HAPPY BIRTHDAY

We would like to wish you all a very happy 68th birthday and very best wishes for 2014.

NEWS FROM THE STUDY TEAM

The past year has been busy and exciting. Confirmation of our core funding from the Medical Research Council (MRC) for the next five years was received in March 2013 enabling us to start developing detailed plans for the next data collection. We were also successful in being awarded additional funding for a NSHD project with collaborators in Aberdeen to re-use the bone scan images to identify the shape of hip and knee joints and the lifetime influences on joint shape. Three other grants were awarded for comparisons across cohort studies: one with UCL colleagues on the lifetime determinants of extended working lives; another with our North American colleagues on the dynamic relationship between changes in physical health and changes in cognition; and a third with collaborators in Bristol on the contribution of high impact activities to bone health.

Public activities

In June 2013 we took part in several events to celebrate the MRC centenary. Highlights included the MRC Centenary Science Fairs at the Science Museum and at University College London. At both events, MRC research groups provided a mixture of presentations and hands-on activities for members of the general public. Our stand at the Science Museum was called Highway to Health and we encouraged visitors to participate in some of the tests we conducted during home visits, such as grip strength, balance and memory tests. We also discussed our research findings.

A member of the cohort and Professor Diana Kuh took part in a session called ‘From Cradle to Grave’ at the London Documentary Film Festival in June which brought together participants and investigators from several landmark studies to explore what can be learnt by studying people across their lifetime, chaired by Mark Easton from the BBC. Diana also took part in a public debate on ageing in Liverpool ‘More life or just more years? How can we make an ageing society a good thing?’ Dr Dorina Cadar and other members of the team took part in the Big Bang Fair to motivate, educate and inspire young people about career opportunities in science and engineering.

The team have also been active giving 22 research talks across the world, including; the annual conferences of the American Heart Association and the Gerontological Society of America. In 2013, 69 scientific papers were published or in press; updates from our research findings can be found overleaf and on the website (www.nshd.mrc.ac.uk).
The study team moves to University College London

The MRC Unit for Lifelong Health and Ageing, which is responsible for the MRC National Survey of Health and Development (NSHD), is now part of University College London (UCL). The Unit has always been closely affiliated with UCL. In 2013, the MRC and UCL agreed to cement this scientific partnership, and embed the Unit within UCL as one of a growing number of MRC University Units. This transfer to UCL provides the Unit and the NSHD with a number of benefits. These include additional resources to appoint two senior clinicians interested in the health care needs of older people to the study team: one will work on the NSHD, and the other will develop healthy ageing research more widely across UCL and the UCL London Hospitals Trust. We are delighted to be part of this UCL initiative which could lead the field in developing new ways of caring for older people with health and social care needs.

The new name for the Unit is the MRC Unit for Lifelong Health and Ageing at UCL. Our email addresses have changed to reflect the change in status but the website address for the MRC NSHD remains the same (www.nshd.mrc.ac.uk). The transfer involves no significant changes to the NSHD or to way in which the study team works. However, we do have a legal obligation to notify study members that UCL has now taken over the legal role of ‘Data Controller’ from the MRC. As the Data Controller, UCL is responsible for ensuring that all data are securely stored, handled and used in accordance with the Data Protection Act. UCL’s data policies and procedures for storing and handling NSHD data have been approved by the NHS Information Governance Framework and are equivalent to MRC policies and procedures.

The Director of the NSHD remains the Data Custodian and, on a day to day basis, oversees the way in which the study team looks after study members’ data. The way we look after the data remains the same as before. Personal data (names, addresses and other contact details) are kept securely on an encrypted database to which only members of the study team who have been authorised by the Director have access. During data collections, names and addresses are shared with the NSHD fieldwork team in order to arrange the visits. No other persons have access to personal data without the express consent of the study member.

The information collected on the health and life circumstances of study members, including any test results, are anonymised by separating these data from any personal data. Researchers undertake analyses using anonymised NSHD data. If you have any questions about how your information is stored or used, please do not hesitate to contact Dr Andy Wong, the Senior Study Manager (andrew.wong@ucl.ac.uk) or Professor Diana Kuh (d.kuh@ucl.ac.uk).

Other Unit news and activities

Several of the research team have been recognised for their achievements this year. Dr Dorina Cadar was awarded her PhD and won a prize at the Social Society for Medicine Conference for her poster presentation ‘Use it, don't lose it! The role of lifestyle behaviours on 20 years cognitive decline.’ Dr Mai Stafford, Dr Graciela Muniz, Dr David Bann, Dr Rachel Cooper and Dr Dorina Cadar all won MRC Centenary Awards. These awards provided funds to attend courses, symposiums and gain work experience in different research institutions across the world and has led to the formation of new scientific collaborations.

Dr Graciela Muniz, who has recently been promoted to develop a new cross cohort programme, is organising international training workshops for early career investigators in new statistical methods that give a better understanding of the dynamics of ageing. We are also collaborating on a large project called CLOSER (Cohort and Longitudinal Studies Enhancement Resources) to maximize the impact of the largest and longest-running longitudinal studies in the UK, including the NSHD. Using data from cohorts born at intervals of approximately 12 years, we are investigating how and why the weights and heights of the UK population have changed over time. This research will provide novel information about the progression and causes of the obesity epidemic.
In 2013, we welcomed two new researchers: Dr William Johnson who was previously at the University of Minnesota, US, and Dr Valerie Tikhonoff, from the University of Padova in Italy. We also welcomed four new members to the Science Support Team; Adam Moore (Data Manager); Karen Mackinnon (Data Librarian); Maria Popham and Dr Michelle Byford (Study Managers). In September, three new PhD students; Ahmed Elkaheem, Alison Sizer and Rebecca Wilson began their research training. We have also hosted a number of visiting researchers: Dr Atsushi Nishida from Japan; Dr Michaela von Bonsdorff from Finland; Dr Minna Manty from Denmark; and Dr Esme Fuller-Thompson from Canada. This year we said goodbye to Kate Harvey, who is completing her training as a public health specialist, and to Jane Abington and Dr Kevin Garwood.

LATEST RESEARCH FINDINGS

Physical Capability and Musculoskeletal Health

Dr David Bann has found further evidence of the positive health benefits of maintaining high levels of physical activity across life; participating in physical activity during leisure time across adulthood was associated with a healthier body composition (i.e. lower fat mass and higher muscle mass) at 60-64 years. Spending more time in both light and moderate-vigorous intensity activities, assessed using the heart rate and movement monitors which many of you kindly agreed to wear for 5 days, was associated with lower fat mass. Spending more time in moderate-vigorous intensity activity was also associated with higher muscle mass.

Professor Diana Kuh showed that growth patterns across life from birth onwards are associated with bone health at 60-64 years. For example, those people who had higher birth weight and those who gained weight and height faster than others in the pre- and post-pubertal periods had stronger bones.

Building on a comprehensive review of existing literature which we published a few years ago, Dr Rachel Cooper found that those people in the NSHD who performed least well in the tests of physical capability (i.e. grip strength, chair rising and standing balance) or were unable to complete the tests for health reasons at age 53 years had lower rates of survival up to age 66 years than those people who performed best. This work highlights the importance of performing these tests in midlife; in many other studies they have not been included until much older ages.

Cardiovascular health

Dr William Johnson and Professor Rebecca Hardy investigated how body mass index (BMI, an indicator of weight relative to height) and height between 2-20 years related to cardiovascular health at 60-64 years. Being short in early childhood and having high BMI in adolescence were both associated with greater carotid intima-media thickness, which marks the build-up of plaque in the arteries. Most of this risk was offset by having a healthy lifestyle.

We have also shown that healthy lifestyle, such as being active and not smoking, can dampen the expression of genes known to cause obesity. The public health message of this research is clear. Some individuals may be more susceptible to obesity than others, but this can at least be partly offset by looking after your health.

Dr Valerie Tikhonoff and Professor Marcus Richards are investigating how lifetime emotional problems relate to cardiovascular function at 60-64 years. A cumulative effect of symptoms of anxiety and depression across adulthood was unexpectedly associated with lower systolic blood pressure in late middle age, which was not explained by lifestyle factors and antihypertensive treatment. This work has been presented at a Lifelong Health and Wellbeing ageing research conference at UCL, and has been submitted for publication. The relation between lifetime symptoms of anxiety, depression and hypertension (high blood pressure) at age 60-64 may be driven by the so called “labelling effect”, where awareness of hypertension is more associated with anxiety and depression than is the medical condition itself. This suggests the need for care in how people are informed about hypertension in the clinic, especially since the management of hypertension can be made...
more effective by an ongoing partnership between patients and their health care providers.

**Mental ageing**

Dr Dorina Cadar and Professor Marcus Richards showed that higher adherence to a Mediterranean-style diet adopted in early midlife, was associated with slower memory decline over a 20-year period from age 43 to 60-64 years in both men and women. This diet is rich in fruits and vegetables, includes moderate to high intake of fish, poultry, breads and cereals (largely unrefined), olive oil and moderate alcohol consumption. In addition, a similar association with slower memory decline was also observed for study members who adopted a healthier quality diet in early midlife in terms of simple dietary choices. This assessment was based on regular breakfast consumption, the type of milk and bread consumed, and the intake of fruit and vegetables at both 36 and 43 years.

Dr Dorina Cadar and Dr Graciela Muniz are investigating the role of education on cognitive decline in proximity to dementia diagnosis in various longitudinal cohorts across the world, in a project funded by the Alzheimer’s Society. Education was found to be related to levels of cognitive functioning but unrelated to rates of cognitive change. This suggests that cognitive reserve (i.e. the mind's resistance to damage of the brain) reflects the persistence of earlier differences in cognitive functioning rather than differential rates of age-associated cognitive declines.

**Wellbeing**

Dr Mai Stafford has been looking at social isolation and cortisol patterns. Cortisol is a hormone that helps us deal with acute stress but greater levels of cortisol produced over an extended period of time are linked to premature death and cardiovascular disease. Experiencing social isolation, such as newly living alone or becoming widowed is a stressful experience and the biological response to this form of stress appears to include disrupted cortisol patterns. However, these disrupted patterns were less evident for people who have been living on their own for a long time and those who had been widowed for several years. This could indicate a return to less disrupted cortisol with increasing time as individuals adapt to these events.

**Healthy ageing: hot off the press**

We have also been working hard on our latest book: A Life Course Approach to Healthy Ageing, just published by Oxford University Press. Healthy ageing is about keeping moving ('physical capability'), keeping thinking ('cognitive capability') and keeping our spirits up ('wellbeing') as we grow older. This book looks at the evidence from NSHD and other cohort studies that follow up samples of the population from birth to later life, to find out how experiences in earlier life have long-term effects on the chances of healthy ageing and independent living in later life. Improving the health and wellbeing of older people brings benefits not just for the individual, but also their family and society. This book looks at whether there are times in life when interventions are most likely to be beneficial for healthy ageing. The brochure summarising the book’s main findings is enclosed with this newsletter.

**CONTACT US**

As always, we will continue to keep you informed of our ongoing research, which has only been possible by your continued commitment throughout your life.

To ensure that we are able to stay in contact with you, please complete and return the reply slip in the pre-paid envelope. You can contact us by post, or phone, or via email at MRCLHA.enquiries@ucl.ac.uk, or via the web at www.nshd.mrc.ac.uk/studymembers/.

Thank you for your continued participation and all of the best from the study team for 2014.