

The Disconnected Mind aims to understand how changes in the brain's white matter – its connectivity – contribute to age-related cognitive decline in humans.

Welcome to the last Disconnected Mind newsletter of 2011. This year, our LBC1936 participants all turned 75, the study began a new wave of clinical and scanning assessments, and we've been the subject of a play! Quite a year.

This final newsletter is shorter than usual, but with the accompanying email you should also have received a copy of the LBC1936 Christmas Newsletter that we send to our participants. This contains some of the updates you will have read in previous Disconnected Mind newsletters, plus a few of the more recent events.

In this newsletter, we're wrapping up the year with a final word from Age UK (this issue, we hear from the Research Team), the most recent publications (big news there), and some of the latest news about the team.

For more information about anything in the newsletter, just get in touch (contact details on the last page), especially if you have something you'd like included in a future issue.

To all members of the team, our colleagues and collaborators, we wish you a very, Merry Christmas and a Happy New Year. Here's to 2012!

Nature publication for the DM

At the end of last month, Ian Deary, Study Director, received confirmation that the LBC1936 team had a publication accepted in *Nature*. The paper, "Genetic contributions to stability and change in intelligence from childhood to old age", includes both LBC samples, plus the

Aberdeen Birth Cohort 1936, and is a collaboration with colleagues in the UK and internationally.

On hearing the news, Ian said: "When the 'decision on manuscript' email came in from the Editor, I got some of the LBC1936 team to come in to my office and we pressed the button to open it. We read down until we saw 'we can in principle offer to publish it'. I confess we indulged in a group hug at that point. A nice moment for the gang and Age UK."

The paper should appear in the next few months. Watch this space... In the meantime, a list of the latest papers to go 'in press' appears at the end of the newsletter.

Out and about with the DM team

In November, a delegation from CCACE attended a 2 day conference hosted by the University of Newcastle Centre for Ageing and Vitality. The conference brought together the centres and projects funded by the Lifelong Health and Wellbeing Initiative, which includes CCACE. A number of the LBC1936 team and DM colleagues were part of the delegation, and shared some of the most recent LBC1936 findings with the other teams.

If you are going to be presenting at a conference next year or are participating in any other events promoting the work of The Disconnected Mind, please get in touch with the details so that it can be shared with the rest of the team.

Age UK and The Disconnected Mind by the Research Team

In our articles in this newsletter throughout 2011, we've introduced you to various teams at Age UK who work on The Disconnected Mind. In this last issue of the year, we'd like to report on some autumn highlights from the Research Department.

Many readers will already be familiar with the fact that Age UK funds research to improve the health and wellbeing of older people through grants awarded through the Research into Ageing programme, managed by Libby Archer. But in the wider Research Department headed by Professor James Goodwin, we also have an active mix of other research funding, partnership, dissemination and engagement activity.

Social Research Manager Dr Matthew Norton leads on commissioning of social research, which generates evidence to underpin Age UK's extensive influencing and campaigning work that seeks to improve public policy and practice for older people. Matt said, "We work across a broad range of issues that affect older peoples' everyday lives. Health and social care are major topical themes but this year we've also worked on ageism, poverty and bus passes to name a few examples.

"Particularly exciting is research that we started funding in early autumn with David Melzer, Professor of Epidemiology and Health at the Peninsula Medical School. In the shadow of fundamental reforms to health and social care services and Government funding cuts, the research is reviewing and analysing the needs for healthcare in the UK's ageing population and how well these needs are being met. We believe the research is a first and look forward to the first report next spring."

Meanwhile, Phil Rossall heads Knowledge Management. Phil and his team act as a knowledge hub for information relating to older people and a visit to their web pages is well worth while to see the wide variety of information, reports and toolkits that they make available:

<http://www.ageuk.org.uk/professional-resources-home/knowledge-hub-evidence-statistics/>

Autumn saw a particular highlight with publication of *Improving Later Life*, a new book masterminded by James and Phil, who tells the story. "People are living longer than ever but advice on ageing is often confusing or contradictory. We identified a need to bring together clear and authoritative guidance on what actually works, based on latest knowledge. We were extremely pleased when over 20 leading experts in ageing each agreed to provide a chapter giving evidence-based advice for those seeking to age well, and Professor Sir Michael Marmot, renowned Director of the International Institute of Society and Health at University College London, accepted an invitation to write the Foreword."

The book includes a broad portfolio of

Thinking ahead.



Professor Ian J. Deary
Ian Deary is Professor of Differential Psychology at the University of Edinburgh, and Director of the UK Research Councils-funded University of Edinburgh Centre for Cognitive Ageing and Cognitive Epidemiology. He leads a research team, core-funded by Age UK, conducting the Disconnected Mind Project, which includes the Lothian Birth Cohort 1936 study. He is medically qualified and has a PhD in psychology.

- 1 Genes**
For example, people who have a certain form of a gene that predisposes to dementia also tend, on average, to have slightly faster cognitive decline.
- 2 Health**
Avoiding illness, especially cardiovascular disease, can keep the brain thinking better.
- 3 Brain health**
People with fewer small scars (lesions) in the connections of the brain (white matter) tend to have relatively better thinking skills than those who have more lesions.
- 4 Fitness**
People with a stronger body (muscles and lungs, for example) than the average for their sex and height tend to have slightly better thinking skills.
- 5 Lifestyle**
Non-smokers tend to show a bit less mental decline than smokers.

The things about which I am asked most of all do not appear above: diet, mental engagement, and brain training. Researchers have not been able yet to sort out whether a good diet and brain training produce mental preservation in old age, or whether people whose mental skills were stronger in youth have always eaten better and done more of this mental work, and simply continue to do so in old age. However, even with that uncertainty, there are other reasons – better health and quality of life generally – for eating well and staying mentally curious and engaged.

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Ian's contribution in Age UK's *Improving Later Life* publication.

subjects that matter to older people, with contributions from physicians, scientists, social researchers and financial experts, all wittily illustrated by the Age UK Marketing Division's creative team. One of those experts? A familiar name... Ian Deary. Thank you, Ian, for your chapter, titled "Thinking ahead". If anyone would like to read more, please visit the Knowledge Hub webpage above, scroll down a little way and pick up the link to the Improving Later Life PDF. You might like to sign up to our monthly policy and research e-bulletin at the same time – the ideal way for busy researchers to keep up to date with later life issues.

In September, we told you about Senior Media Officer Andy Walker's ankle injury, sustained playing football in his usual position of striker. Well, ahem, he's now sporting a spectacular hand bandage after breaking three fingers playing in goal as a way of resting the ankle! Fortunately, Phil and Matt, both serious runners in their spare time, have had an injury-free year. Phil is additionally an enthusiastic cook, Matt has recently been experiencing the lack of sleep associated with new parents, and Libby is currently President of the Shire Horse Society for two years.

In late November, we were all delighted to hear the great news that The Disconnected Mind team has had a publication accepted in *Nature* and ethical approval to establish an LBC1936 brain bank.

We'd like to offer you our congratulations on these and all your many other achievements in the past year, and to



Libby with Shire mare Decoy Dawn and her yearling filly, Decoy Rosie, owned and bred by Mr Graham Ward of Gorefield.

wish everyone a very good Christmas season and a happy, healthy and successful 2012.

Staff news

With a new phase of the project, we have welcomed a number of new researchers to the team. Dr Benjamin Aribasala joined the team at the Brain Research Imaging Centre. Benjamin is interested in the brain's white matter and how it relates to ageing. We have also welcomed Miss Lasma Ilzina as an intern on a year's placement from her Bath University Psychology course. Lasma has taken on a number of projects within the LBC1936 team, including analysing the retinal images taken during the previous wave of testing.

Tom Booth also joined the team at the end of the summer, and will be working on analyses of the MRI scanning data. He has his PhD viva in mid-December, so we wish him all the best with that.

Publications

Receiving news of the *Nature* paper (above) was a great way to round out the year, and there's been another healthy batch of publications accepted for publication since the last newsletter.

These new 'in press' papers are listed below. If you're interested in finding out more about any of these papers, get in touch.

One which will prove particularly useful to members of the team and collaborators is the cohort profile paper, which will appear in the *International Journal of Epidemiology*. This includes detailed information about the recruitment and testing of the LBC1936 across the first two waves. The paper will be available soon, and the full reference is:

Deary, I. J., Gow, A. J., Pattie, A., & Starr, J. M. (in press). Cohort profile: The Lothian Birth Cohorts of 1921 and 1936. *International Journal of Epidemiology*.

Newly 'in press':

Gieger, C., 9 authors, Lopez, L. M., 37 authors, Davies, G., 36 authors, Porteous, D. J., 16 authors, Starr, J. M., 4 authors, Tenesa, A., 3 authors, Visscher, P. M., 17 authors, Deary, I. J., 29 authors, Soranzo, N. (in press). Sixty-eight genetic loci uncover new genetic functions in megakaryopoiesis and platelet formation. *Nature*.

Hagger-Johnson, G., Mottus, R., Craig, L. C. A., Starr, J. M., & Deary, I. J. (in press). Pathways from childhood intelligence and socio-economic status to late-life cardiovascular disease risk. *Health Psychology*.

Lopez, L. M., Harris, S. E., Luciano, L., Liewald, D., Davies, G., Gow, A. J., Tenesa, A., Payton, A., Ke, X., Whalley, L. J., Fox, H., Haggerty, P., Ollier, W., Pickles, A., Porteous, D. J., Horan, M. A., Pendleton, N., Starr, J. M., & Deary, I. J. (in press). Evolutionary conserved longevity genes and human cognitive abilities in elderly cohorts. *European Journal of Human Genetics*.

Luciano, M., 37 authors, & Deary, I. J. (in press). Longevity genes and their

association with personality traits in the elderly. *Neuropsychiatric Genetics*.

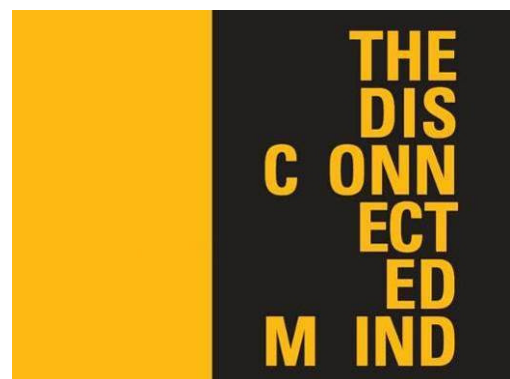
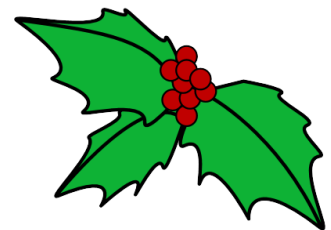
Luciano, M., Mottus, R., Starr, J. M., McNeill, G., Jia, X., Craig, L. C. A., & Deary, I. J. (in press). Depressive symptoms and diet: their effects on prospective inflammation levels in the elderly. *Brain, Behavior, and Immunity*.

Valdes Hernandez, M. D., Gallacher, P. J., Bastin, M. E., Royle, N. A., Maniega, S. M., Deary, I. J., & Wardlaw, J. M. (in press). Automatic segmentation of brain white matter and white matter lesions in normal aging: comparison of five multispectral techniques. *Magnetic Resonance Imaging*.

The publications list on the DM website is regularly updated. Let me know of your 'in press' or recently published papers too. They'll be added to the website and may be profiled in a future newsletter.

Alan Gow
Alan.Gow@ed.ac.uk; 0131 651 1685
December 2011

**Merry
Christmas!**



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