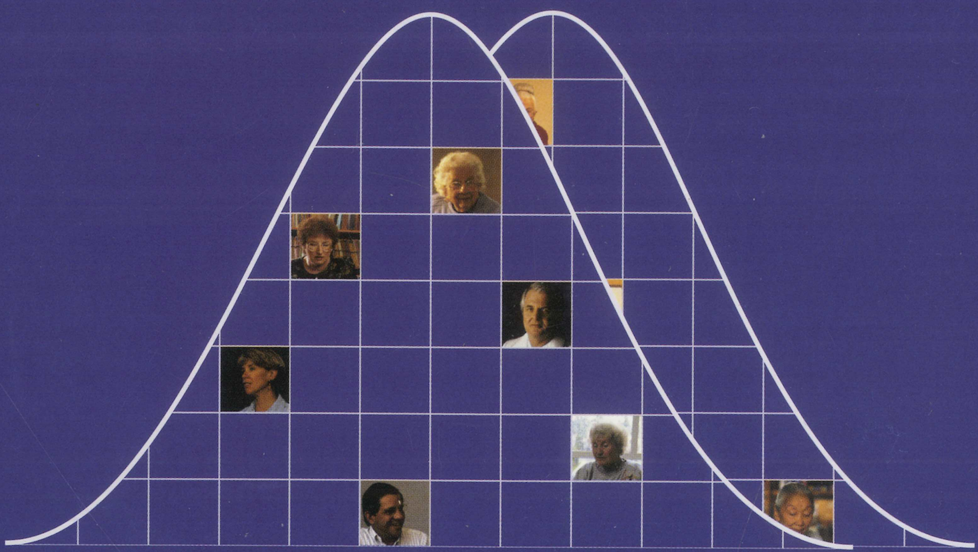
Retirement, health and relationships of the older population in England:

The 2004 English Longitudinal Study of Ageing

WAVE 2



Edited by:
James Banks
Elizabeth Breeze
Carli Lessof
James Nazroo

with an introduction by
Michael Marmot

UCL NatCen National Centre for Social Research IFS

ELSA

Retirement, health and relationships of the older population in England

The 2004 English Longitudinal Study of Ageing (Wave 2)

July 2006

James Banks
Elizabeth Breeze
Hayley Cheshire
Kate Cox
Panayotes Demakakos
Carl Emmerson
Elizabeth Gardener
Edlira Gjonça
Jack M. Guralnik
Elizabeth Hacker
Felicia A. Huppert
Meena Kumari
Iain Lang
Andrew Leicester
Carli Lessof
Susan Maisey
Michael Marmot
Brenda McWilliams
David Melzer
James Nazroo
Susan Nunn
Mary Pierce
Nicholas Steel
Faiza Tabassum
Rebecca Taylor
Gemma Tetlow
Paola Zaninotto

Editors:
James Banks, Elizabeth Breeze, Carli Lessof and James Nazroo

The Institute for Fiscal Studies
7 Ridgmount Street
London WC1E 7AE

Published by

The Institute for Fiscal Studies
7 Ridgmount Street
London WC1E 7AE
Tel: +44-20-7291 4800
Fax: +44-20-7323 4780
Email: mailbox@ifs.org.uk
Internet: www.ifs.org.uk

The design and collection of the English Longitudinal Study of Ageing was carried out as a collaboration between the Department of Epidemiology and Public Health at University College London, the Institute for Fiscal Studies, the National Centre for Social Research and the Department of Psychiatry at the University of Cambridge.

Authors from all these institutions have contributed to this publication.

ISBN-10: 1-903274-46-X
ISBN-13: 978-1-903274-46-0

Printed by
Patersons, Tunbridge Wells
21 Chapman Way
Tunbridge Wells
Kent TN2 3EF

Contents

Tables

1. Introduction

Michael Marmot *University College London*

Do people rage against the dying of the light or do they go gently into that good night? Translating Dylan Thomas: as people age, do they continue to participate actively in work and social life, retain health and function for substantial periods, or do they subside, go gently, into inactivity, decline and eventual death?

There are two types of questions here: what policymakers, politicians and social commentators think people should do – subject of much current debate; and what people actually do. A key purpose of ELSA (the English Longitudinal Study of Ageing) is to discover what people aged 50 years and above do, and are able to do, in areas that are of great interest to all of us whether policymaker, researcher, commentator or simply interested citizen: work, spending, health and receipt of healthcare, social participation, cognitive ability. A second major purpose is to go beyond description of what people do to discover why – to seek explanations for which people have good trajectories in older age and which less good. Without such understanding, it is hard to see how policies could be designed to make things better.

In our first report from ELSA (Marmot et al., 2003), following the first wave of fieldwork in 2002–03, we drew attention to the great diversity in health, physical, social and psychological functioning and economic fortunes in the population. We hoped that results from ELSA would do much to contradict the picture of older age as a time of inevitable decline. In this second report, following the second wave of fieldwork in 2004–05, we fill out the picture further. In particular, we examine an important aspect of diversity: how each of the areas covered by ELSA varies according to people's level of wealth.

One of the strengths of ELSA is that it combines expertise from a number of disciplines. For example, it is common for those of us who do health surveys to treat economic measures as worth adding only if the task can be accomplished with a few questions. Those of us who do economic surveys commonly want to know the minimum that needs to be done to assess health. In ELSA, assessment of wealth is not only superior to that in health surveys; it is likely to be more complete than in most economic surveys. It includes not only current assets but also a calculation of pension wealth. Wealth is important, of course, not only because it provides a summary measure of economic fortunes through the life course but because it also provides a measure of security for the future. Future security is particularly important for people contemplating retirement, experiencing it or living with its aftermath.

ELSA, true to its name, is a longitudinal study. Participants are re-interviewed every two years. This means that we can study the consequences that conditions at one time have for the future. The real 'pay-off' from ELSA will come in the future as we continue to follow the cohort. The key research questions of ELSA include understanding of:

- health trajectories, disability and healthy life expectancy;
- determinants and links between economic position and health at older ages;
- timing of retirement and the nature of post-labour-market activity;
- social networks, social participation and social support;
- household and family structures and the role of family transfers.

Despite the fact that we are only reporting here on wave 2 of ELSA – a two-year follow-up – longitudinal analyses can still be illuminating. For example, at wave 1, we examined the proportion of people, at a given age, who were no longer in the labour force. The proportion not working was high for those in the bottom 20% of the wealth distribution *and* high for those in the top quintile. We speculated that those in the bottom wealth group were not working because they could not – due to ill health or lack of available work – and those in the top group were not working because they did not have to. Longitudinal data would yield the answers to these questions.

Continuing to work?

Because of the public discussion of how long people should work before they draw their pensions, leaving the labour market is of topical policy interest. Although two years is a short time to follow people, the longitudinal data reported here show that having a defined benefit pension, as opposed to having a defined contribution pension, being in part-time work, and feeling in fair or poor health, all predict that people will stop work within two years.

If working longer is seen as a desirable policy option then attention must be paid to the reasons why people leave the workforce. ELSA will continue to provide crucial insights on this issue.

Straitened circumstances?

Wave 2 of ELSA provides detailed measures of patterns of expenditure and consumption for ages 52 years and above. Not surprisingly, these differ markedly by wealth. Although expenditure goes down with age, there is evidence that this reduction, on average, is seen as a diminishing problem. We asked not only about consumption but whether people lacked enough money to meet their own needs. At age 52–59, only 10% of people in the bottom quintile of wealth said they never lacked money to spend on their own needs. This proportion had increased to above 30% at 70 years or over. For the richest 20% – people in the top wealth quintile – the proportion rose from 50% never lacking money to meet their needs at age 52–59 to over 60% at age 70 or over.

This ‘improvement’ for older relative to younger people could reflect a changing definition of what constitutes a ‘need’ as people age, or it could be that the lifetime experiences of the oldest generations led to a different outlook in old age from the one that their successors will have. One should not assume, however, that the problem of insufficient resources at older ages is solved by diminished expectations. Objective measures point to a continuing problem. We used the definition of fuel poverty as a household spending more than 10% of its income on domestic fuel. Although the overall prevalence of fuel poverty in ELSA is 8.3%, it is much higher, at just under 20%, among participants aged under 60 in the bottom wealth quintile. Fuel poverty is more marked for older women than older men. We also show that a quality-of-life measure, the CASP-19, is strongly linked to fuel poverty.

Health at older ages

In the ELSA wave 1 report, we drew attention to the fact that three-fifths of people at age 80 or over described their health as good, very good or excellent. This was reassuring and contradicted the assertion that older age means inevitable ill health. This is not to deny the real need for medical care at older ages. One way we looked at this was the proportion of people who remain free of disease – we included four eye diseases, seven cardiovascular diseases and six other physical diseases. The proportion who still had none of these diseases in 2004–05 falls from around half those aged 50–54 in 2002–03 to around one-in-ten of those aged 75–79 in 2002–03. For those aged under 75, the wealthiest were less likely than the poorest to report a new condition in 2004–05.

Given the high prevalence of one or more diseases in people surviving to older ages, the quality of healthcare is important. At wave 2, ELSA introduced measures of healthcare quality. These will become increasingly important in longitudinal analyses as we assess the impact of new diseases on health and functioning. There is marked variation in quality of care received by condition – in general, good-quality care for ischaemic heart disease, hypertension and diabetes, and rather poorer care for falls, balance and incontinence.

A particular strength of ELSA is the presence of biological markers of illness. This strength can be illustrated by a recently published comparison of socio-economic differences in a number of diseases between studies in England and those in the US, including ELSA and the US-based Health and Retirement Study (Banks et al., 2006). We confined the comparison to white men and women aged 55–64. A striking finding was that for each of six conditions, American men and women had more illness than the English. This came as a surprise to some observers because national expenditure on healthcare per head is two-and-a-half times higher in the US than in the UK. It is possible that Americans report more illness more frequently than the English, not because they have more illness but because they are more likely to have it detected – greater medicalisation of the population. We therefore compared biological markers of disease. For these, too, Americans were worse off. The presence of biomarkers made the conclusion much more secure than had we relied only on self-reports of doctor-diagnosed illness. Thus, the introduction of biomarkers in wave 2 of ELSA greatly enhances the opportunity for learning the nature of health differences between countries.

Similarly, when we make comparisons within ELSA by region, by age and by wealth quintile, the presence of biomarkers lends much to interpretation of observed differences in health. For example, this report shows that greater wealth is associated with lower prevalence of obesity, particularly in women, and lesser central adiposity (as measured by the waist–hip ratio). Turning to plasma lipids (fats in the blood), ELSA confirms that plasma total cholesterol does not decrease with increasing wealth quintile. There are, however, clear differences in HDL cholesterol – the good cholesterol – with fewer people having low levels in the highest wealth quintile. Together with plasma triglyceride – which is also adverse in people with less wealth – central adiposity and HDL cholesterol make up part of the metabolic syndrome. Possession of this syndrome puts people at increased risk of developing diabetes and heart disease. These results show that such increased risk is linked clearly to wealth – the less the wealth the higher the risk.

C-reactive protein (CRP) is a marker of inflammation and is strongly linked to risk of heart disease. The close link between lower wealth and increased CRP levels requires investigation. It suggests that CRP can be used as another biological marker of the biological effects of low socio-economic position. Alternatively, it could be a marker that poor health leads to wealth reductions. Further longitudinal data will distinguish the relative contribution of these two mechanisms.

Physical and cognitive functioning

A major concern as people age is not only with specific diseases but with ability to function, physically and mentally. At wave 1 of ELSA, we showed striking differences in physical functioning by socio-economic position: the more education people had the longer was their physical functioning preserved. As with all wave 1 findings, these conclusions were tentative because based on cross-sectional findings. Although only two years has elapsed between waves 1 and 2, we can already observe deteriorations and, to a lesser extent, recovery of physical function. The wealthiest were less likely than the poorest to deteriorate in function between the two fieldwork waves (e.g. 4% of all men in the richest quintile compared with nearly 11% in the poorest).

Cognitive performance is an important part of continued ability to function independently. At wave 1, we documented the fact, with the usual caveat about the limitations of cross-sectional findings, that although cognitive function declined in all socio-economic groups, it started from a much lower level among those with less education. Therefore those of lower education were at much greater disadvantage at each age.

Prospective memory is remembering to do something in the future without being reminded. In this report, we show that around 60% of our participants aged 75 and older forgot to perform an action that they had previously been requested to carry out. If, as we judge, this is indicative of performance in everyday life, it means that action is necessary to help older people cope with this forgetfulness.

On simple measures of numeracy and literacy, there were striking socio-economic differences, such that substantial proportions of the poorest people scored low on literacy and/or numeracy. Although only 4% overall were impaired on both literacy and numeracy, almost eight times the proportion of participants in the lowest quintile were impaired as in the highest. These measures, too, have important implications for continued ability to function in everyday life.

Important analyses for future waves of ELSA will be the determinants of what puts people on better or worse trajectories of change in functioning with age.

Experiences of ageing

In all the important policy-related discussions of work, economic fortunes, health and functioning, it is possible to forget that older age can be a time of loneliness and isolation. Approximately twice as many people in the poorest wealth quintile as in the richest feel isolated often or some of the time. Not surprisingly, feeling left out is more common for people living without a spouse or with a spouse with whom they do not have a close relationship. Living alone, in turn, is more common in the poorer wealth groups.

Interestingly, about half the population of people 52 years and above describe ageing as a positive experience. Ageing is described as negative by a minority, but negative experiences of ageing are far more common amongst the poorest than the richest. Perhaps people who fear growing older can take heart from the finding that even at age 75+, a majority of people do not think of themselves as old. Perceptions seem to matter. Those who think of themselves as younger than their actual age have better health than those who think of themselves as older. Which comes first, the attitude to age or the better health, will only be settled as we gather longitudinal data on this question.

Methods

Chapter 12 gives information on the fieldwork methods, response rates and content of the ELSA interview and nurse visit. A brief summary of the design is given here.

The ELSA sample is drawn from households previously responding to the Health Survey for England (HSE) in the years 1998, 1999 and 2001 (Marmot et al., 2003). Individuals were eligible for interview if they were born before 1 March 1952, had been living in a responding HSE household and were, at the time of the ELSA 2002–03 interview, still living in a private residential address in England. In addition, partners under the age of 50, and new partners who had moved into the household since HSE, were also given a full interview. Those eligible from HSE who took part in ELSA wave 1 are designated as core members. In the second wave, which took place between June 2004 and July 2005, the core members and their partners were eligible for further interview, provided they were still alive and had not refused any further contact after the first interview.

In 2002–03, there was a face-to-face interview and a self-completion form. In 2004–05, there was also a nurse visit. The health and the functioning measures in the interview are primarily self-report – with the exception of a timed walk for gait speed and some objective memory and cognitive function tests. The nurse visit added objective measures of risk factors for cardiovascular diseases in the form of blood analytes and blood pressure, and also included anthropometric measures (from height, weight, waist and hip). Finally, some objective physical function measures were included, namely lung function, muscle strength (grip strength) and lower limb mobility (balance tests, chair rises). Chapters 5 and 6 focus on the measures from the nurse visit.

The topic areas covered in the ELSA interview and self-completion questionnaire at wave 1 included: individual and household characteristics; physical, cognitive, mental and psychological health; social participation and social support; housing, work, pensions, income and assets; and expectations for the future. The same broad areas were covered in wave 2 but there were changes in some of the details. The more major changes are noted here. Questions were added about different forms of expenditure (for example, on fuel, leisure, clothing and transfers) (reported in Chapter 9). Questions about quality of healthcare were added (see Chapter 7). Numeracy was added to the cognitive function section (reported in Chapter 8) but one memory test was removed. There were new questions on relative deprivation (reported in Chapter 10) and also on life satisfaction (also reported in Chapter 10) and on the way people perceive ageing and their own age (reported in Chapter 11). There was some enhancement of a section about the relationship between effort and reward in people's lives and the motivation and satisfaction (or lack of them) they feel when caring for others or undertaking voluntary work.

In terms of methodology, the wave 2 interviews reflected back on information collected in the first wave so that participants could update their information rather than start again from the beginning. This method applied in particular to diagnosed diseases, employment and membership of pension schemes.

Of those who completed a wave 1 interview and were eligible for a wave 2 interview as an ELSA 'core member', 81.5% took part. Of these, 88.2% also took part in the nurse interview (representing 71.2% of those eligible for a wave 2 interview). The response rate at wave 2 was considerably higher than the response rate at wave 1. This higher rate of response is expected for future waves.

Reporting conventions

The analyses in this report use information from the core members of ELSA. Except for mortality analyses, measures of change apply to those who took part in both waves of fieldwork. Proxy interviews, where the individual was unable to respond for themselves, have been excluded, mainly because a much reduced set of information is available for these people.

Unless otherwise specified, the analyses are presented after weighting for losses to the sample between HSE and the second wave – the weighting procedures are described in Chapter 12.

Most of the analyses involve subdivision by sex and age, and/or by age-specific wealth quintile. The age at the first-wave interview has been used where the analyses look at change between the two waves; the age at the second-wave interview has been used for cross-sectional analyses of data from the second wave. The measure of wealth used comprises all wealth held by the benefit unit when they were interviewed in 2002–03 (including owner-occupied housing wealth, pension wealth, financial assets and other physical assets such as business assets, jewellery and antiques) (Banks, Emmerson and Tetlow, 2005). The wealth quintiles used are age-specific, with separate quintiles constructed for groups of individuals aged 50–59, 60–74 and 75 years and over. Both partners of a couple are assigned the combined wealth of the couple, and this should be taken into account when comparing wealth patterns where subgroups will differ in the percentages who are in a couple or not.

Statistics in cells with between 30 and 49 observations are indicated by the use of square brackets. Statistics that would be based on fewer than 30 observations are omitted from the tables.

Acknowledgements

ELSA is a large multi-centre and multi-disciplinary study that would not have been possible without the efforts and dedication of a great number of people. The study is managed by a small committee chaired by Professor Sir Michael Marmot and made up of James Banks, Richard Blundell, Elizabeth Breeze, Bob Erens, Carli Lessof and James Nazroo.

We would like to express our gratitude for the support we have received from a number of sources.

Foremost of those who deserve recognition are the participants in the study. They have given generously of their time on several occasions already and most have agreed to be recontacted. We hope that they find participation in the study interesting and that they will help us to track through the changes that happen as people age. From time to time, we send out newsletters to participants and we hope that these begin to show the value of the study.

The institutions primarily involved in the study are University College London, the Institute for Fiscal Studies, the National Centre for Social Research and the University of Cambridge. We also have close cooperation with colleagues at the Peninsula Medical School in Exeter and at the University of East Anglia. A great many individuals in each of these institutions have been involved in the study, some of whom are reflected in the authorship of chapters in this report. Others, including the dedicated interviewers and nurses, are unnamed here, but have been crucial to the success of the study and are very much appreciated. With regard to this report, particular thanks are due to Judith Payne and Kathleen Weekley for assiduous copy-editing and preparation of the final manuscript and to Emma Hyman for guiding the report through the final stages of publication.

The research group has been carefully advised by two bodies – the consultants to the study and members of the advisory group to the study. The consultants, who have provided specialist advice, are Orazio Attanasio, Mel Bartley, David Blane, Axel Börsch-Supan, Richard Disney, Paul Higgs, Mike Hurd, Roger Jowell, Costas Meghir, David Melzer, Jim Smith, Beth Soldo, Mike Wadsworth, Bob Wallace and Bob Willis. The advisory group is chaired by Baroness Sally Greengross, and its members are Sir Tony Atkinson, Michael Bury, Julian Farrand, Tom Kirkwood, Tom Ross, Jacqui Smith, Anthea Tinker, Christina Victor and Alan Walker.

Finally, the study would not be possible without the support of funders. Funding for the first two waves of ELSA has been provided by the US National Institute on Aging, under the stewardship of Richard Suzman, and several British government departments, specifically: Department for Education and Skills, Department for Environment, Food and Rural Affairs, Department of Health, Department of Trade and Industry, Department for Work and Pensions, Her Majesty's Revenue and Customs, the Office of the Deputy Prime Minister and the Office for National Statistics. This British government funding, and our interactions with departments' representatives, have been coordinated by the Office for National Statistics through the longitudinal data strategy and we are grateful for its role in the development of the study. The views expressed in this report are those of the authors and do not necessarily reflect those of the funding organisations, however.

References

Banks, J., Emmerson, C. and Tetlow, G. (2005), 'Estimating pension wealth of ELSA respondents', IFS Working Paper 05/09 (http://www.ifs.org.uk/publications.php?publication_id=3369).

Banks, J., Marmot, M., Oldfield, Z. and Smith, J. P. (2006), 'Disease and disadvantage in the United States and in England', *Journal of the American Medical Association*, 295: 2037–2045.

Marmot, M., Banks, J., Blundell, R., Lessof, C. and Nazroo, J. (eds) (2003), *Health, Wealth and Lifestyles of the Older Population in England: The 2002 English Longitudinal Study of Ageing*, London: Institute for Fiscal Studies (http://www.ifs.org.uk/elsa/report_wave1.php).

Summary

Chapter 2
The socio-demographic characteristics of the ELSA population

- The cohorts covered in ELSA are ones in which marriage is the norm and cohabitation applies to a small minority. Unsurprisingly, widowhood is highly prevalent at old ages especially for women.
- Overall, only a small proportion of people in the sample have one or more children living in the household (21% of men and 17% of women), but nearly half of the men and women in their early 50s had one or more of their children living with them.
- Among men, the percentages living with at least one of their children drop substantially in successively older groups up to age 65–69 years; in this age group, 14% are living with children. The transition appears to occur earlier for women, so that by age 60–64 years only 14% are living with children.
- Household size decreases with age more sharply for women than for men: two thirds of women and one third of men aged 80 years and over are living alone, but about one in ten of both men and women live alone in their early 50s.
- Around 1 in 6 of those aged under 65 years in 2002–03 was living in smaller household in 2004–05. Few of those aged 75 years or over in 2002–03 were living in a household of different size when interviewed again in 2004–05. Fewer than 5% of participants were living in larger households in 2004–05 than in 2002–03.
- Analyses by wealth show that people who are married or cohabiting are more likely to be wealthy, while people who are divorced, single or widowed are more likely to be poor. Wealthier people are also less likely to live alone than poorer people. This is in part an artefact of the way in which wealth was defined to include combined assets of couples, but could nevertheless indicate greater hardship for those who are alone.
- A strong gradient in mortality rates by age was observed, as expected. Overall, more men than women died between wave 1 and wave 2. Further, the mortality rates were higher amongst those in the lowest wealth quintile compared to those in the highest wealth quintile.

Chapter 3
Labour market transitions

- Nearly 15% of those in paid work aged between 50 and the state pension age in 2002–03 had left work by 2004–05. Movements out of paid work were more common among men aged 60 or over and women aged 55 or over than they were among younger individuals. Both women and (particularly) men in part-time work in 2002–03 were more likely to have left work than those in full-time work.

- Most of those who were not in paid work in 2002–03 were still not in work in 2004–05. However, 8% of those aged 50 to the state pension age who were out of work had returned to paid work by 2004–05. This was more common among those at least five years younger than the state pension age in 2002–03.
- Among 50- to 54-year-olds, those in paid work in 2002–03 in the poorest and the richest wealth quintiles were the most likely to leave work. Similarly, amongst this same age group, those not in paid work in 2002–03 in the poorest two wealth quintiles and the richest wealth quintile were the least likely to return to work.
- Men who were in paid work and contributing to a defined benefit pension in 2002–03 were much more likely to leave work than those who had been in paid work and contributing to a defined contribution pension in 2002–03. Among women, the likelihood of remaining in work did not vary by whether they had contributed to a defined benefit or a defined contribution private pension in 2002–03.
- Among those in paid work in 2002–03, those who reported that their health was only fair or poor were about twice as likely to leave work as those who had reported being in excellent or very good health. In addition, among those who were not in paid work in 2002–03, those who had reported worse health were less likely to return to work than those who had reported being in excellent or very good health in 2002–03. This difference was particularly large for men aged 50 to 54.
- A vast majority (81%) of employees whose employers have a compulsory retirement age say they would not want to work beyond this age, even if their employer allowed it. However, a greater proportion of employees feel constrained by the compulsory retirement age the lower it is.
- Almost two-thirds of men, and half of women, aged 52 to 54 who were not in paid work in 2004–05 report that they had a disability that affected the amount of work that they could do, compared with only one-in-fifteen men and women in the same group who were working full-time.

Chapter 4
Self-reported physical health

- Seventeen chronic conditions were considered, all of which have potential to increase difficulties in daily function among sufferers. A quarter of participants recorded at least one additional diagnosis between the interviews in 2002–03 and 2004–05 (median time lapse: 27 months).
- By the end of the second wave of fieldwork, half those in their early 50s in 2002–03 were without diagnosis of any of these conditions but only one-in-ten of those aged 80 years or over.
- Women had an advantage in prevalence and a small advantage in incidence of diagnosis of at least one of seven cardiovascular disease (CVD)-related conditions, but this did not apply when all 17 conditions were considered together.

- Of four CVD-related conditions and six other physical diseases analysed separately, percentage incidence of diagnosis was particularly high for cataracts among those aged 75 and over in 2002–03 (15% of men and 22% of women without previous cataracts) and for arthritis among women aged 60 and over (one-in-eight of those without the condition previously).
- Experience of chest pain symptoms was not strongly age-related.
- Experience of troubling pain, and, more specifically, of severe pain in the back, hip, knees or feet, was not age-related.
- Balance problems and dizziness were considerably more common the older the person (for example, three-out-of-five women aged 80 and over experienced one or both of these at least sometimes, compared with only one-out-of-five women in their 50s).
- Older age was also associated with greater likelihood of multiple falls.
- Falls may affect life more if one lives alone. More people aged 60 to 74 living alone experienced them than their counterparts living with others. This was not true of older people still living in the community.
- Among people aged under 75, greater wealth was accompanied by greater health, as measured in this chapter. This applied to incidence of at least one disease, being free of diagnosis of the 17 conditions, and experience of chest pain, of balance problems or dizziness, of severe pain and of specific severe pain at two or more specific parts of the body (back, hip, knee, foot).
- Once aged at least 75, associations between health indicators and wealth largely disappeared. They remained for women for incidence of CVD-related conditions, experience of angina symptoms, experience of severe pain generally and experience of severe pain in multiple specific parts of the body.

Chapter 5
Measures of physical health

- The age patterns differ for Body Mass Index (BMI) and Waist-Hip Ratio (WHR). In men, BMI peaks earlier than in women (55–59 years compared with 60–64 years), while WHR peaks at 70–74 in men, but continues to increase with age in women.
- There is clear pattern of differences in anthropometric measures with wealth. BMI in women and WHR in both men and women, show linear negative trends across the quintiles of wealth. This pattern is not seen in BMI in men.
- Among ELSA participants, systolic and diastolic blood pressure show different patterns with age. Systolic blood pressure does not rise inexorably with age but peaks in people in groups in their 70s and thereafter falls. Diastolic pressure falls with age in all women and in men older than 60 years.

- Different cardiovascular risk factors pattern differently by age. The percentage of people with hypertension (except for the very oldest group), diagnosed diabetes and mean levels of C-reactive protein (CRP) increases with age. By contrast, the percentage of people with high total and LDL cholesterol decreases with age after 60 years.
- Different cardiovascular risk factors also show different patterns with wealth. As wealth increases, there is a decrease in mean systolic blood pressure, the percentage of people with hypertension, high risk levels of HDL cholesterol and triglycerides, diagnosed and undiagnosed diabetes and mean CRP levels. By contrast, there is no association with diastolic blood pressure and the prevalence of high total and LDL cholesterol increases with increasing wealth.
- Different lipids measures show different patterns by sex. The overall prevalence of high total and LDL cholesterol is very high and higher for women than for men. Detrimental levels of triglycerides are more prevalent in men than women.
- All measures of lung function deteriorate with advancing age and there is a shallow gradient with wealth, richer people being somewhat advantaged. There is a clear effect of smoking; lung function is always better in those who have never smoked than in those who currently smoke.
- Mean haemoglobin decreases with age in both men and women. The prevalence of anaemia is greatest in the oldest groups.
- Ferritin levels show an inverted U shape with age in both sexes. Low ferritin levels in women show the same pattern with age, but no age related pattern is seen in men. Mean haemoglobin is not associated with wealth and ferritin only shows some signs of an advantage for the richest group.

Chapter 6
Measured physical performance

- Performance measures offer an objective marker of functioning, free from differences in attitudes to reporting difficulties. ELSA wave 2 (2004–05) included tests of lower limb functioning plus grip strength.
- Overall tested performance declines with age, but some of the oldest people maintain high functioning. For example, the weakest 25% of women aged 52–59 have measured grip strengths of 24 kg or less, but the top 5% women aged 80 and over have grip strengths of 25 kg and above.
- Those living in the poorest households have significantly higher rates of impairment on all tests. For instance, compared with those in the wealthiest fifth of households, men and women in the poorest fifth of households are approximately two and a half times as likely to perform poorly on the Short Physical Performance Battery of tests.
- Incidence rates of poor function on the gait speed test are also associated with low wealth. Both men and women in the poorest group are significantly more likely to have developed gait speed limitations between the first and second ELSA waves than those in the wealthiest group.

- Performance test results are useful in detecting differences among high- as well as low-functioning individuals, and provide reliable measures for identifying factors that might delay the onset of functional limitations.

Chapter 7
Quality of healthcare

- The quality of healthcare received by ELSA respondents was assessed against pre-defined evidence-based quality indicators for those who reported having been diagnosed with diabetes mellitus, hypertension, ischaemic heart disease, cerebrovascular disease, osteoarthritis, depression, osteoporosis or raised cholesterol; or having problems with balance, falls, vision, hearing, anticoagulation, pain, urinary incontinence or smoking. Indicated care is healthcare that meets the standard described in the quality indicator.
- The proportion of ELSA respondents reporting that they received indicated care varied substantially by condition, from eight-out-of-ten respondents with newly diagnosed heart attack or angina, to only one-in-seven of those with balance problems.
- The health problems presented in this chapter can be divided into three groups according to the quality of care reported by respondents. Over two-thirds of respondents reported receiving indicated care for hypertension, ischaemic heart disease, diabetes, hearing problems and pain. Less than two-thirds but more than one-third received indicated care for diabetes (with an additional risk factor), osteoporosis, vision, incontinence and falls. Less than one-third of respondents received indicated care for problems with balance.
- A high proportion of those receiving healthcare advice from a health professional reported following that advice.
- Few differences in the quality of healthcare were reported by wealthier respondents compared with poorer respondents, which suggests that healthcare for the interventions studied in ELSA is provided equitably to those in need, regardless of socio-economic status. Exceptions were incontinence management and diabetes education.

Chapter 8
Cognitive function

- One-third of the sample reported that their memory had worsened over the past two years. Compared with wave 1, 38% fewer regarded their memory as excellent and 20% more regarded their memory as poor.
- Participants' own ratings of their memory, however, are an unreliable guide to their actual memory performance, and their ratings of the change in their memory are an equally unreliable guide to the observed change in their memory performance.
- Older groups have a double disadvantage in relation to their memory performance; on tests of word recall, not only do they remember fewer words when tested immediately, but after a brief delay they forget more of

what they could recall initially. To counteract this age-related loss, it is recommended that important information be provided to older people in written form.

- Older groups have a striking impairment in prospective memory – that is, remembering to carry out an action without being reminded. Around two-thirds of participants aged 75 and older forgot to perform an action that they had earlier been instructed to carry out. If the findings are indicative of forgetfulness in daily life, then they raise concerns about the health and safety of older people, in relation to such activities as remembering to take medication, pay bills and lock doors.
- Speed of information processing was the most sensitive measure of cognitive decline over the two-year period. The older the group, the greater the degree of decline.
- Literacy was assessed for the first time in a UK population sample of people aged 65 years or more. The literacy measure assessed how well respondents understood written instructions about taking an Aspirin tablet. Some degree of literacy impairment was surprisingly widespread, being found in one-third of the sample. Literacy was strongly age-related: one-half of the oldest group (80+) made at least one error on the task, compared with one-quarter of the under 60s. Only some of the age differences in literacy can be explained by differences in education, since the trend for literacy impairment to increase with age is evident even when controlling for level of education.
- The higher the level of wealth, the better the cognitive performance on all measures except speed of processing. Compared to those in the highest wealth quintile, almost eight times as many respondents in the lowest quintile were impaired in both literacy and numeracy.

Chapter 9
Expenditure and consumption

- On average, those aged 52 and over spend £45 per adult per week on food; this pattern is relatively constant across age groups.
- Food spending rises with wealth, particularly for food consumed out of the home. Spending on food out of the home is almost five times higher for those at the top of the wealth distribution than for those at the bottom.
- The level of spending on basics – food, fuel and clothing – increases with wealth, but the budget share falls, as would be expected for goods that are considered economic necessities.
- Nevertheless, even among the very poorest groups of the ELSA sample – low-wealth households aged 75 and over – spending on ‘basics’ accounts for less than 35% of disposable income.
- Transfers to people outside the household account for 4% of disposable income on average, and for as much as 7% amongst the wealthiest oldest households. For almost all groups, average transfers are greater than average spending on either clothing or leisure services.

- The percentage of the elderly spending more than 10% of their income on domestic fuel is 8.3% but this rate varies systematically by age, wealth, health and quality of life. Amongst the oldest old and the poorest groups, rates are higher (11½% for those aged 75 and over and 14% for the lowest wealth quintile).
- Consumption of services from durable goods owned by households is an important aspect of consumption for older households. Durable ownership rates are high and non-negligible even for the high-technology goods such as DVDs and personal computers.
- On average, 40% of the population aged 52 and over have adopted digital television in their household. Amongst those 75 and over, these rates are less than 30%; for women aged 80 and over, the rates are as low as 15%.
- The frequency with which durables are replaced varies across the wealth distribution, and the spending on each replacement rises sharply with wealth.
- Measures of durable ownership and durable replacement and expenditure-based poverty measures correlate with self-perceived measures of both social status and quality of life, which suggests an important role for consumption measures when thinking about broader social outcomes for the older population.

Chapter 10
Loneliness, relative deprivation and life satisfaction

- People aged 80 and older are the most vulnerable to loneliness.
- More women than men report feeling lonely, but this difference lessens with age and for those over 80 years old it remains notable only on the 'feel lack of companionship' dimension of loneliness.
- There is a socio-economic gradient in loneliness.
- Living with a partner and feeling her or him very close lowers rates of loneliness.
- Having children but not feeling close to any of them is associated with higher rates of loneliness than being childless.
- Contact with children is an important correlate of loneliness.
- People without friends report the highest rates of loneliness.
- The older people become, the less they feel that the money they have is insufficient to meet their needs.
- The older people become, the more they feel deprived compared with people around them.
- Being of pre-retirement age (less than 60) or over 80 negatively affects levels of satisfaction with life.
- Relationships with friends and family exert a powerful influence on people's life satisfaction.

- Wealth is an important determinant of people's life satisfaction but its effect declines over the age of 75.

Chapter 11
Perceptions of ageing

- On the whole, ageing is a positive experience for the majority of the respondents.
- Wealth does not affect in a consistent way respondents' experiences and perceptions of growing older.
- The majority of the respondents do not think of themselves as old.
- Future health status seems to be the most important concern for the majority of the respondents.
- Wealthier respondents are more likely to say that old age starts later and middle age ends later, independent of their age and sex.
- Healthier respondents are more likely to say that old age starts later and middle age ends later, independent of their age and sex.
- The majority of the respondents feel younger than their actual age.
- Respondents who feel younger than their actual age have better self-perceived health than the rest of the respondents.
- The majority of the respondents would prefer to be younger than their actual age.
- Respondents who would prefer to be younger have worse self-perceived health than those who prefer to be their actual age.

2. The socio-demographic characteristics of the ELSA population

Edlira Gjonça *University College London*

Faiza Tabassum *University College London*

Elizabeth Breeze *University College London*

Among other things, the analyses presented in this chapter show:

- The cohorts covered in ELSA are ones in which marriage is the norm and cohabitation applies to a small minority. Unsurprisingly, widowhood is highly prevalent at old ages especially for women.
- Overall, only a small proportion of people in the sample have one or more children living in the household (21% of men and 17% of women), but nearly half of the men and women in their early 50s had one or more of their children living with them.
- Among men, the percentages living with at least one of their children drop substantially in successively older groups up to age 65–69 years; in this age group, 14% are living with children. The transition appears to occur earlier for women, so that by age 60–64 years only 14% are living with children.
- Household size decreases with age more sharply for women than for men: two thirds of women and one third of men aged 80 years and over are living alone, but about one in ten of both men and women live alone in their early 50s.
- Around 1 in 6 of those aged under 65 years in 2002–03 was living in smaller household in 2004–05. Few of those aged 75 years or over in 2002–03 were living in a household of different size when interviewed again in 2004–05. Fewer than 5% of participants were living in larger households in 2004–05 than in 2002–03.
- Analyses by wealth show that people who are married or cohabiting are more likely to be wealthy, while people who are divorced, single or widowed are more likely to be poor. Wealthier people are also less likely to live alone than poorer people. This is in part an artefact of the way in which wealth was defined to include combined assets of couples, but could nevertheless indicate greater hardship for those who are alone.
- A strong gradient in mortality rates by age was observed, as expected. Overall, more men than women died between wave 1 and wave 2. Further, the mortality rates were higher amongst those in the lowest wealth quintile compared to those in the highest wealth quintile.

This chapter gives an overview of the demographic characteristics of the ELSA population for the period 2004–05, based on age and sex, as well as other socio-demographic variables, including marital status, household composition and living arrangements. It also covers some demographic changes to the ELSA population between the periods 2002–03 and 2004–05, such as changes in the marital status, living arrangements, and in size of the households. Results are presented for individuals. The analyses in this chapter provide a starting point for many research questions and for studies that rely on a comparison between ELSA and other survey samples.

Age and sex are the most important factors that affect mortality and health and are the main characteristics by which our analyses have been carried out. There is a large literature focusing on sex differences in health and mortality. While different authors argue about the importance of either biological or socio-economic and behaviour factors in these sex differences, it is generally agreed that women live longer than men. On average, women in developed countries live more than five years longer than men (Waldron, 1983; Verbrugge, 1989). However, in the last twenty years, men have achieved greater gains in life expectancy than women (Arber and Ginn, 2005). This has contributed to a gradual narrowing of the male-female life expectancy gap and has significant implications for marital status and living arrangements.

Marital status has also been shown to be very important to health and mortality, especially at old age. Married people have significantly better health and lower mortality than their single counterparts (Smith and Zick, 1994). These results are particularly significant for men (Lillard and Panis, 1996; Hu and Goldman, 1990). A significant transition for many older people begins when they become widowed. Widowhood often represents the loss of a long-time partner, who may have been the main source of companionship. A number of studies (Goldman, Korenman and Weinstein, 1995; Mineau, Smith and Bean, 2002) have found that widowed, divorced and never married individuals are more likely to die earlier than married people. The ELSA study will provide opportunities to monitor the economic, social, psychological and other changes brought about by widowhood.

Living arrangements are linked to legal marital status but increasingly reflect newer forms of partnership such as cohabitation. While cohabitation is expected to be more common in the younger cohorts of the ELSA population, it is also of interest to observe the changing living arrangements arising from widowhood in the older generations. Family ties, relationship and support are thought to influence health and mortality, especially at older ages. The influence or presence of family can have a positive effect on the well-being of older people and can also provide a good preventive measure against lengthy institutionalisation (Grundy, Bowling and Farquhar, 1993; Steinbach, 1992). In most developed countries, the proportion of elderly living alone has increased in recent years. However, few studies have investigated the general impact of living arrangements on health and survival. As living alone becomes more ‘normal’, its negative influence on health and well-being may become less powerful (Davis et al., 1997).

Childlessness and the number of children could be a predictor for the presence (or lack) of social relationships and as a consequence, a predictor of health and mortality. Children can mediate environmental stress that threatens to overwhelm the coping abilities of the older parent (Silverstein and Bengtson, 1991) and at the same time, close intergenerational relations may help to compensate for the lost support of the deceased spouse. However, the number of children in itself does not necessarily equate with meaningful help and support, so the association with mortality has reflected inconsistent trends (Bowling, 1994).

2.1 Measures

Information was collected at both the household and at the individual levels. In the second wave of ELSA, some of this information was fed forward from the wave 1 survey. Information on household characteristics such as living arrangements and relations between household members was recorded in the household grid. This household-level information was usually provided by one member of the household. Each ELSA respondent was then asked individually about age, sex, marital status and number of children (both within and outside the household). The results presented in this chapter combine information from both the household grid and the individual questionnaire.

Each ELSA respondent was asked about legal marital status in the individual questionnaire. The response options were: single, never married; married, first and only marriage; married, second or later marriage; legally separated; divorced; or widowed. The term 'cohabitation' is used in these analyses to describe whether the single, divorced or widowed respondent is living with a partner. Details of cohabitation and living arrangements were derived using the household grid, in which the relation of each ELSA respondent to every other person in the household was collected. The predetermined response options regarding the relationships in the household were: husband/wife; partner/cohabitant; natural son/daughter; adopted son/daughter; foster son/daughter; stepson/ stepdaughter/ child of partner; son-in-law/daughter-in-law; natural parent; adoptive parent; foster parent; step-parent/parent's partner; parent-in-law; natural brother/sister; half-brother/half-sister; stepbrother/stepsister; adopted brother/ sister; foster brother/sister; brother-in-law/sister-in-law; grandchild; grandparent; other relative; other non-relative.

All respondents were asked whether they have any living children, how many they have and, if they have children living outside the household, whether they are their natural (i.e. biological) children, adopted, step or fostered children. These questions were answered by all respondents in the household. The household grid was used to derive the number of children living in the household.

Deaths are reported through two methods. All participants who gave their permission (95%) are 'flagged' with the National Health Service Central Register (NHSCR) run by the Office for National Statistics. This register keeps track of registrations with general practitioners but also with official death registrations and with people who leave the UK health system. Most of the deaths reported here were confirmed through the NHSCR. In addition, some deaths are reported to the National Centre for Social Research by relatives of ELSA participants and by interviewers who learn of the deaths when trying to contact the household. For this analysis, the data are weighted for a non-response at wave 1 and the bases include all who core members who took part in 2002–03, except for a small number of people (27) who were not flagged at NHSCR and for whom there was no information from field contacts. Deaths were included in this analysis if they occurred after the interview in 2002–03 and before the date on which the address would have been issued for an interview at the second wave of fieldwork.

2.2 Results

Age and sex composition

In the core ELSA sample who were living in the community in 2004–05, 46% are men and 54% are women. This is expected in a population above the age of 52, where women outnumber men as a result of their lower mortality rates at these ages. For the purpose of the analysis, the population has been regrouped into 5-year age groups with the exception of the highest and lowest groups. The median age of the ELSA population is 65, the mean age is 66.7, and the maximum age is 101. The largest proportion of the survey population is in the younger groups, with those aged 55–59 having the greatest number of people for both sexes (23% for men and 20% for women) (Table 2A.1).

Figure 2.1. ELSA core members: age pyramid in 2004–05

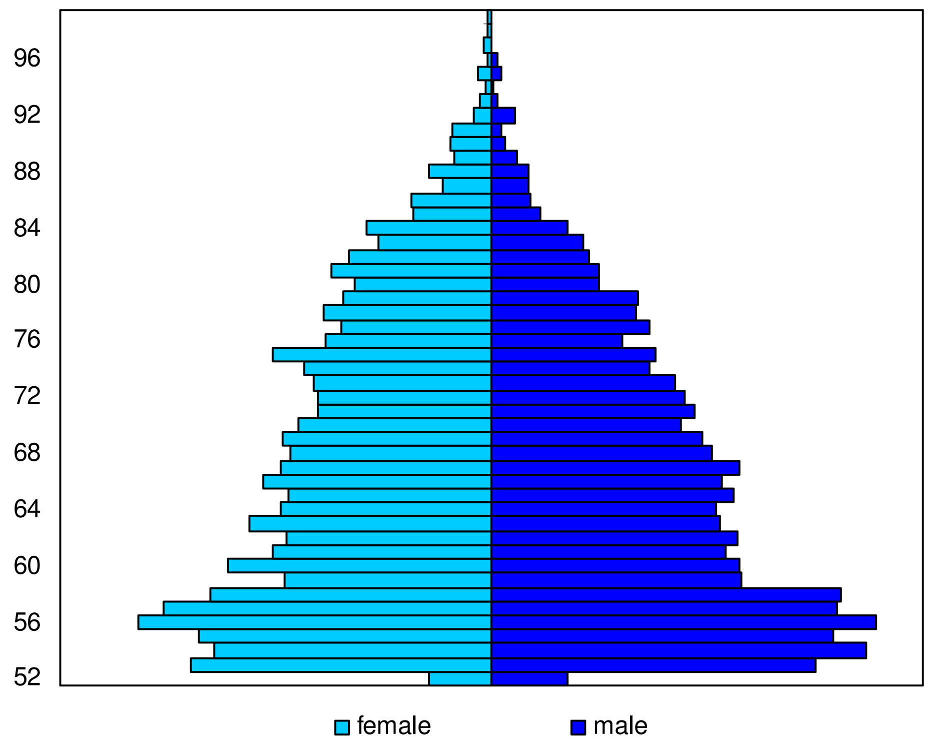


Figure 2.1 shows the population age pyramid for ELSA population. The number of women who survived to old age is clearly larger than the number of men and reflects the characteristics of the whole English population. The influence of the baby boom after the Second World War is evident, with more people concentrated at ages 55–58, who were born between 1947 and 1950.

The reduction of fertility during the Second World War as well as the baby bust of the 1930s is also evident. However, the evidence of these two demographic events is now slowly diminishing. The cohorts that were subject to these events are now in their late 50s to early 70s, and while the size of the birth cohort has effects on the structure of the population even after 50 years, other factors, such as survival rates, also play an important role at these ages. The number of the very old in the sample is relatively small – 11% of the ELSA sample are aged 80 or over, while 4% are aged 85 and over. These age groups will be most affected by the sample analysed here being confined to those outside long-term care. The small numbers in the youngest group are an artefact of the sample design, whereby all sample members were aged 50 and over at first interview (2002–03), and hence aged 52 or more by the second wave.

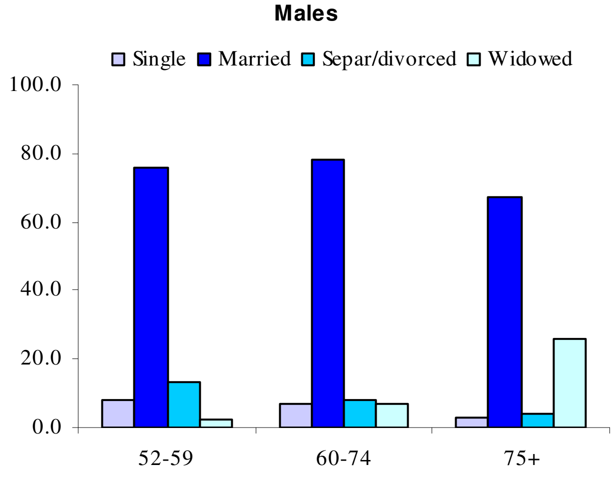
Marital status

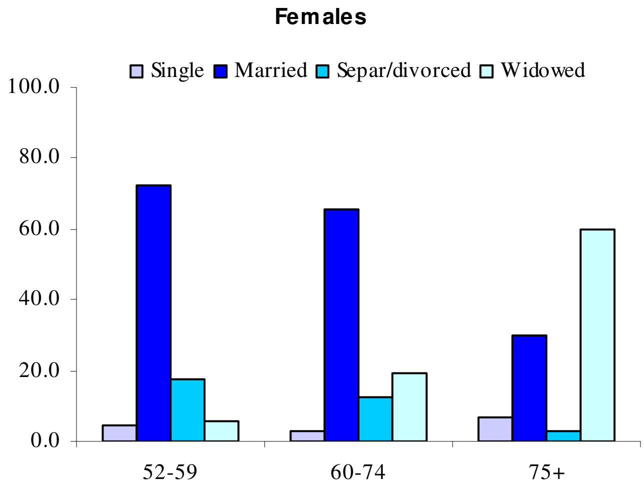
Nearly two-thirds of the men and half of the women are still in their first marriage, but a substantial proportion are in a second or subsequent marriage (12% of men and 9% of women). The higher proportion of currently married men compared with recently married women is offset by a higher percentage of women than of men who are widowed. This is to be expected, given the tendency for women to marry older men and to live longer (Figure 2.2, Table 2A.2). However there is not much difference in the proportions of men and women who report being separated or divorced. It is notable that these cohorts have some of the highest proportions of married people in the past 50 years (OPCS, 1980), and the proportion of them who have never married is low. Future cohorts are likely to have higher proportions of people who are single, cohabiting rather than legally married, or divorced. There is only a small difference in the proportion of women and men who have never married, with more men than women who have never married in the young age groups. This pattern reverses in the older groups (75 years and older) with more women who have never married than men. The second pattern of findings can be explained by the cohort effect of the two world wars, where many young men were killed leaving women with fewer chances to find partners to marry. Thus, this is a cohort rather than a period or age effect. This characteristic of these cohorts has an impact on the living arrangements, family relationships and care of these elderly.

Widowhood is nowadays almost exclusively associated with old age. Both Table 2A.2 and Figure 2.2 clearly show this. There is a clear gender difference in widowhood, reflecting both higher female survival and the male-female age-gap at entrance into marriage. By the age of 75, almost one third of women have been widowed compared with only 11% of the men (Table 2A.2). In the oldest group (80 and over), almost 36% of men and 71% of women are widowed (Table 2A.2). It is common throughout Europe and North America for women to face long periods of widowhood in later life, whereas for men this is a relatively unusual experience (Victor 1994).

Cohabitation outside marriage is to some extent a recent phenomenon and high levels of cohabitation would be unexpected in a population of this age. Table 2A.3 shows clearly that cohabitation is much less common than marriage in

Figure 2.2. ELSA's population, by marital status, age and sex

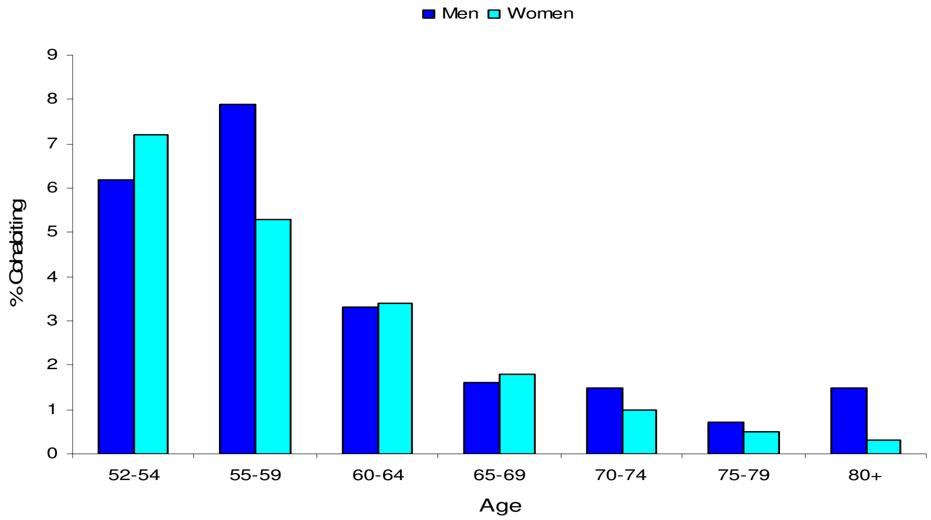




the ELSA sample, but is more common in the younger than the older generations.

Table 2A.3 shows analyses for both married and unmarried (single, separated, divorced and widowed) respondents: 4% of men and 3% of women live with a partner (not a spouse), while the proportion of unmarried people who do not cohabit is 22% for men and 40% for women. However, the proportion of people who are not married but are cohabiting declines at older ages. For example, while 6% of men and 7% of women aged 52–54 report living with a partner, the proportions for people aged 80 or over are only 1.3% and 0.3% respectively for men and women. Conversely, the proportion of unmarried people who do not cohabit increases with age. For example, 16% of men and 22% of women aged 52–54 report not living with a partner, while the proportion of unmarried people aged 80 or over who do not live with a partner is much greater: 40% for men and 79% for women. Figure 2.3 only shows analyses for the unmarried respondents. It indicates clearly the decrease in cohabitation as people age. It also shows a clear gender difference in cohabitation – more women than men report cohabiting among the youngest group while men are slightly more likely to cohabit especially at older ages. This could, of course, be as a result of deaths of cohabitants, together with the fact that women have a higher survival rate than men. However, additional analyses suggest that this also reflects cohort/age differences in the relative frequency of cohabitation.

Figure 2.3. Percentage of unmarried people cohabiting, by age and sex



Analyses of wealth by marital status were done for both sexes combined. Table 2A.4 shows that across all age groups, widowed, divorced or separated, and single people are disproportionately concentrated in the lowest two wealth quintiles. For example, more than half of widowed people are in the poorest two-fifths of the wealth range and only 11% in the richest quintile. This means that those who are currently married are most likely to be near the top of the wealth range. There is probably a two-way effect here, as widowhood and separation often leads to a drop in wealth, but also those with accumulated wealth may be able to sustain health and marriage better.

In addition, poorer people are more likely to be neither married nor cohabiting. Thus, there are distinctly more unmarried people who do not cohabit in the poorer wealth quintiles (61%) than in the richest (9%). (Table 2A.5) This is at least partly an effect of the way the wealth variable is defined, attributing the combined wealth of couples to both partners. Inheritance might be one reason that the wealth distribution for widowed people aged 60 years and over is better than that for separated and divorced people and more like that of never-married people. However, there is also the possibility, as other studies have shown, that these results could be partly due to a selection effect in marriage, remarriage and cohabitation, whereby healthier people, as well as people of higher socio-economic status are selected into marriage, remarriage and cohabitation (Goldman, Korenman and Weinstein, 1995). The younger widowed people could be the subjects of adverse selection, whereby young widowhood is more likely to arise for those in lower social classes.

Living arrangements

In wave 2 of ELSA (2004–05) information about the number of living children and whether they lived in or outside the household was collected. Information on whether these were participants' natural children, stepchildren, adopted or fostered children was also collected. The term 'child' here refers to the relationship with the participant and does not distinguish whether that child is an adult. The number of children was calculated separately for men and women. Table 2A.6 shows that 80% of men and 83% of women have biological children, while 10% of men and 6% of women have stepchildren (in addition to any biological, adopted or fostered children). The proportion of men and women that report having either adopted or fostered children is very small. At the same time, 16% of men and 14% of women report having no children.

The number of children alive, and of these the number living with the parents, has important implications for social relationships and social support. Living arrangements are an important determinant of health and mortality, particularly for the age groups that are the focus of ELSA. In the age range covered by ELSA, changes in living arrangements are likely to arise for two main reasons. Since our respondents are aged 52 and over, many of their children might have moved away or be in the process of moving away from home. At the same time, older respondents might be losing their spouses or partners due to widowhood.

The analyses of living arrangements (living with children) show that 64% of men and 69% of women have children (including step, adopted and fostered), but live in households without children. On the other hand, 21% of men and 17% of women live with at least one of their children. The results show a clear age pattern. Younger respondents are more likely to be living with some of their children. For example, nearly half the men and women aged 52–54 live with at least one of their children, compared with 6% of men and 9% of women aged 80 years or over. The proportion of people not living with their children increases rapidly with age, which could be a consequence of children moving out of the parental household. (Table 2A.7) This age difference in living arrangements with children could arise from the fact that the respondents in the younger age groups still live with children who have not yet left the parental home, while the respondents in the older groups live with children who might have moved in again in order to help the elderly parent.

Analyses of living arrangements by wealth show a distinctive wealth distribution for people aged 75 years and over who live with at least one of their children. A high percentage of this group are in the poorest quintile while a low percentage is in the richest (Table 2A.8). It is beyond the scope of this report to explore further whether this is the result of lack of alternatives forcing poorer old people to live with their family, or a reflection of choice.

On average, ELSA core members live in households of 2 people,[1] with men living in slightly larger households than women. There is a strong age gradient

---

[1]This analysis is based on individuals. Average household size, using the household as the unit of analysis, would be smaller than this.

in mean size of household as older generations are more likely to live alone and less likely to live in either two-person or larger households. Only one in seven men and women aged 55–59 live alone compared with over one in three men and over two in three women aged 80 years and over. The difference in percentages of men and women living in households larger than two persons drops dramatically over successively older groups, tying in with the earlier results shown for living with children. (Table 2A.9)

Household size was also analysed taking into account the wealth of the respondent (Table 2A.10). As expected from earlier results for marital status and living with children, one-member households are concentrated among the poorest two quintiles, but interestingly, the larger households are distributed relatively evenly across the wealth quintiles. However, the patterns vary markedly according to age. The shortfall in larger households in the poorest quintiles is greater for the younger than the older groups, i.e. at the ages when children might still be living in the parental household. At age 75 years and over, there is a shift such that the richest rather than the poorest are under-represented in larger households. This could arise if poorer people were more likely to start living again with children, but this time with the children as carers.

Demographic change

In this section we focus on changes in marital status, living arrangements and household size. Since most ELSA respondents have completed their fertility cycle, we expect the change in the number of children of ELSA respondents to be negligible. However, as cross-sectional analyses suggest, there are likely to be changes in whether ELSA members live with their children. Together with the change in marital status, this has direct implications for change in household size and composition.

Table 2A.11 reports the change in household size from wave 1 (2002–03) to wave 2 (2004–05). Over these two years the household size of ELSA members became smaller. For example, there was a decrease in household size for 13% of men and 11% of women compared with an increase for only 5% of men and 4% of women. While there is very little gender difference in the change of household size, the differences across ages are clear – the biggest decrease or increase in the household size is seen among those aged 52–64 years. This decline in household size among the younger groups can mostly be explained by children moving out of the parental household. At the same time, increase in life expectancy and widowhood are the main reasons for the increasing number of older people living alone where previously they had lived with others (Grundy et al., 2004; Grundy, 1999). Similar trends have been observed in other European countries such as Denmark and Germany. In these analyses, we are not attempting to explore the full dynamics of changing household structure and we can note that there are many forms that the change in structure can take, such as changes in marital and cohabitation status; children moving out; partner dying; children moving in with a frail parent, and so on. As these are very important questions investigate, particularly for these age groups, future research should be focused on them.

Table 2A.12 shows the change in marital status from wave 1 (2002–03) to wave 2 (2004–05) by age for both sexes combined. Only 4% changed marital status during this two-year period: 2% became widowed, 1% married and less than 1% divorced. As expected, the group of people most likely to become widowed are those aged 75 or more, while divorces and marriages are most likely among those aged 52–64 years. The absolute level of change, however, was small due to the period being short.

Table 2A.13 reports the change in living arrangements due to children moving into, or out of, the household between waves 1 and 2 by the age of the respondents in 2002–03. Most of the 'moving in' and 'moving out' pattern was observed among ELSA respondents aged 52–64 years, where less than 4% of the respondents had children who moved into the household and 10% had children who moved out.

Analysis of change in living arrangements was also conducted by age-specific wealth. Table 2A.14 shows the change in living arrangements (children moving into or out of the household) by age-specific wealth quintiles and age of respondents. A higher proportion of people in the poorer wealth categories live in households where children moved in, while more people in the richer wealth categories live in households where children had moved out. This is consistent with the data shown in Table 2A.8, where people living with at least one of their children are increasingly likely to be in the poorer quintiles at successively older ages, and also with Table 2A.10, which shows a greater concentration of people in the poorer quintiles living in one-member households.

The number of ELSA respondents reported dead between waves 1 and 2 was 509. Table 2A.15 shows the percentage of mortality of ELSA respondents between waves 1 and 2, by age and sex. There is a strong age gradient in the proportion of people who died; e.g., with age, the mortality rates went up and there were more deaths in the older groups. For example, nearly 17% of men aged 75 years older in 2002–03 died, compared with a little over 1% of those aged 50–59. Furthermore, as expected, a higher percentage of men died than women (5% and 4% respectively). The mortality analysis was also done by wealth and the results are presented in Table 2A.16. The results show a strong gradient in mortality rates by wealth. For example, the proportion of people who died between these two waves were mostly from the lowest wealth quintile and this pattern is consistent across all age groups. Nearly 8% of those in the lowest wealth quintile died, compared with just 3% among those in the highest wealth quintile.

2.3 Conclusion

Much of the incentive for conducting studies that focus on old age populations comes from the fact that during the last century the proportion of people who were categorised as 'elderly' has increased dramatically. Mortality rates are continuously decreasing, particularly in old age. Especially in developed countries, populations are ageing rapidly. It is therefore increasingly important to investigate the relationships between different socio-demographic factors and health and mortality.

This chapter described the demographic characteristics of the ELSA population in 2004–05 and the demographic changes it has undergone during the average period of 27 months between interviews. The age-related patterns of individual change found in this chapter include the increase in widowhood, the decrease in probability of living with a spouse or partner, children moving out of households more frequently than into, and, as a consequence, a decrease in the average number of people who live in a household. These are very important factors in determining the health, mortality and a number of other aspects in the lives of elderly people.

Our findings once more point out the imbalance in the numbers of men and women surviving to old age. They also show that ELSA is researching generations where marriage predominated and continues to do so into late ages for men, although widowed status becomes common for women by the age of 75. This reminds us of an important consequence of the higher survival rate of women than of men. Analysis of cohabitation also shows an age and sex difference. The proportion of old people living with a partner is small compared with the proportion for younger people. Also, as for marriage, men are more likely than women to be cohabiting.

The existence of living children, whether a natural child or not, was analysed for both men and women. Most people have natural children and while the proportions having adopted, fostered and stepchildren are quite small for these cohorts, it is worth noting that the proportions with stepchildren among those aged 55–64 is about one in ten, reflecting the changes from lifetime partners to divorce and remarriage.

Analysis of living arrangements shows that over 60% of the ELSA population lives in households without any of their children. A relatively small proportion reports living with children in the household and this proportion falls dramatically with age. Most people live in either one- or two-person households. The size of household declines with age. It was found that 83% of men and 85% of women were living in households of the same size in 2002–03 and 2004–05 and about 12% in smaller households. The elderly in Britain have tended to live in small households over the last several decades. However, it is interesting to note that at least nine out of ten of those aged 65 and over in 2004–05 were in a household of the same size in both waves, illustrating that most change happens at a younger age. While this does not rule out some change in household composition, it suggests that it is worth exploring the stability of household composition at older ages over longer periods, as this could reflect a wish of the elderly to stay in their own homes and to retain their independence.

The differences associated with economic circumstances (age-adjusted wealth) have been presented throughout the chapter. Married people are more likely to be wealthy than those who are single, divorced, separated or widowed. Respondents who live in one-person household are also more likely to be poorer. A higher proportion of people in the poorer wealth categories lives in households where children moved in, while more people in the richer wealth categories live in households where children have 'moved out'. Finally, a strong gradient in mortality rates by wealth shows more deaths among those in the poorest wealth quintile than among those in the richest wealth quintile.

References

Arber, S. and Ginn, J. (2005), 'Gender dimensions of the age shift', in *The Cambridge Handbook of Age and Ageing*, Cambridge: Cambridge University Press.

Bowling, A. (1994), 'Mortality after bereavement: an analysis of mortality rates and associations with mortality 13 years after bereavement', *International Journal of Geriatric Psychiatry*, 9: 445–459.

Davis, M., Moritz, D., Neuhaus, J., Barclay, J. and Gee, L. (1997), 'Living arrangements, changes in living arrangements, and survival among community dwelling older adults', *American Journal of Public Health*, 87: 371–377.

Goldman, N., Korenman, S. and Weinstein, R. (1995), 'Marital status and health among the elderly', *Social Science and Medicine*, 40, 1717–1730.

Grundy, E. (1999), 'Household and family change in mid and later life in England and Wales', in S. McRae (ed.), *Changing Britain: Families and Households in the 1990s*, Oxford: Oxford University Press.

Grundy, E., Bowling, A. and Farquhar, M. (1993), 'Social support, life satisfaction and survival at older ages', *Conference on Health and Mortality Trends among Elderly Populations: Determinants and Implications*, 21–25 June 1993, Sendai City, Japan. Published by IUSSP, Belgium.

Grundy, E., Mayer, D., Young, H. and Sloggett, A. (2004), 'Living arrangements and place of death of older people with cancer in England and Wales: a record linkage study', *British Journal of Cancer*, 91: 907–912.

Hu, Y. and Goldman, N. (1990), 'Mortality differentials by marital status: an international comparison', *Demography*, 27: 233–250.

Lillard, L. A. and Panis, C. W. A. (1996), 'Marital status and mortality: the role of health', *Demography*, 33: 313–327.

Marmot, M., Banks, J., Blundell, R., Lessof, C. and Nazroo, J. (eds) (2003), *Health, Wealth and Lifestyles of the Older Population in England: The 2002 English Longitudinal Study of Ageing*, London: Institute for Fiscal Studies (http://www.ifs.org.uk/elsa/report_wave1.php).

Mineau, G. P., Smith, K. R. and Bean, L. L. (2002), 'Historical trends of survival among widows and widowers', *Social Science and Medicine*, 54: 245–254.

OPCS (1980), *Marriage and Divorce Statistics*, London: HMSO.

Silverstein, M. and Bengtson, V. (1991), 'Do close parent-child relations reduce the mortality risk of older parents?', *Journal of Health and Social Behavior*, 32: 382–395.

Smith, K. R. and Zick, C. D. (1994), 'Linked lives, dependent demise? Survival analysis of husbands and wives', *Demography*, 31: 81–93.

Steinbach, U. (1992), 'Social networks, institutionalization, and mortality among elderly people in the United States', *Journal of Gerontology*, 47: S183–S190.

Verbrugge, L. M. (1989), 'The twain meet: empirical explanations of sex differences in health and mortality', *Journal of Human Resources*, 30: S158–S183.

Victor, C. (1994), *Old Age in Modern Society*, 2nd edition, London: Chapman & Hall.

Waldron, I. (1983), 'Sex differences in human mortality: the role of genetic factors', *Social Science and Medicine*, 17: 321–333.

Annex 2.1
Tables on socio-demographic characteristics

Table 2A.1. Age and sex composition of the ELSA sample in 2004–05

Age	**Men**		**Women**		**All**	
	N	*%*	*N*	*%*	*N*	*%*
52–54	345	10.5	396	8.9	741	9.7
55–59	845	23.0	998	20.3	1843	21.6
60–64	663	16.7	805	15.7	1,468	16.2
65–69	654	16.0	738	14.4	1,392	15.1
70–74	559	12.9	640	12.6	1,199	12.7
75–79	427	10.5	537	11.8	964	11.2
80+	413	10.3	668	16.3	1,081	13.6
Bases	*3,906*	*4,003*	*4,782*	*4,669*	*8,688*	*8,639*

Note: *N* indicates actual counts while the percentages are weighted.

Table 2A.2. Legal marital status, by age in 2004–05 and sex

	52–54	**55–59**	**60–64**	**65–69**	**70–74**	**75–79**	**80+**	**All**
	%	*%*	*%*	*%*	*%*	*%*	*%*	*%*
Men								
Single, never married	7.4	8.1	8.0	6.7	5.8	3.8	2.4	6.4
Married, first and only marriage	62.4	61.2	65.2	63.7	66.7	65.8	51.9	62.6
Remarried	15.7	14.0	13.9	12.8	11.1	8.3	7.3	12.3
Separated /Divorced	12.0	14.3	8.0	10.8	5.9	4.8	2.8	9.2
Widowed	2.6	2.5	4.8	5.9	10.5	17.3	35.5	9.4
Women								
Single, never married	4.4	4.6	2.5	3.5	3.3	7.6	6.3	4.6
Married, first and only marriage	59.8	59.8	59.7	56.2	50.2	39.3	17.8	48.8
Remarried	11.7	12.7	13.9	8.9	5.2	3.8	2.5	8.6
Separated / Divorced	20.2	16.3	15.5	11.8	9.2	4.7	2.0	11.3
Widowed	3.8	6.6	8.3	19.5	32.0	44.6	71.4	26.7
***Weighted* N**								
Men	*421*	*920*	*670*	*641*	*518*	*419*	*413*	*4,003*
Women	*416*	*949*	*733*	*672*	*585*	*551*	*762*	*4,667*
***Unweighted* N**								
Men	*345*	*845*	*663*	*654*	*559*	*427*	*413*	*3,906*
Women	*396*	*998*	*805*	*738*	*639*	*537*	*668*	*4,781*

Table 2A.3. Cohabitation, by age in 2004–05 and sex

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%	%	%
Men								
Married	78.1	75.2	79.1	76.6	77.8	74.1	59.3	74.9
Single – cohabiting	1.1	1.7	0.3	0.0	0.4	0.0	0.0	0.6
Single – not cohabiting	6.3	6.4	7.7	6.7	5.4	3.8	2.4	5.8
Separated / Divorced – cohabiting	4.3	5.8	2.4	0.8	0.4	0.2	0.5	2.4
Separated / Divorced – not cohabiting	7.7	8.5	5.7	10.0	5.5	4.5	2.3	6.7
Widowed – cohabiting	0.6	0.1	0.4	0.7	0.6	0.4	0.8	0.5
Widowed – not cohabiting	2.0	2.4	4.4	5.3	9.9	16.9	34.7	9.0
Women								
Married	71.5	72.5	73.6	65.2	55.6	43.1	20.3	57.4
Single – cohabiting	1.4	0.5	0.4	0.1	0.0	0.0	0.0	0.3
Single – not cohabiting	3.0	4.1	2.1	3.4	3.3	7.6	6.3	4.3
Separated / Divorced – cohabiting	4.8	3.9	2.7	1.0	0.7	0.0	0.1	1.9
Separated / Divorced – not cohabiting	15.5	12.4	12.9	10.8	8.5	4.7	1.9	9.4
Widowed – cohabiting	0.7	1.0	0.1	0.7	0.3	0.5	0.2	0.5
Widowed – not cohabiting	3.2	5.6	8.2	18.8	31.6	44.1	71.2	26.2
***Weighted* N**								
Men	*421*	*920*	*670*	*641*	*518*	*419*	*413*	*4,003*
Women	*416*	*949*	*733*	*672*	*586*	*551*	*762*	*4,669*
***Unweighted* N**								
Men	*345*	*845*	*663*	*654*	*559*	*427*	*413*	*3,906*
Women	*396*	*998*	*805*	*738*	*640*	*537*	*668*	*4,782*

Table 2A.4. Marital status, by age-specific wealth quintile and age in 2004–05

	52–59	60–74	75+	All
	%	%	%	%
Single, never married				
Poorest quintile	38.8	31.7	26.4	32.9
2nd	20.8	22.3	26.7	22.9
3rd	15.7	22.4	19.7	19.4
4th	15.6	13.2	11.5	13.6
Richest quintile	9.1	10.4	15.7	11.2
Married, first and only marriage				
Poorest quintile	11.3	7.4	7.5	8.7
2nd	17.7	16.8	17.1	17.2
3rd	21.9	21.7	22.2	21.9
4th	23.5	25.4	25.1	24.7
Richest quintile	25.6	28.8	28.1	27.6
Remarried				
Poorest quintile	15.3	11.4	8.7	12.7
2nd	23.4	20.0	15.4	20.8
3rd	26.9	23.8	17.8	24.4
4th	19.0	23.8	32.0	22.9
Richest quintile	15.3	21.0	26.1	19.3
Separated / Divorced				
Poorest quintile	45.8	48.6	41.2	46.7
2nd	23.1	18.9	25.1	21.4
3rd	16.6	14.4	14.6	15.5
4th	9.8	11.1	12.3	10.6
Richest quintile	4.6	7.0	6.8	5.9
Widowed				
Poorest quintile	43.3	35.1	29.8	32.3
2nd	16.1	24.1	24.0	23.5
3rd	14.9	18.6	20.8	19.7
4th	15.3	12.8	14.4	13.9
Richest quintile	10.4	9.4	11.1	10.5
***Weighted* N**				
Single, never married	*165*	*188*	*116*	*469*
Married, first and only marriage	*1,622*	*2,284*	*837*	*4,743*
Remarried	*355*	*421*	*102*	*878*
Separated / Divorced	*410*	*398*	*73*	*881*
Widowed	*108*	*503*	*1,009*	*1,621*
***Unweighted* N**				
Single, never married	*154*	*187*	*107*	*448*
Married, first and only marriage	*1,521*	*2,401*	*806*	*4,728*
Remarried	*343*	*448*	*103*	*894*
Separated / Divorced	*412*	*429*	*77*	*918*
Widowed	*111*	*570*	*943*	*1,624*

Table 2A.5. Cohabitation, by age-specific wealth quintile and age in 2004–05

	52–59	60–74	75+	All
	%	%	%	%
Married				
Poorest quintile	11.7	7.6	7.2	9.0
2nd	18.8	17.3	16.9	17.8
3rd	22.9	22.1	21.7	22.3
4th	22.7	25.2	26.1	24.5
Richest quintile	23.8	27.7	28.1	26.4
Cohabiting				
Poorest quintile	23.3	24.8	–	22.8
2nd	19.3	13.9	–	18.5
3rd	23.4	23.9	–	23.0
4th	19.4	16.1	–	18.3
Richest quintile	14.6	21.3	–	17.3
Neither				
Poorest quintile	49.6	40.8	30.4	38.1
2nd	21.8	22.2	24.1	23.0
3rd	13.9	17.2	20.4	17.9
4th	10.0	12.0	13.9	12.4
Richest quintile	4.6	7.8	11.1	8.6
***Weighted* N**				
Married	*1,948*	*2,675*	*924*	*5,547*
Cohabiting	*170*	*88*	*14*	*272*
Neither	*543*	*1,033*	*1,200*	*2,776*
***Unweighted* N**				
Married	*1,837*	*2,818*	*893*	*5,548*
Cohabiting	*163*	*97*	*15*	*275*
Neither	*541*	*1,121*	*1,128*	*2,790*

Table 2A.6. Living children, by age in 2004–05 and sex

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%	%	%
Men								
Has natural children	74.5	75.9	77.4	81.6	82.9	84.5	85.0	79.6
Has adopted children	1.4	1.8	2.5	2.2	2.8	4.5	3.5	2.5
Has foster children	0.3	0.4	0.3	0.0	0.4	0.0	0.4	0.3
Has step children	11.9	11.2	11.7	10.8	6.9	7.9	9.0	10.2
No children	19.6	18.0	17.6	14.7	13.0	10.8	11.9	15.6
Women								
Has natural children	83.7	81.2	84.6	84.7	86.0	82.2	79.5	82.9
Has adopted children	1.7	1.0	2.0	2.3	2.7	3.2	2.5	2.1
Has foster children	0.2	0.3	0.6	0.3	0.0	0.1	0.6	0.3
Has step children	6.5	9.2	9.3	7.2	4.5	3.3	3.4	6.4
No children	13.7	15.8	12.6	12.1	11.4	14.5	17.8	14.2
***Weighted* N**								
Men	*421*	*920*	*670*	*641*	*518*	*419*	*413*	*4,003*
Women	*416*	*949*	*733*	*672*	*586*	*551*	*762*	*4,669*
***Unweighted* N**								
Men	*345*	*845*	*663*	*654*	*559*	*427*	*413*	*3,906*
Women	*396*	*998*	*805*	*738*	*640*	*537*	*668*	*4,782*

Table 2A.7. Children in and out of household, by age in 2004–05 and sex

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%	%	%
Men								
Does not have children	19.6	18.0	17.6	14.7	13.0	10.8	11.9	15.6
Has children, lives with one or more	48.2	32.1	21.2	13.9	10.0	8.4	5.7	21.0
Has children, does not live with them	32.2	49.9	61.2	71.4	77.0	80.9	82.4	63.5
Women								
Does not have children	13.7	15.8	12.6	12.1	11.4	14.5	17.8	14.2
Has children, lives with one or more	45.4	27.6	14.4	9.8	8.3	8.1	9.1	16.8
Has children, does not live with them	40.9	56.6	73.0	78.1	80.3	77.4	73.1	69.0
***Weighted* N**								
Men	*421*	*920*	*670*	*641*	*518*	*419*	*413*	*4,003*
Women	*416*	*949*	*733*	*672*	*586*	*551*	*762*	*4,669*
***Unweighted* N**								
Men	*345*	*845*	*663*	*654*	*559*	*427*	*413*	*3,906*
Women	*396*	*998*	*805*	*738*	*640*	*537*	*668*	*4,782*

Table 2A.8. Children in and out of household, by age-specific wealth quintile and age in 2004–05

	52–59	60–74	75+	All
	%	%	%	%
Does not have children				
Poorest quintile	25.5	21.0	19.8	22.3
2nd	17.3	21.5	22.9	20.3
3rd	20.1	21.6	23.0	21.4
4th	19.7	18.4	16.8	18.5
Richest quintile	17.5	17.5	17.5	17.5
Has children, lives with one or more				
Poorest quintile	19.0	17.5	30.5	19.8
2nd	19.2	20.6	23.9	20.1
3rd	22.8	22.7	20.9	22.5
4th	21.0	19.2	15.9	19.9
Richest quintile	18.0	20.0	8.9	17.7
Has children, does not live with them				
Poorest quintile	19.2	16.2	19.3	17.8
2nd	20.4	17.7	20.4	19.1
3rd	20.2	20.3	20.5	20.3
4th	19.3	22.4	20.0	21.0
Richest quintile	20.9	23.4	19.8	21.8
***Weighted* N**				
Does not have children	*447*	*519*	*309*	*1,275*
Has children, lives with one or more	*938*	*500*	*172*	*1,610*
Has children, does not live with them	*1,276*	*2,777*	*1,656*	*5,709*
***Unweighted* N**				
Does not have children	*434*	*534*	*289*	*1,257*
Has children, lives with one or more	*845*	*497*	*152*	*1,494*
Has children, does not live with them	*1,262*	*3,005*	*1,595*	*5,862*

Table 2A.9. Number of people in household, by age in 2004–05 and sex

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%	%	%
Men								
One	10.2	14.5	14.5	19.1	19.2	22.4	36.3	18.5
Two	38.5	52.1	63.9	66.1	70.5	71.3	59.8	60.1
Three or more	51.3	33.4	21.6	14.8	10.2	6.3	3.9	21.5
Mean	2.5	2.2	2.1	2.0	1.9	1.8	1.6	2.1
Women								
One	11.5	14.6	18.2	27.0	38.2	50.2	69.2	32.8
Two	46.2	60.4	68.0	63.7	55.1	45.7	26.9	52.9
Three or more	42.4	25.0	13.8	9.3	6.8	4.1	3.9	14.3
Mean	2.3	2.0	1.9	1.8	1.7	1.5	1.3	1.9
***Weighted* N**								
Men	*421*	*920*	*670*	*641*	*518*	*419*	*413*	*4,003*
Women	*416*	*949*	*733*	*672*	*586*	*551*	*762*	*4,669*
***Unweighted* N**								
Men	*345*	*845*	*663*	*654*	*559*	*427*	*413*	*3,906*
Women	*396*	*998*	*805*	*738*	*640*	*537*	*668*	*4,782*

Table 2A.10. Number of people in household, by age-specific wealth quintile and age in 2004–05

	52–59	60–74	75+	All
	%	%	%	%
One member				
Poorest quintile	45.2	39.9	28.4	35.4
2nd	22.5	22.7	23.8	23.2
3rd	14.5	17.3	21.3	18.7
4th	12.4	11.7	14.5	13.1
Richest quintile	5.4	8.4	12.0	9.6
Two members				
Poorest quintile	16.1	9.6	11.5	11.9
2nd	18.6	16.7	18.1	17.5
3rd	21.2	21.4	20.4	21.1
4th	20.7	25.4	23.7	23.7
Richest quintile	23.4	26.9	26.4	25.8
Three or more members				
Poorest quintile	16.5	14.4	22.6	16.2
2nd	19.5	20.7	22.0	20.0
3rd	23.6	23.6	22.4	23.5
4th	21.8	18.4	23.9	20.8
Richest quintile	18.7	22.9	9.2	19.4
***Weighted* N**				
One member	*360*	*857*	*1,048*	*2,266*
Two members	*1,376*	*2,446*	*994*	*4,816*
Three or more members	*925*	*493*	*95*	*1,512*
***Unweighted* N**				
One member	*369*	*940*	*1,001*	*2,310*
Two members	*1,352*	*2,615*	*951*	*4,918*
Three or more members	*820*	*481*	*84*	*1,385*

Table 2A.11. Change in household size from wave 1 (2002–03) to wave 2 (2004–05), by age in 2002–03 and sex

	50–59	60–74	75+	All
	%	%	%	%
Men				
No change	72.6	88.7	93.2	82.7
Decrease	20.5	7.5	5.7	12.6
Increase	6.9	3.9	1.2	4.7
Women				
No change	75.2	90.3	92.9	85.3
Decrease	18.4	6.8	5.5	10.8
Increase	6.4	2.9	1.5	3.9
***Weighted* N**				
Men	*1,663*	*1,706*	*635*	*4,003*
Women	*1,713*	*1,919*	*1,036*	*4,669*
***Unweighted* N**				
Men	*1,521*	*1,749*	*636*	*3,906*
Women	*1,796*	*2,071*	*915*	*4,782*

Table 2A.12. Change in marital status from wave 1 (2002–03) to wave 2 (2004–05), by age in 2002–03

	50–59	60–74	75+	All
	%	%	%	%
No change	96.6	96.6	95.1	96.3
Became widowed	0.8	2.1	4.5	2.1
Became divorced	1.1	0.5	0.1	0.7
Became married	1.4	0.7	0.4	0.9
Weighted N	*3,358*	*3,583*	*1,658*	*8,599*
Unweighted N	*3,300*	*3,778*	*1,540*	*8,618*

Table 2A.13. Change in living arrangements by children from wave 1 (2002–03) to wave 2 (2004–05), by age in 2002–03

	50–59	60–74	75+	All
	%	%	%	%
No change	86.6	94.7	97.6	92.2
Children moving in	3.5	2.7	1.7	2.8
Children moving out	9.9	2.6	0.7	5.0
Weighted N	*3,176*	*3,522*	*1,640*	*8,338*
Unweighted N	*3,126*	*3,716*	*1,523*	*8,365*

Table 2A.14. Change in living arrangements by children from wave 1 (2002–03) to wave 2 (2004–05), by age-specific wealth quintile and age in 2002–03

	50–59	60–74	75+	All
	%	%	%	%
No change				
Poorest quintile	20.2	19.2	16.1	18.9
2nd	20.1	18.8	19.7	19.4
3rd	20.5	20.6	22.0	20.8
4th	20.0	20.5	21.3	20.5
Richest quintile	19.3	21.0	20.8	20.3
Children moving in				
Poorest quintile	24.1	26.1	–	26.0
2nd	30.6	23.8	–	27.2
3rd	21.1	20.5	–	22.0
4th	12.5	16.2	–	12.5
Richest quintile	11.8	13.4	–	12.3
Children moving out				
Poorest quintile	16.6	12.4	–	15.5
2nd	16.3	22.6	–	18.6
3rd	19.8	19.6	–	19.7
4th	22.3	23.3	–	22.1
Richest quintile	25.0	22.1	–	24.1
***Weighted* N**				
No change	*2,713*	*3,317*	*1,595*	*7,625*
Moving in	*108*	*95*	*28*	*231*
Moving out	*307*	*89*	*11*	*408*
***Unweighted* N**				
No change	*2,668*	*3,508*	*1,485*	*7,661*
Moving in	*109*	*95*	*22*	*226*
Moving out	*302*	*94*	*11*	*407*

Table 2A.15. Mortality in ELSA population from wave 1 to wave 2, by age in 2002–03 and sex

	50–59	60–74	75+	All
Men				
% dead	1.3	3.8	16.5	5.1
Women				
% dead	0.8	2.6	11.5	4.2
***Weighted* N**				
Men	*2,100*	*2,198*	*968*	*5,267*
Women	*2,139*	*2,420*	*1,537*	*6,096*
***Unweighted* N**				
Men	*1,912*	*2,281*	*981*	*5,174*
Women	*2,247*	*2,574*	*1,370*	*6,191*

Table 2A.16. Mortality in ELSA population, by age in 2002–03 and age-specific wealth quintile

	50–59	60–74	75+	All
	%	%	%	%
Lowest quintile	2.5	5.9	20.5	7.9
2nd	1.0	4.4	14.8	5.4
3rd	0.6	2.3	11.2	3.6
4th	1.1	2.1	10.6	3.6
Highest quintile	0.2	1.3	9.8	2.7
Weighted N	*4,177*	*4,590*	*2,499*	*11,266*
Unweighted N	*4,096*	*4,825*	*2,345*	*11,266*

3. Labour market transitions

Carl Emmerson *Institute for Fiscal Studies*

Gemma Tetlow *Institute for Fiscal Studies*

The analysis in this chapter shows that:

- Nearly 15% of those in paid work aged between 50 and the state pension age in 2002–03 had left work by 2004–05. Movements out of paid work were more common among men aged 60 or over and women aged 55 or over than they were among younger individuals. Both women and (particularly) men in part-time work in 2002–03 were more likely to have left work than those in full-time work.
- Most of those who were not in paid work in 2002–03 were still not in work in 2004–05. However, 8% of those aged 50 to the state pension age who were out of work had returned to paid work by 2004–05. This was more common among those at least five years younger than the state pension age in 2002–03.
- Among 50- to 54-year-olds, those in paid work in 2002–03 in the poorest and the richest wealth quintiles were the most likely to leave work. Similarly, amongst this same age group, those not in paid work in 2002–03 in the poorest two wealth quintiles and the richest wealth quintile were the least likely to return to work.
- Men who were in paid work and contributing to a defined benefit pension in 2002–03 were much more likely to leave work than those who had been in paid work and contributing to a defined contribution pension in 2002–03. Among women, the likelihood of remaining in work did not vary by whether they had contributed to a defined benefit or a defined contribution private pension in 2002–03.
- Among those in paid work in 2002–03, those who reported that their health was only fair or poor were about twice as likely to leave work as those who had reported being in excellent or very good health. In addition, among those who were not in paid work in 2002–03, those who had reported worse health were less likely to return to work than those who had reported being in excellent or very good health in 2002–03. This difference was particularly large for men aged 50 to 54.
- A vast majority (81%) of employees whose employers have a compulsory retirement age say they would not want to work beyond this age, even if their employer allowed it. However, a greater proportion of employees feel constrained by the compulsory retirement age the lower it is.
- Almost two-thirds of men, and half of women, aged 52 to 54 who were not in paid work in 2004–05 report that they had a disability that affected the amount of work that they could do, compared with only one-in-fifteen men and women in the same group who were working full-time.

Increasing life expectancies require either lower consumption by individuals during their working life, reduced consumption during their retirement, later retirement or some combination of the three. Employment rates among both men and women aged between 50 and the state pension age (SPA) have been increasing since the mid-1990s, and this increase has occurred across all education groups (see Emmerson (2005, figure 3.1)). Despite this, the employment rates of older men are still considerably below those achieved throughout the 1970s (see Banks and Blundell (2005, figure 6)).

In an attempt to limit the extent to which annual consumption might need to fall to accommodate improvements in life expectancy, many government policies have been, and are being, implemented to try to boost retirement ages. For example, since 6 April 2006 individuals have been allowed to receive income from an occupational pension scheme while still working for the employer providing that pension, and on 6 April 2005 the deferral rate on state pensions was increased from 1% for every seven weeks of deferral to 1% for every five weeks. Given that the majority of both men and women are out of the labour market before they reach the SPA (see Banks and Casanova (2003, figure 4.1)), a key policy issue is the determinants of these early labour market exits. While previous UK studies have looked at the determinants of retirement, they have tended to rely on the British Retirement Survey (BRS), which only contained individuals born between 1919 and 1933 and is therefore somewhat out of date (in particular given the large changes to both state and private pensions that have affected later cohorts), or alternatively have used the British Household Panel Survey (BHPS), which, to date at least, has had limited information on the financial incentives faced by individuals.[1]

The first wave of data from ELSA has provided, and still is providing, evidence on how the characteristics of those who are still in paid work at older ages differ from those who are not. This chapter builds on this evidence by showing the extent to which individuals have moved out of, or indeed into, paid work between the first wave of ELSA in 2002–03 and the second wave of ELSA in 2004–05 (Section 3.1). In addition, we describe the extent to which the characteristics of those whose labour market status has changed differ from those whose labour market status has not changed, focusing on differences by wealth (Section 3.2), pension coverage (Section 3.3) and health (Section 3.4). In Section 3.5, we turn to cross-sectional evidence from 2004–05 on compulsory retirement ages and the extent to which individuals feel constrained by them; the prevalence of reported work-related disabilities; and individuals' assessments of what changes to their working arrangements have been made, or they would like to see, so that they could be better accommodated. Section 3.6 concludes, while the tables in the annex to this chapter contain more comprehensive data on all of the issues raised in the chapter.

---

[1]Meghir and Whitehouse (1997) construct employment histories from the 1988–89 BRS and examine the labour market transitions of men. Blundell, Meghir and Smith (2002) examine labour market transitions between both waves (1988–89 and 1994) of the BRS. Disney, Emmerson and Wakefield (2003) use eight waves of data from the BHPS (1991 to 1998) to look at the relationship between changes in health and changes in employment among older individuals.

3.1 Labour market transitions

Before turning to look at the movements into and out of paid work among ELSA respondents between 2002–03 and 2004–05, Table 3.1 presents data on the overall percentage of respondents who report that they were in paid work at the time of each interview. This is shown separately by both sex and age. In 2002–03, around seven-out-of-ten men and women (70.6% and 69.3% respectively) aged between 50 and the SPA were in paid work, with older individuals being less likely to be in paid work. By 2004–05, the employment rate among these same individuals had dropped to just over six-in-ten (62.6% of men and 62.2% of women). Table 3.1 also shows that the fall in employment rates was greater among older individuals than it was among younger individuals.

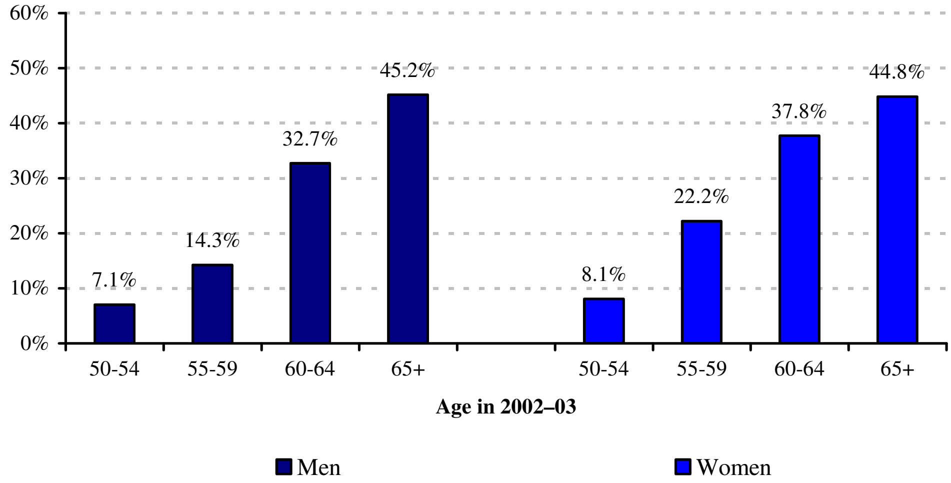
Table 3.1. Percentage in paid work in 2002–03 and 2004–05, by age in 2002–03 and sex

	Age in 2002–03				All	Under SPA in 2002–03	Over SPA in 2002–03
	50–54	55–59	60–64	65+			
	%	%	%	%	%	%	%
Men							
In work in 2002–03	84.6	72.9	48.8	10.1	45.0	70.6	10.1
In work in 2004–05	80.0	65.6	35.5	6.7	39.0	62.6	6.7
% fall in emp. rate	5.5	10.1	27.3	33.2	13.4	11.3	33.2
Women							
In work in 2002–03	76.7	61.2	30.6	5.2	32.3	69.3	11.0
In work in 2004–05	73.3	50.0	21.5	3.5	27.5	62.2	7.7
% fall in emp. rate	4.5	18.3	29.6	31.9	14.7	10.3	30.4
All							
In work in 2002–03	80.6	66.9	39.5	7.3	38.1	70.1	10.7
In work in 2004–05	76.6	57.6	28.3	4.9	32.8	62.4	7.3
% fall in emp. rate	5.0	13.9	28.2	32.6	14.0	10.9	31.4
Sample size							
Men	*739*	*793*	*630*	*1,788*	*3,950*	*2,162*	*1,788*
Women	*875*	*930*	*729*	*2,296*	*4,830*	*1,805*	*3,025*
All	*1,614*	*1,723*	*1,359*	*4,084*	*8,780*	*3,967*	*4,813*

While the employment rate among those aged between 50 and the SPA in 2002–03 dropped by 10.9% over the following two years, in fact 14.3% of those in paid work in 2002–03 were not in paid work in 2004–05 and 8.0% of those not in paid work in 2002–03 had moved *into* paid work by 2004–05 (authors' calculations based on the figures in Table 3A.1).

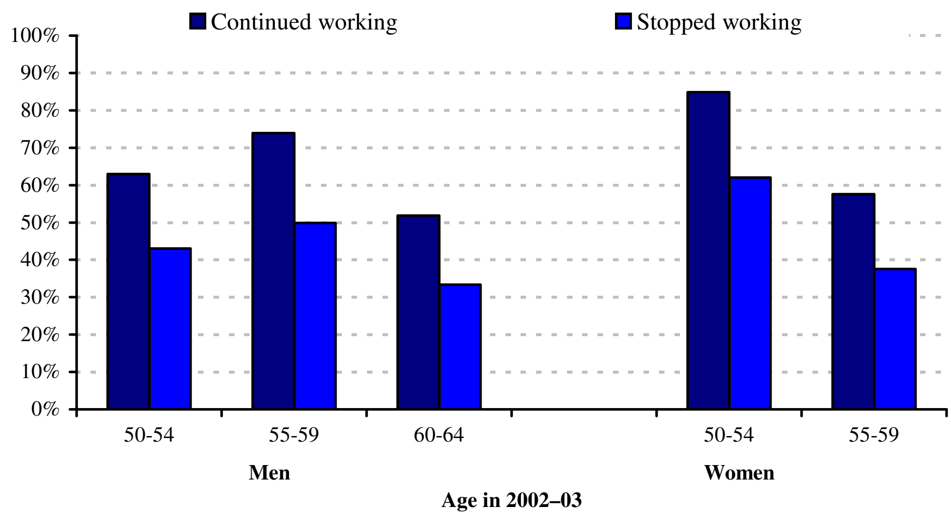
Figure 3.1 shows that among both men and women, the percentage of individuals moving out of paid work is considerably lower among those more than five years from the SPA in 2002–03 (i.e. men aged 50 to 59 and women aged 50 to 54) than among older individuals.

Figure 3.1. Percentage of those in paid work in 2002–03 who are not in paid work in 2004–05, by age band and sex



There is evidence that, at least to some extent, those individuals who left paid work anticipated it. Figure 3.2 shows that those individuals who left paid work between 2002–03 and 2004–05 had reported, on average, lower chances of being in paid work at older ages than those individuals who remained in paid work. This is true amongst both men and women in all age groups. Men aged 50 to 54 in 2002–03 who remained in paid work reported, on average, a 63.3% chance of being in work at age 60 when asked in 2002–03, while men of the same age who had left paid work by 2004–05 had reported, on average, a 43.1% chance of being in paid work at age 60 when asked in 2002–03.

Figure 3.2. Mean self-reported chance of being in work at an older age amongst those in paid work in 2002–03, by sex, age band in 2002–03 and work transition

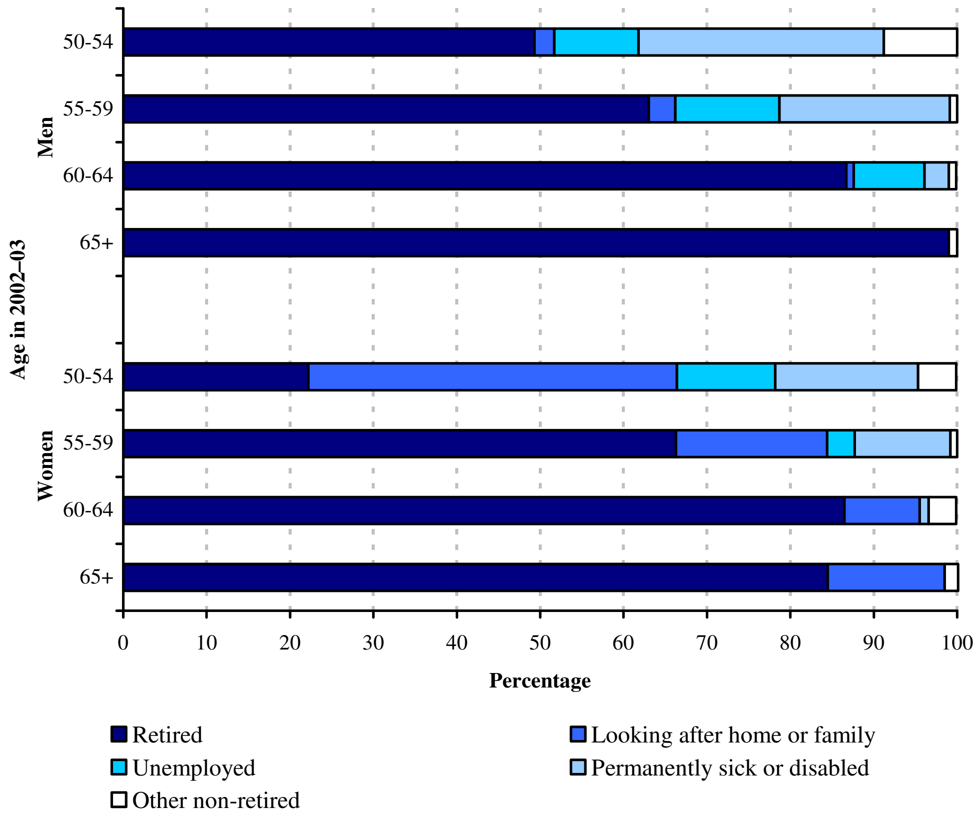


Note: Women aged 50 to 54 were asked the chances of working at age 55, men aged 50 to 59 and women aged 55 to 59 were asked the chances of working at age 60, and men aged 60 to 64 were asked the chances of working at age 65.

Furthermore, as Table 3A.4 shows, amongst all those who had been in paid work in 2002–03 but who had reported very low chances (less than 20%) of being in paid work at older ages, more than one-in-three (34.2%) had left paid work by 2004–05. In contrast, looking just at those who had been in paid work and had reported very high chances (greater than 80%) of being in paid work at older ages, fewer than one-in-twelve (7.6%) had left paid work by 2004–05.

However, not all those who leave paid work consider themselves to be retired. This is particularly true of younger individuals. Figure 3.3 shows that only about half (49.3%) of men aged 50 to 54 who left paid work between 2002–03 and 2004–05 define themselves as being 'retired' in 2004–05, with nearly three-in-ten (29.4%) reporting that they are 'permanently sick or disabled'. The percentage of men moving out of work who report themselves as 'retired' increases with age – virtually all (99.0%) men aged over 65 who have left paid work over the last two years define themselves as 'retired'. The most common self-reported states amongst men under the SPA who do not say they are retired are 'unemployed' (10.2%) or 'permanently sick or disabled' (14.7%).

Figure 3.3. Self-reported economic status in 2004–05 of those who were in paid work in 2002–03 but are not in paid work in 2004–05, by age band and sex



The pattern of self-reported status is slightly different amongst women, who are much more likely than men to say they are 'looking after home or family'. Only about one-in-five (22.2%) women aged 50 to 54 who left paid work between 2002–03 and 2004–05 said they were retired in 2004–05, compared with more than two-in-five (44.2%) who said they were 'looking after home or family'. As with men, the percentage of women saying they are 'retired' increases with age. However, even amongst women aged over the SPA, 14.3% do not say they are 'retired', compared with just 1.0% of men over the SPA.

Amongst those who left paid work, wealth levels in 2002–03 and changes in income between 2002–03 and 2004–05 vary with individuals' self-reported status in 2004–05. Amongst those who moved out of paid work between 2002–03 and 2004–05 and who did not self-report that they were 'unemployed' or 'permanently sick or disabled' in 2004–05, median total family wealth (including that held in state and private pensions) was 62.3% higher in 2002–03 than the median among those who (by 2004–05) had moved out of paid work but who described themselves as being either 'unemployed' or 'permanently sick or disabled'. This is consistent with the cross-sectional evidence presented by Banks and Casanova (2003), which showed that amongst those aged under the SPA who were not in paid work, those in the higher wealth quintiles were more likely than those in the lower wealth quintiles to describe their current activity as 'retired' (rather than, for example, 'unemployed' or 'permanently sick or disabled').

Total net family income in 2004–05 was also a lower proportion of total net family income in 2002–03 for the group who moved out of paid work and described themselves as 'unemployed' or 'permanently sick or disabled' than for the group who moved out of paid work and gave other descriptions of their current economic activity. Mean total net family income in 2004–05 for those who moved out of paid work and described themselves as 'unemployed' or 'permanently sick or disabled' was about 65% of the level of mean net family income for the same group of people two years earlier. This compares with mean total net family income in 2004–05 for those who moved out of paid work but gave other descriptions of their main economic activity being about 75% of the level it had been two years earlier for this same group of people.[2]

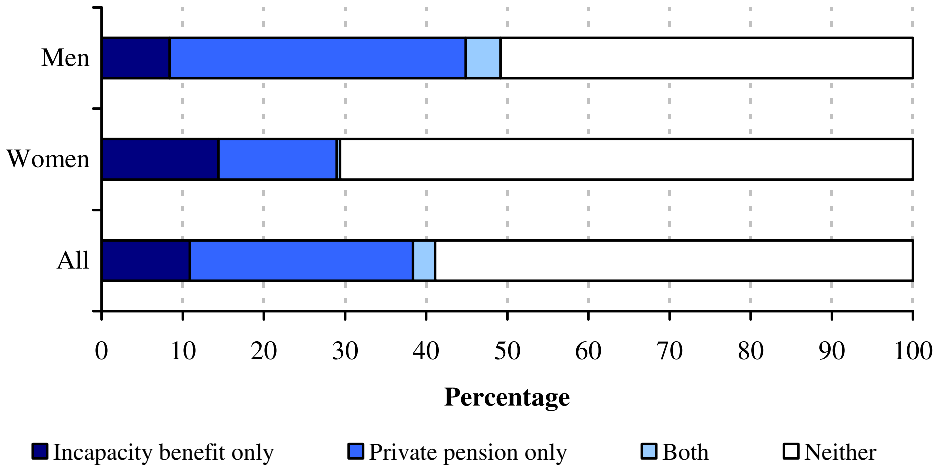
The pattern of self-reported status shown in Figure 3.3 is confirmed when we look at the individual income sources of those who left paid work. As Figure 3.4 shows, overall 40.8% of men (15.0% of women) aged 50 to SPA who left work were in receipt of some private pension income in 2004–05, while 12.7% of men (14.8% of women) report having received incapacity benefit or statutory sick pay in the last year. However, receipt of these types of income is correlated with self-reported status.

Amongst men aged 50 to the SPA who moved out of paid work and report that they are 'retired', nearly half (47.3%) were receiving income from private pensions in 2004–05, with just 6.3% reporting having received incapacity benefit in the last year. In contrast, 50.2% of men who moved out of paid work and report that they are 'permanently sick or disabled' were receiving incapacity benefit, with just 25.6% receiving any income from a private pension. Since April 2001, receipt of incapacity benefit has been means tested against (individual) private pension income, with entitlement withdrawn at a rate of 50p for every £1 of private pension income over £85 a week. This

[2]These figures should not be interpreted as income replacement rates since many of these individuals will not yet be receiving all of their pension income, and many will have partners who are still in receipt of employment income.

provides a strong incentive for those receiving incapacity benefit to delay drawing any private pension income. The numbers receiving both incapacity benefit and private pension income are very low, as Figure 3.4 shows (just 4.3% of men and 0.4% of women aged 50 to SPA). Those who are receiving both may, of course, have already been receiving private pension income before they became eligible for incapacity benefit, or they may only be receiving a small amount of private pension income (i.e. under £85 per week).

Figure 3.4. Receipt of incapacity benefit and private pension income amongst those aged 50 to SPA in 2002–03 who left paid work between 2002–03 and 2004–05, by sex

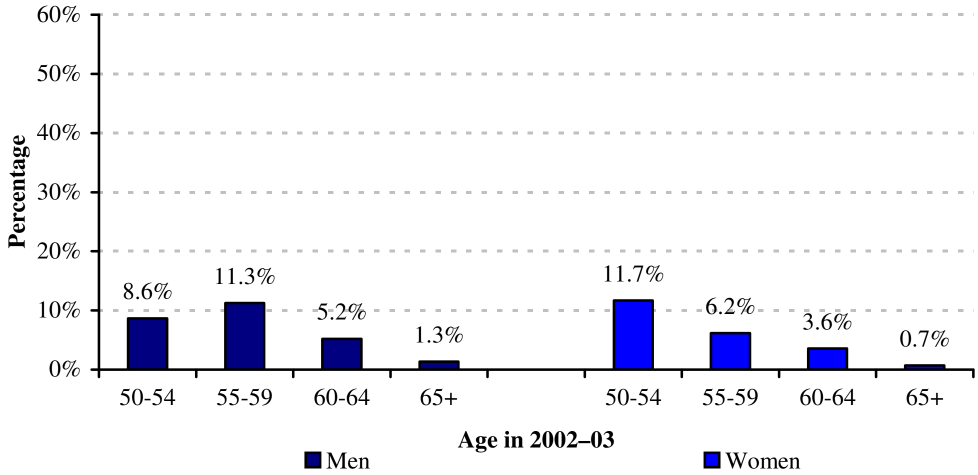


Note: 'Incapacity benefit' includes receipt of statutory sick pay (SSP). A similar proportion of men and women who had left paid work were in receipt of incapacity benefit in 2004–05 (12.7% and 14.8% respectively). Although incapacity benefit caseloads are higher for men than women (see http://www.dwp.gov.uk/asd/ib_sda.asp), we are looking here only at the subsample of individuals who left paid work between 2002–03 and 2004–05.

Women who say they are 'looking after the home or family' are much less likely to be receiving private pension income than those who say they are 'retired' – more than one-in-five (21.7%) women aged 50 to SPA who say they are 'retired' are receiving some private pension income, compared with only about one-in-twelve (8.5%) of those women who say they are 'looking after the home or family'.

That fewer younger individuals report themselves as being retired, even though they have left paid work, could be because younger individuals are more likely to be intending to return to paid work. As shown in Figure 3.5, moving back into paid work was relatively more common among men and women who in 2002–03 were more than five years from reaching the SPA (i.e. men aged 50 to 59 and women aged 50 to 54). Only a very small percentage of those aged over 65 and not in paid work in 2002–03 were in paid work in 2004–05.

Figure 3.5. Percentage of those not in paid work in 2002–03 who are in paid work in 2004–05, by age band and sex



We also find that moving into paid work is related to self-reported status. Looking just at those who were not in paid work in 2002–03, 8.0% of those aged between 50 and the SPA in 2002–03 were in paid work in 2004–05. However, the figure was considerably lower amongst those who had self-reported in 2002–03 that they were 'permanently sick or disabled' (just 2.8%, with little variation between men and women). The percentage entering paid work between 2002–03 and 2004–05 was considerably higher amongst individuals who self-reported some other status in 2002–03, and there is some variation across men and women. Of those not in paid work and reporting themselves as being 'retired' in 2002–03, 7.8% of men (6.5% of women) were in paid work in 2004–05, whilst 19.1% of men (12.4% of women) who were out of paid work but did not describe themselves as either 'permanently sick or disabled' or 'retired' in 2002–03 were in paid work in 2004–05.

There is also some evidence of 'joint retirement' amongst couples. The percentage of individuals in couples who were in paid work in 2002–03 but who were not in paid work in 2004–05 is higher amongst those whose partners were also in paid work in 2002–03 but who were not in paid work in 2004–05. Table 3A.6 shows that 14.0% of men in couples and 13.4% of women in couples in paid work in 2002–03 were not in paid work by 2004–05. However, these percentages are much higher (31.6% and 30.4% for men and women, respectively) amongst individuals whose partner also moves out of work over this period.

Recent years have also seen increasing policy interest in enabling individuals to have a 'phased' retirement, i.e. moving from full-time to part-time work before exiting the labour market completely rather than a 'cliff edge' style of retirement. Indeed, the recent Green Paper on welfare reform states:

> Older people have said that they require more flexible working practices to allow them to balance work with other constraints such as health problems, caring responsibilities and outside interests. Greater flexibility also helps the transition from work to retirement and could keep people in work for longer.
>
> Department for Work and Pensions, 2006, page 71

The panel element of the ELSA survey can be used to examine the extent to which phased retirements occur, and whether they are more common among individuals with certain characteristics.

Figure 3.6 presents evidence on how the percentage of those moving out of work over the two-year window varies by age, sex and whether the individual was working full- or part-time in 2002–03. Those working part-time in 2002–03 are more likely not to be in paid work in 2004–05 than those working full-time in 2002–03, with this difference being particularly marked for men aged 50 to 54. Among men aged over 65 and in part-time employment in 2002–03, the majority are not in paid work in 2004–05.

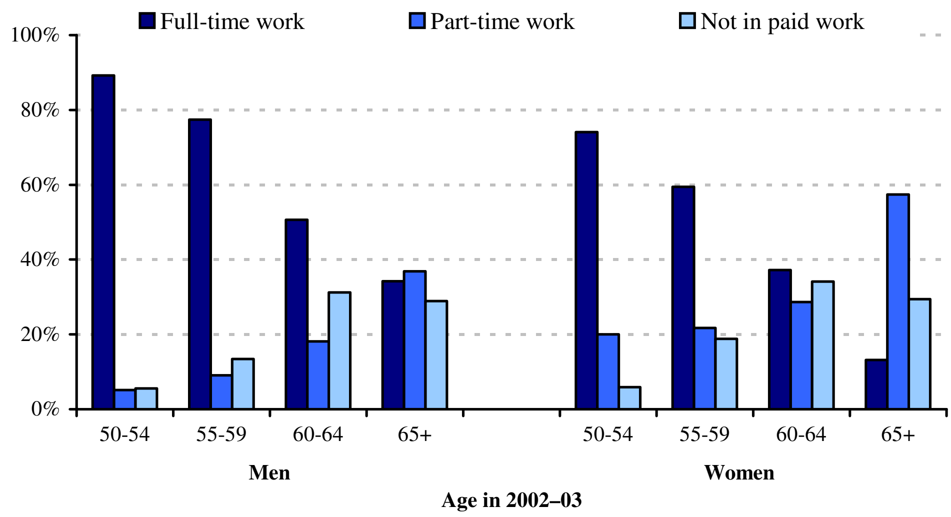
Figure 3.6. Percentage of those in paid work in 2002–03 who are not in paid work in 2004–05, by age band, sex and 2002–03 work status

Part-time work was considerably more common amongst women than men in 2002–03. Of those aged between 50 and the SPA who were in work in 2002–03, 43.0% of women were working part-time compared with just 10.2% of men. Exits from full-time work amongst those aged 50 to 54 are also different amongst men and women. As Figure 3.7 shows, the majority of women in this age group who exit full-time work move into part-time work, whereas men in this age group are equally likely to move into part-time work or to stop working entirely (as, indeed, are men and women aged 55 to 59, while men aged 60 to 64 are more likely to not be in paid work than to have moved into part-time work). Further details of the transitions between part-time and full-time work can be found in Table 3A.2.

Those who moved from full-time to part-time work may be choosing to reduce their hours gradually before eventually leaving paid work completely. So they may be using alternative income sources to supplement their income. There is some evidence of this, as nearly three times as many men and women who moved from full-time work to part-time work were receiving income from a private pension in 2004–05 compared with those who remained in full-time work. Of those aged between 50 and the SPA moving from full-time to part-time work, 36.7% of men (9.3% of women) were receiving some income from a private pension in 2004–05, compared with just 13.2% of men (4.0% of women) who continued to work full-time.

The next sections look at the extent to which the movements out of paid work seen between 2002–03 and 2004–05 are associated with individual characteristics in 2002–03.

Figure 3.7. Work status in 2004–05 of those in full-time paid work in 2002–03, by age band and sex



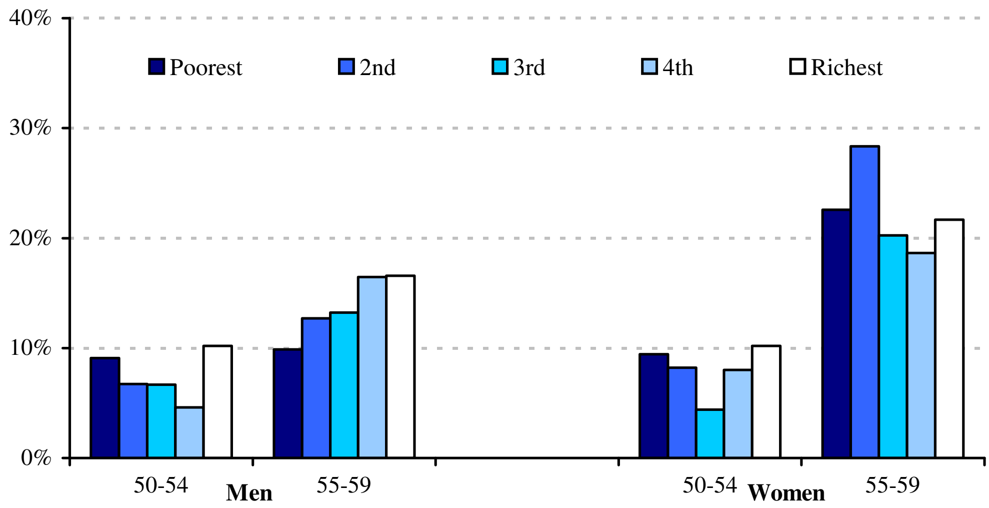
3.2 Labour market transitions and wealth

A key finding of the ELSA report on the first wave of data (Marmot et al., 2003) was that those who were not in paid work in 2002–03 were disproportionately drawn from the poorest and the richest (non-pension) wealth quintiles. This section takes a broader measure of wealth that includes both state and private pension wealth[3] and examines the extent to which this is associated with changes in labour market status of ELSA respondents between 2002–03 and 2004–05. Individuals are divided by wealth in order to look at groups with different levels of lifetime resources. Wealth is preferable to a measure such as income because income may well be expected to fall when individuals leave the labour market as, for example, individuals substitute leisure for consumption. Another alternative would be to look at consumption (as we would expect individuals to smooth their consumption over their lifetime). However, we have insufficient information on consumption in 2002–03 to divide individuals using this measure, especially as there may be expenditures that individuals no longer need to make after they leave work, such as work-related expenditures.

[3]For a description of the distribution of state and private pension wealth and how this varies with both non-pension wealth and other characteristics, see Banks, Emmerson, Oldfield and Tetlow (2005). For details of how the state and private pension wealth of each ELSA respondent was computed, see Banks, Emmerson and Tetlow (2005).

Figure 3.8 shows that for men aged 50 to 54, it is those in the poorest and the richest wealth quintiles who were relatively more likely to move out of paid work over the two-year period. Among men aged between 55 and 59 movements out of paid work were relatively more common among those in the richest two wealth quintiles, though the majority of those in the poorest quintile were already out of paid work by 2002–03.

Figure 3.8. Percentage of individuals in paid work in 2002–03 who are not in paid work in 2004–05, by age band, sex and total wealth in 2002–03

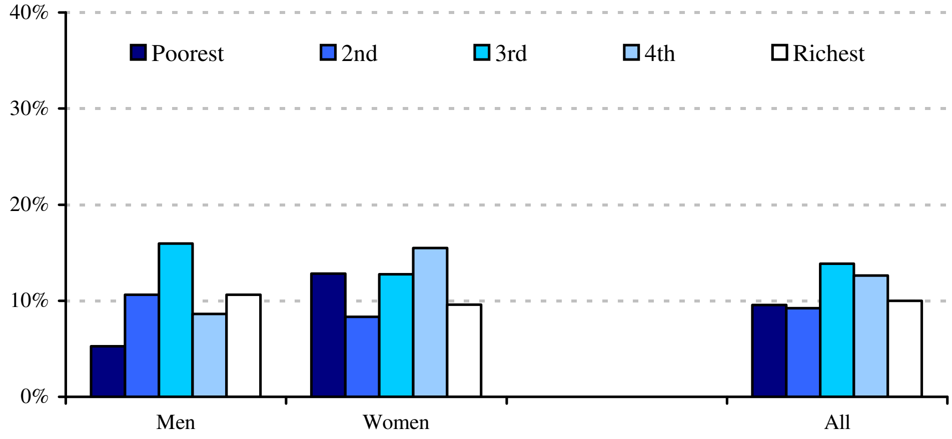


The percentage of women who were in paid work in 2002–03 but were not in paid work in 2004–05 is also shown in Figure 3.8. As was the case with men, we find that among those aged 50 to 54, those in the poorest and richest quintiles of the wealth distribution were relatively more likely to move out of paid work, with movements out of paid work among both these groups being more than twice as frequent as among women in the middle wealth quintile.

The finding that those with lower levels of wealth are more likely to exit the labour market could be due to a combination of several factors. In addition to low wealth itself, various other factors that could determine labour market exits are also correlated with low wealth. For example, those with low levels of wealth will typically have had low levels of lifetime earnings, and therefore the financial reward from remaining in the labour market will be lower. Furthermore, as is well documented (see, for example, Smith (1999)), those with lower levels of wealth are also on average less healthy, which may also cause higher levels of labour market exit. The association between certain measures of health and labour market transitions is explored in Section 3.4.

Among those not in paid work and aged 50 to 54 in 2002–03, men from the third wealth quintile and women from the first, third and fourth wealth quintiles were found to be relatively more likely to be in paid work in 2004–05, as shown in Figure 3.9. Further details of labour market transitions by wealth can be found in Tables 3A.7 and 3A.8.

Figure 3.9. Percentage of those aged 50 to 54 not in paid work in 2002–03 who are in paid work in 2004–05, by sex and total wealth in 2002–03



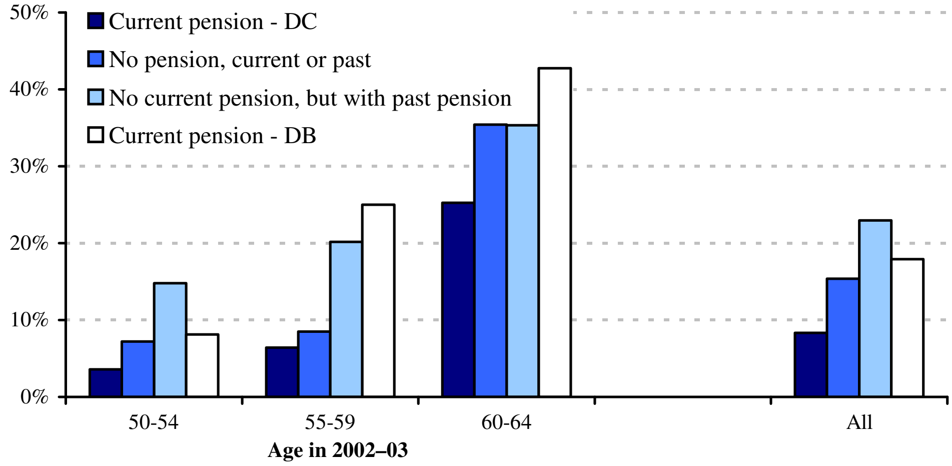
3.3 Labour market transitions and pension status

The boost to an individual's retirement resources from choosing to remain in the labour market will depend in part on how any pension entitlements accrue. A typical defined benefit (DB) pension arrangement will provide a financial incentive for individuals to remain in paid work until the scheme's normal retirement age and a financial disincentive to remain in paid work (or at least to remain as a contributor to that pension scheme) beyond that date. In contrast, those who have chosen not to contract out of the State Second Pension (which replaced the State Earnings-Related Pension Scheme (SERPS) from April 2002) and, in particular, those with defined contribution (DC) pensions (sometimes referred to as money purchase schemes) will typically accrue additional pension wealth from choosing to remain in paid work (at least up to the SPA).[4]

The percentage of men moving out of paid work is shown in Figure 3.10 by both age and pension status in 2002–03. The graph shows that among all age groups, movements out of paid work were considerably more common among those who were (only) contributing to DB pension schemes in 2002–03 than among those who were (only) contributing to a DC pension in 2002–03. Among those men who were in paid work but not contributing to a private pension in 2002–03, among both 50- to 54-year-olds and 55- to 59-year-olds, those who had previously contributed to a private pension were more likely to move out of paid work than those who had never contributed to a private pension, while there was little difference between these two groups among those aged 60 to 64.

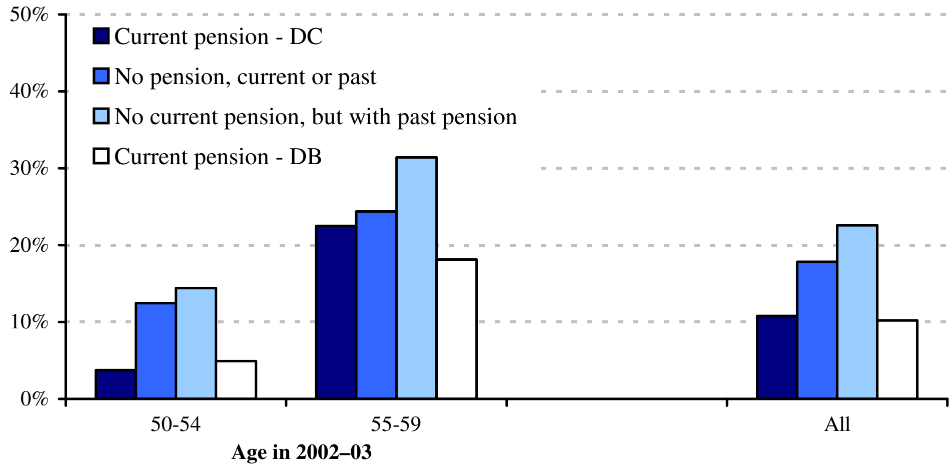
[4]For a further description of these incentives, see, for example, Banks and Smith (2006, section 3).

Figure 3.10. Percentage of men in paid work in 2002–03 who are not in paid work in 2004–05, by age band and pension type in 2002–03



Equivalent figures for women are shown in Figure 3.11. This shows that those in paid work who were contributing to a private pension in 2002–03 were less likely to move out of paid work than those who were not contributing to a private pension, and that there was little difference in the likelihood of moving out of paid work by whether individuals were contributing to a DB or to a DC pension arrangement. Further figures on movements into and out of paid work by pension status can be found in Tables 3A.9 and 3A.10.

Figure 3.11. Percentage of women in paid work in 2002–03 who are not in paid work in 2004–05, by age band and pension type in 2002–03



The issue of phased retirement is also potentially related to the financial incentives provided by pension arrangements. In particular, those in final salary DB pension schemes will, at least in the past, typically have had less incentive to engage in a phased retirement than those in other types of schemes. This is particularly borne out in data on the labour market transitions of men aged between 50 and the SPA who were in full-time paid work in 2002–03 but not in full-time paid work in 2004–05: those who had been contributing to a DC pension arrangement were almost twice as likely to move into part-time work as those who had contributed to a DB pension arrangement.[5] Given that from 6 April 2006 individuals are able to begin drawing an occupational pension while still working for the employer providing that pension, it will be interesting to see whether phased retirement becomes more common among those who were members of employers' pension arrangements – and in particular those who were members of defined benefit schemes.

3.4 Labour market transitions and health

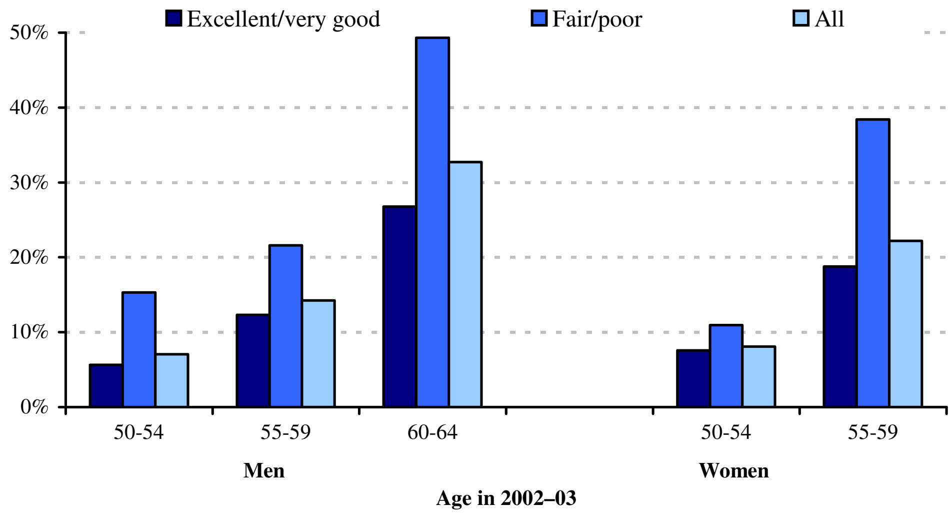
In the first wave of ELSA, respondents who reported better health were also more likely to be in paid employment (see Banks and Casanova (2003, figure 4.1)). In this section, we look at the extent to which movements into or out of paid work between 2002–03 and 2004–05 were associated with self-reported health in 2002–03. Figure 3.12 shows that both men and women in paid work in 2002–03 who reported that their health was fair or poor were more likely to not be in paid work in 2004–05 than those who reported that their health was excellent or very good. Amongst those aged between 50 and the SPA, those who reported being in fair or poor health were about twice as likely to stop working as those who reported being in excellent or very good health. The difference is greatest amongst men aged between 50 and 54 in 2002–03. Amongst this group, those who reported having fair or poor health in 2002–03 were nearly three times as likely to have stopped working by 2004–05 as those who had reported excellent or very good health in 2002–03.

The difference between the proportions of those in poor health and those in excellent health who leave paid work is greatest if we look just at individuals who reported that they were in manual employment.[6] Almost one-in-three (31.2%) male manual workers who reported having fair or poor health in 2002–03 had left paid work by 2004–05, whereas just one-in-five (19.5%) male non-manual workers reporting fair or poor health had left paid work. However, if we look instead at men who reported being in excellent or very good health, rates of exit from paid work are very similar amongst manual and non-manual workers (12.8% and 11.7% respectively). Further details of labour market exits amongst individuals with different self-reported health in manual and non-manual jobs can be found in Table 3A.13.

[5]Authors' calculations based on Table 3A.10 reveal that 49.4% of men aged 50 to the SPA who had been in full-time paid work and contributing to a DC pension scheme in 2002–03 but not in full-time paid work in 2004–05 had moved into part-time paid work in 2004–05, compared with just 28.0% of those who had been contributing to a DB pension scheme. The equivalent figures for women aged between 50 and the SPA are 67.4% and 62.0% respectively.

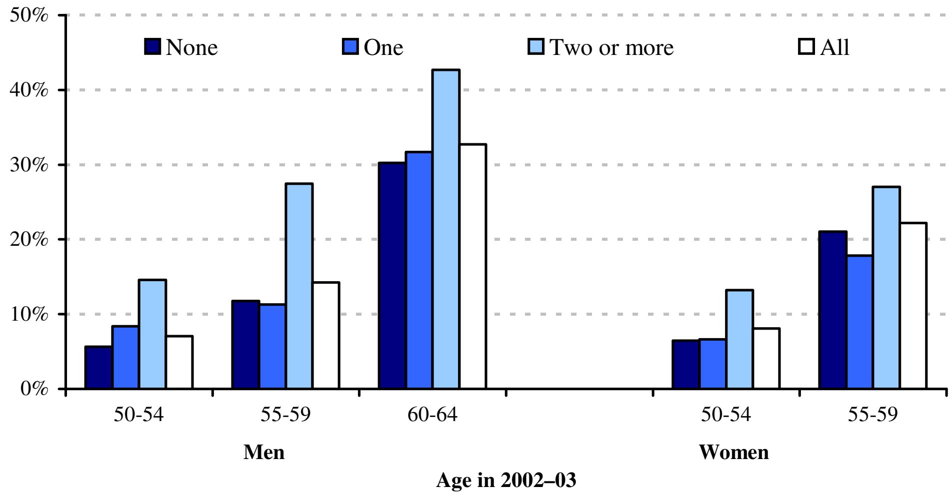
[6]Manual jobs are defined here as jobs that the respondent says require 'some physical effort' or 'vigorous physical activity'. Non-manual jobs are those where the individual 'spend[s] most of [the] time sitting' or 'spend[s] most of [the] time standing or walking'.

Figure 3.12. Percentage of those in paid work in 2002–03 who are not in paid work in 2004–05, by age band, sex and 2002–03 self-reported health



A similar association between health in 2002–03 and likelihood of moving out of paid work by 2004–05 is seen when the measure of baseline health is self-reported mobility limitations rather than self-reported general health. For further information on the measure of mobility limitations used, see Chapter 6 and Steel et al. (2003). Figure 3.13 shows that men and women of all age groups who report two or more mobility limitations are more likely to move out of paid work than those who report one or no mobility limitations.

Figure 3.13. Percentage of those in paid work in 2002–03 who are not in paid work in 2004–05, by age band, sex and 2002–03 self-reported mobility limitations



It is also the case that among those not in paid work in 2002–03, those who reported being in excellent, very good or good health were more likely to have moved into paid work by 2004–05 than those who reported that they were in fair or poor health. As shown in Figure 3.14, this gradient with health is particularly striking for men: one-in-nine (11.7%) men who stated that their health was either excellent or very good had moved back into paid work by 2004–05 compared with less than one-in-twenty (4.8%) of those who had stated that their health was fair or poor.

Figure 3.14. Percentage of those aged 50 to SPA and not in paid work in 2002–03 who are in paid work in 2004–05, by sex and 2002–03 self-reported health

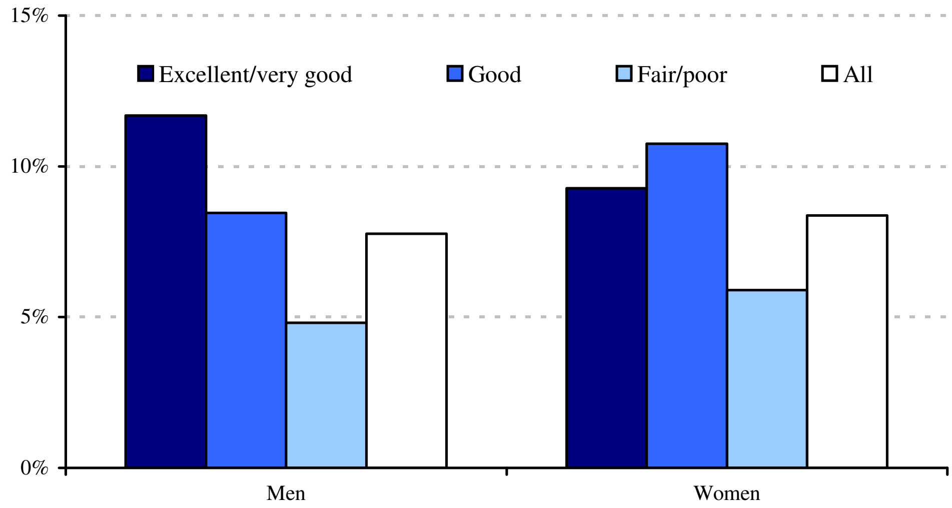


Table 3A.14 shows that the pattern of movements into paid work by self-reported mobility limitations for men is similar to that for self-reported general health in Table 3A.11. Among those men not in paid work in 2002–03, those who reported no or one mobility limitation were more likely to be in paid work in 2004–05 than those who reported two or more mobility limitations. The pattern by number of self-reported mobility limitations for women is less clear. Women who had reported one limitation were more likely to move into paid work than either those who had reported that they had no mobility limitations or those who had reported two or more limitations.

In summary, the pattern of labour market transitions by health is consistent with the hypothesis that those who report poor health are both more likely to move out of paid work and, unless their reported health improves, subsequently less likely to return to paid work. Additional waves of ELSA data will be required to investigate the extent to which this is the case.

Further figures on movements into and out of paid work by self-reported general health can be found in Tables 3A.11 and 3A.12, while figures split by reported mobility limitations can be found in Tables 3A.14 and 3A.15.

3.5 Employment and work practices

The 2004–05 ELSA survey contains new questions designed to shed light on employment practices, the extent to which labour market exits are either voluntary or involuntary, and how this relates to the respondent's health. (Note that, as this section looks only at circumstances in 2004–05, individual ages used throughout this section refer to age in 2004–05.)

Compulsory retirement

Many employers have compulsory retirement ages (CRAs) within their contract of employment. In other words, they impose an age at which an employee is obliged to stop working for that organisation. Given the growing concern to facilitate individuals staying in work at older ages, there has been increasing interest in whether such CRAs are constraining individuals to stop working earlier than they would otherwise choose to. Government policy has also attempted to reduce the extent to which those wishing to remain in paid work are constrained by CRAs, as stated in the recent Green Paper: 'We will also be introducing a default retirement age of 65, below which employers will not be able to force people to retire (unless it can be objectively justified). Employers will also have a duty to consider requests to work beyond age 65' (Department for Work and Pensions, 2006, page 67).

The 2004–05 ELSA survey asked those individuals who were in paid employment whether or not their employer had a CRA. As shown in Table 3A.16, among those aged 52 to 59 who were in employment, just under half of men (49.7%) and just over a third of women (34.0%) report that their employer has a CRA. Nearly one-in-five (18.9%) of those who report that they face a CRA say that they would like to work beyond this age.[7]

By far the most common reported CRAs were 60 and 65. Among both men and women, 65 is a more common reported CRA than 60, with other reported CRAs being extremely rare – only 8.1% of individuals aged between 52 and 59 report having a CRA that is not either 60 or 65.

Only a minority of those in this age group who reported facing a CRA (16.0% of men and 23.2% of women) say that they would, if it were possible, like to work beyond this age. Perhaps unsurprisingly, those who report having a CRA of 60 are more likely to state that they would like to remain in paid work beyond this age than those who report a CRA of 65: 41.3% of men (37.6% of women) with a reported CRA of 60 say they would like to work beyond this age, compared with just 12.0% of men (19.7% of women) with a reported CRA of 65.

So there is a small, but not insignificant, minority (7.9%) of workers in 2004–05 aged between 52 and 59 who said they felt constrained by the CRA that they report. For some of these people, new legislation that comes into effect in October 2006 (which will make compulsory retirement before age 65 illegal unless it can be 'objectively justified') may help. Of employees aged under 60, 7.5% reported facing a CRA below 65, of which 38.3% (i.e. 2.9% of all

[7]Of men aged 60 to 64, 38.0% reported that they faced a CRA, of which 34.7% say they would like to work beyond this CRA. Men in this age group are excluded from the analysis presented in the main text because amongst this age group it is particularly likely that individuals could already have left the labour market if their previous job had a CRA of 60 or that they moved to a job with a higher CRA in order to allow them to continue working.

employees aged 52 to 59) say they would like to work beyond this age. The new legislation may help this group to remain in employment for longer.

Further details of the numbers of employees who report that their employer has a CRA and the percentage who feel constrained by these CRAs are given in Table 3A.16.

Work-limiting disabilities

Section 3.4 showed that those who reported being in worse health were most likely to stop working and least likely to move back into paid work amongst all age groups. This suggests that changes to employment conditions to accommodate employees with health problems could be an important means of raising employment rates amongst those approaching the SPA. This section looks first at how many individuals aged between 52 and the SPA report having a disability that limits the type of work they can do and then at what changes employers have made to accommodate these individuals and whether there are any other changes that individuals feel could help them stay in work.

ELSA respondents to the 2004–05 survey were asked whether they had any conditions that affected their ability to work. Figure 3.15 shows that just over a quarter of men and women aged between 52 and the SPA reported having a work-limiting disability. As we would expect, the percentage of individuals reporting having a work-limiting disability is higher amongst older age groups for both men and women. In addition, among men who report having such a disability, the percentage who are in paid work declines with age.

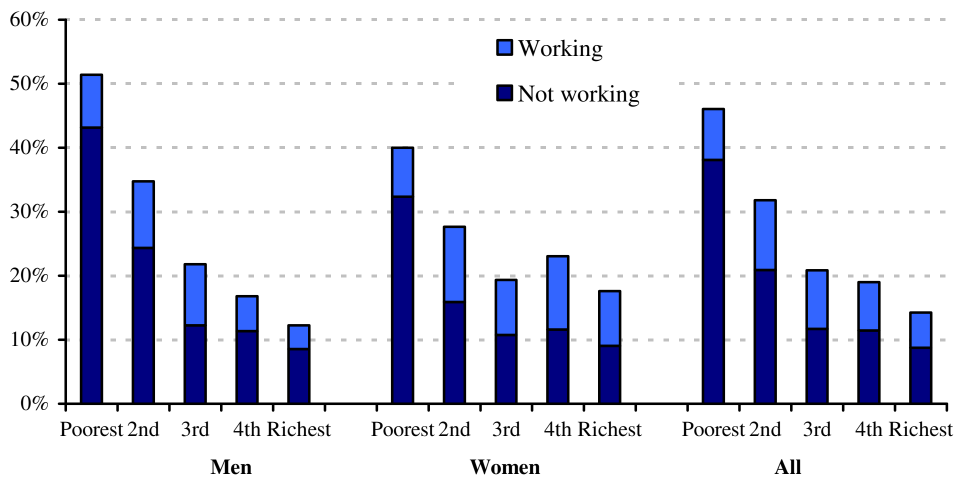
Figure 3.15. Percentage of those aged 52 to SPA in 2004–05 reporting having a work-limiting disability in 2004–05, by sex, age band and work status of these individuals

As shown in Table 3A.17, reported work-limiting disability is substantially more prevalent among those not in paid work than among those who are in work, and this is particularly true among younger individuals. For example, over six-in-ten (62.8%) men aged 52 to 54 who were not in paid work report that they had a disability that affected the amount of work that they could do, compared with under one-in-ten (6.4%) men in the same age group who were working full-time.

Recent policy has also been focused on those with work-limiting disabilities who are receiving incapacity benefits. In particular, the Pathways-to-Work pilots provide greater support (both financial and non-financial), and impose greater obligations, to encourage claimants of incapacity benefits to move off benefits and into paid work. Early descriptive evidence shows that the off-flow rate from these benefits after six months is around 8 percentage points higher in the areas where the pilots were operating than in the rest of the country, and the government recently announced that these pilots are set to be extended nationwide.[8]

Figure 3.16 shows that the percentage of men aged between 52 and the SPA who reported that they had a work-limiting disability in 2004–05 was far higher among those in the lower wealth quintiles. Over half (51.4%) of the men in the poorest wealth quintile reported having a disability that limited the work they could do, whereas fewer than one-in-eight (12.2%) of the men in the richest quintile reported having a work-limiting disability. A similar pattern can be seen for women.

Figure 3.16. Percentage of those aged 52 to SPA in 2004–05 reporting having a work-limiting disability in 2004–05, by sex, quintile of total wealth and work status of these individuals



Amongst women who reported having a work-limiting disability, those in the lower wealth quintiles are less likely to be in paid work than those in the higher wealth quintiles. More than four-in-five (80.9%) women in the poorest wealth quintile who report having such a disability are not in work, compared with just over half (51.3%) of those in the richest quintile. Amongst men who reported having a work-limiting disability, a slightly different pattern of employment emerges. Men in the poorest, second and richest wealth quintiles who reported having such a disability are the most likely to be out of work

[8]See Department for Work and Pensions (2006, figure 2.3).

(84.0% of those in the poorest quintile, 70.2% of those in the second quintile and 70.0% of those in the richest quintile are not in work), while those in the third and fourth quintiles are most likely to be in work (only 56.3% of those in the third quintile who report a work-limiting disability are out of work).

We might expect employment rates to be lowest amongst the richest and poorest individuals with work-limiting disabilities. Those in the poorest wealth quintiles who have such a disability may receive a reasonably good earnings replacement rate from (flat-rate) out-of-work disability benefits such as incapacity benefit, while those in the richest wealth quintiles may have sufficient income – for example, from a defined benefit pension – to fund their consumption needs even if they are not in employment.

As shown in Figure 3.15, the majority of those who reported having a work-limiting disability were not in paid work. About one-in-four individuals (25.9%) aged under the SPA reported having such a disability. Since these individuals are much more likely to be out of work than non-work-disabled individuals, one way to increase employment rates amongst this age group could be to adapt employment conditions to allow these people to continue working for longer. There are various ways that employers could adapt jobs to help individuals with health problems. For example, employers may be able to reduce the physical or mental demands of the job (perhaps by enabling an individual to move to a different role within the organisation) or to reduce the number of hours an individual works.

In 2004–05, those ELSA respondents who were employed and reported that they did have a work-limiting disability but that it did *not* affect their work in their current job were asked what, if anything, their employer had done to accommodate their disability or health condition (to see whether their ability to carry out their current job without any problems could be a result of adaptations made by their employer). Of those aged between 52 and the SPA who reported having any work-limiting disability and were in work, 55.7% said that their disability did not affect the kind or amount of work they could do in their current job. Amongst these people, Figure 3.17 shows that only 13.3% stated that their employer had made a change to their working situation to accommodate them. The most common types of changes were making the job less physically demanding and introducing special equipment or adaptations to the workplace; both of these were reported by about 6% of these respondents.

Those individuals who reported that their health condition or disability did limit their ability to do their current job were instead asked what changes they would like their employer to make because of their disability. Figure 3.18 shows that even amongst this group, the majority would not like to see any changes to their workplace, although a sizeable minority (42.9%) did report that they would like to see some changes. The most commonly cited requests were for a less demanding job (either physically or mentally) and for fewer hours of work. However, given that the question asked did not explicitly state that such changes would be accompanied by a commensurate drop in pay, the popularity of these responses is perhaps not surprising.

Figure 3.17. Reported changes to working situation among those reporting that they do have a work-limiting disability but that it does not affect their ability to work in their current job

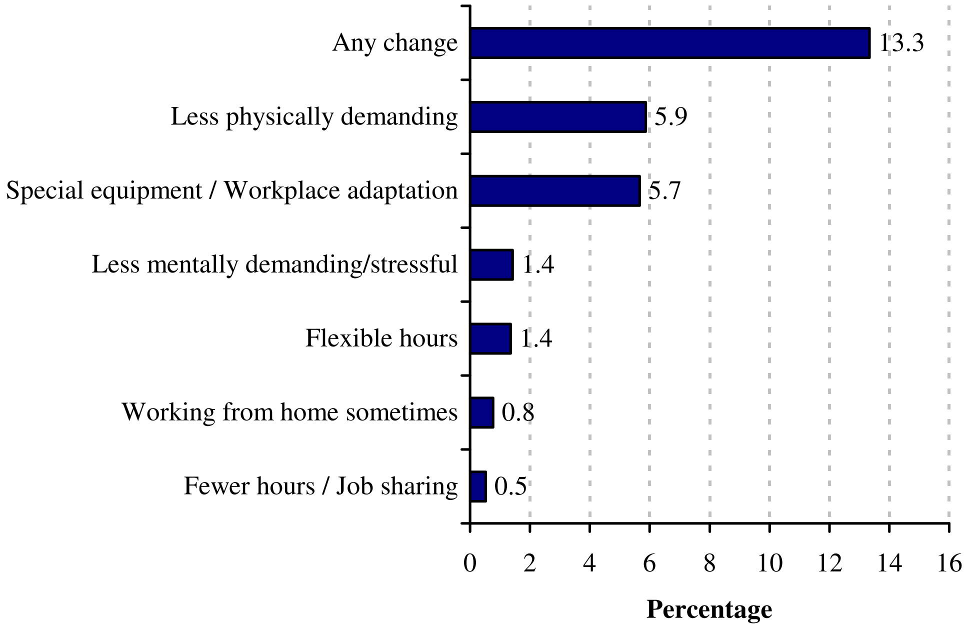


Figure 3.18. Reported desired changes to working situation among those reporting that they have a health problem that limits their ability to work in their current job

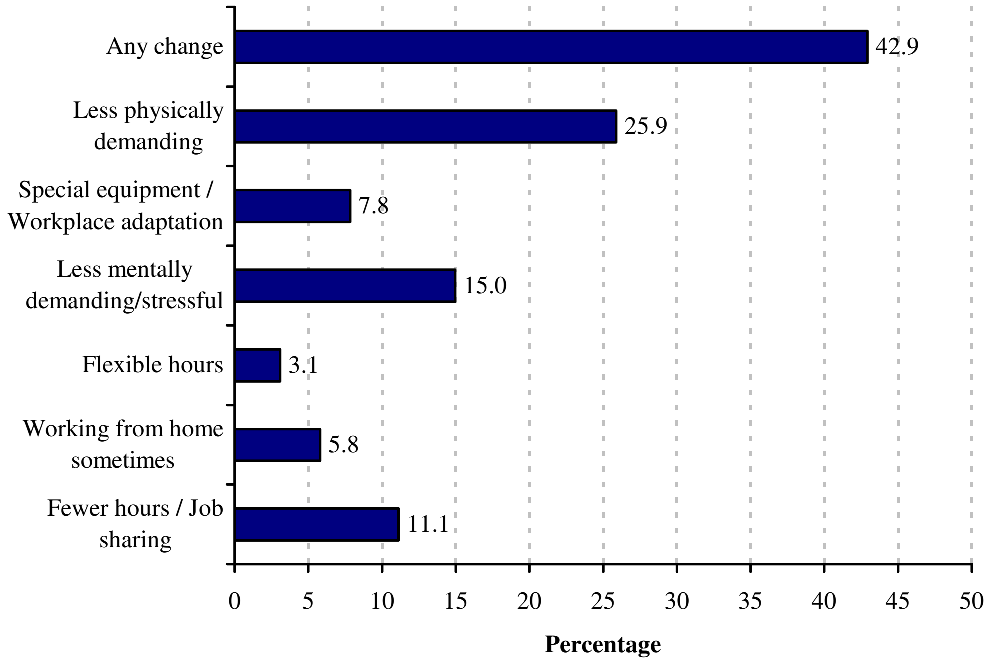
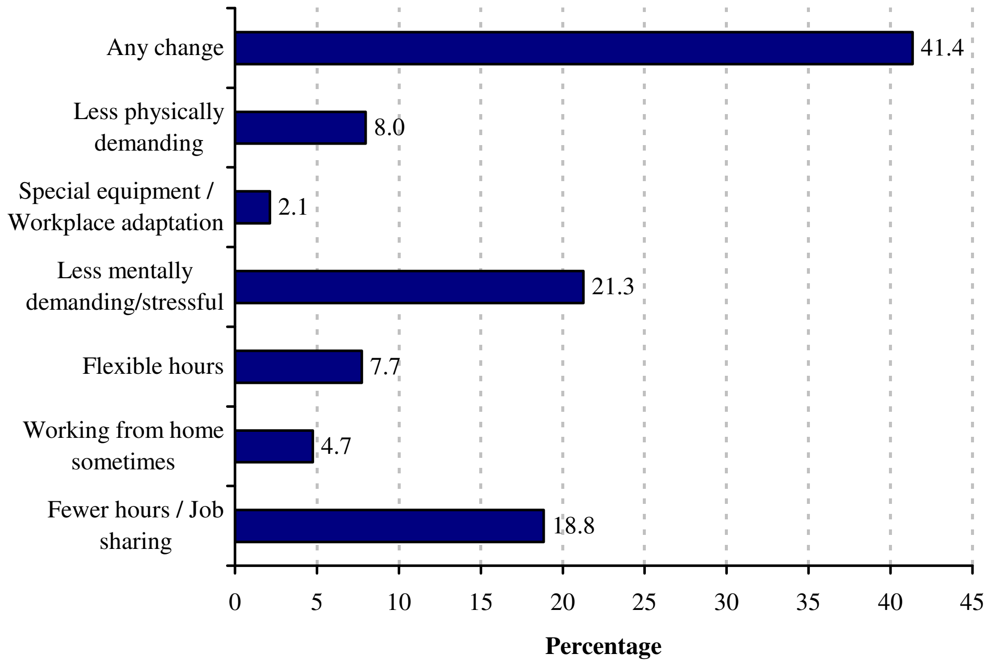


Figure 3.19. Reported desired changes to working situation among those reporting that they do not have a work-limiting disability



The types of changes desired by those with a work-limiting disability that affects their current job are somewhat different from the types of changes desired by non-work-disabled employees, as shown by Figures 3.18 and 3.19. Those with a work-limiting disability were much more likely to say that they wanted physical changes made to their job (e.g. less physically demanding or special equipment), whereas those who were not work-disabled were more likely to say that they wanted a less mentally demanding job or fewer, or more flexible, working hours. This is consistent with what we might expect for these two groups. However, some care should be taken when directly comparing Figures 3.18 and 3.19, as those without a work-limiting disability were asked a slightly different question from those with a work-limiting disability, which may have affected responses.[9]

3.6 Conclusions

The retirement behaviour of older individuals and extending the length of working lives are important policy concerns, given the issues surrounding increasing life expectancies and declining relative generosity of state pensions. The data from the first wave of ELSA in 2002–03 identified some of the factors associated with being in or out of work at older ages. With the

[9]Those with a work-limiting disability were asked ‘Would you like the work you do for your employer to change in any of these ways because of your health problem or disability?’, whereas those without a work disability were simply asked ‘Would you like your current job to change in any of these ways?’.

additional data from the second wave of ELSA in 2004–05, we are able to look at the factors associated with the dynamics of labour market participation (i.e. movements into and out of work).

The analysis has identified some characteristics that are associated with being more likely to stop work. Men who were contributing to defined benefit pensions were more likely to stop working than individuals contributing to defined contribution pensions. This suggests that the trend away from private sector defined benefit pension arrangements towards private sector defined contribution pensions that has occurred in the UK since 1988 might help increase retirement ages of subsequent cohorts.

Analysis of the data from the first wave of ELSA in 2002–03 by Banks and Casanova (2003) showed that individuals in poor health were most likely to be out of work. Using the additional data from the second wave of ELSA in 2004–05, we find that these individuals are also the most likely to move out of work (conditional on having been in work in 2002–03) and the least likely to re-enter work (conditional on not being in work in 2002–03). The pattern of labour market transitions by health is consistent with the hypothesis that those who report poor health are both more likely to move out of paid work and, unless their health subsequently improves, less likely to return to paid work. Analysis of further waves of ELSA data will be able to show the extent to which this is the case.

Banks and Casanova (2003) also showed that in cross-section among those aged 50 to the SPA, it was those with relatively low or relatively high levels of wealth who were more likely to be not in the labour market. Our analysis has shown that for men aged 50 to 54, even looking just at those who were in work, it is those in the middle of the wealth distribution who were least likely to have left paid work in 2004–05. Moreover, taking those men aged 50 to 54 who were not in paid work, those in the middle of the wealth distribution were most likely to be in paid work in 2004–05.

Given the importance of extending working lives, reducing barriers to working at older ages could be beneficial. The 2004–05 ELSA survey included some new questions designed to look at this issue. One such possible barrier is compulsory retirement ages. However, the analysis presented here shows that the majority of employees do not, in fact, report facing a CRA; even amongst those who do, the majority do not feel constrained by this. Another possible barrier to continued working for individuals with health problems (which become increasingly prevalent at older ages) is if some demands of the job are incompatible with the health problems of the individual. We find that, even amongst those individuals who say that their disability or health problem does not limit their ability to do their current job, the majority have not actually been offered any changes to their work conditions by their employer.

Acknowledgement

The research for this chapter was produced under the auspices of the IFS pensions and retirement saving consortium, to which the authors are grateful for both financial assistance and useful comments. The members of the IFS pensions and retirement saving consortium are: the Actuarial Profession, the

Association of British Insurers, the Bank of England, the Department for Work and Pensions, HM Revenue and Customs, HM Treasury and the Investment Management Association. The authors also thank the Economic and Social Research Council for co-funding through the research grant 'Late Life Work and Retirement' (RES-000-23-0588) and James Banks for useful comments.

References

Banks, J. and Blundell, R. (2005), 'Private pension arrangements and retirement in Britain', *Fiscal Studies*, 26: 35–53 (http://www.ifs.org.uk/publications.php?publication_id=3333).

Banks, J. and Casanova, M. (2003), 'Work and retirement', in M. Marmot, J. Banks, R. Blundell, C. Lessof and J. Nazroo (eds), *Health, Wealth and Lifestyles of the Older Population in England: The 2002 English Longitudinal Study of Ageing*, London: Institute for Fiscal Studies (http://www.ifs.org.uk/elsa/report_wave1.php).

Banks, J., Emmerson, C., Oldfield, Z. and Tetlow, G. (2005), *Prepared for Retirement? The Adequacy and Distribution of Retirement Resources in England*, London: Institute for Fiscal Studies (http://www.ifs.org.uk/publications.php?publication_id=3443).

Banks, J., Emmerson, C. and Tetlow, G. (2005), 'Estimating pension wealth of ELSA respondents', Institute for Fiscal Studies, Working Paper no. 05/09, (http://www.ifs.org.uk/publications.php?publication_id=3369).

Banks, J. and Smith, S. (2006), 'Retirement in the UK', *Oxford Review of Economic Policy*, 22(1): 40–56.

Blundell, R., Meghir, C. and Smith, S. (2002), 'Pension incentives and the pattern of early retirement', *Economic Journal*, 112: C153–C170.

Department for Work and Pensions (2006), *A New Deal for Welfare: Empowering People to Work*, Cm. 6730, London: DWP (http://www.dwp.gov.uk/aboutus/welfarereform/docs/A_new_deal_for_welfare-Empowering_people_to_work-Full_Document.pdf).

Disney, R., Emmerson, C. and Wakefield, M. (2003), 'Ill health and retirement in Britain: a panel data based analysis', Institute for Fiscal Studies, Working Paper no. 03/02 (http://www.ifs.org.uk/wps/wp0302.pdf); forthcoming in *Journal of Health Economics*.

Emmerson, C. (2005), 'Taxes, benefits and retirement income incentives', paper presented at Pensions Policy Institute seminar on 'How Does the Interaction between State and Private Pensions Affect Incentives to Work and Save?', 24 May (http://www.pensionspolicyinstitute.org.uk/uploadeddocuments/PPI_Nuffield_Seminar_2_Main_Paper_24May05.pdf).

Marmot, M., Banks, J., Blundell, R., Lessof, C. and Nazroo, J. (eds) (2003), *Health, Wealth and Lifestyles of the Older Population in England: The 2002 English Longitudinal Study of Ageing*, London: Institute for Fiscal Studies (http://www.ifs.org.uk/elsa/report_wave1.php).

Meghir, C. and Whitehouse, E. (1997), 'Labour market transition and retirement of men in the UK', *Journal of Econometrics*, 79: 327–354.

Smith, J. P. (1999), 'Healthy bodies and thick wallets: the dual relation between health and economic status', *Journal of Economic Perspectives*, 13: 145–166.

Steel, N., Huppert, F. A., McWilliams, B. and Melzer, D. (2003), 'Physical and cognitive function', in M. Marmot, J. Banks, R. Blundell, C. Lessof and J. Nazroo (eds), *Health, Wealth and Lifestyles of the Older Population in England: The 2002 English Longitudinal Study of Ageing*, London: Institute for Fiscal Studies (http://www.ifs.org.uk/elsa/report_wave1.php).

Annex 3.1
Tables on labour market transitions

Table 3A.1. Percentage of individuals moving and not moving between working and not working between 2002–03 and 2004–05, by age band and sex

	50–54	55–59	60–64	65+	All	Under SPA	Over SPA
	%	%	%	%	%	%	%
Men							
Working, working	78.7	62.5	32.8	5.5	37.1	60.3	5.5
Working, not working	6.0	10.4	16.0	4.6	7.9	10.3	4.6
Not working, not working	14.0	24.0	48.5	88.7	53.2	27.1	88.7
Not working, working	1.3	3.1	2.7	1.2	1.8	2.3	1.2
Women							
Working, working	70.5	47.6	19.1	2.9	25.9	59.6	6.6
Working, not working	6.2	13.6	11.6	2.3	6.4	9.7	4.5
Not working, not working	20.6	36.4	66.9	94.1	66.1	28.1	87.9
Not working, working	2.7	2.4	2.5	0.7	1.6	2.6	1.1
All							
Working, working	74.6	54.9	25.8	4.0	31.1	60.0	6.2
Working, not working	6.1	12.0	13.7	3.3	7.1	10.0	4.5
Not working, not working	17.3	30.3	57.9	91.8	60.1	27.5	88.2
Not working, working	2.0	2.7	2.6	0.9	1.7	2.4	1.1
***Unweighted* N**							
Men	*739*	*793*	*630*	*1,788*	*3,950*	*2,162*	*1,788*
Women	*875*	*930*	*729*	*2,296*	*4,830*	*1,805*	*3,025*
All	*1,614*	*1,723*	*1,359*	*4,084*	*8,780*	*3,967*	*4,813*

Table 3A.2. Percentage of those in work in 2002–03 moving and not moving between full-time work, part-time work and not working between 2002–03 and 2004–05, by age band and sex

	50–54	55–59	60–64	65+	All	Under SPA	Over SPA
	%	*%*	*%*	*%*	*%*	*%*	*%*
Men							
Full-time, full-time	84.3	69.4	40.0	13.1	65.4	70.7	13.1
Full-time, part-time	4.9	8.1	14.3	14.2	8.4	7.8	14.2
Full-time, not working	5.3	12.1	24.7	11.1	11.3	11.3	11.1
Part-time, full-time	0.7	1.0	0.9	2.2	1.0	0.8	2.2
Part-time, part-time	3.4	7.2	12.3	26.2	8.2	6.4	26.2
Part-time, not working	1.4	2.2	7.8	33.1	5.7	2.9	33.1
Women							
Full-time, full-time	44.9	31.0	11.0	2.5	32.4	39.0	7.9
Full-time, part-time	12.1	11.3	8.5	10.9	11.3	11.8	9.4
Full-time, not working	3.6	9.8	10.1	5.6	6.7	6.2	8.5
Part-time, full-time	2.8	2.0	1.8	0.9	2.3	2.5	1.4
Part-time, part-time	32.3	33.3	40.2	40.1	34.3	32.7	40.2
Part-time, not working	4.2	12.5	28.3	40.1	13.0	7.7	32.6
All							
Full-time, full-time	65.4	51.5	28.4	8.7	50.3	57.4	9.7
Full-time, part-time	8.4	9.6	12.0	12.8	9.7	9.5	11.0
Full-time, not working	4.5	11.0	18.9	8.8	9.2	9.2	9.4
Part-time, full-time	1.7	1.5	1.3	1.6	1.6	1.5	1.7
Part-time, part-time	17.2	19.4	23.5	32.0	20.2	17.5	35.5
Part-time, not working	2.8	7.0	16.0	36.0	9.0	4.9	32.8
***Unweighted* N**							
Men	*613*	*575*	*290*	*176*	1,654	*1,478*	*176*
Women	*654*	*556*	*211*	*127*	1,548	*1,210*	*338*
All	*1,267*	*1,131*	*501*	*303*	3,202	*2,688*	*514*

Note: Hours worked were missing for some individuals in 2002–03 and/or 2004–05; therefore some workers have been excluded.

Table 3A.3. Mean expected chance (in 2002–03) of being in work at older age, by age band, sex and work transition

	All	Continue working	Stop working	Stay out of work	Start working
	%	*%*	*%*	*%*	*%*
Men	46.6	65.2	41.8	7.9	[36.5]
50–54	54.8	63.3	[43.1]	12.5	–
55–59	55.4	73.9	50.8	11.7	–
60–64	25.1	51.7	34.0	3.9	–
Women	52.5	74.5	45.4	10.1	[21.6]
50–54	67.0	84.7	61.1	12.9	–
55–59	36.2	57.6	37.4	8.3	–
All	49.1	69.2	43.3	8.8	29.7
50–54	61.0	73.6	52.3	12.7	[31.9]
55–59	45.6	66.6	43.1	9.6	[27.3]
***Unweighted* N**					
Men	*2,117*	*1,268*	*227*	*573*	*49*
50–54	*724*	*574*	*44*	*96*	*10*
55–59	*779*	*492*	*85*	*179*	*23*
60–64	*614*	*202*	*98*	*298*	*16*
Women	*1,782*	*1,052*	*181*	*504*	*45*
50–54	*870*	*615*	*54*	*178*	*23*
55–59	*912*	*437*	*127*	*326*	*22*
All	*3,899*	*2,320*	*408*	*1,077*	*94*
50–54	*1,594*	*1,189*	*98*	*274*	*33*
55–59	*1,691*	*929*	*212*	*505*	*45*

Note: Women aged 50–54 are asked the chances of working after age 55; women aged 55–59 and men aged 50–59 are asked the chances of working after age 60; men aged 60–64 are asked the chances of working after age 65.

Table 3A.4. Percentage of those aged between 50 and SPA leaving and re-entering paid work, by age band, sex and 2002–03 self-reported chance of working at older age

	% leave work 2002–03 reported chance of working at older age:		***Unweighted* N** *2002–03 reported chance of working at older age:*		**% re-enter work** 2002–03 reported chance of working at older age:		***Unweighted N*** *2002–03 reported chance of working at older age:*	
	<20%	>80%	*<20%*	*>80%*	No chance	Some chance	*No chance*	*Some chance*
Men	31.9	8.6	*272*	*556*	3.8	19.2	*459*	*163*
50–54	16.4	4.9	*99*	*203*	4.3	[16.8]	*68*	*38*
55–59	37.0	8.7	*64*	*275*	6.3	21.0	*132*	*70*
60–64	45.5	19.3	*109*	*78*	2.4	19.0	*259*	*55*
Women	38.2	6.7	*188*	*593*	6.3	13.8	*386*	*163*
50–54	–	4.6	*25*	*425*	7.9	19.1	*129*	*72*
55–59	38.2	12.8	*163*	*168*	5.4	9.0	*257*	*91*
All	34.2	7.6	*460*	*1,149*	4.9	16.7	*845*	*326*
50–54	20.2	4.7	*124*	*628*	6.5	18.2	*197*	*110*
55–59	37.9	10.1	*227*	*443*	5.8	14.7	*389*	*161*

Note: Women aged 50–54 are asked the chances of working after age 55; women aged 55–59 and men aged 50–59 are asked the chances of working after age 60; men aged 60–64 are asked the chances of working after age 65.

Table 3A.5. Self-defined status in 2004–05 of those who were in paid work in 2002–03 but were not in paid work in 2004–05, by age band and sex

	Retired	Looking after home	Unemployed	Permanently sick/disabled	Other non-retired	*Unweighted* N
	%	%	%	%	%	
Men						
50–54	[49.3]	[2.4]	[10.1]	[29.4]	[8.8]	*44*
55–59	63.0	3.2	12.5	20.4	0.9	*85*
60–64	86.7	0.9	8.5	2.9	0.9	*100*
65+	99.0	0.0	0.0	0.0	1.0	*84*
All under SPA	70.4	2.0	10.2	14.7	2.6	*229*
All over SPA	99.0	0.0	0.0	0.0	1.0	*84*
Women						
50–54	22.2	44.2	11.8	17.1	4.6	*54*
55–59	66.3	18.1	3.3	11.5	0.8	*129*
60–64	86.5	9.0	0.0	1.1	3.3	*82*
65+	84.5	14.0	0.0	0.0	1.6	*59*
All under SPA	51.5	26.8	6.1	13.4	2.1	*183*
All over SPA	85.7	11.0	0.0	0.7	2.6	*141*
All						
50–54	35.4	23.9	11.0	23.1	6.7	*98*
55–59	64.9	11.8	7.2	15.3	0.8	*214*
60–64	86.6	4.4	4.8	2.2	2.0	*182*
65+	93.0	5.7	0.0	0.0	1.2	*143*
All under SPA	62.7	12.2	8.5	14.2	2.4	*412*
All over SPA	90.6	7.0	0.0	0.4	2.0	*225*

Table 3A.6. Percentage of individuals aged 50 to SPA in couples leaving paid work between 2002–03 and 2004–05, by sex and whether or not their partner stops work

	% who stop working	***Unweighted* N**
Men	14.0	*1,219*
Partner does not stop working	12.4	*1,116*
Partner stops working	31.6	*103*
Women	13.4	*806*
Partner does not stop working	11.5	*721*
Partner stops working	30.4	*85*
All	13.8	*2,025*
Partner does not stop working	12.1	*1,837*
Partner stops working	31.1	*188*

Table 3A.7. Percentage of individuals aged 50 to SPA moving and not moving between working and not working between 2002–03 and 2004–05, by age band, sex and age-specific quintile of total wealth in 2002–03

	Working, working					Working, not working					Not working, not working					Not working, working				
	Poorest	2nd	3rd	4th	Richest	Poorest	2nd	3rd	4th	Richest	Poorest	2nd	3rd	4th	Richest	Poorest	2nd	3rd	4th	Richest
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Men	44.0	63.7	67.6	65.0	56.3	5.9	8.3	10.3	13.7	11.6	47.1	26.3	19.4	19.4	29.6	3.0	1.6	2.6	1.8	2.6
50–54	55.6	80.7	85.5	88.6	77.9	5.6	5.8	6.1	4.3	8.8	36.8	12.0	7.1	6.5	11.9	2.0	1.4	1.3	0.6	1.4
55–59	42.0	65.8	68.4	71.2	61.4	4.6	9.6	10.4	14.0	12.2	48.8	23.3	17.9	12.0	22.9	4.6	1.3	3.3	2.8	3.5
60–64	18.6	25.0	39.1	33.6	35.5	9.5	11.1	16.8	23.6	13.1	70.0	61.3	40.4	40.6	48.6	1.9	2.6	3.7	2.2	2.7
Women	46.0	63.5	66.5	65.4	58.3	7.3	12.4	8.2	9.5	10.9	43.5	22.1	23.4	21.9	28.2	3.1	2.0	1.9	3.1	2.6
50–54	55.4	74.2	78.8	80.6	69.9	5.8	6.6	3.6	7.0	7.9	33.9	17.5	15.4	10.4	20.1	5.0	1.6	2.2	1.9	2.1
55–59	32.7	49.8	52.6	51.3	48.4	9.5	19.7	13.3	11.8	13.4	57.3	27.9	32.5	32.6	35.2	0.6	2.5	1.6	4.3	3.1
All	45.0	63.6	67.1	65.2	57.0	6.6	10.1	9.4	12.1	11.3	45.3	24.5	21.1	20.4	29.1	3.1	1.8	2.3	2.3	2.6
50–54	55.5	77.3	82.3	85.0	73.9	5.7	6.2	4.9	5.5	8.4	35.1	14.9	11.0	8.3	15.9	3.7	1.5	1.8	1.2	1.8
55–59	37.0	58.2	60.2	61.5	54.6	7.2	14.4	11.9	12.9	12.8	53.3	25.5	25.4	22.1	29.3	2.5	1.9	2.4	3.5	3.3
***Unweighted* N**																				
Men	*297*	*370*	*429*	*513*	*539*	*297*	*370*	*429*	*513*	*539*	*297*	*370*	*429*	*513*	*539*	*297*	*370*	*429*	*513*	*539*
50–54	*124*	*137*	*163*	*164*	*141*	*124*	*137*	*163*	*164*	*141*	*124*	*137*	*163*	*164*	*141*	*124*	*137*	*163*	*164*	*141*
55–59	*119*	*160*	*147*	*180*	*185*	*119*	*160*	*147*	*180*	*185*	*119*	*160*	*147*	*180*	*185*	*119*	*160*	*147*	*180*	*185*
60–64	*54*	*73*	*119*	*169*	*213*	*54*	*73*	*119*	*169*	*213*	*54*	*73*	*119*	*169*	*213*	*54*	*73*	*119*	*169*	*213*
Women	*365*	*336*	*360*	*339*	*366*	*365*	*336*	*360*	*339*	*366*	*365*	*336*	*360*	*339*	*366*	*365*	*336*	*360*	*339*	*366*
50–54	*199*	*174*	*182*	*150*	*151*	*199*	*174*	*182*	*150*	*151*	*199*	*174*	*182*	*150*	*151*	*199*	*174*	*182*	*150*	*151*
55–59	*166*	*162*	*178*	*189*	*215*	*166*	*162*	*178*	*189*	*215*	*166*	*162*	*178*	*189*	*215*	*166*	*162*	*178*	*189*	*215*
All	*662*	*706*	*789*	*852*	*905*	*662*	*706*	*789*	*852*	*905*	*662*	*706*	*789*	*852*	*905*	*662*	*706*	*789*	*852*	*905*
50–54	*323*	*311*	*345*	*314*	*292*	*323*	*311*	*345*	*314*	*292*	*323*	*311*	*345*	*314*	*292*	*323*	*311*	*345*	*314*	*292*
55–59	*285*	*322*	*325*	*369*	*400*	*285*	*322*	*325*	*369*	*400*	*285*	*322*	*325*	*369*	*400*	*285*	*322*	*325*	*369*	*400*

Note: Figures for 'All' within each age group can be found in Table 3A.1.

Table 3A.8. Percentage of those aged 50 to SPA in work in 2002–03 moving and not moving between full-time work, part-time work and not working between 2002–03 and 2004–05, by age band, sex and age-specific quintile of total wealth in 2002–03

	Full-time, full-time					Full-time, part-time					Full-time, not working					Part-time, full-time					Part-time, part-time					Part-time, not working				
	Poorest	2nd	3rd	4th	Richest	Poorest	2nd	3rd	4th	Richest	Poorest	2nd	3rd	4th	Richest	Poorest	2nd	3rd	4th	Richest	Poorest	2nd	3rd	4th	Richest	Poorest	2nd	3rd	4th	Richest
	%	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*
Men	77.6	81.8	72.7	67.9	59.7	7.0	2.5	8.6	7.3	11.7	4.8	9.0	11.5	13.4	14.1	0.5	0.8	0.8	1.2	0.7	5.9	3.8	4.4	6.6	10.7	4.2	2.2	2.0	3.6	3.1
50–54	83.0	88.4	83.5	88.3	78.1	2.8	1.6	6.4	2.3	9.1	2.7	7.1	4.4	3.2	9.6	0.9	1.6	0.0	1.3	0.0	6.5	1.4	3.4	4.3	2.3	4.1	0.0	2.4	0.7	0.9
55–59	72.7	80.0	66.9	71.2	58.1	11.9	2.3	11.5	6.1	11.4	5.4	9.0	13.4	14.1	14.6	0.0	0.0	1.7	1.4	1.3	6.4	5.4	6.5	4.4	12.6	3.6	3.3	0.0	2.6	1.9
60–64	–	–	54.0	26.3	36.0	–	–	9.6	17.8	15.7	–	–	26.9	30.7	19.7	–	–	1.6	0.9	0.9	–	–	3.3	14.0	20.0	–	–	4.6	10.2	7.7
Women	41.5	34.0	38.3	40.2	41.4	12.6	11.5	13.1	13.2	9.4	5.3	6.4	6.1	6.5	6.2	1.5	4.2	2.2	2.6	1.6	31.6	33.6	35.2	31.8	31.8	7.5	10.3	5.0	5.7	9.7
50–54	44.8	41.6	42.7	46.5	48.0	11.5	11.3	14.3	16.2	7.8	3.9	4.4	3.2	2.6	3.4	0.8	5.7	2.6	3.2	1.5	34.0	33.0	35.9	27.0	32.2	5.0	4.0	1.2	4.4	7.1
55–59	34.8	22.6	31.8	32.2	34.5	14.7	11.8	11.3	9.3	11.1	8.1	9.4	10.4	11.5	9.1	2.9	1.9	1.7	1.8	1.6	26.7	34.5	34.2	37.7	31.4	12.8	19.9	10.5	7.4	12.4
All	58.5	59.7	58.7	58.0	52.6	10.0	6.6	10.4	9.4	10.8	5.0	7.8	9.3	11.0	11.0	1.0	2.3	1.4	1.7	1.0	19.5	17.5	17.0	15.6	18.9	5.9	5.9	3.2	4.4	5.7
50–54	61.3	64.4	65.1	70.5	64.2	7.8	6.6	9.9	8.2	8.5	3.4	5.7	3.9	2.9	6.7	0.9	3.7	1.2	2.1	0.7	22.1	17.6	18.1	13.9	16.2	4.6	2.0	1.8	2.3	3.8
55–59	53.0	54.2	50.4	55.0	47.0	13.4	6.5	11.4	7.5	11.3	6.8	9.1	12.0	13.0	12.0	1.5	0.8	1.7	1.6	1.4	16.9	18.5	19.5	18.3	21.4	8.4	10.8	4.9	4.6	6.9
***Unweighted* N**																														
Men	*139*	*255*	*327*	*392*	*352*	*139*	*255*	*327*	*392*	*352*	*139*	*255*	*327*	*392*	*352*	*139*	*255*	*327*	*392*	*352*	*139*	*255*	*327*	*392*	*352*	*139*	*255*	*327*	*392*	*352*
50–54	*74*	*112*	*148*	*150*	*119*	*74*	*112*	*148*	*150*	*119*	*74*	*112*	*148*	*150*	*119*	*74*	*112*	*148*	*150*	*119*	*74*	*112*	*148*	*150*	*119*	*74*	*112*	*148*	*150*	*119*
55–59	*53*	*119*	*116*	*150*	*135*	*53*	*119*	*116*	*150*	*135*	*53*	*119*	*116*	*150*	*135*	*53*	*119*	*116*	*150*	*135*	*53*	*119*	*116*	*150*	*135*	*53*	*119*	*116*	*150*	*135*
60–64	*12*	*24*	*63*	*92*	*98*	*12*	*24*	*63*	*92*	*98*	*12*	*24*	*63*	*92*	*98*	*12*	*24*	*63*	*92*	*98*	*12*	*24*	*63*	*92*	*98*	*12*	*24*	*63*	*92*	*98*
Women	*186*	*248*	*261*	*243*	*244*	*186*	*248*	*261*	*243*	*244*	*186*	*248*	*261*	*243*	*244*	*186*	*248*	*261*	*243*	*244*	*186*	*248*	*261*	*243*	*244*	*186*	*248*	*261*	*243*	*244*
50–54	*117*	*138*	*148*	*125*	*115*	*117*	*138*	*148*	*125*	*115*	*117*	*138*	*148*	*125*	*115*	*117*	*138*	*148*	*125*	*115*	*117*	*138*	*148*	*125*	*115*	*117*	*138*	*148*	*125*	*115*
55–59	*69*	*110*	*113*	*118*	*129*	*69*	*110*	*113*	*118*	*129*	*69*	*110*	*113*	*118*	*129*	*69*	*110*	*113*	*118*	*129*	*69*	*110*	*113*	*118*	*129*	*69*	*110*	*113*	*118*	*129*
All	*325*	*503*	*588*	*635*	*596*	*325*	*503*	*588*	*635*	*596*	*325*	*503*	*588*	*635*	*596*	*325*	*503*	*588*	*635*	*596*	*325*	*503*	*588*	*635*	*596*	*325*	*503*	*588*	*635*	*596*
50–54	*191*	*250*	*296*	*275*	*234*	*191*	*250*	*296*	*275*	*234*	*191*	*250*	*296*	*275*	*234*	*191*	*250*	*296*	*275*	*234*	*191*	*250*	*296*	*275*	*234*	*191*	*250*	*296*	*275*	*234*
55–59	*122*	*229*	*229*	*268*	*264*	*122*	*229*	*229*	*268*	*264*	*122*	*229*	*229*	*268*	*264*	*122*	*229*	*229*	*268*	*264*	*122*	*229*	*229*	*268*	*264*	*122*	*229*	*229*	*268*	*264*

Note: Figures for ‘All’ within each age group can be found in Table 3A.2.

Table 3A.9. Percentage of individuals aged 50 to SPA moving and not moving between working and not working between 2002–03 and 2004–05, by age band, sex and pension membership in 2002–03

	50–54								**55–59**								**60–64**								**All**							
	Has a current pension					No current pension			Has a current pension					No current pension			Has a current pension					No current pension			Has a current pension					No current pension		
	DB	DC	Both	D/k	All	Past	None	All	DB	DC	Both	D/k	All	Past	None	All	DB	DC	Both	D/k	All	Past	None	All	DB	DC	Both	D/k	All	Past	None	All
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Men																																
Working, working	91.5	93.4	–	–	92.6	48.5	49.3	48.8	74.2	85.2	–	–	81.3	37.7	37.5	37.7	54.2	61.9	–	–	60.2	18.3	22.3	19.2	81.1	84.3	[95.3]	[68.9]	83.1	31.8	36.2	33.0
Working, not working	8.1	3.5	–	–	5.5	8.4	3.8	6.9	24.7	5.8	–	–	12.4	9.5	3.5	7.8	40.5	20.9	–	–	27.0	10.0	12.2	10.5	17.7	7.6	[4.7]	[22.5]	11.6	9.5	6.6	8.7
Not working, not working	0.4	3.2	–	–	1.9	37.4	45.7	40.2	0.6	7.9	–	–	5.5	47.1	52.2	48.6	3.3	12.7	–	–	8.9	69.5	64.1	68.2	0.8	6.7	[0.0]	[5.8]	4.3	54.6	54.1	54.5
Not working, working	0.0	0.0	–	–	0.0	5.6	1.3	4.2	0.5	1.1	–	–	0.8	5.6	6.8	6.0	1.9	4.5	–	–	3.9	2.2	1.4	2.1	0.4	1.3	[0.0]	[2.8]	1.0	4.1	3.2	3.9
Women																																
Working, working	93.8	90.8	–	[83.6]	91.7	49.8	46.6	47.4	79.6	66.0	–	[80.0]	92.6	24.1	33.0	29.9	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	88.1	80.9	[85.9]	82.0	84.6	34.2	39.8	38.1
Working, not working	4.9	3.5	–	[16.4]	5.4	8.4	6.6	7.1	17.6	19.2	–	[14.6]	5.5	11.0	10.6	10.8	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10.0	9.8	[11.5]	15.5	10.5	10.0	8.6	9.0
Not working, not working	1.0	4.7	–	[0.0]	2.4	37.0	41.6	40.5	2.2	12.6	–	[0.0]	1.9	60.3	54.5	56.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.4	7.8	[2.6]	0.0	3.9	51.1	48.1	49.0
Not working, working	0.4	1.0	–	[0.0]	0.6	4.8	5.2	5.1	0.6	2.2	–	[5.4]	0.0	4.6	1.9	2.8	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.5	1.5	[0.0]	2.5	1.0	4.7	3.5	3.9
All																																
Working, working	92.6	92.4	[94.2]	[84.7]	92.2	49.0	47.2	47.9	76.9	79.0	–	[78.2]	92.6	32.1	34.0	92.6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	84.2	83.3	91.4	77.5	83.6	32.4	38.6	35.4
Working, not working	6.6	3.5	[5.8]	[15.3]	5.5	8.4	6.0	7.0	21.2	10.1	–	[12.9]	5.5	10.1	9.0	5.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	14.2	8.3	7.5	17.9	11.2	9.6	8.0	8.8
Not working, not working	0.7	3.7	[0.0]	[0.0]	2.1	37.3	42.5	40.3	1.4	9.4	–	[4.9]	1.9	52.6	53.9	1.9	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.1	7.1	1.1	2.0	4.2	53.7	49.9	51.9
Not working, working	0.2	0.4	[0.0]	[0.0]	0.3	5.3	4.3	4.7	0.6	1.5	–	[4.0]	0.0	5.2	3.1	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.4	1.3	0.0	2.6	1.0	4.3	3.4	3.9
Unweighted N																																
Men	*214*	*266*	*21*	*9*	*510*	*157*	*72*	*229*	*161*	*274*	*13*	*11*	*459*	*245*	*89*	*334*	*57*	*134*	*5*	*14*	*210*	*331*	*89*	*420*	*432*	*674*	*39*	*34*	*1,179*	*733*	*250*	*983*
Women	*223*	*187*	*17*	*37*	*464*	*112*	*299*	*411*	*177*	*146*	*15*	*37*	*375*	*199*	*356*	*555*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*400*	*333*	*32*	*74*	*839*	*311*	*655*	*966*
All	*437*	*453*	*38*	*46*	*974*	*269*	*371*	*640*	*338*	*420*	*28*	*48*	*834*	*444*	*445*	*889*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*832*	*1,007*	*71*	*108*	*2,018*	*1,044*	*905*	*1,949*

Note: Figures for ‘All’ within each age group can be found in Table 3A.1.

Table 3A.10. Percentage of those aged 50 to SPA in work in 2002–03 moving and not moving between full-time work, part-time work and not working between 2002–03 and 2004–05, by age band, sex and pension membership in 2002–03

	50–54							
	Has a current pension					No current pension		
	DB	DC	Both	D/k	All	Past	None	All
	%	%	%	%	%	%	%	%
Men								
Full-time, full-time	85.1	89.1	–	–	87.5	66.0	83.5	71.7
Full-time, part-time	5.9	3.6	–	–	4.4	8.9	3.0	6.9
Full-time, not working	7.4	3.7	–	–	5.4	4.6	5.3	4.8
Part-time, full-time	0.0	1.0	–	–	0.7	1.1	0.0	0.7
Part-time, part-time	0.9	2.6	–	–	1.7	11.9	5.9	10.0
Part-time, not working	0.8	0.0	–	–	0.3	7.6	2.3	5.9
Women								
Full-time, full-time	57.7	49.8	–	[50.5]	53.9	25.9	27.1	26.8
Full-time, part-time	9.5	13.6	–	[6.3]	10.7	11.8	16.3	15.0
Full-time, not working	3.5	3.2	–	[13.6]	4.2	4.1	1.7	2.4
Part-time, full-time	0.8	4.4	–	[2.8]	2.3	1.7	4.7	3.8
Part-time, part-time	27.5	28.4	–	[24.1]	27.6	46.1	40.0	41.7
Part-time, not working	1.0	0.6	–	[2.7]	1.3	10.3	10.2	10.2
All								
Full-time, full-time	72.3	74.7	[77.4]	[58.5]	72.9	50.3	40.0	44.5
Full-time, part-time	7.6	7.2	[2.4]	[5.0]	7.1	10.0	13.3	11.8
Full-time, not working	5.5	3.5	[2.7]	[13.2]	4.9	4.4	2.5	3.3
Part-time, full-time	0.4	2.3	[2.7]	[2.2]	1.4	1.3	3.6	2.6
Part-time, part-time	13.3	12.1	[11.6]	[19.0]	13.0	25.3	32.2	29.2
Part-time, not working	0.9	0.2	[3.2]	[2.1]	0.7	8.7	8.4	8.5
***Unweighted* N**								
Men	*213*	*250*	*21*	*9*	*493*	*82*	*38*	*120*
Women	*217*	*172*	*16*	*37*	*442*	*63*	*149*	*212*
All	*430*	*422*	*37*	*46*	*935*	*145*	*187*	*332*

	55–59							
	Has a current pension					No current pension		
	DB	DC	Both	D/k	All	Past	None	All
	%	%	%	%	%	%	%	%
Men								
Full-time, full-time	67.0	81.1	–	–	75.7	45.3	[71.9]	51.6
Full-time, part-time	5.7	7.9	–	–	6.9	10.3	[16.1]	11.6
Full-time, not working	23.3	5.7	–	–	12.3	14.0	[3.2]	11.5
Part-time, full-time	0.7	0.7	–	–	0.7	2.5	[0.0]	1.9
Part-time, part-time	1.6	3.7	–	–	3.3	22.1	[5.3]	18.2
Part-time, not working	1.7	0.8	–	–	1.1	5.8	[3.6]	5.2
Women								
Full-time, full-time	45.3	36.1	–	[24.2]	39.9	17.7	17.2	17.3
Full-time, part-time	15.0	12.9	–	[7.8]	13.6	8.4	7.7	7.9
Full-time, not working	12.8	11.8	–	[10.5]	12.4	4.2	6.6	5.9
Part-time, full-time	0.5	1.7	–	[3.1]	1.2	6.2	2.0	3.3
Part-time, part-time	20.7	26.4	–	[49.0]	25.6	37.5	48.4	45.2
Part-time, not working	5.7	11.1	–	[5.4]	7.4	26.0	18.1	20.4
All								
Full-time, full-time	56.3	67.3	–	[36.2]	60.8	36.0	28.2	32.1
Full-time, part-time	10.3	9.4	–	[5.9]	9.7	9.6	9.4	9.5
Full-time, not working	18.1	7.6	–	[10.4]	12.3	10.7	5.9	8.3
Part-time, full-time	0.6	1.0	–	[2.4]	0.9	3.8	1.6	2.7
Part-time, part-time	11.0	10.6	–	[41.0]	12.6	27.3	39.8	33.6
Part-time, not working	3.6	4.0	–	[4.1]	3.7	12.6	15.2	13.9
***Unweighted* N**								
Men	*159*	*244*	*13*	*9*	*425*	*116*	*34*	*150*
Women	*169*	*123*	*14*	*34*	*340*	*66*	*150*	*216*
All	*328*	*367*	*27*	*43*	*765*	*182*	*184*	*366*

	60–64							
	Has a current pension					No current pension		
	DB	DC	Both	D/k	All	Past	None	All
	%	%	%	%	%	%	%	%
Men								
Full-time, full-time	42.0	51.0	–	–	47.4	22.9	–	28.0
Full-time, part-time	10.7	15.9	–	–	15.3	12.8	–	12.8
Full-time, not working	40.0	21.5	–	–	27.2	17.9	–	20.6
Part-time, full-time	0.0	0.0	–	–	0.0	3.3	–	2.4
Part-time, part-time	3.8	7.5	–	–	5.7	27.6	–	23.1
Part-time, not working	3.5	4.0	–	–	4.5	15.5	–	13.1
Women								
Full-time, full-time	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Full-time, part-time	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Full-time, not working	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Part-time, full-time	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Part-time, part-time	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Part-time, not working	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
All								
Full-time, full-time	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Full-time, part-time	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Full-time, not working	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Part-time, full-time	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Part-time, part-time	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Part-time, not working	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
***Unweighted* N**								
Men	*53*	*110*	*5*	*11*	*179*	*82*	*29*	*111*
Women	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*
All	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*

	All							
	Has a current pension					No current pension		
	DB	DC	Both	D/k	All	Past	None	All
	%	%	%	%	%	%	%	%
Men								
Full-time, full-time	74.0	79.6	[85.8]	–	77.1	45.8	68.9	52.2
Full-time, part-time	6.4	7.3	[4.5]	–	7.0	10.5	9.6	10.3
Full-time, not working	16.6	7.5	[4.7]	–	11.2	12.0	10.8	11.7
Part-time, full-time	0.2	0.7	[2.5]	–	0.6	2.2	0.0	1.6
Part-time, part-time	1.5	3.9	[2.5]	–	2.9	20.3	6.9	16.6
Part-time, not working	1.4	1.0	[0.0]	–	1.2	9.2	3.7	7.7
Women								
Full-time, full-time	52.7	44.6	[52.4]	39.0	48.4	22.0	22.6	22.4
Full-time, part-time	11.7	13.3	[10.6]	6.9	11.8	10.2	12.4	11.7
Full-time, not working	7.2	6.5	[7.6]	12.3	7.4	4.2	4.0	4.0
Part-time, full-time	0.7	3.4	[0.0]	3.0	1.9	3.9	3.5	3.6
Part-time, part-time	24.8	27.7	[24.8]	34.9	26.8	42.0	43.8	43.3
Part-time, not working	2.9	4.6	[4.6]	3.9	3.7	17.7	13.8	14.9
All								
Full-time, full-time	64.5	69.1	72.6	45.1	66.0	38.9	35.3	37.1
Full-time, part-time	8.8	9.1	6.9	8.2	8.8	10.4	11.6	11.0
Full-time, not working	12.4	7.2	5.9	14.8	9.7	9.7	5.9	7.8
Part-time, full-time	0.4	1.5	1.5	2.0	1.1	2.7	2.5	2.6
Part-time, part-time	11.9	11.0	11.3	25.3	12.1	26.6	33.7	30.1
Part-time, not working	2.1	2.1	1.8	4.6	2.2	11.6	11.1	11.3
***Unweighted* N**								
Men	*425*	*604*	*39*	*29*	*1,097*	*280*	*101*	*381*
Women	*386*	*295*	*30*	*71*	*782*	*129*	*299*	*428*
All	*811*	*899*	*69*	*100*	*1,879*	*409*	*400*	*809*

Note: Figures for ‘All’ within each age group can be found in Table 3A.2.

Table 3A.11. Percentage of individuals aged 50 to SPA moving and not moving between working and not working between 2002–03 and 2004–05, by age band, sex and self-reported health status in 2002–03

	50–54			55–59			60–64			All		
	Fair/Poor	Good	V.good/ Excellent	Fair/Poor	Good	V.good/ Excellent	Fair/Poor	Good	V.good/ Excellent	Fair/Poor	Good	V.good/ Excellent
	%	%	%	%	%	%	%	%	%	%	%	%
Men												
Working, working	45.2	81.4	89.2	37.7	69.7	69.5	12.2	34.2	44.5	31.0	65.8	70.7
Working, not working	8.2	5.9	5.3	10.4	11.1	9.8	11.9	19.5	16.3	10.2	11.0	9.7
Not working, not working	44.4	11.9	4.2	48.6	16.5	17.5	73.2	43.5	36.6	56.0	21.2	17.3
Not working, working	2.3	0.8	1.3	3.4	2.6	3.2	2.8	2.8	2.6	2.8	2.0	2.3
Women												
Working, working	42.6	70.8	80.5	24.3	50.3	57.9	n/a	n/a	n/a	32.7	61.4	70.2
Working, not working	5.2	6.1	6.6	15.1	12.9	13.4	n/a	n/a	n/a	10.6	9.2	9.7
Not working, not working	47.1	20.3	11.0	58.7	33.2	26.9	n/a	n/a	n/a	53.4	26.2	18.3
Not working, working	5.1	2.7	1.9	1.9	3.6	1.8	n/a	n/a	n/a	3.3	3.2	1.9
All												
Working, working	43.9	76.0	84.8	30.6	60.2	63.5	n/a	n/a	n/a	31.7	63.9	70.5
Working, not working	6.7	6.0	6.0	12.9	12.0	11.6	n/a	n/a	n/a	10.4	10.3	9.7
Not working, not working	45.7	16.2	7.6	54.0	24.7	22.3	n/a	n/a	n/a	54.9	23.3	17.7
Not working, working	3.7	1.8	1.6	2.6	3.1	2.5	n/a	n/a	n/a	3.0	2.5	2.1
***Unweighted* N**												
Men	*131*	*233*	*370*	*165*	*261*	*362*	*167*	*163*	*290*	*463*	*657*	*1,022*
Women	*159*	*273*	*441*	*213*	*283*	*431*	*n/a*	*n/a*	*n/a*	*372*	*556*	*872*
All	*290*	*506*	*811*	*378*	*544*	*793*	*n/a*	*n/a*	*n/a*	*835*	*1,213*	*1,894*

Notes: Figures for ‘All’ within each age group can be found in Table 3A.1. Some people do not respond to the self-assessment of health question.

Table 3A.12. Percentage of those aged 50 to SPA in work in 2002–03 moving and not moving between full-time work, part-time work and not working between 2002–03 and 2004–05, by age band, sex and self-reported health status in 2002–03

	50–54			55–59			60–64			All		
	Fair/Poor	Good	V.good/ Excellent	Fair/Poor	Good	V.good/ Excellent	Fair/Poor	Good	V.good/ Excellent	Fair/Poor	Good	V.good/ Excellent
	%	%	%	%	%	%	%	%	%	%	%	%
Men												
Full-time, full-time	72.9	85.2	86.1	64.7	70.6	70.3	[38.3]	45.4	37.6	62.8	73.0	71.3
Full-time, part-time	6.9	4.7	4.6	6.9	7.7	8.8	[10.6]	7.5	18.7	7.6	6.3	8.8
Full-time, not working	11.6	6.4	3.4	18.2	11.8	10.1	[44.0]	25.8	19.6	20.6	11.7	8.8
Part-time, full-time	0.0	0.5	1.0	0.0	1.4	0.9	[0.0]	0.9	1.1	0.0	0.9	1.0
Part-time, part-time	5.8	2.7	3.3	6.8	6.6	7.8	[2.5]	10.1	15.8	5.6	5.5	7.2
Part-time, not working	2.7	0.5	1.7	3.4	1.9	2.1	[4.6]	10.3	7.2	3.4	2.7	2.9
Women												
Full-time, full-time	41.7	42.5	46.9	22.9	28.0	35.0	n/a	n/a	n/a	32.3	36.6	42.0
Full-time, part-time	5.0	18.1	10.1	7.7	10.5	12.8	n/a	n/a	n/a	6.4	15.1	11.2
Full-time, not working	4.1	3.5	3.5	14.3	9.2	8.9	n/a	n/a	n/a	9.2	5.8	5.7
Part-time, full-time	3.6	2.7	2.8	1.3	3.0	1.6	n/a	n/a	n/a	2.4	2.8	2.3
Part-time, part-time	39.9	28.9	32.9	31.0	37.3	31.7	n/a	n/a	n/a	35.4	32.3	32.4
Part-time, not working	5.7	4.2	4.0	22.7	11.9	10.0	n/a	n/a	n/a	14.2	7.3	6.5
All												
Full-time, full-time	58.2	64.8	67.3	45.0	52.4	53.0	n/a	n/a	n/a	50.1	58.0	58.7
Full-time, part-time	6.1	11.1	7.2	7.3	8.9	10.8	n/a	n/a	n/a	7.1	9.9	9.8
Full-time, not working	8.1	5.0	3.4	16.4	10.7	9.5	n/a	n/a	n/a	15.8	9.3	7.5
Part-time, full-time	1.7	1.5	1.8	0.6	2.1	1.3	n/a	n/a	n/a	1.0	1.7	1.6
Part-time, part-time	21.8	15.3	17.5	18.3	19.7	19.5	n/a	n/a	n/a	18.0	16.5	18.0
Part-time, not working	4.1	2.3	2.8	12.5	6.2	6.0	n/a	n/a	n/a	7.9	4.6	4.4
***Unweighted* N**												
Men	*70*	*200*	*343*	*84*	*209*	*281*	*38*	*85*	*167*	*192*	*494*	*791*
Women	*73*	*207*	*374*	*84*	*173*	*299*	*n/a*	*n/a*	*n/a*	*157*	*380*	*673*
All	*143*	*407*	*717*	*168*	*382*	*580*	*n/a*	*n/a*	*n/a*	*349*	*874*	*1,464*

Notes: Figures for 'All' within each age group can be found in Table 3A.2. Some people do not respond to the self-assessment of health question.

Table 3A.13. Percentage of individuals aged 50 to SPA in paid work in 2002–03 who stay in paid work or move out of paid work between 2002–03 and 2004–05, by sex, job type and self-reported health status in 2002–03

	Manual workers			Non-manual workers		
	Fair/Poor	Good	V.good/ Excellent	Fair/Poor	Good	V.good/ Excellent
	%	%	%	%	%	%
Men						
Working, working	68.8	86.9	87.2	80.5	84.8	88.3
Working, not working	31.2	13.1	12.8	19.5	15.2	11.7
Women						
Working, working	[73.7]	90.4	86.5	76.2	86.0	88.2
Working, not working	[26.3]	9.6	13.5	23.8	14.0	11.8
All						
Working, working	70.2	87.9	87.0	78.3	85.4	88.3
Working, not working	29.8	12.1	13.0	21.7	14.6	11.7
***Unweighted* N**						
Men	*86*	*193*	*290*	*111*	*310*	*522*
Women	*39*	*81*	*137*	*123*	*309*	*552*
All	*125*	*274*	*427*	*234*	*619*	*1,074*

Table 3A.14. Percentage of individuals aged 50 to SPA moving and not moving between working and not working between 2002–03 and 2004–05, by age band, sex and number of self-reported mobility limitations in 2002–03

	50–54			**55–59**			**60–64**			**All**		
No. of limitations:	None	One	Two+	None	One	Two+	None	One	Two+	None	One	Two+
	%	%	%	%	%	%	%	%	%	%	%	%
Men												
Working, working	88.0	78.6	43.6	70.4	73.9	35.7	40.6	37.3	16.6	70.3	65.4	31.1
Working, not working	5.3	7.2	7.4	9.4	9.4	13.5	17.6	17.3	12.4	9.7	10.8	11.4
Not working, not working	5.5	12.5	47.5	16.7	15.2	47.6	38.7	42.3	69.5	17.6	21.8	55.5
Not working, working	1.2	1.8	1.4	3.4	1.5	3.1	3.2	3.2	1.5	2.4	2.1	2.1
Women												
Working, working	79.2	76.5	51.8	54.6	51.6	36.5	n/a	n/a	n/a	68.2	64.5	43.8
Working, not working	5.5	5.4	7.9	14.6	11.2	13.5	n/a	n/a	n/a	9.5	8.2	10.8
Not working, not working	13.8	12.9	37.0	28.6	34.1	47.9	n/a	n/a	n/a	20.4	23.1	42.6
Not working, working	1.5	5.2	3.4	2.3	3.1	2.2	n/a	n/a	n/a	1.9	4.2	2.8
All												
Working, working	84.1	77.5	48.8	63.3	61.9	36.2	n/a	n/a	n/a	69.5	65.0	37.5
Working, not working	5.4	6.3	7.7	11.7	10.4	13.5	n/a	n/a	n/a	9.7	9.6	11.1
Not working, not working	9.2	12.7	40.8	22.1	25.3	47.8	n/a	n/a	n/a	18.6	22.3	49.0
Not working, working	1.3	3.6	2.7	2.9	2.4	2.6	n/a	n/a	n/a	2.2	3.0	2.4
***Unweighted* N**												
Men	*492*	*118*	*129*	*476*	*130*	*187*	*343*	*100*	*187*	*1,311*	*348*	*503*
Women	*465*	*148*	*262*	*435*	*166*	*329*	*n/a*	*n/a*	*n/a*	*900*	*314*	*591*
All	*957*	*266*	*391*	*911*	*296*	*516*	*n/a*	*n/a*	*n/a*	*2,211*	*662*	*1,094*

Note: Figures for 'All' within each age group can be found in Table 3A.1.

Table 3A.15. Percentage of those aged 50 to SPA in work in 2002–03 moving and not moving between full-time work, part-time work and not working between 2002–03 and 2004–05, by age band, sex and number of self-reported mobility limitations in 2002–03

	50–54			**55–59**			**60–64**			**All**		
No. of limitations:	None	One	Two+	None	One	Two+	None	One	Two+	None	One	Two+
	%	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*
Men												
Full-time, full-time	86.4	81.6	73.8	72.7	66.8	59.4	[37.2]	45.5	44.0	73.2	69.0	60.5
Full-time, part-time	4.5	6.6	4.7	8.2	11.6	4.1	[17.1]	13.3	5.6	7.9	9.7	4.7
Full-time, not working	3.8	6.4	13.8	9.8	8.8	24.9	[20.9]	24.8	37.6	8.8	10.9	24.2
Part-time, full-time	0.8	0.9	0.0	1.2	1.0	0.0	[1.5]	0.0	0.0	1.0	0.7	0.0
Part-time, part-time	3.2	2.5	6.2	6.3	9.5	8.3	[14.7]	9.0	7.6	6.2	6.4	7.4
Part-time, not working	1.3	2.0	1.4	1.8	2.5	3.3	[8.7]	7.3	5.2	2.8	3.2	3.1
Women												
Full-time, full-time	47.1	43.4	40.4	32.4	31.6	28.1	n/a	n/a	n/a	41.3	38.5	34.5
Full-time, part-time	11.6	14.0	12.1	10.1	14.7	11.4	n/a	n/a	n/a	11.0	14.3	11.7
Full-time, not working	2.9	4.2	4.8	11.0	5.2	10.5	n/a	n/a	n/a	6.1	4.6	7.5
Part-time, full-time	3.3	3.3	1.2	3.1	0.9	0.7	n/a	n/a	n/a	3.3	2.3	0.9
Part-time, part-time	31.7	32.5	33.9	32.8	34.7	33.3	n/a	n/a	n/a	32.1	33.4	33.6
Part-time, not working	3.4	2.6	7.7	10.5	12.8	16.0	n/a	n/a	n/a	6.2	6.8	11.7
All												
Full-time, full-time	69.8	62.2	51.5	56.1	50.5	40.3	n/a	n/a	n/a	61.3	55.7	45.7
Full-time, part-time	7.5	10.3	9.6	9.0	13.0	8.5	n/a	n/a	n/a	9.1	11.7	8.7
Full-time, not working	3.4	5.3	7.8	10.3	7.1	16.2	n/a	n/a	n/a	7.8	8.2	14.7
Part-time, full-time	1.9	2.1	0.8	2.0	0.9	0.4	n/a	n/a	n/a	1.9	1.4	0.5
Part-time, part-time	15.2	17.7	24.7	17.2	21.2	23.5	n/a	n/a	n/a	15.9	18.1	22.4
Part-time, not working	2.2	2.3	5.6	5.4	7.3	11.0	n/a	n/a	n/a	4.0	4.8	8.0
***Unweighted* N**												
Men	*70*	*200*	*343*	*84*	*209*	*281*	*38*	*85*	*167*	*192*	*494*	*791*
Women	*73*	*207*	*374*	*84*	*173*	*299*	*n/a*	*n/a*	*n/a*	*157*	*380*	*673*
All	*143*	*407*	*717*	*168*	*382*	*580*	*n/a*	*n/a*	*n/a*	*349*	*874*	*1,464*

Notes: Figures for ‘All’ within each age group can be found in Table 3A.2. Some people do not respond to the mobility question.

Table 3A.16. Percentage of individuals aged 52 to 59 in 2004–05 in a job with a compulsory retirement age in 2004–05 and percentage of these who would like to work beyond this age, by sex

	% of all in paid employment	**% of those with any CRA**				
	Any CRA	60	65	Other <65	Other >65	All
Men						
% with this compulsory retirement age	49.7	[9.1]	82.3	–	–	100.0
Of which:						
% who would like to work beyond this age if employer allowed it	16.0	[41.3]	12.0	–	–	16.0
Women						
% with this compulsory retirement age	34.0	21.4	71.2	–	–	100.0
Of which:						
% who would like to work beyond this age if employer allowed it	23.2	37.6	19.7	–	–	23.2
All						
% with this compulsory retirement age	41.9	14.1	77.8	–	–	100.0
Of which:						
% who would like to work beyond this age if employer allowed it	18.9	39.0	14.9	–	–	18.9
***Unweighted* N**						
Men	*721*	*34*	*298*	*18*	*10*	*360*
Women	*825*	*60*	*205*	*3*	*16*	*284*
All	*1,546*	*94*	*503*	*21*	*26*	*644*

Table 3A.17. Percentage of individuals aged 52 to SPA in 2004–05 who report having a disability that limits the work they can do in 2004–05, by sex, age band and work status in 2004–05

	% with any health problem that limits kind/amount of work they can do				**% of those currently in work who have a health problem that limits the kind/amount of work they can do in their current job**			***Unweighted* N**			
	Not working	Part-time	Full-time	All	Part-time	Full-time	All	*Not working*	*Part-time*	*Full-time*	*All*
Men	57.8	18.2	9.4	25.8	8.6	3.5	4.3	*596*	*196*	*1,054*	*1,846*
52–54	62.8	–	6.4	17.3	–	2.1	2.7	*58*	*20*	*263*	*341*
55–59	68.3	16.9	10.7	26.5	9.5	4.3	5.0	*218*	*92*	*534*	*844*
60–64	48.9	16.5	10.3	30.1	7.4	3.6	4.6	*320*	*84*	*257*	*661*
Women	50.8	17.1	10.2	25.5	8.9	4.0	6.5	*443*	*474*	*463*	*1,380*
52–54	50.3	15.3	6.5	21.2	7.4	2.4	4.7	*103*	*130*	*155*	*388*
55–59	50.9	17.8	12.2	27.3	9.5	4.9	7.4	*340*	*344*	*308*	*992*
All	55.0	17.4	9.6	25.7	8.8	3.7	5.2	*1,039*	*670*	*1,517*	*3,226*
52–54	55.2	17.3	6.4	19.3	7.7	2.2	3.6	*161*	*150*	*418*	*729*
55–59	58.4	17.6	11.2	26.9	9.5	4.5	6.1	*558*	*436*	*842*	*1,836*

Table 3A.18. Percentage of individuals aged 52 to SPA in 2004–05 who report having a work disability in 2004–05, by sex, age band, work status in 2004–05 and age-specific quintile of total wealth in 2002–03

	52–54					55–59					60–64					All				
	Poorest	2nd	3rd	4th	Richest	Poorest	2nd	3rd	4th	Richest	Poorest	2nd	3rd	4th	Richest	Poorest	2nd	3rd	4th	Richest
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Men	35.3	26.1	11.0	7.8	12.8	54.0	32.0	23.0	14.0	13.2	60.1	43.1	27.7	26.9	11.1	51.4	34.7	21.8	16.8	12.2
Of which:																				
Full-time	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	11.6	24.6	29.5	25.5	22.3
Part-time	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4.4	5.3	14.2	6.9	7.8
Not working	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	84.0	70.2	56.3	67.6	70.0
Women	36.6	27.2	6.8	17.4	12.2	41.7	27.9	24.4	25.4	19.2	n/a	n/a	n/a	n/a	n/a	40.0	27.7	19.3	23.0	17.6
Of which:																				
Full-time	–	–	–	–	–	–	–	–	–	–	n/a	n/a	n/a	n/a	n/a	5.6	13.6	17.0	19.9	18.9
Part-time	–	–	–	–	–	–	–	–	–	–	n/a	n/a	n/a	n/a	n/a	13.5	28.9	27.3	29.8	29.8
Not working	–	–	–	–	–	–	–	–	–	–	n/a	n/a	n/a	n/a	n/a	80.9	57.5	55.7	50.4	51.3
All	36.0	26.8	9.0	11.8	12.5	47.4	30.0	23.7	19.3	16.5	n/a	n/a	n/a	n/a	n/a	46.0	31.8	20.8	19.0	14.3
Of which:																				
Full-time	–	–	–	–	–	–	–	–	–	–	n/a	n/a	n/a	n/a	n/a	9.1	20.7	24.9	23.1	20.7
Part-time	–	–	–	–	–	–	–	–	–	–	n/a	n/a	n/a	n/a	n/a	8.1	13.7	19.0	16.7	18.0
Not working	–	–	–	–	–	–	–	–	–	–	n/a	n/a	n/a	n/a	n/a	82.7	65.6	56.1	60.2	61.3
***Unweighted* N**																				
Men	*57*	*54*	*72*	*87*	*68*	*136*	*161*	*180*	*184*	*174*	*78*	*125*	*115*	*145*	*196*	*271*	*340*	*367*	*416*	*438*
Women	*92*	*89*	*75*	*67*	*59*	*191*	*175*	*201*	*179*	*221*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*283*	*264*	*276*	*246*	*280*
All	*149*	*143*	*147*	*154*	*127*	*327*	*336*	*381*	*363*	*395*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*554*	*604*	*643*	*662*	*718*

4. Self-reported physical health

Elizabeth Breeze *University College London*

Hayley Cheshire *National Centre for Social Research*

Paola Zaninotto *University College London*

Key points arising from this chapter are:

- Seventeen chronic conditions were considered, all of which have potential to increase difficulties in daily function among sufferers. A quarter of participants recorded at least one additional diagnosis between the interviews in 2002–03 and 2004–05 (median time lapse: 27 months).
- By the end of the second wave of fieldwork, half those in their early 50s in 2002–03 were without diagnosis of any of these conditions but only one-in-ten of those aged 80 years or over.
- Women had an advantage in prevalence and a small advantage in incidence of diagnosis of at least one of seven cardiovascular disease (CVD)-related conditions, but this did not apply when all 17 conditions were considered together.
- Of four CVD-related conditions and six other physical diseases analysed separately, percentage incidence of diagnosis was particularly high for cataracts among those aged 75 and over in 2002–03 (15% of men and 22% of women without previous cataracts) and for arthritis among women aged 60 and over (one-in-eight of those without the condition previously).
- Experience of chest pain symptoms was not strongly age-related.
- Experience of troubling pain, and, more specifically, of severe pain in the back, hip, knees or feet, was not age-related.
- Balance problems and dizziness were considerably more common the older the person (for example, three-out-of-five women aged 80 and over experienced one or both of these at least sometimes, compared with only one-out-of-five women in their 50s).
- Older age was also associated with greater likelihood of multiple falls.
- Falls may affect life more if one lives alone. More people aged 60 to 74 living alone experienced them than their counterparts living with others. This was not true of older people still living in the community.
- Among people aged under 75, greater wealth was accompanied by greater health, as measured in this chapter. This applied to incidence of at least one disease, being free of diagnosis of the 17 conditions, and experience of chest pain, of balance problems or dizziness, of severe pain and of specific severe pain at two or more specific parts of the body (back, hip, knee, foot).

- Once aged at least 75, associations between health indicators and wealth largely disappeared. They remained for women for incidence of CVD-related conditions, experience of angina symptoms, experience of severe pain generally and experience of severe pain in multiple specific parts of the body.

This chapter has two main themes: first, major changes in health status and, second, the prevalence of certain symptoms that often precede or accompany serious illness or disability.

Diseases of the circulatory system (diseases affecting the circulation of the blood in the heart, arteries, capillaries or veins) are the most common causes of death in people aged 75 and over (National Statistics, 2005); for deaths among those aged 50 to 74, neoplasms and circulatory diseases account for similar proportions of deaths.

Various forms of cardiovascular-related diseases are covered in a section on diagnosed disease. These are angina, heart attack, stroke, heart failure, abnormal heart rhythm and heart murmur. Participants are also asked about diagnosed high blood pressure or high cholesterol. The interview includes questions to indicate whether people may have experienced angina or myocardial infarction, even if they have not been diagnosed as such. Responses to these are contrasted with the reports of diagnosed conditions. An important common factor for these two conditions is that there are procedures for preventing them occurring in the first place and for alleviating them and preventing recurrence. Angina pectoris is experienced as a crushing sensation in the chest and is most often caused by thickening of the arteries leading to the heart. It results in heavy burdens for patients in terms of disability and for society in terms of healthcare costs (McDermott, 2001). Each year, more than 20,000 people in the UK develop angina for the first time (Department of Health, 2000, chapter 4). Approximately 300,000 people die of a heart attack or myocardial infarction each year in the UK (Department of Health, 2000, chapter 3), but many survive, and the results reported below for diagnosed disease and symptoms refer to people who have survived. The chances of further heart attacks and disability can be reduced for many people by changing habits such as smoking, poor diet and inactivity and by taking prescribed medication such as aspirin, beta blockers and cholesterol-lowering drugs. This group of survivors is sizeable and important in terms of opportunity to influence the burdens of illness and healthcare.

The interview also asks people about some serious forms of chronic disease that are not of the cardiovascular system. The ones mentioned in this chapter are musculoskeletal (arthritis and osteoporosis), cancers, respiratory diseases (chronic lung disease other than cancer, and asthma) and eye diseases.

There are various forms of arthritis, the two most common being rheumatoid arthritis and osteoarthritis. Joint pain is the dominant symptom of osteoarthritis, which may involve damage to various parts of the joint (hip, knee, hand etc.). It is the second most common cause of work disability in the US (Arden and Nevitt, 2006). The causes of rheumatoid arthritis are still the subject of uncertainty but there is evidence of a genetic component (Worthington, 2005). It is an inflammatory condition that is more disabling than osteoarthritis but less common (Woolf and Pfleger, 2003). People with rheumatoid arthritis are more prone to cardiovascular disease than average (Solomon et al., 2003). Osteoporosis is characterised by degeneration of the bones, and women of advancing years are prone to it, partly because of reduced oestrogen levels (Woolf and Pfleger, 2003).

The respiratory diseases are grouped under generic headings. Chronic lung disease can take a number of forms such as chronic bronchitis, chronic obstructive pulmonary disease (COPD) and emphysema. Smoking and environmental hazards are major risk factors for chronic lung diseases. Early life factors are also implicated (Anto et al., 2001). Only asthma is separated out; it is a disease of all ages (Bousquet et al., 2005), whereas COPD tends to become more prevalent with older age. These diseases can have a major impact on daily life by reducing mobility, making people anxious (Ho and Jones, 1999), reducing participation in social activities and increasing absence from work.

Chronic eye diseases can also be disabling. The causes of cataracts, the most common condition, are still the subject of debate. The resulting blurred vision can interfere with daily life – such as driving, reading and cooking – but most cataracts can be treated successfully (RNIB and RCOphth, 2001).

Symptoms covered in this chapter include balance, dizziness and falls. ‘Problems with your balance’ were not defined for respondents but can be a consequence of physical defects in various parts of the body, e.g. disorders of the balance organs in the ear, faulty visual cues, stiff joints or weak leg muscles. The sense of imbalance can trigger other symptoms such as anxiety, fatigue, headaches, neck pain and difficulty in concentrating. Imbalance can also result in falls, with potential major consequences, as described below.

Common causes of falls are muscle weakness, balance problems and sway when walking, and cognitive impairment (Abt Associates Inc., 2004). Environmental factors include hazards to trip over. Some medications (possibly including those to lower blood pressure) can lead to physiological changes that increase the risk of falling (Riefkohl et al., 2003). Certain cardiovascular conditions (including abnormal heart rhythm) may more directly play a part as well. Fear of falling is in itself a risk factor, partly because it leads people to become less physically active and hence their muscles become weaker. Slow walking speed (reported in Chapter 6) may be an indicator of vulnerability to falling (Bueno-Cavanillas et al., 2000), which is exacerbated by reduced activity after having a fall. Once a person has started experiencing falls, their chance of future falls greatly increases (Abt Associates Inc., 2004). Although most falls do not result in injury, a fall-related injury can have serious long-term implications, such as physical disability, entry into long-term care or other dependency, and psychological problems (Department of Health, 2001, Standard 6). If the faller has osteoporosis, they are at high risk of bone fracture (Department of Health, 2001), with resulting threats to their independence. After an osteoporotic fracture, half can no longer live independently (Department of Health, 2001, Standard 6). There have been extensive reviews of interventions to prevent falls in elderly people, which show that there is no quick solution but that there are ways of reducing risks (Gillespie et al., 2003).

Pain is a complex phenomenon that crosses the boundaries between physical damage to the body and psychological states that affect the intensity of pain that people feel and the effects it has for them. For example, there is evidence that depressed people are more likely to develop chronic back pain (Currie and Wang, 2005). In a study of older people with knee pain, the likelihood of self-reported disability and the ability to climb stairs 30 months after interview were most strongly related to knee strength and to self-efficacy (a measure of confidence in the ability to climb stairs) at the start of the period (Rajeski et al., 2001). As mentioned above, joint pain is a major symptom of arthritis. Chronic pain will often lead to a change in behaviour, such as restriction of physical activity, which can then affect daily functioning. Being overweight or obese can exacerbate the risk of disability (Lamb et al., 2000).

The main analyses compare incidence of disease or prevalence of symptoms by sex and age and then by age-specific wealth quintile, described in Chapter 1. Analyses of change are confined to core members interviewed in person at both wave 1 and wave 2; analyses of prevalence at wave 2 refer to core members interviewed in person at wave 2. The only difference between these two sets was that the former excluded a small number of people interviewed by proxy in 2002–03 but not in 2004–05. The analyses presented here show associations between age or wealth and various health indicators. They do not necessarily indicate cause. It is beyond the scope of this report to explore thoroughly which factors are responsible for age and wealth differences that are found.

4.1 Mortality

Methods

The mortality data have been described in Chapter 2. In this chapter, we divide the deaths into those from circulatory diseases and those with other causes. Deaths from circulatory diseases were defined as those in chapter I of ICD-10.[1] These have been separated out because there is a special emphasis on cardiovascular diseases in ELSA and they were expected to be the only group with sufficiently high numbers of deaths to separate out (190 were attributed to this cause). There were 48 deaths for which cause was unknown, mainly because these individuals had not been marked up with the Office for National Statistics (ONS) and their deaths were reported by the field staff. In total, 5.5% of the core participants at wave 1 had not given permission to be followed up for information from ONS, but for most of these, fact of death would become known through the field operations.

Results

There is a sharp increase in death rates with age (as a percentage of core members who took part in 2002–03) both for the circulatory diseases and for

[1]The international classification of diseases is the standard classification produced under the aegis of the World Health Organisation. The 10th version was endorsed by the 43rd World Health Assembly and came into use in 1994 (website accessed 5 June 2006: http://www.who.int/classifications/icd/en/).

the heterogeneous group of other causes (Table 4A.1). Circulatory diseases accounted for nearly half of deaths of known cause among people aged 75 and over in 2002–03. There was a steeper negative trend of circulatory deaths than of other deaths with increasing wealth for men, but not for women (Table 4A.2). Even in the poorest quintile of wealth for women aged under 75 in 2002–03, circulatory deaths were still rare.

Death rates from ischaemic heart disease are lower the higher the education level among people aged 60 years and over in several northern European countries, including England and Wales, but not in Spain or Italy (Avendano et al., 2006). The country variations are attributed in part to differences in socio-economic patterns of behaviours such as smoking and diet. It is argued that cardiovascular risk is influenced by the cumulation of socio-economic and behavioural factors throughout the life course (Davey Smith and Hart, 2002).

4.2 Absence and incidence of selected chronic diseases

Methods

In each wave of the survey, respondents are asked to report certain chronic diseases that have been diagnosed by a doctor. The second and subsequent time that they take part, an individual is reminded of previous reports of diagnosed disease, given the opportunity to disagree with these, and asked for additional conditions diagnosed since the last interview. In this chapter, percentage incidence of disease is calculated from the numbers who reported a disease anew in the second wave of fieldwork as a percentage of those who did not list the disease at the first wave. The base excludes anyone who did not answer the question at either wave. The diseases reported in this chapter are the ones that were most prevalent and/or had the greatest incidence of new cases; others are not reported because the small numbers make estimates imprecise. In the main analyses, no account is taken of the small number of people who, at wave 2, disputed that they had ever had the disease or those who, when they reported the new diagnosis, gave a date prior to the first interview.

The main indicator of incidence of cardiovascular-related (CVD-related) diseases omits high blood pressure and high cholesterol as these are often asymptomatic and are arguably risk factors for disease rather than the disease itself. Moreover, high cholesterol was only listed as a specific condition in wave 2 (2004–05) and it is likely that in wave 1 (2002–03) it was under-reported as people would have had to include it as an ‘other’ cardiovascular disease. The seven categories of diseases included in this grouping are: angina; myocardial infarction; heart failure; abnormal heart rhythm; heart murmur; diabetes; and stroke. There is a code for ‘other’, but as far as possible these are recoded into the listed conditions; the small heterogeneous group left has been omitted from the analyses. There are also separate analyses for ischaemic heart disease, i.e. angina and myocardial infarction combined, abnormal heart rhythm (often atrial fibrillation), diabetes and stroke.

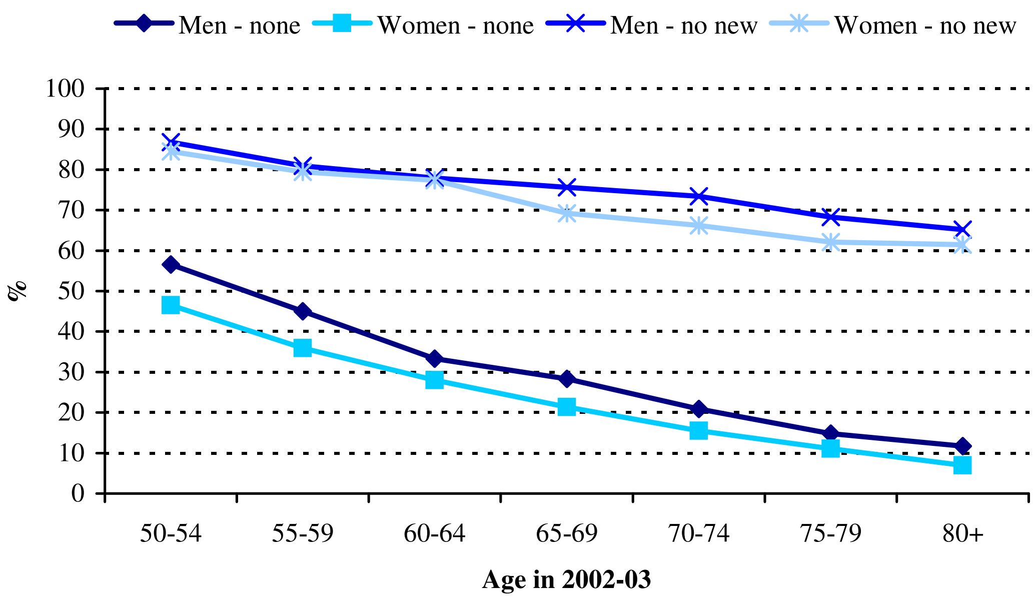
The main chronic eye diseases recorded in the interview are glaucoma, diabetic eye disease and cataract. Of these, the incidence of cataract is most common. ELSA records whether or not the respondent has at least one cataract and does not measure specific cataracts, so does not distinguish whether the person with ongoing cataracts is referring to the same cataract as in the previous wave or a new cataract in the other eye, or re-occurrence of a cataract.

Six other groups of diseases are labelled ‘other chronic physical disease’. These are the two musculoskeletal categories of arthritis and osteoporosis, the two respiratory disease categories of lung disease and asthma, cancers and Parkinson’s disease (the last being uncommon still in this group and not analysed separately at all). Arthritis in this chapter includes all forms of arthritis. Although cancers are a major cause of mortality, they have not been a major focus of the ELSA study – the incidence described here compares those with some form of cancer with those who had none. ELSA does not systematically record developments of secondaries or new primaries.

Incidence by sex and age

One-quarter of the sample reported at least one new condition at their second interview that they had not reported at the first. The likelihood of doing this was age-related, being around one-in-seven of those in their early 50s in 2002–03 and one-in-three of those aged 75 and over (Table 4A.3 and Figure 4.1).

Figure 4.1. Percentages without selected diseases by 2004–05 and percentages without additional selected diseases in 2004–05



The base numbers for Tables 4A.4–4A.6 concerning incidence are the subsets who did not report the specified conditions in their first ELSA interview in 2002–03 but did answer the question.

The time lapse between interviews ranged from 22 to 38 months, with a median of 27 months. Logistic regression models were run to check whether the patterns by age and sex would be different if adjusted for lapsed time (not shown). The adjustment was slight and has not been made in the tables presented here.

For the broad groups of diseases, there were positive gradients with age in percentages with at least one (additional) diagnosis by the second wave of fieldwork (Table 4A.4). This was particularly steep for eye conditions among women. There was one anomaly: a fairly low percentage of men aged 80 years and over reported a new CVD-related disease. As higher percentages of older age groups already had at least one disease by 2002–03, one can infer that co-morbidity was also tending to increase with age.

Incidence of specific conditions was analysed by broader age groups, as the numbers of incident cases were too small for a finer breakdown. The base numbers were larger than for the generic groups of conditions because they only excluded those with the specific disease at wave 1 and those for whom their status at either wave was uncertain (typically small numbers). For most specific conditions, 90% or more of participants in both waves were included in the base for Table 4A.5. The exceptions to this were ischaemic heart disease (85% of men). Even in the oldest age group, previous conditions ruled out only around one-in-ten of the sample for diabetes, stroke and abnormal heart rhythm. However, among men aged 75 years or over at wave 1, one-in-four were excluded for ischaemic heart disease.

Of the CVD-related diseases among men, the incidence of stroke showed a clear positive gradient with age and the incidence of angina or myocardial infarction was also greatest in the oldest age group (75 years and over) (Table 4A.5). However, the oldest age group did not have the highest incidence percentage for diabetes or abnormal heart rhythm. Among women, the oldest age group had the highest incidence of all four CVD-related disease groups but the difference between the younger two age groups was small in absolute terms.

One key message to emerge is that incidence rates for the circulatory diseases were not dissimilar for men and women, although the women had an overall advantage, taking into account lesser prevalence of prior disease as seen in Table 4A.7.

With respect to other specific diseases, 90% or more of men in both waves were included in the base for Table 4A.6 for all but arthritis (75%). Among women, 90% or more of the sample were not yet diagnosed by 2002–03 with respect to cancer, osteoporosis and lung disease, and between 80% and 90% for cataract and asthma. However, only 61% were arthritis-free. For arthritis and cataract, the percentages free of diagnosis at the first interview were much lower at the older end of the age spectrum, being about two-thirds of men and half of women aged 75 years and over for arthritis, and about 70% of men and 57% of women for cataract.

Incidences of the musculoskeletal diseases over the 27-month period were greater among those aged 75 and over than among those in their 50s in 2002–03, but the respiratory conditions did not show a consistent pattern by age and the numbers reporting new disease in this short period were low. The oldest group of men were most likely to have had chronic lung disease diagnosed, however. Fairly small percentages reported first-time cancer diagnoses even in the oldest age groups. Cataracts, on the other hand, showed steep age gradients such that only 2% of those aged under 60 were diagnosed but 15% of men and 22% of women aged 75 or over had received the diagnosis between the two waves.

Absence of selected diagnoses

Table 4A.7 and Figure 4.1 show the percentages of people who had not reported diagnoses of groups of disease at either the first or second rounds of interviewing. The groups cover the conditions noted in the previous paragraphs. As expected, the older age groups were much less likely to be free of diagnoses than the younger ones. Although women appeared to have an advantage for the CVD-related diseases, they did not for the other categories. Women aged 75 or over were markedly less likely to be free of eye disease than their younger counterparts and than men of a similar age. Even though those aged 75 and over had avoided premature mortality and were still living in the community, only around one-in-ten did not report any of the diagnoses covered in this table.

Incidence and absence of selected diagnoses by age-specific wealth

We analysed the number of new conditions reported between the two rounds of fieldwork, as a percentage of everyone who took part, not just those free of the diseases at the first wave (Table 4A.8). We found that the richest men and women were most likely to have escaped new diagnoses if they were aged under 75, but they did not have a substantial advantage over their poorer counterparts in the oldest age group. Among women the proportions reporting two or more new diagnoses in 2004–05 were greater if they were aged 75 or over in 2002–03 than if they were younger, but there was not a clear wealth gradient in the size of this difference between age groups.

Table 4A.9 shows that the richest had advantages in not having been diagnosed with any of the seven CVD-related diseases. In general, the poorest are least likely to be without a diagnosis. These are cross-sectional analyses so the difference between age groups may not reflect the progression of disease through time (successive waves of fieldwork can show this). Among the three richest wealth quintiles, the men aged 75 years and over are substantially less likely than those aged 60 to 74 to be free of these diagnoses. Among the two poorest quintiles, absence of such diagnoses is similar in these age groups. The consequence is that the wealth gradient has disappeared among the oldest age group. This would be consistent with delayed onset for the more materially advantaged men. For women, there is still a wealth gradient in percentages without these CVD-related diagnoses at age 75 and over. Nevertheless, among the richer groups the age difference in prevalence is greatest between the two oldest groups, again consistent with a delayed onset (e.g. in the richest quintile, 87% of 50-to 59-year-olds, 80% of those aged 60 to 74 and only 63% of those aged over 74 were without diagnoses; among the three poorest quintiles, there was a substantial drop in the percentage disease-free between the younger two groups).

On the other hand, for the group of 'other' diseases (musculoskeletal, respiratory, cancer and Parkinson's disease), the only substantial steady gradient of increasing advantage with greater wealth appears among men aged 50 to 59 years (Table 4A.10). The richest men and women still have an advantage over the poorest at age 60–74, but there is not a steady progression across the quintiles. Differences between the wealth quintiles are relatively minor among the oldest group.

4.3 Symptom indicators of angina and possible heart attack

Methods

Two standard sets of questions were used to ascertain current experience of symptoms that could be indicative of cardiovascular disease. The Rose Angina Questionnaire (Rose and Blackburn, 1986) asks about experience of chest pain on walking and classifies people into none, grade 1 or grade 2.[2] It has been validated against clinical diagnosis (Bass, Follansbee and Orchard, 1981; Blackwalder et al., 1981). All participants were asked these questions.

Based on the Rose Angina Questionnaire, participants were classified as having had a possible myocardial infarction (heart attack) if they reported having ever had an attack of severe pain across the front of the chest, lasting for half an hour or more. This is referred to in this chapter as 'possible myocardial infarction'.

People whose situation was not clear because they said that they never walked or could not walk were excluded from the analysis of angina (236 people).

Symptoms experienced: variation by age and sex

Six per cent of both men and women fulfilled the criteria for angina, with a quarter to a third of these having the more severe form (Table 4A.11). For men, there is a trend of increasing prevalence with age, ranging from 3% of men aged 52–54 years to 8% of those aged 75–79 years, with the oldest age group having a lower reported prevalence at 6%. The two youngest female

[2]Rose defined angina as a chest pain or discomfort with the following characteristics:

1. the site must include *either* the sternum (any level) *or* the left arm and left anterior chest (defined as the anterior chest wall between the levels of clavicle and lower end sternum);

2. it must be provoked by either hurrying or walking uphill (or by walking on the level, for those who never attempt more);

3. when it occurs on walking it must make the subject either stop or slacken pace, unless nitroglycerin is taken;

4. it must disappear on a majority of occasions in 10 minutes or less from the time when the subject stands still.

Grade 1 angina occurs when the subject only experiences the chest pain when walking uphill or hurrying.

Grade 2 angina occurs when the subject experiences the chest pain even when walking at an ordinary pace on the level.

groups have slightly lower prevalence than older women, but otherwise there is not a clear trend with age. Prevalence of possible myocardial infarction is greater for men than for women and greater than for angina, being 10% of men and 6% of women (Table 4A.12). There is not a continuing upward trend of increasing prevalence with age. For men, possible myocardial infarctions were most common among those aged 70–79 years and least common among those aged 52–54 years. The age pattern for women is not straightforward.

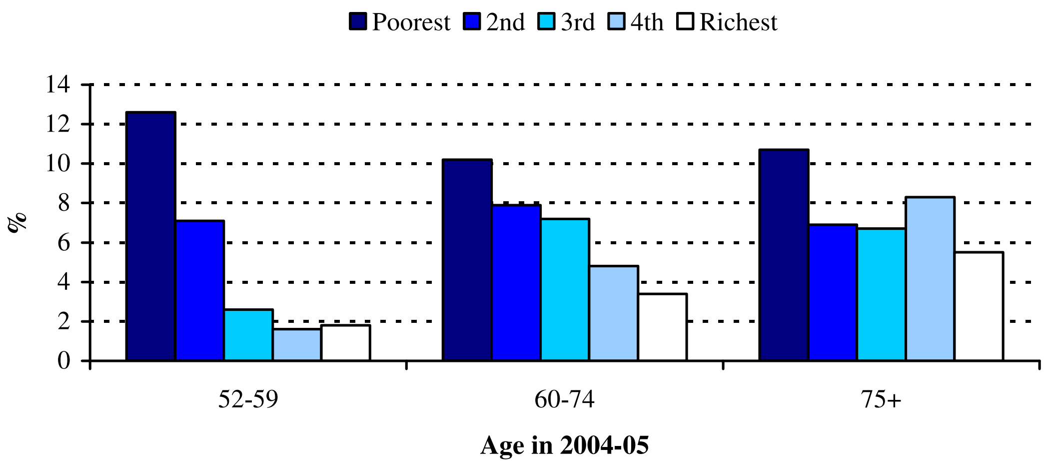
It is noticeable that the oldest age group did not have the highest prevalence of these symptoms. This group would be most affected by the exclusion of people in long-term care and also by prior deaths of those who had cardiovascular disease. These omissions would tend to reduce the prevalence observed in our sample. The prevalence of angina may also be underestimated as a result of excluding those who never walk or cannot walk; this group accounted for 8% of those aged 80 years or over compared with 3% or less of others.

Symptoms experienced: variation by age-specific wealth

For all except the oldest men, there is a decreasing tendency to report angina symptoms with increasing wealth quintile (Table 4A.13 and Figure 4.2). The largest difference between the richest and the poorest in absolute terms is found among men in their 50s, suggesting that the poorest wealth quintile are at a marked disadvantage in developing symptoms earlier in life. Among the oldest men, the pattern of prevalence does not show a consistently increasing advantage with increasing wealth, although the poorest fared worst.

Chest pain symptoms of possible myocardial infarction also show stronger wealth gradients at younger age groups, but were more common in the richer quintiles than angina, making the relative advantage of the wealthiest less clear-cut (Table 4A.14). For men and women aged 75 and over, there was variation by wealth but no straightforward pattern.

Figure 4.2. Percentages reporting angina symptoms in 2004–05, by age and age-specific wealth quintile: men



Comparison between symptoms and diagnosis

Those reporting symptoms that fulfilled the criteria for the Rose Angina Questionnaire and possible myocardial infarction were compared with those who had said, either in 2002–03 or in 2004–05, that they had been diagnosed with these conditions by a doctor at some point in their life. Around half of those with symptoms of angina did not report diagnosis (Table 4A.15). To put this in context, the total numbers with possible angina that was undiagnosed comprised only 3% of men and women in the sample. This was a smaller number than those who had had a diagnosis and did not currently have symptoms (8% of men and 6% of women), perhaps partly because of control by treatment (not explored further here).

The same analysis was undertaken for myocardial infarction (Table 4A.16). As with angina, substantial proportions of those who did report symptoms had not reported a diagnosis: 55% of the men and 76% of the women. These possibly undiagnosed cases accounted for around 5% of the whole sample. Similar percentages had reported being diagnosed with a heart attack but did not recall ever having the symptom of chest pain lasting more than half an hour. This may have arisen because the heart attack was a long time previously or the heart attack was a mild one.

Although validated, these instruments are known to be imperfect against objective tests, with higher percentages of false negatives (negative on symptoms, positive on objective tests) than of false positives (Garber, Carleton and Heller, 1992). Nevertheless, self-reports of symptoms do predict mortality from ischaemic heart disease (Hart et al., 1997) and hence it would be wise for those with the symptoms to speak to their doctor. People who reported angina symptoms but had not already reported diagnosed angina, heart attack, stroke or diabetes were asked if they had talked to a doctor about their pain. Overall, four-fifths of those who reported symptoms of angina and not a diagnosis either had another of these CVD-related diagnoses (11%) or had spoken to a doctor (70%).

4.4 Loss of balance, dizziness and falls

Methods

Respondents were asked to rate frequency of problems with balance and dizziness when walking on a level surface. Later in the interview, respondents aged 60 years and over were asked whether they had fallen down during the previous two years. If they had fallen, they were asked the number of falls and whether they had injured themselves seriously enough to need medical treatment.

Prevalence of loss of balance, dizziness and falls by sex and age

Table 4A.17 shows that the proportion of people with balance problems steadily increased with age, with a sharp rise between the 60–79 and 80+ age groups. Women were more likely to report balance problems than men at every age. For example, of those in the youngest age group, 14% of women and 10% of men reported ever having balance problems, compared with 55% of women and 46% of men in the oldest age group.

The proportion who reported that they 'always' had problems was similar between the ages of 52 and 69, although the proportion who said they 'sometimes' had problems rose significantly.

Table 4A.18 shows that problems with dizziness increased with age, with substantial differences between people in their 70s and younger people, and again between those aged 80 years and over and people in their 70s. Dizziness is not as common as balance problems across all age groups, but, like balance, women are more likely to report dizziness than men. Approximately 11% of men and 17% of women experienced some dizziness symptoms, compared with 19% of men and 29% of women for balance problems.

Taking balance and dizziness together, the increasing prevalence of problems in successively older groups is clear (Figure 4.3), and experience of multiple symptoms also increases, with over one-in-five of the oldest women experiencing both at least some of the time.

Figure 4.3. Percentages reporting balance problems or dizziness at least some of the time, by age and sex

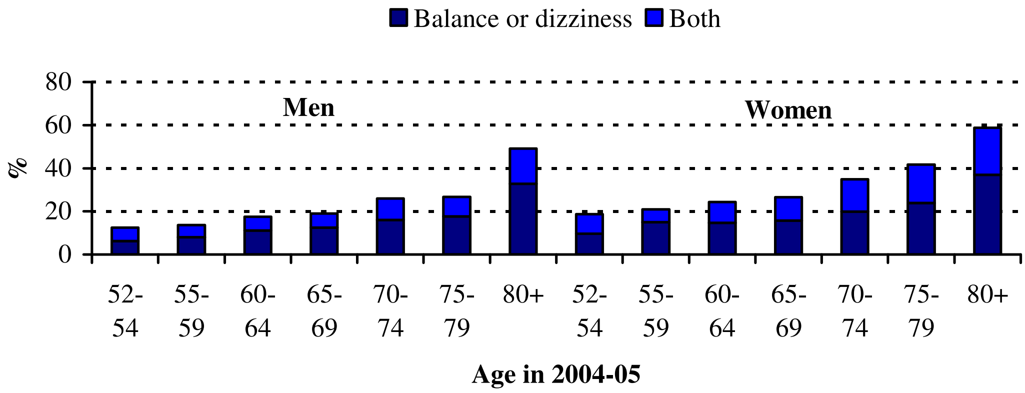


Table 4A.19 shows that, as we would expect, the likelihood of falling increased with age. However, there are still a fairly high proportion of people in the youngest age group (60–64 years) reporting at least one fall (22% of men and 32% of women). Women were more likely to fall than men (39% against 26%) and this did not just reflect the different age distributions of men and women as it applied in all age groups.

A similar proportion of people in the two oldest groups had fallen once. However, the proportion of people who have had multiple falls is substantially greater among those aged 80 years and over than among those in their late 70s. This is particularly true for men: 5% of men aged 75–79 had fallen at least three times, rising to 14% of men aged 80 years or over.

Across all age groups, a greater proportion of women than men who had fallen needed medical treatment (a total of 39% of women and 29% of men) (Table 4A.20). Those needing medical attention amounted to 15% of all women aged 60 years and over (including non-fallers) and 8% of such men. In the four younger age groups who fell, the proportions of men needing medical treatment were similar. Those aged 80 and over were most likely to have had a fall needing treatment. Among women, the proportions needing medical treatment increased with age except that the prevalence among women in their late 60s was no greater than that among women in their early 60s. Interestingly, the likelihood of needing medical treatment was no greater among people reporting one fall than among those reporting three or more (in both cases, just over a third).

Prevalence of loss of balance, dizziness and falls by age-specific wealth

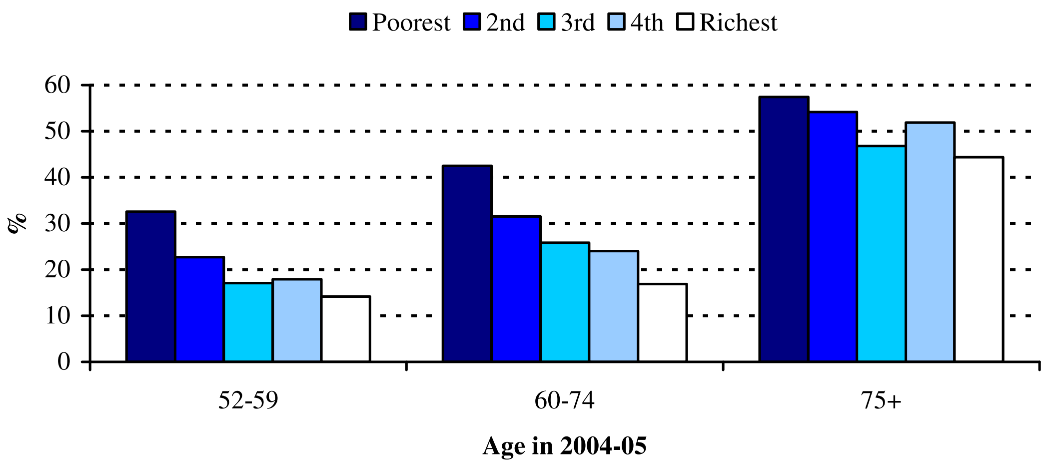
There is a strong negative association between balance problems and level of wealth except among men aged 75 and over (Table 4A.21). Again, there are indications of delayed onset for wealthier groups, with the differences between wealth quintiles being smaller at older ages. As young as 52–59 years, one-in-ten men in the poorest quintile had balance problems often, but this prevalence was only found among the richest groups once they had reached 75 or over.

Symptoms of dizziness were also less frequent the wealthier the respondent (Table 4A.22). There was generally steadily increasing advantage for successively richer groups provided they were aged under 75. Among the oldest age group, the poorest still fared worse than the richest but there was not a clear gradient across the intermediate quintiles.

Figure 4.4 clearly shows that in all wealth groups, older women are more likely than younger ones to experience balance problems or dizziness and the advantage of the wealthiest becomes negligible.

Table 4A.23 shows that for women aged 60–74, there was a clear benefit for successively wealthier groups in likelihood of falling. The poorest men fared worse than the richest but the pattern across the intermediate quintiles was uneven. Men in the poorest quintile were particularly likely to have experienced three or more falls (13% compared with 6% or fewer of richer groups). Wealth was not associated with falling for those aged 75 or over.

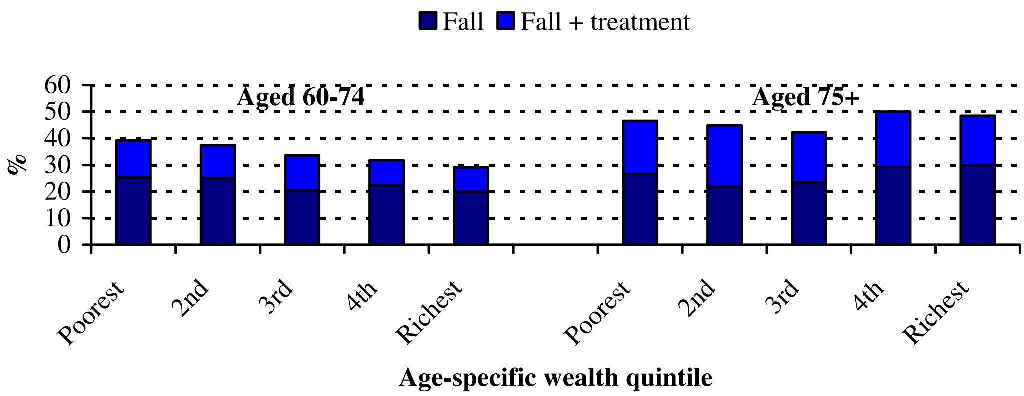
Figure 4.4. Percentages reporting balance problems or dizziness in 2004–05, by age and age-specific wealth quintile: women



Amongst those who had falls, there is not a linear relationship between need for hospital treatment and level of wealth (Table 4A.24). Male fallers aged 60–74 years in the richest quintile appeared to have lower chances of needing treatment than those in other quintiles (14% versus 29–32% respectively).

Figure 4.5 brings together falling and need for treatment, as a percentage of all women, and shows the lack of a relationship with wealth among the older age group but some gradient in the younger one.

Figure 4.5. Percentages reporting falls and need for treatment during the previous two years, by age and wealth: women



Prevalence of falls by whether lives alone

Falls may have greater impact on the sufferer's life if he or she lives alone. Table 4A.25 shows that falls were more common among those living alone if they were also aged 60–74, but this difference was not apparent among the older people. Only the younger lone men who fell were substantially more likely to need treatment than their counterparts who were not alone (Table 4A.26).

4.5 Symptoms of pain

Methods

All respondents were asked whether they were often troubled by pain and, if so, how bad the pain was most of the time. The question was general and did not refer to specific sites of, or occasions precipitating, pain. Those who were often troubled by pain were asked to rate the pain they experienced (from 1 to 10) in specific parts of the body while walking on a flat surface. Respondents were asked separately about pain in their back, hip, knee and feet. For the purposes of this report, ratings between 1 and 5 have been termed 'mild–moderate pain' and ratings between 6 and 10 have been termed 'severe' pain. A score of zero means that they did not report pain at that part of the body.

Symptoms of pain by sex and age

Table 4A.27 shows there is little variation by age across all categories of pain severity. However, women were more likely to be in pain, and slightly more likely to experience severe pain, than men: 22% of women reported moderate pain compared with 17% of men, and a further 9% of women reported severe pain compared with 7% of men. The proportion of men in severe pain was 4% at age 52–54 and 9% at age 80 or over. It was greater in older than younger age groups but there was not necessarily a step-up in prevalence for each 5-year age band. In contrast, the proportion of women in severe pain was close to one-in-ten in all age groups above 64 years.

Of those with pain, women were more likely than men to report pain in any one of the four sites covered in the interview (Tables 4A.28–4A.31). The smallest sex difference is seen for knee pain (62% of women with pain had it in the knee compared with 57% of men with pain) – for the other sites, about 10 percentage point more female pain-sufferers had pain at that part of the body than male sufferers.

When comparing parts of the body, pain sufferers were more likely to experience pain specifically in the back or knee than in the hip or foot. Women with pain were more likely than men to give a mild–moderate pain rating for back and hip pain, and there was also a small excess of women over men giving a severe pain rating for all four sites. This amounted to a 3–4 percentage point difference for back, hip, and knee pain and a 6 percentage point difference for foot pain.

Combining the information for presence of any pain and, if present, the sites of pain, it emerges that 85% of men and 80% of women did not have pain at any of the four parts of the body listed (Table 4A.32). On the other hand, 7% of men and 11% of women had pain at two or more of the sites. This varied little across the three broad age groups. The number of sites was also correlated with quality of life. The quality-of-life measure used is known as the CASP-19. It was developed with an older population in mind and, unlike many quality-of-life instruments, measures qualities distinct from health (Hyde et al., 2003). The median value and interquartile range of CASP-19 for those with no pain at any of the hip, back, knee or foot were 45 (39–50) for men and 46 (40–50) for women, but for those with severe pain in two or more of these sites the median and interquartile range were 32 (25–40) for men and 36 (29–42) for women, a marked shift towards worse quality of life.

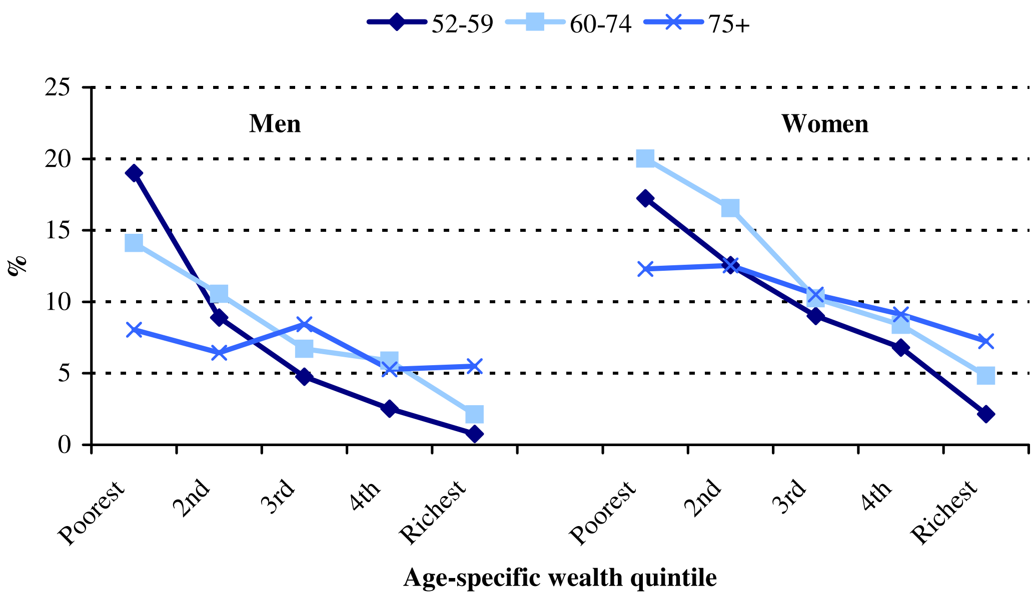
Symptoms of pain by age-specific wealth

Among those with pain, there is an association between pain severity and level of wealth (Table 4A.33). As wealth increases, the proportion of people with no pain increases and the proportion with severe pain decreases. This relationship is found for both men and women, except for men aged 75 and over. The association is also fairly weak for women in the oldest age group. For example, among those aged 52–59, half the men and two-thirds of the women in the poorest wealth quintile had no pain, compared with four-fifths of men and three-quarters of women in the richest quintile. With severe pain, the converse is true – around 15% of men and women in the lowest wealth quintile aged 52–59 had severe pain, falling to 2–3% of men and women in the highest wealth quintile.

For the separate parts of the body, the analyses focus on severe pain – Table 4A.34 gives numbers experiencing severe pain at a particular site of the body as a percentage of those who had pain. For each of the four sites, the wealthiest were generally least likely to have severe pain among men and women aged 50–74 years. For men aged 50–59 and women aged 50–74, the greatest differences in prevalence of severe pain tended to be between the poorest and second-poorest quintiles or between the second-poorest and middle wealth quintiles. Generally, the association with wealth was not one of steadily increasing advantage as wealth increased. As with other symptoms discussed, there was no clear pattern with wealth among people aged 75 and over.

Figure 4.6 gives the percentages with severe pain at at least two of the four sites, as a percentage of everyone, including those who did not report pain at all. There is clearly a decreasing likelihood of this potentially debilitating experience with increasing wealth for all except the oldest men. As these are cross-sectional data, they do not indicate whether wealth influenced pain or vice versa – or other factors may have accounted for the association. However, it is possible that the life histories of those who have been able to accumulate less wealth exposed them to more of the experiences and diseases that lead to pain and that this could in turn inhibit work opportunities for accumulating further wealth. This is a subject for further study.

Figure 4.6. Percentages with severe pain in two or more of back, hip, knee and foot, by sex, age and wealth



4.6 Discussion

The median time lag between interviews was 27 months (range 22 to 38 months). After this short period, a quarter of the participants reported at least one additional diagnosis of the 17 conditions reported in this chapter. As expected, there was a strong relationship with age, but it is disturbing that about one-in-six people in their 50s were reporting an additional condition.

Among the seven CVD-related diseases, those with the greatest incidence in absolute numbers were angina or myocardial infarction, abnormal heart rhythm, diabetes and stroke. New heart murmur and new cases of chronic heart failure were rare – indeed, the prevalence was rare too. Heart murmurs can occur at any age and are not particularly a 'disease of old age', whereas chronic heart failure tends to develop in very old age and may also be disproportionate in the subpopulation living in long-term care. An increase in incidence of specific chronic diseases with age was expected but not always found. Men aged 75 and over did not have greater incidence of diabetes or abnormal heart rhythm. In so far as obesity is a powerful predictor of diabetes and obese people have markedly shorter lifespans, the former finding could arise because the most vulnerable have already died by the age of 75.

Cataracts, as well as arthritis and osteoporosis, can contribute to falls, and their greater incidence among women may be part of the story for higher percentages of women than men falling. Other possible reasons, not explored here, are differences in levels of activity (physical activity protects against falls), other vision problems and medication use.

The results for balance, dizziness and falls reinforce the concerns expressed in the National Service Framework that they are a major public health problem. As young as their late 50s, nearly one-in-five women were experiencing problems with balance and one-in-ten experienced dizziness at times. In future waves of fieldwork, we can observe whether these are the people who have serious problems and falls later.

Overall, 25% of the men and 39% of the women aged 60 or over when interviewed in 2004–05 had experienced a fall during the previous two years. Of those aged 65 or over, 35% had fallen. The Cochrane Review of Interventions quotes 30% of men and women aged over 65 years and living in the community falling in any year (Gillespie et al., 2003). One would expect a higher percentage over a two-year period. The ELSA figure may be an underestimate if loss to the sample was disproportionate amongst those who had experienced falls, especially if there were serious consequences. The results presented here are consistent with other findings that about half of those who fall do so more than once (Kannus et al., 2005), thus highlighting the importance of acting to prevent further falls.

There are studies showing that socio-economic factors are associated with incidence of stroke and heart attack. Qureshi et al. (2003) found that people with less than 12 years' education had higher risk of fatal strokes and myocardial infarction than those with more education. Nanchahal et al. (2005) found that high cardiovascular risk scores were more prevalent with lower income and less education. With cross-sectional data, we cannot be sure whether wealth is affecting health or vice versa, but the effect of health on wealth might be expected to be less than that of health on income. Apart from the actual presence of the disease, differential attitudes to seeking medical attention and differential ability to insist on diagnosis might be affecting the reported distributions.

Nevertheless, it is striking that wealth gradients are consistently appearing for younger people and tending to be much weaker or non-existent for those aged 75 years or over. In this chapter, several findings have suggested that there might be a delay in onset of conditions for the wealthier groups rather than a complete escape from them.

The symptoms of imbalance and dizziness and the reporting of falls were clearly associated with wealth in those aged under 75. There is little other information on the socio-economic profiles of these symptoms. Among an Australian community, those with a degree or higher were less likely to fall than those who stopped their education at secondary school or sooner, but there was not a simple association with income (Gill, Taylor and Pengelly, 2005). There are many possible explanations for an inverse association with wealth, including disadvantages for those with less wealth with respect to presence of morbid conditions such as arthritis and osteoporosis, general functioning limitations and perhaps less control over the medication prescribed.

A common link between the diseases and symptoms shown in this chapter is their tendency to increase vulnerability to deteriorating functions such as walking and climbing stairs, and hence potentially affecting other functions such as shopping, maintaining the home and socialising. Incidence for most of the conditions was greater at older ages, despite already-higher prevalence. Thus multiple co-morbidity and adverse symptomatic experience can trigger people into dependence. There are conditions, such as angina and heart attack symptoms, that were not most common among the oldest age group. This may mean that there comes an age when those left in the community are the ones who have some form of protection against key diseases. Poorer people were reporting more symptoms, whether angina, balance problems, dizziness, falls or pain. These could be the end result of a lifetime accumulation of disadvantage – all that are reported here are the current associations. Further longitudinal analyses in the future will help to show how much the wealth advantage comes from the healthy staying wealthy and how much from the wealthy staying healthy.

References

Abt Associates Inc. (2004), *The Effect of Reducing Falls on Long-Term Care Expenses: Literature Review*, prepared for the Office of Disability, Aging and Long-Term Care Policy, Office of the Assistant Secretary for Planning and Evaluation, US Department of Health and Human Services (website accessed 5 June 2006: http://aspe.hhs.gov/daltcp/reports/fallexplr.htm).

Anto, J. M., Vermeire, P., Vestbo, J. and Sunyer, J. (2001), 'Epidemiology of obstructive pulmonary disease', *European Respiratory Journal*, 17: 982–994.

Arden, N. and Nevitt, M. C. (2006), 'Osteoarthritis: epidemiology', *Best Practice and Research in Clinical Rheumatology*, 20: 3–25.

Avendano, M., Kunst, A. E., Huisman, M., Lenthe, F. V., Bopp, M., Regidor, E., Glickman, M., Costa, G., Spadea, T., Deboosere, P., Borrell, C., Valkonen, T., Gisser, R., Borgan, J-K., Gadeyne, D. and Mackenbach, J. P. (2006), 'Socioeconomic status and ischaemic heart disease mortality in 10 western European populations during the 1990s', *Heart*, 92: 461–467.

Bass, E. B., Follansbee, W. P. and Orchard, T. J. (1981), 'Comparison of supplemented Rose Questionnaire to exercise thallium testing in men and in women', *Journal of Clinical Epidemiology*, 42: 385–394.

Blackwalder, W. C., Kagan, A., Gordon, T. and Rhoads, G. G. (1981), 'Comparisons of methods for diagnosing angina pectoris: the Honolulu heart study', *International Journal of Epidemiology*, 10: 211–215.

Bousquet, J., Bousquet, P. J., Godard, P. and Daures, J-P. (2005), 'The public health indications of asthma', *Bulletin of the World Health Organisation*, 83: 549–554.

British Heart Foundation (2005), *Peripheral Arterial Disease*, Heart Foundation Series no. 16, London: BHF.

Bueno-Cavanillas, A., Padilla-Ruiz, F., Jiménez-Moleón, J. J., Peinado-Alonso, C. A. and Gálvez-Vargas, R. (2000), 'Risk factors for falls among the elderly according to extrinsic and intrinsic precipitating causes', *European Journal of Epidemiology*, 16: 849–859.

Currie, S. R. and Wang, J. (2005), 'More data on major depression as an antecedent risk factor for first onset of chronic back pain', *Psychological Medicine*, 35: 1–8.

Davey Smith, G. and Hart, C. (2002), 'Life-course socioeconomic and behavioural influences on cardiovascular disease mortality: the Collaborative Study', *American Journal of Public Health*, 92: 1295–1298.

Department of Health (2000), *National Service Framework: Coronary Heart Disease*, London: Department of Health.

Department of Health (2001), *National Service Framework for Older People*, London: Department of Health.

Evans, J. R., Fletcher, A. E. and Wormald, R. P. (2004), 'Age-related macular degeneration causing visual impairment in people 75 years or older in Britain: an add-on study to the Medical Research Council Trial of Assessment and Management of Older People in the Community', *Ophthalmology*, 111: 513–517.

Garber, V. H., Carleton, R. A. and Heller, G. V. (1992), 'Comparison of "Rose questionnaire angina" to exercise thallium scintigraphy: different findings for males and females', *Journal of Clinical Epidemiology*, 45: 715–720.

Gill, T., Taylor, A. W. and Pengelly, A. (2005), 'A population-based survey of factors relating to the prevalence of falls in older people', *Gerontology*, 51: 340–345.

Gillespie, L. D., Gillespie, W. J., Robertson, M. C., Lamb, S. E., Cumming, R. G. and Rowe, B. H. (2003), 'Interventions for preventing falls in elderly people', *The Cochrane Database of Systematic Reviews*, issue 4, art. no. CD000340.

Hart, C. L., Watt, G. C., Davey Smith, G., Gillis, C. R. and Hawthorne, V. M. (1997), 'Pre-existing ischaemic heart disease and ischaemic heart disease mortality in women compared with men', *International Journal of Epidemiology*, 26: 508–515.

Ho, S. F. and Jones, D. (1999), 'Morbidity in older people with self-reported asthma', *Age and Ageing*, 28: 475–480.

Hyde, M., Wiggins, R. D., Higgs, P. and Blane, D. B. (2003), 'A measure of the quality of life in early old age: the theory, development and properties of a needs satisfaction model (CASP-19)', *Ageing and Mental Health*, 7: 186–194.

Kannus, P., Sievanen, H., Palvanen, M., Jarvinen, T. and Parkkari, J. (2005), 'Prevention of falls and consequent injuries in elderly people', *Lancet*, 366: 1885–1893.

Lamb, S. E., Guralnik, J. M., Buchner, D. M., Ferrucci, L. M., Hochberg, M. C., Simonsick, E. M. and Fried, L. P., for the Women's Health and Aging Study (2000), 'Factors that modify the association between knee pain and mobility limitation in older women: the Women's Health and Aging Study', *Annuls of the Rheumatic Diseases*, 59: 331–337.

Leng, G. C. and Fowkes, F. G. (1992), 'The Edinburgh Claudication Questionnaire: an improved version of the WHO/Rose Questionnaire for use in epidemiological surveys', *Journal of Clinical Epidemiology*, 45: 1101–1109.

McDermott, A. (2001), 'Reducing risks and improving outcomes in patients with angina', *Professional Nurse*, 17: 1302–1305.

Nanchahal, K., Morris, J. N., Sullivan, L. M. and Wilson, P. W. (2005), 'Coronary heart disease risk in men and the epidemic of overweight and obesity', *International Journal of Obesity*, 29: 317–323.

National Statistics (2005), 'Mortality by cause', *DH2 no. 31*, table 2, London: Office for National Statistics.

Qureshi, A. I., Suri, M. F. K., Saad, M. and Hopkins, L. N. (2003), 'Educational attainment and risk of stroke and myocardial infarction', *Medical Science Monitor*, 9: CR466–CR473.

Rajeski, W. J. J., Miller, M. E., Foy, C., Messier, S. and Rapp, S. (2001), 'Self-efficacy and the progression of functional limitations and self-reported disability in older adults with knee pain', *Journal of Gerontology: Social Sciences*, 56B: S261–S265.

Riefkohl, E. Z., Bieber, H. L., Burlingame, M. B. and Lowenthal, D. T. (2003), 'Medication and falls in the elderly: a review of the evidence and practical considerations', *Pharmacy and Therapeutics*, 28: 724–726, 733.

RNIB and RCOphth (2001), 'Understanding cataracts', information sheet, London: Royal National Institute for the Blind and Royal College of Ophthalmologists (http://www.rcophth.ac.uk/docs/publications/UnderstandingCataracts.pdf).

Rose, G. A. and Blackburn, H. (1986), *Cardiovascular Survey Methods*, World Health Organisation Monograph no. 56, Geneva: WHO.

Schmieder, F. A. and Comerota, A. J. (2001), 'Intermittent claudication: magnitude of the problem, patient evaluation, and therapeutic strategies', *American Journal of Cardiology*, 87: 3D–13D.

Smith, J. P. and Kington, R. (1997), 'Demographic and economic correlates of health in old age', *Demography*, 34: 159–170.

Solomon, D. H., Karlson, E. W., Rimm, E. B., Cannuscio, C. C., Mandl, L. A., Manson, J. A. E., Stampfer, M. J. and Curhan, G. C. (2003), 'Cardiovascular morbidity and mortality in women diagnosed with rheumatoid arthritis', *Circulation*, 107, 1303–1307.

Woolf, A. D. and Pfleger, B. (2003), 'Burden of major musculoskeletal conditions', *Bulletin of the World Health Organisation*, 81: 646–656.

Worthington, J. (2005), 'Looking back: developments in our understanding of the genetic epidemiology of rheumatoid arthritis over the last 50 years', *Rheumatology*, 44, Supplement 4: iv5–iv8.

Annex 4.1
Tables on self-reported physical health

Table 4A.1. Deaths from circulatory disease or other, by age in 2002–03 and sex

Participants in 2002–03, including proxies

	50–59	60–74	75+	All
	%	*%*	*%*	*%*
Men				
Circulatory disease[a]	0.4	1.3	7.0	2.0
Other	0.7	2.1	8.2	2.7
Unknown	0.1	0.4	1.3	0.5
Women				
Circulatory disease[a]	0.1	0.6	5.0	1.5
Other	0.7	1.7	5.2	2.2
Unknown	0.0	0.2	1.4	0.5
***Weighted* N**				
Men	*2,100*	*2,198*	*968*	*5,267*
Women	*2,139*	*2,420*	*1,537*	*6,096*
***Unweighted* N**				
Men	*1,912*	*2,281*	*981*	*5,174*
Women	*2,247*	*2,574*	*1,370*	*6,191*

[a]ICD-10, chapter I.

Note: Excluding 27 people without registration at the National Health Service Central Register or information from fieldworkers, for whom deaths would not be reported.

Table 4A.2. Deaths from circulatory disease or other, by age-specific wealth quintile, sex and age in 2002–03

Participants in 2002–03, including proxies

		Poorest	2nd	3rd	4th	Richest
		%	%	%	%	%
Men						
50–74	Circulatory disease	2.2	1.6	0.6	0.3	0.0
	Other	3.1	1.7	0.9	1.1	0.7
	Unknown	0.9	1.2	0.4	0.0	0.1
75+	Circulatory disease	10.8	12.3	6.5	5.6	3.0
	Other	13.0	7.5	6.5	8.1	8.1
	Unknown	2.7	1.1	0.4	2.0	1.0
Women						
50–74	Circulatory disease	0.6	0.5	0.3	0.3	0.0
	Other	2.1	1.4	0.8	1.3	0.6
	Unknown	0.3	0.1	0.0	0.2	0.1
75+	Circulatory disease	7.8	5.0	3.1	3.1	4.8
	Other	9.4	4.4	4.7	2.6	2.4
	Unknown	1.6	2.0	1.9	0.8	0.4
***Weighted* N**						
Men	*50–74*	*709*	*844*	*873*	*918*	*921*
	75+	*116*	*182*	*197*	*220*	*249*
Women	*50–74*	*1,035*	*908*	*883*	*840*	*837*
	75+	*394*	*316*	*306*	*276*	*244*
***Unweighted* N**						
Men	*50–74*	*665*	*815*	*843*	*907*	*934*
	75+	*116*	*180*	*199*	*221*	*260*
Women	*50–74*	*1,101*	*956*	*931*	*885*	*884*
	75+	*333*	*284*	*279*	*250*	*223*

[a]ICD-10, chapter I.

Note: Excluding 27 people without registration at the National Health Service Central Register or information from fieldworkers, for whom deaths would not be reported.

Table 4A.3. Percentage who reported at least one additional disease in 2004–05 from the physical diseases listed in the interview, by age in 2002–03 and sex

Participants in 2002–03 and 2004–05, excluding proxies

	50–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%	%	%
Men	13.2	19.1	22.1	24.4	26.4	31.7	34.8	22.1
Women	15.4	20.6	22.6	30.8	33.8	37.9	38.5	26.8
All	14.3	19.9	22.3	27.8	30.5	35.3	37.3	24.6
***Weighted* N**								
Men	*890*	*783*	*659*	*573*	*486*	*358*	*287*	*4,036*
Women	*903*	*820*	*692*	*637*	*590*	*496*	*570*	*4,707*
***Unweighted* N**								
Men	*729*	*782*	*619*	*623*	*496*	*355*	*270*	*3,874*
Women	*869*	*922*	*724*	*712*	*618*	*432*	*468*	*4,745*

Note: *N*s for the ‘All’ rows are the sum of those for men and women.

Table 4A.4. Percentage incidence of disease between the 2002–03 and 2004–05 interviews, in broad groups, by age in 2002–03 and sex

Those who did not report the condition in 2002–03 but did answer the question

	50–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	*%*	*%*	*%*	*%*	*%*	*%*	*%*
Men								
At least one CVD-related disease[a]	4.3	5.9	6.9	9.1	11.8	10.2	6.5	7.0
At least one eye disease[b]	1.9	3.5	4.5	7.7	8.1	16.7	20.8	6.1
At least one other chronic disease[c]	6.6	10.1	11.4	12.5	12.5	17.1	19.2	10.9
Women								
At least one CVD-related disease[a]	2.8	4.4	5.7	8.4	8.5	10.2	12.8	6.6
At least one eye disease[b]	2.8	3.6	7.0	12.6	14.6	21.1	28.3	9.3
At least one other chronic disease[c]	11.0	13.6	17.8	16.8	16.2	19.7	16.6	15.0
All								
At least one CVD-related disease[a]	3.5	5.1	6.2	8.7	9.9	10.2	10.9	6.8
At least one eye disease[b]	2.4	3.6	5.8	10.2	11.6	19.0	25.1	7.8
At least one other chronic disease[c]	8.6	11.7	14.4	14.4	14.2	18.4	17.8	12.8
***Weighted* N**								
Men CVD	*762*	*614*	*476*	*386*	*281*	*202*	*145*	*2,866*
Men eye	*843*	*733*	*589*	*495*	*358*	*260*	*154*	*3,433*
Men other	*656*	*521*	*391*	*343*	*257*	*181*	*136*	*2,485*
Women CVD	*800*	*692*	*556*	*488*	*398*	*331*	*330*	*3,595*
Women eye	*863*	*760*	*608*	*522*	*428*	*304*	*210*	*3,695*
Women other	*556*	*438*	*339*	*272*	*221*	*184*	*184*	*2,195*
***Unweighted* N**								
Men CVD	*627*	*616*	*449*	*421*	*291*	*200*	*144*	*2,748*
Men eye	*697*	*740*	*558*	*540*	*372*	*258*	*151*	*3,316*
Men other	*540*	*521*	*369*	*373*	*269*	*181*	*131*	*2,384*
Women CVD	*771*	*785*	*583*	*551*	*417*	*290*	*283*	*3,680*
Women eye	*831*	*863*	*638*	*587*	*454*	*268*	*183*	*3,824*
Women other	*534*	*492*	*352*	*302*	*227*	*156*	*157*	*2,220*

[a]Angina, myocardial infarction, stroke, heart failure, heart murmur, abnormal heart rhythm, diabetes.
[b]Glaucoma, diabetic eye disease, macular degeneration, cataract.
[c]Chronic lung disease, asthma, arthritis, osteoporosis, cancer (excluding primary skin cancer), Parkinson's disease.
Note: *N*s for the 'All' rows are the sum of those for men and women.

Table 4A.5. Percentage incidence of selected CVD-related diseases between the 2002–03 and 2004–05 interviews, by age in 2002–03 and sex

Those who did not report the condition in 2002–03 but did answer the question

		50–59	60–74	75+	All
		%	%	%	%
Ischaemic heart disease[a]	Men	2.7	2.4	3.7	2.7
	Women	1.1	1.7	3.2	1.8
	All	1.8	2.0	3.4	2.2
Diabetes	Men	1.6	2.4	1.3	1.9
	Women	1.2	1.6	2.4	1.6
	All	1.4	1.9	2.0	1.8
Stroke	Men	0.6	1.4	3.3	1.4
	Women	0.4	1.4	2.8	1.3
	All	0.5	1.4	3.0	1.3
Abnormal heart rhythm	Men	1.3	3.1	2.1	2.2
	Women	1.5	2.9	5.4	2.9
	All	1.4	3.0	4.1	2.6
***Weighted* N**					
Ischaemic heart disease	*Men*	*1,541*	*1,405*	*474*	*3,420*
	Women	*1,666*	*1,703*	*861*	*4,229*
Diabetes	*Men*	*1,579*	*1,540*	*567*	*3,686*
	Women	*1,656*	*1,794*	*959*	*4,409*
Stroke	*Men*	*1,638*	*1,616*	*574*	*3,828*
	Women	*1,700*	*1,845*	*960*	*4,505*
Abnormal heart rhythm	*Men*	*1,577*	*1,578*	*571*	*3,726*
	Women	*1,657*	*1,808*	*941*	*4,406*
***Unweighted* N**					
Ischaemic heart disease	*Men*	*1,399*	*1,431*	*469*	*3,299*
	Women	*1,738*	*1,833*	*751*	*4,322*
Diabetes	*Men*	*1,436*	*1,573*	*561*	*3,570*
	Women	*1,732*	*1,932*	*841*	*4,505*
Stroke	*Men*	*1,491*	*1,653*	*572*	*3,716*
	Women	*1,776*	*1,983*	*842*	*4,601*
Abnormal heart rhythm	*Men*	*1,434*	*1,608*	*568*	*3,610*
	Women	*1,732*	*1,942*	*821*	*4,495*

[a]Angina or myocardial infarction.

Note: *N*s for the 'All' rows are the sum of those for men and women.

Table 4A.6. Percentage incidence of selected chronic diseases between the 2002–03 and 2004–05 interviews, by age in 2002–03 and sex

Those who did not report the condition in 2002–03 but did answer the question

		50–59	60–74	75+	All
		%	*%*	*%*	*%*
Arthritis	Men	6.1	6.4	9.5	6.7
	Women	8.8	11.8	13.3	10.8
	All	7.4	9.0	11.6	8.7
Osteoporosis	Men	0.5	0.8	1.3	0.8
	Women	2.3	3.8	6.1	3.7
	All	1.4	2.4	4.2	2.3
Cancers (excluding skin cancer)	Men	0.7	2.4	2.8	1.8
	Women	1.5	1.7	1.5	1.6
	All	1.1	2.1	2.0	1.7
Lung disease	Men	1.8	1.8	3.5	2.1
	Women	1.0	1.6	1.6	1.3
	All	1.4	1.6	2.3	1.7
Asthma	Men	1.4	1.9	1.9	1.7
	Women	1.3	1.4	0.8	1.2
	All	1.4	1.6	1.3	1.5
Cataract	Men	1.8	4.9	14.9	4.8
	Women	1.8	8.9	21.6	7.8
	All	1.8	7.0	18.7	6.3
***Weighted* N**					
Arthritis	*Men*	*1,354*	*1,239*	*410*	*3,004*
	Women	*1,234*	*1,123*	*526*	*2,882*
Osteoporosis	*Men*	*1,652*	*1,675*	*613*	*3,940*
	Women	*1,642*	*1,734*	*922*	*4,298*
Cancers	*Men*	*1,635*	*1,618*	*590*	*3,843*
	Women	*1,619*	*1,797*	*963*	*4,379*
Lung disease	*Men*	*1,599*	*1,576*	*581*	*3,757*
	Women	*1,641*	*1,772*	*968*	*4,381*
Asthma	*Men*	*1,512*	*1,515*	*582*	*3,609*
	Women	*1,498*	*1,661*	*912*	*4,070*
Cataract	*Men*	*1,623*	*1,537*	*454*	*3,614*
	Women	*1,668*	*1,648*	*587*	*3,904*
***Unweighted* N**					
Arthritis	*Men*	*1,228*	*1,267*	*406*	*2,901*
	Women	*1,283*	*1,195*	*453*	*2,931*
Osteoporosis	*Men*	*1,504*	*1,711*	*614*	*3,829*
	Women	*1,716*	*1,867*	*806*	*4,389*
Cancers	*Men*	*1,488*	*1,653*	*589*	*3,730*
	Women	*1,690*	*1,928*	*839*	*4,457*
Lung disease	*Men*	*1,454*	*1,614*	*578*	*3,646*
	Women	*1,715*	*1,904*	*851*	*4,470*
Asthma	*Men*	*1,372*	*1,553*	*578*	*3,503*
	Women	*1,559*	*1,785*	*801*	*4,145*
Cataract	*Men*	*1,477*	*1,567*	*447*	*3,491*
	Women	*1,745*	*1,777*	*516*	*4,038*

Note: *N*s for the ‘All’ rows are the sum of those for men and women.

Table 4A.7. Percentage without any of selected physical diseases by wave 2 interview (2004–05), by age in 2002–03 and sex

Participants in 2002–03 and 2004–05, excluding proxies

	50–54	55–59	60–64	65–69	70–74	75–79	80+	All
	% without any of selected diseases in the group							
Men								
CVD-related diseases[a]	82.7	74.1	67.5	61.6	52.1	50.7	49.8	66.8
Eye diseases[b]	93.6	91.1	85.8	80.0	69.2	60.2	45.0	80.7
Other chronic diseases[c]	69.4	60.0	52.5	52.1	47.1	41.0	39.9	55.1
All of the above	56.6	45.0	33.3	28.3	20.9	14.8	11.7	35.4
Women								
CVD-related diseases[a]	86.5	81.1	76.0	70.4	61.3	60.6	52.7	72.0
Eye diseases[b]	93.2	90.0	81.9	72.0	62.3	48.9	27.6	71.9
Other chronic diseases[c]	55.0	46.3	40.3	35.6	30.8	29.6	27.7	39.8
All of the above	46.5	35.9	28.0	21.4	15.5	11.1	7.0	26.3
All								
CVD-related diseases[a]	84.6	77.7	71.9	66.2	57.2	56.4	51.8	69.6
Eye diseases[b]	93.4	90.5	83.8	75.8	65.4	53.7	33.4	76.0
Other chronic diseases[c]	62.1	53.0	46.2	43.4	38.1	34.4	31.8	46.8
All of the above	51.5	40.3	30.6	24.6	17.9	12.6	8.5	30.5
***Weighted* N**								
Men	*890*	*783*	*659*	*573*	*486*	*358*	*287*	*4,036*
Women	*903*	*820*	*692*	*637*	*590*	*496*	*570*	*4,707*
***Unweighted* N**								
Men	*729*	*783*	*619*	*623*	*496*	*356*	*272*	*3,878*
Women	*868*	*923*	*724*	*716*	*622*	*435*	*472*	*4,760*

[a]Angina, myocardial infarction, stroke, heart failure, heart murmur, abnormal heart rhythm, diabetes.
[b]Glaucoma, diabetic eye disease, macular degeneration, cataract.
[c]Chronic lung disease, asthma, arthritis, osteoporosis, cancer (excluding primary skin cancer), Parkinson's disease.
Note: *N*s for the 'All' rows are the sum of those for men and women.

Table 4A.8. Percentage distribution of number of additional diseases reported in 2004–05 of 17 selected chronic diseases, by age-specific wealth quintile, sex and age in 2002–03

Participants in 2002–03 and 2004–05, excluding proxies

	No. of additional diseases[a]	Poorest	2nd	3rd	4th	Richest
		%	%	%	%	%
Men						
50–59	0	78.3	81.0	82.7	87.6	89.0
	1	17.0	13.8	16.0	11.0	8.7
	2+	4.7	5.2	1.3	1.3	2.3
60–74	0	73.2	73.4	75.4	74.2	81.2
	1	21.1	20.4	20.4	20.8	16.5
	2	5.7	6.2	4.2	5.0	2.3
75+	0	[65.7]	68.9	64.8	64.6	70.2
	1	[15.5]	23.6	26.7	27.2	26.3
	2+	[15.3]	7.5	8.6	8.2	3.6
Women						
50–59	0	77.5	80.5	82.9	86.0	84.9
	1	19.6	16.7	14.6	14.0	12.0
	2+	2.9	2.9	2.6	0.0	3.1
60–74	0	64.3	70.2	73.5	73.8	75.6
	1	28.1	25.4	21.3	23.4	21.5
	2+	7.6	4.4	5.2	2.7	3.0
75+	0	59.0	56.0	65.6	65.8	63.1
	1	31.3	31.3	26.6	25.0	26.2
	2+	9.7	12.8	7.8	9.2	10.8
***Weighted* N**						
Men	*All*	*581*	*738*	*844*	*888*	*909*
Women	*All*	*1,027*	*924*	*948*	*863*	*838*
***Unweighted* N**						
Men	*All*	*508*	*692*	*802*	*888*	*959*
Women	*All*	*1,005*	*925*	*972*	*899*	*894*

[a]Angina, myocardial infarction, heart failure, heart murmur, abnormal heart rhythm, stroke, diabetes, chronic lung disease, asthma, arthritis, osteoporosis, cancer (excluding primary skin cancer), Parkinson's disease, glaucoma, diabetic eye disease, macular degeneration, cataract

Note: *Ns* for separate age groups not given; there were 1,499 men and 1,752 women aged 50–59, 1,730 men and 2,043 women aged 60–74, and 620 men and 900 women aged 75+.

Table 4A.9. Percentages without any selected CVD-related disease at wave 2, by age-specific wealth quintile, sex and age in 2002–03

Participants in 2002–03 and 2004–05, excluding proxies

	Poorest	**2nd**	**3rd**	**4th**	**Richest**
	% without any of the selected CVD-related diseases[a]				
Men					
50–59	70.9	77.3	78.6	84.4	81.4
60–74	57.1	54.1	60.6	62.9	68.0
75+	[52.4]	60.8	42.1	47.0	52.2
All ages	63.6	65.3	65.0	68.9	69.7
Women					
50–59	80.0	82.0	84.8	86.9	86.6
60–74	58.7	68.6	72.0	71.3	80.2
75+	54.3	48.0	59.8	59.1	62.8
All ages	65.2	68.5	73.8	74.1	79.2
All					
50–59	75.9	79.6	81.7	85.5	84.0
60–74	58.2	62.2	66.5	67.0	73.5
75+	53.9	52.3	53.0	53.9	57.4
All ages	64.6	67.1	69.6	71.5	74.3
***Weighted* N**					
Men	*583*	*739*	*846*	*888*	*909*
Women	*1,029*	*929*	*952*	*865*	*841*
***Unweighted* N**					
Men	*509*	*693*	*804*	*888*	*959*
Women	*1,007*	*929*	*976*	*901*	*897*

[a]Angina, myocardial infarction, stroke, heart failure, heart murmur, abnormal heart rhythm, diabetes.
Notes: *N*s for the 'All' rows are the sum of those for men and women. *Ns* for separate age groups not given; there were 1,500 men and 1,752 women aged 50–59, 1,730 men and 2,051 women aged 60–74, and 623 men and 907 women aged 75+.

Table 4A.10. Percentages without any of six selected chronic physical diseases at wave 2, by age-specific wealth quintile, sex and age in 2002–03

Participants in 2002–03 and 2004–05, excluding proxies

	Poorest	2nd	3rd	4th	Richest
	% without any of the selected chronic physical diseases[a]				
Men					
50–59	50.6	63.2	66.0	70.3	72.8
60–74	44.0	49.8	45.4	46.2	64.8
75+	35.1	38.1	40.1	42.4	42.2
All ages	46.6	53.5	53.0	55.3	63.2
Women					
50–59	40.0	51.9	53.7	54.0	55.4
60–74	28.9	34.7	37.5	39.1	40.1
75+	23.9	31.0	29.3	28.6	30.7
All ages	31.7	39.8	41.4	42.1	44.2
All					
50–59	44.7	57.1	59.9	62.7	64.0
60–74	34.2	41.3	41.3	42.8	53.5
75+	25.9	33.4	33.4	34.6	36.6
All ages	37.1	45.9	46.9	48.8	54.1
***Weighted* N**					
Men	*583*	*739*	*846*	*891*	*912*
Women	*1,031*	*933*	*952*	*865*	*842*
***Unweighted* N**					
Men	*509*	*693*	*804*	*891*	*962*
Women	*1,007*	*932*	*975*	*900*	*896*

[a]Chronic lung disease, asthma, arthritis, osteoporosis, cancer (excluding primary skin cancer), Parkinson's disease.

Notes: *N*s for the 'All' rows are the sum of those for men and women. *Ns* for separate age groups not given; there were 1,501 men and 1,752 women aged 50–59, 1,732 men and 2,049 women aged 60–74, and 626 men and 909 women aged 75+.

Table 4A.11. Percentages with angina symptoms, by age in 2004–05 and sex

Participants in 2004–05, excluding proxies

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	*%*	*%*	*%*	*%*	*%*	*%*	*%*
Men								
None	96.7	94.5	95.3	93.5	92.4	91.8	94.0	94.1
Grade 1	2.4	3.5	3.4	4.7	5.4	5.3	3.4	4.0
Grade 2	0.9	2.0	1.3	1.7	2.2	2.9	2.6	1.9
Women								
None	96.8	96.5	93.8	94.0	92.2	93.1	93.7	94.4
Grade 1	1.9	2.7	5.1	5.4	5.5	5.0	3.6	4.1
Grade 2	1.3	0.8	1.1	0.7	2.3	1.9	2.8	1.5
All								
None	96.8	95.5	94.5	93.8	92.3	92.5	93.8	94.2
Grade 1	2.2	3.1	4.3	5.1	5.4	5.1	3.5	4.1
Grade 2	1.1	1.4	1.2	1.2	2.3	2.3	2.7	1.7
***Weighted* N**								
Men	*420*	*911*	*654*	*620*	*505*	*397*	*378*	*3,884*
Women	*412*	*942*	*717*	*653*	*566*	*541*	*695*	*4,526*
***Unweighted* N**								
Men	*345*	*837*	*650*	*633*	*546*	*405*	*380*	*3,796*
Women	*392*	*989*	*787*	*717*	*618*	*527*	*610*	*4,640*

Notes: Pain in chest (sternum, left anterior or left arm) when walking; the pain leads person to stop or slow down upon which it goes away in 10 minutes or less. Grade 1 if pain experienced when walking uphill or hurrying; grade 2 if pain experienced when walking at an ordinary pace on the level. *N*s for the 'All' rows are the sum of those for men and women. 236 people excluded because they reported that they never walk or cannot walk.

Table 4A.12. Percentages having experienced chest pain (possible myocardial infarction), by age in 2004–05 and sex

Participants in 2004–05, excluding proxies

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	*%*	*%*	*%*	*%*	*%*	*%*	*%*
Men	8.0	9.2	10.0	10.4	12.4	11.2	9.7	10.1
Women	7.0	5.3	6.9	7.4	8.1	7.1	5.0	6.5
All	7.5	7.2	8.4	8.8	10.1	8.9	6.6	8.2
***Weighted* N**								
Men	*420*	*921*	*668*	*641*	*518*	*418*	*410*	*3,996*
Women	*416*	*950*	*731*	*672*	*586*	*550*	*763*	*4,668*
***Unweighted* N**								
Men	*345*	*845*	*663*	*654*	*559*	*426*	*411*	*3,903*
Women	*396*	*998*	*803*	*738*	*639*	*536*	*667*	*4,777*

Notes: Ever experienced a severe pain across the front of the chest pain lasting half an hour or more. *N*s for the 'All' rows are the sum of those for men and women.

Table 4A.13. Percentages reporting angina symptoms, by age-specific wealth quintile, sex and age in 2004–05

Participants in 2004–05, excluding proxies

	Poorest	2nd	3rd	4th	Richest
	% with either grade 1 or grade 2				
Men					
52–59	12.6	7.1	2.6	1.6	1.8
60–74	10.2	7.9	7.2	4.8	3.4
75+	10.7	6.9	6.7	8.3	5.5
Women					
52–59	6.7	2.8	2.7	1.8	2.9
60–74	11.0	8.1	5.4	5.8	3.1
75+	8.3	7.5	7.9	3.5	4.2
All					
52–59	9.4	4.9	2.7	1.7	2.3
60–74	10.7	8.0	6.2	5.3	3.3
75+	8.8	7.3	7.4	5.6	4.8
***Weighted* N**					
Men	*557*	*708*	*826*	*864*	*901*
Women	*979*	*891*	*931*	*843*	*833*
***Unweighted* N**					
Men	*490*	*669*	*790*	*868*	*954*
Women	*962*	*895*	*961*	*882*	*891*

Notes: *N*s for the 'All' rows are the sum of those for men and women. *N*s for age subgroups by wealth not given; there were 1,170 men and 1,351 women aged 52–59, 1,823 men and 2,105 women aged 60–74, and 778 men and 1135 women aged 75+.

Table 4A.14. Percentages reporting symptoms of myocardial infarction, by age-specific wealth quintile, sex and age in 2004–05

Participants in 2004–05, excluding proxies

	Poorest	2nd	3rd	4th	Richest
	% with chest pain lasting at least half an hour				
Men					
52–59	11.4	17.3	7.5	3.5	5.6
60–74	14.1	13.0	10.4	9.9	8.8
75+	13.7	8.9	12.5	5.7	13.0
Women					
52–59	7.3	5.7	4.7	5.1	5.7
60–74	10.9	6.7	7.9	5.6	5.5
75+	7.4	4.7	3.9	8.9	4.2
All					
52–59	9.1	11.3	6.1	4.2	5.7
60–74	12.1	9.6	9.1	7.8	7.3
75+	8.8	6.2	7.3	7.5	8.7
***Weighted* N**					
Men	*583*	*737*	*846*	*890*	*912*
Women	*1,028*	*932*	*951*	*865*	*842*
***Unweighted* N**					
Men	*514*	*695*	*809*	*894*	*966*
Women	*1,010*	*935*	*979*	*903*	*900*

Notes: *N*s for the 'All' rows are the sum of those for men and women. *N*s for age subgroups by wealth not given; there were 1,178 men and 1,363 women aged 52–59, 1,870 men and 2,163 women aged 60–74, and 830 men and 1,201 women aged 75+.

Table 4A.15. Comparison of reports of diagnosis and of symptoms for angina, by sex

Participants in 2004–05, excluding proxies

Symptom reported	Diagnosis reported	Men		Women	
		%	% of all	%	% of all
No	Yes	9.0	8.4	6.3	6.0
	No	91.0	85.7	93.7	88.4
Grade 1	Yes	47.2	1.9	45.3	1.9
	No	52.8	2.1	54.7	2.3
Grade 2	Yes	58.6	1.1	44.9	0.8
	No	41.4	0.8	55.1	0.7
***Weighted* N**					
No		*3,656*		*4,271*	
Grade 1		*155*		*188*	
Grade 2		*74*		*68*	
All			*3,885*		*4,527*
***Unweighted* N**					
No		*3,568*		*4,362*	
Grade 1		*152*		*201*	
Grade 2		*71*		*71*	
All			*3,791*		*4,634*

Table 4A.16. Comparison of reports of diagnosis and of symptoms for heart attack, by sex

Participants in 2004–05, excluding proxies

Symptom reported	Diagnosis reported	Men		Women	
		%	% of all	%	% of all
No	Yes	5.3	4.8	2.5	2.4
	No	94.7	85.2	97.5	91.1
Yes	Yes	45.5	4.6	23.6	1.6
	No	54.5	5.5	76.4	5.0
***Weighted* N**					
No		*3,590*		*4,356*	
Yes		*401*		*305*	
All			*3,991*		*4,662*
***Unweighted* N**					
No		*3,498*		*4,458*	
Yes		*400*		*313*	
All			*3,898*		*4,771*

Table 4A.17. Problems with balance when walking on a level surface, by age in 2004–05 and sex

Participants in 2004–05, excluding proxies

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%	%	%
Men								
Never	89.6	88.6	85.0	83.8	77.2	77.7	54.0	81.2
Sometimes	6.4	7.5	10.6	11.7	15.5	15.0	26.3	12.3
Often	2.7	1.2	1.2	1.2	3.4	2.6	7.6	2.4
Very often	0.8	1.0	2.0	2.0	2.1	2.3	6.4	2.1
Always	0.6	1.6	1.2	1.3	1.8	2.5	5.6	1.9
Women								
Never	86.1	81.7	79.8	76.2	69.3	61.8	45.3	71.4
Sometimes	10.8	13.7	13.1	18.0	19.6	26.2	32.9	19.2
Often	1.5	1.7	3.2	3.2	3.9	3.8	6.1	3.4
Very often	0.2	1.4	2.6	0.8	3.7	4.0	4.1	2.4
Always	1.4	1.4	1.3	1.7	3.5	4.3	11.6	3.6
***Weighted* N**								
Men	*415*	*916*	*662*	*633*	*512*	*408*	*396*	*3,942*
Women	*413*	*940*	*724*	*664*	*578*	*534*	*718*	*4,571*
***Unweighted* N**								
Men	*341*	*840*	*657*	*646*	*553*	*417*	*397*	*3,851*
Women	*393*	*990*	*794*	*729*	*630*	*522*	*629*	*4,687*

Note: Excluding those who say they never or cannot walk (19 men and 27 women).

Table 4A.18. Problems with dizziness when walking on a level surface, by age in 2004–05 and sex

Participants in 2004–05, excluding proxies

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%	%	%
Men								
Never	91.8	92.2	90.9	90.6	86.7	86.4	80.3	89.2
At least sometimes[a]	8.2	7.8	9.1	9.4	13.3	13.6	19.7	10.8
Women								
Never	86.0	89.5	86.3	86.5	80.9	78.6	73.7	83.4
At least sometimes[a]	14.0	10.5	13.7	13.5	19.1	21.4	26.3	16.6
***Weighted* N**								
Men	*414*	*916*	*660*	*633*	*512*	*408*	*395*	*3,939*
Women	*413*	*941*	*724*	*663*	*577*	*534*	*714*	*4,565*
***Unweighted* N**								
Men	*340*	*840*	*655*	*646*	*553*	*417*	*396*	*3,847*
Women	*393*	*990*	*794*	*728*	*629*	*522*	*626*	*4,682*

[a]Combines those answering sometimes/often/very often/always.

Note: Excluding those who say they never or cannot walk (23 men and 31 women).

Table 4A.19. Number of falls reported during previous two years, by age in 2004–05 and sex

Participants aged 60 years and over in 2004–05, excluding proxies

	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%
Men						
0	78.3	76.3	77.4	72.6	60.5	74.0
1	10.3	13.4	12.0	16.0	16.5	13.3
2	3.9	4.8	5.7	6.4	8.6	5.6
3+	7.6	5.4	4.9	5.0	14.3	7.2
Women						
0	68.0	68.4	61.7	58.1	50.6	61.3
1	17.9	17.4	18.8	23.9	25.7	20.8
2	7.0	7.5	9.4	8.9	10.7	8.7
3+	7.1	6.6	10.1	9.0	12.9	9.2
***Weighted* N**						
Men	*666*	*637*	*512*	*417*	*410*	*2,644*
Women	*730*	*669*	*584*	*549*	*760*	*3,292*
***Unweighted* N**						
Men	*661*	*650*	*555*	*425*	*411*	*2,702*
Women	*801*	*735*	*636*	*535*	*664*	*3,371*

Note: Number of falls unknown for 7 people.

Table 4A.20. Percentages needing medical treatment for fall, by age in 2004–05 and sex

Those reporting at least one fall

	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%
Men	26.8	21.9	29.1	26.4	40.2	29.2
Women	31.7	31.3	38.6	42.4	45.8	38.9
***Weighted* N**						
Men	*145*	*151*	*116*	*114*	*162*	*688*
Women	*234*	*211*	*224*	*230*	*375*	*1,274*
***Unweighted* N**						
Men	*140*	*159*	*130*	*118*	*163*	*710*
Women	*259*	*233*	*251*	*228*	*326*	*1,297*

Note: Not known for 24 people whether any fall needed medical treatment.

Table 4A.21. Problems with balance when walking on a level surface, by age-specific wealth quintile, sex and age in 2004–05

Participants in 2004–05, excluding proxies

		Poorest	2nd	3rd	4th	Richest
		%	*%*	*%*	*%*	*%*
Men						
52–59	Never	75.9	84.2	92.6	95.2	93.8
	Sometimes	14.5	9.0	5.9	3.8	4.2
	More often[a]	9.6	6.9	1.5	1.0	2.1
60–74	Never	66.9	76.6	82.3	87.1	89.9
	Sometimes	21.7	15.4	12.4	8.5	9.1
	More often[a]	11.4	8.0	5.2	4.4	1.0
75+	Never	65.7	68.6	60.8	61.0	72.6
	Sometimes	18.1	21.4	26.6	18.8	17.3
	More often[a]	16.3	10.0	12.5	20.2	10.1
Women						
52–59	Never	71.8	82.3	86.1	86.1	89.2
	Sometimes	19.4	15.3	11.2	11.1	7.4
	More often[a]	8.8	2.5	2.6	2.8	3.5
60–74	Never	60.4	71.8	77.6	80.8	87.0
	Sometimes	25.0	18.7	15.5	13.8	10.3
	More often[a]	14.6	9.6	6.9	5.4	2.7
75+	Never	49.5	48.4	56.1	51.5	58.0
	Sometimes	30.4	30.0	29.1	33.0	27.7
	More often[a]	20.1	21.5	14.8	15.5	14.3
***Weighted* N**						
Men		*566*	*722*	*835*	*882*	*909*
Women		*1,000*	*901*	*931*	*851*	*838*
***Unweighted* N**						
Men		*498*	*680*	*799*	*886*	*963*
Women		*986*	*908*	*960*	*889*	*895*

[a]Often, very often or always.

Notes: Excluding those who say they never or cannot walk. *N*s not given separately for all subgroups; there were 1,169 men and 1,353 women aged 52–59, 1,850 men and 2,136 women aged 60–74, and 807 men and 1,149 women aged 75+.

Table 4A.22. Problems with dizziness when walking on a level surface, by age-specific wealth quintile, sex and age in 2004–05

Participants in 2004–05, excluding proxies

	Poorest	2nd	3rd	4th	Richest
			% ever having problems[a]		
Men					
52–59	18.2	9.6	5.1	4.4	4.4
60–74	18.5	13.5	11.2	7.8	5.4
75+	25.0	15.2	17.7	18.6	11.8
Women					
52–59	16.0	13.7	9.3	10.6	8.2
60–74	23.4	16.1	14.4	12.2	9.3
75+	32.7	29.2	16.9	23.2	14.4
***Weighted* N**					
Men	*566*	*720*	*834*	*880*	*909*
Women	*998*	*897*	*931*	*851*	*838*
***Unweighted* N**					
Men	*498*	*679*	*798*	*884*	*963*
Women	*984*	*905*	*960*	*889*	*895*

[a]Sometimes, often, very often or always.

Notes: Excluding those who say they never or cannot walk. *N*s not given separately for all subgroups; there were 1,168 men and 1,353 women aged 52–59, 1,848 men and 2,134 women aged 60–74, and 806 men and 1,146 women aged 75+.

Table 4A.23. Number of falls, by age-specific wealth quintile, sex and age in 2004–05

Participants aged 60 years and over in 2004–05, excluding proxies

	No. of falls	Poorest	2nd	3rd	4th	Richest
		%	%	%	%	%
Men						
60–74	0	67.0	74.0	80.7	77.5	82.6
	1	12.9	15.3	10.6	13.8	8.2
	2	6.6	4.7	4.2	4.2	4.2
	3+	13.4	6.0	4.5	4.5	5.0
75+	0	64.8	70.0	60.8	69.5	67.3
	1	17.1	16.2	19.2	11.2	17.4
	2	7.4	4.8	7.4	8.1	9.4
	3+	10.7	9.1	12.6	11.2	6.0
Women						
60–74	0	61.0	63.2	66.7	68.6	71.8
	1	17.1	19.1	20.6	16.3	16.5
	2	9.9	7.9	7.8	7.3	6.6
	3+	11.9	9.8	4.9	7.8	5.2
75+	0	52.8	55.6	57.2	49.4	52.8
	1	24.3	22.6	26.5	25.2	27.4
	2	11.4	9.6	7.8	13.0	7.4
	3+	11.5	12.2	8.4	12.5	12.5
***Weighted* N**						
Men	*Aged 60+*	*339*	*487*	*552*	*593*	*660*
Women	*Aged 60+*	*730*	*663*	*678*	*627*	*574*
***Unweighted* N**						
Men	*Aged 60+*	*318*	*479*	*554*	*617*	*721*
Women	*Aged 60+*	*718*	*667*	*698*	*655*	*614*

Note: *N*s not given separately for all subgroups; there were 1,860 men and 2,155 women aged 60–74 and 829 men and 1,197 women aged 75+.

Table 4A.24. Percentage needing medical treatment for fall, by age-specific wealth quintile, sex and age in 2004–05

Those reporting at least one fall

		Poorest	2nd	3rd	4th	Richest
		%	%	%	%	%
Men	60–74	29.1	29.8	22.1	32.2	14.1
	75+	[37.4]	[32.8]	40.4	35.6	28.3
Women	60–74	36.0	33.7	38.9	28.9	31.4
	75+	42.3	51.3	44.8	43.9	39.4
***Weighted* N**						
Men		*116*	*134*	*144*	*152*	*147*
Women		*319*	*267*	*252*	*241*	*201*
***Unweighted* N**						
Men		*110*	*131*	*145*	*158*	*161*
Women		*306*	*269*	*256*	*246*	*215*

Note: *N*s not given separately for all subgroups; there were 426 men and 738 women aged 60–74 and 279 men and 554 women aged 75+.

Table 4A.25. Number of falls, by whether lives alone, sex and age in 2004–05

Participants aged 60 years and over in 2004–05, excluding proxies

	No. of falls	Men		Women	
		Alone	Not alone	Alone	Not alone
		%	%	%	%
Aged 60–74	0	68.6	79.0	60.2	68.3
	1	15.6	11.2	22.3	16.6
	2	7.2	4.2	9.3	7.4
	3+	8.6	5.6	8.2	7.7
Aged 75+	0	65.5	67.0	52.5	55.4
	1	17.8	15.7	25.4	24.4
	2	6.3	7.9	10.4	9.3
	3+	10.4	9.4	11.6	10.9
***Weighted* N**					
Aged 60–74		*292*	*1,525*	*487*	*1,497*
Aged 75+		*211*	*616*	*754*	*555*
***Unweighted* N**					
Aged 60–74		*287*	*1,579*	*573*	*1,599*
Aged 75+		*227*	*609*	*693*	*506*

Table 4A.26. Percentage needing medical treatment for fall, by whether lives alone, sex and age in 2004–05

Those reporting at least one fall

	Men		Women	
	Alone	Not alone	Alone	Not alone
	%	%	%	%
Aged 60–74	30.9	24.2	35.0	33.5
Aged 75+	37.1	33.6	45.0	43.9
***Weighted* N**				
Aged 60–74	*93*	*331*	*198*	*479*
Aged 75+	*73*	*205*	*362*	*247*
***Unweighted* N**				
Aged 60–74	*90*	*339*	*232*	*511*
Aged 75+	*79*	*281*	*327*	*227*

Table 4A.27. Severity of pain, by age in 2004–05 and sex

Participants in 2004–05, excluding proxies

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%	%	%
Men								
None	76.1	65.3	67.2	64.2	64.6	63.6	62.7	66.0
Mild	8.1	11.1	9.6	11.5	9.2	11.5	9.8	10.3
Moderate	11.5	16.8	17.3	17.7	18.5	17.3	18.7	16.9
Severe	4.2	6.8	5.9	6.7	7.7	7.6	8.8	6.8
Women								
None	68.8	59.3	57.4	59.0	54.8	57.1	55.6	58.4
Mild	10.6	13.1	11.0	9.5	9.8	7.1	8.1	10.1
Moderate	12.9	20.9	23.2	21.5	24.3	24.5	26.4	22.4
Severe	7.6	6.7	8.4	10.0	11.0	11.3	9.8	9.1
***Weighted* N**								
Men	*420*	*921*	*668*	*640*	*518*	*418*	*413*	*3,997*
Women	*416*	*947*	*733*	*670*	*587*	*551*	*760*	*4,665*
***Unweighted* N**								
Men	*345*	*845*	*663*	*653*	*559*	*426*	*413*	*3,904*
Women	*396*	*996*	*804*	*736*	*640*	*537*	*665*	*4,774*

Note: Responses to ‘Are you often troubled with pain?’ and, if yes, ‘How bad is the pain most of the time? Is it mild, moderate, or severe?’.

Table 4A.28. Back pain rating when walking on a flat surface, by age in 2004–05 and sex

People often troubled by pain

	52–59	60–74	75+	All
	%	%	%	%
Men				
0	48.8	44.8	48.8	46.9
1–5	28.5	32.5	30.9	30.9
6–10	22.6	22.8	20.3	22.2
Women				
0	40.8	34.6	33.4	36.1
1–5	35.7	38.4	38.4	38.0
6–10	23.5	27.0	28.2	25.9
***Weighted* N**				
Men	*414*	*618*	*291*	*1,323*
Women	*507*	*832*	*530*	*1,868*
***Unweighted* N**				
Men	*363*	*625*	*291*	*1,279*
Women	*519*	*907*	*502*	*1,928*

Note: Excluding those who say they never or cannot walk.

Table 4A.29. Hip pain rating, by age in 2004–05 and sex

People often troubled by pain

	52–59	60–74	75+	All
	%	%	%	%
Men				
0	59.5	60.9	65.6	61.5
1–5	23.1	22.1	22.5	22.5
6–10	17.4	17.0	11.9	16.0
Women				
0	51.4	48.0	52.0	50.0
1–5	29.3	30.2	30.0	29.9
6–10	19.3	21.8	18.0	20.1
***Weighted* N**				
Men	*414*	*618*	*291*	*1,323*
Women	*507*	*834*	*531*	*1,873*
***Unweighted* N**				
Men	*363*	*625*	*291*	*1,279*
Women	*520*	*909*	*503*	*1,932*

Note: Excluding those who say they never or cannot walk.

Table 4A.30. Knee pain rating, by age in 2004–05 and sex

People often troubled by pain

	52–59	60–74	75+	All
	%	%	%	%
Men				
0	44.6	42.1	43.5	43.2
1–5	34.0	32.8	30.6	32.7
6–10	21.4	25.0	25.9	24.1
Women				
0	41.0	37.8	36.0	38.2
1–5	32.9	35.0	34.5	34.3
6–10	26.1	27.2	29.5	27.5
***Weighted* N**				
Men	*414*	*617*	*291*	*1,322*
Women	*507*	*833*	*529*	*1,869*
***Unweighted* N**				
Men	*363*	*624*	*291*	*1,278*
Women	*520*	*908*	*501*	*1,929*

Note: Excluding those who say they never or cannot walk.

Table 4A.31. Foot pain rating, by age in 2004–05 and sex

People often troubled by pain

	52–59	60–74	75+	All
	%	%	%	%
Men				
0	61.0	65.1	65.9	64.0
1–5	23.4	19.9	20.9	21.2
6–10	15.6	15.0	13.2	14.8
Women				
0	51.5	53.9	58.4	54.5
1–5	24.5	26.1	22.4	24.6
6–10	24.0	20.1	19.2	20.9
***Weighted* N**				
Men	*414*	*617*	*291*	*1,322*
Women	*507*	*834*	*530*	*1,871*
***Unweighted* N**				
Men	*363*	*624*	*291*	*1,278*
Women	*520*	*909*	*502*	*1,931*

Note: Excluding those who say they never or cannot walk.

Table 4A.32. Number of sites at which severe pain, by age in 2004–05 and sex

Participants in 2004–05, excluding proxies

	52–59	60–74	75+	All
	%	%	%	%
Men				
0	86.7	84.5	84.3	85.2
1	6.4	8.4	9.1	7.9
2	3.9	3.6	4.8	4.0
3 or 4	2.9	3.4	1.8	2.9
Women				
0	82.4	78.7	79.0	79.9
1	7.8	9.4	10.3	9.2
2	5.0	6.8	5.8	6.0
3 or 4	4.8	5.1	4.9	5.0
***Weighted* N**				
Men	*1,341*	*1,825*	*831*	*3,997*
Women	*1,364*	*1,991*	*1,310*	*4,665*
***Unweighted* N**				
Men	*1,190*	*1,875*	*839*	*3,904*
Women	*1,392*	*2,180*	*1,202*	*4,774*

Notes: Excluding those who say they never or cannot walk. Number of sites out of back, hip, knee and foot. '0' includes those who are not often troubled by pain, those who have pain but not at these sites and those whose pain at these sites is not severe.

Table 4A.33. Severity of pain, by age-specific wealth quintile, sex and age in 2004–05

Participants 2004–05, excluding proxies

		Poorest	2nd	3rd	4th	Richest
		%	*%*	*%*	*%*	*%*
Men						
52–59	Never	48.8	61.8	69.6	79.0	81.0
	Mild	12.6	8.7	9.8	9.9	10.4
	Moderate	22.8	22.6	16.9	7.8	6.8
	Severe	15.8	6.9	3.7	3.3	1.8
60–74	Never	45.6	58.2	66.9	67.4	78.3
	Mild	11.9	10.6	7.4	10.9	10.4
	Moderate	29.3	20.1	20.5	16.6	8.6
	Severe	13.1	11.2	5.2	5.2	2.7
75+	Never	64.5	62.4	58.3	64.0	66.8
	Mild	10.5	10.6	12.3	9.0	10.2
	Moderate	19.7	13.7	19.4	19.1	18.4
	Severe	5.3	13.2	10.0	7.9	4.5
Women						
52–59	Never	54.1	55.4	64.5	65.8	72.4
	Mild	8.2	12.7	13.6	14.8	12.4
	Moderate	23.5	22.8	18.0	15.7	12.4
	Severe	14.2	9.2	3.9	3.6	2.8
60–74	Never	46.7	50.5	56.1	63.0	68.6
	Mild	5.4	8.8	12.9	11.7	12.0
	Moderate	30.0	28.5	23.2	19.1	14.4
	Severe	17.8	12.2	7.8	6.1	4.9
75+	Never	49.8	52.0	60.9	60.1	63.3
	Mild	8.2	8.3	7.1	5.5	9.1
	Moderate	26.6	30.0	23.7	26.9	18.2
	Severe	15.4	9.7	8.3	7.5	9.4
***Weighted* N**						
Men		*583*	*739*	*846*	*891*	*912*
Women		*1,031*	*933*	*952*	*865*	*842*
***Unweighted* N**						
Men		*514*	*696*	*809*	*895*	*965*
Women		*1,009*	*934*	*980*	*902*	*899*

Notes: Those with mild, moderate or severe pain, excluding those who say they never or cannot walk. *N*s are not given for each sex and age group separately; there were 1,178 men and 1,361 women aged 52–59, 1,869 men and 2,163 women aged 60–74, and 832 men and 1,200 women aged 75+.

Table 4A.34. Prevalence of severe pain in particular sites, among those with pain, by age-specific wealth quintile, sex and age in 2004–05

People often troubled by pain

		Poorest	2nd	3rd	4th	Richest	All
		%	%	%	%	%	%
Men							
52–59	Back	38.6	25.5	15.3	6.2	11.9	22.8
	Hip	31.6	17.2	12.1	11.3	0.0	23.0
	Knee	29.4	25.7	17.1	16.2	8.3	21.6
	Foot	25.9	12.9	10.9	13.3	7.2	15.7
60–74	Back	28.4	24.8	23.2	20.2	16.0	22.8
	Hip	22.0	22.0	15.8	14.4	9.4	17.1
	Knee	28.2	32.5	26.9	25.1	9.1	25.1
	Foot	18.9	18.6	12.1	15.5	6.8	14.8
75+	Back	[28.6]	15.5	23.4	21.2	15.2	20.1
	Hip	[14.4]	8.1	11.7	16.9	8.8	11.8
	Knee	[25.6]	30.2	29.8	20.1	22.5	25.7
	Foot	[16.4]	15.7	11.3	12.9	12.5	13.3
Women							
52–59	Back	35.2	25.8	19.8	16.9	11.3	23.5
	Hip	26.8	25.8	12.2	14.1	9.9	19.2
	Knee	36.8	27.5	27.8	20.4	6.3	25.7
	Foot	34.8	26.3	23.4	14.0	12.5	23.9
60–74	Back	39.6	29.3	20.5	21.6	17.9	27.1
	Hip	29.1	25.4	17.1	18.3	14.1	21.7
	Knee	38.2	31.8	21.4	21.3	17.3	27.3
	Foot	27.1	22.4	19.7	14.1	12.9	20.2
75+	Back	31.3	30.6	27.2	23.4	24.4	28.2
	Hip	15.2	22.4	21.7	16.6	14.0	18.0
	Knee	24.3	39.4	33.7	26.5	23.5	30.0
	Foot	20.6	22.6	20.6	20.2	8.3	19.3
***Weighted* N**							
Men		*281*	*283*	*281*	*257*	*213*	*1,314*
Women		*496*	*417*	*365*	*310*	*263*	*1,851*
***Unweighted* N**							
Men		*247*	*266*	*272*	*261*	*225*	*1,271*
Women		*496*	*422*	*382*	*327*	*285*	*1,912*

Notes: Excluding those who say they never or cannot walk. *N*s are not given separately for each sex and age group; there were 360 men and 509 women aged 52–59, 623 men and 903 women aged 60–74, and 288 men and 500 women aged 75+.

5. Measures of physical health

Mary Pierce *University College London*

Faiza Tabassum *University College London*

Meena Kumari *University College London*

Paola Zaninotto *University College London*

Nicholas Steel *University of East Anglia*

The focus of this chapter is on distribution of a number of biological measurements by age and sex, and age-specific wealth. Among other things, the cross-sectional analyses presented in this chapter show:

- The age patterns differ for Body Mass Index (BMI) and Waist-Hip Ratio (WHR). In men, BMI peaks earlier than in women (55–59 years compared with 60–64 years), while WHR peaks at 70–74 in men, but continues to increase with age in women.
- There is clear pattern of differences in anthropometric measures with wealth. BMI in women and WHR in both men and women, show linear negative trends across the quintiles of wealth. This pattern is not seen in BMI in men.
- Among ELSA participants, systolic and diastolic blood pressure show different patterns with age. Systolic blood pressure does not rise inexorably with age but peaks in people in groups in their 70s and thereafter falls. Diastolic pressure falls with age in all women and in men older than 60 years.
- Different cardiovascular risk factors pattern differently by age. The percentage of people with hypertension (except for the very oldest group), diagnosed diabetes and mean levels of C-reactive protein (CRP) increases with age. By contrast, the percentage of people with high total and LDL cholesterol decreases with age after 60 years.
- Different cardiovascular risk factors also show different patterns with wealth. As wealth increases, there is a decrease in mean systolic blood pressure, the percentage of people with hypertension, high risk levels of HDL cholesterol and triglycerides, diagnosed and undiagnosed diabetes and mean CRP levels. By contrast, there is no association with diastolic blood pressure and the prevalence of high total and LDL cholesterol increases with increasing wealth.
- Different lipids measures show different patterns by sex. The overall prevalence of high total and LDL cholesterol is very high and higher for women than for men. Detrimental levels of triglycerides are more prevalent in men than women.
- All measures of lung function deteriorate with advancing age and there is a shallow gradient with wealth, richer people being somewhat advantaged.

There is a clear effect of smoking; lung function is always better in those who have never smoked than in those who currently smoke.

- Mean haemoglobin decreases with age in both men and women. The prevalence of anaemia is greatest in the oldest groups.
- Ferritin levels show an inverted U shape with age in both sexes. Low ferritin levels in women show the same pattern with age, but no age related pattern is seen in men. Mean haemoglobin is not associated with wealth and ferritin only shows some signs of an advantage for the richest group.

5.1 Introduction

This chapter focuses on distribution of a number of biological measurements by age and sex, and age-specific wealth. These factors were chosen because they are associated with mortality or morbidity either directly or indirectly because they are cardiovascular risk factors.

Many of the biological measurements reported here have been found to be distributed by socio-economic position. One aspect of this is financial status and this has often been investigated using measures of income. However, the ELSA population is a combination of working and retired people, so we have developed and used a novel measure of total wealth (age-specific wealth) to represent the participants' financial status more accurately.

The chapter includes separate sections on:

Anthropometry – Body Mass Index, Waist-Hip Ratio

Blood pressure

Lipids and inflammatory markers

Glycaemic control

Lung function

Haemoglobin and ferritin

The data for this chapter comes from the nurse visit to the core sample members living in private homes. Eighty-eight per cent of those who had a wave 2 interview had a nurse visit (n=7648). Important features of the methodology are highlighted in this chapter but the precise details of what was done are given in the technical report and the detailed response rates appear in the chapter on methodology.

Blood samples were taken from willing ELSA core members, except people who had ever had a fit/convulsion, clotting/bleeding disorders, or were on anticoagulants. Fasting blood samples were taken whenever possible, but subjects over 80 years, known to be diabetic and on treatment, and those who seemed frail or whose health the nurse was concerned about, were not asked to fast. Subjects were considered to have fasted if they had not had food or drink except water for a minimum of 5 hours prior to the blood test. Valid blood samples were taken from 5,884 people of which 4,432 (75% were fasting).

If participants gave permission, then the results of their BP and blood analytes were sent to their GPs.

5.2 Anthropometry

Body mass index and waist-hip ratio

Both obesity and underweight are important problems in the elderly. The prevalence of obesity is increasing in all age groups, including the elderly (Kopelman, 2000). Obese people have increased mortality compared with those who are overweight or desirable weight, but the relative risk of death associated with increasing BMI decreases with age (Calle et al., 1999).

Obesity is associated with a number of conditions that interfere with health and well-being. These include the metabolic syndrome (obesity, insulin resistance, hypertension, gout, dislipidemia), frank diabetes, arthritis, pulmonary abnormalities (obesity hypoventilation syndrome and obstructive sleep apnoea), urinary incontinence, cataracts and cancers (of breast, colon, gall-bladder, pancreas, kidney, bladder, uterus, cervix and prostate). Obesity exacerbates the age-related decline in physical function and impairs the quality of life of older people (Kopelman, 2000; Villareal et al., 2005).

Cross-sectional data from large population studies suggest that mean body weight and BMI gradually increase during adult life, reaching a peak at about 50–59 years and tending to decline thereafter. However, these observations could be affected by survival bias as obese people have higher mortality at younger ages, and data from cohort studies suggest that BMI does not change or decreases only slightly in older adults Moreover, as people age, their body composition changes. After 30 years of age, free fat mass decreases and fat mass increases, and after 70 years both decline. The distribution of body fat also changes with age, with a relative increase in abdominal fat compared with skeletal or total body fat (Villareal et al., 2005).

Underweight in the elderly is associated with increased mortality. This is partially but not completely explained by smoking and overt or covert disease (Calle et al., 1999; Seidell and Visscher, 2000).

Anthropometric measurements are distributed by socio-economic status. BMI has been shown to be negatively associated with income (Choiniere, Lafontaine and Edwards, 2000) and education (Yarnell et al., 2005; Silventoinen et al., 2005; Davey Smith et al., 1998). Overweight and obesity are negatively associated with education (Choiniere, Lafontaine and Edwards, 2000; Hoeymans et al., 1996). However, no association has been found between occupation and BMI (Davey Smith et al., 1998; Rosengren, Orth-Gomer and Wilhelmsen, 1998).

Height was measured using a portable stadiometer with a sliding headplate, a base plate and three connecting rods marked with a metric scale. Informants were asked to remove their shoes. One measurement was taken with the informant stretching to the maximum height and the head in the Frankfort plane. The reading was recorded to the nearest millimetre.

Weight was measured using Tanita THD-305 portable electronic scales. Informants were asked to remove their shoes and any bulky clothing. A single measurement was recorded to the nearest 0.1 kg.

We report only the measurements of height and weight taken. People who stated that they were greater than130kg were not weighed and are therefore excluded.

The BMI associated with the lowest mortality is slightly higher in older than younger adults, so there is a debate about what desirable weight might be in an older population. In this chapter, the WHO classification is used, i.e. less than18.5 kg/m^2 is called underweight, 18.5 kg/m^2 but less than 25 kg/m^2 is desirable, 25 kg/m^2 but less than 30 kg/m^2 is overweight; and 30 kg/m^2 or more is obese (James et al., 2001).

Waist-hip ratio (WHR) was also collected as it has been shown to be better than BMI as a predictor of total mortality, mortality from coronary heart disease, other cardiovascular diseases and cancer. Like BMI, WHR is associated with incidence of diabetes and hypertension (Folsom et al., 2000). WHR has been shown to be negatively associated with education (Silventoinen et al., 2005).

Waist was defined as the midpoint between the lower rib and the upper margin of the iliac crest. It was measured using a tape with an insertion buckle at one end. Hip was defined as the widest circumference around the buttocks below the iliac crest. Both measurements were taken twice using the same tape and were recorded to the nearest even millimetre. Those whose waist or hip measurements differed by more than 3cms had a third measurement taken.

Unlike BMI, there is no consensus about appropriate WHR criterion levels (Molarius and Seidell, 1998), but for consistency we used the same cut-offs as the Health Survey for England 1994, 1998 and 2003, and a raised WHR for women was taken as 0.85 or more and for men 0.95 or more.

Results

BMI and WHR measurements by age and sex

The overall mean BMI is similar for men (27.8 kg/m^2) and women (28 kg/m^2). Among men, mean BMI starts decreasing after 55–59 years from 28.3 kg/m^2 to 26.6 kg/m^2 for those aged 80 years or over. In women, Mean BMI starts decreasing after 74 years from 28.3 kg/m^2 to 26.5 kg/m^2 for those aged 80 years or over (Table 5A.1).

Less than 1% of men and slightly more than 1% of women are underweight. Only 23% of men and 30% of women have their BMI in the desirable category. More men (49%) than women (39%) are overweight and this applies to all age groups, but more women (31%) than men (27%) are obese, particularly among people in their 70s (Table 5A.2). The very oldest are the least likely to be obese.

The mean WHR in men is 0.956 and in women it is 0.846. In men, WHR increases with age up to 74 years, thereafter it decreases. In women, a clear upward linear trend with age is found in WHR (Table 5A.3). Raised WHR was defined in men as 0.95 or greater and 0.85 or greater in women. Overall, 53% of men had raised WHR compared with 46% of women. The percentage of women with raised WHR increases with age, but for men the highest percentage is in the 70–74 year age group.

BMI and WHR measurements by wealth and sex

A decreasing trend in the BMI means by age-specific wealth quintiles is found in women (Table 5A.4). In men, respondents in the poorest wealth quintile have slightly higher mean BMIs than respondents in the richest wealth quintile.

Table 5A.5 shows the percentage of people in each WHO category of BMI by age-specific wealth quintiles and sex. At all levels of wealth, around three quarters of men are overweight or obese. The proportion of overweight men increases with wealth while the proportion of obese men decreases. In women, the percentages with desirable weight and overweight increase with wealth, while the percentages of underweight and obese decrease with wealth.

For both men and women, with increasing wealth the means of waist-hip ratio are lower. Thus, people in the poorest wealth quintile tend to have higher WHR than those in the richest wealth quintile (Table 5A.6). The percentage of both men and women with raised WHR decreases as wealth increases. For example, there are 44% of men with raised WHR in the richest wealth quintile compared with 63% of men in the poorest.

Summary

The age patterns differ for BMI and WHR. In men, BMI peaks earlier than in women (55–59 years compared with 60–64 years) (Table 5A.2), while WHR peaks at 70–74 years in men but continues to increase with age in women (Table 5A.4).

There is a clear pattern in anthropometric measures with wealth: BMI in women, and WHR in both men and women, show linear trends right across the quintiles of wealth. This pattern is not seen in BMI in men, where the poorest have slightly worse BMIs than the richest, but there is no clear pattern for the intermediate groups. These findings complement those of Choiniere et al., relating BMI inversely to income (Choiniere, Lafontaine and Edwards, 2000) and Silventoinen relating WHR inversely to education (Silventoinen et al., 2005).

5.3 Blood pressure

Elevated systolic and diastolic blood pressures are important risk factors for cardiovascular disease (CVD). A recent meta-analysis of 61 observational studies of people without pre-existing CVD has re-confirmed systolic and diastolic hypertension as being pre-eminent risk factors for CVD deaths (James et al., 2001; Lewington et al., 2002).

Based on clinical trial data, hypertension is defined as 'the level of BP [blood pressure] at which there is evidence that blood pressure reduction does more good (in terms of CVD risk) than harm'. In ELSA we have used systolic equal to or greater than 140mmHg or diastolic equal to or greater 90 mmHg to define hypertension, as recommended by the IV British Hypertension Society Guidelines 2004 (Williams et al., 2004). Isolated systolic hypertension is defined as systolic equal to or greater 140 mmHg with diastolic less than 90mmHg. This classification is in keeping with the European society for Hypertension (2003), the WHO/ISH (1999) and the Joint British Societies Guidelines (2006).

Ageing in Western societies is associated with a rise in SBP across the whole age range, whereas DBP rises to the age of 60 years, plateaus and then falls, resulting in an age-related increase in pulse pressure and prevalence of isolated systolic hypertension (ISH) (Franklin et al., 1997). Trial evidence supports treatment in the elderly up to the age of 80 years, in that they have as good or better results from treatment. Until the HYVET study reports, there is no available guidance for those over 80 years at diagnosis (Bulpitt et al., 2003).

Many studies have shown that blood pressure varies with socio-economic status. Systolic, diastolic blood pressures (BP) and hypertension are negatively associated with education (Davey Smith et al., 1998; Hoeymans et al., 1996; Yarnell et al., 2005); systolic and diastolic BP negatively associated with occupational social class (Davey Smith et al., 1998) and hypertension negatively associated with income(Choiniere, Lafontaine and Edwards, 2000). However, there are some studies that have failed to show these associations, e.g. between systolic BP and occupational social class (Rosengren, Orth-Gomer and Wilhelmsen, 1998) and diastolic BP and education (Silventoinen et al., 2005).

High blood pressure may be asymptomatic and remain undetected until many years after onset. As ELSA has both self-reports of doctor diagnosed hypertension and actual measurements of blood pressure, this provided the opportunity to assess the extent to which this condition exists but is undiagnosed in the older population.

Blood pressure measurements were taken using the Omron HEM 907. Three measurements were taken, in the right arm, at one-minute intervals, with the subjects seated.

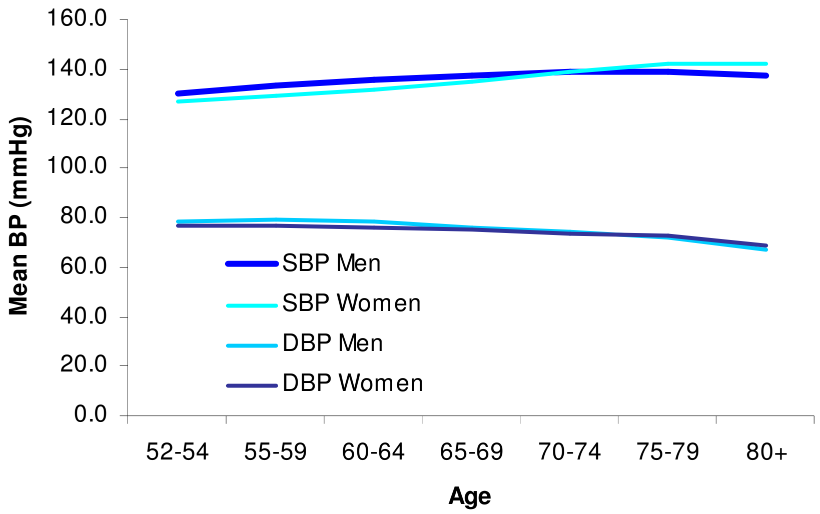
Results

Means of systolic and diastolic blood pressure (BP) by age and sex

The means of systolic and diastolic blood pressure are higher among men (135.9 mmHg and 75.8 mmHg respectively) than women (135.1 mmHg and 74.1 mmHg respectively). In men, systolic BP increases up to 70–74 years then it decreases slightly. In women, systolic blood pressure increases up to age 75–79 years. Diastolic blood pressure in men and in women is generally lower the older the age group, although the highest mean diastolic BP is seen in men aged 55–59 years (Table 5A.7). Figure 5.1 shows the widening of pulse pressure with age apparent in both sexes.

Table 5A.7 also lists the prevalence of hypertension in men and women. The overall prevalence of hypertension is similar in both sexes (56% in men and 55% in women) There is an increasing trend in the prevalence of hypertension with age in both sexes. In men 37% had hypertension in the age group 52–54 years compared with 64% in the age group 80 years and over; the corresponding percentages in women were 34% and 74%.

Figure 5.1. The differences in mean systolic blood pressure (SBP) and diastolic (DBP) in mmHg with age and sex



Means of systolic and diastolic BP, by age-specific wealth quintiles and sex

There is a decreasing trend in the means of systolic blood pressure by age-specific wealth quintiles in both men and women. Diastolic BP decreases with wealth in men, but no trend of diastolic BP with wealth was found in women. The prevalence of people with hypertension decreases with increase in wealth. For example, 63% of women in the poorest age-specific wealth quintile have hypertension, compared with 45% of women in the richest quintile (Table 5A.8).

Undiagnosed high blood pressure, by age and sex

Sixteen per cent of women and 18% of men had systolic BP equal to or greater than 140 mmHg or diastolic BP equal to or greater than 90 mmHg, but had not reported a diagnosis of hypertension or high blood pressure when asked in 2002–03 (wave 1) or 2004–05 (wave 2). There is a clear trend of increasing undiagnosed high blood pressure with increasing age, from 11% of women and 15% of men aged 52–59 years, up to 21% of women and 23% of men aged over 80 years (Table 5A.9).

Undiagnosed high blood pressure, by age-specific wealth quintiles and sex

No clear trend of increasing undiagnosed high blood pressure with wealth was apparent for men. For women, undiagnosed hypertension was more common in the poorest quintile (18%) than the richest (14%). There was a highly significant trend for women aged 52–54 years, but this was not significant in any other subgroup (Table 5A.10).

Summary

Differences by age and sex

In our population, systolic and diastolic BP show different patterns with age. Systolic BP does not rise inexorably with age but peaks in people in groups in their 70s and thereafter falls. Diastolic blood pressure in men and in women is generally lower the older the group, although the youngest men do not have the highest mean. The patterns observed are not exactly the same as the physiological pattern of change in BP with age, but this is probably because these analyses are cross-sectional and so the mean for the older groups is affected by the selective survival in the community of those whose systolic blood pressure was not at the higher end of the range.

The percentage of people with high blood pressure is high overall and rises with advancing age. The problem of undiagnosed hypertension is also an increasing problem as people get older. The non-detection and hence non-treatment of hypertension in the older population cannot be justified on clinical grounds as there is strong evidence of the benefit of treatment up to the age of 80 years(Williams et al., 2004).

Differences by wealth

Hypertension and systolic BP in both men and women, and diastolic BP in men, decrease with wealth, but there is no evidence of such an effect in women. These findings reinforce and extend the literature on the relationship between socio-economic status and BP and in particular support and extend the findings of Choiniere that income is inversely related to hypertension (Choiniere, Lafontaine and Edwards, 2000).

The problem of undiagnosed high blood pressure is only slightly more likely to occur in the poorest women than the wealthiest women and is not at all related to wealth in men. If detecting important asymptomatic conditions is taken as an indicator of quality of care, this indicates that in the UK the wealthier do not seem to be getting better care.

5.4 Lipids and inflammatory markers

Lipids

Cholesterol, HDL cholesterol and LDL cholesterol

Cholesterol levels in the blood are influenced by diet and the rate of manufacture in the liver. High levels of cholesterol are associated with the development of atheroma and there is a continuous positive relationship between total serum cholesterol level and CHD risk (Stamler et al., 1993).

Total cholesterol includes two fractions – LDL and HDL cholesterol. LDL cholesterol comprises 60–70% of total cholesterol. It is a risk factor for cardiovascular disease and intervention studies have shown that a reduction of LDL cholesterol with statins leads to a reduction in the incidence of coronary heart disease and other major vascular events (Baigent et al., 2005). HDL cholesterol is a smaller fraction of the total cholesterol, but it is cardioprotective as it is involved in carrying cholesterol away from the arteries to the liver where it is metabolised (Assmann et al., 1996; Turner et al., 1998).

In ELSA we measured total cholesterol, HDL cholesterol on non-fasting samples and LDL cholesterol on fasting samples. We did not record whether participants had been given a diagnosis of hypercholesterolaemia or were taking lipid-lowering agents.

The NSF 2000 guidelines for the UK (Department of Health, 2000) suggest using lipid-lowering drugs and dietary advice to reduce raised total cholesterol to no more than 5 mmol/l (LDL cholesterol to below 3 mmol/l) or by 30% (whichever is the higher) in people at high risk of CVD. We have therefore taken 5 mmol/l as the cut-off for high total cholesterol and 3 mmol/l for a high LDL. We have taken the cut-off for a high-risk level of HDL cholesterol (less than 1 mmol/l) from the Expert Panel on HDL Cholesterol recommendations for primary and secondary prevention of CVD (Sacks, 2002).

In men, in the Health Survey for England (HSE) 2003, after an initial rise with age, mean total cholesterol flattened out after age 45 (at 5.9 mmol/l) and then fell from age 65–74 years to 5.3 mmol/l in those aged 75 years and over. In women, it fell slightly with age from 55–64 years. Neither LDL nor HDL fluctuated much between age groups for either gender, but as LDL cholesterol was measured in few people (it was done only on the fasting sample) the point estimates should be interpreted with caution. Mean HDL cholesterol was a little higher in women than in men.

Triglycerides

Triglycerides levels are an independent risk factor for CVD and based on the findings of a prospective study of people with familial hypertriglyceridemia, we have used ≥1.6 mmol/l as the cut-off for high triglyceride levels(Austin, 1998; Austin et al., 2000). As triglycerides are assayed on a fasting sample, the HSE 2003 results are to be interpreted with caution, but the mean triglyceride levels in women rose from 1.3 mmol/l in those 45–54 years to 1.6 mmol/l in those 65–74 years, and the corresponding percentages with high triglycerides from 25% to 43%. In men in the same age groups the mean went from 1.8 mmol/l to 1.7 mmol/l and the percentages with high triglycerides from 43% to 48%.

Lipids and socio-economic status

The literature relating cholesterol and socio-economic status is unclear, showing no association (Yarnell et al., 2005) or a negative association (Hoeymans et al., 1996) with education; no association (Rosengren, Orth-Gomer and Wilhelmsen, 1998) or a positive association with social class (Davey Smith et al., 1998); and a positive association with income (Choiniere, Lafontaine and Edwards, 2000).

Low HDL cholesterol is more common in lower educational groups (Hoeymans et al., 1996) and mean HDL is positively associated with education in women but not in men (Silventoinen et al., 2005). Triglycerides are negatively associated with education (Silventoinen et al., 2005).

Results

Lipids by age and sex

Associations of four lipids namely, total cholesterol, LDL cholesterol, HDL cholesterol and triglycerides with age and sex are presented in Table 5A.11. The table shows that men have lower levels of total cholesterol than women: 5.6 mmol/l compared with 6.1 mmol/l. In men, mean total cholesterol levels are flat from age 52–64 years and then fall from 5.8 mmol/l in those aged 60–64 to 4.9 mmol/l in those aged 80 years and more. In women, there is a little decrease in the mean cholesterol levels with age from the age of 70 years. These age-related findings are similar to those of HSE 2003.

Overall, 70% of men and 84% of women have high total cholesterol levels (at least 5 mmol/l). At every age, the percentage of women with high cholesterol is greater than that of men. This is most extreme in the oldest group because the percentage with higher cholesterol declines sharply with age for men but more gradually for women. Four out of five women aged 75 years or above have raised cholesterol levels compared with 57% of men aged 75–79 years and 44% of men aged 80 years and over. In both sexes, the prevalence of high cholesterol decreases with age, but this is more marked in men than in women.

The mean LDL cholesterol levels are slightly lower in men (3.5 mmol/l) than in women (3.8 mmol/l). In men, LDL concentrations decrease with age, e.g., the LDL concentration for those aged 52–54 years is 3.7 mmol/l compared with 3.3 mmol/l at age 75–79. In women, there is little variation with age.

In total, 72% of men and 81% of women have high levels of LDL cholesterol (at least 3.0 mmol/l). The prevalence of high LDL levels in men decreases with age e.g. 81% of men aged 52–54 years compared to 60% aged 75–79 years. In women, the prevalence of high LDL decreases from age 55–59 years.

Mean HDL cholesterol was marginally higher in women (1.6 mmol/l) than in the men (1.4 mmol/l). Overall, mean HDL levels do not show any pattern with age in either sex. Seven per cent of men and 2% of women have high-risk levels of HDL (less than 1.0 mmol/l) and no consistent pattern of difference with age is seen in either sex.

Triglycerides concentrations are similar for the sexes (1.5 mmol/l in women and 1.6 mmol/l in the men) and there is little variation in mean level by age. Fifty one per cent of men and 43% of women have high levels of triglycerides (at least 1.6 mmol/l). The prevalence of high levels of triglyceride decreases with increasing age in men. In women, although the youngest groups had a higher prevalence of high triglycerides than the oldest, the pattern in the intervening age groups was inconsistent.

Lipids by age-specific wealth and sex

Table 5.A.12 shows the associations of four lipids namely, total cholesterol, LDL cholesterol, HDL cholesterol and triglycerides with age-specific wealth quintiles for men and women. Total cholesterol levels in men do not show any trend with the age-specific wealth quintiles. In women, the mean cholesterol levels are slightly higher among those in the richest quintiles than those in the poorest quintiles. In men and women, there is a positive trend of increasing prevalence of high cholesterol (at least 5 mmol/l) with wealth.

Mean LDL cholesterol levels in men and women increase with age-specific wealth quintiles, as does the prevalence of men and women with high LDL levels. Mean HDL cholesterol concentrations show small increases with wealth in both sexes. The prevalence of low levels of HDL decreases with increasing age-specific wealth quintile, albeit the percentages are small at all levels of wealth for women.

The triglycerides concentrations show a slight decrease with wealth. For example, the mean triglycerides concentration among men in the poorest quintile is 1.8 mmol/l compared with 1.4 mmol/l for those in the richest quintile. The prevalence of high triglycerides decreases with wealth.

Inflammatory markers

Fibrinogen is a soluble protein essential to the blood clotting mechanism. Studies have shown that high fibrinogen is related to increased risk of cardiovascular disease in middle aged and older populations (Danesh et al., 2005; Smith et al., 2005).

C-reactive protein (CRP) is an inflammatory marker that is shown to be associated with atherosclerosis and is predictive of myocardial infarction in older men and women (Cushman et al., 2005; Strandberg and Tilvis, 2000).

Both fibrinogen (Myllykangas et al., 1995) and CRP (Lubbocket al., 2005) have been shown to be associated with low socio-economic status.

Results

Inflammatory markers by age and sex

Table 5A.13 reports the means of fibrinogen (g/l) and C-reactive protein (CRP) concentrations (mg/l) by age for men and women. The mean levels are similar for the two sexes. The mean levels of fibrinogen increase with age in both men and women, but the differences are small, the gradient is shallow and the means are not consistently higher in successively older groups. CRP levels increase with age, plateauing from 70–74 years.

Inflammatory markers by age-specific wealth and sex

With increasing wealth, CRP levels decrease. The gradient of fibrinogen with wealth is very slight; for example, in the poorest quintile the mean levels of fibrinogen in men is 3.3 g/l compared to 3.1 g/l in the richest quintile (Table 5A.14). These findings accord with those of Lubbock, relating CRP inversely to socio-economic status (Lubbock et al., 2005).

Summary

Differences by age and sex

The different lipids measured show quite different patterns with age and sex, and are similar to the findings of HSE 2003. Although generally differences in mean values by age or wealth were small, the percentages in high-risk groups showed more variation. The overall prevalence of detrimental (high) lipid levels is very high and is higher for women than for men for both total and LDL cholesterol. In both men and women we find an age-related fall in the percentages with high values from the age of 60 years. In women, the age-related fall in the prevalence of high values is shallower. High levels of triglycerides decrease with increasing age from the youngest group in men.

The means for inflammatory markers (CRP and fibrinogen) and differences with age are similar to those found in HSE 2003. CRP levels increase with age and there is a similar but slight trend for fibrinogen.

Differences by wealth

Different lipid show quite different patterns by wealth. Surprisingly, the prevalence of high cholesterol and high LDL cholesterol increases with wealth, with wealthier people being high risk, although the absolute differences are not large. These findings support the findings of a positive association with socio-economic status reported by Davey Smith (Davey Smith et al., 1998) and Choiniere (Choiniere, Lafontaine and Edwards, 2000).

High-risk levels of HDL cholesterol and triglycerides are less common among the wealthier than the poor. These findings are in keeping with those of Hoeymans et al. (1996) and Silventoinen et al. (2005), who report a negative association with socio-economic status. The means for CRP levels decrease with wealth. The pattern for fibrinogen is similar but the gradient is shallow.

5.5 Glycaemic control

Diabetes is associated with profound medical complications particularly affecting the eyes, kidneys, peripheral nerves and the cardiovascular system. People with diabetes have more than double the risk of cardiovascular disease (Kannel and McGee, 1979; Huxley, Barzi and Woodward, 2006) than people without diabetes. Even among non-diabetics, higher glucose levels are associated with increased risk of death from coronary heart disease (Fuller et al., 1983)

Increasing age is one of the most important risk factors for diabetes. The relationship between diabetes and occupational social class (NS-SEC) is complex, but a clear gradient by equivalised household income has been found, with diabetes more prevalent among people from households with the lowest income than those with the highest (HSE 2003).

As the onset of type 2 diabetes is insidious, people may have diabetes for many years without knowing it. The ELSA protocol allowed us a unique opportunity to examine the issue of undiagnosed diabetes. In the interviews at waves 1 and 2, participants were asked if a doctor had ever told them that they had diabetes and whether they were taking medication for diabetes or insulin. We calculated the percentage of people without diabetes who had fasting blood glucose of 7 mmol/l or more and examined this by age/sex and wealth. A definitive diagnosis of diabetes in clinical practice requires single fasting blood glucose of equal to or greater than 7 mmol/l in the presence of symptoms, or in the absence of symptoms, two such fasting blood glucose measurements on different days (Report of the Expert Committee 1997). In ELSA we had only one fasting blood glucose measurement and so we may be overestimating the percentage of people with undiagnosed diabetes.

Results

Fasting blood glucose, by age and sex, and by wealth

Table 5A.15 shows the mean fasting glucose levels by age and sex in participants without known diabetes. Mean fasting glucose is slightly higher at all ages in men than in women. There is a small increase with age in both sexes; the mean rises from 4.9 mmol/l in the youngest men to 5.1 mmol/l in the oldest and from 4.8 mmol/l to 4.9 mmol/l in same age groups among the women. There was no clear pattern by wealth in either sex (data not shown).

Diagnosed and undiagnosed diabetes by age and sex

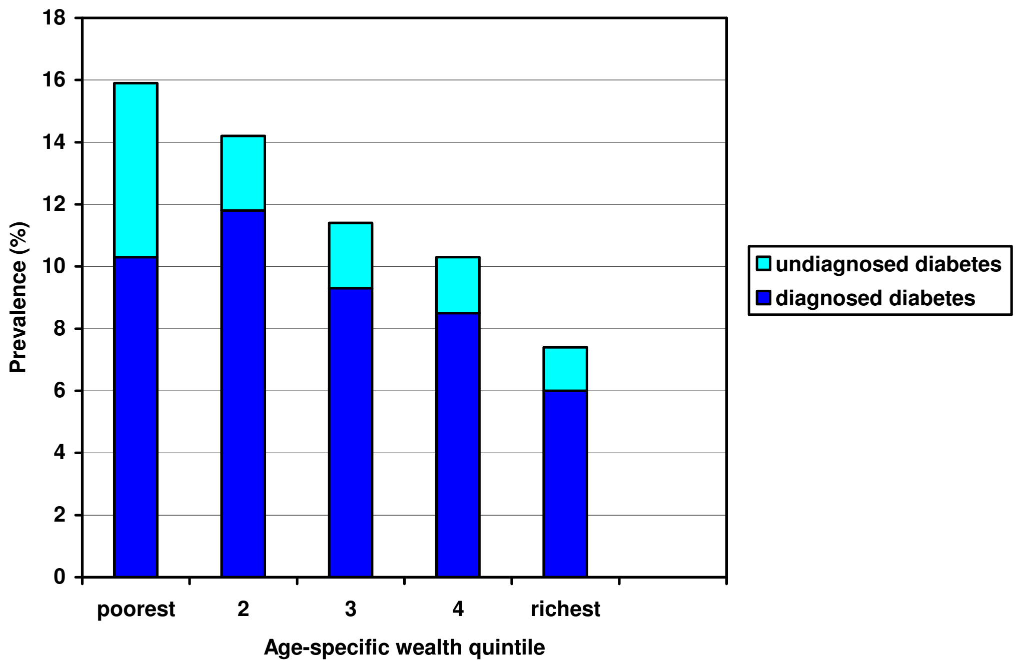
Table 5A.16 shows the proportion of the ELSA population under 80 years of age who reported a doctor diagnosis of diabetes at either wave 1 or wave 2 interviews, by age and sex. There was an increase in the prevalence of doctor-diagnosed diabetes with age in both sexes, from one-in-twenty of the youngest men to one-in-seven of the oldest, and from one-in-thirty of the youngest women to one-in-ten of the oldest.

Table 5A.17 shows the prevalence of fasting blood glucose of 7 mmol/l or more (which is suggestive of undiagnosed diabetes) in those people who did not have a doctor diagnosis of diabetes. The overall proportion of people with fasting blood glucose suggestive of undiagnosed diabetes (7 mmol/l or more) was low (less than 2% for men and women combined) compared with other studies (Thomas et al., 2005; Williams et al., 1995) and was more than twice as high for men than for women. This sex difference was apparent in all but one age group. The oldest (75–79 years) have a higher prevalence of undiagnosed diabetes than the youngest (52–52 years) in both sexes, but the pattern in the intervening age groups is not consistent. There is no clear trend of increasing undiagnosed diabetes with increasing age.

Diagnosed and undiagnosed diabetes by wealth

Table 5A.18 shows the proportion of the ELSA population under 80 years of age who reported a doctor diagnosis of diabetes at either wave 1 or wave 2 interviews, by age-specific wealth quintile. The percentage of men and women with undiagnosed diabetes was higher in the poorest quintile of age-specific wealth than the richest quintile. In men 5.6% of those in the poorest quintile and 1.4% in the richest quintile had undiagnosed diabetes. In women less than 2% of the poorest and none of the richest had undiagnosed diabetes. (Table 5A.19) In every wealth group, a higher proportion of men than women had fasting blood glucose levels suggestive of diabetes. Figure 5.2 shows clearly that the combined prevalence of diagnosed and undiagnosed diabetes decreases as wealth increases. A similar pattern is seen for women but with smaller percentages.

Figure 5.2. Prevalence (%) of diagnosed and undiagnosed diabetes by age-specific wealth quintile (men only)



Summary

Both the prevalence of diagnosed diabetes and the mean fasting blood glucose in people without diabetes are higher in men than women, and rise with age. The percentage of people with undiagnosed diabetes is higher in the oldest than the youngest group. The prevalence of undiagnosed diabetes is higher in the poorest than the richest groups, in accordance with the findings of HSE 2003. If detecting important asymptomatic conditions is taken as an indicator of quality of care, then this indicates that in the UK, the wealthiest do seem to be getting better care with respect to the detection of diabetes than the poorest, in contrast with the situation with respect to hypertension. This illustrates how quality of care may be condition-specific and underlines the difficulty of generalising about it.

5.6 Lung function

Lung function tests are commonly used in clinical practice to assess impairment due to chronic lung disease and asthma. Lung function is known to decline with age and with smoking. Lung function test results are predictive of mortality from respiratory and cardiovascular diseases, and all cause mortality (Bang et al., 1993; Ebi-Kryston, 1988; Sorlie, Kannel and O'Connor, 1989; Wannamethee, Shaper and Ebrahim, 1995). Lung function is also associated with socio-economic position (Herrick, 2005; Prescott, Lange and Vestbo, 1999).

The measures of lung function obtained during the nurse visit were:

1. Forced Expiratory Volume (FEV1) – the volume in litres that can be expelled in the first second of a forced expiration, starting from a maximal inspiration.

2. Forced Vital Capacity (FVC) – the full volume in litres that can be expelled following a maximal inspiration.

3. Peak Expiratory Flow rate (PEF) – the fastest rate of exhalation (in litres per minute) recorded during the measurement.

These tests were not done if the ambient temperature was less than 15 degrees centigrade or more than 35 degrees, as this affects the accuracy of the readings. People were also excluded if they had had eye or chest surgery during the three weeks prior to the visit, or if they had been hospitalised for heart disease or a stroke in the previous six weeks. The protocol requires three measurements and the highest satisfactory score is taken as the valid one.

Lung function depends on lung size. Sex and height correlate strongly with lung volume; the results are presented separately for two different height categories in each sex, as was done in the Scottish Health Survey 2003 (Herrick, 2005). Results are presented only for participants for whom reliable height measurements were obtained.

Results

Lung function, age, sex and height

Owing to a training error, some nurses reported FEV1/FVC ratio instead of FEV1. Since it was not possible to detect where this error had occurred, any FEV1 that was less than 1.00 was disregarded. Nevertheless, the remaining FEV1 results were approximately normally distributed. Table 5.A.20 shows that mean FEV1, FVC and PEF are all greater in men than in women and greater in taller people of either sex. Within each gender-specific height band, the FEV1, FVC and PEF decrease with advancing age.

Lung function and age-specific wealth quintile

Tables 5A.21–23 show FEV1, FVC and PEF by age-adjusted wealth quintile. For each of the measurements, a similar pattern is observed: generally, as wealth quintile increases, so does the lung function, but the gradient is shallow.

Lung function and smoking

There is a clear difference in FEV1, FVC and PEF with smoking status, the means being higher in those who have never smoked compared with current smokers. The pattern of measurements in ex-smokers is variable. Generally, but not always, the measurements in the ex-smokers are worse than for those who have never smoked (Table 5A.24–26). This may be related to the level of exposure to tobacco and to the length of time since they gave up smoking.

Summary

All measures of lung function deteriorate with advancing age. There is a shallow gradient of lung function with wealth, the richer people being somewhat advantaged. This confirms and extends the finding of the Scottish Health Survey (Herrick, 2005), where both socio-economic classification (NS-SEC) and income were found to be related to FEV1 but not to PEF or FVC, and those of Prescott who found that both FEV1 and FVC are positively associated with income (Prescott, Lange and Vestbo, 1999). There is a clear effect of smoking; lung function is always better in those who had never smoked than in the current smokers.

5.7 Haemoglobin and ferritin

Haemoglobin is the oxygen-carrying, iron-containing molecule in red blood cells. The level of haemoglobin is partially determined by the iron status in the body. Low haemoglobin or anaemia may be caused by iron deficiency, which arises when iron requirements exceed supply, either through excessive blood loss or inadequate dietary supply. Anaemia is common in older adults and is an independent predictor for increased morbidity and mortality in several disease states. It is associated with a very wide range of complications, including increased risk of mortality, cardiovascular disease, cognitive dysfunction, longer hospitalisation for elective procedures and comorbid conditions, reduced bone density, and falls and fractures (Eisenstaedt, Penninx and Woodman, 2006). Anaemia is also prognostic for diminished physical performance and loss of mobility in people 65 years and older. This report uses the World Health Organization definition of anaemia, which is a haemoglobin concentration of less than 13 g/dl in men and less than 12 g/dl in women (World Health Organisation, 1972).

In HSE 2000, the prevalence of anaemia in people aged 65 years and above in private residences was greater in men (16%) than in women (11%) and increased with age (Bajekal, 2000). In the third National Health and Nutrition Examination Survey (NHANES) 1988–1994, anaemia was present in 11% of men and 10% of women aged 65 years and older, with the prevalence rising to over one-in-five among people 85 years and more. One third of the cases were due to nutritional deficiencies and another third due to chronic illness, including, but not only, chronic kidney disease. The final third of the cases of anaemia remained unexplained (Woodman, Ferrucci and Guralnik, 2005).

Ferritin is a circulating protein that indicates the amount of iron stored in the body. It provides a more definite indicator of low iron status than haemoglobin, as ferritin is often depleted before the haemoglobin concentration. Moreover, low haemoglobin can be due to conditions other than iron deficiency. On the other hand, infection and several chronic diseases can raise the levels of ferritin.

Ferritin was measured by immunoassay, a method that shows a wide variability between laboratories. There is, therefore, no universally accepted level of ferritin to indicate low iron status. For the purposes of this report, sex specific quintiles were used to categorise ferritin levels. Those in the lowest quintile (less than 62 µg/l for men and less than 39 µg/l for women) were classified as having low ferritin. As ferritin is not normally distributed, the geometric mean is used in describing ferritin levels.

Results

Haemoglobin by age and sex

Mean haemoglobin is 15 g/dl in men and 14 g/dl in women. It decreases in concentration with increasing age. Overall, 5% of men and 6% of women have low haemoglobin (anaemia). In both men and women there is a clear upward flip in the prevalence of anaemia in the oldest groups In men, the prevalence of anaemia increases from one-in-fifty among the youngest to one-in-five among the oldest, with substantial differences between those aged 75 years and over and those younger. In women, those in the oldest group have the highest prevalence of anaemia (17%) (Table 5A.27).

Ferritin by age and sex

Geometric mean ferritin is 110 µg/l in men and 70 µg/l in women. In men, mean ferritin concentrations present an inverted U shape, showing increases with age, up to the group 60–64 years. Thus, mean ferritin concentrations increase from 111 µg/l in those aged 52–54 years, to 122 µg/l in those aged 60–64 years. There is a decrease in mean ferritin with increasing age in those aged 65 and over, falling to 90 µg/l in those aged 80 years and more. In women, a similar pattern is observed as for men, with the highest mean ferritin concentration found in those aged 60–69 years (Table 5A.28).

The prevalence of low ferritin in men (as defined by the lowest quintile) remains constant in age groups younger than 75 years, but rises in older age groups: from 21% in the 70–74 year group to 32% in those aged 80 years or more. On the other hand, the prevalence of low ferritin in women shows a U-shaped curve, with the highest prevalence found among the oldest (26%) and the youngest (33%) age groups, and the lowest prevalence in the groups aged 60–64 years (15%) and 65–69 years (17%) (Table 5A.28).

Wealth, haemoglobin and ferritin

There is no clear pattern in the distribution of mean haemoglobin by wealth; mean haemoglobin does not vary by age-specific wealth quintile in either sex. (Table 5A.29) The same applies to the prevalence of anaemia (data not shown).

Ferritin levels do vary by wealth. Ferritin concentrations show a U-shaped pattern by age-specific wealth quintile in men. Thus, in men, ferritin concentrations were 103 µg/l in the third age-specific wealth quintile, rising to 124 µg/l in the highest age-specific wealth quintile. In women, ferritin levels were unrelated to age-specific wealth quintile, except in the richest group, which has significantly raised level of ferritin (Table 5A.29).

Summary

Mean haemoglobin decreases with age in both men and women. The prevalence of anaemia increases markedly at the upper end of the age range for both men and women. The proportion of people (especially men) over 65 years with anaemia is lower than found in HSE 2000 and closer to that found in NHANES.

Ferritin levels show an inverted U-shaped curve with age in both sexes. Low ferritin levels in women show the same pattern with age. In men, low ferritin is most common among the oldest.

In terms of both haemoglobin and ferritin, the oldest people are at a disadvantage, even though this is a select group still living in the community, rather than in institutions.

Haemoglobin levels show no pattern of association with wealth, but the richest group appears to be at an advantage with respect to ferritin levels.

5.8 Conclusion

Differences by age

As expected, most of the biological features we examined deteriorate with age. This is clear for glycaemic control, lung function and haemoglobin levels. More of the elderly are anaemic and have low ferritin levels. BMI and WHR measures increase with age and then level off.

Differences in blood pressure with age are complex. Systolic blood pressure does not rise inexorably with age but peaks and thereafter falls. Diastolic pressure falls with age in all women and in men older than 60 years. These differences result in a widening of the pulse pressure with age.

Other cardiovascular risk factors pattern differently by age. The percentage of people with hypertension (except for the very oldest), mean levels of C-reactive protein (CRP) and mean levels of fasting blood glucose increase with age, whereas detrimental lipid levels do not.

It is important when interpreting these results to remember that these are cross-sectional analyses. The patterns observed may not be the same as the physiological pattern of change with age. The distributions of variables in the different age groups are affected by both cohort and survival effects. Taking the extremes, people born in the 1920s and the early 1950s are likely to have had quite different environmental exposures given the societal changes that occurred between these two periods. This could result in the two groups having different distributions of biological measures that are nothing to do with ageing per se. Furthermore, the least healthy people in each age group will die earlier or move to long-term care, so that the survivors in the community in the older age groups may have ‘healthier’ characteristics.

Differences by wealth

Some conditions appear to be differently distributed by wealth, whereas others do not. As for differences by age, the observed patterns by wealth may have been affected by differential survival in the different wealth groups.

Obesity in women and lung function in both sexes show linear trends, with richer groups being advantaged over the poorer. With respect to mean blood glucose, ferritin levels and obesity in men, the richest group is advantaged over the poorest, but no clear pattern is seen in the intermediate groups. There is no effect of wealth on haemoglobin levels.

The effect of wealth on cardiovascular risk factors is complex. Different cardiovascular risk factors show different patterns with wealth. As wealth increases, there is a decrease in mean systolic blood pressure, the percentage of people with hypertension, high-risk levels of HDL cholesterol and triglycerides, and mean CRP levels. By contrast, there is no association between wealth and diastolic blood pressure, and the prevalence of high total and LDL cholesterol increases with increasing wealth.

References

2003 European Society of Hypertension-European Society of Cardiology guidelines for the management of arterial hypertension (2003), *Journal of Hypertension*, 21: 1011–1053.

Assmann, G., Schulte, H., von, E. A. and Huang, Y. (1996), 'High-density lipoprotein cholesterol as a predictor of coronary heart disease risk. The PROCAM experience and pathophysiological implications for reverse cholesterol transport', *Atherosclerosis*, 124: S11–S20.

Austin, M. A. (1998), 'Plasma triglyceride as a risk factor for cardiovascular disease', *Canadian Journal of Cardiology*, 14: 14B–17B.

Austin, M. A., McKnight, B., Edwards, K. L., Bradley, C. M., McNeely, M. J., Psaty, B. M., Brunzell, J. D. and Motulsky, A. G. (2000), 'Cardiovascular disease mortality in familial forms of hypertriglyceridemia: a 20-year prospective study', *Circulation*, 101: 2777–2782.

Baigent, C., Keech, A., Kearney, P. M., Blackwell, L., Buck, G., Pollicino, C., Kirby, A., Sourjina, T., Peto, R., Collins, R. and Simes, R. (2005), 'Efficacy and safety of cholesterol-lowering treatment: prospective meta-analysis of data from 90,056 participants in 14 randomised trials of statins', *Lancet*, 366 (9493): 1267–1278.

Bajekal, M. (2002), 'Care homes and their residents', in Department of Health, *Health Survey for England 2000*, London: The Stationery Office.

Bang, K. M., Gergen, P. J., Kramer, R. and Cohen, B. (1993), 'The effect of pulmonary impairment on all-cause mortality in a national cohort', *Chest*, 103: 536–540.

Bulpitt, C. J., Beckett, N. S., Cooke, J., Dumitrascu, D. L., Gil-Extremera, B., Nachev, C., Nunes, M., Peters, R., Staessen, J. A. and Thijs, L. (2003), 'Results of the pilot study for the Hypertension in the Very Elderly Trial', *Journal of Hypertension*, 21: 2409–2417.

Calle, E. E., Thun, M. J., Petrelli, J. M., Rodriguez, C. and Heath, C. W., Jr. (1999), 'Body-mass index and mortality in a prospective cohort of U.S. adults', *New England Journal of Medicine*, 341: 1097–1105.

Choiniere, R., Lafontaine, P. and Edwards, A. C. (2000), 'Distribution of cardiovascular disease risk factors by socioeconomic status among Canadian adults', *Canadian Medical Association Journal*, 162: S13–S24.

Cushman, M., Arnold, A. M., Psaty, B. M., Manolio, T. A., Kuller, L. H., Burke, G. L., Polak, J. F. and Tracy, R. P. (2005), 'C-reactive protein and the 10-year incidence of coronary heart disease in older men and women: the Cardiovascular Health Study', *Circulation*, 112: 25–31.

Danesh, J., Lewington, S., Thompson, S. G., Lowe, G. D., Collins, R., Kostis, J. B., Wilson, A. C., Folsom, A. R., Wu, K., Benderly, M., Goldbourt, U., Willeit, J., Kiechl, S., Yarnell, J. W., Sweetnam, P. M., Elwood, P. C., Cushman, M., Psaty, B. M., Tracy, R. P., Tybjaerg-Hansen, A., Haverkate, F., de Maat, M. P., Fowkes, F. G., Lee, A. J., Smith, F. B., Salomaa, V., Harald, K., Rasi, R., Vahtera, E., Jousilahti, P., Pekkanen, J., D'Agostino, R., Kannel, W. B., Wilson, P. W., Tofler, G., rocha-Pinango, C. L., Rodriguez-Larralde, A., Nagy, E., Mijares, M., Espinosa, R., Rodriquez-Roa, E., Ryder, E., ez-Ewald, M. P., Campos, G., Fernandez, V., Torres, E., Marchioli, R., Valagussa, F., Rosengren, A., Wilhelmsen, L., Lappas, G., Eriksson, H., Cremer, P., Nagel, D., Curb, J. D., Rodriguez, B., Yano, K., Salonen, J. T., Nyyssonen, K., Tuomainen, T. P., Hedblad, B., Lind, P., Loewel, H., Koenig, W., Meade, T. W., Cooper, J. A., De, S. B., Knottenbelt, C., Miller, G. J., Cooper, J. A., Bauer, K. A., Rosenberg, R. D., Sato, S., Kitamura, A., Naito, Y., Palosuo, T., Ducimetiere, P., Amouyel, P., Arveiler, D., Evans, A. E., Ferrieres, J., Juhan-Vague, I., Bingham, A., Schulte, H., Assmann, G., Cantin, B., Lamarche, B., Despres, J. P., Dagenais, G. R., Tunstall-Pedoe, H., Woodward, M., Ben-Shlomo, Y., Davey, S. G., Palmieri, V., Yeh, J. L., Rudnicka, A., Ridker, P., Rodeghiero, F., Tosetto, A., Shepherd, J., Ford, I., Robertson, M., Brunner, E., Shipley, M., Feskens, E. J., Kromhout, D., Dickinson, A., Ireland, B., Juzwishin, K., Kaptoge, S., Lewington, S., Memon, A., Sarwar, N., Walker, M., Wheeler, J., White, I. and Wood, A. (2005), 'Plasma fibrinogen level and the risk of major cardiovascular diseases and nonvascular mortality: an individual participant meta-analysis', *Journal of the American Medical Association*, 29: 1799–1809.

Davey Smith, G., Hart, C., Hole, D., MacKinnon, P., Gillis, C., Watt, G., Blane, D. and Hawthorne, V. (1998), 'Education and occupational social class: which is the more important indicator of mortality risk?', *Journal of Epidemiology and Community Health*, 52: 153–160.

Ebi-Kryston, K. L. (1988), 'Respiratory symptoms and pulmonary function as predictors of 10-year mortality from respiratory disease, cardiovascular disease and all causes in the Whitehall Study', *Journal of Clinical Epidemiology*, 41: 251–260.

Eisenstaedt, R., Penninx, B. W. and Woodman, R. C. (2006), 'Anemia in the elderly: current understanding and emerging concepts', *Blood Reviews*, 20: 213–226.

Folsom, A. R., Kushi, L. H., Anderson, K. E., Mink, P. J., Olson, J. E., Hong, C. P., Sellers, T. A., Lazovich, D. and Prineas, R. J. (2000), 'Associations of general and abdominal obesity with multiple health outcomes in older women: the Iowa Women's Health Study', *Archives of Internal Medicine*, 160: 2117–2128.

Franklin, S. S., Gustin, W., Wong, N. D., Larson, M. G., Weber, M. A., Kannel, W. B. and Levy, D. (1997), 'Hemodynamic patterns of age-related changes in blood pressure. The Framingham Heart Study', *Circulation*, 96: 308–315.

Fuller, J. H., Shipley, M. J., Rose, G., Jarrett, R. J. and Keen, H. (1983), 'Mortality from coronary heart disease and stroke in relation to degree of glycaemia: the Whitehall Study', *British Medical Journal (Clinical Research Edition)*, 287 (6396): 867–870.

Herrick, K. (2005), 'Respiratory health and lung function', in C. Bromley, K. Sproston and N. Shelton (eds), *Scottish Health Survey*, vol. 2, Edinburgh: Scottish Executive.

Hoeymans, N., Smit, H. A., Verkleij, H. and Kromhout, D. (1996), 'Cardiovascular risk factors in relation to educational level in 36 000 men and women in the Netherlands', *European Heart Journal*, 17: 518–525.

Huxley, R., Barzi, F. and Woodward, M. (2006), 'Excess risk of fatal coronary heart disease associated with diabetes in men and women: meta-analysis of 37 prospective cohort studies ', *British Medical Journal*, 332: 73–78.

James, P. T., Leach, R., Kalamara, E. and Shayeghi, M. (2001), 'The worldwide obesity epidemic ', *Obesity Research*, 9 Suppl. 4: 228S–233S.

Kannel, W. B. and McGee, D. L. (1979), 'Diabetes and cardiovascular disease. The Framingham Study ', *Journal of the American Medical Association*, 241: 2035–2038.

Kopelman, P. G. (2000), 'Obesity as a medical problem', *Nature*, 404 (6778): 635–643.

Lewington, S., Clarke, R., Qizilbash, N., Peto, R. and Collins, R. (2002), ‘Age-specific relevance of usual blood pressure to vascular mortality: a meta-analysis of individual data for one million adults in 61 prospective studies’, *Lancet*, 360 (9349): 1903–1913.

Lubbock, L. A., Goh, A., Ali, S., Ritchie, J. and Whooley, M. A. (2005), ‘Relation of low socioeconomic status to C-reactive protein in patients with coronary heart disease (from the Heart and Soul Study)’, *American Journal of Cardiology*, 96: 1506–1511.

Molarius, A. and Seidell, J. C. (1998), ‘Selection of anthropometric indicators for classification of abdominal fatness – a critical review’, *International Journal of Obesity Related Metabolic Disorders*, 22: 719–727.

Myllykangas, M., Pekkanen, J., Rasi, V., Haukkala, A., Vahtera, E. and Salomaa, V. (1995), ‘Haemostatic and other cardiovascular risk factors and socioeconomic status among middle-aged Finnish men and women’, *International Journal of Epidemiology*, 24: 1110–1116.

Prescott, E., Lange, P. and Vestbo, J. (1999), ‘Socioeconomic status, lung function and admission to hospital for COPD: results from the Copenhagen City Heart Study’, *European Respiratory Journal*, 13: 1109–1114.

Report of the Expert Committee on the Diagnosis and Classification of Diabetes Mellitus (1997), *Diabetes Care*, 20: 1183–1197.

Rosengren, A., Orth-Gomer, K. and Wilhelmsen, L. (1998), ‘Socioeconomic differences in health indices, social networks and mortality among Swedish men: a study of men born in 1933’, *Scandinavian Journal of Social Medicine*, 26: 272–280.

Sacks, F. M. (2002), ‘The role of high-density lipoprotein (HDL) cholesterol in the prevention and treatment of coronary heart disease: expert group recommendations’, *American Journal of Cardiology*, 90: 139–143.

Seidell, J. C. and Visscher, T. L. (2000), ‘Body weight and weight change and their health implications for the elderly’, *European Journal of Clinical Nutrition*, 54 Suppl. 3: S33–S39.

Silventoinen, K., Pankow, J., Jousilahti, P., Hu, G. and Tuomilehto, J. (2005), ‘Educational inequalities in the metabolic syndrome and coronary heart disease among middle-aged men and women’, *International Journal of Epidemiology*, 34: 327–334.

Smith, A., Patterson, C., Yarnell, J., Rumley, A., Ben-Shlomo, Y. and Lowe, G. (2005), ‘Which hemostatic markers add to the predictive value of conventional risk factors for coronary heart disease and ischemic stroke? The Caerphilly Study’, *Circulation*, 112: 3080–3087.

Sorlie, P. D., Kannel, W. B. and O’Connor, G. (1989), ‘Mortality associated with respiratory function and symptoms in advanced age: the Framingham Study’, *American Review of Respiratory Disease*, 140: 379–384.

Stamler, J., Vacate, O., Nekton, J. D. and Wentworth, D. (1993), ‘Diabetes, other risk factors, and 12-yr cardiovascular mortality for men screened in the Multiple Risk Factor Intervention Trial’, *Diabetes Care*, 16: 434–444.

Strandberg, T. E. and Tilvis, R. S. (2000), ‘C-reactive protein, cardiovascular risk factors, and mortality in a prospective study in the elderly’, *Arteriosclerosis Thrombosis Vascular Biology*, 20: 1057–1060.

Thomas, M. C., Walker, M. K., Emberson, J. R., Thomson, A. G., Lawlor, D. A., Ebrahim, S. and Whincup, P. H. (2005), ‘Prevalence of undiagnosed Type 2 diabetes and impaired fasting glucose in older British men and women’, *Diabetic Medicine*, 22: 789–793.

Turner, R. C., Millns, H., Neil, H. A., Stratton, I. M., Manley, S. E., Matthews, D. R. and Holman, R. R. (1998), ‘Risk factors for coronary artery disease in non-insulin dependent diabetes mellitus: United Kingdom Prospective Diabetes Study’, *British Medical Journal*, 316 (7134): 823–828.

Villareal, D. T., Apovian, C. M., Kushner, R. F. and Klein, S. (2005), ‘Obesity in older adults: technical review and position statement of the American Society for Nutrition and NAASO, The Obesity Society’, *Obesity Research*, 13: 1849–1863.

Wannamethee, S. G., Shaper, A. G. and Ebrahim, S. (1995), ‘Respiratory function and risk of stroke’, *Stroke*, 26: 2004–2010.

Williams, B., Poulter, N. R., Brown, M. J., Davis, M., McInnes, G. T., Potter, J. F., Sever, P. S. and McG Thom S. (2004), ‘Guidelines for management of hypertension: report of the fourth working party of the British Hypertension Society, 2004–BHS IV’, *Journal of Human Hypertension*, 18: 139–185.

Williams, D. R., Wareham, N. J., Brown, D. C., Byrne, C. D., Clark, P. M., Cox, B. D., Cox, L. J., Day, N. E., Hales, C. N., Palmer, C. R., Shackleton, J. R. and Wang, T. W. M. (1995), ‘Undiagnosed glucose intolerance in the community: the Isle of Ely Diabetes Project’, *Diabetic Medicine*, 12: 30–35.

Woodman, R., Ferrucci, L. and Guralnik, J. (2005), ‘Anemia in older adults’, *Current Opinion in Hematology*, 12: 123–128.

World Health Organisation (1972), *Nutritional Anaemias*, Technical Report Series 503, Geneva: WHO.

Yarnell, J., Yu, S., McCrum, E., Arveiler, D., Hass, B., Dallongeville, J., Montaye, M., Amouyel, P., Ferrieres, J., Ruidavets, J. B., Evans, A., Bingham, A. and Ducimetiere, P. (2005), ‘Education, socioeconomic and lifestyle factors, and risk of coronary heart disease: the PRIME Study’, *International Journal of Epidemiology*, 34: 268–275.

Annex 5.1
Tables on measures of physical health

Table 5A.1. Body mass index (BMI) means, by age in 2004–05 and sex

Core wave 2 respondents (excluding proxies) with a valid BMI

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
Men	27.9	28.3	28.1	27.9	27.8	27.0	26.6	27.8
Women	28.4	28.2	28.3	28.1	28.3	28.0	26.5	28.0
***Weighted* N**								
Men	*353*	*772*	*559*	*539*	*438*	*343*	*302*	*3,308*
Women	*359*	*800*	*622*	*570*	*489*	*452*	*547*	*3,840*
***Unweighted* N**								
Men	*295*	*716*	*550*	*568*	*479*	*336*	*294*	*3,238*
Women	*345*	*867*	*681*	*650*	*524*	*420*	*462*	*3,949*

Table 5A.2. Body mass index (BMI), by age in 2004–05 and sex

Core wave 2 respondents (excluding proxies) with a valid BMI

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%	%	%
Men								
Underweight	0.3	0.4	0.3	0.9	1.0	0.0	1.1	0.6
Desirable	25.5	20.5	21.1	21.4	21.4	30.6	31.2	23.4
Overweight	46.6	49.2	47.4	50.3	50.8	48.2	48.1	48.8
Obese	27.7	29.9	31.2	27.4	26.9	21.2	19.7	27.2
Women								
Underweight	0.5	0.9	0.4	0.6	1.5	2.0	2.4	1.2
Desirable	30.9	28.4	28.9	29.7	23.4	27.4	38.4	29.6
Overweight	33.2	39.8	38.6	38.4	39.8	35.8	39.6	38.3
Obese	35.4	30.9	32.1	31.3	35.2	34.8	19.7	31.0
***Weighted* N**								
Men	*353*	*772*	*559*	*539*	*438*	*343*	*302*	*3,308*
Women	*359*	*800*	*622*	*570*	*489*	*452*	*547*	*3,840*
***Unweighted* N**								
Men	*295*	*716*	*550*	*568*	*479*	*336*	*294*	*3,238*
Women	*345*	*867*	*681*	*650*	*524*	*420*	*462*	*3,949*

Notes: ‘Underweight’ indicates BMI < 18.5. ‘Desirable’ indicates BMI from 18.5 to 24.9. ‘Overweight’ indicates BMI from 25 to 29.9. ‘Obese’ indicates BMI 30 or more.

Table 5A.3. Waist–hip ratio (WHR) means, by age in 2004–05 and sex

Core wave 2 respondents (excluding proxies) with a valid WHR

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
Men								
Mean WHR	0.948	0.954	0.952	0.960	0.965	0.957	0.955	0.956
Raised WHR (%)	49.3	52.5	50.2	55.8	60.7	52.8	52.3	53.4
Women								
Mean WHR	0.829	0.840	0.840	0.844	0.850	0.857	0.858	0.846
Raised WHR (%)	35.2	42.2	42.0	45.6	50.0	51.0	54.5	45.7
***Weighted* N**								
Men	*363*	*791*	*574*	*545*	*444*	*350*	*328*	*3,395*
Women	*359*	*820*	*628*	*576*	*500*	*471*	*602*	*3,956*
***Unweighted* N**								
Men	*303*	*732*	*562*	*575*	*486*	*343*	*319*	*3,320*
Women	*345*	*886*	*690*	*656*	*535*	*437*	*503*	*4,052*

Notes: Any measurement considered invalid by the nurse was omitted. If the first two measurements differed by more than 3 cm, then a third was taken. The measurements included in the table are the means of two valid measurements.

Table 5A.4. Body mass index (BMI) means, by age-specific wealth and sex

Core wave 2 respondents (excluding proxies) with a valid BMI

	Poorest	2nd	3rd	4th	Richest
Men	27.9	27.8	28.2	27.8	27.4
Women	28.8	28.4	28.4	27.6	26.5
***Weighted* N**					
Men	*441*	*605*	*711*	*748*	*783*
Women	*803*	*748*	*801*	*732*	*717*
***Unweighted* N**					
Men	*378*	*567*	*677*	*757*	*840*
Women	*773*	*751*	*832*	*770*	*784*

Table 5A.5. Body mass index (BMI), by age-specific wealth and sex

Core wave 2 respondents (excluding proxies) with a valid BMI

	Poorest	2nd	3rd	4th	Richest
	%	%	%	%	%
Men					
Underweight	1.8	0.3	0.2	0.4	0.6
Desirable	25.8	25.2	23.7	19.7	24.0
Overweight	41.6	45.4	45.0	54.2	53.4
Obese	30.8	29.1	31.1	25.7	22.0
Women					
Underweight	2.3	1.0	1.1	0.8	0.5
Desirable	24.6	28.0	28.0	30.7	37.5
Overweight	35.3	35.9	35.7	41.4	43.2
Obese	37.8	35.1	35.2	27.0	18.8
***Weighted* N**					
Men	*441*	*605*	*711*	*748*	*783*
Women	*803*	*748*	*801*	*732*	*717*
***Unweighted* N**					
Men	*378*	*567*	*677*	*757*	*840*
Women	*773*	*751*	*832*	*770*	*784*

Notes: ‘Underweight’ indicates BMI < 18.5. ‘Desirable’ indicates BMI from 18.5 to 24.9. ‘Overweight’ indicates BMI from 25 to 29.9. ‘Obese’ indicates BMI 30 or more.

Table 5A.6. Waist–hip ratio (WHR) means, by age-specific wealth and sex

Core wave 2 respondents (excluding proxies) with a valid WHR

	Poorest	2nd	3rd	4th	Richest
Men					
Mean WHR	0.965	0.964	0.960	0.953	0.943
Raised WHR (%)	61.4	60.3	57.1	52.8	43.8
Women					
Mean WHR	0.858	0.851	0.844	0.839	0.835
Raised WHR (%)	55.1	49.1	44.4	41.7	40.7
***Weighted* N**					
Men	*464*	*626*	*726*	*762*	*795*
Women	*848*	*776*	*819*	*738*	*736*
***Unweighted* N**					
Men	*396*	*587*	*692*	*772*	*853*
Women	*811*	*774*	*848*	*777*	*802*

Notes: Any measurement considered invalid by the nurse was omitted. If the first two measurements differed by more than 3 cm, then a third was taken. The measurements included in the table are the means of two valid measurements.

Table 5A.7. Means of systolic and diastolic blood pressure (mmHg), by age in 2004–05 and sex

Core wave 2 respondents (excluding proxies) with a measured systolic and diastolic blood pressure

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
Men								
Mean systolic BP	130.0	133.7	135.7	137.2	139.4	138.8	137.6	135.9
Mean diastolic BP	78.5	79.2	78.2	76.0	74.6	71.9	67.3	75.8
Hypertension (%)	37.3	44.3	55.9	63.0	65.8	71.5	63.6	56.0
Women								
Systolic BP	127.4	128.9	131.6	135.0	139.2	142.3	142.0	135.1
Diastolic BP	77.2	76.7	75.9	74.8	73.6	72.1	68.7	74.1
Hypertension (%)	34.3	37.9	45.3	56.2	66.4	74.3	73.6	54.6
***Weighted* N**								
Men	*312*	*689*	*505*	*483*	*394*	*323*	*304*	*3,010*
Women	*306*	*710*	*573*	*527*	*466*	*427*	*555*	*3,564*
***Unweighted* N**								
Men	*258*	*643*	*500*	*512*	*437*	*316*	*292*	*2,958*
Women	*298*	*772*	*634*	*603*	*500*	*397*	*462*	*3,666*

Table 5A.8. Means of systolic and diastolic blood pressure (mmHg), by age-specific wealth and sex

Core wave 2 respondents (excluding proxies) with a measured systolic and diastolic blood pressure

	Poorest	2nd	3rd	4th	Richest
Men					
Mean systolic BP	137.8	136.6	136.8	134.5	134.9
Mean diastolic BP	77.3	75.8	76.0	75.0	75.7
Hypertension (%)	61.8	60.3	58.4	53.3	52.7
Women					
Mean systolic BP	136.9	135.6	136.9	134.2	131.7
Mean diastolic BP	75.0	73.0	74.4	73.8	74.3
Hypertension (%)	62.8	59.2	58.2	50.4	44.8
***Weighted* N**					
Men	*377*	*542*	*660*	*688*	*723*
Women	*722*	*710*	*743*	*679*	*675*
***Unweighted* N**					
Men	*326*	*513*	*627*	*698*	*776*
Women	*694*	*710*	*771*	*719*	*737*

Table 5A.9. Undiagnosed high blood pressure,[a] by age in 2004–05 and sex

Core wave 2 respondents (excluding proxies) with a measured blood pressure

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%	%	%
Men	15	15	20	20	21	18	23	18
Women	11	14	12	17	18	17	21	16
***Weighted* N**								
Men	*312*	*689*	*505*	*483*	*394*	*323*	*304*	*3,010*
Women	*306*	*710*	*573*	*527*	*466*	*427*	*555*	*3,564*
***Unweighted* N**								
Men	*258*	*643*	*500*	*512*	*437*	*316*	*292*	*2,958*
Women	*298*	*772*	*634*	*603*	*500*	*397*	*462*	*3,666*

[a]Undiagnosed high blood pressure defined as systolic ≥ 140 or diastolic ≥ 90 on a mean of two measurements, with no diagnosis of hypertension reported in 2002–03 (wave 1) or 2004–05 (wave 2).

Table 5A.10. Undiagnosed high blood pressure,[a] by age-specific wealth quintile, sex and age in 2004–05

Core wave 2 respondents (excluding proxies) with a measured blood pressure, who answered questions on wealth

	Poorest	2nd	3rd	4th	Richest
	%	%	%	%	%
Men					
Aged 52–59	11	14	17	15	15
Aged 60–74	24	19	19	18	21
Aged 75+	30	18	23	18	17
All	20	17	19	17	18
Women					
Aged 52–59	20	15	11	11	8
Aged 60–74	17	15	18	13	15
Aged 75+	18	19	17	21	20
All	18	16	16	14	14
***Weighted* N**	*1,099*	*1,252*	*1,403*	*1,369*	*1,398*
Men	*377*	*542*	*660*	*689*	*725*
Women	*722*	*710*	*743*	*680*	*674*
***Unweighted* N**	*1,019*	*1,223*	*1,398*	*1,419*	*1,513*
Men	*325*	*513*	*627*	*699*	*777*
Women	*694*	*710*	*771*	*720*	*736*

[a]Undiagnosed high blood pressure defined as systolic ≥ 140 or diastolic ≥ 90 on a mean of two measurements, with no diagnosis of hypertension reported in 2002–03 (wave 1) or 2004–05 (wave 2).

Table 5A.11. Lipids (mmol), by age in 2004–05 and sex

Core wave 2 respondents (excluding proxies) with valid blood sample

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
Men								
Mean total cholesterol	5.9	5.9	5.8	5.5	5.4	5.3	4.9	5.6
% ≥ 5.0 mmol/l chol	79.0	79.2	76.7	68.8	67.9	57.2	43.6	69.6
Mean LDL cholesterol	3.7	3.7	3.6	3.4	3.4	3.3	N/A	3.5
% ≥ 3.0 mmol/l LDL	80.7	76.4	75.2	66.6	67.0	60.2	N/A	72.0
Mean HDL cholesterol	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.4
% < 1.0 mmol/l HDL	5.5	7.2	4.1	7.7	10.1	10.0	8.0	7.3
Mean[a] triglycerides	1.8	1.7	1.6	1.6	1.6	1.4	N/A	1.6
% ≥ 1.6 mmol/l trig	60.8	56.0	50.5	48.1	48.7	37.9	N/A	51.3
Women								
Mean total cholesterol	6.2	6.2	6.2	6.2	6.1	6.0	6.0	6.1
% ≥ 5.0 mmol/l chol	88.3	88.9	86.5	85.3	79.8	78.0	79.5	84.0
Mean LDL cholesterol	3.7	3.8	3.9	3.9	3.8	3.7	N/A	3.8
% ≥ 3.0 mmol/l LDL	80.3	84.8	83.4	81.1	75.3	73.8	N/A	80.6
Mean HDL cholesterol	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
% < 1.0 mmol/l HDL	2.2	1.4	1.5	.7	1.7	1.6	1.5	1.5
Mean[a] triglycerides	1.6	1.4	1.5	1.5	1.5	1.4	N/A	1.5
% ≥ 1.6 mmol/l trig	47.1	40.2	43.1	42.6	44.8	42.2	N/A	42.8
***Weighted* N**								
Men								
Total/HDL cholesterol	*286*	*615*	*460*	*439*	*347*	*284*	*282*	*2,714*
LDL cholesterol	*235*	*503*	*395*	*341*	*270*	*202*	*N/A*	*1,945*
Triglycerides	*252*	*524*	*407*	*351*	*281*	*204*	*N/A*	*2,019*
Women								
Total/HDL cholesterol	*283*	*646*	*497*	*451*	*400*	*376*	*507*	*3,160*
LDL cholesterol	*243*	*544*	*419*	*386*	*310*	*271*	*N/A*	*2,174*
Triglycerides	*250*	*560*	*429*	*389*	*314*	*273*	*N/A*	*2,215*
***Unweighted* N**								
Men								
Total/HDL cholesterol	*261*	*589*	*482*	*469*	*365*	*270*	*253*	*2,689*
LDL cholesterol	*213*	*485*	*414*	*371*	*284*	*200*	*N/A*	*1,967*
Triglycerides	*230*	*503*	*426*	*382*	*295*	*202*	*N/A*	*2,038*
Women								
Total/HDL cholesterol	*284*	*733*	*560*	*509*	*413*	*332*	*361*	*3,192*
LDL cholesterol	*244*	*623*	*479*	*437*	*326*	*243*	*N/A*	*2,352*
Triglycerides	*250*	*639*	*489*	*440*	*330*	*244*	*N/A*	*2,392*

[a]Geometric means are reported.

Notes: Triglycerides and LDL cholesterol measurements were done on those who are eligible to fast according to the protocol. Chol indicates total cholesterol; LDL indicates LDL cholesterol; trig indicates triglycerides; LDL indicates LDL cholesterol.

Table 5A.12. Lipids (mmol), by age-specific wealth and sex

Core wave 2 respondents (excluding proxies) with valid blood sample

	Poorest	2nd	3rd	4th	Richest
Men					
Mean total cholesterol	5.7	5.4	5.6	5.6	5.6
% ≥ 5.0 mmol/l chol	66.5	66.1	70.6	70.5	71.9
Mean LDL cholesterol	3.5	3.4	3.5	3.6	3.6
% ≥ 3.0 mmol/l LDL	70.0	68.3	72.8	71.4	75.1
Mean HDL cholesterol	1.3	1.3	1.4	1.4	1.4
% < 1.0 mmol/l HDL	11.6	9.9	7.3	5.9	4.5
Mean[a] triglycerides	1.8	1.7	1.6	1.7	1.4
% ≥ 1.6 mmol/l trig	59.5	54.6	51.0	53.5	42.1
Women					
Mean total cholesterol	6.0	6.0	6.2	6.2	6.2
% ≥ 5.0 mmol/l chol	79.7	78.5	85.2	87.4	89.5
Mean LDL cholesterol	3.6	3.8	3.9	3.9	3.9
% ≥ 3.0 mmol/l LDL	71.6	78.3	81.9	85.5	85.7
Mean HDL cholesterol	1.6	1.6	1.7	1.7	1.7
% < 1.0 mmol/l HDL	2.9	2.1	0.8	0.7	0.8
Mean[a] triglycerides	1.6	1.5	1.5	1.4	1.3
% ≥ 1.6 mmol/l trig	50.1	46.4	47.5	38.0	33.1
***Weighted* N**					
Men					
Total/HDL cholesterol	*356*	*507*	*589*	*619*	*628*
LDL cholesterol	*253*	*357*	*415*	*453*	*457*
Triglycerides	*265*	*372*	*430*	*472*	*469*
Women					
Total/HDL cholesterol	*668*	*620*	*637*	*617*	*585*
LDL cholesterol	*442*	*418*	*429*	*425*	*432*
Triglycerides	*454*	*427*	*439*	*431*	*438*
***Unweighted* N**					
Men					
Total/HDL cholesterol	*301*	*476*	*561*	*640*	*697*
LDL cholesterol	*219*	*339*	*403*	*481*	*515*
Triglycerides	*229*	*353*	*418*	*500*	*528*
Women					
Total/HDL cholesterol	*605*	*600*	*660*	*645*	*646*
LDL cholesterol	*440*	*435*	*469*	*479*	*501*
Triglycerides	*452*	*444*	*477*	*484*	*507*

[a]Geometric means are reported.

Notes: Triglycerides and LDL cholesterol measurements were done on those who are eligible to fast according to the protocol. Chol indicates total cholesterol; LDL indicates LDL cholesterol; trig indicates triglycerides; LDL indicates LDL cholesterol.

Table 5A.13. Fibrinogen (g/l) and C-reactive protein (mg/l), by age in 2004–05 and sex

Core wave 2 respondents (excluding proxies) with valid blood sample

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
Men								
Mean fibrinogen	3.0	3.0	3.2	3.2	3.3	3.4	3.3	3.2
Mean[a] C-reactive protein	1.6	1.8	1.9	2.0	2.5	2.6	2.6	2.0
Women								
Mean fibrinogen	3.1	3.2	3.2	3.3	3.4	3.5	3.5	3.3
Mean[a] C-reactive protein	1.8	1.9	2.1	2.2	2.6	2.6	2.6	2.2
***Weighted* N**								
Men	*286*	*614*	*462*	*437*	*347*	*284*	*282*	*2,712*
Women	*283*	*646*	*496*	*451*	*400*	*375*	*507*	*3,158*
***Unweighted* N**								
Men	*261*	*588*	*483*	*467*	*364*	*270*	*253*	*2,686*
Women	*284*	*733*	*559*	*509*	*413*	*331*	*361*	*3,190*

[a]Geometric means are reported.
Note: *N*s are for CRP; of these, 12 men and 21 women were missing fibrinogen values.

Table 5A.14. Fibrinogen (g/l) and C-reactive protein (mg/l), by age-specific wealth and sex

Core wave 2 respondents (excluding proxies) with valid blood sample

	Poorest	2nd	3rd	4th	Richest
Men					
Mean fibrinogen	3.3	3.2	3.2	3.2	3.1
Mean[a] C-reactive protein	2.7	2.4	2.2	1.8	1.7
Women					
Mean fibrinogen	3.4	3.4	3.3	3.3	3.2
Mean[a] C-reactive protein	2.9	2.6	2.1	2.0	1.7
***Weighted* N**					
Men	*356*	*507*	*588*	*618*	*628*
Women	*667*	*620*	*637*	*617*	*584*
***Unweighted* N**					
Men	*301*	*476*	*560*	*639*	*696*
Women	*604*	*600*	*660*	*645*	*645*

[a]Geometric means are reported.
Note: *N*s are for CRP; of these, 11 men and 21 women were missing fibrinogen values.

Table 5A.15. Mean fasting glucose (mmol/l) levels, by gender and age in 2004–05

Core wave 2 respondents (excluding proxies) with a valid fasting blood glucose

	52–54	55–59	60–64	65–69	70–74	75–79	All
Men	4.9	5.0	5.2	5.1	5.1	5.1	5.0
Women	4.8	4.8	4.9	5.0	5.0	4.9	4.9
***Weighted* N**							
Men	*183*	*393*	*332*	*263*	*221*	*155*	*1,546*
Women	*192*	*435*	*352*	*309*	*238*	*201*	*1,728*
***Unweighted* N**							
Men	*168*	*380*	*349*	*287*	*234*	*155*	*1,573*
Women	*196*	*495*	*402*	*353*	*253*	*182*	*1,881*

Note: Includes only eligible people who had fasted in accordance with the protocol.

Table 5A.16. Prevalence of diabetes,[a] by gender and age in 2004–05

Core wave 2 respondents (excluding proxies)

	52–54	55–59	60–64	65–69	70–74	75–79	All
Men	4.8	6.7	6.4	11.4	12.9	13.9	9.0
Women	3.1	3.5	5.7	6.1	9.7	9.6	6.0
***Weighted* N**							
Men	*376*	*809*	*577*	*578*	*465*	*352*	*3,157*
Women	*371*	*854*	*638*	*609*	*506*	*457*	*3,435*
***Unweighted* N**							
Men	*308*	*750*	*575*	*594*	*505*	*361*	*3,093*
Women	*353*	*903*	*708*	*675*	*554*	*453*	*3,646*

[a]Reported having a doctor diagnosis of diabetes at wave 1 or wave 2.

Table 5A.17. Undiagnosed diabetes (FBG),[a] by age in 2004–05 and sex

Core wave 2 respondents (excluding proxies) with a fasting blood glucose measurement who did not report a diagnosis of diabetes

	52–54	55–59	60–64	65–69	70–74	75–79	All
	%	*%*	*%*	*%*	*%*	*%*	*%*
Men	1.1	1.6	4.5	1.3	0.7	5.2	2.3
Women	0.4	0.2	1.0	2.4	0.8	1.4	1.0
All	0.7	0.9	2.7	1.9	0.7	3.0	1.6
***Weighted* N**							
Men	*183*	*393*	*332*	*263*	*221*	*155*	*1,546*
Women	*192*	*435*	*352*	*309*	*238*	*201*	*1,728*
***Unweighted* N**							
Men	*168*	*380*	*349*	*287*	*234*	*155*	*1,573*
Women	*196*	*495*	*402*	*353*	*253*	*182*	*1,881*

[a]Undiagnosed diabetes defined as FBG ≥ 7 mmol/l, with no diagnosis of diabetes reported.

Table 5A.18. Diagnosed diabetes,[a] by age-specific wealth quintile and sex

Core wave 2 respondents (excluding proxies)

	Poorest	2nd	3rd	4th	Richest
	%	%	%	%	%
Men	10.3	11.8	9.3	8.5	6.0
Women	9.8	8.1	5.2	4.8	2.3
***Weighted* N**					
Men	*442*	*578*	*683*	*704*	*730*
Women	*698*	*667*	*710*	*650*	*667*
***Unweighted* N**					
Men	*389*	*549*	*653*	*710*	*773*
Women	*724*	*698*	*751*	*700*	*730*

[a]Reported having a doctor diagnosis of diabetes at wave 1 or wave 2.

Table 5A.19. Undiagnosed diabetes (FBG),[a] by age-specific wealth quintile and sex

Core wave 2 respondents (excluding proxies) with a fasting blood glucose measurement who did not report a diagnosis of diabetes

	Poorest	2nd	3rd	4th	Richest
	%	%	%	%	%
Men	5.6	2.4	2.1	1.8	1.4
Women	1.7	1.5	1.4	0.5	0.0
All	3.2	1.9	1.8	1.2	0.7
***Weighted* N**					
Men	*197*	*275*	*331*	*367*	*368*
Women	*327*	*335*	*337*	*355*	*352*
***Unweighted* N**					
Men	*170*	*265*	*325*	*386*	*419*
Women	*331*	*351*	*370*	*398*	*408*

[a]Undiagnosed diabetes defined as FBG $\geq$ 7 mmol/l, with no diagnosis of diabetes reported.
Note: 31 were excluded due to missing data on wealth.

Table 5A.20. Lung function measures: mean values of FEV1, FVC and PEF, by age in 2004–05 and sex-specific height group

Core wave 2 respondents (excluding proxies) with a valid lung function measurement

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
FEV1 (litres)								
Men ≥175 cm	3.7	3.4	3.2	2.9	2.7	2.5	2.0	3.1
Men <175 cm	3.1	3.0	2.8	2.6	2.4	2.2	2.1	2.6
Women ≥165 cm	2.7	2.6	2.4	2.3	2.0	1.8	1.5	2.3
Women <165 cm	2.3	2.2	2.1	1.9	1.8	1.6	1.5	1.9
FVC (litres)								
Men ≥175 cm	4.9	4.5	4.3	3.9	3.8	3.4	2.9	4.2
Men <175 cm	4.1	3.9	3.7	3.5	3.3	3.1	2.8	3.5
Women ≥165 cm	3.5	3.3	3.1	2.9	2.7	2.5	1.8	3.0
Women <165 cm	3.0	2.9	2.7	2.5	2.3	2.1	1.9	2.5
PEF (litres/minute)								
Men ≥175 cm	555.6	528.2	504.6	468.3	448.5	404.9	333.1	489.7
Men <175 cm	496.6	482.8	456.0	440.9	388.7	351.3	322.4	425.5
Women ≥165 cm	378.9	366.2	339.9	328.8	279.5	264.5	193.5	325.5
Women <165 cm	341.2	330.1	311.1	290.0	263.7	239.7	195.9	281.4
***Weighted* N**								
Men ≥175 cm	*183*	*372*	*249*	*194*	*154*	*108*	*83*	*1,344*
Men <175 cm	*182*	*429*	*331*	*357*	*291*	*247*	*258*	*2,094*
Women ≥165 cm	*117*	*234*	*174*	*128*	*77*	*67*	*125*	*921*
Women <165 cm	*245*	*592*	*460*	*455*	*429*	*403*	*508*	*3,093*
***Unweighted* N**								
Men ≥175 cm	*155*	*356*	*248*	*210*	*171*	*106*	*82*	*1,328*
Men <175 cm	*150*	*385*	*321*	*370*	*316*	*242*	*249*	*2,033*
Women ≥165 cm	*114*	*258*	*191*	*150*	*83*	*66*	*98*	*960*
Women <165 cm	*233*	*634*	*505*	*515*	*458*	*373*	*431*	*3,149*

Note: *N*s shown are for FVC and PEF; of these, 500 had FEV1 excluded because it was recorded as <1.0 and may have been the FEV/FVC ratio rather than FEV1; these comprised 49 taller men, 104 shorter men, 59 taller women and 288 shorter women.

Table 5A.21. Mean FEV1 (litres), by sex-specific height and wealth

Core wave 2 respondents (excluding proxies) with a valid FEV[a]

	Poorest	2nd	3rd	4th	Richest
Men					
≥175 cm	2.7	2.9	3.1	3.2	3.3
<175 cm	2.5	2.5	2.6	2.7	2.7
Women					
≥165 cm	2.1	2.3	2.3	2.4	2.5
<165 cm	1.8	1.9	1.9	2.0	2.1
Weighted N	*1,055*	*1,175*	*1,373*	*1,339*	*1,411*
Unweighted N	*990*	*1,148*	*1,376*	*1,397*	*1,530*

[a]FEV1 values of <1.0 were not included because they may have been affected by nurse error.

Table 5A.22. Mean FVC (litres), by sex-specific height and wealth

Core wave 2 respondents (excluding proxies) with a valid FVC

	Poorest	2nd	3rd	4th	Richest
Men					
≥175 cm	3.8	4.0	4.2	4.3	4.4
<175 cm	3.4	3.4	3.4	3.6	3.6
Women					
≥165 cm	3.4	3.4	3.4	3.6	3.6
<165 cm	2.3	2.4	2.5	2.6	2.7
Weighted N	*1,189*	*1,306*	*1,471*	*1,438*	*1,484*
Unweighted N	*1,101*	*1,272*	*1,473*	*1,487*	*1,606*

Table 5A.23. Mean PEF (litres per minute), by sex-specific height and wealth

Core wave 2 respondents (excluding proxies) with a valid PEF

	Poorest	2nd	3rd	4th	Richest
Men					
≥175 cm	405.4	467.1	472.2	506.0	528.8
<175 cm	392.8	405.3	426.7	438.4	453.8
Women					
≥165 cm	282.8	301.6	324.6	338.9	363.0
<165 cm	252.2	274.1	287.0	293.2	305.5
Weighted N	*1,189*	*1,306*	*1,471*	*1,438*	*1,484*
Unweighted N	*1,101*	*1,272*	*1,473*	*1,487*	*1,606*

Table 5A.24. Mean FEV1 (litres), by smoking status and sex-specific height

Core wave 2 respondents (excluding proxies) with a valid FEV[a]

	Never smoked	Ex-smoker	Current smoker	All
Men				
≥175 cm	3.3	3.1	2.9	3.1
<175 cm	2.8	2.6	2.5	2.6
Women				
≥165 cm	2.4	2.3	2.1	2.3
<165 cm	2.0	1.9	1.8	1.9
Weighted N	*2,301*	*3,114*	*988*	*6,404*
Unweighted N	*2,381*	*3,206*	*907*	*6,494*

[a]FEV1 values of <1.0 were not included because they may have been affected by nurse error.
Note: *N*s are not shown for all subgroups. In total, there were 1,206 taller men, 1,832 shorter men, 822 taller women and 2,634 shorter women.

Table 5A.25. Mean FVC (litres), by smoking status and sex-specific height

Core wave 2 respondents (excluding proxies) with a valid FVC

	Never smoked	Ex-smoker	Current smoker	All
Men				
≥175 cm	4.4	4.2	4.0	4.2
<175 cm	3.7	3.4	3.4	3.5
Women				
≥165 cm	3.0	2.9	2.9	3.0
<165 cm	2.5	2.5	2.4	2.5
Weighted N	*2,486*	*3,353*	*1,101*	*6,941*
Unweighted N	*2,559*	*3,429*	*1,006*	*6,994*

Note: *N*s are not shown for all subgroups. In total, there were 1,255 taller men, 1,936 shorter men, 881 taller women and 2,922 shorter women.

Table 5A.26. Mean PEF (litres/minute), by smoking status and sex-specific height

Core wave 2 respondents (excluding proxies) with a valid PEF

	Never smoked	Ex-smoker	Current smoker	All
Men				
≥175 cm	517.3	491.7	435.3	489.5
<175 cm	453.7	424.3	383.4	425.5
Women				
≥165 cm	330.0	330.8	296.9	325.5
<165 cm	289.0	281.9	258.2	281.3
Weighted N	*2,486*	*3,353*	*1,101*	*6,941*
Unweighted N	*2,559*	*3,429*	*1,006*	*6,994*

Note: *N*s are not shown for all subgroups. In total, there were 1,255 taller men, 1,936 shorter men, 881 taller women and 2,922 shorter women.

Table 5A.27. Mean haemoglobin (g/dl) and anaemia (%), by age in 2004–05 and sex

Core wave 2 respondents (excluding proxies) with valid haemoglobin concentrations

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
Men								
Mean haemoglobin (g/dl)	15.2	15.1	15.3	15.0	14.9	14.6	14.0	15.0
Anaemia (%)	[1.9]	[2.6]	[1.5]	[4.7]	[6.4]	[13.8]	20.9	6.2
Women								
Mean haemoglobin (g/dl)	13.8	13.8	13.9	14.0	13.8	13.7	13.3	13.8
Anaemia (%)	[4.6]	[3.4]	[3.5]	[3.9]	[7.9]	[7.4]	17.1	6.8
***Weighted* N**								
Men	*285*	*607*	*456*	*427*	*344*	*280*	*276*	*2,676*
Women	*282*	*639*	*493*	*447*	*402*	*368*	*499*	*3,131*
***Unweighted* N**								
Men	*260*	*580*	*477*	*457*	*362*	*266*	*248*	*2,650*
Women	*283*	*726*	*557*	*505*	*416*	*325*	*356*	*3,168*

Note: Anaemia defined as below 13g/dl for men and below 12g/dl for women.

Table5A.28. Geometric mean ferritin (µg/l) and low ferritin (%), by age in 2004–05 and sex

Core wave 2 respondents (excluding proxies) with valid ferritin concentrations

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
Men								
Geometric mean ferritin (µg/l)	110.9	114.8	122.4	112.3	112.1	100.0	90.0	110.4
Low ferritin (%)	20.8	18.7	16.0	20.5	20.8	26.6	31.6	21.2
Women								
Geometric mean ferritin (µg/l)	54.8	66.4	77.4	77.3	73.8	75.6	63.7	69.9
Low ferritin (%)	32.5	21.2	14.7	16.7	18.4	18.5	25.7	20.6
***Weighted* N**								
Men	*286*	*615*	*462*	*439*	*347*	*283*	*282*	*2715*
Women	*283*	*646*	*498*	*451*	*400*	*376*	*507*	*3161*
***Unweighted* N**								
Men	*261*	*589*	*483*	*469*	*365*	*269*	*253*	*2689*
Women	*284*	*733*	*561*	*509*	*413*	*332*	*361*	*3193*

Note: Low ferritin is defined by sex-specific quintiles. This represents values below 62 µg/l for men and below 39 µg/l for women.

Table 5A.29. Mean haemoglobin (g/dl) and geometric mean ferritin (µg/l), by age-specific wealth quintile and sex

Core wave 2 respondents (excluding proxies) with valid iron status measurements

	Poorest	2nd	3rd	4th	Richest
Haemoglobin (g/dl)					
Men	14.8	14.9	14.9	15.0	15.1
Women	13.8	13.7	13.8	13.8	13.8
Ferritin (µg/l)					
Men	106.5	103.1	102.9	113.5	123.5
Women	67.5	69.2	67.4	69.9	77.4
***Weighted* N**					
Men	*360*	*505*	*575*	*606*	*615*
Women	*660*	*622*	*627*	*609*	*579*
***Unweighted* N**					
Men	*303*	*474*	*548*	*627*	*684*
Women	*597*	*604*	*652*	*639*	*640*

6. Measured physical performance

David Melzer *Peninsula Medical School, Exeter*

Elizabeth Gardener *Institute of Public Health, University of Cambridge*

Iain Lang *Peninsula Medical School, Exeter*

Brenda McWilliams *Institute of Public Health, University of Cambridge*

Jack M. Guralnik *Epidemiology and Demography Section, National Institute of Aging, USA*

The key points in this chapter include:

- Performance measures offer an objective marker of functioning, free from differences in attitudes to reporting difficulties. ELSA wave 2 (2004–05) included tests of lower limb functioning plus grip strength.
- Overall tested performance declines with age, but some of the oldest people maintain high functioning. For example, the weakest 25% of women aged 52–59 have measured grip strengths of 24 kg or less, but the top 5% women aged 80 and over have grip strengths of 25 kg and above.
- Those living in the poorest households have significantly higher rates of impairment on all tests. For instance, compared with those in the wealthiest fifth of households, men and women in the poorest fifth of households are approximately two and a half times as likely to perform poorly on the Short Physical Performance Battery of tests.
- Incidence rates of poor function on the gait speed test are also associated with low wealth. Both men and women in the poorest group are significantly more likely to have developed gait speed limitations between the first and second ELSA waves than those in the wealthiest group.
- Performance test results are useful in detecting differences among high- as well as low-functioning individuals, and provide reliable measures for identifying factors that might delay the onset of functional limitations.

6.1 Introduction

In this chapter we explore the results of the tests of physical performance that were carried out in 2004–05. Performance tests aim to assess physical functioning in a standardised way. The degree of objectivity introduced by these tests can be used to compare groups that face different environmental challenges and have different attitudes to reporting difficulties with everyday activities.

Performance tests and the assessment of functioning

ELSA wave 2 included tests of lower limb mobility (walking/gait speed, time to complete five chair stands, and balance tests), supplemented by a measure of muscle strength. Restricted mobility is an early and relatively culture-free marker of the development of disabilities and because of this has been used in the ELSA study as a principal marker of functioning. Well over nine-in-ten older people with any disability report problems with walking (Lan et al., 2002).

Differences between self-reports and the results of performance tests have long been reported (Hoeymans et al., 1996; Sayers et al., 2004). Performance measures provide a method of accounting for different thresholds for self-reporting of disabilities between people and groups (Iburg et al., 2001; Melzer et al., 2004; Murray et al., 2001). Also, tested performance can be more sensitive than self-reports, particularly for people with some degree of cognitive impairment: Melzer and colleagues (Melzer et al., 2005) showed that performance measures are sensitive to the effects of the Alzheimer's related ApoE-e4 genetic variant, while self-reported functioning is not.

Impaired function on performance tests has been shown to be strongly predictive of future disability, nursing home entry and mortality (Guralnik et al., 1994; Guralnik et al., 1995) in the USA. Performance tests thus have utility in the clinical assessment of older people (Guralnik and Ferrucci, 2003; Studenski et al., 2003), including the identification of those with pre-clinical limitations who are at higher risk of developing disabilities over the following few years (Cavazzini et al., 2004).

Similarly, lower muscle strength has emerged as a long-term predictor of earlier onset of disability (Rantanen et al., 1999): those with greater strength appear to have more reserves to cope with the effects of ageing and tend to be able to function well for longer. Declining muscle strength with advancing age may reflect accumulated damage as well as the effects of disease.

Performance measures quantify physical function on a continuous scale from very poor to excellent. The results are also expected to be valuable in detecting change in function over time, when enough time has elapsed so that differences in function are large compared to the measurement errors at each wave. The gait speed results from the ELSA baseline have supported comparisons with a US national study, indicating that performance and reporting of medium-distance mobility difficulties (over a quarter of a mile) are broadly similar in England and the USA (Gardener and Melzer, 2005).

Since the functions measured in the ELSA tests are not comprehensive and people can perform better on tests than in everyday life – for example by ignoring pain in order to do well in the test situation – these tests cannot be regarded as the only benchmark. Self-reported difficulties remain important, and combining self-reports with performance test data can be useful (Reuben et al., 2004). In addition, it is only by considering self-reported difficulties that we can gain insight into how an individual is doing in his or her own environment, which is important for providing supportive services and accommodation.

An obvious question is why several measures of function are needed. In a comparison of reported and measured mobility (walking) ability, Lan and colleagues (Lan et al., 2002) showed that while gait speed measures identify a lot of impairment, adding, for example, the chair stand measure significantly increases measurement precision. Identifying poor function is relatively easy, but accurately measuring grades of good or excellent function is much more difficult. Curb and colleagues (Curb et al., 2006) have shown that measures such as grip strength, single-leg balance and chair stands discriminate well at the top end of functioning, but gait speed does not. The ELSA data will allow exploration of these issues in depth and will contribute to identifying the most efficient subset of markers for predicting future disability in individuals and monitoring population health.

The sample and response rates

Some of the tests described in this chapter were performed as part of the nurse interview, but the gait speed test was performed during the main ELSA interview. The measures taken during the nurse interview included grip strength, balance measures, leg raises and chair rises.

All core sample members were eligible for a nurse visit, except those who required a proxy interview. Towards the end of the main interview, the respondent was asked if they were willing to be visited by a qualified nurse who would collect more medical information and carry out some measurements. If they refused to have a nurse visit then their reasons for refusal were recorded; if they agreed then the interviewer either arranged an appointment for the nurse to visit a few days later, or told the respondent that the nurse would telephone them to arrange the visit. The nurse asked separately for permission to do each test, so the respondent could decide at the time whether or not they wanted to participate in a particular test. The nurse demonstrated each test before the respondent was asked to do it.

Overall, 12% of core study members who had undertaken an interview did not receive a nurse visit. Chapter 12 of this report contains details of response rates for the second wave of ELSA interviews and for the nurse visit, by age group and wealth quintile. Within the group that took part in the nurse visit, refusal to participate in performance tests was rare: for example, although doing five chair stands can be demanding, particularly for older people, there were only six refusals to attempt this test. However, inability to complete a test is itself informative and so the proportions of respondents who were unable to do tests or who physically failed to complete the tests is provided in the tables.

The test procedures and results

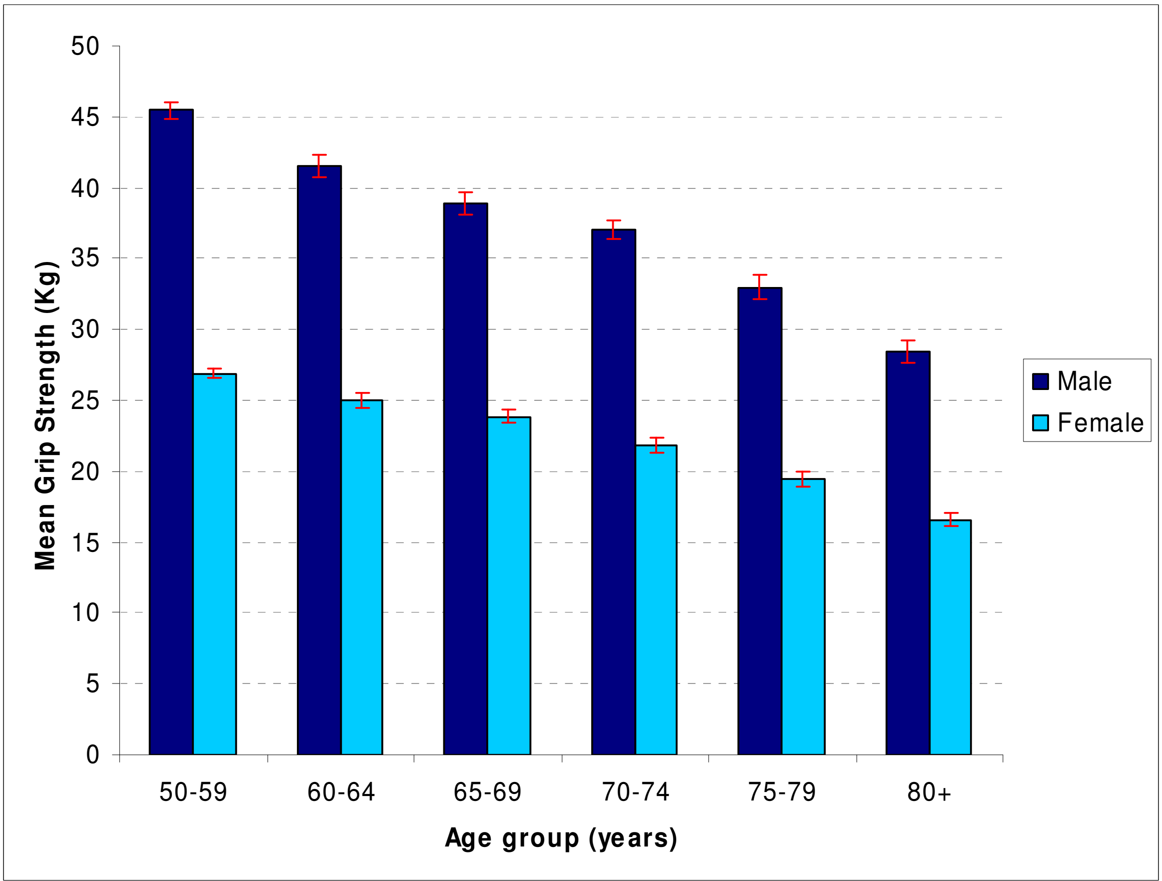
The first part of the results section below provides data on performance on each of the tests individually. Following this, the balance, gait speed and chair stand test results are combined into the Short Physical Performance Battery (Guralnik et al., 2000). This provides a highly validated summary marker of lower limb functioning in older people.

6.2 Grip strength

The grip strength test is a test for upper body strength. It was given to all respondents who were willing to take it, with no upper or lower age limits, but with certain exclusions on safety grounds (respondents were excluded if they had swelling or inflammation, severe pain, a recent injury, or if they had had surgery to the hand in the preceding six months). If there was a problem with only one hand, measurements were taken using the other hand.

After adjusting the gripometer[1] (grip gauge) to suit the respondent's hand and positioning the respondent correctly, the respondent was asked to squeeze the gripometer as hard as they could for a couple of seconds. Three values were recorded for each hand, starting with the non-dominant hand and alternating between hands. Any measurements carried out incorrectly were not included.

Figure 6.1. Mean grip strength by age group and gender



Grip strength results

Mean strength declines with age, from 46 kg among men aged 52–59, to 28 kg in those aged 80 years and over. Strength in women is lower – 27 kg in 52–59-year-olds and 17 kg in those 80 and above – but shows a similar age-related decline (Figure 6.1 and Tables 6A.1 and 6A.2). There is an increase with age in the percentage of respondents who are unable to do the test. An additional factor apparent from Figure 6.1 is that the male-female ratio of mean grip strength remains approximately constant (at around 1.68) as each group ages.

In spite of the decline in average (mean) function, there are large differences in strength within each age group and some of the oldest respondents are stronger than some of the youngest (Table 6A.1). For example, the weakest

[1]The gripometer used was the 'Smedley's for Hand' Dynamo Meter, scale 0–100kg.

25% of the women aged 52–59 had measured grip strengths up to 24 kg, but the top 5% of the women 80+ had grip strengths of 25kg or more.

Many measures linked to health status at all ages show more limitation in less privileged groups. Grip strength in ELSA is no exception, rising from 37 kg in the poorest quintile of older men to 41 kg in the wealthiest; in women, the corresponding figures are 21 kg in the poorest quintile and 25 kg in the wealthiest (Table 6A.3).

6.3 Static balance tests

Static balance was evaluated in three separate, progressively more difficult, tests. Respondents in the following circumstances were ineligible for the balance tests: if they were chair-bound or wheelchair-based; if it became clear after discussion that they were too unsteady on their feet; if they found it painful to stand; or if either the nurse or the respondent considered it unsafe to conduct the measurement. If the respondent was not willing to take part in the tests (for example, saying that they were too busy) they were coded as 'refused' and the reason for refusal was noted.

The tests were demonstrated once and walking aids such as canes, walkers or crutches could not be used (this applied to all balance, leg raise and chair stand tests). Respondents were asked to wear appropriate (flat) shoes and the nurse was able to help them get into position and to stand by in case they began to fall or lose their balance.

The balance measure evaluated the respondent's ability to balance using five components, described in detail below: side-by-side, semi-tandem and full tandem, and for those aged 69 years and under, leg raise with eyes open and leg raise with eyes closed. All ages started with the side-by-side for 10 seconds; if they passed that, they then did the semi-tandem for 10 seconds; those who passed the semi-tandem then attempted the full tandem – for 10 seconds if aged 70 years or over, and for 30 seconds if aged 69 years or under. Those aged 69 years and under who successfully passed the full tandem stand then attempted the one-leg stand with eyes open for 30 seconds, and if they were successful in that, they then attempted it again with their eyes closed for 30 seconds. They were not allowed to practise for the side-by-side, semi-tandem or full-tandem stands, but they were allowed one practice for the one-leg stand.

If the respondent or the nurse felt any particular test was unsafe then it was not attempted.

Side-by-side stand

The respondent was asked to stand with feet together, side-by-side, for at least 10 seconds, using their arms, bending their knees or moving their body to maintain balance, but not moving their feet. If the respondent was unable to hold the position for 10 seconds, then the time held in seconds (to 2 decimal places) was recorded. If the respondent was able to hold the position for 10 seconds, then they moved on to the semi-tandem stand.

Semi-tandem stand

Here, respondents had to stand with the side of the heel of one foot touching the big toe of the other foot for at least 10 seconds. If they were able to hold the position for 10 seconds then they moved on to the full tandem stand.

Full tandem stand

For this test respondents had to stand with the heel of one foot in front of and touching the toes of the other foot, for at least 30 seconds (if aged 69 years or under), or for about 10 seconds (if aged 70 years or over).

Leg raise with eyes open

This test was carried out for those aged 69 years or under who had held the full tandem stand for 10 seconds. They were asked to try to stand on one leg, raise the other leg off the ground a few inches, and stand for as long as they could, but stopping at 30 seconds. (One-leg balance is an important predictor of injurious falls in older persons (Vellas et al., 1997).) Timing began as soon as the foot was raised and stopped either when either (1) the raised leg touched the floor as the respondent lost balance, or (2) 30 seconds had elapsed, whichever happened first. If respondents were able to hold the position for 30 seconds then they moved on to do the leg raise with eyes shut.

Leg raise with eyes shut

This test was the same as the leg raise with eyes open, except respondents were asked to close their eyes as they stood on one leg. The test was stopped if (1) the raised leg touched the floor as the respondent lost his or her balance, or (2) the respondent opened his or her eyes, or (3) 30 seconds had elapsed, whichever happened first.

Balance test results

The balance tests were designed to pose increasing difficulty and a general fall-off in performance is evident across the range of tests. While 99% of men can complete the side-by-side test, only 87% can maintain the full-tandem stand for 10 seconds (Table 6A.4). For the leg-raise tests, designed to challenge younger people, only a small minority of both men (3%) and women (2%) are able to maintain their position, standing on one leg with their eyes closed, for 30 seconds.

As expected, performance declines with age: for example, for men the percentage holding the full tandem position for 10 seconds declines from 96% at age 52–59 years, to 56% at age 80 years and over.

The percentage of women successfully performing these tests is only marginally lower than of men at ages under 70 years. Again, performance declines markedly with age. For example, for the full tandem stand, 94% of women can maintain their position for 10 seconds in the youngest group, while only one-third of those aged 80 years and over can do this. Reflecting a greater difference between the sexes, the same figures in men show a marked, but smaller, drop: 96% of men in the youngest group and 56% in the oldest group can complete this test.

6.4 Chair rise measures

The chair stand is a simple test with complex requirements: it depends on several body systems working together, including muscular strength, balance, coordination, lower limb joint range of motion and exercise tolerance. Respondents were asked to stand up from a firm chair without using their arms. If they succeeded in doing a single rise, they were asked to stand up and sit down as quickly as they could for five rises if they were aged 70 years or over, or up to ten rises if aged 69 years or under, and the time taken was noted. While doing the test, respondents had to keep arms folded across the chest and feet on the floor. The nurse counted the rises out loud as they did them and each rise was counted as complete when the respondent was fully standing with his or her back straight. (For younger people, the time taken was measured at the end of both 5 and 10 rises.)

No-one attempted this test who could not stand up without assistance; the use of walking aids, such as a walker or cane, was not permitted. The test was stopped if the respondent became too tired or short of breath; if the participant used their hands; if after one minute, the participant had not completed all the rises; or if the nurse felt concerned for the respondent's safety.

Chair stand results

Performance on the initial single chair stand was good, with relatively small proportions of the oldest respondents unable to do this screening test (Table 6A.5).

On the more demanding 5 or 10 chair stand tests (Table 6A.6), with advancing age there is a marked increase in the proportions unable to complete the test, and there are sharp declines in ability to complete the test evident in men aged 80 years and over and in women aged 75 years and over. The mean time taken to complete the stands increases with age, but while most tests show significantly poorer performance for women, an interesting aspect of the chair stand results is that, among those able to complete the test, performance in women is similar to that in men. In women, the mean times taken to complete five stands are 10.3 seconds at age 52–59 years and 15.7 seconds at age 80 and over; in men, the corresponding times are 9.9 seconds and 15.3 seconds. These results should be treated with caution, though, because a greater proportion of older women than older men were unable to complete this test.

It is notable, however, that within each age group, there is a wide range of performance such that, for example, the slowest 25% of 52–59-year-old women takes more than 11.9 seconds, while the quickest 25% of 80+ year-old women take less than 12.0 seconds to complete the five stands. The same thing is evident among men: the slowest quarter of 52–59-year-olds takes 11.4 seconds or more for the five stands and the fastest quarter of men aged 80 or over completes the same test in 11.2 seconds or less (Table 6A.6).

6.5 Gait speed measurement

All respondents aged 60 years and over completing the interviews on their own behalf were eligible for the walking speed test, which was performed as part of the main ELSA interview. The test involved timing how long it took to walk a distance of eight feet.

Respondents began with both feet together at the beginning of the course. The interviewer started timing as soon as the respondent placed either foot down on the floor across the start line. They were asked to walk (not race) to the other end of the course at their usual speed, just as if they were walking down the street to the shops, and to walk all the way past the other end of the tape before stopping. Timing was stopped when either foot was placed on the floor across the finish line. Respondents were then asked to repeat the test by lining up their feet and walking back along the course, all the way past the other end.

The gait speed test was also carried out at baseline (ELSA wave 1), making measures of change in performance possible. There is evidence that gait speed and other Short Physical Performance Battery (SPPB) components are responsive to change (Ostir et al., 2002), especially with the onset of major episodes of disease like heart attacks, strokes or hip fractures. In patients who recover from these major events, scores tend to improve and reflect recovery.

Gait speed results

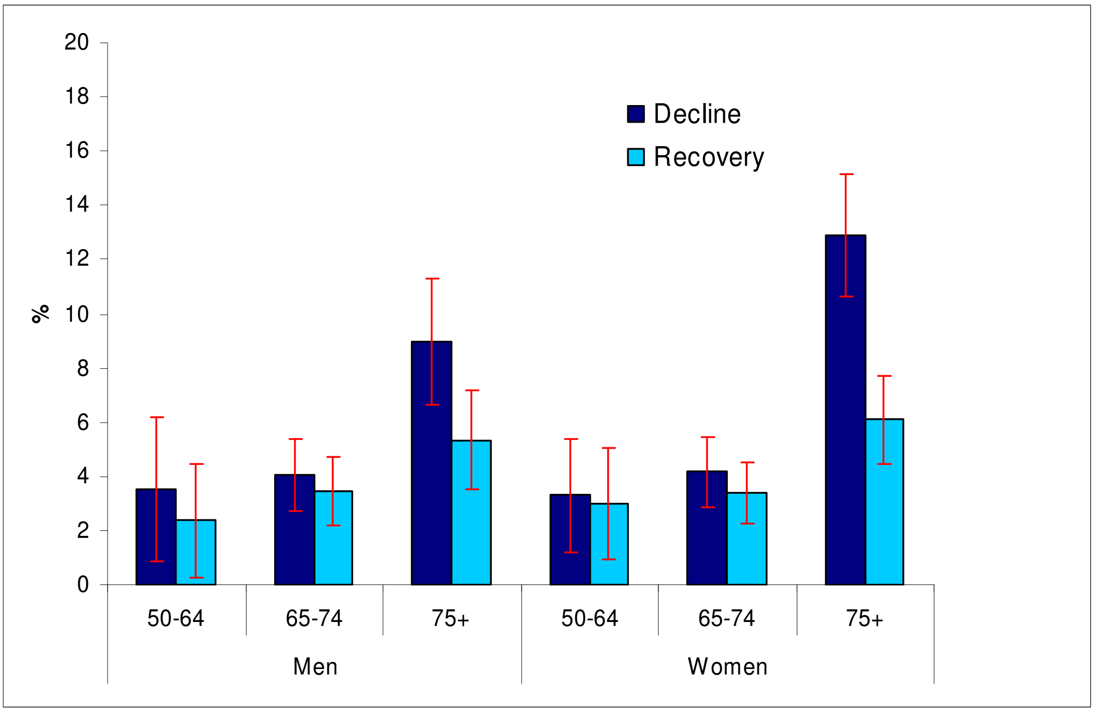
As with the other tests, the percentage of respondents unable to complete the gait speed test increases with age. Mean speeds (in metres per second) also decrease with age, and speeds are slightly lower in women than men (Table 6A.7).

Incident gait speed performance

By excluding people with poor performance at the ELSA baseline on the gait speed test, it is now possible to examine the percentages of respondents who have developed gait speed impairments since then. The gait speed test is really designed to identify impairment, as it asks people to walk at their normal pace and does not attempt to measure high performance. Table 6A.8 summarises the proportions of respondents who walk at or less than half a metre per second, or who cannot walk at all, by age-specific wealth quintile and sex. (For reference: a person walking at half a metre per second takes 15 seconds to cross a typical 7.5 metre single-carriageway road. Standard timings on pelican crossings in a 30 mph zone display a red light to traffic for between four and nine seconds, and a flashing amber for an additional six to eighteen seconds (Department for Transport, 1995).)

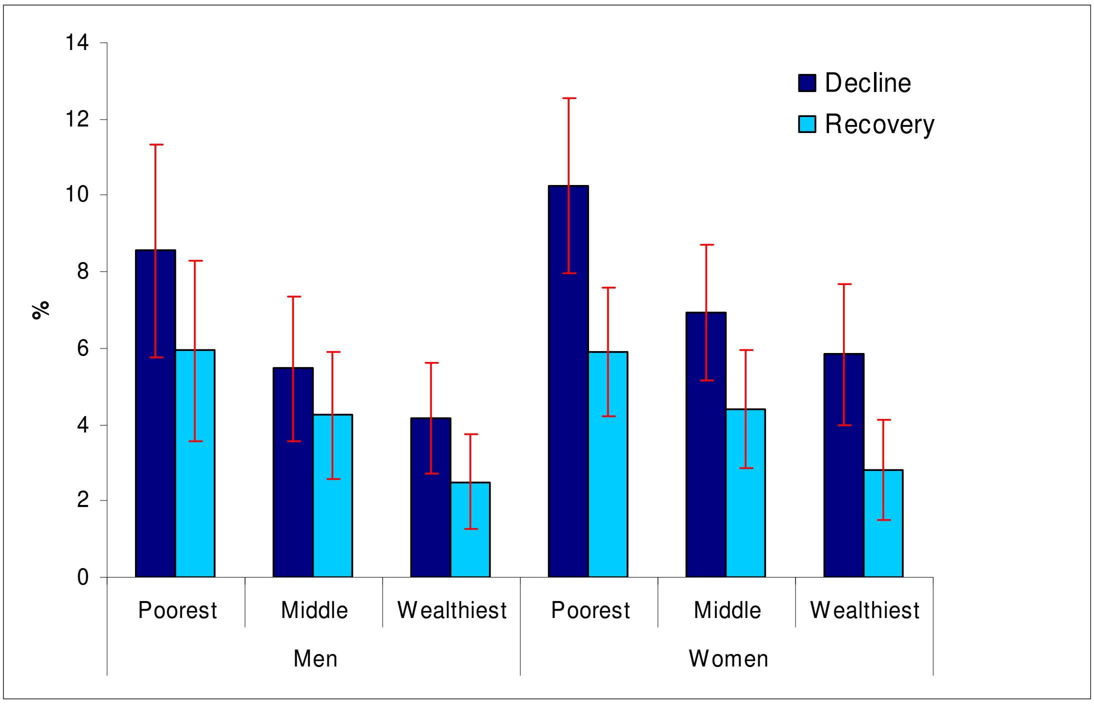
Figures 6.2 and 6.3 show change in gait speed limitations (gait speed ≤0.5 m/s) by age group and by age-specific wealth tertiles. In Figure 6.2, a trend indicating greater levels of decline associated with increasing age is evident. The oldest group shows a marked and statistically significant difference from the younger groups, with the greatest decline for older women. Figure 6.3 indicates that there are higher levels of decline in individuals living in poorer households. As with the age groups, the differences in recovery may relate to

Figure 6.2. Change in gait speed limitations, by age group and sex, with 95% confidence intervals



Note: Decline is defined as gait speed of >0.5m/s in 2002/03 and gait speed of ≤0.5m/s or being unable to complete the test in 2004/05; recovery is defined as gait speed of ≤0.5m/s or being unable to complete the test in 2002/03 and gait speed o >0.5m/s in 2004/05

Figure 6.3. Change in gait speed limitations, by age-specific wealth tertiles and sex, with 95% confidence intervals



Note: Decline is defined as gait speed of >0.5m/s in 2002/03 and gait speed of ≤0.5m/s or being unable to complete the test in 2004/05; recovery is defined as gait speed of ≤0.5m/s or being unable to complete the test in 2002/03 and gait speed of >0.5m/s in 2004/05 higher levels of baseline impairment. Overall levels of decline are fairly low and future waves of ELSA will provide a clearer picture of how incident decline in gait speed performance is related to socio-economic and other factors.

6.6 The Short Physical Performance Battery (SPPB) score

The SPPB combines the results of the gait speed, chair stand and balance tests (Guralnik et al., 2000). As described, this battery has been extensively validated, is predictive at the pre-clinical stage of later disability and has application in routine clinical settings in monitoring the functioning of older people. Figure 6.4 and 6.5 show the relationship between poor performance in the SPPB (defined as a score of 8 or lower) and wealth, at different ages (see also Tables 6A.9 and 6A.10). At the younger ages, we see very large relative differences in performance, with the poorest group showing markedly worse performance. Differences remain in the 75+ group, although these are relatively less marked.

Figure 6.4. Impairment on SPPB, by age and age-specific wealth quintile, men, with 95% confidence intervals

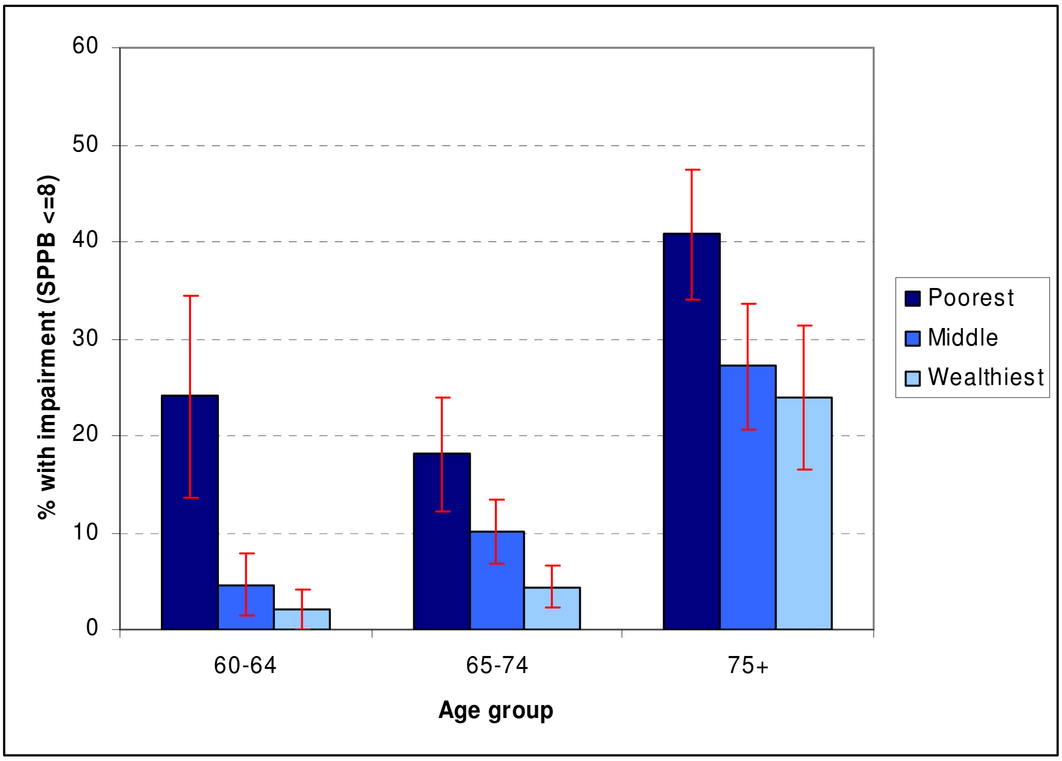
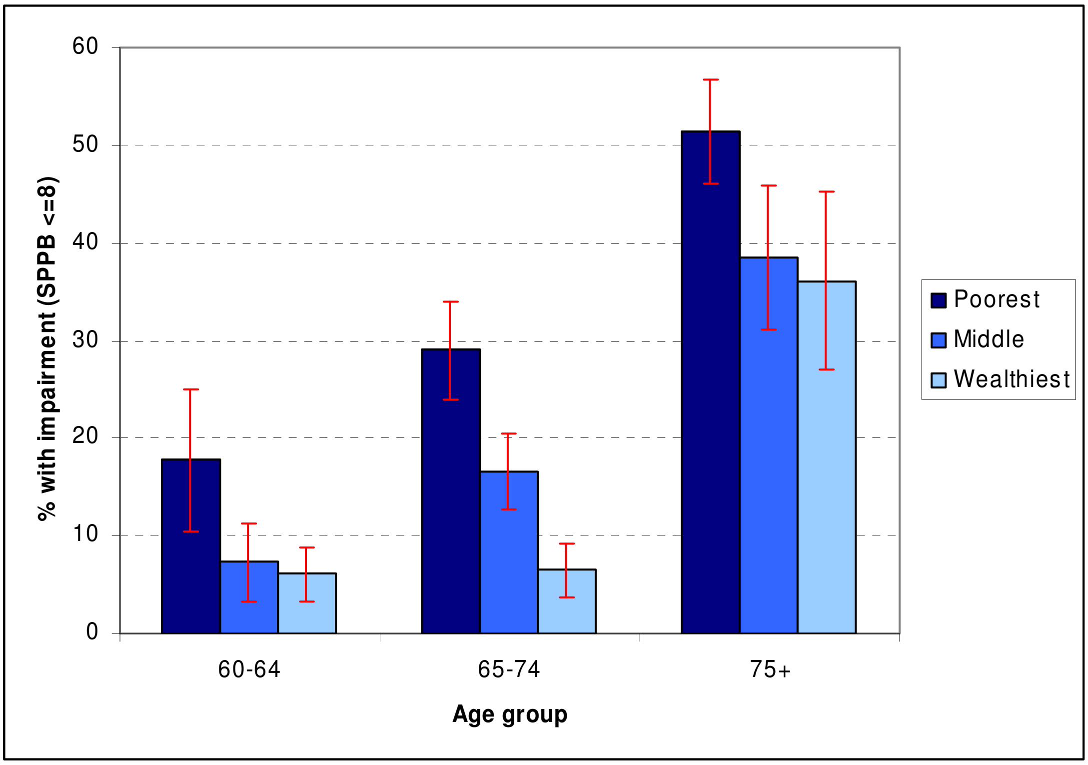


Table 6A.11 shows poor performance on the SPPB by number of mobility activities of daily living (ADLs), i.e., the number of problems reported with the following six activities: walking 100 yards; sitting for about two hours; getting up from a chair after sitting for long periods; climbing several flights of stairs without resting; climbing a single flight of stairs without resting; stooping, kneeling, or crouching. As we might expect, there is a strong relationship between these two measures for both men and women. Among men reporting three or more mobility ADLs, nearly six-in-ten perform poorly in the SPPB; among women with three or more mobility ADLs, the equivalent figure is nearly nine-in-ten.

The unadjusted correlation between gait speed and grip strength is 0.37, suggesting that, for at least some older people, there is a general increase in frailty in upper and lower limbs.

Figure 6.5. Impairment on SPPB, by age and age specific wealth quintile, women, with 95% confidence intervals



6.7 Summary

The physical performance tests in ELSA were designed to provide an objective measure of lower limb function and (upper limb) muscle strength, using a well-validated battery of tests.

The results show that performance declines with age and that limitation is more common in women than men. The latter finding is commonly seen in self-reported responses to questions on disability, and it is sometimes suspected that this is due to differences between men and women in willingness to report difficulties. However, in these objective tests, the higher prevalence of limitations in women is confirmed, despite the fact that women have significantly longer life expectancies than men.

In spite of the overall pattern of decline with chronological age, the test results also show a great diversity of function, with some older people performing at higher levels than some of the middle-aged respondents. Similarly, some of the younger respondents have (prematurely) impaired functioning, showing the very different ages of onset of impairments: the link between chronological age and 'age-related' impairments is once again shown to be very loose.

As with other measures of health, physical limitations are more common in those with lower incomes. This effect is substantial; it is most marked in the younger age groups but still present in the older groups. These performance differences by wealth indicate that the self-reported differences in disability noted in the first ELSA report are not due to differences in attitude or environment only, but reflect real and large differences in the ages of onset of physical impairment across the income range. On average, 'ageing' clearly affects members of less privileged groups earlier in their lives.

For most tests, the 2004–05 examination provides a baseline for future monitoring, but for the gait speed test, the study now has two waves of measures. These show that new onsets of limitations in short distance walking follow the same age, sex and wealth patterns discussed above. Recovery from limitation was also present, but recovery rates rise less with age and do not show a simple trend across the wealth range.

As noted in the introduction, the performance test measurements will support a variety of detailed analyses in the future. The results identify both poor and high functioning and enable prediction of future disability onsets. As markers of the ageing process they can be used to explore the role of the many factors that might slow or accelerate decline. The early age at which some people develop 'age-related' limitations is clearly a concern, but the high functioning of some of the oldest people indicates that much could be achieved to prevent premature ageing and to postpone the onset of disability. Enabling us to identify the extent to which social and other inequalities are related to both the development and avoidance of disability in old age is among the key roles that ELSA will play in the coming months and years.

References

Cavazzini, C., Bandinelli, S., Gangemi, S., Lauretani, F., Lucci, G., Ferrucci, L., Conti, M., Gallinella, M., Guralnik, J. M. and Windham, B. G. (2004), 'Screening for poor performance of lower extremity in primary care: the Camucia Project', *Aging – Clinical and Experimental Research*, 16: 331–336.

Curb, J. D., Ceria-Ulep, C. D., Rodriguez, B. L., Grove, J., Guralnik, J., Willcox, B. J., Donlon, T. A., Masaki, K. H. and Chen, R. (2006), 'Performance-based measures of physical function for high-function populations', *Journal of the American Geriatric Society*, 54: 737–742.

Department for Transport (1995), *The Design of Pedestrian Crossings*, Local Transport Note 2/95, London: The Stationery Office.

Gardener, L. and Melzer, D. (2005), *Mobility Disability Self-Reporting and Gait Speed in England and the USA*, University of Cambridge and Peninsula Medical School, http://www.ifs.org.uk/elsa/publications.php?publication_id=3451. Accessed 8 June 2006.

Guralnik, J. M. and Ferrucci, L. (2003), 'Assessing the building blocks of function: utilizing measures of functional limitation', *American Journal of Preventive Medicine*, 25 Suppl. 2: 112–121.

Guralnik, J. M., Ferrucci, L., Pieper, C. F., Leveille, S. G., Markides, K. S., Ostir, G. V., Studenski, S., Berkman, L. F. and Wallace, R. B. (2000), 'Lower extremity function and subsequent disability: consistency across studies, predictive models, and value of gait speed alone compared with the short physical performance battery', *Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 55: M221–M231.

Guralnik, J. M., Ferrucci, L., Simonsick, E. M., Salive, M. E. and Wallace, R. B. (1995), 'Lower-extremity function in persons over the age of 70 years as a predictor of subsequent disability', *New England Journal of Medicine*, 332: 556–561.

Guralnik, J. M., Simonsick, E. M., Ferrucci, L., Glynn, R. J., Berkman, L. F., Blazer, D. G., Scherr, P. A. and Wallace, R. B. (1994), 'A short physical performance battery assessing lower extremity function: association with self-reported disability and prediction of mortality and nursing home admission', *Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 49: M85–M94.

Hoeymans, N., Feskens, E. J. M., Van Den Bos, G. A. M. and Kromhout, D. (1996), 'Measuring functional status: cross-sectional and longitudinal associations between performance and self-report (Zutphen Elderly Study 1990–1993)', *Journal of Clinical Epidemiology*, 49: 1103–1110.

Iburg, K., Salomon, J., Tandon, A. and Murray, C. (2001), *Cross-Population Comparability of Self-Reported and Physician-Assessed Mobility Levels: Evidence from the Third National Health and Nutrition Examination Survey,* Global Program on Evidence for Health Policy 14, Geneva: World Health Organisation.

Lan, T. Y., Melzer, D., Tom, B. D. and Guralnik, J. M. (2002), 'Performance tests and disability: developing an objective index of mobility-related limitation in older populations', *Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 57: M294–M301.

Melzer, D., Dik, M. G., Jonker, C., Deeg, D. J. and Van Kamp, G. J. (2005), 'The apolipoprotein E e4 polymorphism is strongly associated with poor mobility performance test results but not self-reported limitation in older people', *Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 60: 1319–1323.

Melzer, D., Lan, T. Y., Tom, B. D. M., Deeg, D. J. H. and Guralnik, J. M. (2004), 'Variation in thresholds for reporting mobility disability between national population subgroups and studies', *Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 59: 1295–1303.

Murray, C., Tandon, A., Salomon, J. and Mathers, C. (2001), 'Enhancing cross-population comparability of survey results', GPE Discussion Paper 35, World Health Organisation, Geneva.

Ostir, G. V., Volpato, S., Fried, L. P., Chaves, P. and Guralnik, J. M. (2002), 'Reliability and sensitivity to change assessed for a summary measure of lower body function: results from the Women's Health and Aging Study', *Journal of Clinical Epidemiology*, 55: 916–921.

Rantanen, T., Guralnik, J. M., Foley, D., Masaki, K., Leveille, S., Curb, J. D. and White, L. (1999), 'Midlife hand grip strength as a predictor of old age disability', *Journal of the American Medical Association*, 281: 558–560.

Reuben, D. B., Seeman, T. E., Hirsch, S. H., Keeler, E., Hayes, R. P., Bowman, L., Sewall, A., Wallace, R. B. and Guralnik, J. M. (2004), 'Refining the categorization of physical functional status: the added value of combining self-reported and performance-based measures', *Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 59: 1056–1061.

Sayers, S. P., Brach, J. S., Newman, A. B., Heeren, T. C., Guralnik, J. M. and Fielding, R. A. (2004), 'Use of self-report to predict ability to walk 400 meters in mobility-limited older adults', *Journal of the American Geriatric Society*, 52: 2099–2103.

Studenski, S., Perera, S., Wallace, D., Chandler, J. M., Duncan, P. W., Rooney, E., Fox, M. and Guralnik, J. M. (2003), 'Physical performance measures in the clinical setting', *Journal of the American Geriatric Society*, 51: 314–322.

Vellas, B. J., Wayne, S. J., Romero, L., Baumgartner, R. N., Rubenstein, L. Z. and Garry, P. J. (1997), 'One-leg balance is an important predictor of injurious falls in older persons', *Journal of the American Geriatric Society*, 45: 735–738.

Annex 6.1
Tables on measured physical performance

Table 6A.1. Grip strength, by age in 2004–05 and sex

	52–59	60–64	65–69	70–74	75–79	80+	All	p-value
	kg	kg	kg	kg	kg	kg	kg	
Men								
% unable to do test	0.2	0.7	0.5	0.7	0.8	1.4	0.6	
Mean	45.5	41.5	38.9	37.0	33.0	28.4	39.6	<0.001
(95% CI)	(44.9–46.0)	(40.7–42.4)	(38.1–39.6)	(36.3–37.7)	(32.1–33.8)	(27.6–29.2)	(39.3–40.0)	
5th percentile	31	24	24	25	20	16	22	
25th percentile	41	37	34	32	29	23	34	
50th percentile	46	43	40	37	33	30	40	
75th percentile	51	49	45	42	38	34	47	
95th percentile	60	55	52	50	46	40	55	
Women								
% unable to do test	0.8	0.5	1.1	1.6	1.5	3.8	1.5	
Mean	26.9	25.0	23.8	21.9	19.4	16.6	23.0	<0.001
(95% CI)	(26.5–27.3)	(24.5–25.5)	(23.4–24.3)	(21.3–22.4)	(18.9–19.9)	(16.1–17.1)	(22.8–23.2)	
5th percentile	16	14	14	12	9	8	11	
25th percentile	24	22	21	18	16	13	19	
50th percentile	27	26	24	22	20	17	24	
75th percentile	31	29	28	26	24	20	28	
95th percentile	37	35	33	32	28	25	34	
***Weighted* N**								
Men	*1,184*	*589*	*565*	*459*	*368*	*363*	*3,528*	
Women	*1,201*	*646*	*587*	*515*	*483*	*666*	*4,098*	
***Unweighted* N**								
Men	*1,060*	*578*	*595*	*501*	*360*	*351*	*3,445*	
Women	*1,253*	*707*	*668*	*550*	*450*	*554*	*4,182*	

Notes: Numbers may not add up due to rounding of weighted data. People with information not available, including refusals and those not attempted test for safety reasons, are excluded: 23 men (1%); 88 women (2%).

Table 6A.2. Grip strength, by mobility ADL difficulties: respondents aged 60 years and over

	Number of mobility ADL difficulties			All	p-value
	0	1–2	3+		
	kg	kg	kg	Kg	
Men					
% unable to do test	0.4	1.6	2.7	0.7	
Mean	37.8	33.4	30.3	36.7	<0.001
(95% CI)	(37.3–38.2)	(32.4–34.5)	(28.0–32.6)	(36.2–37.1)	
5th percentile	23	17	10	20	
25th percentile	32	27	21	31	
50th percentile	38	34	30	37	
75th percentile	44	40	40	44	
95th percentile	52	51	50	52	
Women					
% unable to do test	1.2	1.7	7.1	1.6	
Mean	22.7	18.4	14.8	21.4	<0.001
(95% CI)	(22.5–23.0)	(17.8–18.9)	(13.8–15.8)	(21.2–21.7)	
5th percentile	13	9	5	10	
25th percentile	19	15	10	18	
50th percentile	23	18	15	22	
75th percentile	27	23	20	26	
95th percentile	32	29	25	32	
***Weighted* N**					
Men	*1,825*	*398*	*121*	*2,345*	
Women	*2,132*	*582*	*182*	*2,895*	
***Unweighted* N**					
Men	*1,876*	*394*	*115*	*2,385*	
Women	*2,211*	*551*	*166*	*2,928*	

Notes: Numbers may not add up due to rounding of weighted data. Respondents for whom data are unavailable, including refusals and those not attempted test for safety reasons, are excluded: 21 men (1%); 72 women (2%). Number of mobility ADL difficulties is the number of problems reported with the following six activities: walking 100 yards; sitting for about two hours; getting up from a chair after sitting for long periods; climbing several flights of stairs without resting; climbing one flight of stairs without resting; stooping, kneeling or crouching.

Table 6A.3. Grip strength, by age-specific wealth quintile

	Poorest	2nd	3rd	4th	Richest	All	p-value
	kg	kg	kg	kg	kg	kg	
Men							
% unable to do test	1.4	0.6	0.7	0.5	0	0.6	
Mean	37.0	38.5	39.8	40.5	40.9	39.6	<0.001
(95% CI)	(35.9–38.0)	(37.6–39.3)	(39.0–40.6)	(39.7–41.2)	(40.3–41.6)	(39.2–39.9)	
5th percentile	19	20	22	23	25	22	
25th percentile	31	32	34	34	35	34	
50th percentile	38	39	41	42	41	40	
75th percentile	44	46	47	48	48	47	
95th percentile	53	56	56	56	56	55	
Women							
% unable to do test	2.4	1.9	1.4	0.9	0.6	1.5	
Mean	21.2	22.0	23.1	24.0	24.9	23.0	<0.001
(95% CI)	(20.6–21.7)	(21.5–22.6)	(22.7–23.6)	(23.5–24.4)	(24.4–25.3)	(22.7–23.2)	
5th percentile	10	10	11	14	14	11	
25th percentile	17	18	19	20	21	19	
50th percentile	22	23	24	25	25	24	
75th percentile	26	27	28	28	30	28	
95th percentile	32	34	34	35	35	34	
***Weighted* N**							
Men	*493*	*648*	*763*	*786*	*817*	*3,507*	
Women	*881*	*815*	*845*	*762*	*752*	*4,055*	
***Unweighted* N**							
Men	*421*	*607*	*724*	*797*	*876*	*3,425*	
Women	*839*	*811*	*872*	*801*	*816*	*4,139*	

Notes: Numbers may not add up due to rounding of weighted data. People with information not available, including refusals and those not attempted test for safety reasons, are excluded: 25 men (1%); 88 women (2%).

Table 6A.4. Percentages maintaining balance test positions for the required numbers of seconds, by age in 2004–05, with 95% confidence intervals

	52–59	60–64	65–69	70–74	75–79	80+	All	p-value
	%	%	%	%	%	%	%	
Men								
Side-by-side (10 secs)[a]	99.6 (99.2–100.0)	100	99.3 (98.5–100.0)	97.5 (96.1–99.0)	98.9 (97.9–100.0)	95.6 (93.3–97.9)	98.9 (98.5–99.2)	<0.001
Semi-tandem (10 secs)[a]	98.7 (98.0–99.4)	98.8 (97.7–99.9)	96.6 (95.1–98.1)	95.0 (92.9–97.1)	93.9 (91.2–96.6)	85.4 (81.4–89.4)	96.1 (95.5–96.8)	<0.001
Full-tandem (10 secs)[a]	96.4 (95.2–97.6)	93.8 (91.6–96.0)	91.0 (88.6–93.3)	83.4 (79.9–87.0)	72.7 (67.8–77.5)	55.5 (49.7–61.3)	87.1 (85.9–89.3)	<0.001
Full-tandem (30 secs)[a]	91.6 (89.8–93.3)	87.5 (84.6–90.4)	80.4 (77.1–83.8)	–	–	–	87.9 (86.5–89.3)	<0.001
Leg raise, eyes open (30 secs)[a,b]	76.1 (73.5–78.8)	64.2 (60.1–68.3)	54.9 (50.6–59.2)	–	–	–	68.2 (66.1–70.2)	<0.001
Leg raise, eyes shut (30 secs)[a,c]	3.8 (2.6–5.0)	2.8 (1.5–4.1)	1.7 (0.6–2.8)	–	–	–	3.1 (2.3–3.8)	0.023
Women								
Side-by-side (10 secs)[a]	99.5 (99.0–100.0)	99.3 (98.6–100.0)	98.5 (97.5–99.4)	97.5 (96.1–98.9)	97.6 (96.1–99.1)	91.4 (88.6–94.1)	97.6 (97.1–98.2)	<0.001
Semi-tandem (10 secs)[a]	98.2 (97.4–99.0)	97.5 (96.3–98.8)	96.2 (94.7–97.7)	92.0 (89.7–94.4)	89.8 (86.8–92.9)	70.9 (66.5–75.3)	92.1 (91.1–93.1)	<0.001
Full-tandem (10 secs)[a]	94.0 (92.6–95.4)	89.1 (86.7–91.6)	86.3 (83.5–89.0)	73.0 (69.1–76.8)	57.6 (52.6–62.6)	33.7 (29.2–38.2)	76.6 (75.1–78.1)	<0.001
Full-tandem (30 secs)[a]	86.4 (84.4–88.3)	78.0 (74.9–81.0)	70.8 (67.3–74.4)	–	–	–	80.4 (78.9–82.0)	<0.001
Leg raise, eyes open (30 secs)[a,b]	67.3 (64.5–70.0)	52.8 (48.9–56.7)	41.0 (37.1–44.9)	–	–	–	57.3 (55.2–59.3)	<0.001
Leg raise, eyes shut (30 secs)[a,c]	2.3 (1.4–3.2)	1.1 (0.3–1.8)	0.6 (0.0–1.2)	–	–	–	1.6 (1.1–2.1)	0.005
***Weighted* N**								
Men	*1,171*	*574*	*546*	*451*	*362*	*333*	*3,437*	
Women	*1,196*	*639*	*579*	*498*	*467*	*598*	*3,977*	
***Unweighted* N**								
Men	*1,048*	*564*	*576*	*493*	*354*	*325*	*3,360*	
Women	*1,249*	*701*	*659*	*534*	*435*	*499*	*4,077*	

Notes: Numbers may not add up due to rounding of weighted data. People with information not available, including refusals, those unable to understand the test and those not attempted test for safety reasons, are excluded. *Men* – side-to-side: 71 (2%); semi-tandem: 116 (3%); full-tandem: 132 (4%); leg raise, eyes open: 37 (2%); leg raise, eyes shut: 42 (2%). *Women* – side-to-side: 118 (3%); semi-tandem: 175 (4%); full-tandem: 207 (5%); leg raise, eyes open: 51 (2%); leg raise, eyes shut: 58 (2%).

[a]Participants not able to do the test, not able to hold position unassisted or did not hold preceding position(s) for required length of time are classed as not passing the test.

[b]Only under-70s.

[c]Only under-70s who could hold side-to-side for 10 seconds.

Table 6A.5. Single chair-stand, by age in 2004–05 and sex

	52–59	60–64	65–69	70–74	75–79	80+	All	p-value
			% standing without using their arms					
Men	99.3	98.4	99.0	98.2	99.5	90.9	98.2	<0.001
(95% CI)	(98.7–99.9)	(97.2–99.6)	(98.1–99.9)	(96.9–99.4)	(98.5–100.0)	(87.2–94.6)	(97.7–98.7)	
Women	99.4	98.6	98.4	97.0	92.4	86.0	96.3	<0.001
(95% CI)	(99.0–99.9)	(97.6–99.6)	(97.3–99.5)	(95.5–98.4)	(89.7–95.2)	(82.4–89.5)	(95.6–96.9)	
***Weighted* N**								
Men	*1,077*	*530*	*497*	*402*	*318*	*273*	*3,097*	
Women	*1,108*	*588*	*542*	*455*	*411*	*459*	*3,563*	
***Unweighted* N**								
Men	*970*	*526*	*525*	*447*	*314*	*267*	*3,049*	
Women	*1,161*	*646*	*619*	*493*	*381*	*390*	*3,690*	

Notes: Numbers may not add up due to rounding of weighted data. Respondents for whom data are unavailable, including refusals, those unable to understand the test and those not attempted test for safety reasons, are excluded: 452 men (13%): 5% no suitable chair available, 6% participant or nurse thought test would be unsafe, 1% used arms to stand; 647 women (15%): 5% no suitable chair available, 7% participant or nurse thought test would be unsafe, 3% used arms to stand.

Table 6A.6. Repeated chair-stands, by age in 2004–05

	52–59	60–64	65–69	70–74	75–79	80+	All	p-value
	secs	secs	secs	secs	secs	secs	secs	
Rise five times								
Men								
% unable to do	1.5	2.0	2.2	2.4	3.0	13.3	3.0	
Mean	9.9	10.7	11.0	12.5	14.0	15.3	11.4	<0.001
(95% CI)	(9.7–10.2)	(10.4–11.0)	(10.7–11.3)	(12.1–12.9)	(13.4–14.7)	(14.5–16.1)	(11.3–11.6)	
5th percentile	5.8	6.3	6.3	7.3	8.4	8.7	6.3	
25th percentile	7.9	8.6	8.7	9.9	10.9	11.2	8.7	
50th percentile	9.5	10.1	10.5	11.9	12.8	14.4	10.6	
75th percentile	11.4	12.4	12.7	14.1	15.8	18.3	13.0	
95th percentile	15.0	16.5	16.4	19.2	22.8	24.2	18.7	
Women								
% unable to do	1.1	2.5	2.7	4.9	11.3	20.3	5.7	
Mean	10.3	11.1	11.7	13.5	14.5	15.7	12.1	<0.001
(95% CI)	(10.1–10.5)	(10.8–11.4)	(11.4–12.1)	13.1–14.0)	(13.8–15.1)	15.0–16.4)	(11.9–12.3)	
5th percentile	6.1	6.3	6.9	8.0	8.5	9.2	6.6	
25th percentile	8.0	8.7	9.3	10.6	11.2	12.0	9.1	
50th percentile	9.7	10.5	11.1	12.7	13.5	14.4	11.2	
75th percentile	11.9	12.8	13.4	15.4	16.3	18.1	13.8	
95th percentile	15.7	17.1	18.7	22.5	22.9	26.7	20.1	
Rise ten times[a]								
Men								
% unable to do	2.4	3.1	2.3	–	–	–	2.6	
Mean	20.8	22.8	23.3	–	–	–	21.9	<0.001
(95% CI)	(20.4–21.2)	(22.1–23.4)	(22.7–23.9)				(21.5–22.2)	
5th percentile	12.1	12.9	13.6	–	–	–	12.7	
25th percentile	16.5	18.2	18.4	–	–	–	17.2	
50th percentile	20.0	21.9	22.5	–	–	–	21.0	
75th percentile	24.4	26.0	26.8	–	–	–	25.3	
95th percentile	30.8	34.1	35.0	–	–	–	33.2	
Women								
% unable to do	1.9	3.8	5.7	–	–	–	3.3	
Mean	21.6	23.6	24.3	–	–	–	22.7	<0.001
(95% CI)	(21.2–22.0)	(23.0–24.1)	(23.7–24.8)				(22.4–23.0)	
5th percentile	12.8	13.3	14.9	–	–	–	13.2	
25th percentile	17.0	18.6	19.7	–	–	–	18.0	
50th percentile	20.8	22.5	23.5	–	–	–	21.9	
75th percentile	24.9	27.2	28.0	–	–	–	26.3	
95th percentile	32.7	35.7	36.5	–	–	–	34.7	
***Weighted* N**								
Men	*1,069*	*520*	*482*	*399*	*310*	*263*	*3,043*	
Women	*1,102*	*574*	*536*	*450*	*397*	*439*	*3,497*	
***Unweighted* N**								
Men	*963*	*517*	*512*	*443*	*308*	*259*	*3,002*	
Women	*1,155*	*632*	*612*	*488*	*370*	*373*	*3,630*	

[a]Under-70s only.

Notes on next page.

Notes to Table 6A.6

Numbers may not add up due to rounding of weighted data. Of those eligible to attempt the five chair-stand test (i.e. those who had successfully completed a single stand), 81 men (3%) and 118 women (3%) had missing data or did not complete the test for safety reasons. Of those eligible to attempt the ten chair-stand test (i.e. those younger than 70 who had successfully completed five stands), 35 men (2%) and 37 women (2%) had missing data or did not complete the test for safety reasons.

Table 6A.7. Gait speed, by age in 2004–05 and sex: 60 years and over only

	60–64	65–69	70–74	75–79	80+	All	p-value
Men							
% with gait speed ≤0.5 m/s	7.5	7.5	7.9	12.5	26.2	11.2	<0.001
Speed (metres/second)							
Mean	0.99	0.95	0.88	0.80	0.69	0.89	<0.001
(95% CI)	(0.97–1.02)	(0.92–0.97)	(0.86–0.91)	(0.77–0.83)	(0.66–0.72)	(0.87–0.90)	
5th percentile	0.6	0.5	0.5	0.4	0.3	0.4	
25th percentile	0.8	0.8	0.7	0.7	0.5	0.7	
50th percentile	1.0	0.9	0.9	0.8	0.7	0.9	
75th percentile	1.2	1.1	1.0	1.0	0.8	1.1	
95th percentile	1.4	1.4	1.3	1.2	1.1	1.3	
Women							
% with gait speed ≤0.5 m/s	6.3	8.7	15.3	21.6	45.9	19.8	<0.001
Speed (metres/second)							
Mean	0.95	0.91	0.81	0.73	0.58	0.80	<0.001
(95% CI)	(0.93–0.97)	(0.89–0.93)	(0.79–0.84)	(0.70–0.76)	(0.56–0.60)	(0.79–0.81)	
5th percentile	0.5	0.4	0.4	0.3	0.2	0.3	
25th percentile	0.8	0.7	0.7	0.6	0.4	0.6	
50th percentile	1.0	0.9	0.8	0.7	0.6	0.8	
75th percentile	1.1	1.1	1.0	0.9	0.7	1.0	
95th percentile	1.4	1.3	1.2	1.1	1.0	1.3	
***Weighted* N**							
Men	*567*	*539*	*433*	*351*	*330*	*2,220*	
Women	*623*	*571*	*502*	*468*	*619*	*2,783*	
***Unweighted* N**							
Men	*558*	*566*	*474*	*344*	*321*	*2,263*	
Women	*683*	*650*	*539*	*435*	*519*	*2,826*	

Notes: Numbers may not add up due to rounding of weighted data. People with information not available, including refusals and tests not attempted for safety reasons, are excluded: 153 men (6%); 181 women (6%).

Table 6A.8. Incidence of gait speed impairment (≤0.5 m/s) between 2002–03 and 2004–05, by age-specific wealth quintile and sex

	Poorest	2nd	3rd	4th	Richest	All	p-value
Men							
% ≤0.5 m/s in 2004–05, not in 2002–03	10.6	8.0	7.7	5.0	3.8	6.3	<0.001
(95% CI)	(5.7–15.5)	(4.4–11.6)	(4.7–10.8)	(2.9–7.1)	(2.0–5.5)	(5.1–7.5)	
Women							
% ≤0.5 m/s in 2004–05, not in 2002–03	11.4	14.8	6.3	10.2	5.2	9.5	<0.001
(95% CI)	(7.7–15.2)	(10.8–18.9)	(4.0–8.7)	(7.2–13.2)	(2.9–7.5)	(8.0–10.8)	
***Weighted* N**							
Men	*164*	*266*	*350*	*391*	*454*	*1,626*	
Women	*152*	*260*	*355*	*412*	*505*	*1,684*	
***Unweighted* N**							
Men	*361*	*358*	*415*	*403*	*373*	*1,909*	
Women	*351*	*361*	*434*	*420*	*401*	*1,967*	

Notes: Numbers may not add up due to rounding of weighted data. Respondents for whom data were unavailable, or who were impaired at wave 1, are excluded. *Men* – 603 (24%) data unavailable; 217 (10%) baseline impaired. *Women* – 738 (27%) data unavailable; 399 (17%) baseline impaired.

Table 6A.9. Impairment on Short Physical Performance Battery (SPPB) (score ≤8), by age in 2004–05 and sex: respondents aged 60 years and over

	60–64	65–69	70–74	75–79	80+	All	p-value
Men							
% with SPPB ≤8	6.4	7.2	12.2	21.0	45.8	15.1	<0.001
(95% CI)	(4.1–8.7)	(4.8–9.6)	(8.9–15.5)	(16.1–25.8)	(39.3–52.2)	(13.5–16.7)	
Women							
% with SPPB ≤8	8.6	10.2	26.4	35.6	55.2	24.8	<0.001
(95% CI)	(6.3–11.0)	(7.5–12.8)	(22.4–30.4)	(30.4–40.8)	(49.5–60.9)	(22.8–26.7)	
***Weighted* N**							
Men	*499*	*463*	*377*	*294*	*240*	*1872*	
Women	*557*	*513*	*439*	*375*	*383*	*2267*	
***Unweighted* N**							
Men	*498*	*491*	*419*	*292*	*238*	*1938*	
Women	*613*	*586*	*477*	*350*	*331*	*2357*	

Notes: Numbers may not add up due to rounding of weighted data. Respondents unable to perform test or excluded for other reasons: 451 men (19%); 598 women (20%).

Table 6A.10. Impairment on Short Physical Performance Battery (SPPB) (score ≤8), by age-specific wealth quintile and sex

	Poorest	2nd	3rd	4th	Richest	All	p-value
Men							
% with SPPB ≤8	26.8	17.0	17.1	14.2	9.2	15.1	<0.001
(95% CI)	(20.1–33.5)	(12.8–21.2)	(13.2–21.0)	(11.0–17.4)	(6.7–11.7)	(13.5–16.7)	
Women							
% with SPPB ≤8	39.8	29.5	20.8	21.7	14.5	24.8	<0.001
(95% CI)	(34.6–44.9)	(24.8–34.1)	(17.0–24.6)	(17.7–25.7)	(11.2–17.8)	(22.8–26.7)	
***Weighted* N**							
Men	*185*	*321*	*394*	*441*	*522*	*1,863*	
Women	*427*	*413*	*482*	*476*	*453*	*2,253*	
***Unweighted* N**							
Men	*171*	*316*	*397*	*466*	*579*	*1,929*	
Women	*419*	*422*	*506*	*502*	*493*	*2,342*	

Notes: Numbers may not add up due to rounding of weighted data. Respondents unable to perform test or excluded for other reasons: 451 men (19%); 598 women (20%).

Table 6A.11. Impairment on Short Physical Performance Battery (SPPB) (score ≤8), by mobility ADL difficulties and sex: respondents aged 60 years and over

	Number of mobility ADL difficulties			All	p-value
	0	1–2	3+		
Men					
% ≤8	10.3	37.5	[58.5]	15.1	0.000
(95% CI)	(8.8–11.8)	(31.4–43.6)	(42.0–75.0)	(13.5–16.7)	
Women					
% ≤8	17.7	48.9	87.2	24.8	0.000
(95% CI)	(15.8–19.6)	(43.5–54.3)	(79.5–95.0)	(22.8–26.7)	
***Weighted* N**					
Men	*1,572*	*262*	*38*	*1,872*	
Women	*1,839*	*356*	*72*	*2,266*	
***Unweighted* N**					
Men	*1,634*	*267*	*37*	*1,938*	
Women	*1,933*	*356*	*67*	*2,356*	

Notes: Numbers may not add up due to rounding of weighted data. Respondents unable to perform test or excluded for other reasons: 451 men (19%); 598 women (20%). Number of mobility ADL difficulties is the number of problems reported with the following six activities: walking 100 yards; sitting for about two hours; getting up from a chair after sitting for long periods; climbing several flights of stairs without resting; climbing one flight of stairs without resting; stooping, kneeling or crouching.

7. Quality of healthcare

Nicholas Steel *University of East Anglia*

Susan Maisey *University of East Anglia*

Kate Cox *National Centre for Social Research*

Key points arising from this chapter are:

- The quality of healthcare received by ELSA respondents was assessed against pre-defined evidence-based quality indicators for those who reported having been diagnosed with diabetes mellitus, hypertension, ischaemic heart disease, cerebrovascular disease, osteoarthritis, depression, osteoporosis or raised cholesterol; or having problems with balance, falls, vision, hearing, anticoagulation, pain, urinary incontinence or smoking. Indicated care is healthcare that meets the standard described in the quality indicator.
- The proportion of ELSA respondents reporting that they received indicated care varied substantially by condition, from eight-out-of-ten respondents with newly diagnosed heart attack or angina, to only one-in-seven of those with balance problems.
- The health problems presented in this chapter can be divided into three groups according to the quality of care reported by respondents. Over two-thirds of respondents reported receiving indicated care for hypertension, ischaemic heart disease, diabetes, hearing problems and pain. Less than two-thirds but more than one-third received indicated care for diabetes (with an additional risk factor), osteoporosis, vision, incontinence and falls. Less than one-third of respondents received indicated care for problems with balance.
- A high proportion of those receiving healthcare advice from a health professional reported following that advice.
- Few differences in the quality of healthcare were reported by wealthier respondents compared with poorer respondents, which suggests that healthcare for the interventions studied in ELSA is provided equitably to those in need, regardless of socio-economic status. Exceptions were incontinence management and diabetes education.

In wave 1 of ELSA in 2002–03, respondents were asked about diagnosis of all the major illnesses affecting the older population of England, and about symptoms and functional status (McMunn et al.. 2003; Steel et al., 2003). These questions were repeated in wave 2 in 2004–05, and in addition, questions about the quality of healthcare received by ELSA participants were included for the first time. The aim of the questions on quality of healthcare in ELSA is to explore the role of healthcare differences as causes of socio-economic differences in illness and disability, and to help determine the critical steps along the trajectory from health to sickness.

Inequalities in health between socio-economic groups have been extensively documented in ELSA and elsewhere (Marmot et al., 2003; US Department of Health and Human Services, 2003). The role that healthcare plays in the pathway from socio-economic conditions to health outcomes is one of the most important scientific questions for ELSA, and is also highly relevant to policymakers in that poor-quality healthcare is potentially remediable. The extent to which ELSA respondents adhere to the advice about healthcare that they report receiving is also presented in this chapter. Adherence is an essential step in the pathway from treatment to improved health outcomes, and has been previously found to vary with socio-economic status (Goldman and Smith, 2002).

Previous attempts to measure quality of healthcare in England have generally used samples drawn from a single healthcare sector, or with a single disease. A system-level view of quality of healthcare is needed to understand the complexity of healthcare delivery, particularly for older people. Older people are major recipients of healthcare, and often receive treatment for several conditions at once, delivered across the boundaries between primary and secondary care, and for some conditions between the public and private sectors.

A recent national review of quality in the National Health Service drew on multiple sources to provide a system-level view, and concluded that there was much variability in quality of care and that independent sources of information were few compared with government sources (Leatherman and Sutherland, 2005). This is the first time that detailed measures of quality of care have been independently measured for a range of conditions on a sample representative of the national population of England.

7.1 Measures

The health module in ELSA wave 2 included approximately 100 questions on quality of healthcare. The majority of these questions concern technical healthcare processes, such as blood sugar monitoring for diabetics or taking a targeted history to guide the management of urinary incontinence. These questions determine whether or not the participant received the healthcare set out in 44 quality indicators (evidence-based care standards). Examples of quality indicators used in ELSA are given in Box 7.1.

Quality of healthcare is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge (Institute of Medicine, 2001). Good-quality healthcare should be effective, efficient, safe, timely, equitable, and patient-centred. The quality indicators in ELSA were designed primarily to measure effectiveness, and although some also consider safety, timeliness and patient-centred care, these dimensions of quality are not well covered. Equity was not considered in the development and selection of the quality indicators, but the multidisciplinary nature of ELSA allows equity to be considered in the analysis stage.

Box 7.1. Examples of quality indicators used in ELSA

Diabetes mellitus

IF a person aged 50 or older has diabetes, THEN his or her glycosylated haemoglobin or fructosamine level should be measured at least annually.

ALL diabetic persons aged 50 or older should have an annual examination of his/her feet.

Urinary incontinence

IF a person aged 50 or older has new urinary incontinence that persists for over 1 month or urinary incontinence at the time of a new evaluation, THEN a dipstick urinalysis and/or mid-stream urine sample should be obtained.

Pain

IF a person aged 50 or older has a newly reported chronic painful condition, THEN treatment should be offered.

Quality of care can be assessed using measures of healthcare processes, which consider whether treatment adheres to agreed good practice, or by outcome measures, which consider the resulting changes in health status (Donabedian, 1980). There are many causes of changes in health status other than healthcare, and there are many problems in adequately adjusting outcomes for differences in case mix. Processes are also more sensitive measures of quality than outcomes, and more clearly linked to any action that should be taken to improve quality (Mant and Hicks, 1995). For these reasons, the quality indicators in ELSA are measures of process. Quality indicators should be based on robust evidence where it exists, so that their use will be likely to lead to improved health outcomes (McColl et al., 1998).

The quality indicators used in ELSA were developed using the RAND/UCLA method for combining the best available research evidence with expert opinion to assess the appropriateness of treatment (Brook et al., 1986). Indicators from RAND's 'Assessing the Care of Vulnerable Elders' (ACOVE) programme in the US (Wenger et al., 2001) were adapted for use in ELSA as described in detail elsewhere (Steel et al., 2004). A panel of 10 clinical experts in England reviewed 119 quality indicators covering 16 clinical areas, based on the ACOVE set of indicators. Panel members were supplied with literature reviews summarising the evidence base for each quality indicator. The indicators were sent for comment before the panel meeting to UK charitable organisations for older people. The panel rated 102 of the 119 indicators (86%) as valid for use in England. The adaptation was intended for assessment of quality through interviews with patients, an underused source of data about healthcare quality which avoids the problems of extracting data from clinical records (Kirk et al. 2003).

Two further stages were needed in order to use the quality indicators in the ELSA questionnaire. First, the indicators were grouped by the minimum age of the population they refer to, after review of the evidence base. Most indicators apply to the whole population over 50 years, but a minority apply to only those aged over 65. The next stage was to develop and test survey questions which could be used to assess whether quality indicators were achieved or not. Examples of this matching of survey questions to quality indicators are given in Box 7.2.

Additional questions about interpersonal care were adapted from established surveys. The question about explanation of hypertension was adapted from the Consumer Assessment of Healthcare Providers and Systems (CAHPS), the question about choices in hypertension was adapted from the Foundation for Accountability's (FACCT) Robert Wood Johnson National Strategic Indicators Survey Project, and the questions about training and knowledge in diabetes come from the Medicare Current Beneficiary Survey (MCBS).

Box 7.2. Examples of ELSA questions used to assess quality indicators

Diabetes quality indicator: IF a person aged 50 or older has diabetes, THEN his or her glycosylated haemoglobin or fructosamine level should be measured at least annually.

Corresponding ELSA questions:
Have you ever had a special blood test to see how well your blood sugar was controlled? This test is called a glycosylated haemoglobin, or haemoglobin A1c, or fructosamine. This is a blood test taken at a doctor's surgery or health centre or laboratory.

Have you had this test (glycosylated haemoglobin or fructosamine) performed in the past 12 months?

Urinary incontinence quality indicator: IF a person aged 50 or older has new urinary incontinence that persists for over 1 month or urinary incontinence at the time of a new evaluation, THEN a dipstick urinalysis and/or mid-stream urine sample should be obtained.

Corresponding ELSA questions: *We would like to ask you about incontinence. During the last 12 months, have you lost any amount of urine beyond your control?*

When you had this problem, did it last for more than 1 month?

Have you ever mentioned this problem to a doctor or nurse?

Did a doctor or nurse ask you to provide a sample of urine for testing?

Pain quality indicator: IF a person aged 50 or older has a newly reported chronic painful condition, THEN treatment should be offered.

Corresponding ELSA questions:
Are you often troubled with pain?

How bad is the pain most of the time? Is it [INTERVIEWER: Read out...] 1 mild, 2 moderate, 3 severe?

[If moderate or severe, then asked:] Has this pain started within the past 12 months?

Have you told your doctor or nurse about this pain?

Did your doctor or nurse recommend any treatments for your pain?

Are you currently receiving any treatment for your pain?

How well does the treatment control your pain? [INTERVIEWER: Read out...] 1 Very well, 2 Fairly well, 3 Not very well, 4 Not at all.

The medical conditions in which quality of care was measured in ELSA were selected according to their prevalence and importance as a cause of disability for older people in the Health Survey for England 2000 and their potential for quality improvement. For these medical conditions, we selected only quality indicators that could be used in an interview survey without the use of clinical records.

Data were collected on receipt of recommended care in the following 16 healthcare areas: mobility, vision, hearing, hypertension, ischaemic heart disease, diabetes mellitus, cerebrovascular disease, anticoagulation, cholesterol management, osteoarthritis, osteoporosis, depression, falls, pain, urinary incontinence and smoking.

This chapter presents data from a sample of over half of the above healthcare areas in order to demonstrate the approach taken to measuring quality of healthcare in ELSA and to provide reference tables to show the quality of care reported by the ELSA population for these areas. The percentage of people who receive recommended care for the following health conditions will be presented: mobility, falls, vision, hearing, hypertension, ischaemic heart disease, osteoporosis, pain, urinary incontinence and diabetes. Prevalence of undiagnosed diabetes mellitus and raised blood pressure are key measures of quality of care at population level and are presented in Chapter 5 on biological measures of health.

The numbers of people responding to the questions on quality of care are presented in the tables. Only respondents who reported having a particular condition were asked about their care for that condition, and the base population for each table is described in a note to the table where applicable. Sometimes, several questions are necessary to determine whether the care indicated by a single quality indicator has been received. The proportion of eligible respondents receiving the care indicated by each relevant quality indicator is presented as the summary measure of quality of care for that condition. If there are two or more quality indicators for a condition, the mean of the proportions receiving the care indicated by each quality indicator is presented as the summary.

Unless otherwise stated, the base population used in this chapter is core members of ELSA, excluding those interviewed by proxy (*N*=8,688). Results refer to data collected in the wave 2 interviews during 2004–05.

7.2 Results

Balance

Two hundred and twenty-one respondents (3%) aged 60 or over reported problems keeping balance when walking on a level surface often, very often or always. They were asked questions about the quality of care received for poor balance.

One-in-five of those with balance problems reported that a doctor or nurse had recommended joining an exercise programme or getting physiotherapy to improve walking or balance, and most of these (15% of all with problems) had done so (Table 7A.1). Over two-in-five (44%) had been advised to use a stick or 'Zimmer frame'. There was considerable overlap between those joining an exercise programme or physiotherapy, and those using a stick or walking aid. The percentage meeting the care specified in both of the quality indicators was 15%.

Falls

Of those aged 60 years or over who reported more than two falls in the past two years, with a resulting injury that required treatment, nearly half reported that a doctor or nurse had talked with them to try to understand why they fell, and one-third had a balance or walking test (Table 7A.2). Fewer than a quarter received both recommended healthcare interventions. Data for different age groups are not presented separately, due to small numbers. The mean percentage meeting the care specified in at least one of the two relevant quality indicators was 42%.

Vision

Five hundred and ninety-four respondents (7%) reported in wave 1 or wave 2 that they had been diagnosed with a cataract, and also in wave 2 that they were either blind or had poor or fair (as opposed to excellent, very good or good) vision. Only 29 people aged under 60 (13 men and 16 women) reported being blind or having fair or poor vision, and so data are only presented on the 565 aged over 59. Three-fifths reported that a doctor or optician had recommended having cataract removal, and one-third had had cataract surgery (Table 7A.3). The numbers are small but suggest that older women with cataracts were more likely than women aged 60–74 to receive advice to have cataracts removed. No significant variation in care by wealth quintile was seen in the population aged 60 years and over as a whole (Table 7A.4). Numbers were too small to separate out results by sex or age.

Hearing

The percentage of respondents aged 65 or over reporting difficulty following a conversation if there was background noise, or rating their hearing as poor or fair (as opposed to excellent, very good or good), was 45%. Half of these had told a doctor or nurse of the problem, of whom three-quarters were referred for a hearing test and two-thirds were recommended to use a hearing aid (Table 7A.5). Those aged 75 and over were more likely to be recommended a hearing aid than those aged 65–74. Of those recommended to use a hearing aid, 83% received one and were taught how to use it (Table 7A.6). No significant variation in care by wealth quintile was seen (Tables 7A.7 and 7A.8).

Hypertension, ischaemic heart disease and anticoagulation

Three-quarters of those recently reporting hypertension were advised to take medication, whereas one-third reported that hypertension had been adequately explained to them and that they had been given choice about how to treat their high blood pressure (Table 7A.9). There was no clear pattern of variation in any of the measures of quality of care for hypertension by wealth quintile (Table 7A.10).

Of those newly reporting diagnosed angina or myocardial infarction in 2004–05, the percentage taking recommended anticoagulation (blood-thinning medication) is high: 95% of those who were recommended to take medication said that they were currently taking it (Table 7A.11).

Forty-six people reported taking warfarin, and of these, 96% had had the recommended blood test (INR) in the past 12 weeks and 80% in the past 4 weeks (data not shown in table due to small numbers).

Osteoporosis

Of those reporting diagnosed osteoporosis in wave 1 or wave 2, three-fifths had been recommended to take medication, nearly all within the recommended time period (Table 7A.12). Data for men and women are not presented separately, as the number of men reporting osteoporosis was small, but the percentage receiving recommended care did not vary by more than a few percentage points between men and women, or between age groups. Again, nearly all of those reporting being recommended treatment also reported taking it. There was no gradient in care for osteoporosis by wealth quintile (Table 7A.13).

Pain

Three hundred and fifty-seven respondents (4%) reported being often troubled by moderate or severe pain that started in the past 12 months (excluding those with knee or hip pain and a diagnosis of osteoarthritis, as they were separately asked about pain as part of osteoarthritis care). Three-out-of-four had told their doctor or nurse about their pain. Of these, three-quarters were recommended to take treatment, but only two-fifths felt that this treatment controlled their pain very or fairly well (Table 7A.14). Given the numbers involved, the evidence is not strong for variation in treatment by age.

Urinary incontinence

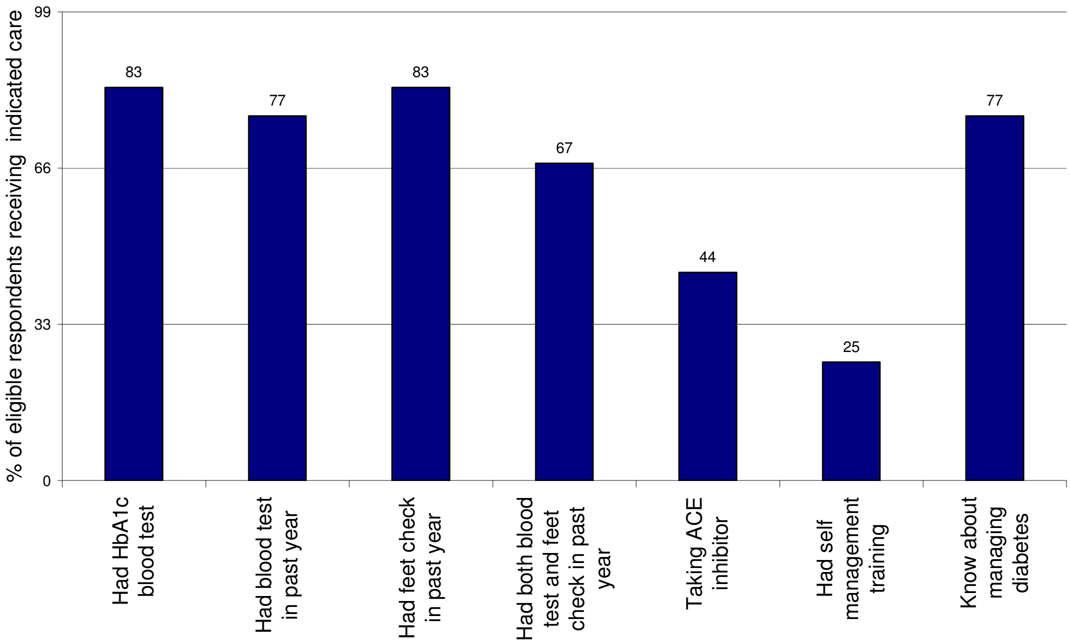
Eight hundred and sixty-six respondents (10%) reported losing urine beyond their control for more than 1 month in the previous 12 months. Of these, 530 (70% of men and 57% of women) had mentioned the problem to a doctor. There was generally little difference between age groups in receipt of recommended care, except for a doctor or nurse asking whether urine was lost on sneezing or laughing. Nine-out-of-ten women aged 52–59 reported that they were asked this question, compared with only two-thirds of those aged over 74. The percentage receiving recommended care ranged from 22% to 71% for individual quality indicators. Out of all the quality indicators for incontinence, the highest rate was reported for urine testing (71%) (Table 7A.15). The percentages receiving all recommended care were 15% for women and 9% for men (13% for men and women combined).

Analysis by wealth showed an unusual pattern of better quality of care for targeted history taking and urine testing being reported by those in the poorer wealth quintiles (P values for trend are 0.02 and 0.03) (Table 7A.16).

Diabetes

Around four-fifths of respondents with diabetes reported receiving a blood test in the past year, with a similar proportion reporting receiving a foot check. Two-thirds of diabetics reported receiving both of these interventions in the past year (Figure 7.1). Lower levels of receipt of indicated care were reported by those aged over 74 than by younger groups (Table 7A.17). Under half of those with at least one additional risk factor reported either discussing or receiving treatment with an ACE inhibitor or A2 receptor blocker (Table 7A.19).

Figure 7.1. Receipt of indicated care for diabetes



Much lower numbers reported receiving training in self-management than reported indicated care for the more established blood and foot checks. Only 25% reported receiving some training in self-management of diabetes, with particularly low levels in women aged 75 and over (Table 7A.17).

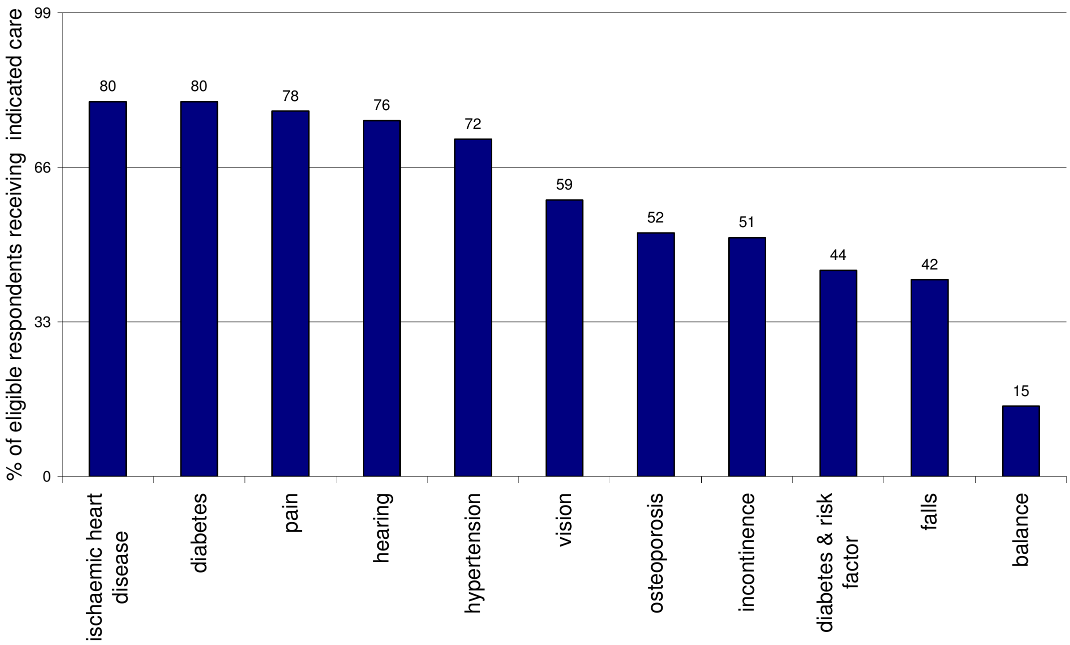
There was a highly significant trend for receiving training in living with diabetes, and having good self-rated knowledge about diabetes, to be reported more often by wealthier respondents. The receipt of indicated blood and foot checks for diabetes, in contrast, showed no relationship with wealth (Table 7A.18).

Overall quality of care by condition

On average, 59% of respondents received appropriate care for their health problem, and quality varied greatly by condition. Indicated care is healthcare that meets the standard described in the quality indicator, and the highest level of indicated care reported was 80%. This of course also suggests that one-in-five people are going without indicated care in this particular instance, and the number going without indicated care differs for different healthcare interventions and conditions.

The conditions studied can be broadly divided into three groups, according to the summary measure of quality of care reported. More than two-thirds of respondents reported receiving indicated care for diabetes, anticoagulation in ischaemic heart disease, management of hearing difficulties, hypertension and pain. Indicated care for those with diabetes with at least one additional risk factor, osteoporosis, urinary incontinence, repeated falls with injury, and vision difficulties was received by between a third and two-thirds of those potentially eligible. The lowest percentage of indicated care was reported for poor balance, with only 15% reporting that they had received indicated care (Figure 7.2 and Table 7A.21).

Figure 7.2. Receipt of indicated care, by health condition



Adherence to recommended care

High rates of adherence to recommended care were reported for nearly all conditions studied. The only condition where reported adherence was below 65% was vision, where the take-up of cataract surgery was 56% (Figure 7.3 and Table 7A.21).

Quality of care and wealth

There was little difference in the quality of care reported by those in different wealth quintiles. The exceptions to this general rule of equitable provision of healthcare were diabetes education and care for some aspects of urinary

Figure 7.3. Adherence to recommended care, by condition
(% of those recommended treatment by their doctor or nurse)

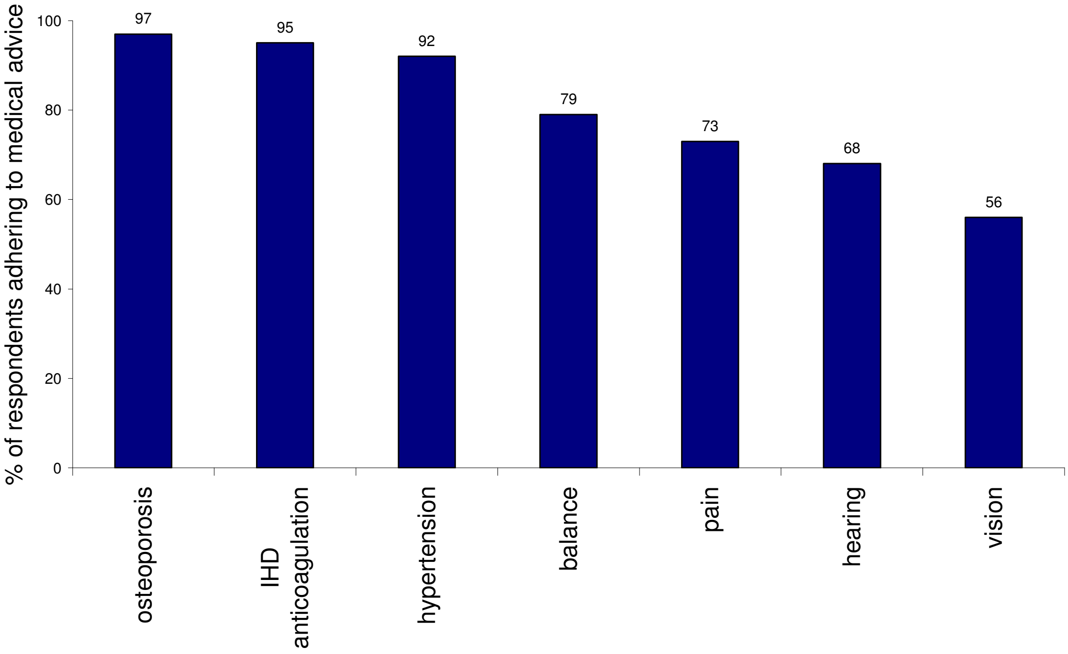
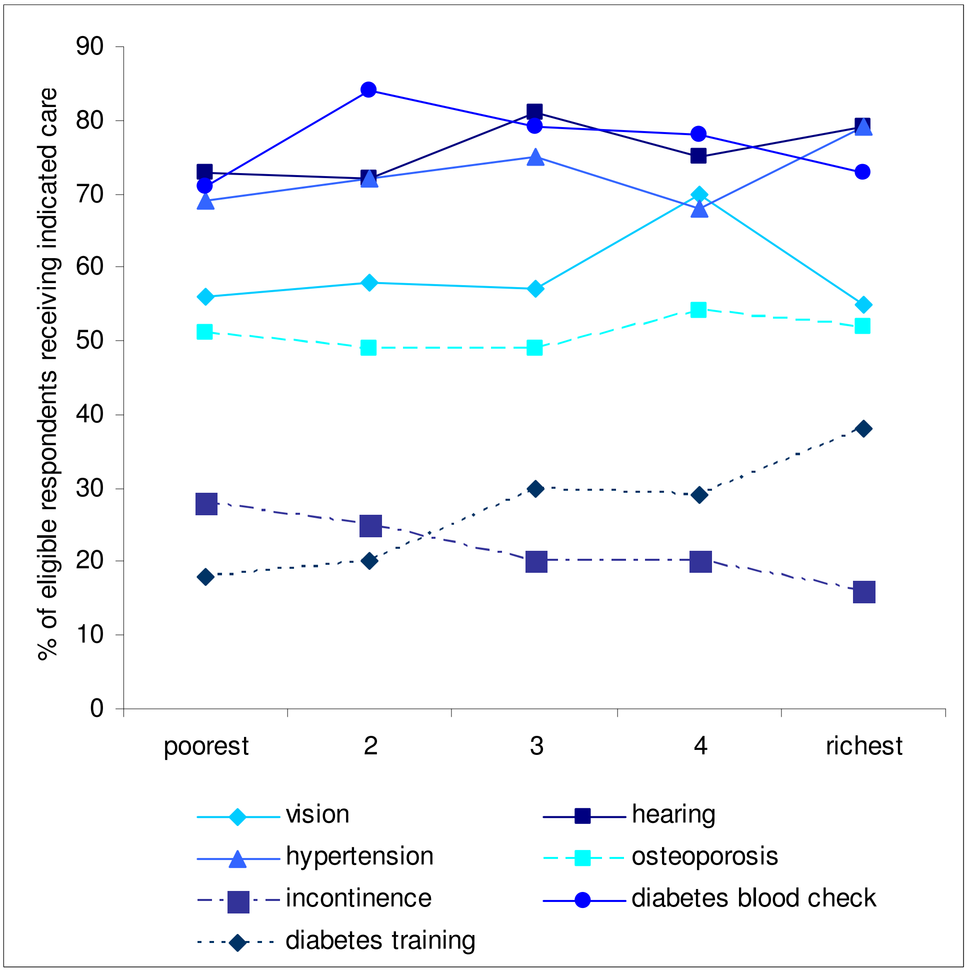


Figure 7.4. Trends in quality of care, by age-adjusted wealth quintile



incontinence. The questions on training and knowledge about managing diabetes showed a clear trend to greater training and self-rated knowledge in wealthier respondents (P-values for trend are both <0.001) (Figure 7.4 and Table 7A.18). Quality as measured by taking a targeted history and by asking for a urine sample from respondents with urinary incontinence showed a contrary trend, being better in poorer respondents (P-values for trend are 0.02 and 0.03) (Figure 7.4 and Table 7A.16).

7.3 Conclusions

Three main conclusions can be drawn from the data presented above on quality of healthcare reported in ELSA. First, many people are not receiving healthcare that they would benefit from, although quality of care is substantially better for some conditions than others. Second, reported adherence to healthcare recommendations is generally high. Third, there is little variation in the quality of healthcare reported by respondents in different wealth quintiles.

Quality variation by condition

Quality of care was generally better in the conditions that are of greater public health importance – namely, hypertension, ischaemic heart disease and diabetes. This is not surprising, given the amount of attention that clinicians and policymakers have given to improving the quality of care for these conditions in England over several years. It is worth noting that the quality scores for some indicators in diabetes were low, in particular for those diabetics with an additional risk factor. It is reassuring that most people were being offered treatment for deafness and pain, although most people with pain reported that the treatment did not control their pain.

The less glamorous conditions of urinary incontinence, recurrent falls and poor balance received low quality scores. These conditions are not big killers in the general population, but are responsible for much illness and misery, particularly for older people, and many opportunities are being missed to improve care.

The variation in quality of care seen in ELSA is similar to the variation found in a larger study of quality of care in the US (McGlynn et al., 2003). The US study reported that only half of the participants received indicated care, which is broadly similar to our overall mean of about 60%.

Adherence to advice

Most of those who were aware that the doctor had recommended medication were taking it, with the exceptions of those suffering from pain, which was often poorly controlled, and cataract surgery, where the respondent may have chosen not to have surgery or alternatively may still be waiting for surgery at the time of the survey. However, these high rates should be interpreted with caution, as those who are adhering to therapy are possibly more likely to remember having the treatment recommended in the first place.

Quality variation by wealth

The remarkably few differences in the quality of healthcare reported by wealthier respondents compared with poorer respondents contrast with the usual pattern seen for prevalence of most health conditions in ELSA, where higher rates are generally seen in poorer groups of the population. The reasons for this are not clear, but may be due to the lack of financial barriers to receiving healthcare in the National Health Service. It may also be that a gradient is there, perhaps in particular demographic subgroups, but that it was too small to be apparent with the comparatively small numbers of respondents that were asked many of the quality-of-care questions.

The only healthcare interventions with a clear trend for wealthier respondents to report better-quality care were for training in living with diabetes and for having good self-rated knowledge about diabetes. The development of these expert patient skills may be an example of a relatively new area of healthcare being adopted first by the wealthier groups in the population, and it will be interesting to see how this changes in future waves of ELSA.

Limitations

The absolute levels of indicated care reported should be treated with caution due to the methods used to measure quality of care, in particular uncertainties around the accuracy of self-reports about quality of care. We have no way of checking the accuracy of reports within ELSA at present. The ELSA quality indicators were derived from the ‘Assessing the Care of Vulnerable Elders’ project, and researchers on that project found that their interview data were comparable with clinical notes data, and for some indicators it appeared that respondents remembered higher rates of appropriate interventions than had been documented in the notes (Steel et al., 2004).

Although the absolute levels of care are subject to a degree of uncertainty for the reasons given above, there is no reason to believe that the accuracy of self-reports differs systematically from one health condition to another. The strength of these data are that they allow the quality of care for different health conditions to be compared, and they show that some health conditions are currently managed better than others in England. The approach used also allows comparisons to be made about the quality of healthcare received by different socio-economic groups in the population of England. It is, of course, important to remember that summary measures may conceal problems with particular aspects of care.

Whilst there may be individual patients for whom the recommended care would not be appropriate, or who may not correctly remember the care they received, at a population level the approach taken gives a reasonably clear indication of health system performance.

References

Brook, R. H., Chassin, M. R., Fink, A., Solomon, D. H., Kosecoff, J. and Park, R. E. (1986), ‘A method for the detailed assessment of the appropriateness of medical technologies', *International Journal of Technology Assessment in Health Care*, 2: 53–63.

Donabedian, A. (1980), *Explorations in Quality Assessment and Monitoring. Vol. 1: The Definition of Quality and Approaches to Its Assessment*, Ann Arbor, MI: Health Administration Press.

Goldman, D. P. and Smith, J. P. (2002), 'Can patient self-management help explain the SES health gradient?', *Proceedings of the National Academy of Sciences of the United States of America*, 99: 10929–10934.

Institute of Medicine Committee on Healthcare in America (2001), *Crossing the Quality Chasm: A New Health System for the 21st Century*, Washington, DC: National Academies Press.

Kirk, S. A., Campbell, S. M., Kennell-Webb, S., Reeves, D., Roland, M. O. and Marshall, M. N. (2003), 'Assessing the quality of care of multiple conditions in general practice: practical and methodological problems', *Quality and Safety in Health Care*, 12: 421–427.

Leatherman, S. and Sutherland, K. (2005), *The Quest for Quality in the NHS: A Chartbook on Quality of Care in the UK*, Abingdon: Radcliffe.

Mant, J. and Hicks, N. (1995), 'Detecting differences in quality of care: the sensitivity of measures of process and outcome in treating acute myocardial infarction', *British Medical Journal*, 311: 793–796.

Marmot, M., Banks, J., Blundell, R., Lessof, C. and Nazroo, J. (eds) (2003), *Health, Wealth and Lifestyles of the Older Population in England: The 2002 English Longitudinal Study of Ageing*, London: Institute for Fiscal Studies (http://www.ifs.org.uk/elsa/report_wave1.php).

McColl, A., Roderick, P., Gabbay, J., Smith, H. and Moore, M. (1998), 'Performance indicators for primary care groups: an evidence based approach', *British Medical Journal*, 317: 1354–1360.

McGlynn, E. A., Asch, S. M., Adams, J., Keesey, J., Hicks, J., DeCristofaro, A. and Kerr, E. A. (2003), 'The quality of healthcare delivered to adults in the United States', *New England Journal of Medicine*, 348: 2635–2645.

McMunn, A., Hyde, M., Janevic, M. and Kumari, M. (2003), 'Health', in M. Marmot, J. Banks, R. Blundell, C. Lessof and J. Nazroo (eds), *Health, Wealth and Lifestyles of the Older Population in England: The 2002 English Longitudinal Study of Ageing*, London: Institute for Fiscal Studies (http://www.ifs.org.uk/elsa/report_wave1.php).

Steel, N., Huppert, F. A., McWilliams, B. and Melzer, D. (2003), 'Physical and cognitive function', in M. Marmot, J. Banks, R. Blundell, C. Lessof and J. Nazroo (eds), *Health, Wealth and Lifestyles of the Older Population in England: The 2002 English Longitudinal Study of Ageing*, London: Institute for Fiscal Studies (http://www.ifs.org.uk/elsa/report_wave1.php).

Steel, N., Melzer, D., Shekelle, P. G., Wenger, N. S., Forsyth, D. and McWilliams, B. C. (2004), 'Developing quality indicators for older adults: transfer from the USA to the UK is feasible', *Quality and Safety in Health Care*, 13: 260–264.

US Department of Health and Human Services (2003), *National Healthcare Disparities Report*, Rockville, MD: Agency for Healthcare Research and Quality.

Wenger, N. S., Shekelle, P. G., Davidoff, F. and Mulrow, C. (2001), 'Quality indicators for assessing care of vulnerable elders', *Annals of Internal Medicine*, Supplement, 135: 641–758.

Annex 7.1
Tables on quality of healthcare

Unless otherwise indicated, the percentages given in these tables are the percentage of respondents answering 'yes' to the relevant question. Numbers may not add up due to rounding of percentages and weighted data.

Table 7A.1. Quality of care for poor balance, by age in 2004–05

	60–74	75+	All
	%	%	%
Did a doctor or nurse recommend that you join an exercise programme or get physiotherapy to improve your walking or balance?	20	19	19
Did any doctor or nurse suggest a stick or 'Zimmer frame' to improve your walking or balance?	38	51	44
[If walking aid was advised:] Do you use a cane or walking stick, 'Zimmer frame' or walker?	34	48	41
Did any doctor or nurse suggest a stick or 'Zimmer frame' to improve your walking or balance OR do you use one?	49	65	57
Both above quality-of-care standards met (exercise/physiotherapy and walking aid suggested OR used)	17	13	15
Weighted N	*117*	*112*	*230*
Unweighted N	*118*	*103*	*221*

Note: Base comprises those aged 60 or over who in 2004–05 reported problems keeping balance when walking on a level surface often, very often or always and who had not already been asked questions about balance earlier in the interview.

Table 7A.2. Quality of care received for falls, by sex

	Men	Women	All
	%	%	%
With any of your past falls, did a doctor or nurse talk with you to try to understand why you fell?	55	46	49
Did a doctor or nurse or physiotherapist test your balance or strength or watch how you walk to understand why you fell?[a]	34	34	34
Both quality-of-care measures met	22	24	23
Mean % answering yes to at least one falls quality question	45	40	42
Weighted N	*53*	*125*	*178*
Unweighted N	*51*	*117*	*168*

[a]Probe: 'This might include standing with one foot in front of the other, standing with your eyes closed, walking heel to toe, getting up from a chair without using your hands.'

Note: Base comprises those aged 60 or over who reported in 2004–05 having more than two falls in the past 2 years and had a resulting injury that required treatment

Table 7A.3. Quality of care for poor vision, by age in 2004–05 and sex

	60–74	75+	All
	%	%	%
Men			
Did any doctor or optician recommend that you have your cataracts removed?	51	52	52
Have you had cataract surgery?	30	32	32
Women			
Did any doctor or optician recommend that you have your cataracts removed?	47	67	61
Have you had cataract surgery?	20	39	34
All			
Did any doctor or optician recommend that you have your cataracts removed?	49	63	59
Have you had cataract surgery?	24	37	33
***Weighted* N**			
Men	*77*	*107*	*183*
Women	*113*	*296*	*409*
***Unweighted* N**			
Men	*77*	*106*	*183*
Women	*119*	*263*	*382*

Notes: Base comprises those aged 60 or over who reported diagnosed cataract in 2002–03 or 2004–05, and vision fair, poor or blind (not: good, very good or excellent) in 2004–05. *N*s for 'All' are sum of those for men and women.

Table 7A.4. Quality of care for poor vision, by age-specific wealth quintile

	Poorest	2nd	3rd	4th	Richest	All
	%	%	%	%	%	%
Did any doctor or optician recommend that you have your cataracts removed?[a]	56	58	57	70	55	58
Have you had cataract surgery?[b]	34	28	30	40	36	33
Weighted N	*155*	*147*	*125*	*92*	*71*	*591*
Unweighted N	*143*	*137*	*120*	*90*	*74*	*564*

Notes: Base comprises those aged 60 or over who reported diagnosed cataract in 2002–03 or 2004–05, and vision fair, poor or blind in 2004–05. Wealth information missing for 1 respondent.
[a]Cuzick's non-parametric test for trend across ordered groups P=0.31
[b]Cuzick's non-parametric test for trend across ordered groups P=0.46

Table 7A.5. Quality of care for poor hearing, by age in 2004–05 and sex

	65–74	75+	All
	%	%	%
Men			
When you told the doctor or nurse about your hearing problems, did he or she refer you to an ear specialist to check your hearing?	71	81	76
Has any doctor or nurse or ear specialist recommended a hearing aid?	54	77	66
Women			
When you told the doctor or nurse about your hearing problems, did he or she refer you to an ear specialist to check your hearing?	75	77	76
Has any doctor or nurse or ear specialist recommended a hearing aid?	53	74	67
All			
When you told the doctor or nurse about your hearing problems, did he or she refer you to an ear specialist to check your hearing?	72	79	76
Has any doctor or nurse or ear specialist recommended a hearing aid?	53	76	66
***Weighted* N**			
Men	*268*	*277*	*546*
Women	*160*	*344*	*504*
***Unweighted* N**			
Men	*282*	*280*	*562*
Women	*173*	*309*	*482*

Notes: Base comprises those aged 65 or over who in 2004–05 reported difficulty following a conversation if there was background noise, or who rated their hearing as fair or poor and who had told a doctor or nurse about the problem. *N*s for 'All' are the sum of those for men and women.
Of all 4,565 respondents aged 65 or over, 2,095 (46%) had poor hearing. Of these, 1,050 (50%) had told a doctor or nurse about the problem. (All counts weighted.)

Table 7A.6. Quality of care for poor hearing if hearing aid recommended, by age in 2004–05 and sex

	65–74	75+	All
	%	%	%
Men			
Did you get a hearing aid?	91	91	91
Did an ear specialist or doctor or nurse teach you how to use your hearing aid?	81	83	82
Do you use your hearing aid?	66	66	66
Women			
Did you get a hearing aid?	87	94	93
Did an ear specialist or doctor or nurse teach you how to use your hearing aid?	82	84	84
Do you use your hearing aid?	59	74	70
All			
Did you get a hearing aid?	90	93	92
Did an ear specialist or doctor or nurse teach you how to use your hearing aid?	81	84	83
Do you use your hearing aid?	64	71	68
***Weighted* N**			
Men	*144*	*214*	*358*
Women	*84*	*255*	*339*
***Unweighted* N**			
Men	*149*	*218*	*367*
Women	*90*	*228*	*318*

Notes: Base comprises those aged 65 or over who in 2004–05 reported difficulty following a conversation if there was background noise, or who rated their hearing as fair or poor and who had told a doctor or nurse about the problem, and who were recommended a hearing aid. *N*s for 'All' are the sum of those for men and women.

Table 7A.7. Quality of care for poor hearing, by age-specific wealth quintile and sex

	Poorest	2nd	3rd	4th	Richest	All
	%	%	%	%	%	%
Men						
When you told the doctor or nurse about your hearing problems, did he or she refer you to an ear specialist to check your hearing?	72	75	74	77	81	76
Has any doctor or nurse or ear specialist recommended a hearing aid?	67	64	63	67	67	65
Women						
When you told the doctor or nurse about your hearing problems, did he or she refer you to an ear specialist to check your hearing?	74	69	88	73	76	76
Has any doctor or nurse or ear specialist recommended a hearing aid?	69	65	76	62	62	67
All						
When you told the doctor or nurse about your hearing problems, did he or she refer you to an ear specialist to check your hearing?[a]	73	72	81	75	79	76
Has any doctor or nurse or ear specialist recommended a hearing aid?	68	64	69	65	65	66
***Weighted* N**						
Men	*68*	*115*	*113*	*123*	*123*	*542*
Women	*138*	*102*	*98*	*84*	*83*	*504*
***Unweighted* N**						
Men	*65*	*117*	*115*	*128*	*134*	*559*
Women	*124*	*99*	*95*	*82*	*82*	*482*

[a]Cuzick's non-parametric test for trend across ordered groups P=0.18

Notes: Base comprises those aged 65 or over who in 2004–05 reported difficulty following a conversation if there was background noise, or who rated their hearing as fair or poor and who had told a doctor or nurse about the problem. *N*s for 'All' are the sum of those for men and women. 3,370 (weighted 3,387) respondents had poor hearing, of whom 46% had told a doctor or nurse of the problem. Wealth information missing for 3 people.

Table 7A.8. Quality of care for poor hearing if hearing aid recommended, by age-specific wealth quintile and sex

	Poorest	2nd	3rd	4th	Richest	All
	%	%	%	%	%	%
Men						
Did you get a hearing aid?	[91]	87	92	94	91	91
Did an ear specialist or doctor or nurse teach you how to use your hearing aid?	[82]	78	85	84	82	82
Do you use your hearing aid?	[65]	69	64	68	64	66
Women						
Did you get a hearing aid?	94	85	95	95	94	93
Did an ear specialist or doctor or nurse teach you how to use your hearing aid?	81	75	90	87	88	84
Do you use your hearing aid?	70	66	78	61	76	70
All						
Did you get a hearing aid?	93	86	94	94	92	92
Did an ear specialist or doctor or nurse teach you how to use your hearing aid?[a]	81	77	87	85	84	83
Do you use your hearing aid?	69	68	71	65	69	68
***Weighted* N**						
Men	*46*	*74*	*71*	*82*	*82*	*355*
Women	*95*	*66*	*75*	*52*	*51*	*339*
***Unweighted* N**						
Men	*44*	*75*	*72*	*84*	*89*	*364*
All	*127*	*138*	*144*	*134*	*139*	*682*

[a]Cuzick's non-parametric test for trend across ordered groups P=0.55

Notes: Base comprises those aged 65 or over who in 2004–05 reported difficulty following a conversation if there was background noise, or who rated their hearing as fair or poor and who had told a doctor or nurse about the problem, and who were recommended a hearing aid. *N*s for 'All' are the sum of those for men and women. Wealth information missing for 3 people.

Table 7A.9. Quality of care for hypertension, by age in 2004–05 and sex

	52–59	60–74	75+	All
	%	%	%	%
Men				
Did a doctor or nurse ever suggest that you take any medication to lower your blood pressure?	57	77	87	73
Are you currently taking any medication, tablets or pills for high blood pressure?	47	72	80	66
Has a doctor or nurse explained high blood pressure in a way you could understand?	72	71	56	68
In general, have doctors or nurses given you any choice about how to treat your high blood pressure?	50	49	32	46
Both of above (given both explanation and choice)	43	41	22	38
Women				
Did a doctor or nurse ever suggest that you take any medication to lower your blood pressure?	56	75	84	72
Are you currently taking any medication, tablets or pills for high blood pressure?	51	67	81	66
Has a doctor or nurse explained high blood pressure in a way you could understand?	66	55	56	58
In general, have doctors or nurses given you any choice about how to treat your high blood pressure?	37	25	34	31
Both of above (given both explanation and choice)	33	22	25	26
All				
Did a doctor or nurse ever suggest that you take any medication to lower your blood pressure?	56	76	85	73
Are you currently taking any medication, tablets or pills for high blood pressure?	49	70	81	66
Has a doctor or nurse explained high blood pressure in a way you could understand?	69	63	56	63
In general, have doctors or nurses given you any choice about how to treat your high blood pressure?	43	37	34	38
Both of above (given both explanation and choice)	38	31	24	31
***Weighted* N**				
Men	*80*	*129*	*53*	*262*
Women	*89*	*134*	*92*	*314*
***Unweighted* N**				
Men	*67*	*130*	*53*	*250*
Women	*89*	*148*	*83*	*320*

Notes: Base comprises those who reported for the first time in 2004–05 that they had been diagnosed with hypertension. *N*s for ‘All’ are the sum of those for men and women.

Table 7A.10. Quality of care for hypertension, by age-specific wealth quintile and sex

	Poorest	2nd	3rd	4th	Richest	All
	%	%	%	%	%	%
Men						
Did a doctor or nurse ever suggest that you take any medication to lower your blood pressure?	68	(76)	78	(63)	(78)	73
Are you currently taking any medication, tablets or pills for high blood pressure?	55	(69)	74	(61)	(71)	66
Has a doctor or nurse explained high blood pressure in a way you could understand?	63	(58)	66	(82)	(73)	68
In general, have doctors or nurses given you any choice about how to treat your high blood pressure?	50	(48)	32	(60)	(44)	45
Both of above (given both explanation and choice)	38	(41)	23	(56)	(36)	37
Women						
Did a doctor or nurse ever suggest that you take any medication to lower your blood pressure?	70	70	69	73	80	72
Are you currently taking any medication, tablets or pills for high blood pressure?	66	64	62	63	78	67
Has a doctor or nurse explained high blood pressure in a way you could understand?	56	69	53	61	49	58
In general, have doctors or nurses given you any choice about how to treat your high blood pressure?	26	31	31	32	40	32
Both of above (given both explanation and choice)	22	29	20	27	32	26
All						
Did a doctor or nurse ever suggest that you take any medication to lower your blood pressure?[a]	69	72	75	68	79	73
Are you currently taking any medication, tablets or pills for high blood pressure?	62	66	69	62	75	67
Has a doctor or nurse explained high blood pressure in a way you could understand?	59	65	60	70	60	63
In general, have doctors or nurses given you any choice about how to treat your high blood pressure?	36	38	31	44	42	38
Both of above (given both explanation and choice)[b]	28	34	21	40	34	31
***Weighted* N**						
Men	*54*	*46*	*68*	*44*	*49*	*261*
Women	*81*	*70*	*53*	*55*	*54*	*312*
***Unweighted* N**						
Men	*47*	*42*	*64*	*43*	*53*	*249*
Women	*79*	*71*	*54*	*58*	*56*	*318*

[a]Cuzick's non-parametric test for trend across ordered groups P=0.34
[b]Cuzick's non-parametric test for trend across ordered groups P=0.37
Notes: Base comprises those who reported for the first time in 2004–05 that they had been diagnosed with hypertension. *N*s for 'All' are the sum of those for men and women. Wealth information missing for three people.

Table 7A.11. Quality of care for ischaemic heart disease anticoagulation, by age in 2004–05

	52–59	60–74	75+	All
	%	%	%	%
Did any doctor suggest that you take medication to thin your blood such as warfarin or aspirin, Plavix, Ticlid, or other blood thinning medication?	87	80	74	80
Are you currently taking medication to thin your blood like Warfarin, Aspirin, Plavix, Ticlid, or other medication to thin the blood?	87	77	67	76
Weighted N	*51*	*72*	*69*	*192*
Unweighted N	*48*	*75*	*64*	*187*

Note: Base comprises those who reported newly diagnosed angina or myocardial infarction in 2004–05.

Table 7A.12. Quality of care for osteoporosis, by age in 2004–05

	52–59	60–74	75+	All
	%	%	%	%
1. Did a doctor or nurse recommend treatment with medication for your osteoporosis or 'thin bones'?	60	62	54	59
2. Were these medicines recommended within 3 months of a doctor telling you that you had osteoporosis?	53	55	46	51
3. Did you take any of them?	58	60	53	57
4. Has any doctor or nurse recommended taking calcium pills or vitamin D?	52	54	53	53
5. Do you take calcium pills or vitamin D for your osteoporosis or 'thin bones'?	42	45	48	46
Mean % answering yes to osteoporosis quality questions 2 and/or 4	53	55	50	52
Weighted N	*82*	*261*	*240*	*583*
Unweighted N	*80*	*283*	*223*	*586*

Note: Base comprises those who reported diagnosed osteoporosis in 2002–03 or 2004–05.

Table 7A.13. Quality of care for osteoporosis, by age-specific wealth quintile

	Poorest	2nd	3rd	4th	Richest	All
	%	%	%	%	%	%
Did a doctor or nurse recommend treatment with medication for your osteoporosis or 'thin bones'?	57	56	60	62	59	58
Were these medicines recommended within 3 months of a doctor telling you that you had osteoporosis?[a]	51	49	49	54	52	51
Did you take any of them?	55	53	59	60	56	56
Has any doctor or nurse recommended taking calcium pills or vitamin D?[b]	48	54	54	54	58	53
Do you take calcium pills or vitamin D for your osteoporosis or 'thin bones'?	39	48	45	49	52	46
Weighted N	*153*	*123*	*106*	*96*	*102*	*580*
Unweighted N	*151*	*117*	*110*	*98*	*107*	*583*

[a]Cuzick's non-parametric test for trend across ordered groups P=0.49
[b]Cuzick's non-parametric test for trend across ordered groups P=0.22
Notes: Base comprises those who reported diagnosed osteoporosis in 2002–03 or 2004–05. Wealth information missing for 3 respondents.

Table 7A.14. Quality of care received for pain, by age in 2004–05

	52–59	60–74	75+	All
	%	%	%	%
Did your doctor or nurse recommend any treatments for your pain?	84	74	75	78
Are you currently receiving any treatment for your pain?	60	55	57	57
How well does the treatment control your pain? ('very well' or 'fairly well')	38	37	35	37
Weighted N	*94*	*109*	*71*	*274*
Unweighted N	*89*	*109*	*70*	*268*

Note: Base comprises those who reported in 2004–05 being often troubled by moderate or severe pain that started within past year which they told a doctor or nurse about, excluding those with moderate to severe knee or hip pain due to osteoarthritis (who were asked different questions about pain).

Table 7A.15. Quality of care for incontinence, by age in 2004–05 and sex

Percentage who reported the following action by a doctor or nurse	52–59	60–74	75+	All
	%	%	%	%
Men				
Asked when you lose urine, for example when you sneeze or laugh	–	36	37	40
Asked if you had trouble getting to the toilet	–	50	60	54
Asked if you had been treated for this problem before	–	49	53	51
Asked how important this problem was to you	–	53	55	52
1. All 4 of above – 'targeted history' taken		14	18	17
2. Asked you to provide a sample of urine for testing	–	81	74	79
3. Talked with you about how to treat urinary incontinence	–	43	68	53
4. Performed a rectal examination	–	59	57	58
Mean % answering yes to at least one of incontinence quality questions 1 to 4		49	54	52
All of the above action taken		4	11	9
Women				
Asked when you lose urine, for example when you sneeze or laugh	88	83	66	78
Asked if you had trouble getting to the toilet	56	64	54	58
Asked if you had been treated for this problem before	49	47	37	44
Asked how important this problem was to you	51	55	42	49
1. All 4 of above – 'targeted history' taken	27	28	17	24
2. Asked you to provide a sample of urine for testing	58	71	70	67
3. Talked with you about how to treat urinary incontinence	65	70	56	64
4. Performed an internal examination[a]	52	57	36	48
Mean % answering yes to at least one of incontinence quality questions 1 to 4	50	57	45	51
All of the above action taken	16	19	10	15
All				
Asked when you lose urine, for example when you sneeze or laugh	85	68	56	67
Asked if you had trouble getting to the toilet	55	60	56	57
Asked if you had been treated for this problem before	50	48	42	46
Asked how important this problem was to you	50	54	46	50
1. All 4 of above – 'targeted history' taken	26	24	18	22
2. Asked you to provide a sample of urine for testing	64	74	71	71
3. Talked with you about how to treat urinary incontinence	60	61	60	60
4. Performed a rectal or internal examination[a]	53	58	43	51
Mean % answering yes to at least one of incontinence quality questions 1 to 4	51	54	48	51
All of the above action taken	16	14	10	13
***Weighted* N**				
Men	*19*	*67*	*69*	*155*
Women	*96*	*139*	*129*	*365*
***Unweighted* N**				
Men	*17*	*70*	*68*	*155*
Women	*100*	*151*	*124*	*375*

[a]Probe: 'This is called a pelvic examination, where a doctor examines your vagina and/or rectum.'

Notes: Base comprises those who reported in 2004–05 losing urine beyond their control for more than 1 month in last 12 months and had mentioned it to a doctor. *N*s for 'All' are the sum of those for men and women.

Men aged 52–59 were omitted from the table because of small numbers, but were included in the 'All' percentages for men, which may therefore appear skewed compared with the data for specific age groups.

Table 7A.16. Quality of care for incontinence, by age-specific wealth quintile

Percentage who reported the following action by a doctor or nurse	Poorest	2nd	3rd	4th	Richest	All
	%	%	%	%	%	%
Asked when you lose urine, for example when you sneeze or laugh	76	64	67	62	63	67
Asked if you had trouble getting to the toilet	67	60	57	49	50	57
Asked if you had been treated for this problem before	54	43	48	44	41	46
Asked how important this problem was to you	51	56	48	47	49	50
1. All 4 of above – 'targeted history' taken[a]	28	25	20	20	16	22
2. Asked you to provide a sample of urine for testing[b]	74	77	70	65	65	71
3. Talked with you about how to treat urinary incontinence[c]	59	63	61	62	57	60
4. Performed a rectal or internal examination[d]	50	51	51	55	50	51
Mean % answering yes to at least one of incontinence quality questions 1 to 4	53	54	51	51	47	51
All of the above action taken	18	19	10	10	7	13
Weighted N	*128*	*103*	*102*	*89*	*95*	*518*
Unweighted N	*125*	*104*	*102*	*93*	*104*	*528*

[a]Cuzick's non-parametric test for trend across ordered groups P=0.02
[b]Cuzick's non-parametric test for trend across ordered groups P=0.03
[c]Cuzick's non-parametric test for trend across ordered groups P=0.52
[d]Cuzick's non-parametric test for trend across ordered groups P=0.97
Note: Base comprises those who reported in 2004–05 losing urine beyond their control for more than 1 month in last 12 months and had mentioned it to a doctor.

Table 7A.17. Quality of care for diabetes, by age in 2004–05 and sex

	52–59	60–74	75+	All
	%	%	%	%
Men				
1. Have you ever had a special blood test to see how well your blood sugar was controlled?[a]	87	84	70	81
2. Have you had this test (glycosylated haemoglobin or fructosamine) performed in the past 12 months?	83	77	61	74
3. In the past year, has any doctor or nurse examined your bare feet?	92	85	81	86
Mean % answering yes to diabetes quality questions 2 and/or 3	88	81	71	80
Had both feet check and blood test in past 12 months	79	69	55	67
Have you ever participated in a course or class about diabetes, or received special training on how you can live with your diabetes from day-to-day?	29	28	23	27
How much do you think you know about managing your diabetes? *('just about everything/most of what you need to know')*	82	80	70	78
Women				
1. Have you ever had a special blood test to see how well your blood sugar was controlled?[a]	89	85	85	86
2. Have you had this test (glycosylated haemoglobin or fructosamine) performed in the past 12 months?	87	80	79	81
3. In the past year, has any doctor or nurse examined your bare feet?	75	83	79	81
Mean % answering yes to diabetes quality questions 2 and/or 3	81	81	79	81
Had both feet check and blood test in past 12 months	69	69	64	67
Have you ever participated in a course or class about diabetes, or received special training on how you can live with your diabetes from day-to-day?	36	24	17	23
How much do you think you know about managing your diabetes? *('just about everything/most of what you need to know')*	76	75	75	75
All				
1. Have you ever had a special blood test to see how well your blood sugar was controlled?[a]	88	85	78	83
2. Have you had this test (glycosylated haemoglobin or fructosamine) performed in the past 12 months?	84	78	71	77
3. In the past year, has any doctor or nurse examined your bare feet?	86	85	80	83
Mean % answering yes to diabetes quality questions 2 and/or 3	85	82	76	80
Had both feet check and blood test in past 12 months	75	69	60	67
Have you ever participated in a course or class about diabetes, or received special training on how you can live with your diabetes from day-to-day?	32	26	20	25
How much do you think you know about managing your diabetes? *('just about everything/most of what you need to know')*	79	78	73	77
***Weighted* N**				
Men	*83*	*194*	*101*	*377*
Women	*50*	*155*	*124*	*329*
***Unweighted* N**				
Men	*76*	*198*	*102*	*376*
Women	*50*	*164*	*115*	*329*

[a]Additional question wording: 'This test is called a glycosylated haemoglobin, or haemoglobin A1c, or fructosamine. This is a blood test taken at a doctor's surgery or health centre or laboratory.'

Notes: Base comprises those who reported in 2002–03 or 2004–05 that they had diabetes or high blood sugar, and confirmed in 2004–05 that they had diagnosed diabetes. *N*s for 'All' are the sum of those for men and women.

Table 7A.18. Quality of care for diabetes, by age-specific wealth quintile

	Poorest	2nd	3rd	4th	Richest	All
	%	*%*	*%*	*%*	*%*	*%*
Have you ever had a special blood test to see how well your blood sugar was controlled?[a]	81	88	83	83	80	83
Have you had this test (glycosylated haemoglobin or fructosamine) performed in the past 12 months?[b]	71	84	79	78	73	78
In the past year, has any doctor or nurse examined your bare feet?[c]	81	80	85	88	86	83
Had both feet check and blood test in past 12 months	61	69	70	72	64	67
Have you ever participated in a course or class about diabetes, or received special training on how you can live with your diabetes from day-to-day?[d]	18	20	30	29	38	25
How much do you think you know about managing your diabetes? *('just about everything you need to know'* or *'most of what you need to know')*[e]	70	73	74	82	90	76
Weighted N	*164*	*180*	*139*	*126*	*91*	*700*
Unweighted N	*156*	*173*	*136*	*135*	*100*	*700*

[a]Additional question wording: 'This test is called a glycosylated haemoglobin, or haemoglobin A1c, or fructosamine. This is a blood test taken at a doctor's surgery or health centre or laboratory.'
[b]Cuzick's non-parametric test for trend across ordered groups P=0.26
[c]Cuzick's non-parametric test for trend across ordered groups P=0.10
[d]Cuzick's non-parametric test for trend across ordered groups P<0.001
[e]Cuzick's non-parametric test for trend across ordered groups P<0.001
Notes: Base comprises those who reported in 2002–03 or 2004–05 that they had diabetes or high blood sugar, and confirmed in 2004–05 that they had diagnosed diabetes. Wealth information missing for 5 people.

Table 7A.19. Quality of care for diabetes with at least one additional risk factor, by age in 2004–05 and sex

	52–59	60–74	75+	All
	%	*%*	*%*	*%*
Men				
Has a doctor discussed with you whether you should take a medication called an ACE inhibitor or A2 receptor blocker?[a] OR on checking medications, is the respondent taking an ACE inhibitor or A2 receptor blocker?	39	45	46	44
Women				
Has a doctor discussed with you whether you should take a medication called an ACE inhibitor or A2 receptor blocker?[a] OR on checking medications, is the respondent taking an ACE inhibitor or A2 receptor blocker?	53	46	39	45
All				
Has a doctor discussed with you whether you should take a medication called an ACE inhibitor or A2 receptor blocker?[a] OR on checking medications, is the respondent taking an ACE inhibitor or A2 receptor blocker?	45	46	42	44
***Weighted* N**				
Men	*66*	*161*	*79*	*306*
Women	*44*	*132*	*93*	*268*
***Unweighted* N**				
Men	*60*	*163*	*79*	*302*
Women	*44*	*139*	*87*	*270*

Note: Base comprises those who reported diagnosed diabetes and at least one other risk factor (smoker, hypertension, hypercholesterolaemia, renal insufficiency/microalbuminuria) in 2004–05 or 2002–03.
[a]Probe: 'These drugs are also called angiotensin converting enzyme inhibitors or angiotensin-II receptor blockers. Examples are captopril, enalopril, lisinopril, losartan, and valsartan.'

Table 7A.20. Quality of care for diabetes with at least one additional risk factor, by age-specific wealth quintile

	Poorest	2nd	3rd	4th	Richest	All
	%	%	%	%	%	%
Has a doctor discussed with you whether you should take a medication called an ACE inhibitor or A2 receptor blocker?[a] OR on checking medications, is the respondent taking an ACE inhibitor or A2 receptor blocker? [b]	37	44	48	48	49	44
Weighted N	*140*	*147*	*110*	*102*	*72*	*571*
Unweighted N	*133*	*141*	*108*	*108*	*79*	*569*

Notes: Base comprises those who reported diagnosed diabetes and at least one other risk factor (smoker, hypertension, hypercholesterolaemia, renal insufficiency/microalbuminuria) in 2004–05 or 2002–03. Wealth information missing for 3 people.
[a]Probe: ‘These drugs are also called angiotensin converting enzyme inhibitors or angiotensin-II receptor blockers. Examples are captopril, enalopril, lisinopril, losartan, and valsartan.’
[b]Cuzick’s non-parametric test for trend across ordered groups P=0.05

Table 7A.21. Summary measures of quality of care for all conditions

Condition	Mean % of respondents receiving indicated quality of care[a]	% of respondents adhering to recommended care[b]
Diabetes	80	n/a
Ischaemic heart disease (anticoagulation)	80	95
Pain	78	73
Hearing	76	68
Hypertension	72	92
Vision	59	56
Osteoporosis	52	97
Incontinence	51	n/a
Diabetes with additional risk factor	44	n/a
Falls	42	n/a
Balance	15	79

[a]If there are two or more quality indicators for a condition, the figure given in the table is the mean percentage receiving the care indicated by each quality indicator for that condition.
[b]Base is those who were recommended to take treatment by a doctor or nurse.

8. Cognitive function

Felicia A. Huppert *Department of Psychiatry, University of Cambridge*

Elizabeth Gardener *Department of Public Health and Primary Care, University of Cambridge*

Brenda McWilliams *Department of Public Health and Primary Care, University of Cambridge*

The key findings in this chapter include:

- One-third of the sample reported that their memory had worsened over the past two years. Compared with wave 1, 38% fewer regarded their memory as excellent and 20% more regarded their memory as poor.
- Participants' own ratings of their memory, however, are an unreliable guide to their actual memory performance, and their ratings of the change in their memory are an equally unreliable guide to the observed change in their memory performance.
- Older groups have a double disadvantage in relation to their memory performance; on tests of word recall, not only do they remember fewer words when tested immediately, but after a brief delay they forget more of what they could recall initially. To counteract this age-related loss, it is recommended that important information be provided to older people in written form.
- Older groups have a striking impairment in prospective memory – that is, remembering to carry out an action without being reminded. Around two-thirds of participants aged 75 and older forgot to perform an action that they had earlier been instructed to carry out. If the findings are indicative of forgetfulness in daily life, then they raise concerns about the health and safety of older people, in relation to such activities as remembering to take medication, pay bills and lock doors.
- Speed of information processing was the most sensitive measure of cognitive decline over the two-year period. The older the group, the greater the degree of decline.
- Literacy was assessed for the first time in a UK population sample of people aged 65 years or more. The literacy measure assessed how well respondents understood written instructions about taking an Aspirin tablet. Some degree of literacy impairment was surprisingly widespread, being found in one-third of the sample. Literacy was strongly age-related: one-half of the oldest group (80+) made at least one error on the task, compared with one-quarter of the under 60s. Only some of the age differences in literacy can be explained by differences in education, since the trend for literacy impairment to increase with age is evident even when controlling for level of education.

- The higher the level of wealth, the better the cognitive performance on all measures except speed of processing. Compared to those in the highest wealth quintile, almost eight times as many respondents in the lowest quintile were impaired in both literacy and numeracy.

8.1 Defining and measuring cognitive function

There is known to be a broad spectrum of cognitive capability among middle-aged and older people, with dementia at one extreme and maintained function at the other. If we consider the full spectrum, the overall human, social and economic costs associated with cognitive impairment and cognitive decline are very high. While the prevalence of dementia is low in Western Europe before the age of 70 (around 1.5% for ages 65–69), prevalence rises to nearly 4% for ages 70–74, 12% for ages 80–84 and 25% for those aged 85+ (Ferri et al., 2005). Even in those without dementia (i.e. the vast majority of the older population), the presence of mild cognitive impairment may nevertheless interfere with work performance, family life, the management of finances, and with social activities. Indeed, independence in later life is as much determined by mental ability as by physical ability (Huppert, 2003).

Progressive age-associated decline in memory, name-finding, complex decision-making and speed of information processing is common throughout late middle-age and later life, and may lead to social withdrawal and depression. Many of the decisions that individuals make in later life about retirement, health, housing and finances are complex and may be compromised by impairments in memory and decision-making ability or other aspects of executive function, including planning, organisation and mental flexibility. Basic abilities such as literacy and numeracy are also very important for dealing with the complexities of daily life.

A full understanding of how individuals make the economic, social and lifestyle decisions associated with retirement and later life requires an assessment of key aspects of cognitive function, along with information about the factors that influence the maintenance or decline of it, and those aspects that influence our perceptions of cognitive ability such as self-reported memory.

The cognitive measures selected for ELSA cover a diversity of cognitive domains and were chosen on the basis of four primary considerations:

- assessing cognitive processes that are relevant to the everyday functioning of older people;
- using mainly tasks that are known to be sensitive to age-related decline;
- avoiding floor effects (too many people failing) and ceiling effects (too many obtaining maximum scores);
- employing measures used in other studies to facilitate comparisons.

The cognitive processes that were assessed include learning and memory, word-finding ability, executive function and speed of processing, along with the basic skills of literacy and numeracy. Given the primacy of memory in age-related cognitive impairment, memory assessment comprises measures of both self-reported memory and memory test for performance, including retrospective memory (recalling information learned previously) as well as prospective memory (remembering to carry out an intended action). The term 'executive function' refers to a number of cognitive control processes which include attention, initiation, mental flexibility, organisation, abstract thinking, planning and problem-solving. The non-memory tasks used in ELSA tap into a number of these processes (discussed below). While most of the cognitive measures used in ELSA are known to show large age differences (cross-sectionally), and to decline with advancing age (longitudinally), the literacy measure might be expected to show cross-sectional age differences, but it is less clear that it would show appreciable longitudinal decline. As far as we can ascertain, wave 2 of ELSA is the first time that literacy has been assessed in a UK population sample aged over 65, so future waves of ELSA will provide a unique opportunity to examine the progression of literacy over time.

The specific cognitive measures used in ELSA wave 2 are essentially a repeat of those used in wave 1. The only differences are (1) a question about self-reported change in memory over the two-year interval has been added; (2) one of the prospective memory tasks was dropped because of time constraints (and since it correlated very highly with the task that was retained), and (3) a literacy test was administered in place of the wave 1 numeracy test.

Memory measures

1. Self-reported memory – this measure provides an indication of whether the respondent is worried about their memory. They were asked to rate their memory at the present time as excellent, very good, good, fair or poor. The item wording comes from the US Health and Retirement Study (HRS, 2002). Respondents were also asked to say whether compared with two years ago their memory is now better, the same, or worse.
2. Orientation in time – knowing the day and date is a simple but effective test of memory. Time orientation is assessed by standard questions about the date (day, month, year) and the day of the week. This item is included in the HRS and also forms part of the Mini-Mental State Examination (MMSE), which is used in numerous studies of ageing.
3. Word list learning – this is a test of verbal learning and recall, in which ten common words are presented aurally and the participant is asked to remember them. Word recall is tested both immediately and after a short delay, which is filled with other cognitive tests. ELSA uses the word lists developed for HRS, which comprise four different versions, so that different lists can be given to different members of the same household, and for different waves. For wave 1, the first member of the household to be tested was assigned a list at random by the computer and where there was more than one member of the household in the ELSA sample, the remaining lists were also selected at random. For wave 2, the lists were selected in the same way, but it excluded the list that the respondent had heard in wave 1. To ensure standardisation, the lists were presented by the

computer, using a taped voice, and preceded by a volume check to ensure that the respondent could hear the list.

4. Prospective memory – sometimes referred to as 'remembering to remember', prospective memory concerns memory for future actions. Early in the cognitive assessment session, respondents were informed about an action that they would be asked to carry out at the appropriate time, later in the session. They were told that they would need to carry out the action without being reminded. The task was to remember to write their initials in the top left-hand corner of the page attached to the clipboard, when later handed the clipboard. When the appropriate point in the session was reached for the respondent to carry out the action, the interviewer waited for five seconds to see if the respondent performed the correct action without a prompt. If they failed to carry out the action spontaneously, the interviewer reminded them that they were going to do something, and recorded what the respondent then did. A correct response requires the person to carry out the correct action without being reminded. This task is based on a similar task used in the MRC Cognitive Function and Ageing Study (MRC CFA Study, 1998).

Executive function

1. Word-finding (verbal fluency) – this is a test of how quickly participants can think of words from a particular category, in this case, naming as many different animals as possible in one minute. Successful performance on this test requires self-initiated activity, organisation and abstraction (categorising animals into groups such as domestic, wild, birds, dogs), and mental flexibility (moving to a new category when no more animals come to mind from a previous category).

2. Letter cancellation – this is a test of attention, visual search and mental speed. The participant is handed a clipboard to which is attached a page of random letters of the alphabet set out in rows and columns, and is asked to cross out as many target letters (P and W) as possible within one minute. An example is given at the top of the page to show the respondent how to cross out the letters. The page comprises 26 rows and 30 columns and there are 65 target letters in all. Respondents are asked to work across and down the page as though they were reading, and to perform the task both as quickly and as accurately as possible. When one minute has elapsed, the respondent is asked to underline the letter they reached. The total number of letters searched provides a measure of speed of processing. The number of target letters (P and W) missed up to the letter reached, provides a measure of accuracy. We also devised a measure of search efficiency which was defined as the percentage of letters correctly crossed out divided by the number of target letters up to the point reached. The letter cancellation test was developed for the 1946 birth cohort study (Richards et al., 1999) and has also been used in the MRC Cognitive Function and Ageing Study (MRC CFA Study, 1998).

Basic skills

1. Literacy – the aim was to use a measure of prose literacy that has relevance for the lives of older adults. Participants were shown a realistic, but fictitious medicine label for a product called Medco Aspirin and asked a series of questions to establish how well they understand the instructions on the label. This test has been widely used as part of the International Adult Literacy Survey (IALS) (OECD & Statistics Canada, 2000) and the Adult Literacy and Life Skills Survey (Statistics Canada & OECD, 2005). Question 1 concerns the maximum number of days for which this medication should be taken; question 2 invites respondents to list three situations in which a doctor should be consulted (out of six situations mentioned on the label); question 3 asks respondents to name one condition for which the tablets can be taken (out of six). The maximum possible score on this brief literacy test is 3.
2. Numeracy – this was not assessed in wave 2, but in this report we compare levels of literacy and numeracy for wave 2 respondents. The participants' level of numeracy was established by asking them to solve six problems requiring simple mental calculations based on real-life situations. The test begins with three moderately easy items to provide a rapid assessment of ability level. Respondents who make errors on all these items are then asked an easier question. Respondents who get any of the first three questions correct are then asked two progressively more difficult questions (and given credit for the easiest question). A score of 1 is given for a correct answer on each of the first five questions, but for the final question (calculation of compound interest), a score of 1 is given if the answer is almost correct and a score of 2 if the answer is fully correct. Scores on this test range from 0 to 7. These items were developed for ELSA and have also been used in HRS.

Summary cognitive measures

For some purposes, it is useful to derive summary cognitive performance measures. Accordingly, we have derived a memory index, which combines the scores on all the memory tests to produce a range of scores from 0 to 27. This is similar to the memory index derived in wave 1, but does not include the second prospective memory test as this was not repeated in wave 2.

8.2 Findings on cognitive function

The data presented below include descriptive data for wave 2, and data on cognitive change between waves 1 and 2. Where means and confidence intervals are presented, the significance of differences can be obtained directly from the tables, but in the case of percentages, we describe general trends and, in some cases, the results of chi-square tests. We recognise that differences between measures taken at two points in time provide only crude estimates of longitudinal trends, since they can be unduly influenced by intra-individual fluctuations. One needs data over a number of waves to see reliable trends in an individual's performance over time, and these will be available from future waves of ELSA. Nevertheless, with this proviso, it is interesting to begin to look at trends in the wave 2 data.

Memory

Table 8A.1 shows respondents' perceptions of their memory in five categories, from excellent to poor, in both wave 1 and wave 2. The first set of columns reports data for the full wave 1 sample, the second set for wave 1 respondents who were also assessed in wave 2, and the final set for wave 2 respondents who had been assessed in wave 1 (the full wave 2 sample contains an additional 36 people who did not have a full face-to-face interview in wave 1). It can be seen that for the wave 1 sample, scores are fairly normally distributed across the five response categories and that, as expected, a smaller percentage of those who went on to wave 2 reported their memory as poor (6%) than those who did not (7%). This table also provides an indication of change in self-reported memory between waves 1 and 2. It can be seen that in wave 2, 38% fewer respondents who participated in both waves describe their memory as excellent, while 20% more describe their memory as poor. For all three sets of data, women were less likely to use the extreme categories than men; that is, a higher percentage of men than women reported their memory as excellent and also a higher percentage of men reported their memory as poor. The number of women reporting their memory as excellent in wave 2 dropped by 43%, whereas the reduction for men was less at 36%, but the number of men reporting their memory as poor in wave 2 increased by 28%, while for women the percentage increased by only 15 points.

Table 8A.2 shows self-reported memory at wave 2, broken down by age and sex. Just over one-third of the total sample rated their memory as fair or poor, rather than excellent, very good or good. For men, the percentage reporting memory problems was higher among older participants (75 years and above) than among younger participants (less than 75 years), but there was no consistent age effect in women. In every age group, the percentage of women reporting memory impairment was smaller than for men and this difference was particularly pronounced among those aged 70 years and older. Wave 2 also asked participants to compare their memory now with how it was two years earlier. Table 8A.3 shows that only just over 1% of the sample said that their memory is better now, while almost one-third said that their memory is now worse. Among the men, the percentage saying their memory is worse now increases steadily with age, but again there is no consistent pattern for women.

A question which often arises in surveys is the extent to which we can take self-reporting measures at face value. The question we can ask in the present context is, how well does self-assessed memory compare with actual performance in memory tests? And likewise, how well does self-assessed change in memory compare with observed change in performance in memory tests? As noted above, age differences in self-reported memory are surprisingly small, particularly among women, but this is in stark contrast to the very large age differences observed on all the objective tests of memory. Tables 8A.4 and 8A.5 show substantial age differences on the three memory tests used in ELSA: time orientation, prospective memory and word list memory. Age differences are particularly marked on the prospective memory test, which assesses the respondent's ability to remember to carry out an instruction given earlier in the session without being reminded. In the oldest group (80+), the failure rate for this task was twice as high as in the under-60s group (64% versus 31%). If this test is a valid indicator of prospective memory in daily life, then these findings are alarming, since a very high percentage of old people live alone, and this finding may indicate that they are at increased risk of forgetting to carry out important actions such as taking medication, locking doors or paying bills. There may be less of a problem remembering appointments, social commitments or family events, since there is evidence from experimental research that older people are more likely than younger people to record appointments and important dates in diaries or calendars, whereas young adults tend to rely on their memory (Moscovitch, 1982).

Table 8A.5 shows marked age-related impairment of memory for the ten-word list in wave 2. The older the group, the fewer words they recalled when tested immediately after the list was presented. All groups recalled fewer words after a short delay, but is there a specific effect of age on the percentage of words retained? To answer this question, we calculated delayed recall as a percentage of immediate recall for each respondent. Table 8A.5 confirms that after a short interval (around five minutes), older people recall a much smaller percentage of the words they had originally recalled; the percentage retained was only 54% in the oldest group compared with 86% in the youngest. While the overall effect of gender on this test is small, women recalled more words than men in every age group except the oldest, for which the mean scores were identical. After the delay, women also retained a slightly higher percentage of the words they had originally recalled, and this was observed in every age group.

The scores on the three separate tests of memory were combined into a single memory index with a range from 0 to 27. The extent to which memory performance changed over the two-year interval between wave 1 and wave 2 was examined using this combined score, and categorised into improvement, no change (wave 2 score equals wave 1 score ± 1) and decline (Table 8A.6). For the sample as a whole, three-in-ten obtained a score within one point of their wave 1 score and were hence classified as showing no change; a further three-in-ten showed a decrease of two or more points and were therefore classified as having declined, and nearly four-in-ten showed an increase of two or more points and were classified as having improved. That is, a higher percentage of the sample showed an improvement in their memory performance over two years than showed a decline. This result is not unexpected, since previous studies have demonstrated practice effects on memory tasks lasting around two years (Rabbitt et al., 2001). Practice effects may be either specific (participant recalls the test materials used two years previously), or non-specific, e.g. as a result of the participant becoming familiar with the testing procedure in general. Since a different word list was presented to each participant in waves 1 and 2, and since most of the points on the memory index comes from recall of the word list (20 out of 27 points) it is likely that the improvement resulted from a non-specific practice effect. A few participants may have recalled in advance of the cognitive assessment that they would be asked about the date or would have to remember to carry out an action, but it is likely that this would have occurred in only a very small number of cases. In spite of the improvement in memory performance for the sample as a whole, there is a tendency for older groups to show less improvement and more decline than younger groups. For example, nearly three-in-ten people in the 80+ group are likely to show an improvement, compared with four-in-ten of those under 60, while those percentages are reversed for the likelihood of decline.

The next question we addressed was the extent to which observed change in memory is related to self-reported change in memory. This is presented in Table 8A.7, which focuses on the 31% of the sample whose memory test performance was shown to have declined by two points or more. If self-reporting of memory change were a reliable guide to actual decline in memory, then we would expect to see a higher percentage showing actual decline among those who reported that their memory had become worse than among those who reported that their memory had stayed the same or improved. However, this prediction is not borne out by the findings reported in Table 8A.7. The percentages showing an actual decline in memory bear no relationship to whether the participant reported that their memory had got worse or not. This finding was replicated with a more stringent cut-point (a drop of three or more points from the wave 1 value – data not shown). So we can conclude that self-reported change in memory is not a reliable indicator of observed change.

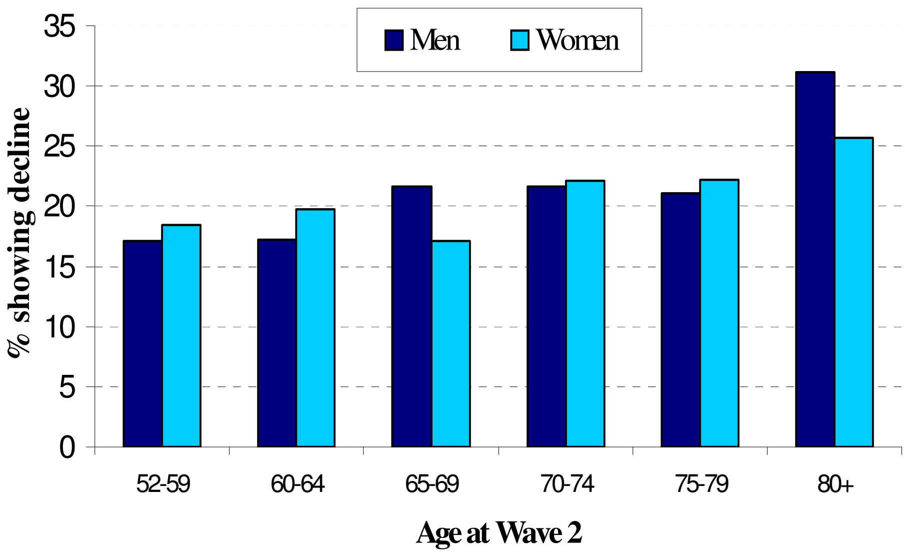
Executive function

Verbal fluency tasks provide measures of a number of executive processes, including self-initiated activity, categorisation and mental flexibility. The number of different animal names produced by ELSA respondents on the verbal fluency task in wave 2 ranged from 0 to 63, with an overall mean of 20. As expected, there was a large effect of age on fluency scores (Table 8A.8). Respondents aged under 60 produced an average of 22 different animal names, compared with less than 15 in respondents aged 80 and over. The mean number of animal names decreased steadily with chronological age in both men and women. Men performed significantly better than women overall (19% versus 17%; chi-square=6.87, 1 df, $p<0.01$). The lower half of the table shows the percentage of those in each group who declined by five or more points, the closest approximation in the data to the largest quintile of change scores. Overall, nearly one-in-five of the sample showed this degree of decline, and it can be seen that a higher percentage of men declined than women. In contrast to performance on the memory tests, where a higher percentage overall showed an improvement rather than a decline, on this test, a higher percentage showed decline rather than improvement, regardless of the choice of cut-point (provided the same figure was used above and below 0 – data not shown). Interestingly, there was no systematic effect of age on the percentage of respondents showing a substantial decline on this test, although men and women aged 80+ were more likely than those in any other age group to show this level of decline.

The letter cancellation task provided a measure of speed of information processing. The speed measure was the number of letters searched during the one-minute interval, and it ranged from 11 to 780 with a mean of 295 (data not shown). The mean number of letters searched in wave 2 decreased as expected, with chronological age, from 310 in respondents aged under 60, to 251 in those aged 80 and above (Table 8A.9). On this speed measure, women performed substantially better than men in every age group; overall, women searched an average of 30 letters more than men (308 compared with 278), which represents a full additional row of letters on the page on which they were working.

We also created a measure of search efficiency for each individual, which is the number of target letters correctly cancelled as a percentage of the total letters searched. An age-related decline in search efficiency is shown in the lower half of Table 8A.9, falling from 83% in the under-60s to 73% in those aged 80+. There was no significant effect of gender on search efficiency, although women searched at a considerably faster rate than men. To establish the extent of decline on the letter cancellation test over the two-year interval between wave 1 and wave 2, we calculated a difference score for search speed for each individual. To define a substantial level of decline on this score, we calculated a cut-point which corresponds approximately to the largest quintile of change. Slightly more than one-in-five of the sample showed this degree of slowing. Table 8A.10 shows that the percentage with this substantial slowing on the speed measure tends to increase with age, from 18% of those aged under 60 to 28% of those aged 80 or more (see Figure 8.1). There was no significant gender difference on this measure of change.

Figure 8.1. Speed of visual search: percentage showing substantial slowing between wave 1 and wave 2

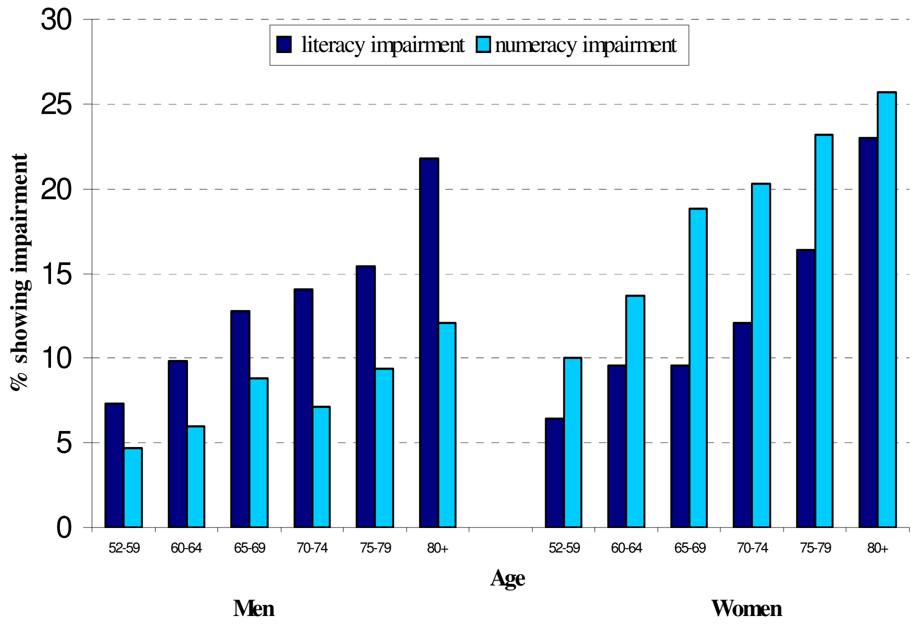


Basic skills

The brief literacy test involved reading and being asked questions about the instructions on a typical medicine label. The maximum possible score on this brief literacy test was 3, and overall, two-thirds of the sample obtained the maximum score, while slightly more than one tenth scored either 0 or 1 (Table 8A.11). The percentage of the sample obtaining the maximum score decreases with advancing age, from three-quarters of the youngest group to half of the oldest. There was no consistent effect of gender on this test. The fact that one-third of the total sample showed some impairment on this measure is rather alarming, since the task assessed comprehension of a relatively simple set of instructions on how to take Aspirin tablets. Furthermore, the fact that half of the oldest group made at least one error on this task is of particular concern, since the oldest members of the population are most likely to be taking medication and a high percentage take a large number of different tablets, requiring them to follow a variety of different instructions.

One would expect that level of literacy is strongly related to level of education, and this is amply confirmed by Table 8A.12. Regardless of where we placed the cut-point for literacy impairment (literacy score <3 or <2), those with no educational qualifications have one-and-a-half to two times the rate of impairment of those with intermediate qualifications, who in turn have one-and-a-half to two times the rate of impairment of those with a degree or higher qualification. While there are clearly educational differences between the older and younger groups, these differences do not explain the age differences in literacy, since the age effect can be seen within each level of education and for both genders.

Figure 8.2. Age and gender differences in literacy and numeracy impairment



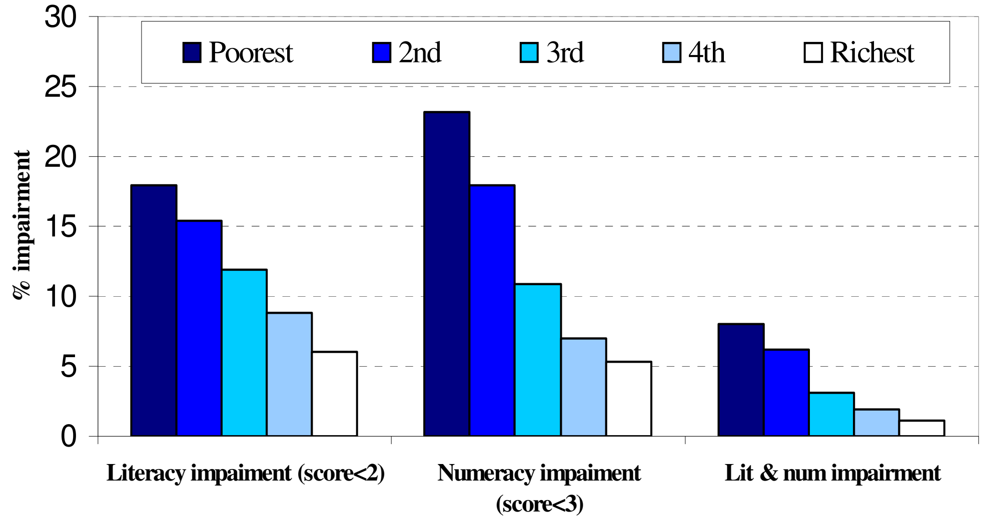
Basic skills comprise both literacy and numeracy. Although numeracy was not assessed in wave 2, it was assessed in wave 1, and there is no reason to expect a decline in basic skills over two years for the majority of the sample. Table 8A.13 reports data for wave 2 respondents who completed both the literacy and numeracy tests. It presents the percentages who were impaired in literacy only, numeracy only, or both. Direct comparisons between literacy and numeracy impairment are problematic. Our approach was to define impairment as the bottom 10% of scores (approximately) on each measure. Accordingly, literacy impairment was defined as a score of 1 or less on the literacy test (maximum = 3) and numeracy impairment was defined as a score of 2 or less on the numerical reasoning test (maximum = 7). Overall, slightly less than 12% of the sample were impaired in literacy, slightly more than 12% were impaired in numeracy, and nearly 4% of the total sample were impaired in both. The percentage impaired in both literacy and numeracy showed a five-fold increase with age, and women were more likely than men to be impaired in both (5% of women compared with 3% of men). There is also a striking pattern of gender differences (see Figure 8.2), with men being more likely to show literacy impairment than numeracy impairment (12% and 7% respectively), while women are more likely to show numeracy impairment than literacy impairment (17% compared with 12%). It should be noted that these figures are an under-estimate of population levels of impairment on these tasks, since wave 2 is a survivor sample, and therefore those with lower levels of numeracy at wave 1 were less likely to have taken part in wave 2. The median (IQR) numeracy score for those who continued into wave 2 was 5 (3–6) compared with 4 (2–5) who were only in wave 1.

These findings on literacy and numeracy are of great interest, since there appear to have been no previous studies undertaken of those aged over 65. The most recent UK study, The Skills for Life survey (DfES, 2003) was restricted to respondents aged 16–65. The survey reports age effects by broad age bands, the most comparable to ELSA being the age group 55–65. Comparison with ELSA is difficult because literacy and numeracy levels are divided into five categories: Entry Level 1 or below, Entry Level 2, Entry Level 3, Level 1 and Level 2 or above, which are based on more extensive measures of literacy and numeracy than were possible in ELSA. Nevertheless, if we focus on performance at the two lowest levels (Entry Level 1 or below, and Entry Level 2 or below), the results are consistent with ELSA findings on both age and gender. A greater proportion of participants in the oldest group (55–65) performed at the lowest levels compared with those aged under 45, for both literacy and numeracy (table 3.A4 – DfES, 2003). The Skills for Life survey also shows that in the age group 55–65, a smaller percentage of women than men perform at the lowest levels in literacy (5% and 9% respectively), while the gender effect is reversed for numeracy, with a smaller percentage of men than women performing at the lowest levels (20% and 34%).

Cognitive function, wealth and employment status

Many and varied factors are associated with performance on cognitive function tests. These include physical and mental health, health behaviours (e.g. alcohol consumption), socio-economic status and social engagement, as well as subjective aspects of well-being (e.g. sense of control, optimism, selfesteem). In this report, we focus briefly on just two aspects of socio-economic position: wealth and employment status. It is to be expected that wealth would be positively associated with cognitive capability, and that this occurs for various reasons. For example, higher levels of wealth in family of origin are likely to be associated with better access to education and better career prospects. Alternatively, having a high level of cognitive ability (independent of family and education) may lead to the pursuit of financially rewarding activities. The relationship between selected measures of cognitive performance and age-specific wealth quintiles is shown in Table 8A.14. With the exception of speed of visual search, the measures show a clear trend in the direction of increasing performance with increasing wealth. Nowhere is this association more striking than in relation to the basic skills of literacy and numeracy. Figure 8.3 shows a strong inverse relationship between impairment and quintile of wealth. Comparing the lowest wealth quintile with the highest, three times as many in the lowest quintile are impaired in literacy; more than four times as many are impaired in numeracy, and almost eight times as many are impaired in both literacy and numeracy. The relationship between cognitive function and wealth is partially accounted for by differences in education, although respondents with an intermediate degree of education can be found in all quintiles of wealth.

Figure 8.3. Impairment in literacy and numeracy, by age-specific wealth quintiles



Cognitive function also plays an important role in a person's employment prospects. The relationship between cognitive function and employment status is shown in Table 8A.15. Not surprisingly, those who are currently employed or self-employed perform best on almost every measure of cognitive function, while the permanently sick or disabled perform poorly on most measures. Interestingly, those in the unemployed group perform at a comparable level to the employed group on some measures (self-reported memory, verbal fluency and search efficiency), although they show a substantial impairment in memory test performance, search speed, literacy and numeracy. The people who are looking after family at home (almost entirely women) show fairly good performance on most measures, apart from a relatively high level of literacy and numeracy impairment. Some caution is needed when interpreting this table, since employment groups differ in their mean age, as shown in the table; unlike the previous table where wealth quintiles have been age-adjusted, employment status is not age-adjusted. Future analyses of the data will need to address the many complex associations within the data using a variety of multi-variate analyses and modelling techniques.

8.3 Conclusion

Cognitive capability or impairment of function is a key marker of population health and independence at all ages. This chapter has described the variation in cognitive function between age groups and between men and women, and the effects of education, wealth and employment status for people aged 52 and over in England.

The results presented are from the cross-sectional data in wave 2 of ELSA as well as various measures of change. Although the two-year period that has elapsed between ELSA waves 1 and 2 is rather too short to yield reliable estimates of cognitive decline, nevertheless substantial decline was observed on some measures, most notably speed of information processing. However, memory scores improved on average over the two-year period, although the improvement was more evident in younger than in older groups. This slight improvement in memory performance probably reflects a non-specific practice effect resulting from the participants' familiarity with the test procedures. There was a mismatch between observed change in memory test performance and self-reported change in memory, confirming that self-reporting of decline in memory is an untrustworthy indicator of actual memory decline.

This chapter provides the first national data on literacy and numeracy in people aged 65 and older. Our findings show surprisingly high literacy and numeracy impairment, particularly among older people. This is only partially explained by age differences in education, since age differences persist within each level of education. We also found a striking pattern of gender difference, with men showing greater impairment in literacy than in numeracy and women showing greater impairment in numeracy than in literacy.

Data from future waves of the study will provide more reliable information on trajectories of cognitive impairment. The longitudinal design of ELSA allows for repeated collection over time of most of the measures presented here. This will inform policy debates about the manner in which cognitive function interacts with health, well-being, lifestyle, and social and economic circumstances.

References

Department for Education and Skills (DfES) (2003), *The Skills for Life Survey: A National Needs and Impact Survey of Literacy, Numeracy and ICT Skills*, Norwich: HMSO.

Ferri, C. P., Prince, M., Brayne, C., Brodaty, H., Fratiglioni, L., Ganguli, M., Hall, K., Hasegawa, K., Hendrie, H., Huang, Y., Jorm, A., Mathers, C., Menezes, P. R., Rimmer, E. and Scazufca, M. (for Alzheimer's Disease International) (2005), 'Global prevalence of dementia: a Delphi consensus study', *Lancet*, 366: 2112–2117.

Health and Retirement Survey (2002), http://hrsonline.isr.umich.edu. Accessed 19 June 2006.

Huppert, F. A. (2003), 'Designing for older users', in P. J. Clarkson, R. Coleman, S. Keates and C. Lebbon (eds), *Inclusive Design: Design for the Whole Population*, London: Springer Verlag.

Moscovitch, M. (1982), 'A neuropsychological approach to perception and memory in normal and pathological aging', in F. I. M. Craik and S. Trehub (eds), *Aging and Cognitive Processes*, New York: Plenum Press.

MRC CFA Study (1998), 'Cognitive function and dementia in six areas of England and Wales: the distribution of MMSE and prevalence of GMS organicity level in the MRC CFA Study', *Psychological Medicine*, 28: 319–335.

Organisation for Economic Cooperation and Development (OECD) and Statistics Canada (2000), *Literacy in the Information Age: Final Report of the International Adult Literacy Survey*, Paris: OECD and Statistics Canada.

Rabbitt, P., Diggle, P., Smith, D., Holland, F. and McInnes, L. (2001), 'Identifying and separating the effects of practice and of cognitive ageing during a large longitudinal study of elderly community residents', *Neuropsychologia*, 39(5): 532–543.

Richards, M., Kuh, D., Hardy, R. and Wadsworth, M. E. J. (1999), 'Lifetime cognitive function and timing of the natural menopause', *Neurology*, 53: 308–314.

Statistics Canada and Organisation for Economic Cooperation and Development (OECD) (2005), *Learning a Living: First Results of the Adult Literacy and Life Skills Survey*, Ottawa and Paris: Statistics Canada and OECD.

Annex 8.1
Tables on cognitive function

Table 8A.1. Self-reported memory, by sex and wave in ELSA

	Wave 1 sample			Wave 1 sample (those also in wave 2)			Wave 2 sample		
	M	F	All	M	F	All	M	F	All
	%	%	%	%	%	%	%	%	%
Excellent	6.1	4.9	5.5	6.1	4.7	5.3	3.9	2.7	3.3
Very good	21.4	21.4	21.4	21.7	21.9	21.8	18.1	18.7	18.5
Good	39.2	42.3	40.9	40.5	43.3	42.0	40.0	44.9	42.6
Fair	25.9	25.6	25.7	25.2	24.8	24.9	29.7	27.6	28.6
Poor	7.4	5.9	6.6	6.5	5.3	5.9	8.3	6.1	7.1
Weighted N	*5,128*	*5,950*	*11,078*	*3,927*	*4,614*	*8,541*	*3,970*	*4,657*	*8,627*
Unweighted N	*5,036*	*6,057*	*11,093*	*3,849*	*4,743*	*8,592*	*3,879*	*4,765*	*8,644*

Notes: Numbers may not add up due to rounding of weighted data. People with information not available are excluded (wave 1 sample: 141 people (1.3%); wave 1 in wave 2 sample: 60 people (0.7%); wave 2 sample: 44 people (0.5%)). Wave 1 in wave 2 sample includes only those who had in-person interviews in both waves.

Table 8A.2. Self-reported memory at wave 2, by age in 2004–05 and sex

	52–59	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%	%
Men							
Excellent	5.1	2.5	4.2	3.1	4.0	2.5	3.9
Very good	19.6	19.4	17.4	15.2	16.7	17.3	18.1
Good	40.4	42.4	43.4	38.5	34.6	37.0	40.0
Fair	28.0	28.3	27.6	34.5	34.4	30.0	29.7
Poor	6.9	7.4	7.4	8.6	10.3	13.1	8.3
Women							
Excellent	2.5	3.3	3.2	3.0	1.8	2.3	2.7
Very good	17.4	17.0	20.4	20.8	19.3	19.4	18.7
Good	46.8	44.5	43.3	45.2	46.0	42.0	44.9
Fair	28.1	29.0	29.3	25.3	25.1	27.6	27.6
Poor	5.2	6.1	3.8	5.7	7.7	8.7	6.1
All							
Excellent	3.8	2.9	3.7	3.1	2.7	2.4	3.3
Very good	18.4	18.2	18.9	18.2	18.2	18,7	18.5
Good	43.6	43.5	43.3	42.1	41.1	40.3	42.6
Fair	28.0	28.7	28.5	29.6	29.1	28.5	28.6
Poor	6.1	6.7	5.6	7.1	8.8	10.3	7.1
***Weighted* N**							
Men	*1,331*	*667*	*639*	*515*	*416*	*402*	*3,970*
Women	*1,365*	*730*	*671*	*586*	*550*	*756*	*4,657*
All	*2,696*	*1,397*	*1,310*	*1,101*	*966*	*1,158*	*8,627*
***Unweighted* N**							
Men	*1,182*	*662*	*652*	*556*	*424*	*403*	*3,879*
Women	*1,393*	*801*	*737*	*638*	*536*	*660*	*4,765*
All	*2,575*	*1,463*	*1,389*	*1,194*	*960*	*1,063*	*8,644*

Notes: Numbers may not add up due to rounding of weighted data. People with information not available are excluded (44 people (0.5%)).

Table 8A.3. Self-reported change in memory, by age in 2004–05 and sex

	52–59	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%	%
Men							
Better now	1.3	1.0	0.6	1.0	0.9	1.0	1.0
About same	73.0	68.7	66.6	65.4	64.5	64.1	68.5
Worse now	25.7	30.3	32.8	33.6	34.6	34.9	30.5
Women							
Better now	1.7	1.2	1.8	1.8	1.2	0.0	1.3
About same	64.3	65.0	68.4	65.1	65.8	62.8	65.0
Worse now	34.0	33.8	29.7	33.2	33.1	37.2	33.7
All							
Better now	1.5	1.1	1.2	1.4	1.1	0.4	1.2
About same	68.6	66.7	67.5	65.2	65.2	63.3	66.6
Worse now	29.9	32.2	31.2	33.4	33.7	36.4	32.2
***Weighted* N**							
Men	*1,330*	*667*	*637*	*514*	*416*	*401*	*3,965*
Women	*1,362*	*731*	*671*	*587*	*548*	*756*	*4,655*
All	*2,692*	*1,398*	*1,308*	*1,101*	*964*	*1,157*	*8,620*
***Unweighted* N**							
Men	*1,181*	*662*	*650*	*555*	*424*	*402*	*3,874*
Women	*1,389*	*802*	*737*	*640*	*535*	*660*	*4,763*
All	*2,570*	*1,464*	*1,387*	*1,195*	*959*	*1,062*	*8,637*

Notes: Numbers may not add up due to rounding of weighted data. People with information not available are excluded (51 people (0.6%)).

Table 8A.4. Time orientation and prospective memory at wave 2, by age in 2004–05 and sex

	52–59	60–64	65–69	70–74	75–79	80+	All
Time orientation			% making at least one error				
Men	19.4	19.3	20.7	30.0	30.0	34.5	23.6
Women	11.1	15.3	15.7	21.4	23.9	41.6	20.2
All	15.2	17.2	18.1	25.4	26.5	39.1	21.8
***Weighted* N**							
Men	*1,335*	*665*	*638*	*515*	*417*	*406*	*3,975*
Women	*1,365*	*731*	*669*	*587*	*548*	*759*	*4,659*
All	*2,700*	*1,396*	*1,307*	*1,102*	*965*	*1,164*	*8,634*
***Unweighted* N**							
Men	*1,185*	*661*	*651*	*556*	*425*	*406*	*3,884*
Women	*1,393*	*802*	*735*	*640*	*534*	*663*	*4,767*
All	*2,578*	*1,463*	*1,386*	*1,196*	*959*	*1,069*	*8,651*
Prospective memory			% failing to make correct response without prompt				
Men	30.3	37.0	40.0	46.6	59.8	63.0	41.5
Women	32.1	37.9	37.1	49.3	53.4	63.7	43.6
All	31.2	37.4	38.5	48.0	56.1	63.5	42.6
***Weighted* N**							
Men	*1,340*	*666*	*640*	*516*	*418*	*408*	*3,989*
Women	*1,365*	*733*	*672*	*586*	*549*	*762*	*4,667*
All	*2,704*	*1,400*	*1,312*	*1,102*	*967*	*1,170*	*8,655*
***Unweighted* N**							
Men	*1,189*	*662*	*653*	*557*	*426*	*409*	*3,896*
Women	*1,393*	*804*	*738*	*639*	*535*	*666*	*4,775*
All	*2,582*	*1,466*	*1,391*	*1,196*	*961*	*1,075*	*8,671*

Notes: Numbers may not add up due to rounding of weighted data. People with information not available are excluded (time orientation: 37 people (0.4%); prospective memory: 17 people (0.2%)).

Table 8A.5. Memory for word list at wave 2, by age in 2004–05 and sex

	52–59	60–64	65–69	70–74	75–79	80+	All
Men							
Immediate recall							
Mean	6.2	5.7	5.5	5.0	4.7	4.1	5.5
95% CI	6.1–6.3	5.6–5.8	5.3–5.6	4.9–5.1	4.6–4.9	3.9–4.3	5.4–5.5
Delayed recall							
Mean	4.9	4.2	4.0	3.5	3.1	2.3	4.0
95% CI	4.8–5.0	4.1–4.4	3.9–4.2	3.3–3.7	2.9–3.3	2.1–2.5	4.0–4.1
Percentage retained[a]							
Mean	84.3	77.7	75.0	73.9	66.9	53.0	75.5
95% CI	80.8–87.8	73.3–82.1	71.4–78.7	68.6–79.3	62.3–71.4	48.9–57.1	73.7–77.3
Women							
Immediate recall							
Mean	6.4	6.1	5.9	5.4	5.0	4.1	5.6
95% CI	6.3–6.5	6.0–6.2	5.8–6.0	5.3–5.5	4.8–5.2	4.0–4.3	5.6–5.7
Delayed recall							
Mean	5.3	4.8	4.5	4.1	3.4	2.3	4.3
95% CI	5.2–5.4	4.7–5.0	4.4–4.7	3.9–4.3	3.3–3.6	2.2–2.5	4.2–4.3
Percentage retained[a]							
Mean	87.4	83.2	82.4	79.2	67.0	56.0	77.5
95% CI	83.9–90.9	79.2–87.2	77.3–87.4	74.5–84.0	63.2–70.8	50.9–59.1	75.6–79.4
All							
Immediate recall							
Mean	6.3	5.9	5.7	5.2	4.9	4.1	5.5
95% CI	6.2–6.4	5.8–6.0	5.6–5.8	5.1–5.3	4.8–5.0	4.0–4.2	5.5–5.6
Delayed recall							
Mean	5.1	4.6	4.3	3.8	3.3	2.3	4.1
95% CI	5.0–5.2	4.5–4.7	4.2–4.4	3.7–3.9	3.2–3.4	2.2–2.4	4.1–4.2
Percentage retained[a]							
Mean	85.9	80.6	78.8	76.8	67.0	54.3	76.6
95% CI	83.4–88.3	77.6–83.5	75.7–81.9	73.2–80.3	64.0–70.0	51.2–57.4	75.2–77.9
***Weighted* N**[b]							
Men	*1,331*	*663*	*636*	*514*	*416*	*402*	*3,962*
Women	*1,362*	*729*	*669*	*586*	*546*	*758*	*4,650*
All	*2,693*	*1,391*	*1,305*	*1,100*	*962*	*1,161*	*8,612*
***Unweighted* N**[b]							
Men	*1,182*	*659*	*649*	*555*	*424*	*403*	*3,872*
Women	*1,390*	*800*	*735*	*639*	*532*	*662*	*4,758*
All	*2,572*	*1,459*	*1,384*	*1,194*	*956*	*1,065*	*8,630*

[a]Delayed recall as a percentage of immediate recall.

[b]*N*s shown are for immediate and delayed recall; these are reduced by a further total of 72 for percentage retained.

Notes: Numbers may not add up due to rounding of weighted data. People with information not available are excluded (immediate and delayed: 58 people (0.7%); percentage retained (including those with zero words recalled immediately): 130 people (1.5%)).

Table 8A.6. Observed change in memory index, by age in 2004–05 and sex

	52–59	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%	%
Men							
Improvement	37.5	34.1	37.7	35.5	36.4	35.2	36.4
No change	34.0	33.8	31.1	26.9	30.9	28.9	31.7
Decline	28.5	32.1	31.1	37.6	32.7	36.0	31.9
Women							
Improvement	42.6	39.5	41.0	37.6	35.6	30.6	38.5
No change	30.6	30.9	33.1	31.4	30.2	29.1	30.8
Decline	26.8	29.5	25.9	31.1	34.2	40.3	30.7
All							
Improvement	40.1	37.0	39.4	36.6	36.0	32.2	37.5
No change	32.2	32.3	32.1	29.3	30.5	29.0	31.2
Decline	27.7	30.8	28.5	34.2	33.5	38.8	31.2
***Weighted* N**							
Men	*1,307*	*645*	*625*	*508*	*411*	*388*	*3,884*
Women	*1,350*	*720*	*657*	*574*	*536*	*733*	*4,571*
All	*2,658*	*1,366*	*1,282*	*1,082*	*947*	*1,120*	*8,455*
***Unweighted* N**							
Men	*1,163*	*643*	*639*	*549*	*419*	*391*	*3,804*
Women	*1,378*	*792*	*723*	*627*	*524*	*645*	*4,689*
All	*2,541*	*1,435*	*1,362*	*1,176*	*943*	*1,036*	*8,493*

Definitions: No change is a wave 2 score within one point of the wave 1 score. Improvement is a wave 2 score two or more points better than the wave 1 score. Decline is a wave 2 score two or more points worse than the wave 1 score.
Notes: Numbers may not add up due to rounding of weighted data. People with information not available are excluded (195 people (2.2%)).

Table 8A.7. Observed change in memory index,[a] by self-reported change in memory, age in 2004–05 and sex

Self-reported change in memory	52–59	60–64	65–69	70–74	75–79	80+	All
Men							
Better/same	28.8	33.7	29.7	39.5	31.9	34.6	31.9
Worse	27.6	28.7	34.2	33.6	33.8	38.4	31.7
All	28.5	32.1	31.2	37.5	32.5	35.9	31.9
Women							
Better/same	29.3	30.1	26.2	31.7	31.6	39.0	31.0
Worse	22.0	28.2	25.3	29.8	39.4	42.8	30.1
All	26.8	29.4	25.9	31.1	34.2	40.4	30.7
All							
Better/same	29.0	31.8	27.9	35.4	31.7	37.4	31.4
Worse	24.4	28.4	29.8	31.6	36.9	41.4	30.8
All	27.6	30.7	28.5	34.1	33.5	38.8	31.2
***Weighted* N**							
Men	*1,305*	*645*	*624*	*507*	*410*	*387*	*3,878*
Women	*1,346*	*719*	*657*	*574*	*536*	*730*	*4,564*
All	*2,651*	*1,365*	*1,281*	*1,081*	*946*	*1,117*	*8,441*
***Unweighted* N**							
Men	*1,161*	*643*	*638*	*548*	*418*	*390*	*3,798*
Women	*1,373*	*791*	*723*	*627*	*524*	*643*	*4,681*
All	*2,534*	*1,434*	*1,361*	*1,175*	*942*	*1,033*	*8,479*

[a]Percentage showing substantial decline, i.e. a drop of two or more points from their wave 1 value.
Notes: Numbers may not add up due to rounding of weighted data. People with information not available are excluded (209 people (2.4%)).

Table 8A.8. Verbal fluency at wave 2 and percentage showing substantial decline, by age in 2004–05 and sex

	52–59	60–64	65–69	70–74	75–79	80+	All
Verbal fluency at wave 2	Number of animal names produced						
Men							
Mean	22.2	20.6	20.3	18.8	17.6	15.4	20.0
95% CI	21.8–22.6	20.1–21.1	19.8–20.9	18.3–19.3	17.1–18.2	14.8–16.0	19.8–20.3
Women							
Mean	21.9	20.5	19.4	18.1	16.9	14.4	19.0
95% CI	21.5–22.2	20.0–21.0	19.0–19.9	17.6–18.5	16.4–17.4	13.9–14.8	18.8–19.2
All							
Mean	22.0	20.5	19.9	18.4	17.2	14.7	19.5
95% CI	21.8–22.3	20.2–20.9	19.5–20.2	18.1–18.8	16.8–17.6	14.4–15.1	19.3–19.7
***Weighted* N**							
Men	*1,337*	*664*	*637*	*516*	*416*	*403*	*3,972*
Women	*1,364*	*731*	*671*	*586*	*548*	*759*	*4,659*
All	*2,701*	*1,395*	*1,308*	*1,102*	*964*	*1,162*	*8,631*
***Unweighted* N**							
Men	*1,186*	*660*	*650*	*556*	*424*	*404*	*3,880*
Women	*1,392*	*802*	*737*	*639*	*534*	*663*	*4,767*
All	*2,578*	*1,462*	*1,387*	*1,195*	*958*	*1,067*	*8,647*
% showing substantial decline [a]	%	%	%	%	%	%	%
Men	19.5	20.1	16.3	19.4	19.3	20.7	19.2
Women	15.1	17.6	18.5	17.8	15.4	19.3	17.0
All	17.3	18.8	17.4	18.5	17.1	19.8	18.0
***Weighted* N**							
Men	*1,317*	*646*	*628*	*508*	*411*	*393*	*3,902*
Women	*1,355*	*723*	*659*	*577*	*539*	*747*	*4,599*
All	*2,672*	*1,369*	*1,287*	*1,085*	*950*	*1,139*	*8,501*
***Unweighted* N**							
Men	*1,169*	*644*	*642*	*549*	*419*	*395*	*3,818*
Women	*1,382*	*794*	*725*	*629*	*527*	*655*	*4,712*
All	*2,551*	*1,438*	*1,367*	*1,178*	*946*	*1,050*	*8,530*

[a] A drop of five or more points from their wave 1 score.

Notes: Numbers may not add up due to rounding of weighted data. People with information not available are excluded (41 people in wave 2 (0.5%); 158 people in both waves (1.8%)).

Table 8A.9. Speed and efficiency of visual search at wave 2, by age in 2004–05 and sex

	52–59	60–64	65–69	70–74	75–79	80+	All
Speed of visual search in wave 2	Number of letters searched						
Men							
Mean	298	284	276	266	258	236	278
95% CI	293–303	278–290	269–282	259–273	249–267	226–246	275–280
Women							
Mean	324	323	315	309	294	260	308
95% CI	319–329	317–330	308–322	302–317	286–302	251–269	305–311
All							
Mean	310	305	296	289	278	251	294
95% CI	307–314	300–309	291–301	283–294	272–285	245–258	292–296
Efficiency of visual search in wave 2	Letters correctly cancelled as a percentage of total letters searched						
Men							
Mean	82.8	80.0	79.6	77.1	75.8	72.3	79.3
95% CI	82.0–83.5	79.0–81.1	78.4–80.8	76.0–78.4	74.3–77.2	70.6–74.0	78.9–79.8
Women							
Mean	83.3	80.9	78.5	76.8	75.8	73.5	79.1
95% CI	82.6–84.0	80.0–81.9	77.5–79.6	75.7–77.9	74.5–77.2	72.2–74.8	78.6–79.5
All							
Mean	83.0	80.5	79.1	77.0	75.8	73.1	79.2
95% CI	82.5–83.5	79.8–81.2	78.3–79.9	76.1–77.8	74.8–76.8	72.1–74.1	78.9–79.5
***Weighted* N**							
Men	*1,308*	*651*	*626*	*505*	*398*	*367*	*3,855*
Women	*1,346*	*716*	*656*	*569*	*522*	*660*	*4,470*
All	*2,655*	*1,367*	*1,282*	*1,074*	*921*	*1,028*	*8,325*
***Unweighted* N**							
Men	*1,163*	*647*	*639*	*546*	*407*	*370*	*3,772*
Women	*1,374*	*787*	*721*	*621*	*511*	*585*	*4,599*
All	*2,537*	*1,434*	*1,360*	*1,167*	*918*	*955*	*8,371*

Notes: Numbers may not add up due to rounding of weighted data. People with information not available are excluded (317 people (3.6%)).

Table 8A.10. Percentage showing substantial decline in speed of visual search at wave 2, by age in 2004–05 and sex

	52–59	60–64	65–69	70–74	75–79	80+	All
	% showing substantial decline[a]						
Men	17.1	17.2	21.6	21.6	21.1	31.1	20.2
Women	18.4	19.8	17.1	22.1	22.2	25.7	20.4
All	17.8	18.6	19.3	21.9	21.7	27.6	20.3
***Weighted* N**							
Men	*1,267*	*628*	*602*	*490*	*383*	*353*	*3,722*
Women	*1,301*	*700*	*636*	*550*	*507*	*635*	*4,331*
All	*2,569*	*1,328*	*1,237*	*1,040*	*890*	*988*	*8,052*
***Unweighted* N**							
Men	*1,129*	*626*	*617*	*530*	*392*	*356*	*3,650*
Women	*1,329*	*772*	*700*	*602*	*496*	*564*	*4,463*
All	*2,458*	*1,398*	*1,317*	*1,132*	*888*	*920*	*8,113*

[a]A drop of 68 or more points from their wave 1 value.
Notes: Numbers may not add up due to rounding of weighted data. People with information not available are excluded (317 people in wave 2 (3.6%); 575 people in both waves (6.6%)).

Table 8A.11. Literacy in wave 2, by age in 2004–05 and sex

	52–59	60–64	65–69	70–74	75–79	80+	All
	% obtaining each score						
Men							
0	1.3	0.9	2.0	2.4	3.0	6.2	2.1
1	6.1	8.8	10.7	11.9	12.7	16.1	9.7
2	17.7	18.1	22.1	27.3	24.7	25.5	21.2
3	74.9	72.2	65.2	58.4	59.7	52.2	67.1
Women							
0	0.5	0.8	1.1	0.8	2.9	3.7	1.4
1	5.9	8.7	8.6	11.4	13.5	19.3	10.3
2	20.1	22.4	20.7	25.2	25.2	28.8	23.0
3	73.5	68.1	69.6	62.7	58.5	48.2	65.3
All							
0	0.9	0.8	1.5	1.5	2.9	4.6	1.7
1	6.0	8.8	9.6	11.6	13.1	18.1	10.0
2	18.9	20.4	21.4	26.2	25.0	27.6	22.2
3	74.2	70.0	67.5	60.7	59.0	49.6	66.1
***Weighted* N**							
Men	*1,298*	*642*	*614*	*497*	*394*	*350*	*3,796*
Women	*1,336*	*711*	*663*	*562*	*521*	*641*	*4,436*
All	*2,634*	*1,354*	*1,278*	*1,059*	*916*	*992*	*8,232*
***Unweighted* N**							
Men	*1,158*	*642*	*627*	*538*	*405*	*355*	*3,725*
Women	*1,367*	*782*	*729*	*616*	*511*	*573*	*4,578*
All	*2,525*	*1,424*	*1,356*	*1,154*	*916*	*928*	*8,303*

Notes: Numbers may not add up due to rounding of weighted data. People with information not available are excluded (385 people (4.4%)).

Table 8A.12. Literacy impairment in wave 2, by level of education, age in 2004–05 and sex

	Percentage scoring < 3				Percentage scoring < 2			
	52–64	65–74	75+	All	52–64	65–74	75+	All
	%	%	%	%	%	%	%	%
Men								
No qualification (35.6%)*	41.7	54.1	49.4	48.0	17.3	23.2	24.3	21.2
Intermediate (35.9%)	23.5	31.7	43.1	29.5	5.7	9.7	17.1	9.0
Degree/higher (28.5%)	17.2	20.3	29.3	19.9	4.2	2.6	6.4	4.1
All	25.9	37.9	43.4	32.9	8.2	13.4	18.4	11.7
Women								
No qualification (47.4%)	42.4	41.6	51.6	45.5	13.3	14.5	23.7	17.4
Intermediate (35.7%)	24.2	27.2	42.7	28.3	5.4	7.6	16.9	8.0
Degree/higher (16.9%)	15.6	20.9	32.5	19.7	3.1	5.3	6.3	4.2
All	28.3	33.5	47.3	34.7	7.5	10.8	20.0	11.7
All								
No qualification (42.0%)	42.1	46.8	50.9	46.5	15.0	18.1	23.9	18.9
Intermediate (35.8%)	23.9	29.4	42.9	28.8	5.5	8.6	17.0	8.5
Degree/higher (22.3%)	16.6	20.6	30.8	19.6	3.7	3.8	6.4	4.1
All	27.1	35.6	45.7	33.9	7.8	12.0	19.4	11.7
***Weighted* N**								
Men	*1,924*	*1,106*	*739*	*3,769*	*1,924*	*1,106*	*739*	*3,769*
Women	*2,041*	*1,217*	*1,161*	*4,419*	*2,041*	*1,217*	*1,161*	*4,419*
All	*3,965*	*2,323*	*1,900*	*8,188*	*3,965*	*2,323*	*1,900*	*8,188*
***Unweighted* N**								
Men	*1,785*	*1,161*	*755*	*3,701*	*1,785*	*1,161*	*755*	*3,701*
Women	*2,143*	*1,336*	*1,083*	*4,562*	*2,143*	*1,336*	*1,083*	*4,562*
All	*3,928*	*2,497*	*1,838*	*8,263*	*3,928*	*2,497*	*1,838*	*8,263*

*Weighted percentages for each education/sex group.

Notes: Numbers may not add up due to rounding of weighted data. People with information not available are excluded (425 people (4.9%)).

Table 8A.13. Literacy and numeracy impairment,[a] by age and sex

	52–59	60–64	65–69	70–74	75–79	80+	All
Men							
% with literacy score <2	7.3	9.8	12.8	14.1	15.4	21.8	11.7
% with numeracy score <3	4.7	6.0	8.8	7.1	9.4	12.1	7.1
% with both	1.4	1.8	5.2	3.1	3.4	5.7	2.9
Women							
% with literacy score <2	6.4	9.6	9.6	12.1	16.4	23.0	11.7
% with numeracy score <3	10.0	13.7	18.8	20.3	23.2	25.7	17.0
% with both	2.1	3.3	3.8	4.9	7.0	10.6	4.7
All							
% with literacy score <2	6.9	9.7	11.2	13.0	15.9	22.6	11.7
% with numeracy score <3	7.4	10.1	14.0	14.1	17.3	20.9	12.5
% with both	1.8	2.6	4.5	4.0	5.5	8.9	3.9
***Weighted* N**							
Men	*1,289*	*635*	*610*	*496*	*393*	*347*	*3,769*
Women	*1,332*	*710*	*661*	*557*	*520*	*641*	*4,421*
All	*2,621*	*1,345*	*1,271*	*1,052*	*913*	*988*	*8,190*
***Unweighted* N**							
Men	*1,150*	*635*	*624*	*537*	*404*	*352*	*3,702*
Women	*1,363*	*781*	*727*	*610*	*510*	*573*	*4,564*
All	*2,513*	*1,416*	*1,351*	*1,147*	*914*	*925*	*8,266*

[a]Impairment was defined as the lowest 10% (approximately) of scores on each measure. This corresponded to a literacy score less than 2 and a numeracy score less than 3.
Notes: Numbers may not add up due to rounding of weighted data. People with information not available are excluded (422 people (4.9%)).

Table 8A.14. Cognitive performance, by age-specific wealth quintile

	Poorest	2^{nd}	3^{rd}	4^{th}	Richest
Self-reported memory					
% fair or poor	41.0	40.6	34.9	34.8	27.5
Prospective memory					
% failing to make correct response	53.0	48.6	43.4	36.7	32.6
Memory index					
% in lowest third of scores	52.9	46.8	40.2	34.3	26.8
Verbal fluency					
Mean number of animal names	17.5	18.3	19.4	20.4	21.5
95% CI	17.1–17.8	17.9–18.6	19.1–19.8	20.1–20.7	21.2–21.9
Visual search					
Mean speed (letters searched)	295	285	288	298	302
95% CI	289–300	281–290	284–292	294–302	297–306
Mean efficiency (correct/searched)	76.3	78.1	79.5	80.1	81.4
95% CI	75.5–77.1	77.3–78.8	78.8–80.2	79.4–80.7	80.8–82.1
Literacy and numeracy					
% literacy impairment (score < 2)	17.9	15.4	11.9	8.8	6.0
% numeracy impairment (score < 3)	23.2	17.9	10.9	7.0	5.3
% impairment on both	8.0	6.2	3.1	1.9	1.1
N *(range)*[a]					
Weighted	*1,467–1,608*	*1,556–1,670*	*1,703–1,793*	*1,689–1,754*	*1,697–1,752*
Unweighted	*1,405–1,522*	*1,535–1,631*	*1,705–1,784*	*1,737–1,795*	*1,809–1,864*

[a]Bases shown are for literacy and numeracy measures, which have the least observations available, and prospective memory, which has the most observations available. Otherwise, base numbers are as in previous tables.
Note: People with information not available for wealth are excluded (75 (0.9%)).

Table 8A.15. Cognitive performance, by employment status

	Employed / Self - employed Mean age 58	**Unemployed** Mean age 59	**Permanently sick or disabled** Mean age 62	**Looking after family or home** Mean age 67	**Retired / Semi-retired** Mean age 72
Self-reported memory					
% fair or poor	31.4	32.3	52.2	34.8	38.5
Prospective memory					
% failing to make correct response	31.2	46.0	47.7	43.8	48.2
Memory index					
% in lowest third of scores (age-adjusted)	34.7	52.5	53.5	36.7	37.9
Verbal fluency					
Mean number of animal names	22.0	20.0	18.3	18.6	18.4
95% CI	21.8–22.3	183–217	17.7–18.9	18.1–19.0	18.2–18.6
Visual search					
Mean speed (letters searched)	310	280	282	303	284
95% CI	306–313	258–303	272–291	297–310	281–287
Mean efficiency (correct/searched)	82.7	82.0	78.9	79.2	77.1
95% CI	82.2–83.2	79.1–84.9	77.4–80.5	78.3–80.2	76.7–77.6
Literacy and numeracy					
% literacy impairment (score < 2)	6.5	13.9	16.5	13.0	14.0
% numeracy impairment (score < 3)	7.2	12.1	17.7	17.3	14.1
% impairment on both	1.6	4.6	6.0	5.0	4.8
N *(range)*[a]					
Weighted	*2,508–2,578*	*69–71*	*444–500*	*841–891*	*4,306–4,589*
Unweighted	*2,445–2,506*	*63–65*	*423–470*	*844–889*	*4,469–4,726*

[a]Bases shown are for literacy and numeracy measures, which have the least observations available, and prospective memory, which has the most observations available.

Notes: People with information not available or reported ‘other’ for employment status are excluded (25 (0.3%): 1 refusal and 24 ‘other’). Otherwise, base numbers are as in previous tables.

9. Expenditure and consumption

James Banks *Institute for Fiscal Studies* **and** *University College London*

Andrew Leicester *Institute for Fiscal Studies*

The analysis in this chapter shows that:

- On average, those aged 52 and over spend £45 per adult per week on food; this pattern is relatively constant across age groups.
- Food spending rises with wealth, particularly for food consumed out of the home. Spending on food out of the home is almost five times higher for those at the top of the wealth distribution than for those at the bottom.
- The level of spending on basics – food, fuel and clothing – increases with wealth, but the budget share falls, as would be expected for goods that are considered economic necessities.
- Nevertheless, even among the very poorest groups of the ELSA sample – low-wealth households aged 75 and over – spending on ‘basics’ accounts for less than 35% of disposable income.
- Transfers to people outside the household account for 4% of disposable income on average, and for as much as 7% amongst the wealthiest oldest households. For almost all groups, average transfers are greater than average spending on either clothing or leisure services.
- The percentage of the elderly spending more than 10% of their income on domestic fuel is 8.3% but this rate varies systematically by age, wealth, health and quality of life. Amongst the oldest old and the poorest groups, rates are higher (11½% for those aged 75 and over and 14% for the lowest wealth quintile).
- Consumption of services from durable goods owned by households is an important aspect of consumption for older households. Durable ownership rates are high and non-negligible even for the high-technology goods such as DVDs and personal computers.
- On average, 40% of the population aged 52 and over have adopted digital television in their household. Amongst those 75 and over, these rates are less than 30%; for women aged 80 and over, the rates are as low as 15%.
- The frequency with which durables are replaced varies across the wealth distribution, and the spending on each replacement rises sharply with wealth.
- Measures of durable ownership and durable replacement and expenditure-based poverty measures correlate with self-perceived measures of both social status and quality of life, which suggests an important role for consumption measures when thinking about broader social outcomes for the older population.

Standard economic models state that it is consumption of goods and services that provides individuals or households with utility. For many households, consumption will not be equal to income, and hence the two measures may provide different pictures of economic well-being. The elderly population is a group for which this is particularly relevant for two reasons. First, the ‘dissaving’ of any financial wealth accumulated over their previous lifetime provides an opportunity to consume a higher level of goods and services than that allowed by their pension annuities or earned income alone. Second, however, any uncertainties they might have about future needs (such as health care or long-term care costs) or even their remaining length of life may mean that people are unwilling to dissave so much, perhaps even consuming less than their pension income and choosing instead to add to their financial wealth.

The first wave of ELSA data collection concentrated on measuring income and wealth and contained only two very partial measures of household spending – housing costs and food expenditures. In wave 2, the questionnaire contained a more detailed set of questions on spending patterns and it is these we analyse here. It is important to note from the start that it is expenditure, not consumption, which is measured by the ELSA questionnaire (and indeed by related survey instruments such as the ONS Expenditure and Food Survey). Some forms of consumption services in any one particular time period can, of course, be obtained without associated spending in that period. This is the case for durable goods and housing, which both provide a flow of services to owners that negates the need for other expenditures in these dimensions. Consequently, we also include a complete discussion of durable ownership and replacement in what follows, although we make no effort to impute the levels of weekly consumption associated with these durables. This, along with the issue of housing, which is a topic in its own right, is left for future analysis.

It is well established that, on average, retired households in the UK, as in many places around the world, spend less than the regular ‘income’ that comes from their pensions, other annuities and any benefits they may receive. Banks, Blundell and Tanner (1998) discuss this issue with regard to the changing spending patterns around retirement, and Brewer, Goodman and Leicester (2006) show that poverty rates based on spending are much higher than those based on income for pensioners. Both of these studies are based on the official expenditure data in the UK – the Expenditure and Food Survey (EFS) and its previous incarnation, the Family Expenditure Survey (FES). These data are collected for an age-representative sample using a two-week diary method where respondents are asked to record all the purchases they make.

Such diary methods are generally considered too time-intensive for broader studies covering more dimensions, but recent developments have suggested that some degree of success in measurement of expenditures can be achieved by asking simple recall questions about monthly or weekly spending (see Hurd and Rohwedder (2006) or Browning and Madsen (2005)). The second wave of ELSA therefore included recall expenditure questions for food consumed in the home, food consumed outside the home, clothing, leisure expenditures and transfers to individuals outside the household. In addition, a battery of questions on domestic fuel arrangements and bills were introduced to get a precise measure of spending on fuel.

The advantage of collecting such data in a general-purpose study is that expenditure and consumption choices can be analysed in the context of factors other than simply income – more notably, health and well-being, wealth and quality of life. In addition, the size of the ELSA sample and the fact that it comprises only individuals aged 50 and over mean that we have larger samples of potentially important subgroups (such as older single women – a particularly important group for policy) than we would by looking at EFS/FES data. This chapter therefore shows the main empirical patterns and relationships that emerge from such an analysis.

For the purposes of the tabulations here, the ELSA data are analysed at the individual level but expenditures are measured at the household level.[1] Since the ELSA measures of income and wealth are at the benefit-unit level,[2] we restrict our sample to only those individuals living in households in which every benefit unit contains an ELSA sample member. With this sample, we can sum incomes across all the benefit units to construct a household-level measure of income and wealth.[3] Nevertheless, it should be borne in mind throughout this chapter that the analysis refers to those individuals in households in which all members were either age-eligible (i.e. 52 or over in 2004) or the spouse or dependent child of an age-eligible household member. As a consequence, weights are not used in our analysis here.

Finally, we restrict our sample to only those who provided a precise answer for each spending question.[4] The final selected sample comprises 6,557 individuals (2,908 men and 3,649 women) in 4,295 households.

One common measure used by economists is the share of the total budget that is accounted for by a particular commodity or commodity group. Since the ELSA survey only measures a selection of items from the household budget and does not include a recall question on total monthly spending,[5] we cannot compute such a measure. Nevertheless, some degree of adjustment both for household size and for the total spending power of the household is needed if

[1]Although direct comparisons cannot be made from the tables, expenditure measured in ELSA generally compares well to that measured for comparable expenditure categories in the ONS Expenditure and Food Survey (Office for National Statistics, 2005). Relative to the EFS, ELSA appears to record higher levels of food prepared at home and lower levels of food prepared or eaten outside the home, but other items are comparable. However, if we compare relative spending across age groups, for example, the two surveys look broadly similar.

[2]A benefit unit is defined as a single person or a couple and any dependent children that they might have.

[3]The ELSA questionnaire does contain a small number of crude questions on the incomes of other household members that could be used to help estimate total household income for the remaining part of the sample, but this is not an approach we pursue here.

[4]As with all financial questions in ELSA, those replying ‘don’t know’ or refusing to reply are asked a few questions designed to elicit a broad range in which the true value lies. These data are not used here.

[5]See Browning, Crossley and Weber (2003) for a discussion of the use of and problems with such a question.

we are to compare households. As a result, we use a simple equivalence scale to adjust levels of expenditure for differences in household composition.[6] In addition, we compute budget shares as a fraction of net disposable weekly income as opposed to total expenditure.

The income and wealth measures used in our analysis here refer to wave 2 income and wealth levels, and are computed as described in the Socio-economic Position chapter of the ELSA wave 1 report (Banks, Karlsen and Oldfield, 2003). All amounts are expressed in December 2005 prices.

A full breakdown of many of the relevant dimensions of spending and durable ownership by wealth, health and other measures of individual and household circumstances for the ELSA sample is provided in tables in the annex to this chapter. The text that follows refers briefly to some of those tables and focuses on a number of key findings that illustrate potentially important variation in circumstances and outcomes in the older population.

9.1 Weekly spending patterns

In this section, we briefly describe the main differences that emerge when looking at spending patterns by age and sex. Tables 9A.1 to 9A.3 show mean and median equivalised weekly expenditures and budget shares for the six expenditure items we measure:

Food in: This represents spending on foodstuffs brought into, prepared and consumed at home, including meals on wheels but excluding pet food, alcohol and meals outside the home. What is asked for is a typical weekly spend by the household.

Food out: The question asks for a typical monthly spend, from which we derive a weekly value. It includes takeaway meals and meals eaten outside the home, including those at work.

Clothing: Households are asked to recall spending over the previous four weeks, from which we derive a weekly average value. It includes spending on outerwear, underwear, footwear and clothing accessories.

Leisure: Households are again asked about spending over the previous four weeks, from which we derive a weekly average. It includes spending on leisure activities other than eating out. A card is supplied to respondents to remind them what to include, which covers items such as cinema, theatre, sports, subscriptions to clubs, fees for classes, internet and television subscriptions and TV licences.

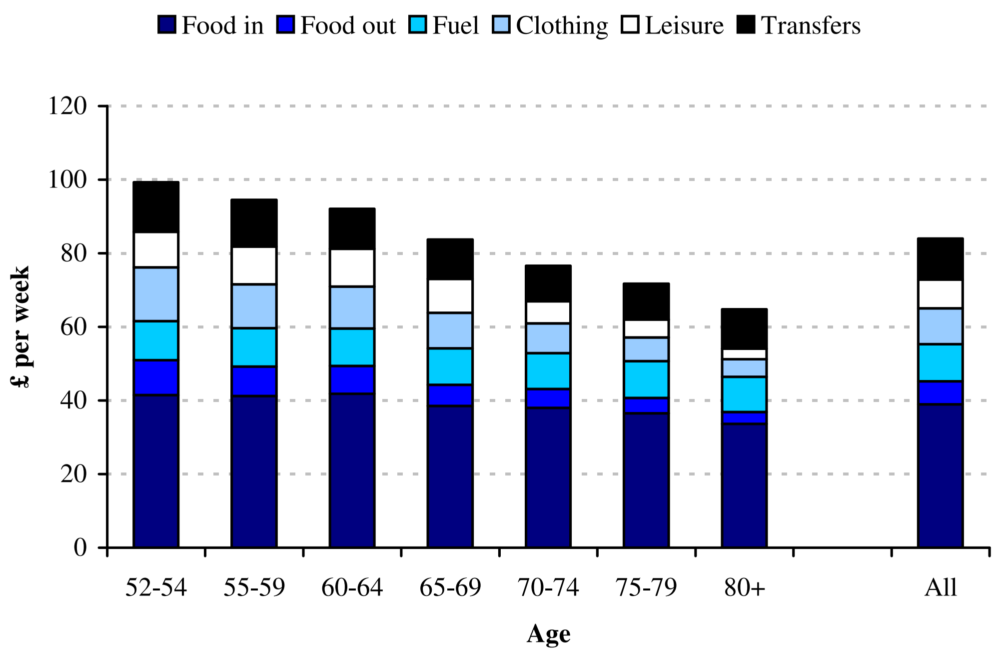
Transfers: Households are asked about the amount of money given to people outside the household, including charity donations, over the last four weeks. A weekly average is taken. It counts only money transfers for which nothing was received in return.

[6]The scale used is the modified OECD equivalence scale, first proposed by Haagenars, de Vos and Zaidi (1994). The scale gives a value of 1 to the first adult in the household, 0.5 to all other adults and 0.3 to all children.

Fuel: Households are asked about all fuel spending, such as on gas, electricity, coal, wood, oil and so on, including the method and frequency of payments and the amount of the last bill or direct debit where applicable. We use all this information to calculate weekly total spending on all sources of domestic fuel.

The analysis shows variation in both mean and median expenditures across age groups and, to a small extent, across sexes at the older ages. Gender differences will appear at older ages but not at younger ages as a corollary of our assumption on household sharing, which is that all spending is shared equally. Remember that we have household levels of spending which we allocate to each household member and we then conduct most of our analysis at the individual level. At older ages, there are likely to be many more single households, whose spending patterns will differ by sex according to preferences and needs. At younger ages, when a higher fraction of households are couples, any gender variation in consumption will not be observed since, in the absence of any specific (but arbitrary) assumptions on household sharing, both men and women in couples are assigned the average spending of their household.

Figure 9.1. Mean weekly expenditure, by age



The expenditures measured by ELSA account for around £80 per week on average across the whole sample. Table 9A.1 and Figure 9.1 show how this is distributed across categories for each age group. Perhaps as expected, spending on food per person stays approximately constant with age, although there is a small decline over the oldest groups. A similar result holds for transfers and domestic fuel. The reduction in total measured spending that occurs between the youngest and oldest age groups is instead due to food out, clothing and leisure expenditures, all of which decline with age.

Table 9A.2 shows the median value of expenditure on each item by age. For non-food items, the median tends to be lower than the mean, suggesting a skewed distribution. An interesting point from this table is that more than half of the over-80s report no expenditure at all on clothing, leisure and food out. This may be a measurement problem – these households spend on these items but less frequently than once a month, say – or may reflect expenditures being more permanently concentrated amongst a relatively small number of households in this age group.

Note that we do not know what is happening to the residual components of consumption since we do not measure total spending or a complete set of individual spending items. We therefore do not know spending on items such as household goods and services, personal items and services, transport, alcohol and tobacco. And we have not analysed expenditure on housing services although it would be possible to do so.[7] There is evidence, however, that total spending is substantially lower for older groups, which would be in accordance with the evidence here that only spending on necessities stays constant with age (see Office for National Statistics (2005), for example).

As well as looking at the levels of expenditure, it is interesting to examine how relative shares of spending on different goods vary. Rich households may spend absolutely more than poor households on food, for example, but it is likely to represent a smaller share of their overall budget. Indeed, the expenditure share on necessities, and particularly food in, has been used as an indirect (and inverse) measure of household welfare for precisely this reason.

Table 9A.3 shows budget shares on each spending item.[8] Figure 9.2 plots budget shares on necessities – food consumed in the home, domestic energy and clothing – which is commonly taken to be a measure of well-being (although note again that we do not include housing costs here). The graph shows a rise in the budget share of necessities with age, predominantly driven by the rise in the budget share of food. This in turn indicates lower levels of economic welfare amongst the older households in our sample.

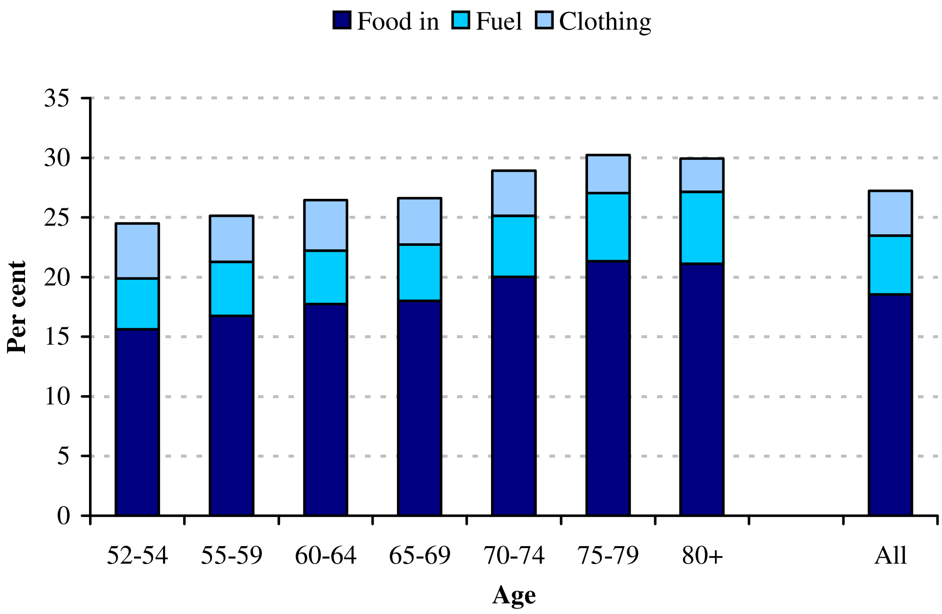
There is an important caveat here, however. Since Figure 9.1 shows a small fall in levels of food expenditures, the rise in the budget share is being driven by the fact that the older households in our sample have lower incomes than their younger counterparts (see Banks, Karlsen and Oldfield (2003) for detailed analysis of the wave 1 ELSA data on this). Care should be taken when interpreting these age patterns in the share on necessities as being 'caused by' individuals ageing, since both cohort effects (whereby older households in any one year come from cohorts that were poorer over their lifetimes) and differential mortality (whereby richer individuals within each cohort are more likely to live to older ages) will be affecting the age profile observed in our wave 2 data.

---

[7]Housing, however, needs to be treated more like a durable good in the sense that consumption services need to be imputed for owner-occupiers who own their houses outright. This is particularly important for the elderly population, where this group is largest.

[8]As discussed above, typically we think of expenditure shares out of total spending; since we do not observe total spending in these data, we instead look at the share of total *income* spent on the various goods.

Figure 9.2. Budget shares on necessities, by age



Other than this, there is relatively little variation in budget shares of the measured items by age, although the more detailed gender splits in Table 9A.3 show some variation in shares by sex at older ages. Indeed, women in the oldest three age groups have systematically higher budget shares on the three necessities, once again suggesting lower economic well-being for these groups.

One item of spending in Tables 9A.1 to 9A.3 has not been discussed so far, and that is transfers of money to people (or charities) outside the household. These tables show that transfers are proportionately highest amongst the oldest age groups and on average they account for around 4% of income, which is more than these households spend on clothing or on leisure.[9] This is a potentially interesting finding, relating as it does to 'intergenerational' transfers to children and grandchildren, which are a key dimension to bear in mind when thinking about bequests, inheritance taxation and the effects of future changes to pension incomes. Hence the issue of transfers outside the household is one that we will discuss more in the next section when we look at spending patterns and how they vary by dimensions other than age and sex.[10]

Tables 9A.4 and 9A.5 repeat our analysis of mean expenditures and budget shares by broad age group and household type. These show the relatively small differences in expenditure patterns between single men, single women and couples, although some differences are apparent for budget shares as opposed to levels of (equivalised) weekly spending.

[9]Looking into the data in more detail, this result is partially driven by large transfers being highly concentrated within some households. If we look at individual households, only 38% spend more on transfers than on clothing and 42% spend more on transfers than on leisure.

[10]The FES/EFS also includes a measure of transfers defined as money outside the home, charity and 'presents', a measure that technically speaking should also include money sent abroad, which ours does not.

9.2 Spending patterns by wealth and health

The ELSA survey is the first survey with information on expenditures that also collects very detailed information on wealth and health for all respondents.[11] As such, it provides the first opportunity to look at how spending patterns vary across the wealth distribution. As argued above, wealth represents a better measure of the permanent economic status of older people than income, since it captures the stock of assets that they could use to finance consumption if necessary.[12] This is particularly true for individuals and households that have not yet retired and annuitised their wealth.

Tables 9A.6 to 9A.11 show mean expenditures and budget shares by wealth, general health status (as measured by self-reported health) and disability (as measured by self-reported limitations with activities of daily living (ADLs)).

As one would expect, spending patterns vary across the wealth distribution. Those aged 60–74 who are in the richest wealth quintile of benefit units (with a net non-pension wealth of more than £243,000) spend around £13 more per week on food in than those in the poorest quintile (net non-pension wealth of less than £25,000). But as a share of income, these poorer households spend 6 percentage points more than their richer counterparts. Expenditure shares of food in and fuel tend to fall across the wealth distribution, whilst shares of leisure, food out, transfers and clothing tend to rise.

Figure 9.3 pools numbers from Table 9A.7 to provide budget shares on necessities – food in, fuel and clothing – by wealth. The share typically declines with wealth within age groups; those in the poorest wealth quintile in each age group typically spend around 30% of their income on necessities. For the youngest age group, the distinction in the middle of the wealth distribution is very small but those at the top have a smaller necessities share. For the oldest age group, there is little difference in the necessities share until the very highest wealth quintile. Controlling for wealth, necessities shares tend to rise with age, as we would expect given Figure 9.2, with the important exception of the very poorest wealth quintile, where age seems not to influence the necessities share.

As noted in the previous section, expenditure on transfers outside the household seems large – it exceeds, on average, spending on clothing, on food out and on leisure for the ELSA sample. Although we do not know for whom these transfers are intended – children, grandchildren or charity, for example – this is a potentially important finding and one that warrants further investigation in the future with more detailed data. Figure 9.4 shows that there is a strong association between the share of income spent on transfers and wealth at all ages, with more than twice the fraction of income being devoted

[11]The British Household Panel Survey collected summary information on financial wealth in 1995 and 2000 but no information on physical assets and has only limited information on food consumption and less detail on health than the ELSA instrument. The Expenditure and Food Survey contains very detailed measures of expenditure but no indicators of wealth or health.

[12]Even if an individual chose not to run down any accumulated housing wealth this should be seen as a choice to consume the consumption services that their housing wealth provides.

to transfers at the top of the wealth distribution as at the bottom. The transfer expenditure share also rises with age, on average, after age 60. Before age 60, the patterns by wealth are somewhat different.

Figure 9.3. Budget shares on necessities, by broad age and wealth

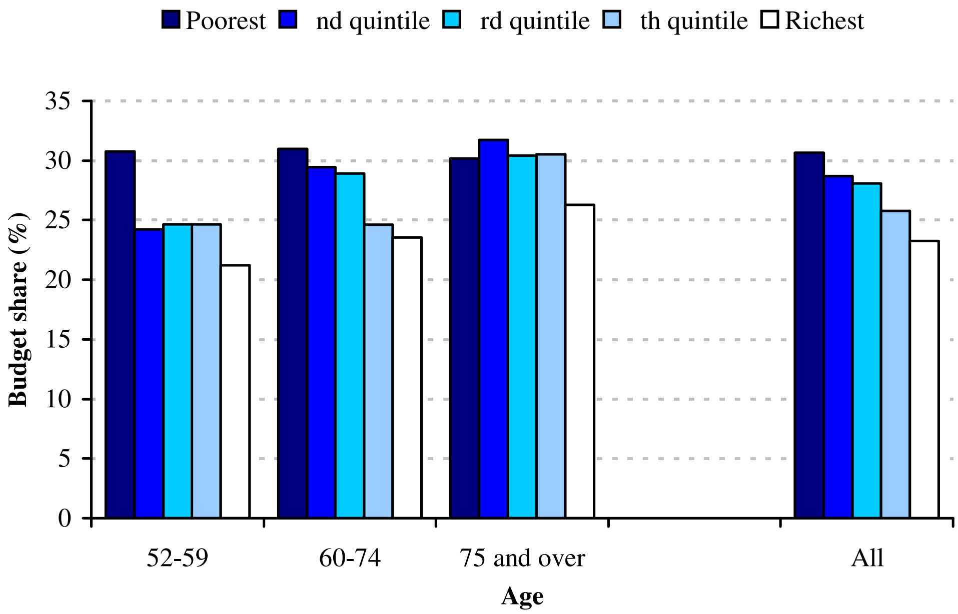
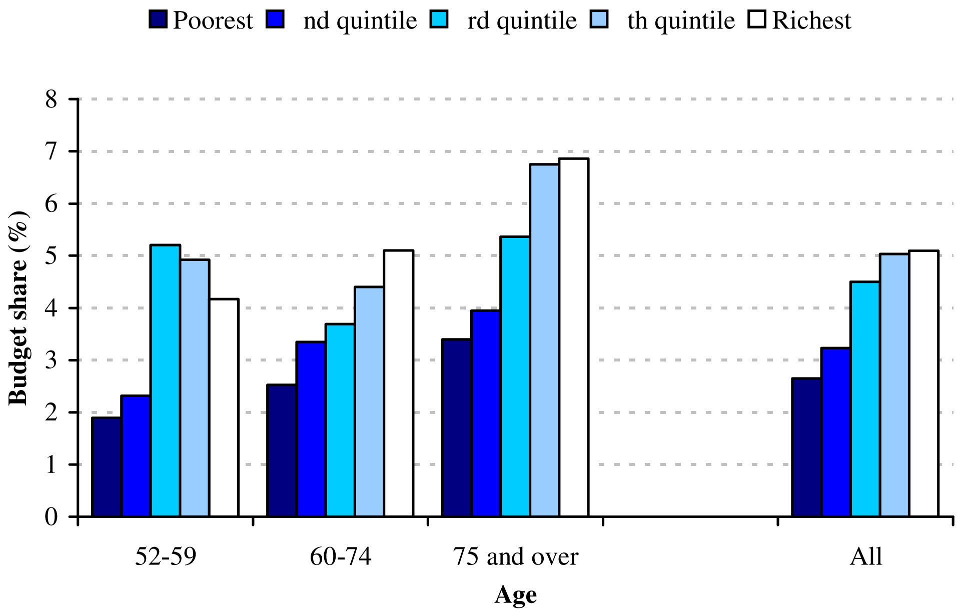


Figure 9.4. Transfers as a fraction of income, by broad age and wealth



In fact, these differences mask even more acute differences across the wealth distribution. Table 9.1 shows that the fraction of individuals giving any transfers also varies by wealth, as does the average amount (in pounds per week) for those that do give any transfers. For those in the poorest wealth quintile, a consistent finding across ages is that around half of households make transfers and the average transfer for these households is just over £9 per week. The prevalence of transfers and the average amount given then rise across the wealth distribution. Variation in both prevalence and generosity by age is smaller. However, the oldest and wealthiest group makes the largest average transfers, of just over £33 per week.

Table 9.1. Transfers, by broad age and wealth

	Poorest	**2nd**	**3rd**	**4th**	**Richest**	**All**
Proportion making transfers, %						
Aged 52–59	50.0	58.7	71.2	80.0	75.2	68.1
Aged 60–74	49.8	60.1	71.1	72.3	78.1	67.2
Aged 75+	54.4	59.9	67.2	72.5	72.5	63.9
All	51.4	59.7	70.2	74.7	76.2	66.7
Average amount, £ per week						
(those with transfers > 0 only)						
Aged 52–59	9.3	12.1	18.9	22.7	24.6	19.0
Aged 60–74	9.1	10.6	11.1	17.6	24.4	15.6
Aged 75+	9.3	10.1	14.9	16.6	33.2	15.9
All	9.2	10.9	14.2	19.1	25.8	16.7

Note: Average amounts are per adult equivalent.

Transfers clearly play an important role in the budgeting decisions of elderly households. Intra-family income transfers are an important margin for income smoothing in the event of shocks, and indeed the flow need not be exclusively one from parent to child. Net transfers for elderly households may ultimately be negative in the event that children start to support parents who, say, have not saved sufficiently for their retirement or who suffer a negative health shock. It will be increasingly important to measure such mechanisms as the degree of private provision in retirement incomes increases.

Although transfers out of the household appear quite important for many elderly households, transfers *into* the household from outside, such as regular payments from relatives or ex-partners, appear to be an unimportant source of income for most ELSA respondents. Only around 1% of the sample report regular payments into the household from outside.

Finally, expenditures vary with self-reported health status in the way we might expect. Expenditure on each good declines with health status, both overall and within age groups, with the smallest declines observed for food in and fuel and the largest declines for food out, leisure, transfers and clothing (Table 9A.8). The relationship between the number of limitations in activities of daily living (ADLs) and expenditure is slightly less clear-cut: though a higher number of limitations tends to reduce expenditures on most items, for fuel the reverse is true (Table 9A.10). Given the strong correlations between health, wealth and other socio-economic variables presented in this volume and elsewhere, a full multivariate analysis would be required to really understand the relationships between health, expenditure and well-being.

9.3 Consumer durables

Although typically we use the terms ‘expenditure’ and ‘consumption’ interchangeably, durable goods provide one clear example of the distinction that should be made between the two. Imagine a household that purchases a TV at the start of the year for £500. A survey that records households’ expenditures week-by-week would record a pattern of £500, £0, £0, £0 and so on. However, the consumption flows the household receives from that TV would not follow the same pattern – the household would get some consumption benefits from the TV each week. Imagine the set was expected to last for 250 weeks before being replaced; one possibility is that we could say the consumption value from the TV would be £2 each week.

Durables also have an important role to play in terms of how consumers react to negative financial shocks in the face of liquidity constraints or limited financial resources (see Browning and Crossley (2004)). Consumers may decide either to delay or to forgo altogether the purchase of a new durable good that they had been saving for and instead use the savings to maintain their usual consumption of non-durables, for example.

Of interest is not just whether or not people own durables but also the quality, as this will affect the consumption benefits available from the good. Quality will be a function of the age of the good and the price paid.

Tables 9A.12 to 9A.20 provide a detailed breakdown of the ownership of 12 different durable goods asked about in ELSA: TV, video recorder (VCR), CD player, freezer (deep freeze or fridge/freezer), washing machine, tumble dryer (or washer/dryer), dishwasher, microwave oven, computer, digital/cable/ satellite television, landline telephone and DVD player.[13] The tables also show the percentage of people that own each durable who have either bought or replaced them during the last two years and the average price paid amongst those households that did so.

Overall, access to durables tends to be quite high for the ELSA sample: 99% have a television, 97% a landline phone, 96% a freezer, 92% a washing machine, 90% a VCR and 89% a microwave oven. On the other hand, just 56% have a dryer, 50% a computer, 47% a DVD player, 40% digital television and 35% a dishwasher.

As we would expect, ownership rates tend to be higher amongst younger sample members: three-quarters of the under-55s have a DVD player compared with just 14% of those aged 80 or more, for example. Typically, differences across the sexes are smaller – where there is a difference, ownership rates amongst males tend to be slightly higher.

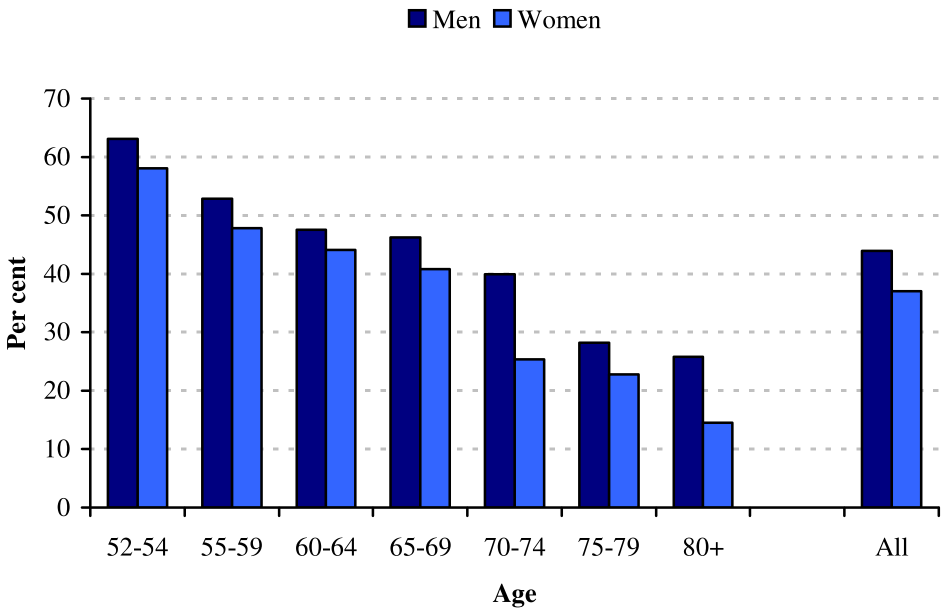
For some items, there are only small differences across the wealth distribution: 99% of people own a television in each wealth quintile, for example. For others, there are substantial differences: 40% of those in the poorest wealth quintile own a dryer, compared with 68% of those in the richest; 9% of people

[13]Note that these results are at the individual level although the durable questions are asked at the household level; the figures therefore represent the percentage of people living in households that have access to each of the durable goods.

in the poorest quintile own a dishwasher compared with 64% in the richest; and 25% of those in the poorest quintile own a computer compared with 76% in the richest.

Replacement/purchase rates for the durables tend to be lower. Not surprisingly, the greatest replacement rates are found for those goods that are more recent innovations, such as DVD players, or where quality changes are more frequent, such as computers: 44% of DVD player owners bought or replaced them in the last 2 years, as did 23% of TV and computer owners. Replacement rates tend to decline quite strongly with age, as we might expect, although interestingly there is no particular trend for people at the higher end of the wealth distribution to replace durables more frequently. However, when they are replaced, wealthier people do tend to purchase more expensive models (for example, the average replacement price for a computer is £532 for people in the poorest wealth quintile and £942 for those in the richest), so there is certainly a quality effect and consumption will be higher as a result. In addition, more expensive (and presumably higher-quality) durables may need to be replaced less frequently, which might explain the lack of association between wealth and replacement rates.

Figure 9.5. Percentage with digital television, by age and sex

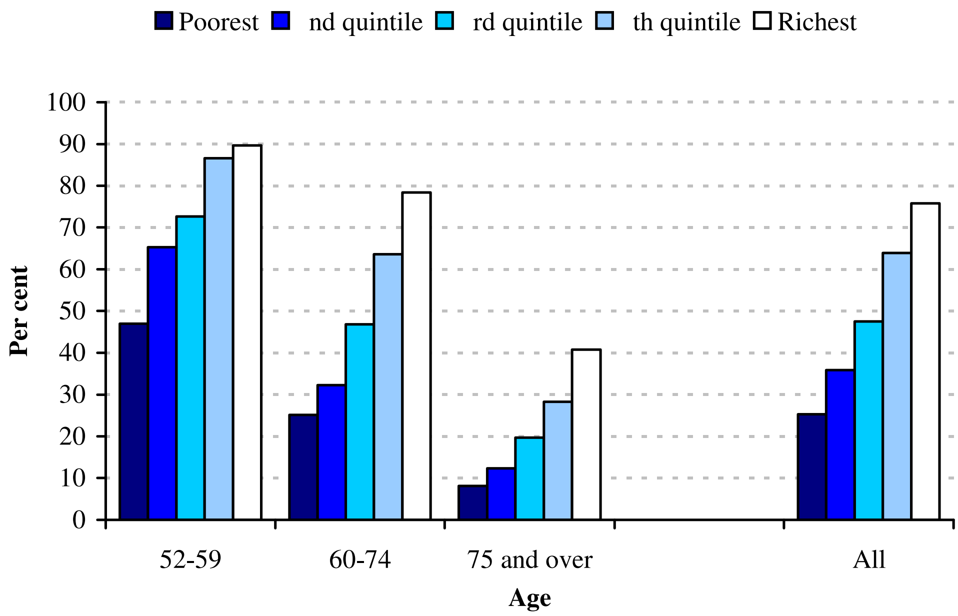


The rest of this section will focus on a couple of durables where overall ownership prevalence is lower and where there is some view that elderly households may be in some sense 'behind' their younger counterparts. For example, there is much concern about whether elderly will be left behind by the switch to digital television (see, for example, House of Commons Culture, Media and Sport Committee (2006)). We can look at this directly: less than half of those aged 60 or more had adopted digital television by wave 2 of

ELSA, and less than a quarter of those aged 75 or more had done so.[14] Adoption rates appear particularly low for the most elderly women and Table 9A.15 shows that they are as low as 11.9% for single women aged 75 and over. There is a natural concern about the potential effects of the analogue switch-off starting in 2008.

Ownership of personal computers is quite high amongst younger groups of ELSA respondents, but there are strong differences across the wealth distribution. Just under half of those aged under 60 in the poorest wealth quintile have a computer in the household, compared with almost 90% of those in the richest quintile. For the oldest pensioners, ownership rates of a personal computer are particularly low, especially for the poorest pensioners, of whom less than 10% own one.

Figure 9.6. Percentage with personal computer, by broad age and wealth

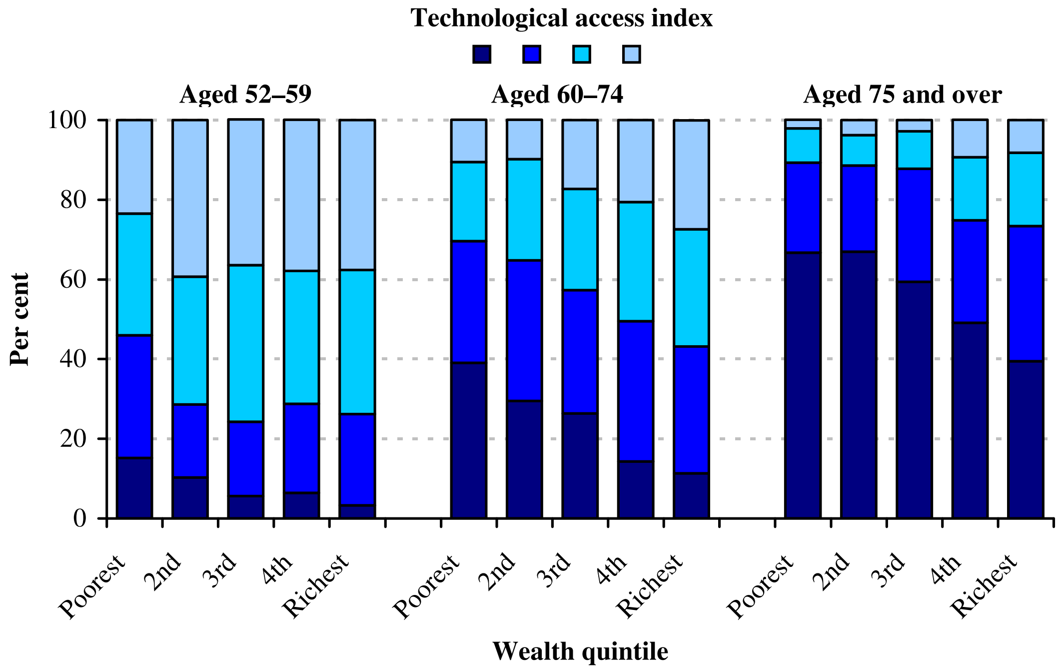


One issue is whether ownership of durable goods tends to be clustered amongst the same households or not, i.e. do households tend to own most of the durables or none at all? In particular, this is of interest for what we might think of as the 'high-tech' durables of DVD player, personal computer and digital TV. Households without these items are typically seen as being left behind technologically. We construct an ad-hoc 'technological access index' which takes a value of 0 to 3 according to how many of these durables each household owns. Figure 9.7 plots this index by wealth and age group.

---

[14]This compares with an adoption rate of around 62% of all households as at 2005Q1 (Ofcom, 2005). Analysing the ELSA sample at the household rather than the individual level reveals that 37% of households in the ELSA sample used in this chapter had access to digital TV.

Figure 9.7. Number of types of high-tech consumer durables owned (DVD, PC, digital TV), by broad age and wealth quintile



There is considerable variation by both age and wealth. Around 40% of those aged under 60 and in the second or higher wealth quintile have all three items, compared with only 2% of those aged 75 and over in the poorest wealth quintile. Around half of the oldest group have none of the items at all, though this again varies with wealth. However, it is worth noting that there is a considerable spread of the population across all four possible values of the index; it is not necessarily the case that households that own some 'high-tech' items own all of them.

9.4 Expenditure-based poverty measures

The presence of expenditure on domestic fuel allows us to analyse one important measure of welfare that the government now explicitly targets, namely fuel poverty. Government policy is to 'end fuel poverty for vulnerable households as far as is reasonably practicable by 2010' (Department for Environment, Food and Rural Affairs, 2004). Vulnerable households include those with children, long-term disabled people and elderly people. Against a recent background of rising fuel prices, this measure of well-being may become a particularly important one, and potentially a challenging one to reduce.

In England, a household is officially classified as living in 'fuel poverty' if it is assessed as needing to spend more than 10% of its income on domestic fuel in order to maintain a satisfactory temperature in the home.[15] Since we have

[15]See the DTI website at http://www.dti.gov.uk/energy/fuel-poverty/index.html.

measures of fuel expenditure and household income from ELSA, we can determine the proportion of our sample living in households that *currently* spend more than 10% of their income on fuel. For convenience, we will refer to these households as 'fuel poor', though in practice some of them may not *need* to spend as much and so would not officially be classified as fuel poor. Equally, some households that do not spend 10% of their income on fuel may *need* to do so and so would be officially classified as fuel poor. Since we have no way of knowing the fuel spending needed, we use the fuel spending observed, and this should be borne in mind throughout the discussion of these results.

Overall, 8.3% of the sample is fuel poor by our definition: 6.7% of men and 9.6% of women. Government figures for England for 2003 (Department of Trade and Industry, 2005) show that amongst households where the *youngest* household member is aged 60–74, fuel poverty rates were 8.2%; where the youngest household member is aged 75+, the fuel poverty rate was 15.9%. Our figures suggest that 7.1% of those aged 60–74 and 11.5% of those aged 75+ are currently spending more than a tenth of their income on fuel. If anything, we appear to obtain slightly lower rates by this measure than the government does by its definition, although the effects of real income growth between 2003 and 2004–05 and of the sample selections we use here remain to be quantified. However, the contribution of our analysis is less the overall prevalence but more the evidence on how fuel poverty covaries with other characteristics.

We also devise a more ad-hoc measure of poverty based on whether the share of income spent on basics (food in, fuel, clothing) exceeds 50%.

Tables 9A.21 to 9A.23 and Figures 9.8 and 9.9 show how these measures vary by age, sex, broad household type and wealth. A greater proportion of women than of men live in fuel poverty within each age group, and rates of fuel poverty increase with age (though not in a particularly smooth manner). As we would expect, the wealth gradient is steep, although there is non-negligible fuel poverty in the top quintile.[16]

Tables 9A.24 and 9A.25 show how these indicators vary by self-reported health and by disability measures respectively. We might be tempted to think about causality here, but this would be a step too far. Nevertheless, though, these do show higher rates of poverty amongst the more disadvantaged groups: 5% of those aged 60–74 who report 'excellent' or 'very good' health are in fuel poverty compared with 10% of those with 'fair' or 'poor' health. Interestingly, past the age of 75 the health gradient disappears, and this is true for both self-reported and ADL measures of health.

[16]Some of this may be due to imputation of the wealth variable. There is far less imputation required for income, which forms the denominator of fuel share, and even were income data to be missing for those households where wealth is missing, the imputations are made independently so the correlation between income and wealth is not ensured for these households. The pattern by wealth quintile, including the rather low prevalence of fuel poverty in the middle of the wealth distribution for the under-60s, is unaffected by whether we include or exclude the imputed observations.

Figure 9.8. Fuel poverty rate, by age and sex

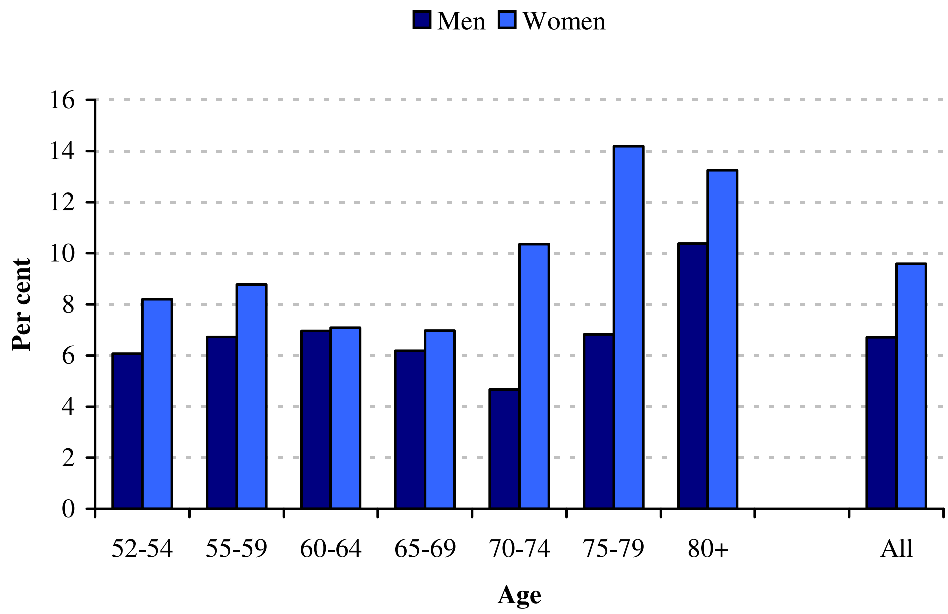
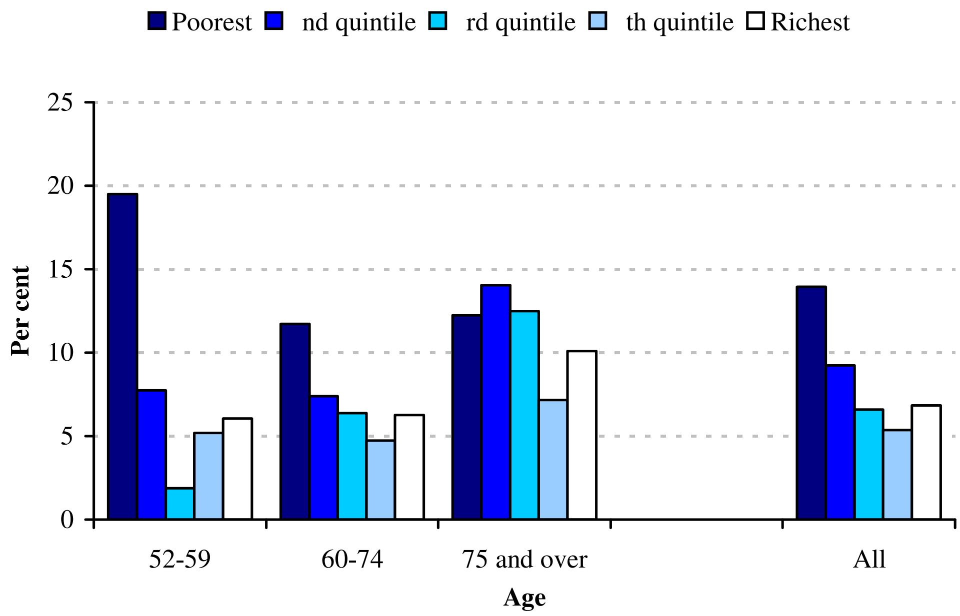


Figure 9.9. Fuel poverty rate, by broad age and wealth quintile



A similar picture emerges when we switch attention from fuel poverty to a 'high basics' measure of poverty. The two measures have similar overall prevalences, with 8.3% of people spending more than 50% of their income on basics, the same share we observe for fuel poverty. This is not unexpected since, of course, fuel is one of the components of the basics measure and we would expect spending levels on different goods to vary systematically across households. However, it is interesting that the overlap between the measures is not as strong as one might expect. Of those who are fuel poor, only 44% also have a basics share in excess of 50%; of those with a high basics share, only 44% also live in fuel poverty. Taking both measures, 3.6% of people are in poverty; 4.7% are fuel poor only; 4.7% have a high basics share only; and 87% of people are not in poverty on either measure.

The next section looks at how these expenditure-based poverty measures, along with the durable ownership rates that were considered previously, covary with individuals' subjective measures of their social status and quality of life.

9.5 Poverty indicators, durable ownership and subjective well-being

Another advantage of ELSA is the relatively good data on individuals' assessment of their own well-being and social status. Such dimensions might be thought to relate to consumption and poverty, and in this section we consider the empirical evidence for this.

As with all tables in this volume, caution should be taken in interpreting any cross-sectional correlation between variables as a causal relationship since causality could run either, neither or both ways. In the case where those who have low subjective measures of well-being tend to have lower levels of consumption and higher measures of consumption-based poverty indicators, this need not suggest that poor subjective well-being reduces consumption nor that low consumption causes poor subjective well-being. An alternative explanation is that, for example, people who have a low subjective measure of social status on the ladder score (see below) are people who have been excluded from society earlier in life through having no job or poorly-paid jobs, such that they both feel socially excluded and have a lower lifetime income from which to consume. Making causal statements about the relationships between health, well-being, social status and consumption requires careful empirical analysis to control for all relevant dimensions, and this is likely to be one of the key contributions of the ELSA data to the empirical literature.

Tables 9A.26 and 9A.27 detail poverty indicators by broad age and two measures of subjective well-being – the CASP-19 quality-of-life score (broken down into three equally sized groups, or tertiles)[17] and the self-reported social status ('ladder') score, broken down into six groups.[18] Those in the highest CASP grouping tend to have lower rates of the two poverty measures, particularly again amongst younger ages. Equally, those who view themselves nearer the top of the social ladder have lower poverty rates, with again a smaller gradient for the oldest age group. Figure 9.10 graphically illustrates this trend for fuel poverty by broad age group and CASP tertile. Fuel poverty falls from around 11% to 4% as we move from lowest to highest CASP tertile for the youngest group; for the oldest group, whilst there is still a decline in

---

[17]For details of CASP-19, see Netuveli et al. (2006).

[18]As in wave 1, and also in Marmot et al. (1991), individuals are asked to rank themselves on a simple 10-rung ladder representing where people stand in society. Data are then coded into 20 points: 5, 10, …, 95 and 100. For the purposes of our analysis, we group the data into six groups: 0–30, 35–45, 50/55, 60/65, 70/75 and 80–100.

Figure 9.10. Fuel poverty rate, by broad age and tertile of CASP-19 score

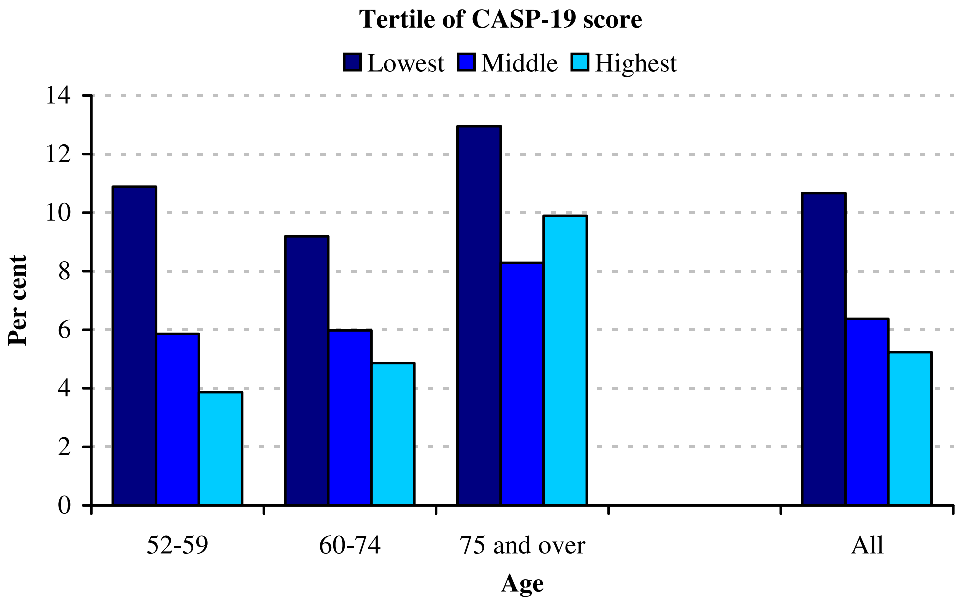
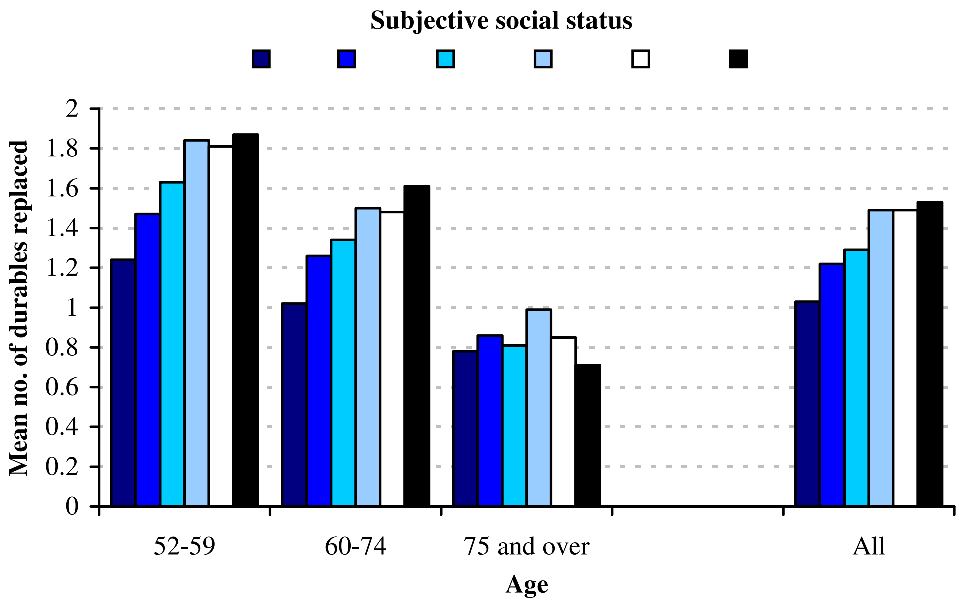


Figure 9.11. Number of durables replaced in last 2 years, by broad age and subjective social status



Note: Subjective social status measured by response to the ladder question (see footnote 18 or Marmot et al. (2003) for further details).

poverty from 13% to 10% across the CASP tertiles, those in the middle tertile actually have a slightly lower poverty rate, and the differences across CASP tertiles are much smaller.

Tables 9A.28 and 9A.29 show that durable ownership and replacement are also related to subjective social status, but they also show that variations in durable ownership and replacement rates by CASP tertile are small. Those in the lowest well-being tertile own, on average, 8.5 durables from the list above and have replaced 1.3 in the last 2 years; those in the highest tertile own 9.3 and have replaced 1.5.

Figure 9.11 shows systematic differences in durable replacement by self-perceived social status for all but the oldest groups (where we know replacement is lower, due presumably to shorter horizons, as discussed above).

Clearly, as the discussion at the start of this section made clear, a fuller, multivariate analysis of the relationship between these factors will be required in future research, preferably making use of the longitudinal nature of the ELSA data. Are these observed correlations simply due to the fact that low-social-status individuals will typically be low-income/low-wealth individuals or is there some independent role for social status in determining consumption, poverty and durable ownership? Or is there a reverse relationship – is there an independent status-related role for durable ownership in creating perceptions about quality of life and social status that goes beyond income, consumption and wealth, for example? There are many such questions linked to the policy debates on well-being and the measurement (and even meaning) of poverty and deprivation. The analysis we have presented here is only a first step in the investigation of these issues.

9.6 Conclusions

Data on consumption expenditures and durable ownership provide key information on an important dimension of economic well-being that is not covered by either income or wealth. As well as reflecting individuals' permanent levels of well-being and providing information on the direct inputs into household utility and well-being, consumption data also tell us something about the way individuals view their own resources – uncertainty about the future, perhaps greater for some individuals than for others or perhaps more worrisome for some than for others, can cause individuals to underconsume relative to the financial or 'annuity' value of their resources. Similarly, individuals with a strong bequest motive may choose to spend less on themselves as they age.

The age patterns in consumption shown in this chapter are striking, particularly for non-necessary items and for durable replacement. Given that large components of income such as pensions and state benefits are typically indexed to inflation after retirement, this suggests a saving rate that rises with age after retirement, although further evidence on the other items of household budgets would be required to make such a finding absolutely concrete. Any possible cohort effects as well as the effects of differential mortality would also need to be investigated. If the conclusion holds up, as it is likely to, this provides food for thought with regard to the provision of retirement resources, since most retirement income institutions (state/private pensions and annuity products) are predicated around providing a (real) income stream that does not vary with age post-retirement. In general, a deeper understanding of the consumption preferences and needs of the older population, and how they change with age, is required.

Looking beyond age effects, once again the main message emerging is that the ELSA data reveal very strong positive correlations between various different dimensions of advantage – spending and consumption, wealth, health and subjective well-being – and this correlation varies within and between age groups.

All of our analysis in this chapter has been, by necessity, cross-sectional in nature as a result of the fact that wave 2 was the first occasion on which detailed information on consumption measures was collected in the ELSA interview. It will be important to collect longitudinal information in these dimensions, allowing us to unpack how all these dimensions evolve as respondents age. Even in isolation, understanding how consumption patterns change with age for individuals as they retire and then as they move into older ages, for example, will be extremely informative. Since annuity incomes are relatively constant over this time, changes in consumption are likely to reflect changing preferences and needs rather than changes to permanent or transitory resources. But coupled with the detailed measures repeatedly collected in other dimensions, the ELSA data will provide an unparalleled source of data for investigating the consumption and well-being of pensioners in England in the future.

References

Banks, J., Blundell, R. and Tanner, S. (1998), 'Is there a retirement savings puzzle?', *American Economic Review*, 88: 769–788.

Banks, J., Karlsen, S. and Oldfield, Z. (2003), 'Socio-economic position', in M. Marmot, J. Banks, R. Blundell, C. Lessof and J. Nazroo (eds), *Health, Wealth and Lifestyles of the Older Population in England: The 2002 English Longitudinal Study of Ageing*, London: Institute for Fiscal Studies (http://www.ifs.org.uk/elsa/report_wave1.php).

Brewer, M., Goodman, A. and Leicester, A. (2006), *Household Spending in Britain: What Can It Teach Us about Poverty?*, Bristol: Policy Press.

Browning, M. and Crossley, T. (2004), 'Shocks, socks and stocks: smoothing consumption over a temporary income loss', CAM Research Paper, Copenhagen.

Browning, M., Crossley, T. and Weber, G. (2003), 'Asking consumption questions in general purpose surveys', *Economic Journal*, 113: 540–567.

Browning, M. and Madsen, E. (2005), 'Consumption', in A. Börsch-Supan, A. Brugiavini, H. Jurges, J. Mackenbach, J. Siegrist and G. Weber (eds), *Health, Ageing and Retirement in Europe: First Results from the Survey of Health, Ageing and Retirement in Europe*, Mannheim: MEA.

Department for Environment, Food and Rural Affairs (2004), *Fuel Poverty in England: The Government's Plan for Action*, London: DEFRA (http://www.defra.gov.uk/environment/energy/fuelpov/pdf/fuelpov_actionplan.pdf).

Department of Trade and Industry (2005), *The UK Fuel Poverty Strategy: 3rd Annual progress report*, London: DTI (http://www.dti.gov.uk/files/file10717.pdf).

Haagenars, A., de Vos, K. and Zaidi, M. A. (1994), *Poverty Statistics in the Late 1980s: Research Based on Micro-Data*, Luxembourg: Office for Official Publications of the European Communities.

House of Commons Culture, Media and Sport Committee (2006), *Analogue Switch-off: A Signal Change in Television (Volume 1)*, London: TSO.

Hurd, M. and Rohwedder, S. (2006), 'Some answers to the retirement-consumption puzzle', RAND Working Paper WR-342 (http://www.rand.org/pubs/working_papers/2006/RAND_WR342.pdf).

Marmot, M. G., Davey Smith, G., Stansfield, S., Patel, C., North, F. and Head, J. (1991), 'Health inequalities among British civil servants: the Whitehall II study', *Lancet*, 337: 1387–1393.

Marmot, M., Banks, J., Blundell, R., Lessof, C. and Nazroo, J. (eds) (2003), *Health, Wealth and Lifestyles of the Older Population in England: The 2002 English Longitudinal Study of Ageing*, London: Institute for Fiscal Studies (http://www.ifs.org.uk/elsa/report_wave1.php).

Netuveli, G., Wiggins, R. D., Hildon, Z., Montgomery, S. M. and Blane, D. (2006), 'Quality of life at older ages: evidence from the English Longitudinal Study of Aging (wave 1)', *Journal of Epidemiology and Community Health*, 60: 357–363.

Ofcom (2005), *Digital Television Update Q1 2005*, (http://www.ofcom.org.uk/research/tv/reports/dtv/dtu_2005_q1/261567/).

Office for National Statistics (2005), *Family Spending: A Report on the 2003–04 Expenditure and Food Survey*, London: ONS (http://www.statistics.gov.uk/downloads/theme_social/Family_Spending_2003-04/FamilySpending2003-04.pdf).

Annex 9.1
Tables on expenditure and consumption

Table 9A.1. Mean equivalised spending on each item, by age and sex

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	£ p.w.	£ p.w.	£ p.w.	£ p.w.	£ p.w.	£ p.w.	£ p.w.	£ p.w.
Men								
Food in	42.63	40.43	43.02	38.60	38.16	38.26	34.33	39.46
Food out	10.48	8.35	7.70	6.24	5.96	5.33	3.83	6.85
Fuel	11.50	10.05	10.11	9.98	9.27	9.88	9.92	10.03
Leisure	10.40	10.53	11.44	9.81	7.08	6.27	3.78	8.77
Transfers	14.63	12.17	11.02	9.75	10.77	11.21	10.22	11.23
Clothing	15.29	11.60	11.02	9.14	7.86	6.71	5.25	9.56
Women								
Food in	40.73	41.94	40.88	38.40	37.94	35.17	33.20	38.60
Food out	8.88	7.69	7.39	5.27	4.40	3.23	2.72	5.79
Fuel	10.16	10.76	10.29	9.93	10.14	10.05	9.33	10.13
Leisure	9.19	10.13	9.19	8.56	5.01	3.82	2.25	7.15
Transfers	12.76	13.10	10.78	11.71	8.63	8.49	10.90	11.02
Clothing	14.15	12.08	11.74	10.15	8.24	6.26	4.58	9.79
All								
Food in	41.45	41.25	41.83	38.50	38.04	36.53	33.66	38.98
Food out	9.48	8.00	7.53	5.75	5.13	4.15	3.17	6.26
Fuel	10.67	10.43	10.21	9.95	9.73	9.98	9.57	10.08
Leisure	9.64	10.31	10.19	9.16	5.98	4.90	2.87	7.87
Transfers	13.46	12.67	10.89	10.77	9.63	9.69	10.62	11.11
Clothing	14.57	11.86	11.42	9.67	8.06	6.46	4.85	9.69
***Unweighted* N**								
Men	*263*	*550*	*474*	*517*	*449*	*337*	*318*	*2,908*
Women	*439*	*649*	*592*	*559*	*512*	*430*	*468*	*3,649*
All	*702*	*1,199*	*1,066*	*1,076*	*961*	*767*	*786*	*6,557*

Table 9A.2. Median equivalised spending on each item, by age and sex

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	£ p.w.	£ p.w.	£ p.w.	£ p.w.	£ p.w.	£ p.w.	£ p.w.	£ p.w.
Men								
Food in	40.52	37.74	40.88	34.64	34.40	34.64	33.77	35.45
Food out	5.92	4.76	4.74	3.19	3.16	2.37	0.47	3.50
Fuel	9.45	8.77	8.95	8.79	8.19	8.12	8.34	8.65
Leisure	5.44	4.75	4.76	3.95	2.67	0.00	0.00	3.16
Transfers	3.17	1.58	2.35	2.37	1.91	2.36	1.89	2.34
Clothing	6.32	4.74	4.74	3.92	3.15	1.58	0.00	3.18
Women								
Food in	37.87	40.76	40.52	35.46	34.53	34.23	30.96	34.64
Food out	4.80	4.74	4.74	3.16	2.36	0.67	0.00	3.16
Fuel	9.01	9.24	9.05	8.66	8.55	8.81	8.42	8.85
Leisure	5.58	4.23	3.30	3.19	1.57	0.00	0.00	2.36
Transfers	2.64	2.39	2.60	3.15	2.17	2.36	1.90	2.37
Clothing	6.36	4.76	5.86	4.78	3.71	0.20	0.00	3.78
All								
Food in	38.95	40.52	40.76	35.05	34.40	34.31	31.07	34.65
Food out	5.26	4.74	4.74	3.18	2.39	1.19	0.00	3.17
Fuel	9.27	9.01	9.02	8.73	8.35	8.45	8.40	8.76
Leisure	5.54	4.70	3.98	3.54	1.90	0.00	0.00	2.54
Transfers	3.14	2.36	2.37	2.86	2.03	2.36	1.89	2.37
Clothing	6.36	4.76	5.28	4.70	3.18	1.11	0.00	3.46
***Unweighted* N**								
Men	*263*	*550*	*474*	*517*	*449*	*337*	*318*	*2,908*
Women	*439*	*649*	*592*	*559*	*512*	*430*	*468*	*3,649*
All	*702*	*1,199*	*1,066*	*1,076*	*961*	*767*	*786*	*6,557*

Table 9A.3. Mean budget shares of each item, by age and sex

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	*%*	*%*	*%*	*%*	*%*	*%*	*%*
Men								
Food in	14.5	16.5	17.9	16.9	19.5	20.6	20.2	18.0
Food out	3.0	2.6	2.8	2.3	2.4	2.4	2.0	2.5
Fuel	4.0	4.3	4.4	4.5	4.6	5.1	5.8	4.6
Leisure	2.9	3.6	4.2	3.6	3.2	2.5	2.2	3.3
Transfers	3.8	3.6	3.6	3.5	3.8	4.8	4.5	3.9
Clothing	4.4	3.7	4.1	3.5	3.5	2.9	2.7	3.6
Women								
Food in	16.3	17.0	17.6	19.1	20.5	21.9	21.8	19.0
Food out	2.8	2.5	2.7	2.1	2.0	1.8	1.6	2.2
Fuel	4.4	4.7	4.6	4.9	5.5	6.2	6.3	5.2
Leisure	3.3	3.3	3.3	3.7	2.4	2.2	1.5	2.9
Transfers	4.3	3.7	3.7	4.8	3.9	4.5	5.9	4.3
Clothing	4.7	4.0	4.4	4.3	4.1	3.4	2.8	4.0
All								
Food in	15.6	16.8	17.7	18.0	20.0	21.3	21.1	18.5
Food out	2.9	2.5	2.7	2.2	2.2	2.0	1.7	2.3
Fuel	4.2	4.5	4.5	4.7	5.1	5.7	6.1	4.9
Leisure	3.1	3.4	3.7	3.7	2.8	2.3	1.8	3.1
Transfers	4.1	3.6	3.6	4.2	3.8	4.6	5.4	4.1
Clothing	4.6	3.9	4.3	3.9	3.8	3.2	2.8	3.8
***Unweighted* N**								
Men	*263*	*550*	*474*	*517*	*449*	*337*	*318*	*2,908*
Women	*439*	*649*	*592*	*559*	*512*	*430*	*468*	*3,649*
All	*702*	*1,199*	*1,066*	*1,076*	*961*	*767*	*786*	*6,557*

Table 9A.4. Mean equivalised spending on each item, by age, sex and marital status

	52–59	60–74	75+	All
	£ p.w.	£ p.w.	£ p.w.	£ p.w.
Single men				
Food in	34.79	34.38	33.24	34.14
Food out	7.28	5.47	5.66	5.97
Fuel	11.78	10.56	11.23	11.06
Leisure	10.09	8.27	5.04	7.74
Transfers	6.84	11.05	8.99	9.39
Clothing	8.07	4.95	4.99	5.73
Single women				
Food in	36.01	36.29	32.89	34.83
Food out	5.98	3.96	2.56	3.73
Fuel	11.84	10.99	10.14	10.79
Leisure	6.39	5.11	2.34	4.18
Transfers	10.89	10.18	8.93	9.79
Clothing	10.69	10.41	5.20	8.30
Couples				
Food in	42.97	41.07	37.32	41.07
Food out	9.13	6.85	3.96	7.12
Fuel	10.15	9.62	9.07	9.71
Leisure	10.69	9.47	4.76	9.08
Transfers	14.02	10.45	11.46	11.81
Clothing	13.78	10.28	6.18	10.75
All				
Food in	41.32	39.50	35.07	38.98
Food out	8.54	6.16	3.65	6.26
Fuel	10.52	9.97	9.77	10.08
Leisure	10.06	8.53	3.87	7.87
Transfers	12.96	10.46	10.16	11.11
Clothing	12.86	9.77	5.65	9.69
***Unweighted* N**				
Single men	*170*	*311*	*208*	*689*
Single women	*252*	*585*	*595*	*1,432*
Couples	*1,479*	*2,207*	*750*	*4,436*
All	*1,901*	*3,103*	*1,553*	*6,557*

Table 9A.5. Mean budget share of each item, by age, sex and marital status

	52–59	60–74	75+	All
	%	%	%	%
Single men				
Food in	17.1	18.2	19.8	18.4
Food out	2.4	2.2	2.9	2.5
Fuel	5.9	5.5	6.4	5.9
Leisure	4.0	3.5	2.7	3.4
Transfers	2.2	3.2	4.3	3.3
Clothing	2.8	2.4	2.4	2.5
Single women				
Food in	18.8	20.4	22.1	20.8
Food out	2.3	1.9	1.6	1.8
Fuel	6.8	6.1	6.9	6.5
Leisure	2.8	2.6	1.6	2.2
Transfers	3.7	4.6	5.5	4.8
Clothing	4.5	5.0	3.2	4.1
Couples				
Food in	15.8	18.1	20.9	17.8
Food out	2.7	2.6	1.8	2.5
Fuel	3.8	4.3	4.9	4.2
Leisure	3.3	3.6	2.2	3.2
Transfers	4.0	3.8	4.7	4.0
Clothing	4.2	4.0	3.0	3.9
All				
Food in	16.3	18.5	21.2	18.5
Food out	2.7	2.4	1.9	2.3
Fuel	4.4	4.8	5.9	4.9
Leisure	3.3	3.4	2.1	3.1
Transfers	3.8	3.9	5.0	4.1
Clothing	4.1	4.0	3.0	3.8
***Unweighted* N**				
Single men	*170*	*311*	*208*	*689*
Single women	*252*	*585*	*595*	*1,432*
Couples	*1,479*	*2,207*	*750*	*4,436*
All	*1,901*	*3,103*	*1,553*	*6,557*

Table 9A.6. Mean equivalised spending on each item, by age and wealth quintile

	Poorest	2nd	3rd	4th	Richest	All
	£ p.w.	£ p.w.	£ p.w.	£ p.w.	£ p.w.	£ p.w.
Food in						
52–59	33.07	37.09	41.40	42.99	49.37	41.32
60–74	34.23	36.77	37.91	39.72	47.36	39.50
75+	32.47	34.09	33.81	36.35	41.79	35.07
All	33.35	36.15	37.90	40.08	47.10	38.98
Food out						
52–59	3.50	6.27	8.40	9.48	13.46	8.54
60–74	2.44	3.34	5.47	7.27	11.16	6.16
75+	1.84	3.18	3.25	4.55	7.30	3.65
All	2.52	4.09	5.75	7.43	11.27	6.26
Fuel						
52–59	9.66	10.07	8.93	10.30	13.15	10.52
60–74	9.32	9.14	9.36	9.91	11.91	9.97
75+	9.02	9.14	9.48	9.39	13.04	9.77
All	9.31	9.39	9.27	9.93	12.50	10.08
Leisure						
52–59	4.66	7.63	9.70	10.28	16.29	10.06
60–74	3.76	5.91	7.25	9.71	14.63	8.53
75+	2.30	3.35	2.70	3.62	9.65	3.87
All	3.52	5.70	6.85	8.69	14.35	7.87
Transfers						
52–59	4.66	7.13	13.46	18.16	18.50	12.96
60–74	4.54	6.35	7.91	12.70	19.00	10.46
75+	5.06	6.08	10.01	12.03	24.04	10.16
All	4.74	6.49	9.94	14.29	19.68	11.11
Clothing						
52–59	5.09	10.81	15.58	13.91	17.08	12.86
60–74	6.01	6.82	9.43	11.77	13.70	9.77
75+	3.87	3.79	5.97	7.68	8.95	5.65
All	5.07	7.09	10.30	11.64	14.01	9.69
***Unweighted* N**						
52–59	*328*	*349*	*372*	*424*	*428*	*1,901*
60–74	*512*	*607*	*658*	*656*	*670*	*3,103*
75+	*408*	*342*	*320*	*265*	*218*	*1,553*
All	*1,248*	*1,298*	*1,350*	*1,345*	*1,316*	*6,557*

Table 9A.7. Mean budget share of each item, by age and wealth quintile

	Poorest	2nd	3rd	4th	Richest	All
	%	%	%	%	%	%
Food in						
52–59	21.3	15.8	15.7	16.3	13.6	16.3
60–74	21.6	20.8	19.6	16.1	15.5	18.5
75+	21.8	23.0	21.0	21.2	17.8	21.2
All	21.6	20.0	18.8	17.2	15.3	18.5
Food out						
52–59	1.6	2.3	2.7	3.2	3.2	2.7
60–74	1.4	1.7	2.6	2.6	3.3	2.4
75+	1.2	1.9	1.8	2.3	2.6	1.9
All	1.4	1.9	2.4	2.7	3.2	2.3
Fuel						
52–59	6.8	4.5	3.4	4.0	3.8	4.4
60–74	6.0	5.2	4.9	4.1	4.0	4.8
75+	6.1	6.3	6.1	5.4	5.2	5.9
All	6.2	5.3	4.8	4.3	4.1	4.9
Leisure						
52–59	2.5	2.9	3.7	3.5	3.8	3.3
60–74	2.3	3.0	3.4	3.8	4.2	3.4
75+	1.4	2.4	1.4	2.1	6.7	2.1
All	2.1	2.8	3.0	3.3	4.0	3.1
Transfers						
52–59	1.9	2.3	5.2	4.9	4.2	3.8
60–74	2.5	3.4	3.7	4.4	5.1	3.9
75+	3.4	4.0	5.4	6.8	6.9	5.0
All	2.7	3.2	4.5	5.0	5.1	4.1
Clothing						
52–59	2.7	4.1	5.5	4.4	3.8	4.1
60–74	3.4	3.5	4.5	4.4	4.1	4.0
75+	2.3	2.4	3.3	3.9	3.3	3.0
All	2.9	3.4	4.5	4.3	3.9	3.8
***Unweighted* N**						
52–59	*328*	*349*	*372*	*424*	*428*	*1,901*
60–74	*512*	*607*	*658*	*656*	*670*	*3,103*
75+	*408*	*342*	*320*	*265*	*218*	*1,553*
All	*1,248*	*1,298*	*1,350*	*1,345*	*1,316*	*6,557*

Table 9A.8. Mean equivalised spending on each item, by age and self-reported general health

	Excellent / Very good	Good	Fair / Poor	All
	£ p.w.	£ p.w.	£ p.w.	£ p.w.
Food in				
52–59	42.70	41.97	37.44	41.34
60–74	40.97	39.14	37.60	39.49
75+	35.97	34.48	34.86	35.06
All	40.73	38.73	36.70	38.98
Food out				
52–59	9.75	9.00	4.84	8.46
60–74	7.87	6.11	3.67	6.19
75+	4.50	3.67	3.06	3.68
All	7.96	6.27	3.74	6.26
Fuel				
52–59	10.63	10.50	10.28	10.52
60–74	10.00	9.98	9.97	9.99
75+	9.70	10.03	9.62	9.97
All	10.17	10.13	9.93	10.09
Leisure				
52–59	10.91	10.79	7.32	10.09
60–74	10.95	7.28	6.28	8.54
75+	6.32	3.86	2.09	3.92
All	10.16	7.36	5.20	7.90
Transfers				
52–59	15.17	12.78	7.62	12.83
60–74	12.74	10.76	6.81	10.52
75+	14.38	10.63	6.73	10.26
All	13.86	11.27	6.97	11.13
Clothing				
52–59	14.74	13.41	7.19	12.70
60–74	12.30	8.59	7.28	9.78
75+	6.52	5.85	4.92	5.70
All	12.18	9.19	6.52	9.67
***Unweighted* N**				
52–59	*926*	*540*	*410*	*1,876*
60–74	*1,282*	*963*	*829*	*3,074*
75+	*445*	*507*	*570*	*1,522*
All	*2,653*	*2,010*	*1,809*	*6,472*

Table 9A.9. Mean budget share of each item, by age and self-reported general health

	Excellent / Very good	Good	Fair / Poor	All
	%	%	%	%
Food in				
52–59	14.7	16.2	20.2	16.4
60–74	17.5	18.5	20.2	18.6
75+	21.7	20.9	21.1	21.2
All	17.2	18.5	20.5	18.5
Food out				
52–59	2.8	2.9	2.0	2.6
60–74	2.7	2.5	1.7	2.4
75+	2.3	1.9	1.6	1.9
All	2.7	2.5	1.8	2.3
Fuel				
52–59	3.7	4.3	6.0	4.4
60–74	4.3	4.8	5.5	4.8
75+	6.0	6.0	5.8	5.9
All	4.4	5.0	5.7	4.9
Leisure				
52–59	3.2	3.6	3.3	3.3
60–74	3.8	3.2	3.0	3.4
75+	3.5	1.9	1.2	2.1
All	3.6	2.9	2.5	3.1
Transfers				
52–59	4.1	4.0	2.8	3.8
60–74	4.3	4.0	3.2	3.9
75+	6.3	5.2	3.9	5.0
All	4.6	4.3	3.3	4.1
Clothing				
52–59	4.4	4.2	3.3	4.1
60–74	4.5	3.7	3.6	4.0
75+	3.4	3.1	2.6	3.0
All	4.3	3.7	3.2	3.8
***Unweighted* N**				
52–59	*926*	*540*	*410*	*1,876*
60–74	*1,282*	*963*	*829*	*3,074*
75+	*445*	*507*	*570*	*1,522*
All	*2,653*	*2,010*	*1,809*	*6,472*

Table 9A.10. Mean equivalised spending on each item, by age and number of limitations in activities of daily living (ADLs)

	Zero	One	Two	Three+	All
	£ p.w.	£ p.w.	£ p.w.	£ p.w.	£ p.w.
Food in					
52–59	42.93	41.13	40.60	36.71	41.32
60–74	41.12	39.05	37.65	37.58	39.50
75+	34.99	35.68	36.53	34.46	35.07
All	40.92	38.74	38.05	36.24	38.98
Food out					
52–59	9.66	8.17	7.48	5.81	8.54
60–74	7.71	5.94	5.34	3.73	6.16
75+	5.20	4.00	3.31	2.62	3.65
All	8.08	6.02	5.30	3.72	6.26
Fuel					
52–59	10.38	10.57	10.79	10.79	10.52
60–74	9.88	10.11	10.11	10.00	9.97
75+	9.66	9.87	9.80	9.81	9.77
All	10.03	10.16	10.19	10.08	10.08
Leisure					
52–59	10.72	11.21	7.07	8.50	10.06
60–74	10.26	8.00	7.01	6.28	8.53
75+	5.65	4.93	3.08	2.53	3.87
All	9.77	8.04	5.95	5.31	7.87
Transfers					
52–59	14.60	13.16	13.76	7.20	12.96
60–74	12.30	9.85	8.99	8.05	10.46
75+	11.54	11.76	11.60	8.20	10.16
All	13.05	11.14	10.86	7.94	11.11
Clothing					
52–59	14.39	13.59	9.85	8.86	12.86
60–74	11.11	9.65	8.96	7.65	9.77
75+	6.00	7.06	6.06	4.72	5.65
All	11.61	9.99	8.38	6.79	9.69
***Unweighted* N**					
52–59	*1,108*	*277*	*168*	*348*	*1,901*
60–74	*1,445*	*565*	*337*	*756*	*3,103*
75+	*424*	*274*	*191*	*664*	*1,553*
All	*2,977*	*1,116*	*696*	*1,768*	*6,557*

Table 9A.11. Mean budget share of each item, by age and number of limitations in activities of daily living (ADLs)

	Zero	One	Two	Three+	All
	%	%	%	%	%
Food in					
52–59	15.3	16.6	17.0	19.3	16.3
60–74	17.8	18.7	18.4	20.0	18.5
75+	21.1	20.9	22.8	21.0	21.2
All	17.3	18.7	19.3	20.3	18.5
Food out					
52–59	2.8	2.6	2.6	2.3	2.7
60–74	2.7	2.4	2.2	1.8	2.4
75+	2.6	2.0	1.8	1.4	1.9
All	2.7	2.3	2.2	1.8	2.3
Fuel					
52–59	3.7	4.6	5.1	6.0	4.4
60–74	4.3	4.9	4.9	5.4	4.8
75+	5.8	5.8	6.0	6.0	5.9
All	4.3	5.0	5.3	5.8	4.9
Leisure					
52–59	3.2	3.8	2.7	3.7	3.3
60–74	3.8	3.1	3.0	3.0	3.4
75+	2.8	2.4	1.8	1.5	2.1
All	3.4	3.1	2.6	2.6	3.1
Transfers					
52–59	3.9	4.2	4.2	2.9	3.8
60–74	4.1	3.8	3.8	3.6	3.9
75+	5.6	5.1	4.9	4.6	5.0
All	4.2	4.2	4.2	3.8	4.1
Clothing					
52–59	4.3	4.2	3.5	3.8	4.1
60–74	4.2	3.9	3.7	3.8	4.0
75+	3.0	3.6	3.2	2.6	3.0
All	4.1	3.9	3.5	3.4	3.8
***Unweighted* N**					
52–59	*1,108*	*277*	*168*	*348*	*1,901*
60–74	*1,445*	*565*	*337*	*756*	*3,103*
75+	*424*	*274*	*191*	*664*	*1,553*
All	*2,977*	*1,116*	*696*	*1,768*	*6,557*

Table 9A.12. Ownership rates of consumer durables, by age and sex

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%	%	%
Television								
Men	98.9	98.7	99.2	99.0	99.3	98.2	99.1	98.9
Women	99.5	98.6	99.7	99.3	99.4	99.5	98.9	99.3
All	99.3	98.7	99.4	99.2	99.3	99.0	99.0	99.1
Video recorder								
Men	95.1	94.4	94.9	93.0	92.2	89.6	79.3	91.8
Women	95.9	94.9	96.3	93.7	91.8	84.7	57.9	88.7
All	95.6	94.7	95.7	93.4	92.0	86.8	66.5	90.0
CD player								
Men	96.2	91.1	89.5	86.9	91.5	74.8	60.4	83.8
Women	94.5	92.0	92.1	86.9	77.9	65.6	40.4	79.8
All	95.2	91.6	90.9	86.9	79.6	69.6	48.5	81.6
Freezer								
Men	97.3	95.6	96.8	96.9	96.2	93.8	94.0	95.9
Women	97.5	96.5	97.6	97.9	97.7	92.1	91.2	96.0
All	97.4	96.1	97.3	97.4	97.0	92.8	92.4	95.9
Washing machine								
Men	95.4	93.6	95.2	93.8	90.4	90.5	84.9	92.3
Women	95.0	95.4	95.8	95.7	92.8	85.8	79.9	92.0
All	95.2	94.6	95.5	94.8	91.7	87.9	81.9	92.1
Dryer								
Men	71.5	65.3	64.1	56.1	54.8	47.8	44.0	58.1
Women	67.9	66.6	62.0	53.3	48.6	38.1	32.5	53.7
All	69.2	66.0	63.0	54.7	51.5	42.4	37.2	55.6
Dishwasher								
Men	51.7	42.4	45.2	39.9	28.5	25.2	19.8	36.6
Women	46.7	45.0	42.4	35.1	23.4	19.1	11.3	32.8
All	48.6	43.8	43.6	37.4	25.7	21.8	14.8	34.5
Microwave								
Men	92.8	93.8	91.4	88.6	89.1	85.2	80.8	89.2
Women	92.5	92.3	93.8	91.8	90.6	83.7	74.6	89.0
All	92.6	93.0	92.7	90.2	89.9	84.4	77.1	89.1
Computer								
Men	79.5	73.5	67.9	54.0	44.5	29.1	23.9	54.6
Women	78.1	68.9	60.3	45.8	31.5	20.0	9.0	46.4
All	78.6	71.0	63.7	49.7	37.6	24.0	15.0	50.0
Digital TV								
Men	63.1	52.9	47.5	46.2	39.9	28.2	25.8	43.9
Women	58.1	47.8	44.1	40.8	25.4	22.8	14.5	37.0
All	60.0	50.1	45.6	43.4	32.2	25.2	19.1	40.1
Landline telephone								
Men	96.6	95.8	96.6	95.7	97.6	98.2	96.9	96.7
Women	96.8	98.2	98.7	98.4	97.7	97.7	98.5	98.0
All	96.7	97.1	97.8	97.1	97.6	97.9	97.8	97.4
DVD player								
Men	79.1	69.1	56.1	54.0	40.5	31.2	22.6	51.3
Women	71.8	65.2	55.6	43.1	30.1	24.7	8.3	44.0
All	74.5	67.0	55.8	48.3	35.0	27.5	14.1	47.3
***Unweighted* N**								
Men	*263*	*550*	*474*	*517*	*449*	*337*	*318*	*2,908*
Women	*439*	*649*	*592*	*559*	*512*	*430*	*468*	*3,649*
All	*702*	*1,199*	*1,066*	*1,076*	*961*	*767*	*786*	*6,557*

Table 9A.13. Proportion of durable owners purchasing or replacing item in previous two years, by age and sex

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%	%	%
Television								
Men	28.1	27.1	25.7	28.1	19.1	23.0	19.1	24.5
Women	26.8	21.7	27.6	19.5	22.6	18.5	15.1	21.8
All	27.3	24.2	26.8	23.6	20.9	20.4	16.7	23.0
Video recorder								
Men	22.0	16.4	16.2	17.3	18.4	14.2	14.3	16.9
Women	16.6	14.0	18.6	14.7	16.8	13.7	10.3	15.3
All	18.6	15.1	17.6	15.9	17.5	14.0	12.2	16.0
CD player								
Men	18.6	12.6	11.1	12.5	11.5	12.7	11.5	12.7
Women	13.7	11.1	13.9	8.6	12.8	9.2	12.2	11.7
All	15.6	11.8	12.7	10.5	12.2	10.9	11.8	12.2
Freezer								
Men	18.0	11.6	16.8	12.0	11.8	8.2	9.7	12.6
Women	15.0	13.3	15.1	13.0	11.2	10.9	10.3	12.8
All	16.1	12.5	15.8	12.5	11.5	9.7	10.1	12.7
Washing machine								
Men	18.3	15.5	14.6	13.0	12.8	11.2	11.1	13.8
Women	15.4	14.2	15.5	12.9	9.9	15.5	10.7	13.5
All	16.5	14.8	15.1	12.9	11.2	13.5	10.9	13.6
Dryer								
Men	13.3	8.6	13.2	9.7	7.3	7.5	7.9	9.8
Women	12.8	9.5	12.0	8.7	6.4	6.1	9.2	9.6
All	13.0	9.1	12.5	9.2	6.9	6.8	8.6	9.7
Dishwasher								
Men	16.2	15.5	18.7	16.0	7.8	8.2	12.7	14.7
Women	17.1	14.0	17.1	12.8	14.3	7.3	9.4	14.4
All	16.7	14.7	17.9	14.4	10.9	7.8	11.2	14.5
Microwave								
Men	14.8	12.2	12.7	12.9	11.0	9.1	7.8	11.7
Women	14.0	13.5	15.1	8.6	9.7	12.2	7.2	11.7
All	14.3	12.9	14.1	10.6	10.3	10.8	7.4	11.7
Computer								
Men	24.9	25.5	22.1	24.0	24.0	20.4	23.7	23.9
Women	25.1	22.4	21.3	22.7	25.5	15.1	[23.9]	22.7
All	25.0	23.9	21.7	23.4	24.7	17.9	23.7	23.3
Digital TV								
Men	13.9	16.5	12.9	18.0	14.0	15.8	17.1	15.4
Women	15.7	14.5	15.3	14.0	14.6	12.2	17.7	14.8
All	15.0	15.5	14.2	16.1	14.2	14.0	17.3	15.1
Landline telephone								
Men	6.7	5.1	5.2	2.0	3.2	1.5	1.3	3.6
Women	8.5	3.1	3.9	2.0	1.4	2.4	2.0	3.2
All	7.8	4.0	4.5	2.0	2.2	2.0	1.7	3.4
DVD player								
Men	49.0	43.2	50.4	40.5	51.2	51.9	36.1	44.1
Women	53.0	42.3	43.8	44.0	33.8	33.0	[33.3]	43.6
All	51.4	43.2	46.7	42.1	37.9	37.4	35.1	43.8

Cell sizes on next page

Table 9A.13 cell sizes

Unweighted *N*	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
Television								
Men	*260*	*543*	*470*	*512*	*446*	*331*	*315*	*2,877*
Women	*437*	*640*	*590*	*555*	*509*	*428*	*463*	*3,622*
All	*697*	*1,183*	*1,060*	*1,067*	*955*	*759*	*778*	*6,499*
Video recorder								
Men	*250*	*519*	*450*	*481*	*414*	*302*	*252*	*2,668*
Women	*421*	*616*	*570*	*524*	*470*	*364*	*271*	*3,236*
All	*671*	*1,135*	*1,020*	*1,005*	*884*	*666*	*523*	*5,904*
CD player								
Men	*253*	*501*	*424*	*449*	*366*	*252*	*192*	*2,437*
Women	*415*	*597*	*545*	*486*	*399*	*282*	*189*	*2,913*
All	*668*	*1,098*	*969*	*935*	*765*	*534*	*381*	*5,350*
Freezer								
Men	*256*	*526*	*459*	*501*	*432*	*316*	*299*	*2,789*
Women	*428*	*626*	*578*	*547*	*500*	*396*	*427*	*3,502*
All	*684*	*1,152*	*1,037*	*1,048*	*932*	*712*	*726*	*6,291*
Washing machine								
Men	*251*	*515*	*451*	*485*	*406*	*305*	*270*	*2,683*
Women	*417*	*619*	*567*	*535*	*475*	*369*	*374*	*3,356*
All	*668*	*1,134*	*1,018*	*1,020*	*881*	*674*	*644*	*6,039*
Dryer								
Men	*188*	*359*	*304*	*290*	*246*	*161*	*140*	*1,688*
Women	*298*	*432*	*367*	*298*	*249*	*164*	*152*	*1,960*
All	*486*	*791*	*671*	*588*	*495*	*325*	*292*	*3,648*
Dishwasher								
Men	*136*	*233*	*214*	*206*	*128*	*85*	*63*	*1,065*
Women	*205*	*292*	*251*	*196*	*119*	*82*	*53*	*1,198*
All	*341*	*525*	*465*	*402*	*247*	*167*	*116*	*2,263*
Microwave								
Men	*244*	*516*	*433*	*458*	*400*	*287*	*257*	*2,595*
Women	*406*	*599*	*555*	*513*	*464*	*360*	*349*	*3,246*
All	*650*	*1,115*	*988*	*971*	*864*	*647*	*606*	*5,841*
Computer								
Men	*209*	*404*	*322*	*279*	*200*	*98*	*76*	*1,588*
Women	*343*	*447*	*357*	*256*	*161*	*86*	*42*	*1,692*
All	*552*	*851*	*679*	*535*	*361*	*184*	*118*	*3,280*
Digital TV								
Men	*166*	*291*	*225*	*239*	*179*	*95*	*82*	*1,277*
Women	*255*	*310*	*261*	*228*	*130*	*98*	*68*	*1,350*
All	*421*	*601*	*486*	*467*	*309*	*193*	*150*	*2,627*
Landline telephone								
Men	*254*	*527*	*458*	*495*	*438*	*331*	*308*	*2,811*
Women	*425*	*637*	*584*	*550*	*500*	*420*	*461*	*3,577*
All	*679*	*1,164*	*1,042*	*1,045*	*938*	*751*	*769*	*6,388*
DVD player								
Men	*208*	*380*	*266*	*279*	*182*	*105*	*72*	*1,492*
Women	*315*	*423*	*329*	*241*	*154*	*106*	*39*	*1,607*
All	*523*	*803*	*595*	*520*	*336*	*211*	*111*	*3,099*

Table 9A.14. Average spending on each durable amongst those who purchased or replaced in the last two years, by age and sex

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	£	£	£	£	£	£	£	£
Television								
Men	615	549	517	509	451	394	398	501
Women	550	516	446	550	393	323	329	459
All	575	533	477	527	418	358	362	479
Video recorder								
Men	[113]	155	117	137	141	[107]	–	131
Women	110	125	129	101	127	[110]	–	122
All	111	139	124	119	134	109	[160]	127
CD player								
Men	[130]	113	[101]	130	[98]	–	–	115
Women	109	134	103	[103]	[111]	–	–	109
All	119	124	102	119	105	109	[92]	112
Freezer								
Men	[277]	334	282	288	[270]	–	–	289
Women	308	282	287	269	291	[257]	[241]	279
All	295	304	284	277	281	271	248	283
Washing machine								
Men	[318]	287	308	314	303	[298]	–	303
Women	294	303	293	302	[295]	303	[288]	298
All	304	295	300	308	299	301	292	300
Dryer								
Men	–	–	[232]	–	–	–	–	216
Women	[192]	[208]	[204]	–	–	–	–	207
All	187	196	218	251	[190]	–	–	211
Dishwasher								
Men	–	[295]	[305]	[282]	–	–	–	300
Women	[305]	[327]	[317]	–	–	–	–	308
All	320	312	312	282	–	–	–	304
Microwave								
Men	[83]	82	88	108	[90]	–	–	93
Women	88	76	108	[97]	[81]	[81]	–	90
All	87	79	100	103	85	88	[104]	91
Computer								
Men	972	731	792	780	[754]	–	–	785
Women	810	810	754	745	[667]	–	–	767
All	871	769	773	764	713	[797]	–	776
Digital TV								
Men	–	[148]	–	[100]	–	–	–	110
Women	[106]	[154]	[92]	[97]	–	–	–	106
All	107	151	103	98	[89]	–	–	108
Landline telephone								
Men	–	–	–	–	–	–	–	80
Women	[84]	–	–	–	–	–	–	79
All	76	[82]	[81]	–	–	–	–	79
DVD player								
Men	122	111	106	125	96	[95]	–	110
Women	102	116	95	113	[154]	–	–	108
All	109	114	101	119	118	85	[75]	109

Cell sizes on next page

Table 9A.14 cell sizes

Unweighted *N*	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
Television								
Men	*72*	*144*	*120*	*140*	*83*	*73*	*58*	*690*
Women	*116*	*136*	*158*	*104*	*112*	*77*	*64*	*767*
All	*188*	*280*	*278*	*244*	*195*	*150*	*122*	*1,457*
Video recorder								
Men	*46*	*66*	*64*	*64*	*67*	*30*	*29*	*366*
Women	*57*	*72*	*85*	*63*	*63*	*37*	*19*	*396*
All	*103*	*138*	*149*	*127*	*130*	*67*	*48*	*762*
CD player								
Men	*47*	*57*	*44*	*50*	*40*	*28*	*21*	*287*
Women	*56*	*62*	*71*	*37*	*48*	*22*	*23*	*319*
All	*103*	*119*	*115*	*87*	*88*	*50*	*44*	*606*
Freezer								
Men	*42*	*61*	*74*	*58*	*49*	*25*	*26*	*335*
Women	*60*	*82*	*85*	*68*	*53*	*42*	*42*	*432*
All	*102*	*143*	*159*	*126*	*102*	*67*	*68*	*767*
Washing machine								
Men	*46*	*79*	*62*	*62*	*50*	*34*	*29*	*362*
Women	*63*	*85*	*87*	*68*	*44*	*54*	*39*	*440*
All	*109*	*164*	*149*	*130*	*94*	*88*	*68*	*802*
Dryer								
Men	*25*	*28*	*39*	*27*	*18*	*12*	*10*	*159*
Women	*38*	*40*	*43*	*23*	*13*	*9*	*13*	*179*
All	*63*	*68*	*82*	*50*	*31*	*21*	*23*	*338*
Dishwasher								
Men	*19*	*36*	*36*	*32*	*10*	*7*	*8*	*148*
Women	*32*	*39*	*42*	*23*	*18*	*6*	*5*	*165*
All	*51*	*75*	*78*	*55*	*28*	*13*	*13*	*313*
Microwave								
Men	*36*	*62*	*53*	*56*	*43*	*24*	*20*	*294*
Women	*56*	*79*	*81*	*43*	*42*	*40*	*24*	*365*
All	*92*	*141*	*134*	*99*	*85*	*64*	*44*	*659*
Computer								
Men	*52*	*102*	*71*	*67*	*47*	*20*	*18*	*377*
Women	*86*	*97*	*75*	*57*	*42*	*13*	*10*	*380*
All	*138*	*199*	*146*	*124*	*89*	*33*	*28*	*757*
Digital TV								
Men	*20*	*45*	*26*	*40*	*22*	*15*	*12*	*180*
Women	*34*	*41*	*40*	*30*	*16*	*10*	*12*	*183*
All	*54*	*86*	*66*	*70*	*38*	*25*	*24*	*363*
Landline telephone								
Men	*16*	*27*	*24*	*10*	*14*	*5*	*4*	*100*
Women	*34*	*20*	*22*	*11*	*6*	*8*	*9*	*110*
All	*50*	*47*	*46*	*21*	*20*	*13*	*13*	*210*
DVD player								
Men	*90*	*141*	*115*	*94*	*70*	*35*	*20*	*565*
Women	*147*	*157*	*118*	*94*	*42*	*27*	*10*	*595*
All	*237*	*298*	*233*	*188*	*112*	*62*	*30*	*1,160*

Table 9A.15. Ownership rates of consumer durables, by age, sex and marital status

	52–59	60–74	75+	All
	%	%	%	%
Television				
Single men	97.7	97.4	97.6	97.5
Single women	98.0	99.0	99.3	99.0
Couples	99.2	99.7	99.1	99.4
All	98.9	99.3	99.0	99.1
Video recorder				
Single men	86.5	80.7	69.7	78.8
Single women	89.3	89.2	61.2	77.6
Couples	97.0	96.8	90.7	95.8
All	95.0	93.8	76.6	90.0
CD player				
Single men	82.4	65.6	50.5	65.2
Single women	86.5	79.0	41.9	64.9
Couples	95.2	90.8	74.8	89.5
All	92.9	86.0	58.9	81.6
Freezer				
Single men	88.2	88.4	86.5	87.8
Single women	92.9	95.4	88.7	92.2
Couples	98.2	99.0	97.3	98.4
All	96.6	97.2	92.6	95.9
Washing machine				
Single men	87.1	81.7	77.4	81.7
Single women	92.9	92.8	77.5	86.5
Couples	96.0	96.2	92.8	95.5
All	94.8	94.1	84.9	92.1
Dryer				
Single men	47.7	41.5	34.1	40.8
Single women	52.8	43.4	28.6	38.9
Couples	71.9	62.1	50.1	63.4
All	67.2	56.5	39.7	55.6
Dishwasher				
Single men	25.3	17.4	8.7	16.7
Single women	27.8	21.2	9.4	17.5
Couples	50.9	42.4	27.9	42.8
All	45.6	35.9	18.2	34.5
Microwave				
Single men	92.9	77.8	75.5	80.8
Single women	88.5	90.9	76.8	84.6
Couples	93.6	92.8	85.2	91.8
All	92.9	91.0	80.7	89.1
Computer				
Single men	58.2	37.0	15.4	35.7
Single women	52.0	29.6	8.1	24.6
Couples	79.3	58.3	29.6	60.5
All	73.8	50.8	19.5	50.0
Digital TV				
Single men	48.8	33.4	20.7	33.4
Single women	37.3	23.9	11.9	21.3
Couples	57.1	46.1	30.5	47.2
All	53.8	40.7	22.1	40.1
Landline telephone				
Single men	88.8	89.4	96.2	91.3
Single women	96.8	97.4	98.0	97.6
Couples	97.9	98.6	98.3	98.3
All	97.0	97.5	97.9	97.4
DVD player				
Single men	61.2	37.3	17.8	37.3
Single women	56.0	29.9	9.8	26.1
Couples	73.1	52.6	30.3	55.6
All	69.8	46.8	20.7	47.3
***Unweighted* N**				
Single men	*170*	*311*	*208*	*689*
Single women	*252*	*585*	*595*	*1,432*
Couples	*1,479*	*2,207*	*750*	*4,436*
All	*1,901*	*3,103*	*1,553*	*6,557*

Table 9A.16. Proportion of durable owners purchasing or replacing item in previous two years, by age, sex and marital status

	52–59	60–74	75+	All
	%	%	%	%
Television				
Single men	34.3	21.8	19.2	24.1
Single women	20.2	18.5	15.2	17.4
Couples	25.2	25.6	21.0	24.7
All	25.3	23.9	18.5	23.0
Video recorder				
Single men	17.0	17.9	13.8	16.6
Single women	11.6	12.8	11.5	12.2
Couples	17.1	17.9	14.0	17.0
All	16.4	17.0	13.2	16.0
CD player				
Single men	10.0	13.2	13.3	12.3
Single women	7.8	10.8	8.8	9.6
Couples	14.4	11.8	11.9	12.7
All	13.2	11.8	11.3	12.2
Freezer				
Single men	14.0	6.9	7.2	8.8
Single women	12.0	12.2	11.2	11.7
Couples	14.1	14.4	9.6	13.5
All	13.8	13.3	9.9	12.7
Washing machine				
Single men	14.2	8.7	8.7	10.1
Single women	10.3	10.9	12.6	11.4
Couples	16.4	14.3	12.8	14.8
All	15.4	13.2	12.2	13.6
Dryer				
Single men	8.6	11.6	7.0	9.6
Single women	12.8	7.5	8.8	9.2
Couples	10.4	10.0	7.2	9.8
All	10.6	9.8	7.6	9.7
Dishwasher				
Single men	[20.9]	11.1	–	13.9
Single women	15.7	13.7	7.1	12.8
Couples	15.1	15.5	10.1	14.8
All	15.5	15.1	9.2	14.5
Microwave				
Single men	9.5	8.7	5.7	8.1
Single women	13.0	9.4	9.9	10.2
Couples	14.0	12.7	9.6	12.6
All	13.4	11.7	9.2	11.7
Computer				
Single men	23.2	22.6	[34.4]	24.4
Single women	22.1	17.3	[16.7]	19.0
Couples	24.6	23.7	18.9	23.7
All	24.3	22.9	20.2	23.3
Digital TV				
Single men	16.9	15.4	[18.6]	16.5
Single women	16.0	12.1	12.7	13.4
Couples	15.0	15.2	15.7	15.2
All	15.3	14.9	15.5	15.1
Landline telephone				
Single men	2.7	4.3	0.5	2.7
Single women	3.7	1.9	2.1	2.3
Couples	6.0	3.0	2.0	3.9
All	5.4	2.9	1.8	3.4
DVD player				
Single men	37.5	42.2	[46.0]	40.9
Single women	44.7	37.1	29.3	38.8
Couples	47.6	44.0	37.0	44.9
All	46.5	43.0	36.7	43.8

Cell sizes on next page

Table 9A.16 cell sizes

Unweighted N	52–59	60–74	75+	All
Television				
Single men	*166*	*303*	*203*	*672*
Single women	*247*	*579*	*591*	*1,417*
Couples	*1,467*	*2,200*	*743*	*4,410*
All	*1,880*	*3,082*	*1,537*	*6,499*
Video recorder				
Single men	*147*	*251*	*145*	*543*
Single women	*225*	*522*	*364*	*1,111*
Couples	*1,434*	*2,136*	*680*	*4,250*
All	*1,806*	*2,909*	*1,189*	*5,904*
CD player				
Single men	*140*	*204*	*105*	*449*
Single women	*218*	*462*	*249*	*929*
Couples	*1,408*	*2,003*	*561*	*3,972*
All	*1,766*	*2,669*	*915*	*5,350*
Freezer				
Single men	*150*	*275*	*180*	*605*
Single women	*234*	*558*	*528*	*1,320*
Couples	*1,452*	*2,184*	*730*	*4,366*
All	*1,836*	*3,017*	*1,438*	*6,291*
Washing machine				
Single men	*148*	*254*	*161*	*563*
Single women	*234*	*543*	*461*	*1,238*
Couples	*1,420*	*2,122*	*696*	*4,238*
All	*1,802*	*2,919*	*1,318*	*6,039*
Dryer				
Single men	*81*	*129*	*71*	*281*
Single women	*133*	*254*	*170*	*557*
Couples	*1,063*	*1,371*	*376*	*2,810*
All	*1,277*	*1,754*	*617*	*3,648*
Dishwasher				
Single men	*43*	*54*	*18*	*115*
Single women	*70*	*124*	*56*	*250*
Couples	*753*	*936*	*209*	*1,898*
All	*866*	*1,114*	*283*	*2,263*
Microwave				
Single men	*158*	*242*	*157*	*557*
Single women	*223*	*532*	*457*	*1,212*
Couples	*1,384*	*2,049*	*639*	*4,072*
All	*1,765*	*2,823*	*1,253*	*5,841*
Computer				
Single men	*99*	*115*	*32*	*246*
Single women	*131*	*173*	*48*	*352*
Couples	*1,173*	*1,287*	*222*	*2,682*
All	*1,403*	*1,575*	*302*	*3,280*
Digital TV				
Single men	*83*	*104*	*43*	*230*
Single women	*94*	*140*	*71*	*305*
Couples	*845*	*1,018*	*229*	*2,092*
All	*1,022*	*1,262*	*343*	*2,627*
Landline telephone				
Single men	*151*	*278*	*200*	*629*
Single women	*244*	*570*	*583*	*1,397*
Couples	*1,448*	*2,177*	*737*	*4,362*
All	*1,843*	*3,025*	*1,520*	*6,388*
DVD player				
Single men	*104*	*116*	*37*	*257*
Single women	*141*	*175*	*58*	*374*
Couples	*1,081*	*1,160*	*227*	*2,468*
All	*1,326*	*1,451*	*322*	*3,099*

Table 9A.17. Average spending on each durable amongst those who purchased or replaced in the last two years, by age, sex and marital status

	52–59	60–74	75+	All
	£	£	£	£
Television				
Single men	555	404	[442]	467
Single women	[337]	353	299	331
Couples	578	508	372	513
All	550	477	359	479
Video recorder				
Single men	–	[120]	–	149
Single women	–	93	[149]	106
Couples	122	131	125	127
All	127	125	130	127
CD player				
Single men	–	–	–	[99]
Single women	–	[89]	–	92
Couples	125	113	101	116
All	122	108	101	112
Freezer				
Single men	–	–	–	[257]
Single women	–	256	232	253
Couples	301	290	285	293
All	301	281	259	283
Washing machine				
Single men	–	–	–	295
Single women	–	276	289	283
Couples	298	308	305	304
All	299	302	297	300
Dryer				
Single men	–	–	–	–
Single women	–	–	–	[217]
Couples	184	218	–	204
All	192	222	[228]	211
Dishwasher				
Single men	–	–	–	–
Single women	–	–	–	[313]
Couples	313	307	–	305
All	315	300	–	303
Microwave				
Single men	–	–	–	[88]
Single women	–	[92]	[79]	86
Couples	81	98	112	93
All	82	97	95	91
Computer				
Single men	–	–	–	776
Single women	–	[593]	–	652
Couples	816	770	[715]	787
All	811	753	701	775
Digital TV				
Single men	–	–	–	[91]
Single women	–	–	–	[67]
Couples	144	103	[68]	115
All	134	97	[69]	108
Landline telephone				
Single men	–	–	–	–
Single women	–	–	–	–
Couples	83	98	–	87
All	79	87	–	79
DVD player				
Single men	[108]	[113]	–	112
Single women	87	120	–	100
Couples	115	109	76	110
All	112	111	82	109

Cell sizes on next page

Table 9A.17 cell sizes

Unweighted N	52–59	60–74	75+	All
Television				
Single men	*56*	*64*	*37*	*157*
Single women	*49*	*102*	*83*	*234*
Couples	*363*	*551*	*152*	*1,066*
All	*468*	*717*	*272*	*1,457*
Video recorder				
Single men	*20*	*39*	*16*	*75*
Single women	*24*	*51*	*30*	*105*
Couples	*197*	*316*	*69*	*582*
All	*241*	*406*	*115*	*762*
CD player				
Single men	*12*	*26*	*11*	*49*
Single women	*17*	*46*	*20*	*83*
Couples	*193*	*218*	*63*	*474*
All	*222*	*290*	*94*	*606*
Freezer				
Single men	*20*	*16*	*10*	*46*
Single women	*27*	*63*	*57*	*147*
Couples	*198*	*308*	*68*	*574*
All	*245*	*387*	*135*	*767*
Washing machine				
Single men	*21*	*18*	*13*	*52*
Single women	*23*	*55*	*54*	*132*
Couples	*229*	*300*	*89*	*618*
All	*273*	*373*	*156*	*802*
Dryer				
Single men	*6*	*14*	*5*	*25*
Single women	*17*	*14*	*14*	*45*
Couples	*108*	*135*	*25*	*268*
All	*131*	*163*	*44*	*338*
Dishwasher				
Single men	*8*	*5*	*1*	*14*
Single women	*11*	*16*	*4*	*31*
Couples	*107*	*140*	*21*	*268*
All	*126*	*161*	*26*	*313*
Microwave				
Single men	*15*	*18*	*9*	*42*
Single women	*28*	*45*	*42*	*115*
Couples	*190*	*255*	*57*	*502*
All	*233*	*318*	*108*	*659*
Computer				
Single men	*23*	*26*	*11*	*60*
Single women	*26*	*31*	*8*	*65*
Couples	*288*	*302*	*42*	*632*
All	*337*	*359*	*61*	*757*
Digital TV				
Single men	*13*	*13*	*7*	*33*
Single women	*13*	*15*	*8*	*36*
Couples	*114*	*146*	*34*	*294*
All	*140*	*174*	*49*	*363*
Landline telephone				
Single men	*4*	*12*	*1*	*17*
Single women	*8*	*9*	*10*	*27*
Couples	*85*	*66*	*15*	*166*
All	*97*	*87*	*26*	*210*
DVD player				
Single men	*33*	*44*	*14*	*91*
Single women	*55*	*53*	*13*	*121*
Couples	*447*	*436*	*65*	*948*
All	*535*	*533*	*92*	*1,160*

Table 9A.18. Ownership rates of consumer durables, by age and wealth quintile

	Poorest	2nd	3rd	4th	Richest	All
	%	%	%	%	%	%
Television						
52–59	98.8	99.1	99.2	98.6	98.8	98.9
60–74	98.8	99.2	99.7	99.4	99.4	99.3
75+	99.0	98.8	98.8	100.0	98.2	99.0
All	98.9	99.1	99.3	99.3	99.0	99.1
Video recorder						
52–59	90.2	95.7	96.8	96.5	95.1	95.0
60–74	88.1	91.6	95.7	95.7	96.1	93.8
75+	65.4	74.5	78.1	83.8	89.0	76.6
All	81.3	88.3	91.9	93.6	94.6	90.0
CD player						
52–59	83.2	92.0	97.0	94.8	95.6	92.9
60–74	77.7	78.8	86.8	91.8	92.5	86.0
75+	46.1	54.1	60.6	70.9	73.4	58.9
All	68.8	75.8	83.4	88.6	90.4	81.6
Freezer						
52–59	93.6	97.7	96.8	96.9	97.4	96.6
60–74	93.2	96.7	97.6	99.2	98.5	97.2
75+	86.5	92.4	94.4	94.7	99.1	92.6
All	91.1	95.8	96.6	97.6	98.3	95.9
Washing machine						
52–59	90.6	95.1	96.5	96.0	95.1	94.8
60–74	87.1	94.2	94.8	95.9	96.7	94.1
75+	74.5	83.9	85.0	95.1	93.1	84.9
All	83.9	91.8	93.0	95.8	95.6	92.1
Dryer						
52–59	50.9	62.2	71.5	71.0	76.2	67.2
60–74	39.5	47.0	61.1	61.3	69.1	56.5
75+	32.8	33.3	42.5	46.8	50.0	39.7
All	40.3	47.5	59.6	61.5	68.2	55.6
Dishwasher						
52–59	14.3	28.4	43.0	59.9	71.5	45.6
60–74	8.8	16.6	33.3	46.8	66.0	35.9
75+	5.6	7.9	16.6	31.7	44.0	18.2
All	9.2	17.5	32.0	48.0	64.1	34.5
Microwave						
52–59	94.5	95.1	94.1	90.3	91.1	92.9
60–74	88.1	91.8	91.0	92.1	91.3	91.0
75+	77.5	80.1	83.1	83.0	81.2	80.7
All	86.3	89.6	90.0	89.7	89.6	89.1
Computer						
52–59	47.0	65.3	72.6	86.6	89.7	73.8
60–74	25.2	32.3	46.8	63.6	78.4	50.8
75+	8.1	12.3	19.7	28.3	40.8	19.5
All	25.3	35.9	47.5	63.9	75.8	50.0
Digital TV						
52–59	45.4	62.5	60.5	50.0	50.9	53.8
60–74	32.6	37.9	41.0	45.1	44.6	40.7
75+	16.7	17.8	20.6	31.7	29.4	22.1
All	30.8	39.2	41.6	44.0	44.2	40.1
Landline telephone						
52–59	90.6	96.9	99.5	97.6	99.1	97.0
60–74	92.6	97.0	98.5	98.9	99.3	97.5
75+	96.6	97.4	97.5	99.3	100.0	97.9
All	93.4	97.1	98.5	98.6	99.3	97.4
DVD player						
52–59	69.8	72.5	73.7	66.3	67.5	69.8
60–74	44.1	45.5	45.7	48.0	49.7	46.8
75+	21.6	18.1	15.3	25.7	25.2	20.7
All	43.5	45.5	46.2	49.4	51.4	47.3
***Unweighted* N**						
52–59	*328*	*349*	*372*	*424*	*428*	*1,901*
60–74	*512*	*607*	*658*	*656*	*670*	*3,103*
75+	*408*	*342*	*320*	*265*	*218*	*1,553*
All	*1,248*	*1,298*	*1,350*	*1,345*	*1,316*	*6,557*

Table 9A.19. Proportion of durable owners purchasing or replacing item in previous two years, by age and wealth quintile

	Poorest %	2nd %	3rd %	4th %	Richest %	All %
Television						
52–59	25.3	30.6	26.0	23.2	22.5	25.3
60–74	24.3	23.4	21.5	23.3	26.9	23.9
75+	17.6	19.8	18.7	19.3	17.3	18.5
All	22.4	24.4	22.1	22.5	23.9	23.0
Video recorder						
52–59	14.9	17.4	16.7	17.4	15.5	16.3
60–74	17.7	15.1	15.1	18.8	18.2	17.0
75+	13.9	10.9	11.6	15.3	15.0	13.2
All	15.9	14.8	14.8	17.7	16.8	16.0
CD player						
52–59	12.1	16.5	12.7	14.2	10.8	13.2
60–74	12.1	12.1	11.6	9.8	13.4	11.8
75+	13.8	9.7	10.8	8.0	14.4	11.3
All	12.5	13.1	11.8	11.0	12.6	12.2
Freezer						
52–59	12.7	13.8	13.1	15.3	13.9	13.8
60–74	11.5	11.4	12.9	15.4	14.7	13.3
75+	12.2	8.9	10.9	6.0	10.7	9.9
All	12.1	11.4	12.5	13.6	13.8	12.7
Washing machine						
52–59	15.8	16.0	19.2	14.0	12.8	15.4
60–74	11.7	12.9	14.3	14.3	12.4	13.2
75+	15.1	9.4	12.5	14.7	8.4	12.2
All	13.9	12.9	15.3	14.3	11.8	13.6
Dryer						
52–59	7.8	13.4	13.9	6.6	11.0	10.6
60–74	8.4	12.3	9.2	9.5	9.7	9.8
75+	4.5	5.3	14.0	8.1	5.5	7.6
All	7.2	11.4	11.6	8.2	9.7	9.7
Dishwasher						
52–59	[14.9]	18.2	14.4	20.9	10.8	15.5
60–74	[22.2]	21.8	13.2	13.7	14.7	15.1
75+	–	–	13.2	9.5	6.3	9.2
All	19.1	17.6	13.7	16.0	12.3	14.5
Microwave						
52–59	14.5	12.7	13.7	13.3	13.1	13.4
60–74	11.3	11.0	9.7	14.2	12.3	11.7
75+	11.1	11.7	4.9	11.4	5.7	9.2
All	12.2	11.6	9.8	13.4	11.5	11.7
Computer						
52–59	32.5	20.2	25.2	23.7	23.4	24.3
60–74	18.6	23.5	21.1	25.0	23.2	22.9
75+	[15.2]	[23.8]	15.9	25.3	19.1	20.2
All	25.0	21.9	22.3	24.5	23.0	23.3
Digital TV						
52–59	13.4	16.1	11.1	16.0	19.3	15.3
60–74	14.4	10.4	12.2	15.2	20.7	14.9
75+	14.7	11.5	12.1	16.7	21.9	15.5
All	14.1	13.0	11.8	15.7	20.3	15.1
Landline telephone						
52–59	2.4	8.6	6.5	5.3	4.3	5.4
60–74	2.7	1.5	2.8	3.5	3.9	2.9
75+	1.5	1.2	1.3	2.7	3.2	1.8
All	2.2	3.3	3.5	3.9	3.9	3.4
DVD player						
52–59	41.1	47.4	50.4	48.4	44.3	46.4
60–74	43.4	38.8	40.9	44.8	46.6	43.0
75+	33.0	35.5	[36.7]	41.2	38.2	36.7
All	40.7	42.1	44.7	45.9	44.9	43.8

Cell sizes on next page

Table 9A.19 cell sizes

Unweighted N	Poorest	2nd	3rd	4th	Richest	All
Television						
52–59	*324*	*346*	*369*	*418*	*423*	*1,880*
60–74	*506*	*602*	*656*	*652*	*666*	*3,082*
75+	*404*	*338*	*316*	*265*	*214*	*1,537*
All	*1,234*	*1,286*	*1,341*	*1,335*	*1,303*	*6,499*
Video recorder						
52–59	*296*	*334*	*360*	*409*	*407*	*1,806*
60–74	*451*	*556*	*630*	*628*	*644*	*2,909*
75+	*267*	*256*	*250*	*222*	*194*	*1,189*
All	*1,014*	*1,146*	*1,240*	*1,259*	*1,245*	*5,904*
CD player						
52–59	*273*	*321*	*361*	*402*	*409*	*1,766*
60–74	*398*	*478*	*571*	*602*	*620*	*2,669*
75+	*188*	*185*	*194*	*188*	*160*	*915*
All	*859*	*984*	*1,126*	*1,192*	*1,189*	*5,350*
Freezer						
52–59	*307*	*341*	*360*	*411*	*417*	*1,836*
60–74	*477*	*587*	*642*	*651*	*660*	*3,017*
75+	*353*	*316*	*302*	*251*	*216*	*1,438*
All	*1,137*	*1,244*	*1,304*	*1,313*	*1,293*	*6,291*
Washing machine						
52–59	*297*	*332*	*359*	*407*	*407*	*1,802*
60–74	*446*	*572*	*624*	*629*	*648*	*2,919*
75+	*304*	*287*	*272*	*252*	*203*	*1,318*
All	*1,047*	*1,191*	*1,255*	*1,288*	*1,258*	*6,039*
Dryer						
52–59	*167*	*217*	*266*	*301*	*326*	*1,277*
60–74	*202*	*285*	*402*	*402*	*463*	*1,754*
75+	*134*	*114*	*136*	*124*	*109*	*617*
All	*503*	*616*	*804*	*827*	*898*	*3,648*
Dishwasher						
52–59	*47*	*99*	*160*	*254*	*306*	*866*
60–74	*45*	*101*	*219*	*307*	*442*	*1,114*
75+	*23*	*27*	*53*	*84*	*96*	*283*
All	*115*	*227*	*432*	*645*	*844*	*2,263*
Microwave						
52–59	*310*	*332*	*350*	*383*	*390*	*1,765*
60–74	*451*	*557*	*599*	*604*	*612*	*2,823*
75+	*316*	*274*	*266*	*220*	*177*	*1,253*
All	*1,077*	*1,163*	*1,215*	*1,207*	*1,179*	*5,841*
Computer						
52–59	*154*	*228*	*270*	*367*	*384*	*1,403*
60–74	*129*	*196*	*308*	*417*	*525*	*1,575*
75+	*33*	*42*	*63*	*75*	*89*	*302*
All	*316*	*466*	*641*	*859*	*998*	*3,280*
Digital TV						
52–59	*149*	*218*	*225*	*212*	*218*	*1,022*
60–74	*167*	*230*	*270*	*296*	*299*	*1,262*
75+	*68*	*61*	*66*	*84*	*64*	*343*
All	*384*	*509*	*561*	*592*	*581*	*2,627*
Landline telephone						
52–59	*297*	*338*	*370*	*414*	*424*	*1,843*
60–74	*474*	*589*	*648*	*649*	*665*	*3,025*
75+	*394*	*333*	*312*	*263*	*218*	*1,520*
All	*1,165*	*1,260*	*1,330*	*1,326*	*1,307*	*6,388*
DVD player						
52–59	*229*	*253*	*274*	*281*	*289*	*1,326*
60–74	*226*	*276*	*301*	*315*	*333*	*1,451*
75+	*88*	*62*	*49*	*68*	*55*	*322*
All	*543*	*591*	*624*	*664*	*677*	*3,099*

Table 9A.20. Average spending on each durable amongst those who purchased or replaced in the last two years, by age and wealth quintile

	Poorest	2nd	3rd	4th	Richest	All
	£	£	£	£	£	£
Television						
52–59	419	481	545	564	733	550
60–74	331	398	421	480	682	477
75+	294	363	368	409	[384]	359
All	350	419	450	492	662	478
Video recorder						
52–59	[94]	[177]	121	109	136	127
60–74	73	108	100	128	191	125
75+	–	–	–	–	–	130
All	89	129	109	131	163	127
CD player						
52–59	[91]	[128]	[91]	158	[122]	122
60–74	[83]	[89]	81	113	150	108
75+	–	–	–	–	–	101
All	86	108	83	134	139	112
Freezer						
52–59	[244]	[293]	[289]	347	306	301
60–74	[233]	256	290	285	311	281
75+	[220]	–	[265]	–	–	259
All	233	260	285	307	315	283
Washing machine						
52–59	[253]	264	298	296	381	299
60–74	[270]	262	298	335	327	302
75+	[266]	–	[313]	[354]	–	297
All	263	263	300	327	340	300
Dryer						
52–59	–	–	[205]	–	[217]	192
60–74	–	[169]	[214]	[244]	[240]	222
75+	–	–	–	–	–	[228]
All	[212]	175	215	206	241	211
Dishwasher						
52–59	–	–	–	303	[354]	315
60–74	–	–	–	[268]	346	300
75+	–	–	–	–	–	–
All	–	[280]	281	288	351	303
Microwave						
52–59	[57]	[82]	[66]	87	[114]	82
60–74	[63]	83	117	106	105	97
75+	[78]	[72]	–	–	–	95
All	65	80	93	106	108	91
Computer						
52–59	631	[615]	818	850	974	811
60–74	–	[634]	970	731	936	753
75+	–	–	–	–	–	701
All	532	637	738	780	942	775
Digital TV						
52–59	–	[155]	–	–	[154]	134
60–74	–	–	[96]	[72]	133	97
75+	–	–	–	–	–	[69]
All	[84]	117	118	74	132	108
Landline telephone						
52–59	–	–	–	–	–	79
60–74	–	–	–	–	–	87
75+	–	–	–	–	–	–
All	–	[47]	[48]	68	159	79
DVD player						
52–59	106	112	96	117	128	112
60–74	66	117	87	112	156	111
75+	–	–	–	–	–	82
All	85	109	93	111	140	109

Cell sizes on next page

Table 9A.20 cell sizes

Unweighted N	Poorest	2nd	3rd	4th	Richest	All
Television						
52–59	*82*	*103*	*94*	*96*	*93*	*468*
60–74	*118*	*138*	*137*	*151*	*173*	*717*
75+	*63*	*64*	*59*	*50*	*36*	*272*
All	*263*	*305*	*290*	*297*	*302*	*1,457*
Video recorder						
52–59	*38*	*41*	*51*	*54*	*57*	*241*
60–74	*67*	*65*	*77*	*102*	*95*	*406*
75+	*22*	*25*	*21*	*24*	*23*	*115*
All	*127*	*131*	*149*	*180*	*175*	*762*
CD player						
52–59	*33*	*48*	*43*	*55*	*43*	*222*
60–74	*46*	*49*	*61*	*55*	*79*	*290*
75+	*21*	*17*	*19*	*14*	*23*	*94*
All	*100*	*114*	*123*	*124*	*145*	*606*
Freezer						
52–59	*39*	*45*	*44*	*60*	*57*	*245*
60–74	*49*	*65*	*78*	*99*	*96*	*387*
75+	*40*	*27*	*33*	*15*	*20*	*135*
All	*128*	*137*	*155*	*174*	*173*	*767*
Washing machine						
52–59	*47*	*52*	*68*	*55*	*51*	*273*
60–74	*48*	*72*	*86*	*88*	*79*	*373*
75+	*44*	*27*	*33*	*36*	*16*	*156*
All	*139*	*151*	*187*	*179*	*146*	*802*
Dryer						
52–59	*13*	*29*	*34*	*19*	*36*	*131*
60–74	*17*	*34*	*33*	*36*	*43*	*163*
75+	*5*	*6*	*19*	*8*	*6*	*44*
All	*35*	*69*	*86*	*63*	*85*	*338*
Dishwasher						
52–59	*6*	*18*	*19*	*50*	*33*	*126*
60–74	*7*	*22*	*26*	*42*	*64*	*161*
75+	*5*	*0*	*7*	*8*	*6*	*26*
All	*18*	*40*	*52*	*100*	*103*	*313*
Microwave						
52–59	*45*	*41*	*48*	*51*	*48*	*233*
60–74	*48*	*58*	*55*	*83*	*74*	*318*
75+	*31*	*30*	*12*	*25*	*10*	*108*
All	*124*	*129*	*115*	*159*	*132*	*659*
Computer						
52–59	*50*	*46*	*68*	*86*	*87*	*337*
60–74	*24*	*47*	*63*	*104*	*121*	*359*
75+	*5*	*10*	*10*	*19*	*17*	*61*
All	*79*	*103*	*141*	*209*	*225*	*757*
Digital TV						
52–59	*17*	*35*	*22*	*28*	*38*	*140*
60–74	*22*	*22*	*30*	*42*	*58*	*174*
75+	*10*	*7*	*8*	*10*	*14*	*49*
All	*49*	*64*	*60*	*80*	*110*	*363*
Landline telephone						
52–59	*6*	*29*	*22*	*22*	*18*	*97*
60–74	*12*	*9*	*17*	*23*	*26*	*87*
75+	*5*	*4*	*4*	*6*	*7*	*26*
All	*23*	*42*	*43*	*51*	*51*	*210*
DVD player						
52–59	*86*	*102*	*120*	*118*	*109*	*535*
60–74	*84*	*91*	*111*	*121*	*126*	*533*
75+	*20*	*20*	*11*	*22*	*19*	*92*
All	*190*	*213*	*242*	*261*	*254*	*1,160*

Table 9A.21. Prevalence of expenditure-share-based poverty indicators, by age and sex

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	*%*	*%*	*%*	*%*	*%*	*%*	*%*
Men								
Fuel poverty	6.1	6.7	7.0	6.2	4.7	6.8	10.4	6.7
High basics	7.2	7.3	6.3	5.8	7.6	7.4	8.5	7.1
Women								
Fuel poverty	8.2	8.8	7.1	7.0	10.4	14.2	13.3	9.6
High basics	8.4	8.3	9.0	8.4	8.6	10.9	12.6	9.4
All								
Fuel poverty	7.4	7.8	7.0	6.6	7.7	11.0	12.1	8.3
High basics	8.0	7.8	7.8	7.2	8.1	9.4	10.9	8.3
***Unweighted* N**								
Men	*263*	*550*	*474*	*517*	*449*	*337*	*318*	*2,908*
Women	*439*	*649*	*592*	*559*	*512*	*430*	*468*	*3,649*
All	*702*	*1,199*	*1,066*	*1,076*	*961*	*767*	*786*	*6,557*

Table 9A.22. Prevalence of expenditure-share-based poverty indicators, by age, sex and marital status

	52–59	60–74	75+	All
	%	*%*	*%*	*%*
Single men				
Fuel poverty	12.4	11.9	12.5	12.2
High basics	10.0	8.7	7.7	8.7
Single women				
Fuel poverty	20.6	14.2	17.5	16.7
High basics	17.1	12.5	13.5	13.7
Couples				
Fuel poverty	4.9	4.5	6.5	5.0
High basics	6.1	6.3	8.3	6.5
All				
Fuel poverty	7.7	7.1	11.5	8.3
High basics	7.9	7.7	10.2	8.3
***Unweighted* N**				
Single men	*170*	*311*	*208*	*689*
Single women	*252*	*585*	*595*	*1,432*
Couples	*1,479*	*2,207*	*750*	*4,436*
All	*1,901*	*3,103*	*1,553*	*6,557*

Table 9A.23. Prevalence of expenditure-share-based poverty indicators, by age and wealth quintile

	Poorest	2nd	3rd	4th	Richest	All
	%	*%*	*%*	*%*	*%*	*%*
Fuel poverty						
52–59	19.5	7.7	1.9	5.2	6.1	7.7
60–74	11.7	7.4	6.4	4.7	6.3	7.1
75+	12.3	14.0	12.5	7.2	10.1	11.5
All	13.9	9.2	6.6	5.4	6.8	8.3
High basics						
52–59	15.2	4.3	7.3	8.0	5.6	7.9
60–74	9.4	9.1	8.8	5.6	6.0	7.7
75+	10.3	9.7	10.3	11.7	8.7	10.2
All	11.2	7.9	8.7	7.6	6.3	8.3
***Unweighted* N**						
52–59	*328*	*349*	*372*	*424*	*428*	*1,901*
60–74	*512*	*607*	*658*	*656*	*670*	*3,103*
75+	*408*	*342*	*320*	*265*	*218*	*1,553*
All	*1,248*	*1,298*	*1,350*	*1,345*	*1,316*	*6,557*

Table 9A.24. Prevalence of expenditure-share-based poverty indicators, by age and self-reported health

	Excellent / Very good	Good	Fair / Poor	All
	%	*%*	*%*	*%*
Fuel poverty				
52–59	4.6	6.7	16.1	7.7
60–74	5.4	6.8	10.3	7.1
75+	11.2	11.6	11.6	11.5
All	6.1	8.0	12.0	8.3
High basics				
52–59	6.3	6.7	13.2	7.9
60–74	7.5	7.4	8.4	7.7
75+	12.8	9.3	8.8	10.1
All	8.0	7.7	9.6	8.3
***Unweighted* N**				
52–59	*926*	*540*	*410*	*1,876*
60–74	*1,282*	*963*	*829*	*3,074*
75+	*445*	*507*	*570*	*1,522*
All	*2,653*	*2,010*	*1,809*	*6,472*

Table 9A.25. Prevalence of expenditure-share-based poverty indicators, by age and number of limitations in activities of daily living

	Zero	One	Two	Three+	All
	%	%	%	%	%
Fuel poverty					
52–59	4.6	9.0	9.5	15.5	7.7
60–74	5.9	7.4	6.5	9.4	7.1
75+	11.1	8.8	11.0	13.1	11.5
All	6.2	8.2	8.5	12.0	8.3
High basics					
52–59	7.1	8.3	8.3	9.8	7.9
60–74	7.6	7.4	5.6	8.9	7.7
75+	10.4	9.9	10.5	10.1	10.2
All	7.8	8.2	7.6	9.5	8.3
***Unweighted* N**					
52–59	*1,108*	*277*	*168*	*348*	*1,901*
60–74	*1,445*	*565*	*337*	*756*	*3,103*
75+	*424*	*274*	*191*	*664*	*1,553*
All	*2,977*	*1,116*	*696*	*1,768*	*6,557*

Table 9A.26. Prevalence of expenditure-share-based poverty indicators, by age and CASP-19 tertile

	Lowest	Middle	Highest	All
	%	%	%	%
Fuel poverty				
52–59	10.9	5.9	3.9	6.6
60–74	9.2	6.0	4.9	6.4
75+	13.0	8.3	9.9	10.6
All	10.7	6.4	5.2	7.3
High basics				
52–59	9.8	6.9	5.2	7.1
60–74	9.1	7.5	5.7	7.2
75+	10.3	10.1	9.5	10.0
All	9.6	7.8	6.0	7.7
***Unweighted* N**				
52–59	*478*	*563*	*620*	*1,661*
60–74	*707*	*869*	*988*	*2,564*
75+	*417*	*326*	*263*	*1,006*
All	*1,602*	*1,758*	*1,871*	*5,231*

Table 9A.27. Prevalence of expenditure-share-based poverty indicators, by age and subjective social status (ladder score)

	0–30	35–45	50/55	60/65	70/75	80–100	All
	%	%	%	%	%	%	%
Fuel poverty							
52–59	21.9	10.2	5.5	6.3	4.5	5.9	7.2
60–74	12.5	10.0	6.6	5.7	5.5	3.8	6.6
75+	12.6	14.2	13.4	9.2	7.2	8.1	10.6
All	15.1	11.0	7.9	6.6	5.4	5.3	7.6
High basics							
52–59	13.5	7.9	6.1	8.4	5.0	6.2	7.2
60–74	6.9	10.9	7.9	7.6	6.7	4.9	7.4
75+	8.4	9.7	10.8	8.5	12.2	9.3	9.8
All	9.1	9.8	8.1	8.0	7.0	6.2	7.8
***Unweighted* N**							
52–59	*119*	*177*	*310*	*428*	*382*	*305*	*1,721*
60–74	*216*	*321*	*572*	*738*	*511*	*426*	*2,784*
75+	*95*	*155*	*268*	*317*	*181*	*173*	*1,189*
All	*430*	*653*	*1,150*	*1,483*	*1,074*	*904*	*5,694*

Table 9A.28. Average number of durables owned and replaced/purchased in last two years, by age and CASP-19 tertile

	Lowest	Middle	Highest	All
Owned				
50–59	9.47	10.07	9.96	9.86
60–74	8.56	9.03	9.41	9.05
75+	7.31	7.35	7.54	7.38
All	8.50	9.05	9.33	8.98
Purchased / Replaced				
50–59	1.57	1.83	1.75	1.72
60–74	1.32	1.48	1.46	1.43
75+	0.86	0.84	0.96	0.88
All	1.28	1.47	1.49	1.42
***Unweighted* N**				
50–59	*478*	*563*	*620*	*1,661*
60–74	*707*	*869*	*988*	*2,564*
75+	*417*	*326*	*263*	*1,006*
All	*1,602*	*1,758*	*1,871*	*5,231*

Table 9A.29. Average number of durables owned and replaced/purchased in last two years, by age and subjective social status (ladder score)

	0–30	**35–45**	**50/55**	**60/65**	**70/75**	**80–100**	**All**
	%	%	%	%	%	%	%
Owned							
50–59	8.76	9.20	9.48	10.08	10.16	10.16	9.82
60–74	8.07	8.45	8.85	8.93	9.38	9.72	8.99
75+	6.57	7.06	6.95	7.37	7.57	7.72	7.25
All	7.93	8.32	8.58	8.92	9.35	9.49	8.88
Purchased / Replaced							
50–59	1.24	1.47	1.63	1.84	1.81	1.87	1.72
60–74	1.02	1.26	1.34	1.50	1.48	1.61	1.41
75+	0.78	0.86	0.81	0.99	0.85	0.71	0.85
All	1.03	1.22	1.29	1.49	1.49	1.53	1.39
***Unweighted* N**							
50–59	*119*	*177*	*310*	*428*	*382*	*305*	*1,721*
60–74	*216*	*321*	*572*	*738*	*511*	*426*	*2,784*
75+	*95*	*155*	*268*	*317*	*181*	*173*	*1,189*
All	*430*	*653*	*1,150*	*1,483*	*1,074*	*904*	*5,694*

10. Loneliness, relative deprivation and life satisfaction

Panayotes Demakakos *University College London*

Susan Nunn *National Centre for Social Research*

James Nazroo *University College London*

Among other things, the analysis presented in this chapter shows that:

- People aged 80 and older are the most vulnerable to loneliness.
- More women than men report feeling lonely, but this difference lessens with age and for those over 80 years old it remains notable only on the 'feel lack of companionship' dimension of loneliness.
- There is a socio-economic gradient in loneliness.
- Living with a partner and feeling her or him very close lowers rates of loneliness.
- Having children but not feeling close to any of them is associated with higher rates of loneliness than being childless.
- Contact with children is an important correlate of loneliness.
- People without friends report the highest rates of loneliness.
- The older people become, the less they feel that the money they have is insufficient to meet their needs.
- The older people become, the more they feel deprived compared with people around them.
- Being of pre-retirement age (less than 60) or over 80 negatively affects levels of satisfaction with life.
- Relationships with friends and family exert a powerful influence on people's life satisfaction.
- Wealth is an important determinant of people's life satisfaction but its effect declines over the age of 75.

10.1 Introduction

This chapter examines three related issues of great importance for people aged over 50: loneliness, relative deprivation and life satisfaction. The main objectives of the chapter are: (1) to describe self-perceived deprivation, whether this be social (i.e. loneliness) or material (lack of the means to live as one thinks appropriate), and life satisfaction; (2) to show the differences among the various population sub-groups in loneliness and relative deprivation and well-being (life satisfaction); and (3) to examine how loneliness and relative deprivation influence these people's lives. Finally, it aims to explore the correlates of loneliness, relative deprivation and life satisfaction of people in England aged 50 and older.

Britain has a long tradition of studying loneliness (Victor et al., 2002). Loneliness refers to the experience of negative feelings due to the inadequacy of existing relationships (De Jong-Gierveld and Havens, 2004). It can be defined as 'situations in which the number of existing relationships [is] smaller than is considered desirable or admissible, as well as situations where the intimacy one wishes for has not been realized' (De Jong-Gierveld, 1987). Loneliness is an important concept for epidemiological and social research as it relates directly to human health and well-being (Cacioppo et al., 2002; Hawkley et al., 2003; Hawkley and Cacioppo, 2003; Cattan et al., 2005). There is a widespread view in Britain that loneliness is mainly a problem of old age (Victor et al., 2002). However, research shows that loneliness relates not only to age but also to other social and demographic characteristics such as gender, socio-economic status, marital status, quality of social networks and contact with friends (Pinquart and Sorensen, 2001). Thus, this chapter attempts to shed further light on the role that loneliness plays for older people in England by providing information on the prevalence of loneliness among people over 50 years old and the types of people at risk of loneliness.

As well as the loneliness that might be conceptualised as self-perceived social deprivation, this chapter also examines self-perceptions of relative economic deprivation. It focuses on perceptions of the adequacy of people's financial resources to cover their needs; individuals' own assessment of their economic position compared with their friends and other people around them; and of their ability effectively to meet their essential social needs. The purpose behind the inclusion of the relative deprivation section in this chapter is dual: first, along with the loneliness analysis, to contribute to our knowledge about the impact of self-perceived deprivation (whether social or economic) on the lives of older people in Britain; and second, to improve our understanding of the ways in which socio-economic deprivation influences human life, by highlighting a rarely discussed but interesting dimension of it that relates to individuals' own judgements about their socio-economic position.

Finally, this chapter focuses on respondents' life satisfaction and what might be its most important correlates. Life satisfaction is examined from the perspective of subjective well-being. Subjective well-being refers to people's own evaluation of their lives (Diener, Suh and Oishi, 1997); in conceptual terms it encompasses two major dimensions that should be understood as interrelated but independent: the emotional-affective (which can be divided further into negative and positive affect) and the cognitive-judgmental (Diener et al., 1985; 1999). Our study is concerned with the cognitive judgmental dimension of subjective well-being and attempts to explore 50-plus-year-old people's overall satisfaction with life, rather than with specific domains of it. This overall assessment is based on people's own criteria and standards (Diener et al., 1985) and reflects their global views of how well they are doing in their lives. The aim is for ELSA to provide a concise and accurate account of subjective well-being at the age of 50 years or more.

10.2 Measures

ELSA measures loneliness with a four-item scale (Hughes et al., 2004), which is based on the widely-used 20-item Revised UCLA loneliness scale (Russell, 1996). ELSA's four constituent items are selected on the basis of their psychometric values and conceptual importance. They are:

1. How often do you feel you lack companionship?
2. How often do you feel isolated from others?
3. How often do you feel left out?
4. How often do you feel in tune with the people around you?

The dimensions of loneliness that this scale measures are self-perceived isolation, and relational and social connectedness. The response scale for all four items is a three-point Likert scale with the categories hardly ever/never; some of the time; and often. For the purposes of our chapter, the categories some of the time and often were combined so that all respondents are characterised as either feeling lonely (response categories some of the time and often) or not (response category hardly ever/never). This categorisation is employed in order to distinguish between people who clearly do not experience loneliness and people who do, so as to clarify which characteristics of human life relate to loneliness and which do not. The analysis uses all four questions in its aim to provide a comprehensive account of the various dimensions of loneliness and show what particular loneliness-related problems the various population sub-groups encounter.

Relative deprivation is measured by four questions aiming to capture not only its absolute and individual-centred dimension but also its social and comparative dimension. The questions employed are:

1. Please say how often you find you have too little money to spend on what you feel your needs are? (possible responses: never; rarely; sometimes; often; and most of the time)
2. Compared to the financial situation of other people living around here, would you say your household is ... (possible responses: much worse off; a bit worse off; about the same; a bit better off; much better off)
3. How does your financial situation compare with most of your friends, would you say your household is ... (possible responses: much worse off; a bit worse off; about the same; a bit better off; much better off)
4. Does having too little money stop you from doing any of the following things … (the possible responses were yes or no). The interviewer coded all that apply from the following list of activities:
    1. buy your first choices of food items
    2. have family and friends round for a drink or meal
    3. have an outfit to wear for social or family occasions
    4. keep your home in a reasonable state of decoration
    5. replace or repair broken electrical goods

6. pay for fares or other transport costs to get to and from places you want to go
7. buy presents for friends or family once a year
8. take the sorts of holidays you want
9. treat yourself from time to time or
10. none of these

Finally, life satisfaction was measured with the satisfaction with life scale (SWLS), developed by Diener and his colleagues in the US (Diener et al., 1985). It consisted of five statements:

1. In most ways my life is close to my ideal
2. The conditions of my life are excellent
3. I am satisfied with my life
4. So far I have got the important things I want in life
5. If I could live my life again, I would change almost nothing.

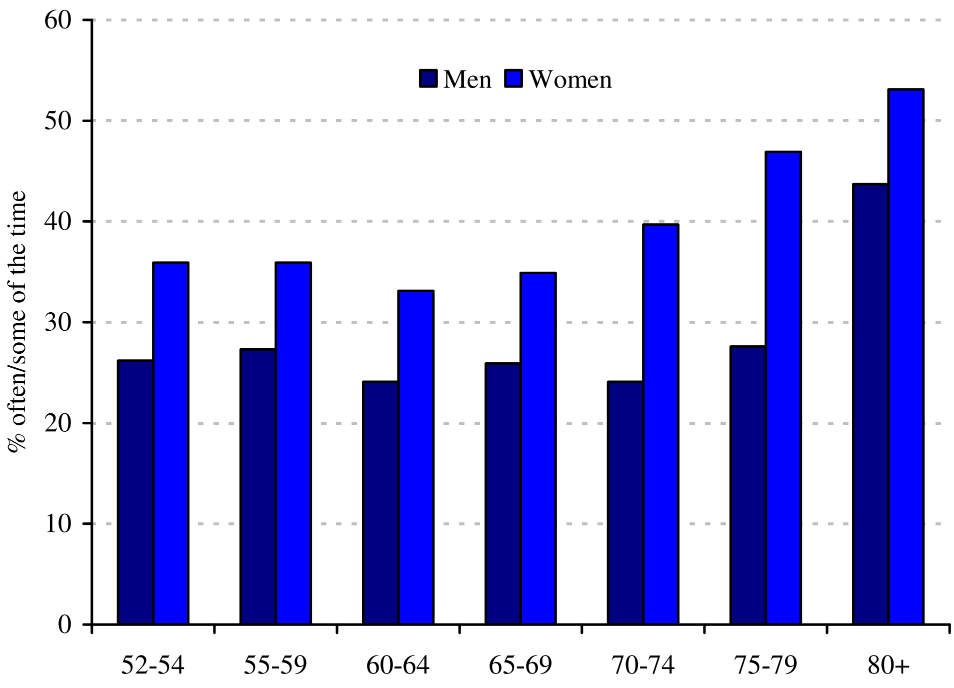
The respondents were asked to say how much they agree or disagree with these five statements on a seven-point Likert scale, with options ranging from strongly agree to strongly disagree (mid point: neither agree nor disagree). For the purposes of this chapter, all three disagree statements are collapsed into one response category labelled disagree. This was decided on methodological and conceptual grounds. The former refers to the small number of people who disagreed with the five statements, which makes retaining the original seven-point scale not especially useful. The latter pertains to the authors' intention to highlight the factors associated with the enhancement of well-being rather than those that diminish it and make people feel dissatisfied with their lives. The life satisfaction summary score might range from 5 to 35 and higher values reflect greater satisfaction with life.

10.3 Loneliness by age and sex

Age affects all four dimensions of loneliness and the main conclusions that we can draw from the analysis of this association are that (a) age relates to loneliness mostly in a non-linear way and (b) it is people over 80 years old who suffer most from loneliness. The shape of the distribution of loneliness across age groups, up to 80 years of age, is that of a flattened U, while beyond that age, the proportion of respondents feeling lonely increases significantly. The flattened U-shaped association between age and loneliness suggests that people in their 50s are slightly more vulnerable to loneliness than those in their 60s, while as age progresses and respondents approach 80 years old, loneliness rates increase again. People in their 80s or older report the highest rates of loneliness, a finding that suggests an age-related threshold that strongly influences loneliness and its effect on human life (Table 10A.1).

Considering the individual dimensions of loneliness (of the four examined here), it is 'feeling in tune with other people around' that relates most closely to age. Its association with age is closer to linearity than those of the other loneliness dimensions, indicating that the older people become, the more they feel they are losing touch with their social environment. This gradual loss of contact with other people is followed by an increase in the rates of 'feel lack of companionship' past the age of 70 and an observable increase in the levels of 'feel isolated from others' at around the age of 75. The dimension of loneliness which seems to be most affected by age later in life (after 80) is the 'feeling of being left out'. In conclusion then, age appears to be a factor that significantly affects all dimensions of loneliness and people over 80 are more vulnerable to loneliness than any other age group (Table 10A.1).

Figure 10.1. Loneliness by age and sex



Exploration of the potential association between sex and loneliness across age groups shows that, in general, both age and sex influence loneliness independently; the effect of age on loneliness is observed in both sexes and sex seems to exert an impact on loneliness over and above age – men appear to be less vulnerable to loneliness than women across the age spectrum. As regards the potential sex-differences in the rates of loneliness, significantly fewer men than women feel a lack of companionship, in all age groups. The same applies to the cases of feeling left out and isolated from other people up to the age of 80 years, but beyond this age, sex differences between men and women disappear. No systematic sex-difference is observed across age groups for the 'feel in tune with other people around' dimension. A point worth noting about the potential sex difference in loneliness is that this declines for those aged 75 and over: this stage appears to be a period at which men and women suffer equally from loneliness. The only exception is that considerably more women feel a lack of companionship than men of the same age (Table 10A.2 and Figure 10.1).

10.4 Loneliness by wealth

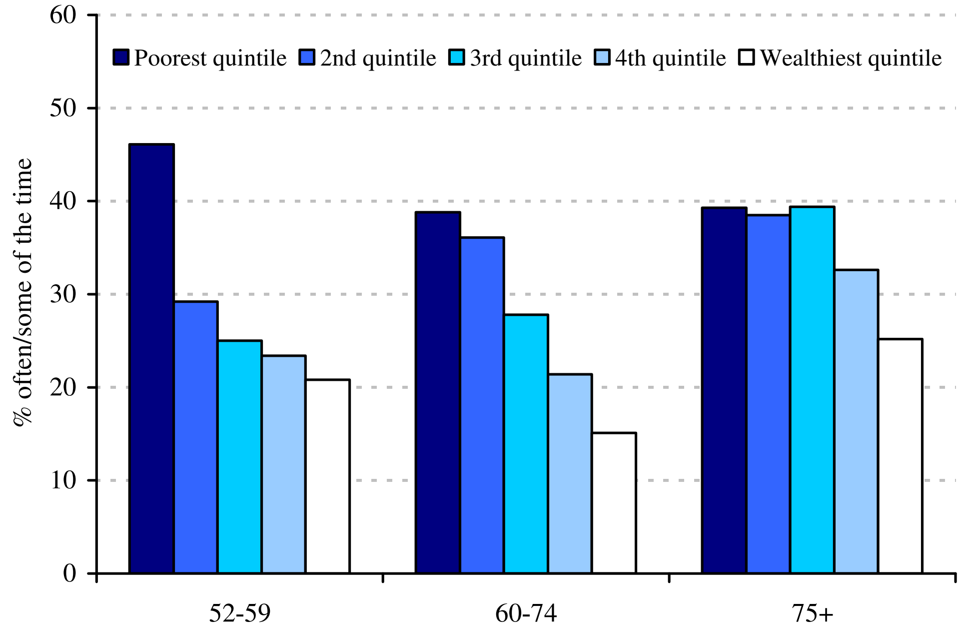
The primary conclusion that we can draw from our examination of the association of age and loneliness across wealth quintiles is that wealth is a major correlate of loneliness across age groups. The effect of wealth on loneliness is purely linear (only the oldest age group constitutes a minor exception to this general rule) and it seems that there is an economic gradient in loneliness over and above age. The gradient is clear for all four dimensions of loneliness and in some cases is very steep, with the poorest respondents reporting double or greater the rates of feeling lonely than their wealthiest counterparts. Specifically, we found that in all but the oldest age group, the wealthier the respondents, the less lonely they feel. The only exceptions to this pattern are (a) slightly lower percentages on the ‘feel lack of companionship’ dimension of those in the fourth quintile of wealth compared with those in the fifth (the wealthiest) quintile (though this applies only to participants aged 52–59); and (b) inconsistency in the association between ‘feeling in tune with people around’ and wealth quintiles at age 60 and over.

Another interesting characteristic of the association between wealth and loneliness is that the magnitude of the differences in loneliness among the wealth quintiles is variable. On all four dimensions of loneliness, the differences between those in the poorest and those in the second poorest quintiles are far greater than those observed between any other adjacent quintiles. These striking differences clearly show that up to the age of 75 years, the poorest respondents constitute the section of the population most vulnerable to loneliness. A further interesting observation is that for the younger group (aged 52–59), the differences between the three wealthiest quintiles on all four dimensions of loneliness are not great. But eventually, this trend changes and at age 60–74, the differences become greater. In the oldest group (75 and over), the pattern of association between wealth and loneliness is somewhat different. On all four loneliness dimensions, the differences between the poorest quintile and the second and third quintiles decrease (in fact, for ‘feel left out’ and ‘feel isolated from people around’, those in the second quintile report slightly lower rates than those in the third quintile), while the distances between the first three quintiles and the fourth, or between the fourth and the wealthiest quintiles, increase (the only exception for the latter is observed on the ‘feel in tune with people around’ dimension) (Table 10A.3).

But beyond the comparison of wealth quartiles, examination of the association of age and loneliness within each wealth quintile shows that age affects loneliness in different ways. In the poorest quintile, the older respondents generally feel less lonely than their younger counterparts (the only exception to this trend is on the ‘feel lack of companionship’ dimension). Nevertheless, the differences between the three age categories within the poorest quintile are quite small, indicating that age plays a minor role in poor respondents’ degrees of loneliness. In the second quintile, the association between age and loneliness is linear and exactly the opposite from that of the poorest quintile: the younger the respondents, the less lonely they feel. This also seems to be the case for respondents in the third quintile of wealth. In the two wealthiest quintiles, the association between age and loneliness seems to take more of a

U shape, with respondents in their 60s and early 70s feeling less lonely than both their younger and older counterparts. In general, it seems that the wealthier the respondents, the more significantly age affects their loneliness levels (Table 10A.3 and Figure 10.2).

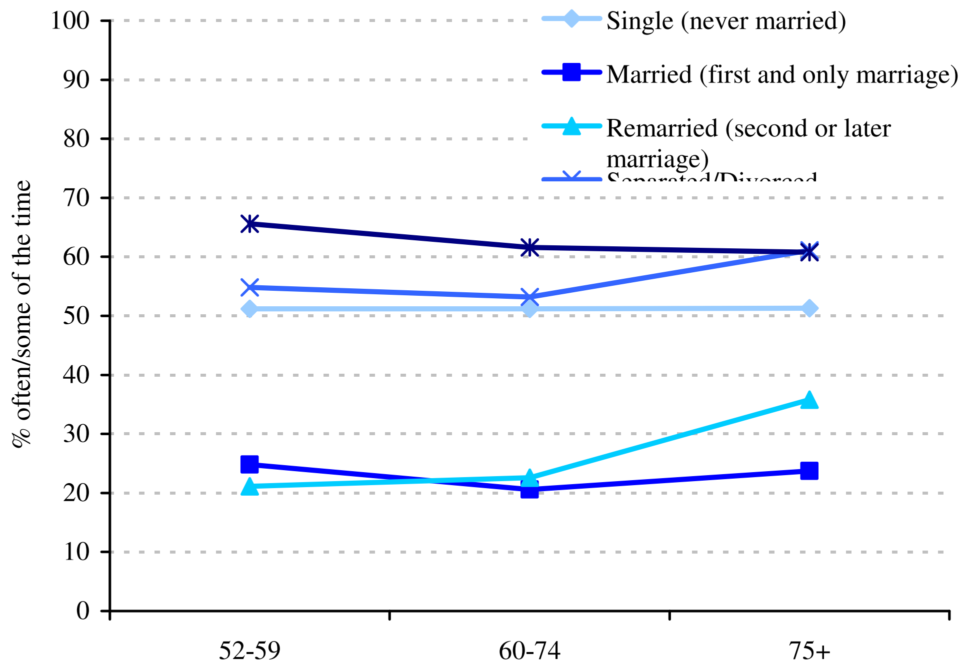
Figure 10.2. Feel isolated from other people by age and wealth



10.5 Loneliness by marital status and closeness of relationship with spouse

Marital status appears to be a major correlate of loneliness. Respondents who were not married at the time of interview were significantly more likely to be lonely than the group of married people and this was observed across all age groups. In particular, respondents who are either widowed or separated/divorced report feeling lonely much more than those who are married (or remarried). The percentage of widowed respondents reporting a lack of companionship is almost three times higher than that of the married respondents, while roughly twice as many widowed respondents 'feel left out' or 'feel isolated from other people' compared with married people. Single respondents who have never married seem to constitute an intermediate category, with scores on the various dimensions of loneliness in between those of widowed or divorced/separated, and married. We can see no major age-related increase or decrease in loneliness for any marital status category across the age groups. This is a major finding, suggesting that the loneliness of an individual is influenced more by her or his marital status than by her or his age (Table 10A.4 and Figures 10.3 and 10.4).

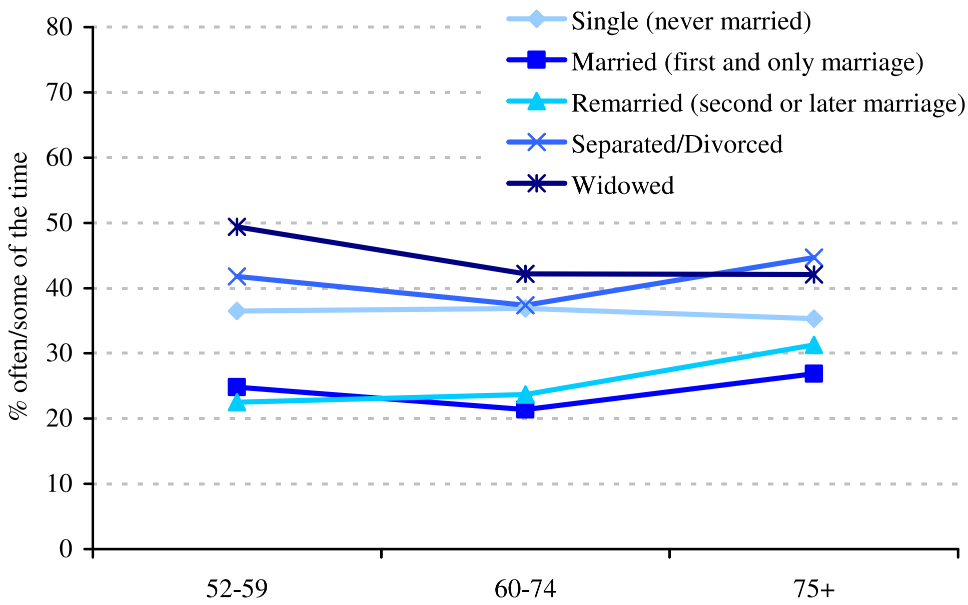
Figure 10.3. Feel lack of companionship by age and marital status



Generally, widowed respondents consistently do worse than any other group in every aspect of loneliness (apart from 'feeling in tune with other people') across age unless they are over 75 years old, in which case it is the separated or divorced participants who face the greatest loneliness. Interestingly, the oldest widowed respondents do somewhat better in terms of loneliness than their younger counterparts, reporting slightly lower levels of loneliness. This age difference might indicate either that widowhood is more strongly linked to loneliness when it happens earlier than expected in life, or that widowed people of 75 years and more cope better with their widowhood (some of them might have become widowed earlier in life and therefore have had time to adjust to their situation) (Table 10A.4 and Figure 10.4).

Age does not seem to affect the loneliness rates of single (never married) respondents. The proportion of single respondents reporting that they either feel a lack of companionship or feel isolated from other people remains remarkably stable across time. The percentages of single people on the other two loneliness dimensions ('feel left out' and 'feel in tune with other people around') slightly decrease as people get older. In contrast, the percentages of lonely people among the married or divorced/separated people once they pass 75 years of age increase steadily. In conclusion, it seems that age loses much of its importance as a correlate of loneliness when the association with marital status is accounted for and therefore that the assumed age-effect on loneliness seems to be at least partly a by-product of the connection between loneliness and other variables (Table 10A.4).

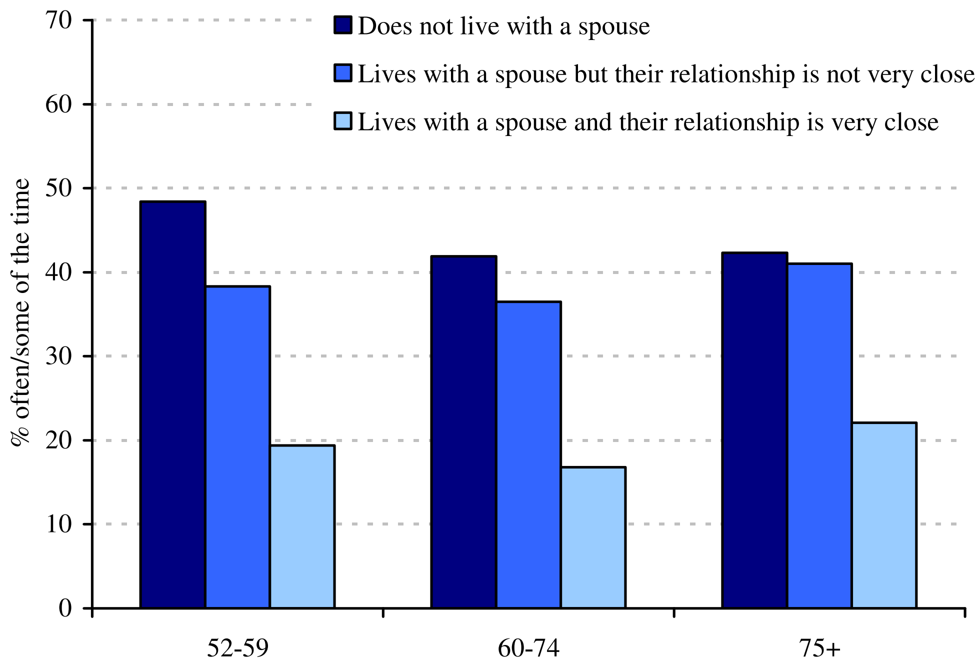
Figure 10.4. Feel isolated from people around by age and marital status



Our analysis also shows that it is not merely living with a partner that decreases loneliness but also the closeness of that relationship. Being married or living with a spouse or partner does counteract loneliness where the couple has a very close relationship, but otherwise, marriage or cohabitation loses much of its importance as a defence against loneliness. The general pattern of the association between living with a spouse or partner and loneliness is that those whose relationship to their partner is very close feel much less lonely than those whose relationship is not very close; the latter in turn feel less lonely than those living without a spouse or partner. Nevertheless, the differences between those living without a partner and those living with one who is not very close to them are not considerable in any loneliness dimension and most importantly are observable only in the youngest group (52–59). Moreover, these differences become even less pronounced as people age and disappear completely in the 75+ group. In contrast, the differences between those who live with a spouse or partner who is close to them and the other two categories are great and remain intact throughout life (Table 10A.5 and Figure 10.5).

For each dimension of loneliness, the greatest difference between respondents who do not live with a spouse or partner and those who do (irrespective of the closeness of the relationship) is observed on the ‘feel lack of companionship’ dimension. Approximately five times as many people in the category ‘not living with a spouse/partner’ report that they often or sometimes feel a lack of companionship than those living with partners to whom they feel very close. While the difference between the latter and those who live with a spouse to whom they do not feel very close is relatively small, in absolute terms this is not negligible as its average value across age groups is 17.3%. It is worth pointing out here that the proportion of spouseless people who often or sometimes feel a lack of companionship is the highest observed in this study, a finding that clearly shows loneliness to be a major problem for people without a spouse or partner. In terms of feeling left out and isolated, the differences between those without a partner and those with a spouse or partner but to whom they do not feel very close, are small compared with those between these two groups and those who report a very close relationship with their partner. Finally, it seems that the 'feel in tune with other people around', dimension of loneliness is the only one that is more influenced by age than by the relationship with a spouse/partner (Table 10A.5).

Figure 10.5. Feel isolated from people around, by age, living with spouse/partner and closeness of relationship to her/him



10.6 Loneliness by relationships and frequency of contact with children

Another facet of human life that is expected to influence loneliness is parenthood, closeness of the relationships with children and frequency of contact with them. But before discussing the relevant tables (Tables 10A.6 and 10A.7), we should state that the proportion of people who report either not feeling close to any of their children, or rarely having contact with them, is very small (see the respective bases in Tables 10A.6 and 10A.7) and therefore any conclusion drawn for these categories of people should be treated with caution.

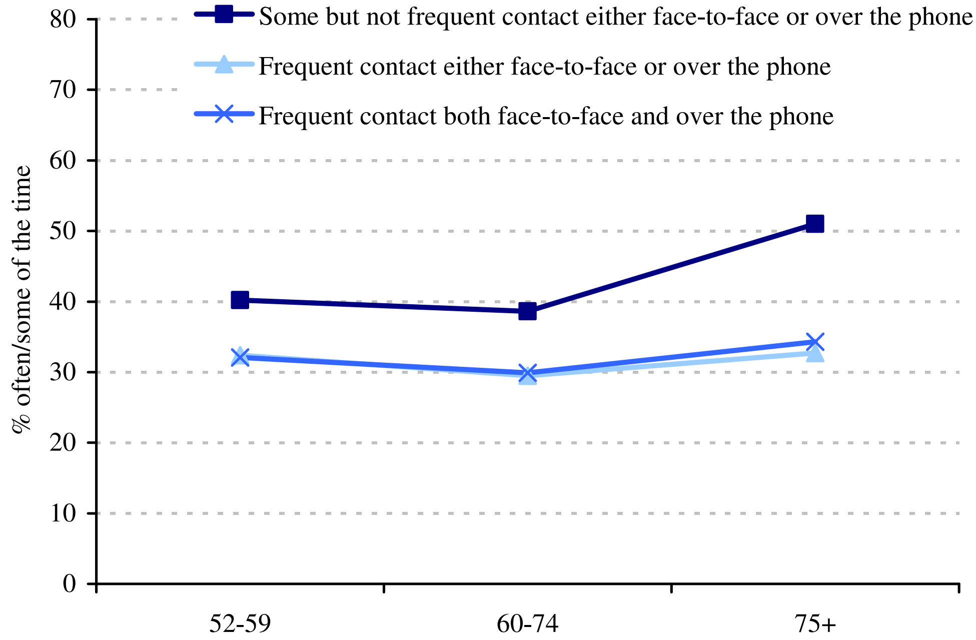
Bearing this in mind, the first conclusion we can draw from our study is that people who have children but do not feel close to any of them report consistently higher rates than childless people on all dimensions of loneliness except 'feel in tune with people around'. This finding suggests that having children should not be considered *a priori* a factor preventing or lessening loneliness and that childless people do not necessarily suffer more loneliness (at least up to age 75, for which we have adequate data). A related finding refers to the variation in the differences in loneliness between those with children to whom they do not feel close and the other two groups as age progresses (up to age 75). These differences are greatest for those in the youngest group (52–59) and decrease significantly in the next age group (60–74). Finally, it is worth highlighting that the associations between having children or not and the closeness of the relationship with them seem to follow similar patterns on all four dimensions of loneliness, across age (Table 10A.6).

Frequency of contact with children appears to be an important correlate of loneliness, as people who have frequent contact with their children (at least once or twice a week, irrespective of whether this is face-to-face or over the phone, or both) feel less lonely than those who have less frequent contact or no contact at all. There are no considerable differences between having frequent contact with children either face-to-face *or* over the phone and having frequent contact with children in *both* ways. This indicates that it is not necessary for older parents frequently to meet their children face-to-face; frequent phone contact seems to function equally well as a means of communication that effectively reduces loneliness. The only slight exception to this conclusion relates to the lack of companionship in the groups aged 60–74 and over 75, where those who frequently meet *and* speak over the phone with their children feel a lack of companionship to a greater degree than those who either meet up *or* speak over the phone frequently with their children (while the reverse is true for the youngest group) (Table 10A.7).

Table 10A.7 also shows that having rare or no contact at all with children raises considerably the loneliness levels of parents in their 50s; they are the loneliest group of parents on all four loneliness dimensions. Nevertheless, this is not observed in the intermediate age group, where parents who have no contact with their children report the same loneliness levels as those having some but not frequent contact (except in the ‘feel lack of companionship’ dimension). Moreover, Table 10A.7 shows that from the age of 60, a meaningful two-fold division of parents can be made according to how often they contact their children, between those parents who have any kind of frequent contact (once a week or more) and those who have frequent contact (either meet or speak over the phone or both). These two categories have distinctly different loneliness profiles and any policy aiming to fight loneliness should take them into account.

Age seems to affect loneliness in all categories of frequency of contact with children. In each category except that of people having rare if any contact with their children, those belonging to the older group (75+) report higher rates of loneliness than the younger respondents of their respective category. However, the differences between parents who have some frequent contact with their children and those without frequent contact with their children remain stable across the age groups. Age plays a somewhat different role for those contacting their children rarely or not at all. The progression of age in this category seems to reduce their feelings of isolation and being left out (Table 10A.7).

Figure 10.6. Feel left out, by age and frequency of contact with children



10.7 Loneliness by relationships and frequency of contact with friends

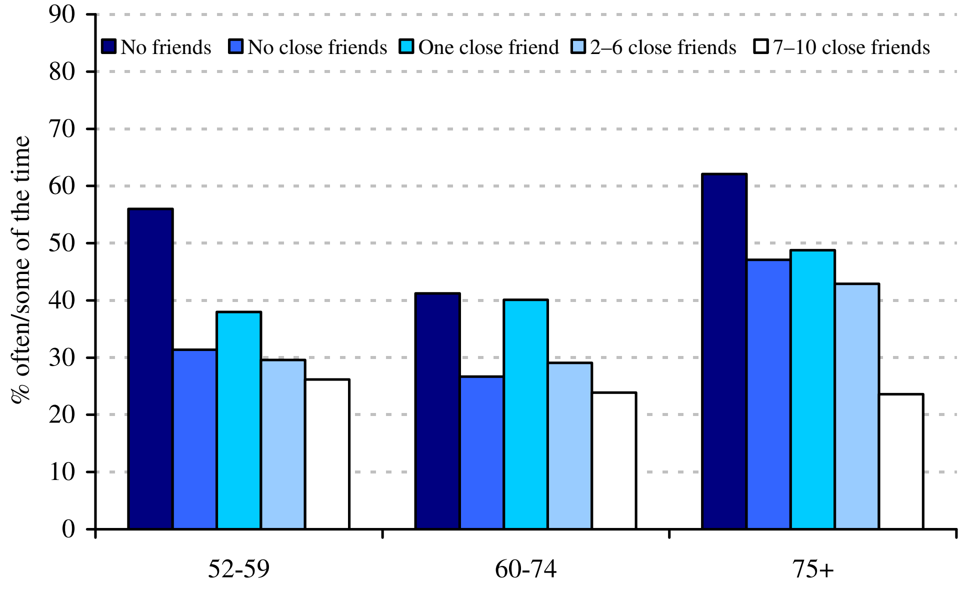
Our data suggest that a lack of friends makes people in their 50s and older particularly vulnerable to loneliness. They also show that having an adequate number of close friends (at least two) is one of the best ways to avoid loneliness in middle and old age. The analysis reveals that by and large, it is friendless people who suffer mostly from loneliness, followed by those with only one close friend and not, as expected, by people without any close friends at all; people with no close friends feel less lonely than those with only one friend and are lonelier only than those with two or more close friends. It also shows that those who report the lowest levels of loneliness are the people who have seven to ten close friends (Table 10A.8).

People without friends consistently report higher rates of loneliness than any other group on all aspects of loneliness. In fact, they report the highest loneliness rates (across age groups) observed in this report, with the exception that on the dimension of 'feel lack of companionship' they report the second highest rates, only falling below those who live without a partner. This means that friendship is the most significant correlate of loneliness for older people in England and constitutes a major regulator of it (apart from the companionship-related aspect, which is determined mostly by the closeness of the relationship with a spouse). Interestingly, in the group of participants without friends it is the youngest people who suffer most from loneliness. Age contributes to a decrease in the excessive loneliness rates of friendless participants (at least as regards feeling isolated, feeling left out and feeling out of tune with other people around): approximately 10% fewer friendless people report feeling lonely at the age of 60 or older than their counterparts in the youngest age group. Thus, it seems that friendlessness is a greater problem at middle age than for those aged 60 or more (Table 10A.8).

Another remarkable finding is that people with no close friends in most cases feel less lonely than those with one close friend (irrespective of the loneliness dimension examined). This finding is surprising in the sense that we might expect that the presence of a close friend-confidant would contribute to lower levels of loneliness. This finding is probably related to respondents' socialisation choices, but more research is needed in this area if we are to understand it more deeply. The proportion of lonely people among those with only one close friend and its change across age remains more or less stable up to the age of 75, when we observe an increase in feelings of isolation and lack of companionship (Table 10A.8).

People who have at least two (and up to six) close friends generally report lower rates of loneliness than those with no close friends; they feel less isolated and left out (the exception here is the intermediate age group (60–74), where the difference between the two groups disappears completely). In relation to feelings of lack of companionship, the rates are similar across age groups; a coincidence which might indicate that friends are not the only possible companions for middle and older age people, and which strengthens the conclusion about the importance of a spouse or partner as a companion. As expected, age affects the loneliness rates of this category; many more older people (75+) report feeling lonely than younger people (Table 10A.8 and Figure 10.7).

Figure 10.7. Feel left out, by age, having friends and closeness to them



People who have seven or more (up to ten) friends appear to feel consistently less lonely than any other category across the three age groups. The proportion of lonely people among them is one of the lowest observed in this report and the percentage of people in their 50s from this category who report that they never or rarely feel in tune with the people around them is the lowest that we observed.

Another surprising characteristic of this group is that age appears not to affect their companionship-related feeling. People who have seven to ten close friends seem to have the same low rates in the ‘feel lack of companionship’ aspect of loneliness across age. This is important because these people constitute the only exception to the empirical rule (drawn from all tables in this chapter) that people’s feeling that they lack companionship increases with age. So, it seems that having a substantial number of close friends is a way for people to meet their general need for companionship (Table 10A.8 and Figure 10.7).

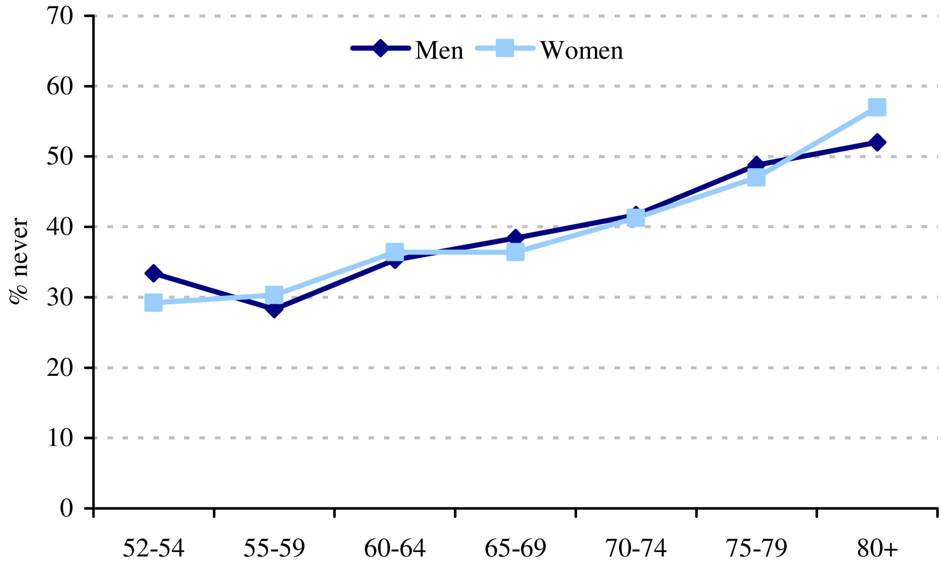
In contrast to the closeness of relationships with friends, frequency of contact with them appears not to be a major correlate of loneliness. It somewhat influences the degree of loneliness for people in their 50s, but it does not play a major role for those aged 60 or older. Thus, the effect on loneliness of frequency of contact with friends seems to be confined to middle age, while for those who are older, it is just observable (the only exception is those with very rare or no contact with their friends, who at age 75 or more, feel more isolated, more left out and less in tune with other people than any of their counterparts). At this point, we should note that very few people report having very rare or no contact at all with their friends (Table 10A.9).

10.8 Relative deprivation by age, sex and wealth

Tables 10A.10–10A.14 present participants’ views of whether they are deprived, and in what ways age, sex and socio-economic position influence these views. Close analysis of the age- and sex-related tables of relative deprivation (Tables 10A.10, 10A.12 and 10A.14) reveals two interesting things about people’s differing views of the adequacy of their economic resources. The first is the seemingly contradictory findings between on the one hand, a negative association between age and feelings of lacking sufficient money to cover needs and on the other hand, a positive association between age and feeling deprived compared with friends and the social context. The second thing is the observed sex differences in feeling relatively deprived.

It seems that the association between age and having adequate financial resources to meet one’s needs is linear in both sexes and the oldest group in the sample (80+) appears to feel the least deprived of all age groups (Table 10A.10 and Figure 10.8). But this rather positive observation tends to disappear when the association is viewed from a somewhat different angle. The analysis suggests that the association between age and deprivation ceases to be positive when the latter is considered as context-dependent, related to a person’s individual position in her or his social environment. In that case, the older people become (at least up to the age of 75), the more deprived they feel compared with nearby people or friends (Table 10A.12 and Figure 10.9). A simultaneous examination of Tables 10A.10 and 10A.12 leads to the conclusion that older people appear feel more capable of covering their costs than their younger and wealthier counterparts (probably because their consumption requirements are fewer and therefore can be more easily met with less money), but nevertheless they feel more deprived than other people around them. This occurs mostly because the feeling of deprivation includes a strong comparative dimension, which relates not to meeting basic everyday needs but to socio-economic standing within the community or society. Older people feel that because they are old, they live at the periphery of life regardless of their ability to meet their everyday needs (Tables 10A.10 and 10A.12).

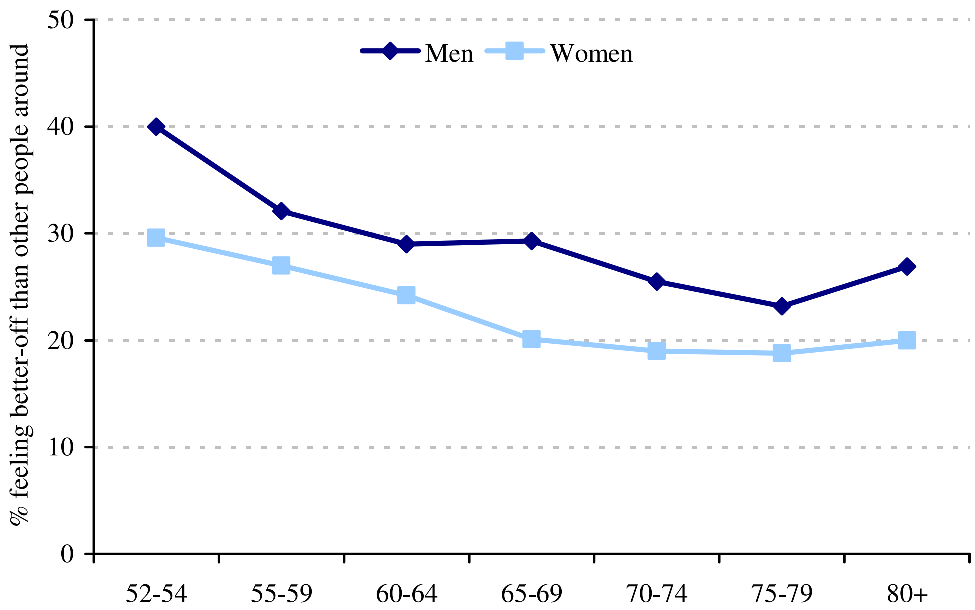
Figure 10.8. Relative deprivation (never lacking money to spend on own needs) by age and sex



The second issue that emerges from Tables 10A.12 and 10A.14 relates to men's and women's different perspectives on relative deprivation. Women across age groups report feeling more deprived than men when deprivation is defined in relation to the social context or when it is connected to social activities. Nevertheless, no sex differences are observed in Table 10A.10, where relative deprivation is measured as adequacy of the person's financial resources to meet her or his needs. The fact that women constantly report higher rates of relative deprivation in questions related to social comparison probably indicates their higher expectations and underlines the need to examine deprivation predominantly within the context of social systems rather than in absolute terms (Tables 10A.12 and 10A.14).

Tables 10A.11 and 10A.13 provide data on the association between wealth and self-perceived deprivation. As expected, in most cases this is linear across the various age groups though there are some exceptions. Table 10A.11 describes the association between wealth and adequacy of economic resources to cover one's needs. This is purely linear across age groups, with no exception. A close examination of Table 10A.11 reveals two interesting findings: the first is that the association between age and the self-assessed adequacy of a person's economic resources to cover their own needs is linear only in the poorest quintile, while the further up the wealth quintiles we move, the less clear the pattern of this association becomes. This finding – in conjunction with the fact that in the poorest quintile the difference between the younger and the older respondents' assessments of their ability to meet their needs is the greatest of its kind – shows that age influences judgement about socio-economic position and ability mostly in the case of the poorer participants. It is less true for their wealthier counterparts. The second interesting finding is that the differences in self-assessments of economic ability between people in the poorest and wealthiest quintiles decreases as age increases. Table 10A.13 shows that wealthy and younger participants tend to feel better off than their friends or people around them. It also shows that the association between wealth and relative deprivation (feeling better off than people around or one's friends) across age groups is not linear. Similarly, it shows that age relates to self-perceived deprivation across wealth quintiles in a non-linear manner. Taken together, these findings suggest that both wealth and age influence self-perceptions about deprivation.

Figure 10.9. Relative deprivation (feel better off than other people around), by age and sex

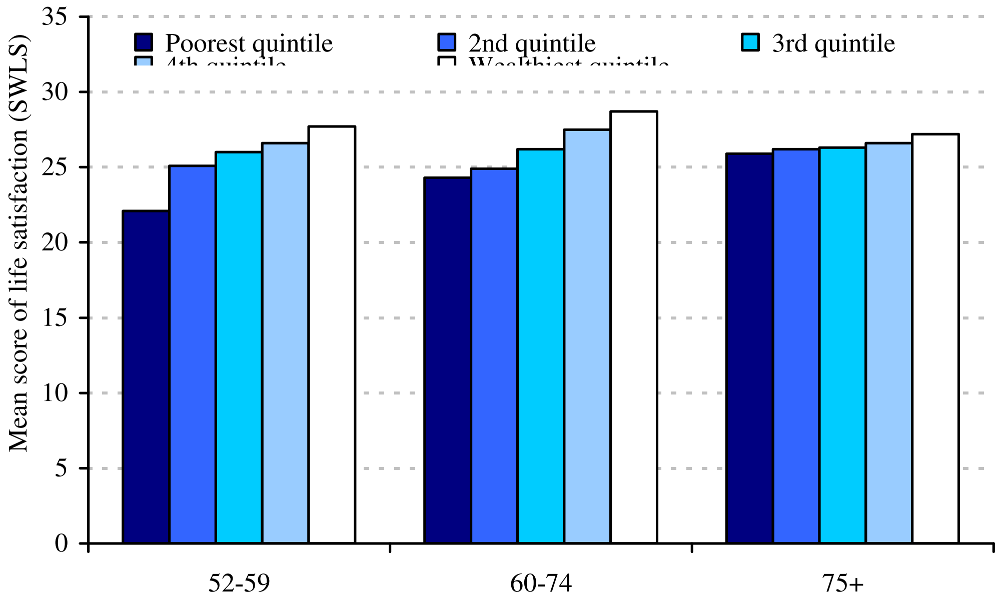


10.9 Life satisfaction by age, sex and wealth

There are interesting findings to note from looking at the relationship between age and the five life satisfaction statements. Analysis shows that the oldest (80+) and those aged 55–59 generally report the lowest life satisfaction (the lower the score the less the satisfaction with life) and highlights the 60s and early 70s as a stage of life at which people are more satisfied. The only clear exception to this general conclusion is the fifth life satisfaction statement used, to which age is related in a linear manner: the older the people become, the less willing they are to change something in their lives if they could live them over again. The examination of the mean scores on the life satisfaction measure, which is also calculated for each age group, shows this trend more precisely. The mean score is lowest for those 55–59 years old, but then rises with age until we reach the group aged 75 and over. The biggest age-differences are observed in the final statement ('if the respondent could live their life again, they would change almost nothing'). Arguably, the younger respondents have more time and opportunities to change the things in their lives that they are unhappy with, whereas the older respondents may either be genuinely happier with their lot in life, or have resigned themselves to no longer being able to make big life changes (Table 10A.15).

Table 10A.15 also explores the potential sex differences in life satisfaction across age. The general trend of the association between age and life satisfaction for both men and women is for the two older groups to score higher than the youngest; but there are some observable sex differences: the older men are, the less they disagree with the five statements (the only slight exception to this is the third statement), while for women this is true only for the two last statements. Women of the middle age group (65–69) consistently report the highest agreement and the lowest disagreement scores on the first three statements. The overall results for the sexes (without taking age into account), show women tending to report slightly higher rates of disagreement than men with all but the last statement, e.g. 14% of women disagree that their life is close to ideal, compared with almost 12% of men. The mean score on life satisfaction was calculated for each age group by sex and reflects these results. Men aged 70–74 have the highest mean score (27.4) both within the age groups for men only, and also between men and women. For women, the highest mean score (26.6) occurs in the 65–69 age group. Overall, men have a slightly higher mean score than women (26.4 compared to 26.1) (Table 10A.15).

Figure 10.10. Life satisfaction (mean score), by age and wealth



The examination of the association between life satisfaction and wealth across age groups reveals some interesting findings. Wealth is linearly related to life satisfaction and there is a clear socio-economic gradient up to the age of 75, where the effect of wealth, although it remains important, seems less strong (in the case of the fifth statement it is virtually non-existent). Thus, the wealthier people are in their 50s, 60s and mid-70s, the higher their levels of life satisfaction (Figure 10.10). The most dramatic wealth-related differences occur in the age group 52–59, both between adjacent groups and between the poorest and wealthiest groups; e.g. nearly two-in-five of those in the poorest quintile disagree with the second statement (that the conditions of their life are excellent), compared with a little over one-in-five of those in the second quintile and one-in-ten of the wealthiest quintile. Interestingly, the association between age and life satisfaction becomes weak and does not seem to follow any particular trend once examined across wealth quintiles (Table 10A.16 and Figure 10.10).

10.10 Life satisfaction by age, social relationships and loneliness

Overall, Table 10A.17 suggests that family relationships are an important correlate of life satisfaction for both men and women. In most cases, family relationships and life satisfaction are associated in a linear way, though not for people over 75. It also shows that there are no notable differences between the sexes in life satisfaction when this is broken down by family relationships across age groups. The relationship with the spouse or partner relates to life satisfaction in a linear way for both sexes, in the two youngest groups (52–59 and 60–74); those not living with a spouse or partner have the lowest mean life satisfaction score, while those living with a spouse or partner with whom they do not have a very close relationship have a lower mean score than those who have a very close relationship with their spouse or partner. For the over 75-year-olds, the situation is different – those not living with a spouse or partner have higher life satisfaction scores than those not having a very close relationship with a partner, while those who feel very close to their partner report the highest scores. The particularity of this age group might tell us that at 75 and older, widows and widowers have come to terms with their situation and it no longer so greatly affects their life satisfaction.

It is clear, however, that having close relationships with at least one of their own children considerably raises the life satisfaction of both men and women across all age groups. Interestingly, those who are childless generally have higher mean scores than those who have children but are not close to them, e.g. women aged 52–59 with no children have a mean score of 24.3, compared with a score of 19.7 for those who have no close children. But as mentioned above, the number of people in our sample who are not close to their children is very small and therefore we should treat this conclusion with caution. Concerning the association between frequency of contact with children and life satisfaction, there is a clear trend of an increase in the mean score of life satisfaction as contact with children becomes more frequent (looking at the ‘total’ column). Nevertheless, this association is not clearly linear across age groups (especially for women). The definite conclusion that can be drawn is that having some kind of frequent contact with one's own children raises considerably one's levels of life satisfaction (Table 10A.17).

Friendship is another important correlate of life satisfaction. In both sexes and across all three age groups those who report not having friends have considerably lower life satisfaction mean scores than any other group – a finding that indicates the great importance of friends for life satisfaction in middle and older age. Nevertheless, Table 10A.18 shows that friendships influence the perceptions of life satisfaction differently in men and women. In men, the associations between friendships and life satisfaction across age groups, and age and life satisfaction within the 'number of friends' categories, are linear without exception. That is, the more friends a man has, the higher his life satisfaction, regardless of his age. In contrast, women who have just one close friend report lower life satisfaction scores than those with no close friend. This trend is observed in all three age groups and probably indicates that women who have selected friendship as a main socialisation pathway but have failed to have an adequate number of close friends, experience a decrease in their life satisfaction rates compared with those women who have decided not to invest a great deal of effort into making and maintaining close friendships. Women also differ from men in terms of the effect of age on life satisfaction within each 'number of friends' category, as this does not follow any particular pattern. We can conclude that for the life satisfaction of women aged 60 and over, age is less important than an adequate number (two or more) of close friends.

Having taken into account the small number of people with very rare or no contact at all with their friends, it seems that frequent contact with friends increases people's life satisfaction. An examination of the totals for both men and women shows that the more frequent the contact with friends, the higher the life satisfaction. But a more detailed exploration of this association shows that there are sex-related differences that need to be discussed. In men, the trends are linear and more frequent contact with friends is associated with higher life satisfaction, while in women frequency of contact with friends does not necessarily relate to life satisfaction (Table 10A.18).

Loneliness appears to be a major correlate of life satisfaction for both men and women: those respondents who report feeling lonely have consistently lower life satisfaction mean scores than those who do not. As expected then, all dimensions of loneliness influence people's life satisfaction. Table 10A.19 also shows that loneliness and life satisfaction are clearly related regardless of age (Table 10A.19).

Finally, Table 10A.20 shows that life satisfaction is closely related to health, as self-perceived health is found to be a major correlate of life satisfaction. The healthier people are, the more they feel satisfied with life.

10.11 Conclusions

The data from the second wave of the English Longitudinal Study of Ageing presented in this chapter provide valuable insights into the prevalence of four different dimensions of loneliness in contemporary England and the sub-groups of the population that are at the greatest risk of loneliness. Our data show that more than two in three people neither feel a lack of companionship nor feel left out at all, and do not feel at all isolated from other people. Nevertheless, less than half of the population often feels in tune with the people around them. With respect to the prevalence of loneliness (% often), a little less than 5% feel left out, a little over 5% feel isolated from other people and nearly 7% feel a lack of companionship. It is only on 'feel in tune with other people around' where the proportion reporting never or hardly ever is somewhat higher (14%). These data are directly comparable to other recent British studies on loneliness. One recent study, which uses a single-item self-reported loneliness measure, suggests that the prevalence of loneliness is 7% (Victor et al., 2005), while another, which focuses on loneliness in Britain after the Second World War, reports that four studies conducted from 1948 show that the prevalence of loneliness in Britain ranges from 5% to 9%. This coincidence in the rates between our data and the findings of these other studies is indicative of the validity of the ELSA loneliness data and suggests that ELSA, given its powerful and multidisciplinary design, could be used as a useful guide to assess the loneliness levels of British people aged over 50. The ELSA data matches the findings of many other recent studies (Pinquart et al., 2001; Pinquart, 2003; Savikko et al., 2005), showing that the risk factors for high rates of loneliness are related to being aged 80 years or more, low levels of wealth, not living with a spouse or partner (and or not being married), having no friends, and not having a close relationship with any of one's children. They also point out that the association between relationships and loneliness contains a qualitative dimension: those with a very close relationship with their partners, who feel close to at least one of their children, who have frequent communication with their children, and have at least two close friends, report the lowest rates of loneliness. Moreover, women seem more likely to feel lonely than men.

Regarding relative deprivation, the data present valuable complementary information to what we already know about socio-economic inequalities. The data show that older people are more likely to believe that they have sufficient resources to meet their needs more easily than their younger counterparts. But they also suggest that older participants feel more deprived than other people around them. This interesting pair of findings tells us much about the social construction of our socio-economic reality and stresses the importance for research and policy-making of focusing not only on the economic input into a household but also on the perceptions of household members about it, its relative value in the wider social context within which the household exists and the comparative advantage that the economic input brings to the household.

The life satisfaction part of the analysis provides insights about the well-being of middle-aged and older people in Britain. It shows that wealth is a major correlate of life satisfaction for the two youngest groups (52–59 years), but is less so for the oldest (75 and over). This means that wealth influences greatly life satisfaction roughly up to the age of 75 years and then its effect lessens. But before we can draw any definite conclusion, further research is needed on this matter. The analysis also shows that there is a decline in life satisfaction at pre-retirement age (before 60) and at 75 years and older, and highlights the importance for well-being of bonds with family and friends. Moreover, it suggests that sex is not a major correlate of life satisfaction, as the observed differences between men and women are minor and of some importance only for those aged 75 and more, where men appear to be slightly more satisfied with their lives than women. A further interesting conclusion that can be drawn from our results when compared with those of other studies, is that the ELSA respondents generally report higher mean life satisfaction scores than older people in other countries (see Pavot et al., 1991). But this conclusion is tentative because ELSA has a different design (e.g. a much larger sample size) than most of these studies and it may be that the observed higher life satisfaction scores of ELSA respondents are a function of methodological differences.

References

Cacioppo, J. T., Hawkley, L. C., Crawford, L. E., Ernst, J. M., Burleson, M. H., Kowalewski, R. B., Malarkey, W. B., Van Cauter, E. and Berntson, G. G. (2002), 'Loneliness and health: potential mechanisms', *Psychosomatic Medicine*, 64: 407–417.

Cattan, M., White, M., Bond, J. and Learmouth, A. (2005), 'Preventing social isolation and loneliness among older people: a systematic review of health promotion interventions', *Ageing and Society*, 25: 41–67.

De Jong-Gierveld, J. (1987), 'Developing and testing a model of loneliness', *Journal of Personality and Social Psychology*, 53: 119–128.

De Jong-Gierveld, J. and Havens, B. (2004), 'Cross-national comparisons of social isolation and loneliness: introduction and overview', *Canadian Journal on Aging – Revue Canadienne du Vieillissement*, 23: 109–113.

Diener, E., Emmons, R. A., Larsen, R. J. and Griffin, S. (1985), 'The satisfaction with life scale', *Journal of Personality Assessment*, 49: 71–75.

Diener, E., Suh, E. M., Lucas, R. E. and Smith, H. L. (1999), 'Subjective well-being: three decades of progress', *Psychological Bulletin*, 125: 276–302.

Diener, E., Suh, E., and Oishi, S. (1997), 'Recent findings on subjective well-being', *Indian Journal of Clinical Psychology*, 24: 25–41.

Hawkley, L. C., Burleson, M. H., Berntson, G. G. and Cacioppo, J. T. (2003), 'Loneliness in everyday life: cardiovascular activity, psychosocial context, and health behaviors', *Journal of Personality and Social Psychology*, 85: 105–120.

Hawkley, L. C. and Cacioppo, J. T. (2003), 'Loneliness and pathways to disease', *Brain, Behavior, and Immunity*, 17: S98–S105.

Hughes, M. E., Waite, L. J., Hawkley, L. C. and Cacioppo, J. T. (2004), 'A short scale for measuring loneliness in large surveys: results from two population-based studies', *Research on Aging*, 26: 655–672.

Pavot, W., Diener, E., Colvin, C. R. and Sandvik, E. (1991), 'Further validation of the satisfaction with life scale: evidence for the cross-method convergence of well-being measures', *Journal of Personality Assessment*, 57: 149–161.

Pinquart, M. (2003), 'Loneliness in married, widowed, divorced, and never-married older adults', *Journal of Social and Personal Relationships*, 20: 31–53.

Pinquart, M. and Sorensen, S. (2001), 'Influences on loneliness in older adults: a meta-analysis', *Basic and Applied Social Psychology*, 23: 245–266.

Russell, D. W. (1996), 'UCLA Loneliness Scale (Version 3): reliability, validity, and factor structure', *Journal of Personality Assessment*, 66: 20–40.

Savikko, N., Routasalo, P., Tilvis, R. S., Strandberg, T. E. and Pitkala, K. H. (2005), 'Predictors and subjective causes of loneliness in an aged population', *Archives of Gerontology and Geriatrics*, 41: 223–233.

Victor, C. R., Scambler, S., Bowling, A. and Bond, J. (2005), 'The prevalence of and risk factors for, loneliness in later life: a survey of older people in Great Britain', *Ageing and Society*, 25: 357–375.

Victor, C. R., Scambler, S. J., Shah, S., Cook, D. G., Harris, T., Rink, E. and de Wilde, S. (2002), 'Has loneliness amongst older people increased? An investigation into variations between cohorts', *Ageing and Society*, 22: 585–597.

Annex 10.1
Tables on loneliness, relative deprivation and life satisfaction

Table 10A.1. Loneliness, by age

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	%	%	%	%	%	%	%	%
Feel lack of companionship								
Often	6.3	5.7	4.6	4.9	7.2	8.9	12.3	6.7
Some of the time	24.8	26.0	24.3	25.6	25.0	29.6	37.6	27.0
Hardly ever or never	68.9	68.3	71.1	69.5	67.8	61.5	50.1	66.3
Feel left out								
Often	4.9	4.7	3.8	4.3	4.7	4.7	9.0	4.9
Some of the time	29.6	30.1	28.0	27.4	26.9	29.4	30.7	28.8
Hardly ever or never	65.5	65.3	68.2	68.3	68.4	65.8	60.3	66.2
Feel isolated from others								
Often	4.8	4.2	5.0	5.1	4.5	6.9	9.9	5.5
Some of the time	25.1	23.6	21.0	21.9	22.1	23.4	30.8	23.5
Hardly ever or never	70.2	72.1	74.0	73.0	73.4	69.7	59.3	71.0
Feel in tune with people around								
Often	51.1	51.8	49.8	48.0	44.9	41.2	40.8	47.5
Some of the time	37.4	36.5	35.4	36.8	38.4	41.8	44.2	38.1
Hardly ever or never	11.5	11.8	14.7	15.2	16.7	17.0	14.9	14.4
Weighted N	*748*	*1,694*	*1,274*	*1,198*	*979*	*919*	*762*	*7,574*
Unweighted N	*668*	*1,678*	*1,344*	*1,279*	*1,069*	*916*	*707*	*7,661*

Table 10A.2. Loneliness, by age and sex

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	% often or some of the time (except for 'Feel in tune with people around', where % refers to hardly ever / never)							
Men								
Feel lack of companionship	26.2	27.3	24.1	25.9	24.1	27.6	43.7	27.3
Feel left out	33.3	33.7	29.9	28.8	26.9	28.7	40.0	31.2
Feel isolated from others	27.8	27.9	24.1	26.9	22.1	26.0	44.0	27.3
Feel in tune with people around	10.0	13.2	16.3	15.6	17.9	17.4	13.1	14.9
Women								
Feel lack of companionship	35.9	35.9	33.1	34.9	39.7	46.9	53.1	39.3
Feel left out	35.7	35.7	33.5	34.5	35.9	38.4	39.6	36.0
Feel isolated from others	31.8	27.8	27.6	27.1	30.8	33.6	39.0	30.5
Feel in tune with people around	13.1	10.4	13.3	14.9	15.6	16.6	15.8	13.9
***Weighted* N**								
Males	*368*	*824*	*596*	*581*	*470*	*400*	*258*	*3,497*
Females	*380*	*870*	*677*	*617*	*509*	*520*	*504*	*4,077*
***Unweighted* N**								
Males	*306*	*761*	*598*	*597*	*510*	*410*	*262*	*3,444*
Females	*362*	*917*	*746*	*682*	*559*	*506*	*445*	*4,217*

Table 10A.3. Loneliness, by age and age-specific wealth quintile

	52–59	60–74	75+	All
	% often or some of the time (except for 'Feel in tune with people around', where % refers to hardly ever / never)			
Feel lack of companionship				
Poorest quintile	50.4	51.4	55.5	52.1
2nd quintile	36.8	37.9	53.7	41.3
3rd quintile	27.8	30.5	47.3	33.5
4th quintile	22.5	22.1	35.9	25.1
Wealthiest quintile	23.0	19.3	26.4	21.9
Feel left out				
Poorest quintile	50.4	43.1	44.4	46.0
2nd quintile	38.6	40.6	39.8	39.7
3rd quintile	31.4	31.9	40.8	33.7
4th quintile	29.4	28.9	33.3	29.9
Wealthiest quintile	25.7	19.9	25.3	22.8
Feel isolated from others				
Poorest quintile	46.1	38.8	39.3	41.5
2nd quintile	29.2	36.1	38.5	34.4
3rd quintile	25.0	27.8	39.4	29.5
4th quintile	23.4	21.4	32.6	24.3
Wealthiest quintile	20.8	15.1	25.2	18.9
Feel in tune with people around				
Poorest quintile	16.6	19.8	20.1	18.8
2nd quintile	11.1	16.6	16.9	14.9
3rd quintile	11.3	15.7	17.6	14.7
4th quintile	10.6	16.4	10.8	13.4
Wealthiest quintile	9.3	10.9	14.8	11.2
***Weighted* N**				
Poorest quintile	*439*	*518*	*309*	*1,266*
2nd quintile	*435*	*649*	*310*	*1,394*
3rd quintile	*519*	*725*	*361*	*1,604*
4th quintile	*504*	*776*	*338*	*1,618*
Wealthiest quintile	*484*	*793*	*337*	*1,614*
***Unweighted* N**				
Poorest quintile	*401*	*533*	*283*	*1,217*
2nd quintile	*435*	*649*	*310*	*1,394*
3rd quintile	*490*	*764*	*347*	*1,601*
4th quintile	*493*	*843*	*328*	*1,664*
Wealthiest quintile	*494*	*882*	*348*	*1,724*

Table 10A.4. Loneliness, by age and marital status

	52–59	60–74	75+	All
	% often or some of the time (except for 'Feel in tune with people around', where % refers to hardly ever / never)			
Feel lack of companionship				
Single (never married)	51.2	51.2	51.3	51.2
Married (first and only marriage)	24.8	20.6	23.7	22.6
Remarried (second or later marriage)	21.1	22.6	35.8	23.4
Separated/Divorced	54.8	53.2	61.1	54.6
Widowed	65.6	61.6	60.8	61.4
Feel left out				
Single (never married)	45.2	44.3	38.0	43.2
Married (first and only marriage)	31.3	26.6	26.9	28.3
Remarried (second or later marriage)	26.3	28.8	36.9	28.6
Separated/Divorced	47.6	43.8	50.1	46.0
Widowed	56.8	46.2	44.7	46.1
Feel isolated from others				
Single (never married)	36.5	36.9	35.3	36.4
Married (first and only marriage)	24.8	21.4	26.9	23.5
Remarried (second or later marriage)	22.5	23.7	31.3	24.0
Separated/Divorced	41.8	37.4	44.7	40.0
Widowed	49.4	42.2	42.1	42.7
Feel in tune with people around				
Single (never married)	15.8	12.1	9.2	12.8
Married (first and only marriage)	12.1	16.7	17.7	15.3
Remarried (second or later marriage)	10.0	14.4	14.3	12.6
Separated/Divorced	9.5	15.5	10.5	12.3
Widowed	12.3	11.7	15.9	14.2
***Weighted* N**				
Single (never married)	*134*	*151*	*84*	*370*
Married (first and only marriage)	*1,533*	*2,139*	*699*	*4,371*
Remarried (second or later marriage)	*335*	*405*	*87*	*827*
Separated/Divorced	*345*	*323*	*52*	*719*
Widowed	*96*	*430*	*760*	*1,286*
***Unweighted* N**				
Single (never married)	*128*	*153*	*80*	*361*
Married (first and only marriage)	*1,443*	*2,258*	*682*	*4,383*
Remarried (second or later marriage)	*325*	*432*	*91*	*848*
Separated/Divorced	*351*	*356*	*55*	*762*
Widowed	*99*	*492*	*715*	*1,306*

Table 10A.5. Loneliness, by age, living with a spouse/partner and closeness of the relationship with the spouse/partner

	52–59	60–74	75+	All
	% often or some of the time (except for 'Feel in tune with people around', where % refers to hardly ever / never)			
Feel lack of companionship				
Does not live with a spouse	68.5	60.6	61.0	62.4
Lives with a spouse but relationship is not very close	49.8	42.2	45.2	45.5
Lives with a spouse and relationship is very close	15.0	13.7	18.9	15.0
Feel left out				
Does not live with a spouse	56.8	46.6	44.5	47.8
Lives with a spouse but relationship is not very close	48.5	44.2	44.6	45.9
Lives with a spouse and relationship is very close	24.0	21.6	22.7	22.6
Feel isolated from others				
Does not live with a spouse	48.4	41.9	42.3	43.4
Lives with a spouse but relationship is not very close	38.3	36.5	41.0	37.8
Lives with a spouse and relationship is very close	19.4	16.8	22.1	18.6
Feel in tune with other people around				
Does not live with a spouse	11.0	12.9	14.6	13.2
Lives with a spouse but relationship is not very close	11.3	12.7	16.9	12.7
Lives with a spouse and relationship is very close	11.9	17.4	16.5	15.2
***Weighted* N**				
Does not live with a spouse	*425*	*814*	*835*	*2,074*
Lives with a spouse but relationship is not very close	*488*	*623*	*165*	*1,277*
Lives with a spouse and relationship is very close	*1,490*	*1,918*	*597*	*4,004*
***Unweighted* N**				
Does not live with a spouse	*433*	*899*	*797*	*2,129*
Lives with a spouse but relationship is not very close	*469*	*656*	*163*	*1,288*
Lives with a spouse and relationship is very close	*1,410*	*2,035*	*583*	*4,028*

Table 10A.6. Loneliness, by age, having children and closeness of the relationship to them

	52–59	60–74	75+	All
	% often or some of the time (except for 'Feel in tune with people around', where % refers to hardly ever / never)			
Feel lack of companionship				
Does not have children	40.5	37.3	48.8	41.2
Has child(ren) but not close to them	48.8	47.1	–	45.4
Has at least one close child	29.1	28.7	43.1	31.9
Feel left out				
Does not have children	41.0	37.8	41.0	39.6
Has child(ren) but not close to them	55.3	41.0	–	46.1
Has at least one close child	32.5	30.5	35.9	32.3
Feel isolated from others				
Does not have children	34.9	32.4	41.5	35.4
Has child(ren) but not close to them	47.7	35.7	–	40.8
Has at least one close child	26.2	25.7	34.1	27.6
Feel in tune with people around				
Does not have children	11.8	16.5	12.8	14.0
Has child(ren) but not close to them	9.8	15.2	–	13.7
Has at least one close child	11.5	14.8	15.6	13.9
***Weighted* N**				
Does not have children	*306*	*381*	*213*	*900*
Has child(ren) but not close to them	*72*	*53*	*25*	*150*
Has at least one close child	*1,968*	*2,797*	*1,276*	*6,041*
***Unweighted* N**				
Does not have children	*304*	*396*	*205*	*905*
Has child(ren) but not close to them	*66*	*56*	*22*	*144*
Has at least one close child	*1,886*	*3,012*	*1,237*	*6,135*

Table 10A.7. Loneliness, by age and contact with children

	52–59	60–74	75+	All
	% often or some of the time (except for 'Feel in tune with people around', where % refers to hardly ever / never)			
Feel lacking companionship				
Very rare or no contact with children	[44.3]	[46.2]	–	47.0
Anything but frequent contact with children (face-to-face or over the phone)	36.9	35.3	47.4	38.4
Frequent contact with children (face-to-face or over the phone)	31.2	26.5	40.1	30.9
Frequent contact with children (both face-to-face and over the phone)	28.3	29.0	43.4	32.0
Feel left out				
Very rare or no contact with children	[56.3]	[38.2]	–	47.8
Anything but frequent contact with children (face-to-face or over the phone)	40.2	38.6	51.0	41.7
Frequent contact with children (face-to-face or over the phone)	32.4	29.5	32.7	31.1
Frequent contact with children (both face-to-face and over the phone)	32.1	29.9	34.3	31.5
Feel isolated from others				
Very rare or no contact with children	[48.5]	[33.6]	–	41.1
Anything but frequent contact with children (face-to-face or over the phone	37.9	34.5	44.2	37.6
Frequent contact with children (face-to-face or over the phone)	27.1	24.9	32.2	27.2
Frequent contact with children (both face-to-face and over the phone)	24.4	23.9	33.2	26.1
Feel in tune with people around				
Very rare or no contact with children	[14.7]	[24.4]	–	17.2
Anything but frequent contact with children (face-to-face or over the phone	10.5	10.4	9.7	10.2
Frequent contact with children (face-to-face or over the phone)	11.2	14.8	16.3	14.0
Frequent contact with children (both face-to-face and over the phone)	12.1	15.8	17.3	15.0
***Weighted* N**				
Very rare or no contact with children	*48*	*42*	*17*	*107*
Anything but frequent contact with children (face-to-face or over the phone	*183*	*274*	*124*	*581*
Frequent contact with children (face-to-face or over the phone)	*619*	*959*	*435*	*2,014*
Frequent contact with children (face-to-face and over the phone)	*1,050*	*1,606*	*757*	*3,413*
***Unweighted* N**				
Very rare or no contact with children	*43*	*41*	*14*	*98*
Anything but frequent contact with children (face-to-face or over the phone	*174*	*291*	*121*	*586*
Frequent contact with children (face-to-face or over the phone)	*612*	*1053*	*433*	*2,098*
Frequent contact with children (face-to-face and over the phone)	*1,000*	*1,714*	*722*	*3,436*

Table 10A.8. Loneliness, by age, having friends or not and closeness to them

	52–59	60–74	75+	All
	% often or some of the time (except for 'Feel in tune with people around', where % refers to hardly ever / never)			
Feel lacking companionship				
No friends	56.0	41.2	62.1	51.7
No close friends	31.4	26.7	47.1	32.6
1 close friend	38.0	40.1	48.8	41.4
2–6 close friends	29.6	29.1	42.9	32.1
7–10 close friends	26.2	23.9	23.6	24.5
Feel left out				
No friends	61.2	49.3	50.7	53.2
No close friends	42.8	29.3	39.8	36.5
1 close friend	40.8	42.3	41.0	41.5
2–6 close friends	32.0	30.1	35.5	31.8
7–10 close friends	29.2	21.6	27.7	25.0
Feel isolated from others				
No friends	60.7	46.3	50.8	51.8
No close friends	35.7	27.7	41.2	33.4
1 close friend	38.1	37.5	42.9	39.0
2–6 close friends	25.0	24.6	32.9	26.4
7–10 close friends	19.8	16.5	27.4	19.6
Feel in tune with people around				
No friends	22.5	20.0	14.9	19.2
No close friends	9.2	19.3	12.3	14.1
1 close friend	15.0	14.5	15.4	14.9
2–6 close friends	11.3	13.9	15.5	13.4
7–10 close friends	7.0	18.0	18.5	14.8
***Weighted* N**				
No friends	*111*	*155*	*115*	*381*
No close friends	*170*	*189*	*86*	*444*
1 close friend	*290*	*348*	*193*	*831*
2–6 close friends	*1,585*	*2,150*	*957*	*4,692*
7–10 close friends	*155*	*259*	*100*	*515*
***Unweighted* N**				
No friends	*102*	*157*	*107*	*366*
No close friends	*164*	*203*	*79*	*446*
1 close friend	*277*	*367*	*184*	*828*
2–6 close friends	*1,534*	*2,319*	*929*	*4,782*
7–10 close friends	*150*	*283*	*101*	*534*

Table 10A.9. Loneliness, by age and contact with friends

	52–59	60–74	75+	All
	% often or some of the time (except for 'Feel in tune with people around', where % refers to hardly ever / never)			
Feel lacking companionship				
Very rare or no contact with friends	[39.3]	28.5	[42.0]	35.2
Anything but frequent contact with friends (face-to-face or over the phone)	31.7	29.6	40.0	32.2
Frequent contact with friends (face-to-face or over the phone)	26.9	29.3	41.4	31.3
Frequent contact with friends (face-to-face and over the phone)	31.2	30.0	41.9	33.0
Feel left out				
Very rare or no contact with friends	[46.4]	22.4	[46.8]	35.9
Anything but frequent contact with friends (face-to-face or over the phone)	36.6	31.5	37.0	34.4
Frequent contact with friends (face-to-face or over the phone)	30.7	32.1	35.0	32.3
Frequent contact with friends (face-to-face and over the phone)	32.3	29.5	33.8	31.3
Feel isolated from others				
Very rare or no contact with friends	[48.9]	28.7	[42.1]	38.3
Anything but frequent contact with friends (face-to-face or over the phone)	31.0	26.2	35.3	29.6
Frequent contact with friends (face-to-face or over the phone)	25.6	26.3	33.3	27.7
Frequent contact with friends (face-to-face and over the phone)	23.4	24.1	31.2	25.4
Feel in tune with people around				
Very rare or no contact with friends	[5.0]	19.0	[29.3]	17.3
Anything but frequent contact with friends (face-to-face or over the phone)	10.1	15.4	13.2	13.0
Frequent contact with friends (face-to-face or over the phone)	9.9	15.7	16.0	13.9
Frequent contact with friends (face-to-face and over the phone)	12.7	14.3	16.1	14.2
Weighted N				
Very rare or no contact with friends	*44*	*64*	*36*	*143*
Anything but frequent contact with friends (face-to-face or over the phone)	*726*	*858*	*330*	*1,913*
Frequent contact with friends (face-to-face or over the phone)	*600*	*870*	*437*	*1,908*
Frequent contact with friends (face-to-face and over the phone)	*921*	*1,396*	*647*	*2,964*
Unweighted N				
Very rare or no contact with friends	*41*	*68*	*34*	*143*
Anything but frequent contact with friends (face-to-face or over the phone)	*700*	*927*	*322*	*1,949*
Frequent contact with friends (face-to-face or over the phone)	*582*	*920*	*415*	*1,917*
Frequent contact with friends (face-to-face and over the phone)	*885*	*1,510*	*632*	*3,027*

Table 10A.10. Too little money to spend on one's needs, by age and sex

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	% frequency of respondents having too little money to spend on their needs							
Men								
Never	33.4	28.3	35.3	38.4	41.7	48.8	52.0	37.9
Rarely	33.0	33.8	31.8	28.5	28.5	23.9	26.3	30.0
Sometimes	23.0	27.6	23.3	25.8	21.9	19.0	14.9	23.3
Often	6.4	6.2	7.0	4.5	4.9	6.4	5.4	5.9
Most of the time	4.2	3.9	2.6	2.8	3.0	1.9	1.4	3.0
Women								
Never	29.2	30.3	36.4	36.4	41.3	47.0	57.0	39.5
Rarely	26.0	29.2	31.3	31.4	26.2	25.5	23.0	27.8
Sometimes	31.2	29.4	23.1	23.0	24.9	21.5	14.6	23.9
Often	7.8	6.5	6.2	6.7	4.8	3.5	4.0	5.6
Most of the time	5.8	4.6	3.1	2.6	2.7	2.5	1.3	3.2
***Weighted* N**								
Men	*419*	*911*	*665*	*634*	*513*	*472*	*338*	*3,952*
Women	*413*	*950*	*729*	*671*	*583*	*628*	*662*	*4,637*
***Unweighted* N**								
Men	*344*	*837*	*661*	*647*	*554*	*480*	*339*	*3,862*
Women	*393*	*998*	*801*	*737*	*636*	*605*	*579*	*4,749*

Table 10A.11. Too little money to spend on own needs, by age and age-specific wealth quintile

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	% frequency of respondents never lacking money to spend on their needs							
Quintiles of wealth								
Poorest quintile	10.4	12.5	14.8	19.4	30.1	37.2	51.4	24.5
2nd quintile	23.7	26.2	30.1	25.6	36.1	41.5	52.8	33.4
3rd quintile	37.8	27.3	31.5	34.2	35.7	49.3	47.3	36.3
4th quintile	35.1	31.5	40.3	36.6	53.6	49.6	62.9	42.5
Wealthiest quintile	55.4	47.6	51.9	58.4	62.9	62.0	63.8	55.9
***Weighted* N**								
Poorest quintile	*175*	*355*	*209*	*175*	*257*	*223*	*200*	*1,593*
2nd quintile	*168*	*348*	*242*	*207*	*251*	*233*	*205*	*1,654*
3rd quintile	*166*	*394*	*273*	*281*	*232*	*225*	*215*	*1,786*
4th quintile	*172*	*358*	*304*	*308*	*198*	*194*	*204*	*1,739*
Wealthiest quintile	*140*	*371*	*355*	*327*	*153*	*219*	*173*	*1,739*
***Unweighted* N**								
Poorest quintile	*152*	*325*	*212*	*178*	*262*	*216*	*165*	*1,510*
2nd quintile	*146*	*335*	*248*	*215*	*269*	*220*	*184*	*1,617*
3rd quintile	*147*	*382*	*278*	*294*	*253*	*222*	*202*	*1,778*
4th quintile	*156*	*364*	*323*	*330*	*224*	*191*	*192*	*1,780*
Wealthiest quintile	*127*	*395*	*390*	*361*	*176*	*229*	*173*	*1,851*

Table 10A.12. Own financial situation compared with friends and other people around, by age and sex

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	% frequency of respondents feeling deprived compared with other people around them							
Men								
Much worse off	1.3	3.9	4.1	2.4	2.3	3.3	2.1	3.0
A bit worse off	10.0	11.6	15.6	12.8	14.3	14.8	14.2	13.3
About the same	48.7	52.4	51.2	55.5	57.9	58.7	56.8	54.1
A bit better off	31.7	25.1	24.0	24.2	20.4	18.7	22.0	23.8
Much better off	8.3	7.0	5.0	5.1	5.1	4.5	4.8	5.8
Women								
Much worse off	3.5	4.1	3.9	3.8	3.7	4.7	3.0	3.9
A bit worse off	13.4	15.5	15.7	18.9	14.9	13.4	15.3	15.4
About the same	53.5	53.3	56.1	57.2	62.4	63.2	61.6	58.0
A bit better off	21.9	19.9	19.9	16.3	16.0	14.7	14.9	17.7
Much better off	7.7	7.1	4.3	3.8	3.0	4.1	5.1	5.0
	% frequency of respondents feeling deprived compared with their friends							
Men								
Much worse off	3.4	4.0	4.6	2.6	1.6	2.8	3.7	3.3
A bit worse off	11.4	16.7	17.2	17.7	15.5	14.4	13.8	15.7
About the same	56.6	57.1	55.5	62.3	68.6	67.8	66.4	61.1
A bit better off	24.5	18.1	19.4	14.3	12.1	13.1	14.0	16.7
Much better off	4.0	4.1	3.3	3.0	2.2	1.9	2.0	3.1
Women								
Much worse off	6.6	6.2	5.5	5.2	4.1	3.0	2.7	4.8
A bit worse off	16.7	19.7	18.6	19.3	14.8	17.5	11.9	17.2
About the same	61.2	55.4	60.3	63.1	69.3	65.8	73.2	63.4
A bit better off	13.1	15.3	12.6	10.3	9.1	10.4	9.0	11.7
Much better off	2.5	3.4	3.0	2.0	2.7	3.3	3.1	2.9
***Weighted* N**								
Men	*411*	*896*	*653*	*613*	*498*	*448*	*316*	*3,834*
Women	*402*	*926*	*709*	*651*	*565*	*607*	*605*	*4,465*
***Unweighted* N**								
Men	*338*	*822*	*649*	*628*	*539*	*458*	*318*	*3,752*
Women	*382*	*973*	*779*	*716*	*616*	*585*	*534*	*4,585*

Table 10A.13. Own financial situation compared with friends and other people around, by age and age-specific wealth

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	% frequency of respondents feeling better off than other people around them							
Quintiles of wealth								
Poorest quintile	32.7	17.8	23.1	21.6	17.6	18.8	15.2	20.4
2nd quintile	28.2	28.7	18.8	20.4	23.9	18.7	25.2	23.6
3rd quintile	33.6	27.0	24.7	21.6	22.1	20.3	20.3	24.2
4th quintile	36.9	33.0	28.3	23.2	20.4	18.7	24.3	26.8
Wealthiest quintile	45.3	39.8	33.6	32.5	28.4	27.2	26.8	33.8
	% frequency of respondents feeling better off than their friends							
Quintiles of wealth								
Poorest quintile	12.7	9.3	10.5	9.8	10.9	11.9	7.3	10.3
2nd quintile	15.0	18.4	14.7	13.5	10.4	10.6	14.3	14.1
3rd quintile	21.5	18.6	13.0	12.4	12.0	10.1	9.7	14.1
4th quintile	23.7	18.6	22.1	16.8	15.5	13.1	17.2	18.3
Wealthiest quintile	41.3	35.5	27.7	18.5	19.3	25.1	18.8	26.9
***Weighted* N**								
Poorest quintile	*170*	*344*	*197*	*165*	*244*	*208*	*178*	*1,505*
2nd quintile	*160*	*338*	*234*	*199*	*242*	*219*	*188*	*1,581*
3rd quintile	*163*	*386*	*271*	*277*	*224*	*219*	*200*	*1,740*
4th quintile	*169*	*352*	*300*	*302*	*196*	*187*	*188*	*1,694*
Wealthiest quintile	*140*	*367*	*349*	*316*	*151*	*217*	*164*	*1,703*
***Unweighted* N**								
Poorest quintile	*148*	*315*	*201*	*170*	*250*	*202*	*148*	*1,434*
2nd quintile	*140*	*325*	*240*	*206*	*260*	*207*	*170*	*1,548*
3rd quintile	*144*	*374*	*276*	*290*	*244*	*216*	*188*	*1,732*
4th quintile	*152*	*357*	*318*	*324*	*222*	*185*	*178*	*1,736*
Wealthiest quintile	*127*	*390*	*382*	*349*	*173*	*226*	*166*	*1,813*

Table 10A.14. Relative deprivation (too little money as an obstacle to social activities), by age and sex

Does having too little money stop the respondent from …	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	% positive answers							
… buying their first choices of food items?								
Men	4.8	5.5	5.1	3.4	3.7	3.5	2.3	4.2
Women	8.9	9.4	7.2	6.1	4.0	3.5	2.7	6.1
… having family and friends round for a drink or meal?								
Men	5.7	4.1	5.0	3.9	3.3	4.0	3.8	4.2
Women	5.6	6.3	5.5	5.3	3.7	2.2	1.6	4.4
… having an outfit to wear for special occasions?								
Men	6.8	4.4	5.2	3.7	3.0	2.8	2.3	4.1
Women	8.4	9.3	7.2	6.0	3.9	5.3	2.0	6.1
… keeping their home in reasonable state of decoration?								
Men	8.2	6.1	7.9	5.6	6.5	6.7	5.9	6.6
Women	10.5	9.1	10.2	11.9	10.7	10.3	7.3	9.9
… replacing or repairing broken electrical goods?								
Men	6.8	5.5	4.0	3.0	2.8	3.2	2.4	4.1
Women	7.2	6.6	6.3	6.1	5.3	5.6	3.7	5.8
… paying for transportation to get to and from places they want to go?								
Men	3.3	3.9	3.4	2.9	1.8	2.4	3.8	3.1
Women	4.7	5.5	4.3	3.3	4.0	3.7	3.0	4.1
… buying presents for friends or family once a year?								
Men	4.8	5.1	5.0	4.7	4.6	4.1	4.2	4.7
Women	5.8	5.3	5.5	7.1	6.2	4.2	4.0	5.4
… taking the sorts of holidays they want?								
Men	24.5	25.2	20.8	18.7	20.5	17.4	13.3	20.7
Women	28.7	26.7	23.4	22.4	21.2	17.4	9.8	21.3
… treating themselves from time to time?								
Men	9.3	8.2	6.2	6.3	5.5	5.1	2.9	6.5
Women	8.6	10.4	7.8	8.2	7.2	6.7	3.7	7.6
***Weighted* N**								
Men	*422*	*928*	*673*	*645*	*526*	*483*	*369*	*4,047*
Women	*417*	*955*	*738*	*672*	*594*	*651*	*706*	*4,733*
***Unweighted* N**								
Men	*347*	*851*	*667*	*659*	*566*	*490*	*370*	*3,950*
Women	*397*	*1,002*	*810*	*738*	*646*	*625*	*612*	*4,830*

Table 10A.15. Life satisfaction, by age and sex

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	% from each age group who gave each answer							
Men								
In most ways, life is close to their ideal								
Strongly agree	6.9	5.4	7.8	10.3	10.2	10.8	8.5	8.3
Agree	44.7	41.8	46.2	47.8	49.5	47.8	42.5	45.6
Slightly agree	22.0	22.3	20.3	15.6	17.0	19.6	18.9	19.6
Neither agree nor disagree	14.9	14.4	13.5	14.0	16.5	13.6	16.7	14.6
Disagree	11.4	16.0	12.3	12.2	6.8	8.2	13.4	12.0
Conditions of life are excellent								
Strongly agree	13.2	7.7	12.0	13.7	14.6	13.1	10.7	11.8
Agree	39.6	40.1	43.0	45.2	46.0	46.0	41.1	42.9
Slightly agree	19.0	22.5	21.2	17.5	18.7	21.9	20.4	20.3
Neither agree nor disagree	12.2	10.6	9.2	10.4	9.8	8.8	13.2	10.4
Disagree	16.0	19.2	14.7	13.2	10.9	10.2	14.7	14.6
Respondent is satisfied with life								
Strongly agree	18.6	14.6	15.2	21.4	22.9	22.2	18.6	18.5
Agree	48.0	48.5	54.6	52.6	53.4	52.9	51.0	51.5
Slightly agree	16.2	14.6	13.9	11.6	13.3	11.7	14.6	13.6
Neither agree nor disagree	9.3	8.2	7.3	6.6	5.0	6.5	6.0	7.1
Disagree	8.0	14.1	9.0	7.9	5.4	6.6	9.7	9.2
So far, respondent has important things they want in life								
Strongly agree	25.3	20.9	21.9	23.4	26.3	24.1	22.1	23.1
Agree	48.5	46.6	51.3	49.4	50.8	50.2	50.4	49.3
Slightly agree	13.1	16.8	11.7	15.7	11.7	14.2	15.5	14.3
Neither agree nor disagree	4.5	5.2	6.6	4.9	5.1	6.1	4.9	5.4
Disagree	8.7	10.4	8.4	6.6	6.2	5.4	7.1	7.9
If respondent could live life again, they would change almost nothing								
Strongly agree	9.0	11.5	12.8	16.1	18.6	19.4	22.9	14.9
Agree	32.5	27.7	31.3	33.4	34.6	35.0	35.7	32.1
Slightly agree	19.3	19.6	18.5	17.5	16.2	14.2	18.7	17.9
Neither agree nor disagree	7.6	7.9	8.9	8.9	11.2	10.3	8.1	8.9
Disagree	31.7	33.3	28.6	24.1	19.4	21.1	14.6	26.1

Table continues on next page

Table 10A.15 continued

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	% from each age group who gave each answer							
Women								
In most ways, life is close to their ideal								
Strongly agree	8.5	7.6	9.0	9.8	10.1	9.0	8.8	8.9
Agree	41.7	40.7	47.6	45.6	41.5	36.8	30.6	41.1
Slightly agree	21.2	20.4	18.1	19.8	19.1	20.2	18.7	19.6
Neither agree nor disagree	15.0	14.9	12.2	13.7	15.7	20.3	24.6	16.2
Disagree	13.6	16.4	13.2	11.1	13.6	13.7	17.3	14.2
Conditions of life are excellent								
Strongly agree	11.5	11.3	14.9	12.9	14.2	12.8	11.6	12.8
Agree	40.6	38.3	42.1	44.4	38.4	39.2	33.1	39.6
Slightly agree	22.7	21.5	21.3	19.5	19.3	18.0	22.7	20.7
Neither agree nor disagree	9.2	11.1	8.1	10.1	11.3	14.7	13.6	11.0
Disagree	16.0	17.8	13.7	13.1	16.9	15.3	19.0	15.9
Respondent is satisfied with life								
Strongly agree	13.6	16.5	18.5	18.7	19.7	18.4	18.4	17.8
Agree	54.0	46.5	50.4	53.2	45.7	52.3	46.5	49.5
Slightly agree	14.2	17.0	16.2	13.7	16.9	12.5	14.6	15.2
Neither agree nor disagree	4.7	7.3	5.0	6.9	6.2	7.7	8.7	6.7
Disagree	13.5	12.7	10.0	7.4	11.5	9.2	11.9	10.8
So far, respondent has important things they want in life								
Strongly agree	25.9	24.3	26.7	22.0	24.6	19.6	20.4	23.5
Agree	52.0	44.7	48.7	51.1	45.9	54.7	52.6	49.4
Slightly agree	8.8	17.2	13.7	13.1	13.4	12.0	11.7	13.4
Neither agree nor disagree	4.3	4.3	3.6	5.3	7.0	8.1	6.5	5.4
Disagree	9.0	9.4	7.3	8.5	9.1	5.5	8.8	8.3
If respondent could live life again, they would change almost nothing								
Strongly agree	9.7	12.0	13.8	15.4	19.7	16.7	19.8	15.1
Agree	36.8	30.9	31.9	33.1	31.5	34.3	34.0	32.9
Slightly agree	17.8	18.7	18.4	18.9	17.5	18.1	14.8	17.9
Neither agree nor disagree	8.7	6.0	7.9	8.1	7.5	11.0	9.2	8.1
Disagree	27.0	32.3	27.9	24.5	23.8	19.9	22.1	26.0
***Weighted* N**								
Men	*370*	*822*	*595*	*581*	*466*	*406*	*263*	*3,504*
Women	*381*	*870*	*678*	*619*	*504*	*516*	*502*	*4,070*
***Unweighted* N**								
Men	*308*	*760*	*597*	*598*	*506*	*416*	*267*	*3,452*
Women	*363*	*917*	*747*	*683*	*553*	*502*	*444*	*4,209*
Mean SWLS score								
Men	26.0	25.3	26.2	26.7	27.4	27.2	26.9	26.4
Women	26.0	25.6	26.5	26.6	26.3	26.3	25.7	26.1
Bases (total)								
Weighted	*840*	*1,883*	*1,411*	*1,317*	*1,120*	*1,134*	*1,075*	*8,780*
Unweighted	*744*	*1,853*	*1,477*	*1,397*	*1,212*	*1,115*	*982*	*8,780*

Table 10A.16. Life satisfaction (mean score), by age and age-specific wealth

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
	% who disagree with the statement							
In most ways life is close to ideal								
Poorest quintile	27.3	28.7	24.8	19.0	12.9	15.6	13.6	21.0
2nd quintile	11.8	20.3	18.8	20.5	13.8	11.5	21.7	17.2
3rd quintile	11.8	14.2	13.5	13.3	11.8	14.4	16.6	13.7
4th quintile	6.6	11.5	10.9	8.7	5.6	10.0	13.8	9.8
Wealthiest quintile	6.8	8.8	3.9	5.1	6.1	6.1	13.3	6.7
Conditions of life are excellent								
Poorest quintile	35.8	36.1	32.7	23.5	21.4	19.5	14.7	27.3
2nd quintile	17.1	25.1	23.9	21.1	19.3	13.7	24.8	21.2
3rd quintile	14.9	15.8	15.2	16.2	13.9	12.3	17.1	15.1
4th quintile	9.9	11.3	9.1	12.4	7.6	13.5	18.6	11.5
Wealthiest quintile	4.0	7.3	2.9	2.4	4.9	7.9	10.8	5.3
Respondent is satisfied with life								
Poorest quintile	24.8	26.9	21.2	14.2	9.9	11.7	9.5	17.7
2nd quintile	10.4	17.0	13.9	13.8	11.5	6.5	16.1	13.1
3rd quintile	9.1	10.0	11.6	8.6	10.4	7.0	8.9	9.5
4th quintile	7.2	4.6	6.1	6.2	5.2	5.8	6.6	5.8
Wealthiest quintile	4.2	5.9	2.8	2.1	4.4	6.2	10.5	4.7
So far, respondent has important things they want in life								
Poorest quintile	26.2	21.0	14.4	15.6	8.4	7.3	15.0	15.5
2nd quintile	7.7	12.1	10.6	12.2	11.7	4.0	9.7	10.0
3rd quintile	5.5	7.0	9.7	11.0	8.0	7.9	6.3	8.1
4th quintile	3.7	6.2	6.8	3.5	4.8	4.2	3.9	4.9
Wealthiest quintile	2.7	4.6	2.4	2.4	4.4	4.0	6.8	3.6
If respondent could live life again, they would change almost nothing								
Poorest quintile	45.8	41.1	42.3	37.1	24.0	20.3	18.4	33.2
2nd quintile	29.2	35.6	34.9	33.3	25.7	19.1	25.2	29.8
3rd quintile	27.2	32.7	31.5	26.4	23.3	21.8	16.8	26.8
4th quintile	23.2	32.3	24.6	18.1	15.6	22.1	19.3	23.0
Wealthiest quintile	21.5	23.9	17.7	17.8	17.5	18.5	17.5	19.5
***Weighted* N**								
Poorest quintile	*140*	*297*	*163*	*145*	*206*	*171*	*141*	*1,263*
2nd quintile	*151*	*314*	*220*	*180*	*216*	*183*	*148*	*1,413*
3rd quintile	*153*	*366*	*255*	*253*	*213*	*190*	*167*	*1,596*
4th quintile	*168*	*336*	*287*	*301*	*189*	*174*	*170*	*1,625*
Wealthiest quintile	*133*	*351*	*337*	*315*	*141*	*199*	*138*	*1,614*
***Unweighted* N**								
Poorest quintile	*126*	*274*	*169*	*148*	*212*	*167*	*118*	*1,214*
2nd quintile	*133*	*305*	*226*	*189*	*233*	*176*	*135*	*1,397*
3rd quintile	*135*	*355*	*260*	*267*	*233*	*188*	*156*	*1,594*
4th quintile	*152*	*341*	*307*	*323*	*214*	*173*	*161*	*1,671*
Wealthiest quintile	*120*	*374*	*371*	*349*	*162*	*208*	*140*	*1,724*
Mean SWLS score								
Poorest quintile	22.0	22.2	23.1	24.0	25.6	25.9	25.8	23.9
2nd quintile	25.9	24.8	24.5	24.4	25.8	26.9	25.2	25.3
3rd quintile	26.1	25.9	25.7	26.2	26.8	26.2	26.5	26.2
4th quintile	27.2	26.2	27.4	27.5	27.6	26.8	26.4	27.0
Wealthiest quintile	28.5	27.4	28.6	28.7	29.0	27.6	26.5	28.1
Bases (total)								
Weighted	*829*	*1,848*	*1,400*	*1,311*	*1,113*	*1,128*	*1,073*	*8,702*
Unweighted	*735*	*1,819*	*1,466*	*1,391*	*1,206*	*1,108*	*980*	*8,705*

Table 10A.17. Life satisfaction (mean score), by family relationships, age and sex

	52–59	60–74	75+	All
Men				
Living with spouse or partner and closeness of relationship to them				
Not living with spouse or partner	21.9	23.7	25.6	23.8
Living with spouse or partner, relationship not very close	23.0	24.4	24.0	23.8
Living with spouse or partner, relationship very close	27.0	28.0	28.4	27.7
Children and closeness of relationship to them				
Have no children	24.0	25.5	24.7	24.8
Relationship with children not close	20.1	23.3	27.4	22.1
At least one close child	26.1	27.0	27.2	26.7
Frequency of contact with children				
Very rare or no contact	21.5	23.8	28.1	23.1
Anything but frequent contact (face-to-face or over the phone)	24.5	26.1	25.7	25.5
Frequent contact (face-to-face or over the phone)	26.2	27.1	27.0	26.8
Frequent contact (face-to-face and over the phone)	26.1	27.2	27.8	26.9
Women				
Living with spouse or partner and closeness of relationship to them				
Not living with spouse or partner	20.8	24.0	25.1	23.9
Living with spouse or partner, relationship not very close	23.8	24.2	25.0	24.1
Living with spouse or partner, relationship very close	28.1	28.9	28.4	28.5
Children and closeness of relationship to them				
Having no children	24.3	26.3	25.6	25.4
Relationship with children not close	19.7	22.1	22.2	21.1
At least one close child	26.0	26.5	26.1	26.3
Frequency of contact with children				
Very rare or no contact	18.3	23.5	19.8	20.6
Anything but frequent contact (face-to-face or over the phone)	24.4	24.5	26.3	24.9
Frequent contact (face-to-face or over the phone)	26.3	26.5	25.2	26.2
Frequent contact (both face-to-face and over the phone)	26.0	26.8	26.5	26.5
***Weighted* N**				
Living with spouse or partner and closeness of relationship to them	*2,418*	*3,402*	*1,658*	*7,478*
Having children and closeness of relationship to them	*2,358*	*3,270*	*1,566*	*7,194*
Frequency of contact with children	*1,908*	*2,918*	*1,377*	*6,202*
***Unweighted* N**				
Living with spouse or partner and closeness of relationship to them	*2,325*	*3,638*	*1,600*	*7,563*
Having children and closeness of relationship to them	*2,267*	*3,504*	*1,514*	*7,285*
Frequency of contact with children	*1,835*	*3,137*	*1,333*	*6,305*

Table 10A.18. Life satisfaction (mean score), by relationships with friends, age and sex

	52–59	60–74	75+	All
Men				
Number of close friends				
No friends	21.8	23.4	23.0	22.9
No close friends	23.1	25.1	25.7	24.4
1 close friend	24.7	25.5	27.2	25.4
2–6 close friends	26.3	27.1	27.6	26.9
7–10 close friends	26.6	28.2	28.1	27.7
Frequency of contact with friends				
Very rare or no contact	23.0	25.6	25.3	24.6
Anything but frequent contact (face-to-face or over the phone)	25.6	26.2	27.0	26.1
Frequent contact (face-to-face or over the phone)	25.4	27.0	27.1	26.5
Frequent contact (both face-to-face and over the phone)	26.3	27.5	28.2	27.2
Women				
Number of close friends				
No close friends	19.2	21.9	23.6	21.6
1 close friend	24.4	25.7	26.3	25.4
2–6 close friends	24.4	24.0	24.1	24.2
7–10 close friends	26.1	26.9	26.3	26.5
Frequency of contact with friends				
No friends				
Very rare or no contact	25.0	27.5	24.3	25.8
Anything but frequent contact (face-to-face or over the phone)	26.2	26.2	26.2	26.2
Frequent contact (either face-to-face or over the phone)	25.9	26.6	26.4	26.3
Frequent contact (both face-to-face and over the phone)	26.1	26.8	26.2	26.4
***Weighted* N**				
Number of close friends	*2,320*	*3,144*	*1,484*	*6,948*
Frequency of contact with friends	*2,301*	*3,223*	*1,481*	*7,005*
***Unweighted* N**				
Number of close friends	*2,235*	*3,372*	*1,432*	*7,039*
Frequency of contact with friends	*2,217*	*3,462*	*1,435*	*7,114*

Table 10A.19. Life satisfaction (mean score), by loneliness, age and sex

	52–59	60–74	75+	All
Men				
How often respondent feels lack of companionship				
Hardly ever or never	21.3	23.1	23.8	22.6
Some of the time or often	27.0	27.8	28.6	27.7
How often respondent feels left out				
Hardly ever or never	21.7	23.5	24.6	23.0
Some of the time or often	27.4	28.0	28.2	27.8
How often respondent feels isolated from others				
Hardly ever or never	21.0	22.7	24.3	22.4
Some of the time or often	27.2	27.9	28.3	27.7
How often respondent feels in tune with those around him				
Hardly ever or never, or some of the time	25.5	26.6	27.0	26.3
Often	25.6	27.1	27.6	26.8
Women				
How often respondent feels lack companionship				
Hardly ever or never	21.8	22.9	23.6	22.8
Some of the time or often	27.8	28.4	28.2	28.2
How often respondent feels left out				
Hardly ever or never	21.6	22.9	23.2	22.6
Some of the time or often	28.0	28.4	27.7	28.1
How often respondent feels isolated from others				
Hardly ever or never	21.4	22.3	22.6	22.1
Some of the time or often	27.4	28.2	27.8	27.8
How often respondent feels in tune with those around her				
Hardly ever or never, or some of the time	25.7	26.2	25.8	26.0
Often	25.5	28.0	27.3	27.2
***Weighted* N**				
Feel lack of companionship	*2,441*	*3,454*	*1,705*	*7,600*
Feel left out	*2,441*	*3,452*	*1,670*	*7,564*
Feel isolated from others	*2,440*	*3,445*	*1,669*	*7,554*
Feel in tune with people around	*2,442*	*3,451*	*1,682*	*7,574*
***Unweighted* N**				
Feel lacking companionship	*2,346*	*3,697*	*1,644*	*7,687*
Feel left out	*2,346*	*3,693*	*1,609*	*7,648*
Feel isolated from others	*2,345*	*3,686*	*1,610*	*7,641*
Feel in tune with people around	*2,346*	*3,692*	*1,623*	*7,661*

Table 10A.20. Life satisfaction (mean score), by age, sex and self-perceived health

Self-perceived health	52–59	60–74	75+	All
Men				
Poor	18.0	20.4	22.2	20.1
Fair	22.6	25.2	25.9	24.6
Good	25.5	27.3	27.6	26.8
Very good	27.1	27.6	28.4	27.5
Excellent	28.0	29.2	30.1	28.8
Women				
Poor	20.7	20.9	21.8	21.2
Fair	22.3	24.6	24.5	24.0
Good	25.0	26.2	26.3	25.9
Very good	27.5	28.0	27.8	27.8
Excellent	28.3	28.9	28.6	28.7
Weighted N	*2,706*	*3,818*	*2,144*	*8,667*
Unweighted N	*2,582*	*4,057*	*2,043*	*8,682*

11. Perceptions of ageing

Panayotes Demakakos *University College London*

Elizabeth Hacker *National Centre for Social Research*

Edlira Gjonça *University College London*

Among other things, the analysis presented in this chapter shows that:

- On the whole, ageing is a positive experience for the majority of the respondents.
- Wealth does not affect in a consistent way respondents' experiences and perceptions of growing older.
- The majority of the respondents do not think of themselves as old.
- Future health status seems to be the most important concern for the majority of the respondents.
- Wealthier respondents are more likely to say that old age starts later and middle age ends later, independent of their age and sex.
- Healthier respondents are more likely to say that old age starts later and middle age ends later, independent of their age and sex.
- The majority of the respondents feel younger than their actual age.
- Respondents who feel younger than their actual age have better self-perceived health than the rest of the respondents.
- The majority of the respondents would prefer to be younger than their actual age.
- Respondents who would prefer to be younger have worse self-perceived health than those who prefer to be their actual age.

This chapter focuses on ELSA respondents' experiences and perceptions of old age and growing older. It attempts to explore how they perceive ageing as a process and old age as a stage of human life, in light of their beliefs, life-experiences and attitudes. It also explores people's perceptions of their self-perceived and desired ages, and the boundaries between middle and old age. Its main objective is dual: (a) to provide insights into the meaning of ageing and old age for middle-aged and older people themselves, and describe ageing perceptions and experiences in Britain; and (b) to provide information on how and the extent to which age, sex and socio-economic position influence ageing experiences and the formation of ageing perceptions. The importance of this chapter lies in its focus on the views of older people themselves. Such knowledge can contribute to setting research or policy targets regarding ageing, as well as to evaluating the effectiveness of existing ageing policies. Furthermore, it is important because it covers a gap in the existing literature where old people's experiences and perceptions of ageing have not been studied extensively (Steverink et al., 2001; Furstenberg, 2002).

Experiences and perceptions of ageing are of substantial importance for middle-aged and older people as they relate to health (Levy, 2003; Levy et al., 2002; Levy and Myers, 2005) and behavioural outcomes (Sarkisian et al., 2005) along with well-being (Steverink et al., 2001; Westerhof and Barrett, 2005), self and identity (Sneed and Whitbourne, 2005). Perceptions of ageing among middle-aged and older people refer to the ways they conceive the ageing process and, by extension, experience their own transition to old age. The formation of each individual's perceptions and experiences of ageing is a dynamic process that pertains to self, social norms and their interplay (Steverink et al., 2001) and reflects the way an individual internalises social norms (Levy, 2003; Westerhof and Barrett, 2005). Researchers have suggested that it is ageing stereotypes, which in old age become ageing self-stereotypes, that influence older people's conceptions of ageing and old age (Levy, 2003). In western societies, this is an issue of particular significance given the dominance of an ageist model that considers old age something inherently negative and which older people must confront in their everyday lives (Westerhof and Barrett, 2005).

The chapter also explores people's perceptions of age by focusing on self-perceived and desired ages, and on their perceptions about the boundaries of middle- and old age. Self-perceived and desired ages as distinct from actual chronological age refer to how old an individual feels and how old she/he would prefer to be. They are both dimensions of a person's age identity and perceptions that are also considered socially constructed (Knoll et al., 2004). Self-perceived age relates to future expectations and a person's own personal ageing model ('envisioned trajectory of ageing') (Furstenberg, 2002). Desired age refers to a person's age preference and pertains to the degree of their acceptance of the idea that they are getting older and their reconciliation to it. People's perceptions about when middle age ends and old age begins refer to their perceptions about age and the very core of their definition of old age. These are built upon cultural and individual norms and beliefs (Furstenberg, 2002) and reflect people's own judgements about the stages of life and major turning points in it.

11.1 Measures

This chapter consists of three interrelated sections: the first focuses on experiences and perceptions of ageing, the second on self-perceived and desired ages, and the third discusses people's perceptions of the chronological boundaries of middle and old age.

Experiences and perceptions of ageing are measured with two scales: a 12-item scale that assesses ageing perceptions and a single item scale for people's experiences of ageing. The ageing perceptions scale contains twelve questions derived from the respondents' answers to two open-ended questions in the pilot study for wave 2 of ELSA. The two open-ended questions were (a) 'what would you say are the most positive things about growing older?' and (b) 'what would you say are the most negative things about growing older?' The twelve items derived from these two questions are:

1. We can learn a lot from old people

2. As I get older, I expect to become more lonely
3. Old age is a time of ill-health
4. As I grow older, I become more tolerant
5. Old age is a time of loneliness
6. As I get older, I expect to be able to do the things I've always done
7. When I think of old people, I think of them as generally grumpy and miserable
8. I worry that my health will get worse as I grow older
9. I don't think of myself as old
10. Old people do not get respect in society
11. Retirement is a time of leisure
12. Growing older doesn't bother me

After being prompted to think of old age and their own ageing experience, the respondents were asked to report the extent to which they agree or disagree with each of the twelve statements. The response scale was a 5-point Likert scale ranging from strongly agree to strongly disagree (mid-point: neither agree nor disagree). In the present analysis, the five categories have been collapsed into three (the two disagreement and the two agreement responses have been collapsed into one disagreement and agreement responses, respectively). The experience of ageing is assessed with an item asking whether, on the whole, growing older has been a negative or a positive experience, using a 5-point Likert scale ranging from very positive to very negative (mid-point: neither positive nor negative).

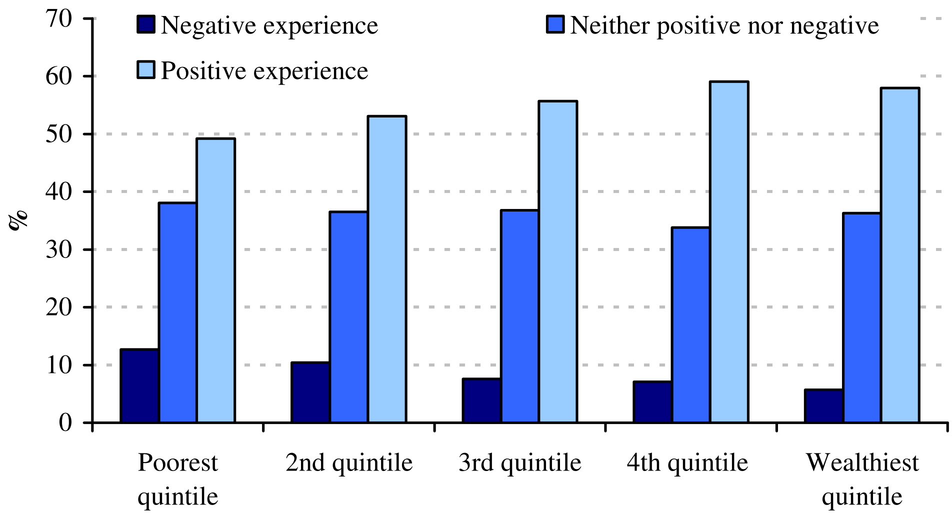
The self-perceived and desired ages are measured with the following questions: 'How old do you feel you are?' and 'How old would you like to be?' For both questions, the respondents were asked to provide an estimate in years. The two questions about the beginning of old age and the end of middle age were included in the main computer-aided interview (CAPI) for the first wave of ELSA. The question about the beginning of old age is: 'Please could you tell us at what age you consider old age to start?' and that about the end of middle age is: 'We would also like you to tell us at what age you consider middle age to end?'. Respondents were asked to provide estimates of those boundaries in years. As the data concerning these two measures were collected in the first wave of ELSA, all break variables used in the analysis of these two measures (i.e. age, sex, wealth and self-perceived health) also come from the first wave of ELSA.

11.2 Experience of ageing

Table 11A.1 shows that, in general, ageing is a positive experience for the majority of our respondents (see also Figure 11.1). In total, 55% of the sample perceives ageing as a positive experience and only 8% experiences it negatively. This is a major finding suggesting that for most of our respondents, ageing is not an unpleasant experience and contradicts the lay belief that ageing is a negative process because it leads to old age and its consequent physical, mental, social and economic deterioration. Table 11A.1 further reveals that the association of age with experience of ageing is not linear. Nevertheless, this does not mean that ageing experiences are completely independent of age; the data suggest that two age groups (55–59 and the 80+) perceive ageing more negatively than all other age groups. It seems that there are two stages in life – pre-retirement age and reaching very old age – at which ageing is experienced less positively (Table 11A.1).

Table 11A.2 examines whether sex influences the way middle-aged and older people experience ageing. Sex also appears not to be a major correlate of respondents' views of ageing, as there are no major sex differences.

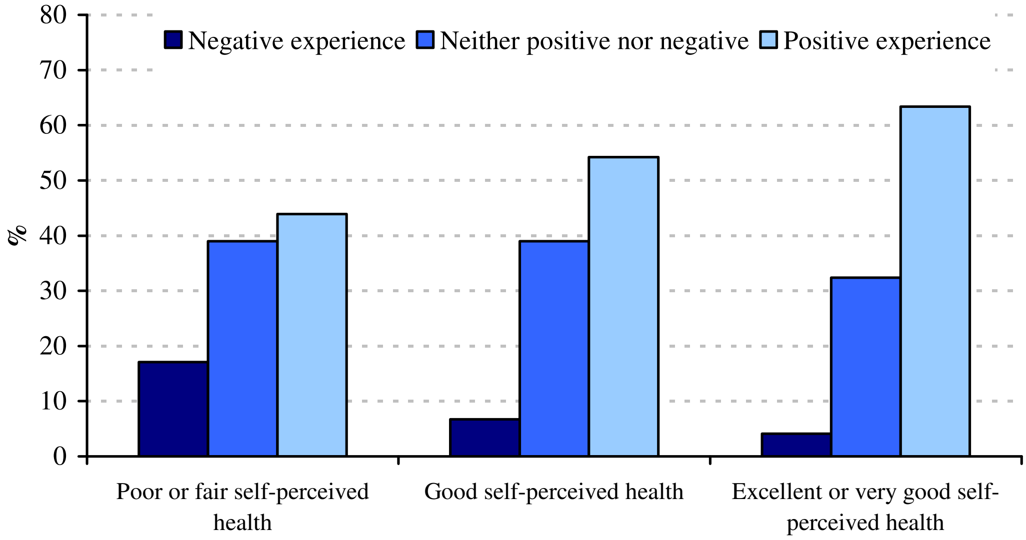
Figure 11.1. Ageing experience by wealth



The only observable sex difference is that nearly one-in-twenty more men than women think of ageing as positive, while one-in-twelve of both men and women think of it as negative (Table 11A.2).

Figure 11.1 shows that generally, wealthier participants tend to report more positively on their ageing experience than poorer participants. Table 11A.3 explores further the association of wealth and ageing experiences and shows that it is not linear across age groups. Thus, there is no clear economic gradient across age groups in the way that older people experience ageing. This finding is interesting, as we might expect that judgements about ageing would encompass a strong element of social construction, which presumably relate to the socio-economic resources at a person's disposal. Nevertheless, this does not mean that wealth does not affect views of ageing at all; across age groups the poorer participants consistently report in greater numbers than their wealthier counterparts that ageing is a negative experience for them (Table 11A.3). Further research is needed in order to clarify the effects of wealth on judgements about ageing.

Figure 11.2. Self-perceived health, by ageing experiences



Another important finding of our analysis is the strong association between self-perceived health and experiences of ageing (Figure 11.2). Those participants whose experience of ageing is negative generally report worse self-perceived health than those who have positive ageing experiences. The rates of those with negative ageing experiences drop as we move from poor or fair self-perceived health to very good or excellent, while the opposite is true for those who have positive ageing experiences. Indicative of the association between experiences of ageing and self-perceived health is the comparatively low proportion of participants with negative ageing experiences in the group of excellent or very good self-perceived health (only 4%). But the association of ageing experience with self-perceived health becomes even more interesting once we account for age; negative ageing experiences are associated with poorer self-perceived health, and positive ageing experience are associated with better self-perceived health, across all age groups (Table 11A.4).

11.3 Perceptions of ageing

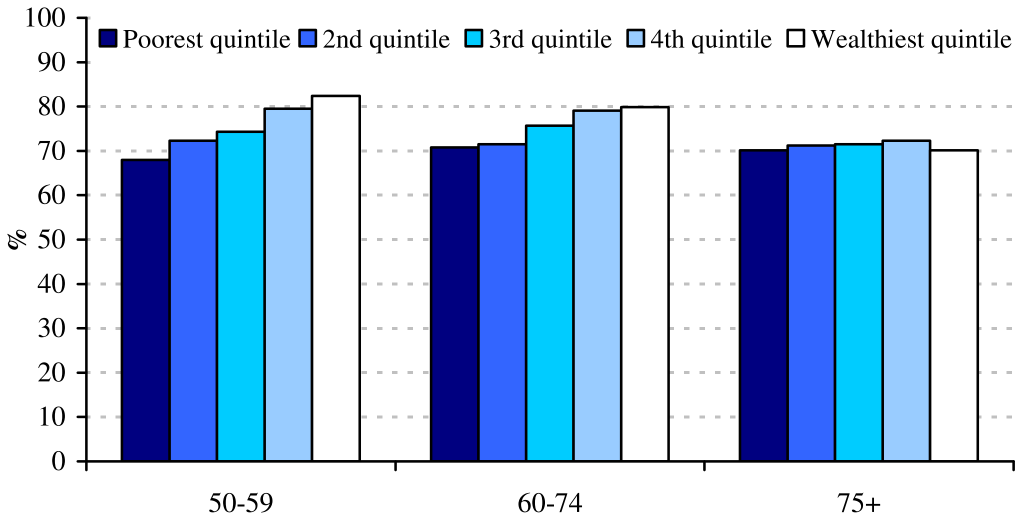
Table 11A.5 shows that nine-in-ten respondents agree that a lot can be learnt from old people; three-quarters of them do not think of themselves as old; three-quarters think of retirement as a time of leisure; more than two-thirds worry that their health will worsen as they grow older; and almost two-thirds believe that old people are not respected in society. In contrast, only one-in-five agrees that old people are grumpy and miserable; one-in-three agrees with the statement 'old age is a time of loneliness'; and nearly four-in-ten agree that 'as I get older, I expect to become more lonely'. Thus, it seems that ELSA participants have a positive view of ageing (i.e., old people are a source of knowledge, retirement is a leisure period, old age is not necessarily a time of loneliness), but they also think that society does not fully share those views (i.e., old people are not respected in society).

Table 11A.5 also presents respondents' perceptions of various dimensions of ageing, broken down by age groups. Age influences most of the twelve ageing perception statements. It relates to respondents' views that as they get older, (a) they will become lonelier, (b) they will become more tolerant, (c) they will be less bothered by the fact that they are getting older (d) their health will worsen (e) the less they will think of themselves as old, and (f) the less they will think that old people are respected in society. On three statements, the observed differences in the proportions of respondents agreeing across the age groups are greater than 10%. These are (a) 'I worry that my health will get worse as I grow older' (11% difference between the youngest and the oldest groups); (b) 'I don't think of myself as old' (11% difference between youngest and oldest groups); and (c) 'Growing older does not bother me' (10% difference between the youngest and the oldest). Moreover, Table 11A.5 shows that the oldest participants (75+) are concerned more than any other age groups with loneliness, while the younger participants (52–59 and 60–74) are mostly concerned with the possible deterioration of their health in the future.

Table 11A.6 complements the conclusions drawn from Table 11A.5 by further breaking down the perceptions of ageing across age groups by sex. Examination of the data does not reveal any major sex differences as both men and women agree or disagree with the same statements. Nonetheless, there are some notable sex differences in the way actual age affects perceptions of ageing. In men, the greatest differences in agreement rates refers to (a) their potential bother by the fact that they are getting old (13% more men aged 75+ agree that they are not bothered by getting older than their counterparts in the 52–59 age group); (b) their expectations that they will become lonelier (12% more men aged 75 or more agree with the statement than those aged 52–59); and (c) their expectations of becoming more tolerant (10% more men among those aged 75+ agree with the statement than those of 52–59 years). In women, the greatest age differences are observed on the following statements: (a) 'I don't think of myself as old' (14% fewer women in the oldest group than in the other age groups agree with that statement); (b) 'I worry that my health will get worse as I grow older' (13. % fewer women aged 75 or more agree than those aged 52–59); and (c) 'Old people don't get respect in society' (11% difference between the oldest and the youngest, in favour of the latter) (Table 11A.6).

Wealth appears not to influence in a consistent way perceptions of ageing, as it does not relate linearly to most of the statements across the three age groups. The cases where wealth is found to exert a consistent influence on people's perceptions of ageing are sporadic and relate to only three statements in a linear way (shown in the column with the totals). The first statement relates to respondents' expectation that they will become lonelier as they get older, and the second to perceptions of old people as grumpy and miserable, and the third to perceptions that retirement is a time of leisure. The greatest differences between the two extreme wealth quintiles across age groups appear for the statements 'old age is a time of loneliness' (18% difference among those aged 75+); 'old people do not get respect in society' (18% difference among those over 75); and 'retirement is a time of leisure' (14% difference among those aged 52–59). Finally, it is notable that for most statements, differences between the wealth quintiles become greater as age increases (e.g. for 'old age is a time of ill health', 'old age is a time of loneliness', 'as I get older, I expect to be able to do the things I've always done', and 'old people do not get respect in society'), while in only one case do they clearly become smaller ('retirement is a time of leisure') (Figure 11.3). Considered together, these results suggest that wealth is more influential on older people's perceptions of ageing than on younger people's, and that it mostly affects perceptions related to respect, leisure, health deterioration and loneliness (Table 11A.7).

Figure 11.3. Agreement with the statement 'Retirement is a time of leisure', by age and wealth



11.4 Perceptions of when old age begins and middle age ends

In this report we are also interested in studying the factors that relate to the chronological threshold of the beginning of old age. We found that actual age is a strong correlate of respondents' perception about when old age starts. The mean age at which respondents believe that old age starts is 71 years. There are considerable age differences in defining the beginning of old age: the youngest respondents (50–54) perceive old age as starting at the age of 68, while those in the oldest group (80 +) believe it starts at 75 years.

Sex, too, relates to perceptions about the chronological beginning of old age: the mean for men is 70, while for women it is 72. Across age groups, women perceive old age as starting later than men of their age. The greatest gap between men and women is 3.1 years and is observed in the youngest age group (50–54). Then, the difference decreases with age and becomes negligible (only 0.3 years) among those 75 years and over (Table 11A.8 and Figure 11.4).

Moreover, perceptions about when old age starts are associated with wealth. In most cases, the wealthier the respondents, the more likely they are to say that old age starts later. The wealthiest respondents (top quintile of wealth) think that old age starts at the mean age of 72 years (men) and 74 years (women), while the poorest respondents (bottom quintile of wealth) think that old age

Figure 11.4. The mean value of the perceived chronological beginning of old age, by age and sex

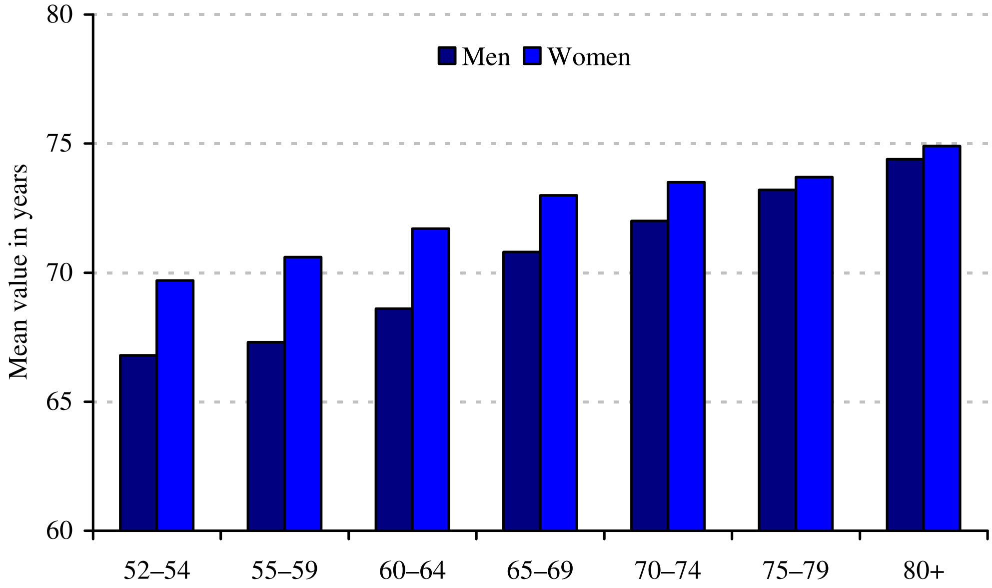
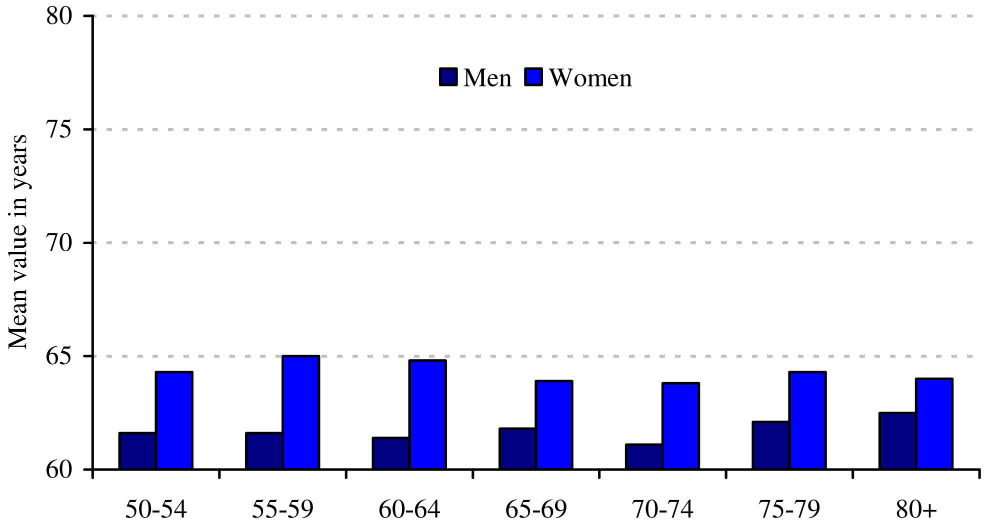


Figure 11.5. The mean value of the perceived chronological end of middle age, by age and sex



starts at 68 years (men) and 71 years (women) (Table 11A.9). Another variable that relates to respondents' perceptions of when old age begins is self-perceived health. They are associated in a linear way independent of sex and actual age. The healthiest men and women (those with excellent or very good health) report, respectively, that old age starts at 71 and 73 years, while the equivalent values for those with fair or poor health are 68 and 71 years for men and women, respectively (Table 11A.10).

Apart from the chronological beginning of old age, this report is also interested in examining the factors that relate to perceptions of the chronological end of middle age. 'Middle age', like 'old age', is a subjective concept based on a number of attributes that an individual or society ascribes to people. Our analysis shows that age is not an important correlate of the self-perceived chronological end of middle age; the greatest differences observed between any of the age groups, in both men and women, is just longer than a year. On the contrary, sex does relate to people's perceptions about the end of middle age: women systematically report higher mean values than men. The mean value for the chronological end of middle age is 63 years (for both sexes). Men aged 50–59 perceive middle age to end at 62 years and at 62.5 when they are 80 or more. The respective values for women are 64.3 and 64 years. The greatest observed sex difference regarding the self-perceptions about the end of middle age is 3.4 years, observed in the 55–59 and 60–64 age groups (Table 11A.11 and Figure 11.5).

The breakdown of perceived chronological end of middle age by wealth shows that the latter influences the former independent of sex and actual age. The wealthier the respondents, the more likely they are to report that middle age ends later. The wealthiest male respondents (top quintile of wealth) report that the mean age at which middle age ends is 64 years and the wealthiest female respondents that it is 66 years, while the mean age reported by the poorest respondents (bottom quintile of wealth) is 60 and 63 years for men and women, respectively (Table 11A.12). Self-perceived health also relates to respondents' perceptions of when middle age ends, independent of their sex and actual age of respondent. Healthier respondents are more likely to say that middle age ends later. The healthiest respondents (those with excellent or very good health) report that middle age ends at 63 and 66 years, respectively for men and women, while the respective values for those with poor or fair self-perceived health is 60 and 63 years (Table 11A.13).

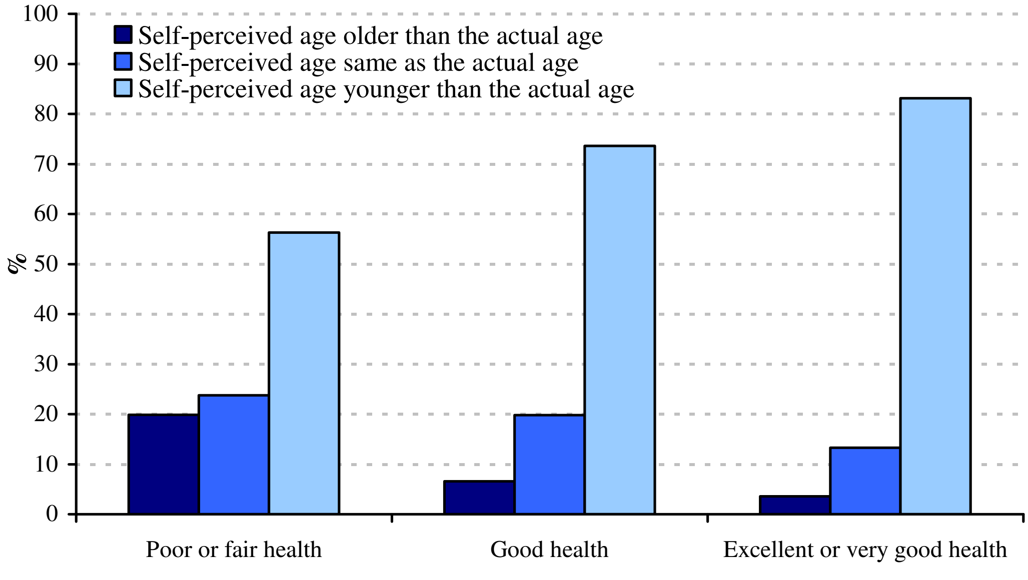
11.5 Self-perceived age

Table 11A.14 suggests that actual age influences self-perceived age, as the gap between these two is wider among the older groups than the younger. It also shows that the sex differences in self-perceived age (how old people feel) are quite small. Men feel slightly older than women across all age groups, apart from the oldest (80+). The greatest sex difference in self-perceived age is observed among those aged 70–74, where men's mean self-perceived age (63 years) is two-and-a-half years older than women's. However, the sex difference decreases after this peak and in the over-80 group, women feel older than do men of the same age (Table 11A.14).

Table 11A.15 shows that there are some wealth differences in self-perceived age, but there is no economic gradient. On average, wealth seems more consistently to influence women's perceptions of their age than men's. Nevertheless, the observed wealth differences in self-perceived age across the three age groups are wider in men than in women, e.g. in the intermediate age group (60–74), the difference between the wealthiest and the poorest men is a little over 3 years, while in women it is just one-and-a-half years. Another salient observation is that among those aged 52–74, it is the poorer men and women who report the highest 'felt' age, but this is not true for those over 75. Finally, it worth mentioning that our data indicate that the age differences in self-perceived age become greater across wealth quintiles, i.e., in the poorest men, the difference in self-perceived age between the youngest and the oldest is 15 years, while the same difference for the wealthiest men is 21 years. Thus, it seems that there is greater variation in self-perceptions about age in the wealthier parts of the population than in the poorer (Table 11A.15).

Table 11A.16 shows that the vast majority of respondents feel younger than their actual age. Also, it highlights that more women than men feel younger than their actual age, across the age groups. The greatest sex difference in the proportions of people feeling younger than their actual age is observed among those aged 60–74, where 6% more women than men feel younger than their actual age, while the smallest is observed among those aged 75 or older (just 2%). Age also influences people's perceptions of their own age: the youngest respondents report less frequently that they feel younger than their actual age. Also notable is the increase in the proportion of respondents who feel younger than their actual age between the youngest (52–59) and intermediate (60–74) groups (Table 11A.16). Table 11A.17 confirms the conclusions drawn from Table 11A.15, showing that there are considerable wealth-related differences in self-perceived age between the poor and the wealthy respondents but these do not take the form of a gradient. The only linear associations observed refer to those who feel the same age as their actual age and only among those under 75 years of age (Table 11A.17).

Figure 11.6. Self-perceived health, by self-perceptions about age



Self-assessed health was found to be strongly related to how old respondents feel. Respondents who feel younger than their actual age have far better self-perceived health than those who feel older than their actual age. The rates of those who feel older than their actual age drop across the three health categories (as we move from poor or fair self-perceived health to very good or excellent), while the opposite is true for those who feel younger than their actual age. In total, one-in-five of those reporting poor or fair self-perceived health feel older than their actual age, while only 4% of those in excellent or very good feel older than their actual age. But the association between self-perceived age and self-perceived health becomes even more interesting once we account for age. Self-perceived age and self-perceived health relate positively to each other in a linear way across all age groups; feeling younger than actual age relates to better self-perceived health, irrespective of the actual age of the respondents. This is a major finding which calls for further research on self-perceived age as a correlate and or predictor of health (Table 11A.18 and Figure 11.6).

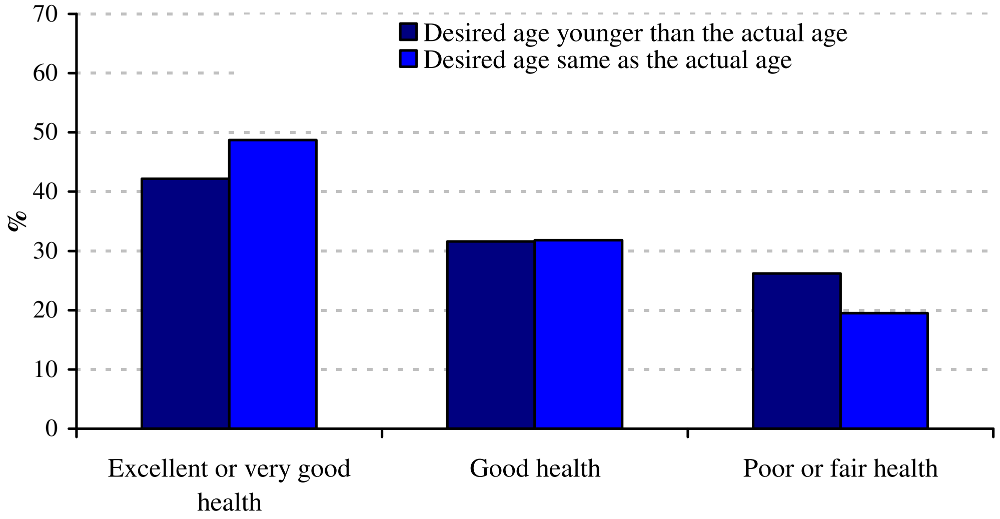
11.6 Desired age

The mean desired age for the entire sample is 42.4 years old, which is approximately 23 years younger than the actual mean age. Table 11A.19 indicates, as expected, that both the mean desired age and the discrepancy between actual and desired ages increase as respondents get older. Moreover, it shows that men want to be younger than women. The mean desired age for men is just under 41 years, while for women it is 44 years. This sex difference is observed across all age groups and tends to be slightly greater among those aged 65 or more than among those under 65 (Table 11A.19).

The association of wealth and mean desired age is interesting because the poorer the participants, the younger they wish to be, both men and women. The differences between wealth quintiles in desired age are greater for men than for women. Mean difference in desired age between the poorest and wealthiest men is 7 years, while for women it is less than 3 years (Table 11A.20). But the findings from this table should be seen in conjunction with those of Table 11A.22, which shows that wealth only affects the mean desired age and not the proportion of respondents who desire to be younger than their actual age; this is because there is no economic gradient in the proportion of respondents wishing to be either younger than or of the same age as their actual age. This suggests that wealth mostly affects the perceptions of age of those who would prefer to be younger and not those of the entire population (Table 11A.22). Table 11A.21 suggests that the proportion of respondents who want to be younger than they are increases with age. This finding complements the results of Table 11A.19 by suggesting that age does play a significant role in the formation of age preferences – older respondents tend to report more often that they would prefer to be younger. The highest proportion of respondents who want to be younger than they are is among those aged 75 or more, while as regards the potential sex differences in desired age, slightly more women than men want to be younger (1% overall difference). The difference between men and women is greatest in the 75+ group, where 89% of men, compared with 93% of women, want to be younger (Table 11A.21).

Desired age relates also to self-assessed health. Their association, in general, is negative; people who prefer to be younger have worse health than those who prefer to be their actual age. Eighty-three per cent of respondents rating their health as excellent or very good report that they do not wish to be a different age than they are, while the proportion of those rating their health as poor or fair who wish to be the same as their actual age drops to 56%. But desired age seems to relate to self-assessed health, up to the age of 75 years (Table 11A.23 and Figure 11.7).

Figure 11.7. Self-perceived health, by age preference (the age the respondents wish to be)



11.7 Conclusion

Our analysis shows that ageing is not a negative experience for the vast majority of middle-aged and older people in Britain. Only one-in-twelve respondents report that their experience of ageing is negative. Also, their perceptions of ageing are generally positive. The majority of the respondents believe that retirement is a time of leisure and that old age is not necessarily a time of loneliness. Only one-in-five respondents are bothered by the idea of growing older. Nevertheless, our respondents do have concerns about old age, such as the expected worsening of their health and the lack of respect for older people in society. Age, sex and wealth are all found to relate to perceptions and experiences of ageing; but not in clear and consistent ways. Pre-retirement age (52–59) and being 75 or older seem to be associated with more negative perceptions regarding ageing than other stages of life. As regards perceptions of age, it is their connection with self-perceived health that should be noted. Those respondents who feel younger than their actual age are healthier and those who desire to be younger are less healthy. However, these associations are expected to be mediated by age, sex and wealth, and are definitely worth exploring further.

References

Furstenberg, A. L. (2002), ‘Trajectories of aging: imagined pathways in later life’, *International Journal of Aging and Human Development*, 55: 1–24.

Knoll, N., Rieckmann, N., Scholz, U. and Schwarzer, R. (2004), ‘Predictors of subjective age before and after cataract surgery: conscientiousness makes a difference’, *Psychology and Aging*, 19: 676–688.

Levy, B. R. (2003), ‘Mind matters: cognitive and physical effects of aging self-stereotypes’, *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 58: 203–211.

Levy, B. R. and Myers, L. M. (2005), 'Relationship between respiratory mortality and self-perceptions of aging', *Psychology & Health*, 20: 553–564.

Levy, B. R., Slade, M. D., Kunkel, S. R. and Kasl, S. V. (2002), 'Longevity increased by positive self-perceptions of aging', *Journal of Personality and Social Psychology*, 83: 261–270.

Sarkisian, C. A., Prohaska, T. R., Wong, M. D., Hirsch, S. and Mangione, C. M. (2005), 'The relationship between expectations for aging and physical activity among older adults', *Journal of General Internal Medicine*, 20: 911–915.

Sneed, J. R. and Whitbourne, S. K. (2005), 'Models of the aging self', *Journal of Social Issues*, 61: 375–388.

Steverink, N., Westerhof, G. J., Bode, C. and Dittmann-Kohli, F. (2001), 'The personal experience of aging, individual resources, and subjective well-being', *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 56: 364–373.

Westerhof, G. J. and Barrett, A. E. (2005), 'Age identity and subjective well-being: a comparison of the United States and Germany', *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 60: S129–S136.

Annex 11.1
Tables on perceptions of ageing

Table 11A.1. Experience of ageing, by age in 2004–05

On the whole, has growing older been …	**52–54**	**55–59**	**60–64**	**65–69**	**70–74**	**75–79**	**80+**	**All**
	%	*%*	*%*	*%*	*%*	*%*	*%*	*%*
… negative experience?	8.8	9.6	7.9	8.7	6.9	6.3	10.1	8.4
… neither positive nor negative	37.3	37.7	35.8	33.9	34.3	39.0	35.8	36.3
… positive experience?	53.9	52.7	56.3	57.4	58.8	54.7	54.1	55.3
Weighted N	*746*	*1,678*	*1,260*	*1,181*	*950*	*868*	*739*	*7,423*
Unweighted N	*666*	*1,663*	*1,330*	*1,262*	*1,039*	*774*	*782*	*7,516*

Table 11A.2. Experience of ageing, by age in 2004–05 and sex

On the whole, has growing older been …	**52–59**	**60–74**	**75+**	**All**
	%	*%*	*%*	*%*
Men				
… negative experience?	10.0	7.8	7.8	8.5
… neither positive nor negative?	34.6	34.1	34.9	34.4
… positive experience?	55.4	58.1	57.3	57.0
Women				
… negative experience?	8.7	8.0	8.2	8.3
… neither positive nor negative?	40.4	35.3	39.3	37.9
… positive experience?	50.8	56.7	52.5	53.9
***Weighted* N**				
Men	*1,193*	*1,625*	*636*	*3,455*
Women	*1,231*	*1,766*	*971*	*3,968*
***Unweighted* N**				
Men	*1,069*	*1,683*	*651*	*3,403*
Women	*1,260*	*1,948*	*905*	*4,113*

Table 11A.3. Experience of ageing, by age in 2004–05 and age-specific wealth

On the whole, has growing older been …	52–59	60–74	75+	All
	%	%	%	%
Poorest quintile				
… negative experience?	17.4	9.6	11.0	12.7
… neither positive nor negative?	38.8	37.8	37.5	38.1
… positive experience?	43.8	52.6	51.4	49.2
2nd quintile				
… negative experience?	10.1	13.0	5.5	10.4
… neither positive nor negative?	37.0	35.0	38.9	36.5
… positive experience?	52.9	52.0	55.6	53.1
3rd quintile				
… negative experience?	6.2	8.1	8.6	7.6
… neither positive nor negative?	41.9	33.4	36.2	36.8
… positive experience?	51.9	58.5	55.2	55.7
4th quintile				
… negative experience?	6.4	6.7	9.3	7.1
… neither positive nor negative?	32.8	33.9	35.2	33.8
… positive experience?	60.8	59.4	55.6	59.1
Wealthiest quintile				
… negative experience?	8.4	4.0	5.6	5.7
… neither positive nor negative?	37.0	34.1	40.5	36.3
… positive experience?	54.6	61.8	53.9	58.0
***Weighted* N**				
Poorest quintile	*430*	*501*	*297*	*1,228*
2nd quintile	*457*	*605*	*307*	*1,369*
3rd quintile	*519*	*715*	*344*	*1,577*
4th quintile	*504*	*764*	*330*	*1,598*
Wealthiest quintile	*481*	*784*	*323*	*1,588*
***Unweighted* N**				
Poorest quintile	*394*	*516*	*273*	*1,183*
2nd quintile	*430*	*637*	*288*	*1,355*
3rd quintile	*490*	*753*	*334*	*1,577*
4th quintile	*492*	*831*	*320*	*1,643*
Wealthiest quintile	*490*	*873*	*334*	*1,697*

Table 11A.4. Experience of ageing, by age in 2004–05 and self-perceived health

On the whole, has growing older been …	52–59	60–74	75+	All
	%	%	%	%
Fair or poor self-perceived health				
… negative experience?	21.5	16.1	14.5	17.1
… neither positive nor negative?	40.3	37.4	40.5	39.0
… positive experience?	38.2	46.5	44.9	43.9
Good self-perceived health				
… negative experience?	7.6	6.5	6.1	6.7
… neither positive nor negative?	43.0	36.5	39.0	39.0
… positive experience	49.4	57.0	54.9	54.2
Excellent or very good self-perceived health				
… negative experience?	5.1	3.7	2.9	4.1
… neither positive nor negative?	33.2	31.7	32.6	32.4
… positive experience	61.7	64.6	64.5	63.4
***Weighted* N**				
Fair or poor self-perceived health	*518*	*892*	*552*	*1,963*
Good self-perceived health	*700*	*1,095*	*565*	*2,360*
Excellent or very good self-perceived health	*1,203*	*1,403*	*490*	*3,096*
***Unweighted* N**				
Fair or poor self-perceived health	*494*	*937*	*527*	*1,958*
Good self-perceived health	*681*	*1,177*	*552*	*2,410*
Excellent or very good self-perceived health	*1,152*	*1,516*	*476*	*3,144*

Table 11A.5. Perceptions of ageing, by age in 2004–05

Whether respondent …	52–59	60–74	75+	All
	%	%	%	%
…expects to get more lonely as they get older				
Disagree	35.9	35.3	29.9	34.3
Neither agree nor disagree	28.6	24.9	26.1	26.4
Agree	35.5	39.8	44.0	39.3
... thinks that old age is a time of loneliness				
Disagree	43.8	45.5	40.0	43.8
Neither agree nor disagree	25.7	25.7	20.9	24.6
Agree	30.6	28.8	39.1	31.6
... thinks that old age is a time of ill health				
Disagree	26.0	29.2	25.7	27.4
Neither agree nor disagree	23.5	23.3	22.9	23.3
Agree	50.5	47.4	51.5	49.3
... worries their health will get worse as they get older				
Disagree	11.9	15.5	18.7	15.0
Neither agree nor disagree	16.0	16.7	20.2	17.3
Agree	72.1	67.8	61.1	67.8
... does not think of themselves as old				
Disagree	12.2	12.1	18.1	13.5
Neither agree nor disagree	10.7	11.2	15.5	12.0
Agree	77.1	76.7	66.4	74.6
... expects to do what they have always done as they get older				
Disagree	41.2	38.9	42.0	40.3
Neither agree nor disagree	16.7	15.8	15.9	16.1
Agree	42.1	45.3	42.1	43.5
… is not bothered by growing older				
Disagree	31.7	22.6	18.9	24.7
Neither agree nor disagree	18.0	17.3	20.4	18.2
Agree	50.4	60.1	60.7	57.1
... thinks of old people as generally grumpy and miserable				
Disagree	52.9	55.4	57.4	55.0
Neither agree nor disagree	26.5	24.1	23.4	24.7
Agree	20.6	20.5	19.1	20.2
... thinks old people do not get respect in society				
Disagree	15.1	15.4	20.1	16.3
Neither agree nor disagree	16.3	18.8	20.5	18.3
Agree	68.7	65.8	59.4	65.4
... thinks that retirement is a time of leisure				
Disagree	9.6	10.3	13.9	10.8
Neither agree nor disagree	15.0	13.9	15.3	14.5
Agree	75.4	75.8	70.9	74.6
... feels we can learn a lot from older people				
Disagree	1.0	1.0	1.7	1.2
Neither agree nor disagree	8.9	8.2	9.9	8.8
Agree	90.1	90.7	88.4	90.0
... thinks that as they get older they become more tolerant				
Disagree	20.9	18.7	14.0	18.4
Neither agree nor disagree	21.7	20.6	20.4	20.9
Agree	57.4	60.7	65.5	60.7
Weighted N	*2,423*	*3,378*	*1,604*	*7,405*
Unweighted N	*2,328*	*3,618*	*1,554*	*7,500*

Table 11A.6. Perceptions of ageing, by sex and age in 2004–05

	52–59	60–74	75+	All
	% of respondents in agreement with the following statements:			
Men				
Whether respondent …				
… expects to get more lonely as they get older	35.6	38.7	47.6	39.3
... thinks that old age is a time of loneliness	29.3	26.4	37.5	29.5
... thinks that old age is a time of ill health	53.0	49.3	57.3	52.1
... worries their health will get worse as they get older	69.6	66.1	61.0	66.4
... thinks of themselves as old	73.5	72.4	66.4	71.7
... expects to do what they have always done as they get older	38.2	42.5	41.7	40.9
… is not bothered by growing older	49.4	61.9	62.7	57.8
... thinks of old people as generally grumpy and miserable	22.0	21.0	21.9	21.5
... thinks old people do not get respect in society	70.1	67.7	64.9	68.0
... thinks that retirement is a time of leisure	74.0	74.8	73.0	74.2
... feels we can learn a lot from older people	90.6	91.9	89.1	90.9
... thinks that as they get older they become more tolerant	52.9	54.8	62.7	55.6
Women				
Whether respondent …				
... expects to get more lonely as they get older	35.4	40.8	41.7	39.4
... thinks that old age is a time of loneliness	31.8	31.0	40.1	33.5
... thinks that old age is a time of ill health	48.0	45.7	47.7	46.9
... worries their health will get worse as they get older	74.4	69.4	61.2	68.9
... thinks of themselves as old	80.5	80.6	66.4	77.1
... expects to do what they have always done as they get older	45.8	47.8	42.4	45.8
… is not bothered by growing older	51.3	58.4	59.5	56.5
... thinks of old people as generally grumpy and miserable	19.2	20.1	17.4	19.1
... thinks old people do not get respect in society	67.2	64.1	55.9	63.1
... thinks that retirement is a time of leisure	76.8	76.8	69.5	75.0
... feels we can learn a lot from older people	89.7	89.7	87.9	89.3
... thinks that as they get older they become more tolerant	61.8	66.2	67.4	65.1
***Weighted* N**				
Men	*1,194*	*1,614*	*633*	*3,441*
Women	*1,229*	*1,764*	*971*	*3,964*
***Unweighted* N**				
Men	*1,069*	*1,673*	*648*	*3,390*
Women	*1,259*	*1,945*	*906*	*4,110*

Table 11A.7. Perceptions of ageing, by age in 2004–05 and age-specific wealth

	52–59	60–74	75+	All
	% of respondents in agreement with the following statements:			
Whether respondent …				
…expects to get more lonely as they get older				
Poorest quintile	43.2	42.0	45.3	43.2
2nd quintile	35.7	40.9	47.3	40.6
3rd quintile	35.1	38.4	44.0	38.5
4th quintile	29.2	41.3	43.1	37.9
Wealthiest quintile	35.1	37.4	40.6	37.3
... thinks that old age is a time of loneliness				
Poorest quintile	38.0	36.7	48.3	40.0
2nd quintile	28.5	31.6	42.2	33.0
3rd quintile	29.5	26.0	41.2	30.5
4th quintile	25.3	27.5	33.9	28.1
Wealthiest quintile	32.0	25.7	30.5	28.6
... thinks that old age is a time of ill health				
Poorest quintile	52.7	50.2	57.1	52.7
2nd quintile	51.7	52.5	51.9	52.1
3rd quintile	47.6	46.0	50.5	47.5
4th quintile	45.3	46.2	49.4	46.6
Wealthiest quintile	55.4	44.6	48.8	48.7
... worries their health will get worse as they get older				
Poorest quintile	72.2	69.7	65.4	69.5
2nd quintile	75.4	71.3	61.1	70.4
3rd quintile	71.7	69.5	62.1	68.6
4th quintile	69.0	67.7	59.3	66.4
Wealthiest quintile	71.9	62.8	57.7	64.5
... does not thinks of themselves as old				
Poorest quintile	71.5	73.9	61.7	70.1
2nd quintile	77.0	73.1	72.8	74.3
3rd quintile	76.1	76.1	66.1	73.9
4th quintile	79.3	77.3	66.7	75.7
Wealthiest quintile	80.7	81.1	64.7	77.6
... expects to do what they have always done as they get older				
Poorest quintile	40.9	48.8	48.3	45.9
2nd quintile	40.8	42.3	42.6	41.9
3rd quintile	44.1	44.3	42.4	43.8
4th quintile	42.5	47.7	41.6	44.8
Wealthiest quintile	40.2	44.0	35.9	41.2
… is not bothered by growing older				
Poorest quintile	50.6	60.3	63.9	57.8
2nd quintile	51.0	61.0	65.2	58.6
3rd quintile	50.4	61.9	61.7	58.1
4th quintile	50.6	58.3	62.4	56.7
Wealthiest quintile	49.0	59.9	51.0	54.8

Table continues

Table 11A.7 continued

	52–59	60–74	75+	All
	% of respondents in agreement with the following statements:			
Whether respondent ,,,				
... thinks of old people as generally grumpy and miserable				
Poorest quintile	25.1	23.8	28.3	25.4
2nd quintile	23.8	25.6	20.8	23.9
3rd quintile	19.0	19.5	17.2	18.8
4th quintile	18.2	20.5	16.0	18.9
Wealthiest quintile	18.1	15.4	14.1	15.9
… thinks that retirement is a time of leisure				
Poorest quintile	68.1	70.6	69.5	69.5
2nd quintile	72.2	71.0	71.1	71.4
3rd quintile	74.4	76.0	71.3	74.4
4th quintile	79.6	79.2	72.5	78.0
Wealthiest quintile	82.5	79.9	70.3	78.7
… feels we can learn a lot from older people				
Poorest quintile	88.8	91.2	90.3	90.1
2nd quintile	92.0	90.3	86.1	89.9
3rd quintile	90.8	92.5	88.9	91.2
4th quintile	88.9	91.2	89.7	90.2
Wealthiest quintile	90.1	89.1	86.6	88.9
… thinks that as they get older they become more tolerant				
Poorest quintile	57.7	66.9	63.9	62.9
2nd quintile	66.9	64.9	70.3	66.8
3rd quintile	56.9	60.7	67.1	60.8
4th quintile	52.1	61.7	66.0	59.6
Wealthiest quintile	54.8	52.8	60.1	54.9
***Weighted* N**				
Poorest quintile	*427*	*496*	*298*	*1,221*
2nd quintile	*456*	*598*	*307*	*1,361*
3rd quintile	*520*	*711*	*339*	*1,570*
4th quintile	*505*	*764*	*326*	*1,595*
Wealthiest quintile	*482*	*786*	*328*	*1,596*
***Unweighted* N**				
Poorest quintile	*391*	*511*	*275*	*1,177*
2nd quintile	*429*	*629*	*287*	*1,345*
3rd quintile	*491*	*750*	*330*	*1,571*
4th quintile	*493*	*831*	*317*	*1,641*
Wealthiest quintile	*491*	*875*	*338*	*1,704*

Table 11A.8. Mean value of 'when old age starts', by age in 2002–03 and sex

	50–54	55–59	60–64	65–69	70–74	75–80	80+	All
All	68.2	69.0	70.2	71.9	72.8	73.5	74.7	71.3
Men	66.8	67.3	68.6	70.8	72.0	73.2	74.4	69.9
Women	69.7	70.6	71.7	73.0	73.5	73.7	74.9	72.4
Weighted N	*849*	*1,886*	*1,404*	*1,324*	*1,113*	*1,128*	*1,034*	*8,737*
Unweighted N	*744*	*1,853*	*1,477*	*1,397*	*1,212*	*1,115*	*982*	*8,780*

Note: The variable about the beginning of old age and the w1 weight used for this table have been taken from the wave 1 ELSA data-set.

Table 11A.9. Mean value of 'when old age starts', by age in 2002–03, sex and age-specific wealth

	50–59	60–74	75+	All
Men				
Poorest quintile	66.0	68.1	73.4	68.1
2nd quintile	64.7	68.3	72.8	68.0
3rd quintile	68.0	70.3	72.9	70.0
4th quintile	67.4	70.9	74.2	70.3
Wealthiest quintile	69.1	72.3	74.9	71.9
Women				
Poorest quintile	68.0	71.7	73.7	71.2
2nd quintile	69.3	71.5	73.6	71.5
3rd quintile	70.4	72.5	74.5	72.4
4th quintile	71.2	73.6	75.2	73.3
Wealthiest quintile	72.9	74.1	75.1	73.9
Weighted N	*2,691*	*3,819*	*2,153*	*8,664*
Unweighted N	*2,554*	*4,063*	*2,088*	*8,705*

Note: The variable about the beginning of old age and the w1 weight used for this table have been taken from the wave 1 ELSA data-set.

Table 11A.10. Mean value of 'when old age starts', by age in 2002–03, sex and self-perceived health

	50–59	60–74	75+	All
Men				
Fair/poor health	64.7	67.9	72.4	68.2
Good health	66.8	70.6	73.2	70.0
Excellent/very good health	68.4	71.8	76.1	71.0
Women				
Fair/poor health	68.5	70.7	73.5	71.2
Good health	69.9	72.5	74.5	72.3
Excellent/very good health	71.4	74.2	75.2	73.3
Weighted N	*2,718*	*3,814*	*2,101*	*8,632*
Unweighted N	*2,582*	*4,057*	*2,043*	*8,682*

Note: The variable about the beginning of old age and the w1 weight used for this table have been taken from the wave 1 ELSA data-set.

Table 11A.11. Mean value of 'when middle age ends', by age in 2002–03 and sex

	50–54	55–59	60–64	65–69	70–74	75–80	80+	All
All	62.9	63.3	63.2	62.9	62.6	63.4	63.5	63.1
Men	61.6	61.6	61.4	61.8	61.1	62.1	62.5	61.7
Women	64.3	65.0	64.8	63.9	63.8	64.3	64.0	64.4
Weighted N	*849*	*1,886*	*1,404*	*1,324*	*1,113*	*1,128*	*1,034*	*8,737*
Unweighted N	*744*	*1,853*	*1,477*	*1,397*	*1,212*	*1,115*	*982*	*8,780*

Note: The variable about the end of middle age and the w1 weight used for this table have been taken from the wave 1 ELSA data-set.

Table 11A.12. Mean value of 'when middle age ends', by age in 2002–03, sex and age-specific wealth

	50–59	60–74	75+	All
Men				
Poorest quintile	60.3	58.3	61.5	59.7
2nd quintile	59.8	58.2	60.8	59.3
3rd quintile	61.7	60.8	61.4	61.3
4th quintile	62.5	62.1	63.0	62.4
Wealthiest quintile	63.4	64.9	63.9	64.3
Women				
Poorest quintile	62.4	62.3	63.1	62.6
2nd quintile	63.7	63.0	63.6	63.4
3rd quintile	64.9	64.3	65.0	64.7
4th quintile	66.0	65.8	64.8	65.6
Wealthiest quintile	67.0	65.5	64.8	65.8
Weighted N	*2,691*	*3,819*	*2,153*	*8,664*
Unweighted N	*2,554*	*4,063*	*2,088*	*8,705*

Note: The variable about the end of middle age and the w1 weight used for this table have been taken from the wave 1 ELSA data-set.

Table 11A.13. Mean value of 'when middle age ends', by self-reported health, sex and age in 2002–03

	50–59	60–74	75+	All
Men				
Fair/poor health	59.0	58.5	61.3	59.4
Good health	61.4	61.5	61.6	61.5
Excellent/very good health	62.8	63.4	64.6	63.4
Women				
Fair/poor health	63.0	62.2	62.8	62.6
Good health	64.3	63.6	65.1	64.2
Excellent/very good health	65.8	66.0	65.0	65.7
Weighted N	*2,718*	*3,814*	*2,101*	*8,632*
Unweighted N	*2,582*	*4,057*	*2,043*	*8,682*

Note: The variable about the end of middle age and the w1 weight used for this table have been taken from the wave 1 ELSA data-set.

Table 11A.14. Mean self-perceived age, by actual age in 2004–05 and sex

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
All	46.4	49.1	53.4	57.1	61.7	65.7	73.8	56.7
Men	46.8	50.0	54.4	57.9	63.0	66.0	73.6	56.9
Women	46.1	48.2	52.5	56.4	60.5	65.5	73.9	56.6
Weighted N	*840*	*1,883*	*1,411*	*1,317*	*1,120*	*1,134*	*1,075*	*8,780*
Unweighted N	*744*	*1,853*	*1,477*	*1,397*	*1,212*	*1,115*	*982*	*8,780*

Table 11A.15. Mean self-perceived age, by actual age in 2004–05, age-specific wealth and sex

	52–59	60–74	75+	All
Men				
Poorest quintile	51.8	60.2	66.6	57.6
2nd quintile	49.3	58.8	68.2	57.0
3rd quintile	48.6	57.9	68.1	56.5
4th quintile	47.1	58.1	70.4	56.4
Wealthiest quintile	49.3	56.8	70.2	57.4
Women				
Poorest quintile	49.2	56.6	68.9	57.8
2nd quintile	47.4	57.0	70.0	57.2
3rd quintile	46.7	56.1	69.6	56.2
4th quintile	47.7	55.8	69.9	56.7
Wealthiest quintile	47.3	55.1	69.8	55.5
Weighted N	*2,677*	*3,824*	*2,201*	*8,702*
Unweighted N	*2,554*	*4,063*	*2,088*	*8,705*

Table 11A.16. Perception of own age, by actual age in 2004–05 and sex

	52–59	60–74	75+	All
	% of the respondents perceiving themselves to be …			
Men				
… older than their actual age	13.3	8.0	6.4	9.5
… of the same age as their actual age	19.3	20.4	20.7	20.1
… younger than their actual age	67.4	71.6	72.9	70.4
Women				
… older than their actual age	10.8	7.2	6.9	8.3
… of the same age as their actual age	17.2	15.0	18.1	16.4
… younger than their actual age	72.0	77.8	75.0	75.3
***Weighted* N**				
Men	*1,168*	*1,584*	*607*	*3,359*
Women	*1,197*	*1,696*	*891*	*3,785*
***Unweighted* N**				
Men	*1,048*	*1,640*	*623*	*3,311*
Women	*1,226*	*1,870*	*832*	*3,928*

Table 11A.17. Perception of own age, by actual age in 2004–05 and age-specific wealth

	52–59	60–74	75+	All
	% of the respondents perceiving themselves to be …			
Poorest quintile				
… older than their actual age	57.6	70.2	71.4	66.0
… of the same age as their actual age	22.4	12.5	8.2	15.0
… younger than their actual age	19.9	17.3	20.4	19.0
2nd quintile				
… older than their actual age	69.5	72.0	71.8	71.1
… of the same age as their actual age	13.5	10.9	9.3	11.5
… younger than their actual age	17.0	17.1	18.9	17.5
3rd quintile				
… older than their actual age	72.1	78.0	75.6	75.5
… of the same age as their actual age	10.4	7.5	5.9	8.2
… younger than their actual age	17.5	14.5	18.5	16.3
4th quintile				
… older than their actual age	75.0	76.8	68.4	74.5
… of the same age as their actual age	8.1	5.1	7.3	6.5
… younger than their actual age	16.9	18.2	24.3	19.0
Wealthiest quintile				
… older than their actual age	72.6	76.9	76.0	75.4
… of the same age as their actual age	6.7	3.7	4.3	4.7
… younger than their actual age	20.7	19.4	19.8	19.9
***Weighted* N**				
Poorest quintile	*400*	*463*	*261*	*1,123*
2nd quintile	*442*	*568*	*273*	*1,283*
3rd quintile	*513*	*693*	*309*	*1,515*
4th quintile	*509*	*759*	*313*	*1,581*
Wealthiest quintile	*496*	*794*	*317*	*1,608*
***Unweighted* N**				
Poorest quintile	*385*	*496*	*253*	*1,134*
2nd quintile	*416*	*608*	*265*	*1,289*
3rd quintile	*477*	*732*	*305*	*1,514*
4th quintile	*481*	*807*	*307*	*1,595*
Wealthiest quintile	*484*	*848*	*318*	*1,650*

Table 11A.18. Perception of own age, by actual age in 2004–05 and self-assessed health

	52–59	60–74	75+	All
	% of the respondents perceiving themselves to be …			
Fair or poor self-perceived health				
… older than their actual age	29.7	18.1	13.3	19.9
… of the same age as their actual age	19.9	24.7	26.1	23.8
… younger than their actual age	50.4	57.2	60.6	56.3
Good self-perceived health				
… older than their actual age	10.6	5.1	4.3	6.6
… of the same age as their actual age	22.0	18.9	19.0	19.8
… younger than their actual age	67.3	76.0	76.8	73.6
Excellent or very good self-perceived health				
… older than their actual age	5.1	2.8	2.0	3.6
… of the same age as their actual age	15.4	12.1	11.6	13.3
… younger than their actual age	79.4	85.1	86.5	83.1
***Weighted* N**				
Fair or poor self-perceived health	*506*	*858*	*519*	*1,883*
Good self-perceived health	*675*	*1,065*	*518*	*2,259*
Excellent or very good self-perceived health	*1,181*	*1,357*	*461*	*2,999*
***Unweighted* N**				
Fair or poor self-perceived health	*483*	*901*	*497*	*1,881*
Good self-perceived health	*659*	*1,143*	*510*	*2,312*
Excellent or very good self-perceived health	*1,130*	*1,465*	*447*	*3,042*

Table 11A.19. Mean desired age, by actual age in 2004–05 and sex

	52–54	55–59	60–64	65–69	70–74	75–79	80+	All
All	36.9	38.3	40.8	42.8	45.5	46.3	51.7	42.4
Men	36.3	37.4	39.2	40.5	43.8	44.0	50.5	40.6
Women	37.4	39.1	42.3	45.0	47.1	48.0	52.4	44.0
Weighted N	*840*	*1,883*	*1,411*	*1,317*	*1,120*	*1,134*	*1,075*	*8,780*
Unweighted N	*744*	*1,853*	*1,477*	*1,397*	*1,212*	*1,115*	*982*	*8,780*

Table 11A.20. Mean desired age, by actual age in 2004–05 and age-specific wealth

	52–59	60–74	75+	All
Men				
Poorest quintile	34.9	36.8	42.5	36.8
2nd quintile	36.2	38.6	44.0	38.6
3rd quintile	36.5	40.1	46.3	39.9
4th quintile	38.0	41.4	46.2	41.0
Wealthiest quintile	39.1	44.6	50.0	44.0
Women				
Poorest quintile	36.0	42.6	49.3	42.5
2nd quintile	36.5	43.9	50.0	43.0
3rd quintile	38.7	45.1	50.8	44.3
4th quintile	41.0	45.3	49.6	45.0
Wealthiest quintile	41.0	45.9	51.0	45.2
Weighted N	*2,677*	*3,824*	*2,201*	*8,702*
Unweighted N	*2,554*	*4,063*	*2,088*	*8,705*

Table 11A.21. Age preference, by actual age in 2004–05 and sex

	52–59	60–74	75+	All
	% of the respondents wishing themselves to be …			
Men				
… younger than their actual age	85.9	89.1	89.2	88.0
… of the same age as their actual age	9.4	8.4	5.6	8.3
Women				
… younger than their actual age	87.3	90.0	92.7	89.8
… of the same age as their actual age	10.3	8.2	5.4	8.2
***Weighted* N**				
Men	*1,166*	*1,540*	*574*	*3,280*
Women	*1,179*	*1,664*	*871*	*3,714*
***Unweighted* N**				
Men	*1,045*	*1,598*	*590*	*3,233*
Women	*1,207*	*1,835*	*814*	*3,856*

Table 11A.22. Age preference, by actual age in 2004–05 and age-specific wealth

	52–59	60–74	75+	All
	% of the respondents wishing themselves to be …			
Poorest quintile				
… younger than their actual age	87.5	90.2	92.3	89.7
… of the same age as their actual age	9.1	6.1	5.7	7.1
2nd quintile				
… younger than their actual age	89.7	90.5	89.2	90.0
… of the same age as their actual age	7.2	6.8	7.6	7.1
3rd quintile				
… younger than their actual age	84.5	91.6	89.6	88.8
… of the same age as their actual age	11.4	6.3	5.4	7.9
4th quintile				
… younger than their actual age	85.2	89.7	92.8	88.9
… of the same age as their actual age	10.5	9.6	4.2	8.8
Wealthiest quintile				
… younger than their actual age	86.3	86.5	93.3	87.8
… of the same age as their actual age	10.8	11.3	4.5	9.8
***Weighted* N**				
Poorest quintile	*413*	*477*	*271*	*1,161*
2nd quintile	*439*	*566*	*266*	*1,272*
3rd quintile	*503*	*659*	*301*	*1,464*
4th quintile	*488*	*731*	*306*	*1,524*
Wealthiest quintile	*472*	*750*	*295*	*1,516*
***Unweighted* N**				
Poorest quintile	*379*	*494*	*248*	*1,121*
2nd quintile	*413*	*595*	*251*	*1,259*
3rd quintile	*475*	*694*	*295*	*1,464*
4th quintile	*475*	*795*	*298*	*1,568*
Wealthiest quintile	*481*	*835*	*305*	*1,621*

Table 11A.23. Age preference, by actual age in 2004–05 and self-assessed health

	52–59	60–74	75+	All
	% of the respondents wishing themselves to be …			
Fair or poor self-perceived health				
… younger than their actual age	19.9	24.7	26.1	23.8
… of the same age as their actual age	50.4	57.2	60.6	56.3
Good self-perceived health				
… younger than their actual age	22.0	18.9	19.0	19.8
… of the same age as their actual age	67.3	76.0	76.8	73.6
Excellent or very good self-perceived health				
… younger than their actual age	15.4	12.1	11.6	13.3
… of the same age as their actual age	79.4	85.1	86.5	83.1
***Weighted* N**				
Fair or poor self-perceived health	*506*	*858*	*519*	*1,883*
Good self-perceived health	*675*	*1,065*	*518*	*2,259*
Excellent or very good self-perceived health	*1,181*	*1,357*	*461*	*2,999*
***Unweighted* N**				
Fair or poor self-perceived health	*483*	*901*	*497*	*1,881*
Good self-perceived health	*659*	*1,143*	*510*	*2,312*
Excellent or very good self-perceived health	*1,130*	*1,465*	*447*	*3,042*

12. Methodology

Hayley Cheshire *National Centre for Social Research*

Kate Cox *National Centre for Social Research*

Carli Lessof *National Centre for Social Research*

Rebecca Taylor *National Centre for Social Research*

Key aspects of the ELSA survey of methodological interest include the following:

- The ELSA interview covers a wide range of topics so analysts can examine the relationship between different aspects of respondents' lives. The wave 2 questionnaire was similar to that used in wave 1, but every module was reviewed to ensure that it would provide data that measures change over time. This was achieved by repeating some measures exactly (e.g., to measure income and assets), by asking directly about change (e.g., to capture perceived changes in memory and concentration) and by adapting questions to allow people to update or amend past responses (e.g., about work, pensions and specific health conditions).
- The wave 2 interview was also expanded to answer a variety of additional research questions. The new items included: quality of healthcare received; household spending on leisure, clothing and transfers; perceptions of deprivation relative to others; perceptions of ageing; levels of literacy; perceived effort and reward for care-giving; and voluntary activities.
- Core sample members who completed a main interview were also offered a nurse visit. This was similar to the one that many respondents had agreed to when interviewed as part of the Health Survey for England in 1998, 1999 or 2001 and included tests of blood pressure, lung function, blood tests, anthropometric measures and physical performance measures.
- In total 9,432 main interviews were completed. Of these, 8,780 (93%) were with eligible core members, who form the basis of this report. The remaining 652 were with partners, defined as core, young or new partners.
- Eighty-two per cent of those who completed a wave 1 interview and were eligible for a wave 2 interview as an ELSA 'core member' took part in the survey. Of these, 88% also took part in the nurse interview (representing 71% of those eligible for a wave 2 interview). The response to specific elements of the interview was high.

This chapter presents a summary of the survey methodology for the second wave of the English Longitudinal Study of Ageing (ELSA). It includes a brief account of the sample design, content of the interview and nurse visit, and the approach to fieldwork. It provides basic information about responses to the survey and the weighting strategy used in this report, and summarises wave on wave response looking back to the Health Survey for England (HSE). Further detail will be provided in the ELSA technical reports, which can be accessed via the ELSA website http://www.ifs.org.uk/elsa.

12.1 Sample design

The ELSA sample is selected to be representative of people aged 50 years and over, living in private households in England. It was drawn from households that had previously responded to the HSE so that the study could benefit from data that had already been collected. Some background information about the HSE is therefore useful.

- The HSE is an annual cross-sectional household survey that gathers a wide range of health data and biometric measures. The ELSA sample was selected from three survey years of the HSE (1998, 1999 core sample and 2001).
- Each of the main HSE samples had originally been drawn in two stages. First, postcode sectors were selected from the Postcode Address File, stratified by health authority and proportion of households in the non-manual socio-economic groups. Addresses were then selected systematically from each sector and a specified number of adults and children in each household were deemed eligible for interview.
- Eligible individuals were asked to participate in a personal interview, followed by a nurse visit. Further details about the HSE are available from the Technical Reports (Erens and Primatesta, 1999; Erens, Primatesta and Prior, 2001; Prior et al., 2003).

Eligibility for interview in ELSA wave 1 and wave 2

Within HSE households, there were three types of individual who were eligible to take part in wave 1 of ELSA, as illustrated in Box 12.1.

The wave 1 interview took place in 2002–2003, providing the baseline for the study. Eligible sample members who responded at this stage were renamed 'core members' to distinguish them as the core element of the continuing ELSA sample. They were eligible for the main interview in wave 2 unless they had since died, had explicitly asked at the end of the first ELSA interview not to be re-contacted, or had moved out of Britain. Core members who completed a main interview in wave 2 were also eligible for a nurse visit. Core members form the main focus of this report.

Several other categories of individuals were also eligible for an interview (but not a nurse visit) in wave 2. These were the partners of core members (core partners, new partners or young partners, as described in Box 12.2). They were not included in the analysis presented in this report.

Box 12.1. Summary of the eligibility criteria for the wave 1 ELSA interview

Eligible sample members were individuals who were living within the household at the time of the HSE interview in 1998, 1999 or 2001, were born on or before 29 February 1952 and were still living at a private residential address in England at the time of the ELSA wave 1 interview.

Young partners were the cohabiting spouses or partners of eligible sample members, who were living within the household at the time of the HSE in 1998, 1999 or 2001, and were still cohabiting with the sample member during the wave 1 interview. They were born *after* 29 February 1952.

New partners were the cohabiting spouses or partners of eligible sample members at the time of the first ELSA interview who had joined the household *since* the HSE interview.

Box 12.2. Summary of the eligibility criteria for the wave 2 ELSA interview

Core members were individuals who had been living within the household at the time of the HSE interview in 1998, 1999 or 2001, were born on or before 29 February 1952 and were subsequently interviewed as part of wave 1 at a private residential address in England. They were not eligible if they had since died, asked not to be revisited or moved out of Britain.

Core partners were individuals who, like core members, had been living within the household at the time of the HSE interview in 1998, 1999 or 2001 and were born on or before 29 February 1952. However they were *not* interviewed as part of wave 1, so missing the baseline survey. Consequently, they were only approached by virtue of their being the partner of a core member.

Young partners were the cohabiting spouses or partners of eligible sample members, who were living within the household at the time of the HSE, and were still cohabiting with the sample member at the time of the wave 1 interview. They were born *after* 29 February 1952. Most, but not all, young partners took part in a wave 1 interview.

New partners were the cohabiting spouses or partners of eligible sample members at the time of *either the first or second* ELSA interview, who had joined the household since the original HSE interview.

Core, young and new partners who had been identified in wave 1 were eligible for a full wave 2 interview even if they were no longer living with a core member at the time of the second interview. That is to say, we attempted to interview all partners who had been living with a core member at the time of an ELSA interview and had been separated or divorced from them, or had been widowed, so that we could understand their circumstances after this event had occurred. The only circumstances in which partners who had separated from the core member was not approached were if they had died, had explicitly asked at the end of their first ELSA interview not to be re-contacted, had left Britain or moved into an institution. Ex-partners are only followed up once after leaving the core member's household.

Core, young and new partners (those identified in both waves 1 and 2) were not eligible for a nurse visit. Although they are not included in the analysis presented in this report in their own right, the fact that many of them completed a main interview means that we can take into account differing characteristics of partners or of joint income that are relevant for the health and well-being of the core member.

Two further types of interview were conducted with specific sub-populations. An 'end of life' interview was sought with a relative, friend or carer of core members who had died since participating in the first ELSA interview. An institution interview was sought with core members who had since moved from a private household into a residential care home or similar institution, or with a proxy who could respond on their behalf. The data collected during these types of interviews have not been used in this report.

Sample allocation

The eligible sample for wave 2 was allocated in monthly batches, for which invitations were to be issued over the fieldwork period. Those to be contacted at each address were allocated to one of four two-month time periods by referring to the date of the wave 1 interview and selecting the period closest to two years from that interview. To create the most efficient grouping for interviewers, addresses were 'bunched' and assigned to one of the two-month time periods.

12.2 Development of the wave 2 interview and nurse visit

Extensive discussion took place with ELSA collaborators about necessary changes to the wave 1 interview. Early pre-tests helped with the development of the nurse visit and the physical performance measures, and two pilots were conducted in August 2003 and January 2004. These tested the survey instruments and fieldwork approach for the main interview and all aspects of the nurse visit. An approach to dependent interviewing was developed – that is, feeding information from a past interview into the current one.

Structure and content of wave 2 interview

As in the previous wave, the wave 2 main survey comprised a personal face-to-face interview and a self-completion questionnaire. Overall, the intention in wave 2 was to collect data about the same topics as in wave 1. There were, however, some additions to the content of the interview to respond to new areas of enquiry. Furthermore, several elements of the questionnaire were amended to take account of responses given during the previous wave.

The structure of the main interview was the same as it had been for wave 1. In brief:

- In households with one respondent, or where two respondents were interviewed separately, each interview followed the course set out in Box 12.3, though some flexibility was given in the order of the walking-speed, income and assets, and housing modules.

Box 12.3. Content of the ELSA interview in wave 2

Household demographics – collection or updating of demographic information about everyone living in the household, including sex, age and relationships to each other, and collection or updating of information about children living outside the household.

Individual demographics – collection or updating of details about respondents' legal marital status, parent's age and cause of death and number of living children.

Health – collection or updating of self-reported general health, chronic illness or disability; eyesight, hearing; specific diagnoses and symptoms; pain; difficulties with daily activities; smoking; mental health, urinary incontinence; falls and fractures; quality of care.

Social participation – covering care-giving and the use of public transport.

Work and pensions – collection or updating of current work activities; current and past pensions; reasons for job change and health-related job limitations.

Income and assets – assessment of the income that respondents received from a variety of sources over the previous 12 months: wages, state pensions, private pensions, other annuity income and state benefits; and collected financial and non-financial assets.

Housing – collection or updating of current housing situation (inc. size and quality), housing-related expenses, ownership of durable goods and cars; consumption including food in and out of home, fuel, durables, leisure, clothing and transfers.

Cognitive function – measured different aspects of the respondent's cognitive function, including memory, speed and mental flexibility; and assessed literacy.

Expectations – measured expectations for the future in a number of dimensions; financial decision-making; relative deprivation and subjective views of ageing.

Psychosocial health – measured how the respondent views his or her life across a variety of dimensions.

Effort and reward – new questions to assess motivations behind voluntary work and caring for others; and the relationship between effort and reward.

Walking speed – for respondents aged 60 and over, a 'timed walk' over a distance of 8 feet (244cm) at the respondent's usual walking pace.

Final questions – collection of any missing demographic information and updating of contact details and consents as described below.

Self-completion questionnaire – covering quality of life, social participation, mobility, control at work, life satisfaction, views of ageing, social networks and alcohol consumption.

- In households where more than one eligible respondent agreed to take part, two individuals could be interviewed in a single session, unless they kept their finances separately and were not prepared to share this information. In these concurrent sessions, the two respondents were interviewed alongside each other, but were separated during the course of the interview so that the later modules – assessing cognitive function and collecting information about expectations for the future, psychosocial health, demographic information and consents for linkages to administrative data – could be administered in private.

Box 12.4. Content of the ELSA nurse interview at wave 2

The nurse visit included the taking of several standard measures including:

Blood pressure

Lung function – a measure of how much air respondents can exhale from lungs, and is measured using a spirometer.

Blood sample – most respondents under the age of 80 were asked to fast before giving the sample. A list of the uses to which the sample was put is given in Box 12.5.

Anthropometric measures – weight, sitting height, standing height, and waist and hip measurement (to assess the distribution of body fat across the body). In addition, nurses took four **physical performance** measures. Taken together with the gait speed (or timed walk) measure carried out during the personal interview, these provide an excellent way of tracking change in physical well-being over time.

Grip strength – a measure of upper body strength, during which the respondent was asked to squeeze a grip gauge up to three times with each hand.

Chair rises – a measure of lower body strength, during which respondents were asked to stand up from a firm chair without using their arms. If they succeeded, they were asked to stand up and sit down as quickly as they could for either five rises if they are aged 70 years and over, or up to ten rises if aged 69 years and under.

Balance – respondents were asked to stand in 3 different positions for up to 30 seconds.

Leg raise – respondents under 70 years old were asked to lift one foot off the ground for up to 30 seconds.

Box 12.5. Purpose of the blood sample in wave 2

Fibrinogen – A protein necessary for blood clotting. High levels are also associated with a higher risk of heart disease.

Total cholesterol – Cholesterol is a type of fat present in the blood, related to diet. Too much cholesterol in the blood increases the risk of heart disease.

HDL cholesterol – This is ‘good’ cholesterol which protects against heart disease.

Triglycerides – Together with total and HDL cholesterol, triglycerides provide a lipid profile, which can give information on the risk of cardiovascular disease.

Ferritin and haemoglobin – These are measures of iron levels in the body, related to diet and other factors.

C-reactive protein – The level of this protein in the blood gives information on inflammatory activity in the body and is also associated with risk of heart disease.

Apolipoprotein E – This is involved in the transport of cholesterol and plays a protective role.

Fasting glucose and glycated haemoglobin – Both indicate the presence or risk of type 2 diabetes, which is associated with an increased risk or heart disease.

Genetics – Genetic factors are associated with some common diseases, such as diabetes and heart disease, and relate to general biological aspects of the ageing process.

- The self-completion questionnaire was normally concluded after the face-to-face interview was over and the interviewer had left the household (if the eligible individual was interviewed alone), or while the other person in the concurrent interview session completed the 'private' modules described above.
- Where two or more eligible individuals live in a household, one was nominated as the informant for that household. Similarly, one individual was asked to be the informant on income and assets on behalf of each benefit unit. However, if two individuals in the same benefit unit keep their finances separately, then the data for each financial unit was collected separately.

The interview ended with a request for confirmation – or amendment – of consent to obtain health and economic data from administrative sources. Consent to obtain information from the NHS Central Register was requested from those who had not provided this at the HSE pre-baseline interview. Consent was also collected for a nurse visit. Contact details were requested for a stable address and for a nominated individual who might respond if a proxy, institution, or end of life interview were needed in the future.

Structure and content of wave 2 nurse visit

After conducting the interview, the interviewer made an appointment for the nurse to visit the respondent, or set up contact between the nurse and respondent. The nurse then visited the respondent to carry out a series of measurements listed in Box 12.4. These were only obtained if the appropriate consents were given and the respondent was able to respond affirmatively to relevant safety questions.

Two additional measures were collected during the nurse visit. First, respondents were asked to supply saliva samples over a 24-hour period to measure cortisol, which is an indicator of stress. Second, a sample of one-in-ten respondents was asked to complete an experimental questionnaire, designed by Carol Ryff, about how they felt about themselves and their lives, in the form of 43 statements with which the respondent was asked to agree or disagree (Ryff and Keyes, 1995).

As described above, a blood sample was collected from respondents who gave consent for this in order to examine the items in Box 12.5.

12.3 Fieldwork

Fieldwork for the first wave of ELSA began in June 2004 and spanned 14 months, finishing in July 2005. Each eligible individual within a household was sent an advance letter inviting them to take part. Interviewers then visited the households to explain the study and to interview willing individuals straight away, or to make appointments to call at a convenient time. A number of different approaches were used to encourage participation among the sample, many of which were similar to those described in the previous ELSA report (Marmot et al., 2003).

12.4 Survey response

In this section, we present summary information about survey response in wave 2 for the main interview, for key modules in the main interview, and for the nurse visit. We focus on the main group of respondents – core members – who form the basis of this report.

Main interview

Survey response and quality of fieldwork were carefully monitored throughout the study period. Ultimately, the ELSA wave 2 fieldwork produced 9,432 productive interviews. The number of interviews conducted is given in Table 12.1, broken down by sample type. This report focuses on the 8,780 core member respondents, which includes 39 partially completed interviews and 92 responses given by a proxy informant, and excludes partners.

Table 12.1. Respondents, by sample type

Sample type	Number of respondents[a]
Core member	8,780
Core partner[b]	57
Younger partner	501
New partner	94
Unweighted N	*9,432*

[a]Excluded from this and all other tables in this report is one additional core member respondent (a woman aged 85 or over) whose data are in the process of being recovered.
[b]Core partners are individuals sampled as core members in wave 1 but who did not respond in wave 1 and so were only interviewed by virtue of their being the partner of a core member.

Contact, co-operation and response rates are measures often used to evaluate the quality of fieldwork. A summary of the rates is presented here (for full details see the wave 2 Technical Report, which can be accessed via the ELSA website (http://www.ifs.org.uk/elsa).

External information from the National Health Service Central Register was matched to non-respondents to identify any deaths that had not been revealed in the course of fieldwork. Individuals whose outcome showed that their eligibility had not been confirmed during fieldwork were all assumed to be eligible for the response rate calculation.

Over the full fieldwork period, for core members, a household contact rate of 97% was achieved and an individual co-operation rate of 84%.[1] The response rate in wave 2 for core members was 82%.[2]

[1]Contact rate is defined as ‘total households where contact was made with at least one member of the sample divided by total eligible households’. The co-operation rate is defined as ‘total individual respondents divided by total eligible individuals contacted’. Respondents have been defined as those who gave a full or partial interview either in person or by proxy.

[2]The response rate is defined as ‘total individual respondents to wave 2 divided by total individuals eligible for wave 2’. The base includes those who were assumed eligible in the absence of information to the contrary. Previously, the household level response rate was presented because the majority of the non-responses at wave 1 occurred at the household level.

Table 12.2. Reasons for non-response for core members

Reason for non-response	Frequency	%
Non-contact	49	2.5
Refusal	1,530	76.9
Moved – unable to trace	221	11.1
Other	190	9.5
Unweighted N	*1,990*	*100.0*

Note: Columns may not add up to 100% because of rounding.

The reasons for non-response are given in Table 12.2. The largest component (over three-quarters) of non-response was a result of refusals. Though many people who had moved were traced from their wave 1 residence, 11% of non-responders were individuals who could not be found. This is slightly higher than wave 1, where those who had moved and could not be traced constituted 10% of issued wave 1 non-respondents. The final category of non-response is 'other', grouping together such reasons as being ill or away during the survey period. A judgement of the impact of the non-response is reserved for a later section where bias is examined.

Response to key sections

In addition to the overall level of response, an analysis of the response to key sections (or modules) of the survey questionnaire was conducted. Not all modules required responses at an individual level. The household demographics and housing modules were asked at the household level, while the income and assets module was asked at the financial-unit level. Table 12.3 shows the responses at the appropriate level for the three key modules of the main questionnaire, and for the nurse visits conducted in wave 2 after the main interviews.[3]

Table 12.3. Response rates to key modules

Section	Total eligible	Level	Response rate
			%
Housing	6,246	Household	99.9
Income and assets	6,712	Financial unit	99.0
Self-completion	9,307	Individual	89.8
Nurse visit	8,688	Individual	88.2

The response rate for the housing, income and assets modules was very high and similar to the rates achieved in wave 1. Response rates for the self-completion module (again similar to wave 1) and nurse visit were good in survey terms. Further information about weighting to address non-response to the nurse visit, to the self-completion module and the blood sample collection is given in Section 12.5 below. In addition, non-response to specific items in

While this is still the case for wave 2, it has been omitted because it is most informative to present the response findings at the intended level of analysis (individual level).

[3]A household or financial unit or individual was classified as 'responding' if data were available for the nominated unit and key questions were asked of all respondents within the module. For the nurse visit, response was defined by the outcome assigned during fieldwork by the nurse conducting the visit.

the interview, including economic variables, was very low, as it had been in wave 1. Further information is provided in the technical reports.

Profile of main interview respondents

The profile of core member respondents is presented in Table 12.4. The distribution shows that the sample contains more women than men, as expected, and that there are relatively more older women than men.

An alternative way of looking at response differences by characteristics is to show how the response rates vary by sub-groups. Tables 12.5 and 12.6 split the sample into sub-groups commonly used in the report. Table 12.5 shows no significant differences between men of different ages although it looks as though a higher percentage of men aged 50–59 years responded. Women aged 75 years or over are significantly less likely to respond than women aged 60–74 years (at 5% significance level).

Table 12.4. Achieved sample of core members, by age and sex

Age in wave 2	Men	Women	Total	Men	Women	Total
				%	%	%
52–54	347	397	744	9	8	8
55–59	851	1,002	1,853	22	21	21
60–64	667	810	1,477	17	17	17
65–69	659	738	1,397	17	15	16
70–74	566	646	1,212	14	13	14
75–79	431	546	977	11	11	11
80–84	274	423	697	7	9	8
85+	155	268	423	4	6	5
Unweighted N	*3,950*	*4,830*	*8,780*	*100*	*100*	*100*

Note: Columns may not add up to 100% because of rounding.

Table 12.5. Wave 2 main interview response for core members, by age and sex at wave 1

		50–59	60–74	75+	Total
		%	%	%	%
Men	Respondents	82.1	80.6	80.9	81.3
	Non-respondents	17.9	19.4	19.1	18.7
	Unweighted N	*1,958*	*2,144*	*759*	*4,861*
Women	Respondents	81.7	82.8	79.6	81.7
	Non-respondents	18.3	17.2	20.4	18.3
	Unweighted N	*2,299*	*2,470*	*1,140*	*5,909*

Note: Wave 1 age at issuing (not at interview).

Table 12.6. Wave 2 main interview response for core members, by wealth quintile at wave 1

	Poorest	2nd	3rd	4th	Richest	All
	%	%	%	%	%	%
Respondents	76.6	78.8	83.7	83.5	84.7	81.6
Non-respondents	23.4	21.2	16.3	16.5	15.3	18.4
Total	*2,024*	*2,102*	*2,158*	*2,168*	*2,220*	*10,672*

Note: All core members (excluding those with a non-responding spouse).

Table 12.6 shows response increasing from the lowest quintile to the highest. Core members in the lowest two quintiles are significantly less likely to respond than core members from other quintiles.

Nurse visit response and profile

In total, 7,666 nurse visits were completed. ELSA core members were eligible for the nurse visit if they had completed an ELSA wave 2 main interview in person (and not by proxy). Of the 8,688 core sample members who did so, nearly nine-in-ten went on to complete a nurse visit. As a percentage of all ELSA core members who were eligible for a wave 2 main interview (10,770), this constitutes a yield of 71%. The age-sex profile of nurse visit respondents is shown in Table 12.7.

Table 12.7. Achieved nurse visits with core members, by age and sex

Age in wave 2	Men	Women	Total	Men	Women	Total
				%	%	%
52–54	310	354	664	9	8	9
55–59	752	906	1,658	22	21	22
60–64	578	710	1,288	17	17	17
65–69	596	677	1,273	17	16	17
70–74	501	555	1,056	15	13	14
75–79	362	452	814	10	11	11
80–84	233	351	584	7	8	8
85 and over	119	210	329	3	5	4
Unweighted N	*3,451*	*4,215*	*7,666*	*100*	*100*	*100*

Table 12.8. Achieved nurse visits as a proportion of wave 2 interviews, by age

Age in wave 2	Productive wave 2 interview	Productive wave 2 nurse visit	% of wave 2 interviews resulting in a nurse visit
52–54	741	664	90
55–59	1,843	1,658	90
60–64	1,468	1,288	88
65–69	1,392	1,273	91
70–74	1,199	1,056	88
75–79	964	814	84
80–84	688	584	85
85 and over	393	329	84
Unweighted N	*8,688*	*7,666*	*88*

Note: Productive interview count includes full and partial interviews only.

Although overall 88% of those who were eligible for a nurse visit responded, the response varied according to the age of the respondents. This is shown in Table 12.8 and ranges from 90% (among the youngest ELSA core sample members who were in their 50s) to approximately 84% (among the oldest ELSA core sample members who were aged 75 and over).

People gave a number of reasons for not taking part in the nurse visit, but the most common was refusal (see Table 12.9). A minority who did agree to take part could not be contacted by the nurse. This may reflect some people's circumstances, but in other cases this could be interpreted as hidden refusal, despite the fact that consent had been given to be visited by the nurse at the end of the main interview. Other reasons for non-response include being too ill or away at the time.

Tables 12.10 and 12.11 present an alternative way of looking at differences in response by sub-groups, in a similar fashion to the earlier section looking at main interview response. Table 12.10 shows that those aged 75 and over are significantly less likely to have completed the nurse visit than core members of other ages, regardless of gender (significant at 1% level). In addition, there are significant differences between women in each age group, where the youngest are most likely to respond (significant at 5% level).

Table 12.11 shows response increasing from the lowest quintile to the highest. The differences between the first and second quintiles, the second and third quintiles, and the fourth and fifth quintiles are significant (at 5% level).

Table 12.9. Reasons for non-response to nurse visit for core members

Reason for non-response	Frequency	%
Non-contact	89	8.7
Refusal	801	78.4
Other	132	12.9
Unweighted N	*1,022*	*100.0*

Note: Core members who responded to wave 2 interview, but had no nurse visit.

Table 12.10. Wave 2 nurse response, by age and sex at wave 1

		50–59	60–74	75+	Total
		%	%	%	%
Men	Respondents	89.2	88.9	84.9	88.4
	Non-respondents	10.8	11.1	15.1	11.6
	Total	*1,521*	*1,749*	*636*	*3,906*
Women	Respondents	90.1	87.9	84.0	87.9
	Non-respondents	9.9	12.1	16.0	12.1
	Total	*1,796*	*2,071*	*915*	*4,782*

Note: All core members with wave 2 interview.

Table 12.11. Wave 2 nurse response, by wealth quintile and sex at wave 1

	Poorest	2nd	3rd	4th	Richest	Total
	%	%	%	%	%	%
Respondents	82.6	87.2	89.9	88.9	90.9	88.1
Non-respondents	17.4	12.8	10.1	11.1	9.1	11.9
Total	*1,527*	*1,633*	*1,789*	*1,798*	*1,866*	*8,613*

Note: All core members with wave 2 interview (excluding those with a non-responding spouse).

12.5 Implications for analyses: weighting

This section considers the implications for using the data and describes the weighting strategy recommended for use in this report to account for non-response. Reflections on the main interview are presented first, followed by other elements of the study: the self-completion module, nurse visit and blood sample.

Main interview

An analysis of the non-respondents helps to identify the potential for bias in the respondent sample. For those individuals eligible for the main interview in wave 2, response was modelled on a full range of household and individual level information collected from both HSE and ELSA wave 1. Note that the analysis was conducted using the main interview weight of wave 1 to ensure that the wave 2 weight did not replicate the wave 1 weight.

The results showed significant differences between respondents and non-respondents on a number of characteristics. The non-responders in wave 2 were more likely than responders to have the following characteristics:

- not interviewed at HSE
- limiting long-standing illness recorded at HSE
- head of household at HSE in the lower supervisory and technical, semi-routine or other social classes
- living in London during wave 1
- sampled from HSE 1999 (rather than 1998 or 2001)
- non-white ethnicity
- renting or other 'non-owning' category compared with owner-occupiers in wave 1 (recorded in wave 1, or HSE if missing in wave 1)
- marital status of single (never married) or married (first and only marriage) at wave 1
- CSE/other or no educational qualifications compared with those with a degree or equivalent in wave 1 (recorded in wave 1, or HSE if missing in wave 1)
- were not current smokers in HSE
- women aged 85 years or over in wave 1

Differences in the age-sex distribution of wave 1 and wave 2 achieved samples of core members can be seen in Table 12.12.[4] Women aged 85 and over in wave 1 were particularly likely to be lost from the sample. Hence, although the profiles are relatively similar, the analysis above suggests that the reduction in the sample between waves 1 and 2 cannot be ignored.

The main aim of the weighting strategy in wave 1 was to try to reduce any bias arising specifically from (1) failure to respond at HSE, (2) refusals to be re-interviewed after HSE and (3) non-response in wave 1. Its aim was then, more generally, to ensure that the respondent sample was representative of the population.

---

[4]This analysis was performed on data weighted by the wave 1 weight.

Table 12.12. Weighted comparison of wave 1 and wave 2 achieved samples of core members, by age and sex

Age at wave 1	wave 1 Men	wave 1 Women	wave 1 Total	wave 2 Men	wave 2 Women	wave 2 Total
	%	%	%	%	%	%
50–54	23	20	22	25	21	23
55–59	18	16	17	19	17	18
60–64	15	14	15	16	15	15
65–69	14	13	13	14	13	14
70–74	12	12	12	11	12	12
75–79	9	11	10	8	11	10
80–84	5	7	6	4	7	6
85+	3	6	5	2	4	3
Weighted N	*5,281*	*6,111*	*11,392*	*4,030*	*4,707*	*8,737*
Unweighted N	*5,187*	*6,205*	*11,392*	*3,950*	*4,830*	*8,780*

Note: Columns may not add up to 100% because of rounding.

In summary, the main interview weight to be used with data collected in wave 1 was created in two steps. First, non-response in wave 1 was modelled using information collected at HSE. The modelling was conducted in a similar way to the wave 2 modelling described above, but only using information collected at HSE. The non-response weighting aimed to correct for any differences in characteristics found between respondents and non-respondents by giving greater weight to those sub-groups with lower response rates. The second step was a (post-stratification) adjustment to ensure that the respondent age-sex distribution matched the Census 2001 non-institutionalised distribution.

The wave 2 weighting strategy was similarly aimed at reducing any bias arising from sample loss after wave 1. For those individuals who were eligible for interview at wave 2, a response or non-response indicator was statistically modelled on a full range of household and individual level information collected from both HSE and ELSA wave 1 (details given above).

A non-response weight at wave 2 was created by taking the inverse of the estimated probability of responding. For example, a response probability of 0.8 corresponds to a weight of 1.25, whilst a lower response probability of 0.5 corresponds to a greater weight of 2. The non-response weighting factor at wave 2 was then multiplied into the wave 1 weight. That is, the main interview weight at wave 2 aims to correct for non-response bias (1) between HSE and ELSA wave 1 and (2) between ELSA waves 1 and 2.

Nurse visit and other modules

Further weights have been created to adjust for non-response to the nurse visit stage and the refusal to give a blood sample. Such weighting mirrors the non-response weighting introduced to the HSE from 2003 onwards (Sproston and Primatesta, 2004). The weights were built up in stages. The nurse visit weight, therefore, contains a correction for both non-response to the main interview and the subsequent nurse visit. Similarly, the blood sample weight contains a correction for non-response to the main interview, the nurse visit and the blood sample collection. A further weight is anticipated to analyse the self-completion questionnaires, to allow for additional non-response at this stage of the survey, but was not used in this report.

12.6 Response across the waves

So far, this chapter has examined the response in wave 2 of the study based on those who were eligible to take part in wave 2. This represents a reasonable measure of the success of this particular phase of the project. However, longitudinal research also depends on the response in successive waves – on cumulative response. Unfortunately, there is no single definition of longitudinal response that is applicable in all circumstances. As a result, a number of representations are put forward here and summarised in Table 12.13. Greater detail is provided in the ELSA technical reports. We focus here on core members' responses to the main interview.

The strictest interpretation of longitudinal response *based on eligibility to take part at each stage* takes wave 1 respondents as the baseline sample and considers what happened subsequently. In one sense, this reflects the original intention of the study and the study's eligibility criteria, and shows that of those eligible, slightly more than eight-in-ten responded (measure A in Table 12.13). However, it is important to understand that this rate does not consider *any* losses before or during wave 1, and takes *no* account of loss of representativeness of the study as various individuals are excluded.

At the other end of the spectrum, we can account for all losses of living individuals since interviewers began to identify respondents for the HSE surveys in 1998, 1999 and 2001. A consideration of this kind provides a better indication of how representative the sample is of the population, since it measures the dropout at *every* stage from the origin of the sample at HSE (which we term wave 0) through to the wave 2 interview. On the other hand, it could be construed as unreasonable because it makes no allowance for the very large number of individuals who were ineligible for the study and could never have been interviewed. For the time being, we set aside these limitations. In order to calculate a rate of this kind we needed to make several practical adjustments to the response rates that had previously been reported for the HSE and wave 1 as individual surveys. First, we re-estimated the HSE response as 71% to take account of the fact that the ELSA sample was drawn from three separate HSE years and to correct for the observation that those aged 50 and over had a higher response rate than adults in general. Second, we adjusted the wave 1 field response rate (from 67 to 61%) to take account of individuals *not issued* for wave 1 because no-one in their household agreed to be re-contacted, or because they responded negatively to an advance letter before wave 1 interviewing began. Working on the basis of an estimated 71% response at wave 0, 61% at wave 1 and 82% at wave 2, we calculated a cumulative longitudinal response rate of 35% (measure D in Table 12.13).

Neither of these two extremes – the 82% based on eligibility and the 35% based on the original sampling frame – gives a true measure of longitudinal response when taken alone. The first takes no account of losses before the baseline survey and the second takes no account of the many individuals who did not have a chance to take part in the study.

Table 12.13. Components of longitudinal response rates for core members

Response rate measure	Single wave 0	Single wave 1	Single wave 2	Total
	%	%	%	%
A	n/a	n/a	81.5	81.5
B	95.8	67.1	81.5	52.4
C	93.6	61.1	81.5	46.6
D	71.1	61.1	81.5	35.4

Notes: The Total column is calculated as the multiplication of the single wave response rates for measures B, C and D, and as (responded to all relevant waves) / (eligible for all relevant waves) for measure A.

Technical notes: The response information in the table above uses the most up-to-date data sources. This implies that if an individual was believed to have been eligible to respond to a particular wave but are now known to have died beforehand, then they will be classified as ineligible. The single wave response rate for wave 2 uses a denominator of all individuals eligible for wave 2 (responded in wave 1, and met eligibility criteria set out in Section 12.1).

The response rate for wave 1 for measure B is the fieldwork rate, which restricts the denominator to those issued (i.e. excludes non-co-operating households at wave 0 and individuals in cooperating households at wave 0 where there was not at least one person aged 50 or more who had agreed to be contacted again beyond wave 0).

Measures C and D use a wider definition, where the denominator includes all individuals eligible for wave 1.

The response rate for wave 0 was calculated using different denominators for each longitudinal rate. Measure B uses all those aged 50 years old or over in co-operating households at wave 0 where at least one had agreed to be re-contacted beyond wave 0; measure C uses all those aged 50 or over in co-operating households at wave 0; and measure D uses all those aged 50 years or more in wave 0, which was estimated using the published rates and knowledge of differences between all adults and the sub-group of interest.

The wave 1 Technical Report contains further details about waves 0 and 1 response rate calculations.

Two interim measures may provide more realistic summaries of response over time. The first removes the households for whom age information was never collected (non-cooperating households in wave 0) and suggests a response rate of 47% (measure C). The second goes further and also removes the households which did not include an age-eligible resident who agreed to be re-contacted. Reducing the sub-group of interest in this way to reflect these exclusions results in an overall response rate of 52% (measure B). These two measures are perhaps more accurate. All four have value as they represent different ways of looking at the study over time, and all four will be reported in future waves of the study.

Ultimately, the choice of response rate depends on the perspective taken. Considerations to take into account are whether wave 0 is included in the definition of longitudinal and whether the focus is sample representativeness or feasible participation in the study. The non-response model used in the weighting is based on measure C, that is, it tries to account for losses from wave 0 co-operating households onwards. However, the weighting also then adjusts for earlier losses at wave 0 (non-co-operating households) as much as is possible with the available information through post-stratification using calibration methods. Therefore the weighting strives to account for all losses (equivalent to the most pessimistic response rate, measure D).

12.7 Conclusions

The ELSA has gone from strength to strength. Wave 2 has seen the introduction of several methodological developments and adaptations to the questionnaire in order to reflect the long-term aims of the project. The level of response in wave 2 (81%) is now high and we hope it will remain stable. We acknowledge and appreciate the contribution of all the individuals who take part in the study, and the interviewers and nurses who carry it out in such a committed way.

References

Erens, B. and Primatesta, P. (eds) (1999), *Health Survey for England 1998*, *Vol. 2: Methodology & Documentation*, London: The Stationery Office.

Erens, B., Primatesta, P. and Prior, G. (eds) (2001), *Health Survey for England. The Health of Minority Ethnic Groups 1999*, *Vol. 2: Methodology & Documentation*, London: The Stationery Office.

Marmot, M., Banks, J., Blundell, R., Lessof, C. and Nazroo, J. (eds) (2003), *Health, Wealth and Lifestyles of the Older Population in England: The 2002 English Longitudinal Study of Ageing*, London: Institute for Fiscal Studies (www.ifs.org/uk/elsa/report_wave1.html).

Prior, G., Deverill, C., Malbut, K. and Primatesta, P. (eds) (2003), *Health Survey for England 2001, Vol. 2: Methodology & Documentation*, London: The Stationery Office.

Ryff, C. D. and Keyes, C. L. M. (1995), 'The structure of psychological well-being revisited', *Journal of Personality and Social Psychology*, 69: 719–727.

Sproston, K. and Primatesta, P. (eds) (2004), *Health Survey for England 2003, Vol. 3: Methodology and Documentation*, London: The Stationery Office.