

Collaborative studies

The survey component of ELSA has been designed to maximise comparability of results with other international longitudinal studies on ageing, such as the US Health and Retirement Study (HRS) and the Survey of Health, Ageing and Retirement in Europe (SHARE). Additionally, ageing studies have been developed in other countries such as Scotland (HAGIS), Ireland (TILDA), Northern Ireland (NICOLA), Australia (ALSA), Brazil (ELSI), Canada (CLSA), China (CHARLS), Korea (KLoSA), Japan (JHRS), India (LASI), Mexico (MHAS), New Zealand (NZHWR), and South Africa (HAALSI). A major goal of the ELSA team is to test innovations in questionnaire design and share these innovations with these other collaborative studies.

ELSA reports (Wave 1-8)

Descriptions of the survey content, along with summary descriptive analysis of many of the key variables and measures collected, can be found in the following ELSA reports, all available for download at the ELSA website:

<p><i>Banks J, Batty G.D, Nazroo J, Oskala A and Steptoe A</i> (2018), The Dynamics of ageing: Evidence from the English Longitudinal Study of Ageing 2002-2016 (Wave 8), IFS, London.</p>	<p><i>Banks J, Nazroo J and Steptoe A</i> (2014), The Dynamics of ageing: Evidence from the English Longitudinal Study of Ageing 2002-2012 (Wave 6), IFS, London.</p>	<p><i>Banks J, Lessof C, Nazroo J, Rogers N, Stafford M and Steptoe A</i> (2010), Financial Circumstances, Health and Well-Being of the Older Population in England: The 2008 English Longitudinal Study of Ageing (Wave 4), IFS, London.</p>	<p><i>Banks J, Breeze E, Lessof C and Nazroo J</i> (2006), Retirement, Health and Relationships of the Older Population in England: The 2004 English Longitudinal Study of Ageing (Wave 2), IFS, London.</p>
<p><i>Banks J, Batty G.D, Nazroo J and Steptoe A</i> (2016), The Dynamics of ageing: Evidence from the English Longitudinal Study of Ageing 2002-2014 (Wave 7), IFS, London.</p>	<p><i>Banks J, Nazroo J and Steptoe A</i> (2012), The Dynamics of ageing: Evidence from the English Longitudinal Study of Ageing 2002-2010 (Wave 5), IFS, London.</p>	<p><i>Banks J, Breeze E, Lessof C and Nazroo J</i> (2008), Living in the 21st Century: Older People in England: The 2006 English Longitudinal Study of Ageing (Wave 3), IFS, London.</p>	<p><i>Marmot M, Banks J, Blundell R, Lessof C and Nazroo J</i> (2003), Health, Wealth and Lifestyles of the Older Population in England: The 2002 English Longitudinal Study of Ageing (Wave 1), IFS, London.</p>

ELSA contact information

For details on ELSA, including study documentation, please visit <http://www.elsa-project.ac.uk>

To contact the study team, please email ELSA@ucl.ac.uk

Publications

To date, over 400 publications have been produced that utilise the ELSA dataset.

For a full list of ELSA publications, visit: <https://www.elsa-project.ac.uk/publications>

ELSA team and funding

ELSA is jointly run by teams at University College London (UCL), the Institute for Fiscal Studies (IFS), NatCen Social Research and the University of Manchester. The ELSA team also has close links with researchers from the University of East Anglia. ELSA is currently funded by the National Institute on Aging (NIA/NIH) in the USA, the ESRC, and a consortium of UK government departments: Department of Health and Social Care; Department for Work and Pensions; and Department for Transport.

In Association With:



ELSA

English Longitudinal Study of Ageing

About ELSA

The English Longitudinal Study of Ageing (ELSA) is a unique and rich resource of information on the dynamics of the health, social, wellbeing and economic circumstances in the English population aged 50 and older. The multidisciplinary and longitudinal nature of the data allows for the examination of complex relationships and causal processes. The current sample contains data from up to eight waves of data collection covering a period of 15 years.

Sample design

Sample members are drawn from respondents to the Health Survey for England (HSE). Study members have a face-to face interview (a computer-assisted personal interview followed by a self-completion questionnaire) every two years of the study and a nurse assessment every four years. At waves 3, 4, 6, 7 and 9, the study has been replenished with new study participants (refreshments) from the Health Survey for England to maintain the size and representativeness of the panel. At wave 3 respondents were invited to participate in a life-history interview to capture information about important events that had taken place previously in their lives. Wave 9 data collection, which now includes an online dietary questionnaire, began in July 2018.

Year	Modality	Sample	Refreshment
Wave 1 (2002/3)	CAPI	12,099	
Wave 2 (2004/5)	CAPI + Nurse visit	9,432 + 7666	
Wave 3 (2006/7)	CAPI	9,771	HSE 2001-4
Wave 4 (2008/9)	CAPI + Nurse visit	11,050 + 8,643	HSE 2006
Wave 5 (2010/11)	CAPI	10,274	
Wave 6 (2012/13)	CAPI + Nurse visit	10,601 + 8,054	HSE 2009-11
Wave 7 (2014/15)	CAPI	9,666	HSE 2011-12
Wave 8 (2016/17)	CAPI + Nurse visit (50%)	8,445 + 3,525	
Wave 9 (2018/19)	CAPI + Nurse visit (50%)		HSE 2013-15

Figure 1: An overview of the structure of ELSA, waves 1-9

ELSA data set

The data set is available to all researchers, with new data being made available as soon as possible after collection. With the exception of sensitive data (including linked administrative records, geographical variables that are disclosive in nature and data on genetic material), the data and associated documentation for wave 0 (Health Survey for England years) to wave 8 are currently available for download from the UK Data Service: www.ukdataservice.ac.uk/

Study aims

The survey data are designed to be used to investigate a broad set of topics to help understand the factors that affect older people's lives. These include:

- predictors of well-being;
- health trajectories, disability and healthy life expectancy;
- the determinants of economic position in older age;
- the links between economic position, physical health and functioning, cognition and mental health;
- the nature and timing of retirement and post-retirement labour market activity;
- household and family structure, social networks and social supports;
- patterns, determinants and consequences of social, civic and cultural participation

Data collection

To enable longitudinal analysis, some key topics are included in the content of the questionnaire for each wave, while others may be rotated on and off, and new topics have been added at later waves. The nurse interview involves measurements of physical function, anthropometric measurements and collection of blood samples for extraction of biomarkers and DNA.

Data linkages

ELSA respondents give permission to link their ELSA data to the following official records:

- Hospital Episodes Statistics (HES)
- Mortality and cancer registration records
- Primary care records
- Economic records including National Insurance contributions and benefits.

Topics covered by ELSA *(not all topics are included at every wave)*

Economics data

Household income – earnings; self-employment income; state pensions/benefits; private pensions; asset incomes; receipt of lump sums.

Wealth – financial assets; physical assets; business wealth; debt; housing wealth; mortgage debt; life insurance.

Pensions – current plan details; current contributions; self-reported accrued pension wealth; past pension statements; knowledge of female state pension age and state pension deferral.

Employment – main job details; health/work disability; normal pay/hours; secondary and other economic activity details; age at/reason for retirement; compulsory retirement ages; health-limiting ability to work; desired/offered/requested workplace adaptations.

Consumption – housing (rent and mortgage payments); vehicle ownership; durable ownership; durable purchases; expenditures on food in, food out, fuel, leisure and clothing; health insurance contributions.

Future expectations – mortality; employment; bequests and inheritances; income adequacy; movement into nursing home; house value; public and private pension income; perceived financial position relative to neighbours, friends and colleagues; self-reported financial planning period.

Risk – assessing people's attitudes to money and their willingness to accept different levels of risk when making financial decisions.

Health data *(not all are collected at every wave)*

Physical health – self-reported health and long-standing illness/disability; eyesight; hearing; pain; walking speed test; difficulties with daily activities; dental health; urinary incontinence; menopause; balance; falls and resulting fractures and quality of care; hip and knee replacements.

Physician-diagnosed conditions - Coronary heart disease; stroke; diabetes; raised cholesterol; chronic lung disease; asthma; arthritis; cancer; Parkinson's disease; Alzheimer's; dementia; psychiatric and emotional problems and related quality of care.

Health behaviour – smoking; alcohol consumption; physical activity; sedentary time; fruit and vegetable consumption; sleep; uptake of cancer screening.

Mental health – physician-diagnosed psychiatric and emotional problems; General Health Questionnaire; CES-D depression scale.

Cognitive function measures

Memory – self-rated and prospective memory; orientation in time; word-list learning (verbal learning and recall).

Executive function – verbal fluency; letter cancellation (accuracy and speed of mental processing).

Basic cognitive abilities – numerical ability; literacy.

Psychological and social measures

Social and civic participation – access to/use of public transport and leisure; access to cultural and commercial venues; access to services; volunteering; caring; grandparenting; involvement in clubs and other institutions; cultural engagement; digital inclusion; contact with friends and family.

Effort and reward – motivations for voluntary work/caring for others; looking after grandchildren; effort and reward in relation to these.

Psychosocial factors – control and demand; subjective social status (ladder position, financial position relative to peers); relative deprivation and perceived financial difficulties; age at which middle age ends and old age begins; self-perceived and desired ages; perceptions of ageing; perceived discrimination; generativity; altruism; sense of collectiveness.

Psychological and social well-being – quality-of-life scale (CASP-19); satisfaction-with-life scale (SWLS); General Health Questionnaire; CES-D depression scale; Ryff well-being scale; ONS well-being scales; social support and close personal relationships; time use.

Physical examination/performance data

Nurse visit (waves 2, 4, 6, and half of the sample in waves 8 and 9) - leg raise; chair rises; blood pressure; lung function; grip strength; balance; anthropometric measurements (weight; height; waist; hip)*. Blood assays – triglycerides; total, LDL and HDL cholesterol; C-reactive protein; fibrinogen; haemoglobin and ferritin; mean corpuscular haemoglobin; glycated haemoglobin; white blood cell count; fasting glucose; cortisol; IGF-1; DHEAS; DNA and PAXgene extraction and storage**Not all have been carried out in all waves.*

Life history interview (Wave 3)

Includes information about important past events that have occurred in the ELSA respondents' lives. The data help us to understand how early life and past events influence the current circumstances of older people.

End of life interview

Completed by a close friend/relative after a respondent has died. Answers given by the late respondent are linked to this interview to see how the health and social and financial situation of the participant might have changed in the 2 years preceding their death. Information on what happened to their assets after they died is also collected.

Demographic data

Household demographics – household members; living family members; educational qualifications (age completed full time education); marital status; ethnic group; country of birth; occupation of main carer when respondent was 14 years old; parents age and cause of death.

Recent findings from ELSA

Association between socioeconomic status and dementia incidence may be driven by wealth rather than education.

Recent evidence indicates that dementia rates have decreased in the last few decades in the United Kingdom and other parts of Western Europe. However, less clear is the extent to which other socioeconomic markers such as wealth, income, and area deprivation contribute to dementia risk. ELSA data were used to investigate the associations between markers of socioeconomic status (educational attainment, wealth quintiles and the index of multiple deprivation) and dementia incidence. In order to investigate the potential effect of cohort effects, two independent groups were derived using a median split of their birth year (born between 1902-1925 and 1926-1943).

The results showed that wealth was a stronger determinant of dementia independent of education and area of deprivation in England. This association was somewhat stronger for participants born in later years, between 1926 and 1943, when the hazard of developing dementia was 1.68 times higher (hazard ratio [HR] = 1.68 [95%CI, 1.05-2.86]) for those in the lowest wealth quintile compared with those in the highest quintile. These associations were independent of education, index of multiple deprivation, and health indicators. Higher hazards were also observed for those in the second-highest quintile of index of multiple deprivation (HR = 1.62 [95%CI, 1.06-2.46]) compared with those in the lowest (least deprived) quintile. **The researchers concluded** that in this nationally representative sample, the incidence of dementia appeared to be socioeconomically patterned primarily by the level of wealth, with the association being somewhat stronger for participants born in later years. The study, published in JAMA Psychiatry, is the first of its kind to determine which socioeconomic factors influence dementia and found that limited wealth in late life is associated with increased risk of dementia, independent of education. - Cadar, Lassale et al. *JAMA Psychiatry* 2018; 75:723-732

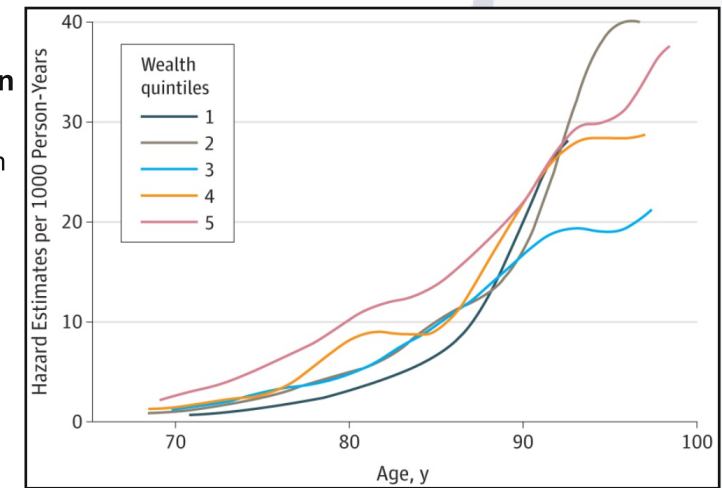


Figure 2: Smoothed Hazard Estimates by Age per 1000 Person-Years by Wealth Quintiles in the English Longitudinal Study of Ageing. Wealth quintile 1 indicates the highest level of wealth; quintile 5, the lowest.

Healthy Cognitive Ageing Project (HCAP)

This is a sub-study of the main ELSA study, looking at how memory and thinking skills change as people age. It is based on a similar study carried out in the United States in 2016/17 by ELSA's sister study, the Health and Retirement Study (HRS). Further similar studies are planned around the world. HCAP aims to understand more about changes in cognition as people age, and about the prevalence of mild cognitive impairment, dementia and Alzheimer's disease among the over-65s in England, and in comparison to other parts of the world. Fieldwork took place in early 2018, with a sub-group of ELSA participants aged 65 and over, selected to undertake a rich series of cognitive assessments during a face-to-face interview, accompanied by an informant interview. A total of 1,274 face to face interviews took place. Using the standardised battery of tests, algorithms will be developed to ascertain the probable presence or absence of dementia and cognitive impairment in this sub-sample of ELSA, in collaboration with colleagues from HRS. Establishing clear assessments of dementia or mild cognitive impairment, this study will allow the extrapolation of the dementia prevalence rates from this sub-sample to the rest of the ELSA population in general. As a result, we will be able to provide the first estimates of dementia and cognitive impairment from a nationally representative sample in England.

ELSA DNA Repository (EDNAR)

Following a nurse visit at Wave 2, DNA was extracted from the blood of around 7,400 consenting individuals. Data from the EDNAR has contributed to a number of high impact papers from 40 applications for genotyping and third party data access. For example, data from ELSA were used in a large scale study that demonstrated that the genetic predisposition to obesity due to the 'fat mass and obesity associated' (FTO) gene was substantially reduced by living a physically active lifestyle. It was found that the effect of the FTO gene on obesity risk was nearly 30% weaker among physically active than in physically inactive adults*. Recently, an ESRC-funded genome-wide association study has been completed using data collected at waves 2, 4 and 6, giving access to over 2 million genotyped genetic variants. The list of available variants has been further expanded through imputation creating a rich recourse for various analyses, such as polygenic scores, genome-wide G*E and G*G interactions, Mendelian Randomisation to infer causal relationships, and for patient stratification and sub-phenotyping. Applications for DNA/DNA analyses can be made to Dr Olesya Ajnakina at UCL (o.ajnakina@ucl.ac.uk).

* Kilpeläinen et al. (2011), *PLoS Med* 8(11)