



The next phase

Thank you to everybody who completed the most recent survey. The response rate was really impressive, and we were pleased to welcome back people with whom we had lost contact.

This study began by looking at the health of working people. The information you have provided over the years has contributed enormously to understanding how the conditions in which people live and work affect their health. Findings from this study have become integral to policy discussions in Britain and globally.

Many of you are now retired or are approaching retirement; it is even more important to continue with the study. As we look towards the future, we want to understand how previous and current circumstances affect your health and quality of life. A new area of enquiry is to understand the secrets of why some people remain healthy and vibrant into older age.

The next phase of the study involves a further medical check-up. Our clinic starts again later this year and I do hope you will be able to participate and that you find the examination beneficial. Certainly, your involvement in this study has already brought great benefit to society.



Professor Sir Michael Marmot

Professor Sir Michael Marmot

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Looking forward to good health in your retirement ... plus we give you details of the next phase of the study

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Focus on brainpower: do fit people have more agile minds?

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You ask us ... your questions answered by the study team



Looking to the future:

Long term effects of working conditions on health

The health and well-being of older age groups is now becoming an important area of research and the Whitehall II study is well placed to look at this. We have investigated the determinants of health during retirement. Interestingly, we found that the main determinants of inequalities in health during retirement were work-based, rather than the circumstances of retirement itself. Since the conditions under which people work have lasting effects on health, enhancing working life may help to improve quality of life in retirement.

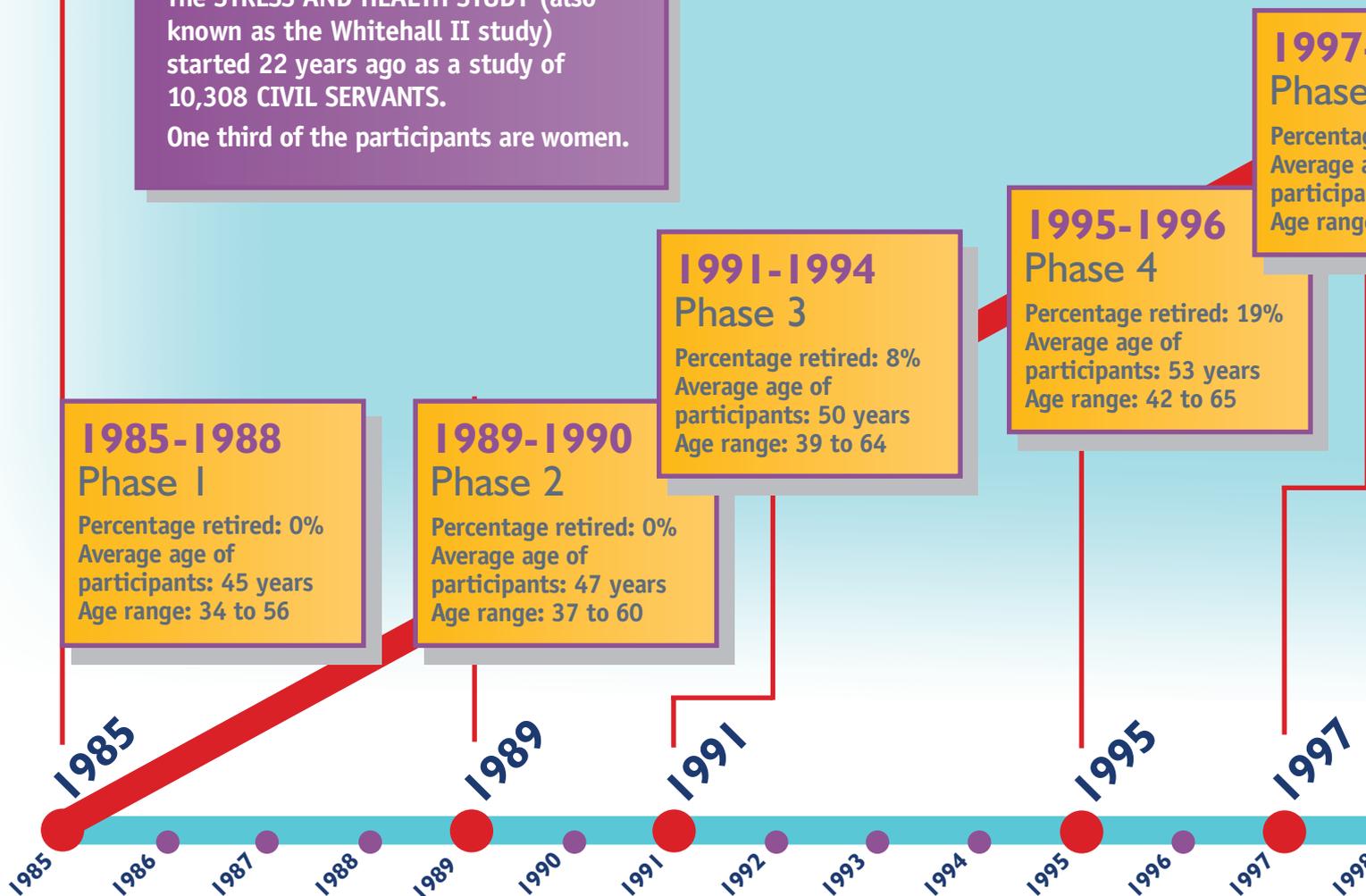
Ageing and Society (2004) 24: pp 279-296



The participants

The STRESS AND HEALTH STUDY (also known as the Whitehall II study) started 22 years ago as a study of 10,308 CIVIL SERVANTS.

One third of the participants are women.



1997
Phase
Percentage
Average age of
participants
Age range

building on the past

Ageing and health inequality

A major theme of the study has been health inequalities according to social status and how they change with age. We found that physical health declined more rapidly with age in lower status groups, resulting in widening health inequalities. For example, the average physical health of a 70-year-old high status man or woman was similar to the health of a low status person 8 years younger. In mid-life this gap was only 4.5 years. As the population ages these findings become more relevant for public health policy.
British Medical Journal (2007) 334: pp 990-993

As the study has continued more and more participants have retired

1995-1999
Phase 5
 Percentage retired: 28%
 Average age of participants: 56 years
 Age range: 45 to 69

2001
Phase 6
 Percentage retired: 38%
 Average age of participants: 59 years
 Age range: 48 to 71

2002-2004
Phase 7
 Percentage retired: 45%
 Average age of participants: 61 years
 Age range: 50 to 74

2006
Phase 8
 Percentage retired: 55% (estimated)
 Average age of participants: 64 years
 Age range: 53 to 77

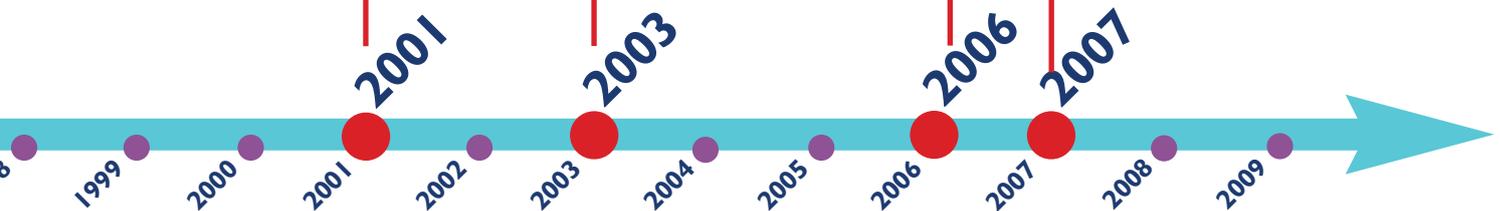
2007-2009
Phase 9
 Percentage retired: 66% (estimated)
 Average age of participants: 66 years
 Age range: 55 to 79



Working and retirement

In 1985 ALL PARTICIPANTS were employed.

WE ESTIMATE that by 2009 about 88% of both men and women will no longer be working in the civil service.



Your next check-up

STARTING IN OCTOBER 2007 and continuing for 18 months, we will be inviting everyone to attend the clinic for a check-up. We will also be conducting home visits for those people who are not able to come to our clinic in central London.

As before we will assess your:

- blood pressure
- cholesterol (blood test)
- glucose (blood tests)
- heart function (via an ECG)
- heart rate variability
- lung function
- walking speed
- height and weight
- general knowledge
- levels of the stress hormone cortisol from saliva samples.

What's new...

● Tests for balance as well as leg and hand grip strength

These will give us an idea of your physical condition and how you are able to manage in everyday activities.

● A test of your kidney function

From the blood sample, taken for cholesterol and glucose, the laboratory will also be able to assess how well your kidneys are filtering your blood. You will receive results from this test.

● Assessing pulse velocity

This is a non-invasive measure that looks at the elasticity of your arteries. Using an ultrasound device we will measure the pulse in your neck and groin areas. The machine is linked to a computer; you will be able to see the pulse waves on the screen.

● No paper pants!

Following feedback, we will not be asking you to wear paper pants this time around. You can stay comfortable in your own underwear.



For practice in balance and hand grip, try the 27^A

Your results letters

Last time, your results letter was based on the “traffic light” system which we used to assess your risk of a heart attack. At this phase all your results will be given along with recommended levels from the national guidelines. We will tell you if you have an elevated, moderate or low risk of **cardiovascular disease**. As before, for each test your actual numerical result will be given.

We are using new guidelines that are currently used in the NHS. We will assess your cardiovascular disease risk (for heart attack *and* stroke) based on information you have given us previously together with the results from your medical check-up.

As before, we will include a copy of your results and ECG for your GP. Your GP is more aware of your health in general. If you are ever concerned about your health, please see your GP.

Keep in touch...

Now more than ever, we want to stay in touch, particularly if you have retired, or have moved out of the area. With this newsletter is a change of address card, which will allow you to fill in all your up-to-date details. If there's no card in your pack, or if you prefer simply to ring us, please phone **0800 068 1562** or e-mail **s&h.study@public-health.ucl.ac.uk**

You're helping to make better health decisions

THANKS TO YOU we are able to investigate the link between work and life circumstances and health. During these last two decades, many findings have been published in scientific journals and reported more widely in the popular press. Some of the findings have changed the way people think about the work environment and have influenced government policies. Your valuable contribution continues to make a difference. The following are some of the latest findings from the Stress and Health study. We highlight that, whether you are working or not, physical and social activities during your leisure time can be good for your quality of life and health.

Physical activity is also a mental workout

Frequent physical activity in leisure time over the years appears to have a cumulative benefit for the mind. When comparing cognitive function scores for participants doing different levels of physical activity, those doing at least two hours a week of moderate activity (for example, dancing) or vigorous activity (for example, running) scored better on cognitive function tests than those who were less active. These benefits start to emerge during mid-life and are still seen in older age. *American Journal of Public Health* (2005) **95**: pp 2252-2258



Kozo Haraguchi, 100 metres record holder in the 95-99 year old category. But you don't need to be a world champion to benefit from being active.

Social activities relate to better sleep quality

Continuing our cross-cultural collaborations, we studied the effects of leisure activities on sleep quality among participants in this study and a similar group in Japan. In both groups, social activities during leisure time, such as visiting friends and relatives or participating in voluntary activities, resulted in better quality of sleep. These findings support the idea that engaging in meaningful activities is a key factor for better health. *Journal of Occupational Health* (2005) **47**: pp 384-390

Study research news

Smoking and stress hormones:

Smoking negatively affects your health. But it is less well known that smoking influences cortisol, one of the hormones the body produces in response to physical and mental stress. Cortisol levels in saliva of smokers were greater than in those who have never smoked. Interestingly, participants who quit smoking had levels of cortisol similar to those who have never smoked.

These positive effects on health support the importance of cutting down smoking. *Journal of Clinical Endocrinology and Metabolism* (2007) **92**: pp 819-824

Does stress lead to weight gain or loss?

People have different behavioural reactions when experiencing stress, for example they might drink more alcohol or eat comfort foods. We looked at work stress and weight; those

who had a tendency to be overweight were more likely to put on weight when stressed. The opposite was true for those who were a bit underweight, work stress lead to further weight loss. This was only apparent for men in the study. *International Journal of Obesity* (2006) **30**: pp 982-987

Unfairness can be taken to heart:

People who are often unjustly treated are at greater

risk of having a heart attack or angina, even after adjusting for established coronary risk factors. People in lower socioeconomic positions and women are more likely to be exposed to everyday acts of injustice. Promoting fairness in different areas of life such as the workplace, family, and the community may contribute to a healthier society. *Journal of Epidemiology and Community Health* (2007) **61**: pp 513-518

You ask us...



Ladies and gentlemen, *accustomed* as I am to public speaking...

What about unpaid work?

Your survey only asks about paid work. Now I am retired, I am involved in a number of activities that keep me active and make use of the skills I developed during my working life. Why don't you ask about these?

As well as paid work, the next survey will ask about work you may do for little or no pay. You will have the chance to tell us about any work or other activities that you are involved in.

It's very personal!

Is it really necessary to ask questions about my wealth and income?

We realise this information is personal and some of you may feel uncomfortable answering these questions. Health and economic circumstances are strongly linked. Since most of you are now retired, or no longer working in the civil service, we need to collect this information to complement information you have provided about your previous job and your current circumstances. All your information is kept confidential.

How is my DNA used?

I have questions about the genetics research. Why is my DNA being collected? Do I have to declare this testing on insurance forms?

We want to understand the role genes play when combined with the different stresses of day to day life, and how this combination may lead to common diseases such as heart disease and diabetes.

The genetic information we collect is pooled for the entire group of people taking part in the study. We do not look at individual people's genes and health, and for this reason we do not feed the results back to you. This work is being done for research rather than diagnostic purposes.

You do not have to declare this sort of testing on any insurance form.

What's the Heart Scan study?

I've heard about the Heart Scan study that some people have been invited to take part in. What is it about and will I be invited to do this study at the same time as my next medical examination?

Some of you will be invited to take part in the Heart Scan study. The purpose of this study is to learn more about how emotions and behaviour influence the cardiovascular system. For those of you who take part, we will try to make sure that you don't have two examinations or have to complete two questionnaires at the same time.

Why the same questions?

Why do you ask the same questions year after year?

Repeating the same questions, and keeping the wording the same, allows us to accurately track changes in your health and personal circumstances over time. Some questions are about specific events such as your date of retirement or when you were hospitalised. These might happen to people at any time in the study. Where you may have provided information in a previous phase, some questions will be worded "since 2006..." in order to catch new information. We appreciate your patience in providing this information every phase.



Alright, the bed's yours and I'll let you have your cream in the Royal Doulton... but please come down.

We listen to you...

In response to your feedback, the next survey will include a category for civil partnership as well as married or cohabiting. We are also asking about pet ownership since many of you have told us that your pet is important in your life. Please do send us comments and suggestions; they help us to improve the quality of the study. Thank you for your continued participation.

Please send or email your questions, comments or change of address to:

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