



# LBC1936

## Christmas Newsletter



### Merry Christmas from the Lothian Birth Cohort 1936 Research Team



Season's greetings from the LBC1936 study team! As we approach the end of another productive and exciting year on the study, we would like to take this opportunity to thank you for your continued interest and participation. This newsletter will give you a rundown of the latest research news and events that the team have taken part in since the summer newsletter. We hope you have all had a good year. From all of us, please accept best wishes for Christmas and the New Year.

### LBC1936 Study Wave 4 begins!



**Our first LBC participant for Wave 4**

We are pleased to say that Wave 4 of the LBC1936 study has now begun. We are continuing to investigate how people's memory and thinking skills (cognitive abilities) change as they age: we try to find what factors predict

these changes, and why some people experience more change than others. The first participants returned for cognitive and medical tests at the Wellcome Trust Clinical Research Facility in November and, by mid-January, we will have seen about 50 of you again. By the completion of wave 4 testing in 2016, participants will have a mean age of 79 years. The data we collect at your visit, along with the repeat brain scan, and ultrasound of arteries in your neck, gives us valuable insight into some of these important issues.

You may have noticed in the previous newsletter that we have teamed up with researchers from the Understanding Sedentary Patterns (USP) group, based at Glasgow Caledonian University, to add a new part to the study. We will be inviting you to wear a small activity monitor when you come along to see us. This will provide information about how much time you spend sitting, standing and walking in your usual daily life. We are delighted to see that this new aspect of the study has been well received, with almost all of the participants seen so far opting to wear the monitor. Like all other parts of the study, it is entirely voluntary.

To those of you who have already been to see us for Wave 4, many thanks. We expect this wave of assessments to be completed by mid-late 2016. If you haven't been contacted yet, you needn't do anything for now. We will be in touch over the next two years, and we look forward to seeing you then. However, please let us know if you have moved house, or are about to, so that we can update your address and are able to keep in touch. Details of how to contact us can be found at the end of the newsletter.

### "The Greatest-Ever Study of Human Development?"

We are always telling you how important are the data you provide. Well, it's nice to be able to tell you that, internationally, we receive the

same opinion. Professor Dave Myers is a highly esteemed U.S. psychology professor and author of one of the most-used introductory psychology textbooks. In the monthly magazine —The Observer—of the American Psychological Society he described the Lothian Birth Cohorts as the greatest ever study of human development. He has been a champion of your contributions to international knowledge about cognitive aging ever since he first heard Ian Deary speak about the LBC studies. He mentioned both LBC studies in his Observer essay, but was particularly impressed by the fact that LBC1921 has data on the same individuals from 11 to 90, recognising that this is the longest-running study of cognition in the world. His Observer essay can be found here:

<http://www.psychologicalscience.org/index.php/publications/observer/2014/october-14/teaching-current-directions-in-psychological-science-15.html#myers>

### **LBC Studies in Science Magazine**

In October of this year, a four-page profile of the LBC studies appeared as a special section of the world's top journal *Science*. Professor Deary and the team were delighted to be featured at length in such an esteemed publication. We have enclosed a copy of the article for you all to read and, once more, extend to you special thanks for your kindness in providing us with your time and data.

### **LBC1936 Research in the Spotlight BBC Breakfast Show**

In November, the BBC Breakfast show filmed a short piece on the LBC1936 study to be aired sometime next year. Keep an eye on our Twitter feed (details at the end of this letter) for the date of the upcoming show.

### **Lifetime Achievement in Intelligence**

Ian Deary will be attending the conference of the International Society for Intelligence Research from 12-14<sup>th</sup> December to receive their Lifetime Achievement Award for his work on human intelligence. Ian will give a talk on his work, including the LBC1936 study, and will be the subject of an interview about his career studying cognitive ability and cognitive ageing.

### **Out and about with the LBC**

As you know, the LBC1936 study is part of a larger research project known as the Disconnected Mind (funded by Age UK). DM researchers have recently been in the spotlight talking about some of the LBC1936 findings on the benefits of physical activity for the ageing brain. Dr Alan Gow, who some of you will have met at previous visits, gave a keynote presentation at the Active Ageing Conference in Hamilton on the 2<sup>nd</sup> of October, and engaged in a panel discussion following the talks.



**Ian Deary  
with  
Claire  
Stevens,  
Chief  
Officer of  
Voluntary  
Health  
Scotland.**

### **Ian Deary addressed the Voluntary Health Scotland (VHS) AGM**

At the Scottish Storytelling Centre in Edinburgh, on 27th November. Professor Ian Deary gave the keynote address to VHS's AGM meeting. His talk was the start of an afternoon symposium on 'Health Wellbeing and Your Brain'. Ian's talk was very well received. There were responses from Jackie Brock, Chief Executive of Children in Scotland, and Maureen O'Neill, Director of Faith in Older People. After these presentations there was a long and lively discussion led by Shulah Allan, Convenor of the Scottish Council for Voluntary Organisations. Ian said,

*"This was a new audience for the LBC studies' findings and for cognitive and general ageing work more broadly. There was a great appetite for robust results and their application toward a healthy older age. People were fascinated by the studies themselves, and there was a clear*

*appreciation that health and wellbeing in older age is a life-course affair, and for the relevance of the early years.”*

### **Dementia Platform UK**

The Medical Research Council's 'Dementias Platform UK' is now up and running. The Disconnected Mind has a good presence on it. Ian Deary is one of five UK academics on its Executive Committee and John Starr and Ian are on its scientific Steering Group. The MRC has awarded £6.8 million to the University of Edinburgh to support the installation of a new high-tech brain scanner, as part of the Dementia Platform UK Imaging Network. This new PET/MRI scanner will be arriving next year. There will also be funds for stem cell research, which will include stem cell work on the LBC1936 study. We will tell you more about the latter when we see you.

The scanner will be housed by the Clinical Research Imaging Centre at the University of Edinburgh. The new equipment - the first of its kind in Scotland - will give scientists the clearest picture yet of what goes wrong in the brain when dementia occurs. The system combines Magnetic Resonance Imaging (MRI) scans with Positron Emission Tomography (PET) imaging to produce high-resolution pictures of the tissue of the brain. It will allow researchers to track the movement of individual molecules within the brain's cells. Ian Deary commented

*“Advanced brain imaging and stem cell research are likely routes to better understanding of the causes and progress of dementias. It is heartening to see the huge and fast-growing challenge of cognitive decline and dementia being tackled head-on by the MRC's Dementias Platform UK.”*

This exciting new research programme has been reported by:

BBC News

<http://www.bbc.co.uk/news/uk-scotland-30078189>

STV News

<http://news.stv.tv/east-central/299851-new-scanner-to-aid-university-of-edinburghs-dementia-research/>

### **Mood Mobility and Place (MMP)**

The LBC1936 study is involved in an exciting collaboration with the Mood, Mobility and Place (MMP) project based in the Geography department at the University of Edinburgh. The MMP project investigates how environments influence our mood and, in turn, our willingness to be active. You recently completed a questionnaire with information about your residential address histories. With this valuable information, the MMP team will be able to examine the influence of local environments in which people have lived from childhood on their health in older age.

On the 1st October, the MMP team gathered in London to celebrate the first year of the project at the UN International Day of Older Persons, and the European Year of the Brain. The reception in Europe House was opened by Matthew Taylor of the RSA and attended by a range of stakeholders from policy, practice, academia and our funders.

MMP team members also attended the Midlothian Science Festival recently and gave a talk to the residents at Heinsberg House. Catherine Tisch from MMP reported,

*“It went really well and the residents were interested in our research and liked talking about how Edinburgh has changed over time etc...Small world... one of the ladies told me that her brother was born in 1936 and is part of the cohort! Apparently he loves it and really enjoys taking part and looks forward to all the meetings etc.”*



**Sara from the Mood Mobility Place project talking at the Midlothian Science**

### Staff news

The team were delighted to welcome Dr Dominika Dykiert back to the LBC studies. Following her maternity leave, Dominika is already busy working on the LBC1936 data collected during wave 3. Her research interests cover life course cognitive change and its' predictors. Welcome back to the study, Dominika!

Ciara Madden joins us on the team as a cognitive tester. Ciara is a first year PhD student working with Ian Deary on cognitive abilities and resilience. She will begin testing participants later this month. Welcome to the team, Ciara!

### News from Age UK

The Disconnected Mind project is featured in a new suite of Age UK publications which were released in autumn. The Annual Review for 2013/14 and the full Annual Report and Accounts can be found at the following links:

[http://www.ageuk.org.uk/Documents/EN-GB/Corporate/age\\_uk\\_annual\\_review\\_2013\\_2014.pdf?dtrk=true](http://www.ageuk.org.uk/Documents/EN-GB/Corporate/age_uk_annual_review_2013_2014.pdf?dtrk=true)

[http://www.ageuk.org.uk/Documents/EN-GB/Corporate/age\\_uk\\_annual\\_report\\_2013\\_14.pdf?dtrk=true](http://www.ageuk.org.uk/Documents/EN-GB/Corporate/age_uk_annual_report_2013_14.pdf?dtrk=true)

### Latest Results

With the data from three waves of the study now available to analyse and publish on, 2014 has been another highly productive year. At the last count, more than 50 research papers from the LBC1936 study have been published this year, or are due to be published in early 2015. Some of the most recent publications are listed at the end of the newsletter.

### Occupational complexity and lifetime cognitive abilities

A new paper by Dr Alan Gow and Emily Smart has discovered that people who worked in more complex occupations throughout their lives (involving working with data and with people) had better cognitive ability in later life, even after controlling for how intelligent they were in childhood. A person's job is a major part of their life, and these results, published in *Neurology*, imply the 'right job' might protect cognitive abilities in older age.

The article was covered by:

BBC News

<http://www.bbc.co.uk/news/health-30115497>

Wall Street Journal

<http://blogs.wsj.com/atwork/2014/11/19/the-best-careers-for-your-brain-in-retirement/>

Mail Online

<http://www.dailymail.co.uk/health/article-2852779/Do-feel-challenged-work-Exercising-mind-complex-jobs-boosts-memory-protects-brain-ageing.html>

### Thanks again

As a member of the LBC1936 you are helping to further our knowledge and understanding of how our thinking skills change over time, and the factors that might slow these changes. From all of the LBC1936 research team, we send a big thank you. We look forward to seeing you in 2015 and beyond.



**Yours sincerely,**

**Professor Ian J. Deary,**  
Study Director;

**Mrs Janie Corley,  
Dr Dominika Dykiert  
Mrs Alison Pattie,  
Miss Adele Taylor  
Miss Ciara Madden**  
Research Associates;

**Dr Simon Cox,**  
Study Co-ordinator;

**Mr Paul Redmond,**  
Database Manager

Parikh, J., Thrippleton, M. J., Murray, C., Armitage, P. A., Harris, B. A., Andrews, P. J. D., Wardlaw, J. M., Starr, J. M., Deary, I. J., & Marshall, I. (in press). Proton spectroscopic imaging of brain metabolites in basal ganglia of healthy older adults. *Magnetic Resonance Materials in Physics, Biology, and Medicine*.

Smart, E. L., Gow, A. J., & Deary, I. J. (in press). Occupational complexity and lifetime cognitive abilities. *Neurology*.

Valdés Hernández, M. D., Allan, J., Glatz, A., Kyle, J., Corley, J., Brett, C. E., Maniega, S. M., Royle, N. A., Bastin, M. E., McNeill, G., Starr, J. M., Deary, I. J., & Wardlaw, J. M. (in press). Dietary intake and the accumulation of iron deposits in the older human brain. *Journal of Nutrition, Health and Aging*.

### **Newly 'in press'**

Corley, J., Starr, J. M., & Deary, I. J. (in press). Serum cholesterol and cognitive functions: the Lothian Birth Cohort 1936. *International Psychogeriatrics*.

Cox, S. R., Bastin, M. E., Ferguson, K. J., Allerhand, A., Royle, N. A., Munoz Maniega, S., Starr, J. M., MacLulich, A. M. J., Wardlaw, J. M., Deary, I. J., & MacPherson, S. E. (in press, a ). Is right frontal lobe involvement in verbal memory ability compensatory? Differences in structural and diffusion MRI correlates between high and low performers in old age. *Cortex*.

Glatz, A., Bastin, M. E., Kiker, A. J., Deary, I. J., Wardlaw, J. M., & Valdés Hernández, M. C. (in press). Automated segmentation of multifocal basal ganglia T2\*-weighted hypointensities. *NeuroImage*.

Möttus, R., Luciano, M., Starr, J. M., McCarthy, M. I., & Deary, I. J. (in press). An interaction between polygenic risk of type 2 diabetes and childhood cognitive ability in predicting older age diabetes. *Health Psychology*.

### **Newly 'in print'**

Aribisala, B. S., Royle, N. A., Valdés Hernández, M. C., Murray, C., Penke, L., Gow, A. J., Maniega, S. M., Starr, J. M., Bastin, M. E., Deary, I. J., & Wardlaw, J. M. (2014). Potential effect of skull thickening on the associations between cognition and brain atrophy in ageing. *Age and Ageing*, 43, 712–716.

Christoforou, A., Espeseth, T., Davies, G., Fernandes, C. P. D., Giddaluru, S., Mattheisen, M., ... Le Hellard, S. (2014). GWAS-based pathway analysis differentiates between fluid and crystallized intelligence. *Genes, Brain, and Behavior*, 13, 663–674.

Cox, S. R., MacPherson, S. E., Ferguson, K. J., Nissan, J., Royle, N. A., MacLulich, A. M. J., Wardlaw, J. M., & Deary, I. J. (2014). Correlational structure of 'frontal' tests and intelligence tests indicates two components with asymmetrical neurostructural correlates in old age. *Intelligence*, 46, 94–106.

Deary I. J. The stability of intelligence from childhood to old age (2014). *Current Directions In Psychological Science*, 23, 239-245.

Rietveld, C. A., Esko, T., Davies, G., 50 authors, Deary, I. J., 5 authors, & Koellinger, P. D. (2014). Common genetic variants associated with cognitive performance identified using the proxy-phenotype method. *Proceedings of the National Academy of Sciences of the United States of America*, 111, 13790–13794.

Ritchie, S. J., Tucker-Drob, E. M., & Deary, I. J. (2014). A strong link between speed of visual discrimination and cognitive ageing. *Current Biology: CB*, 24, R681–683.

Ritchie, S. J., et al. (2014). Religiosity is negatively associated with later-life intelligence, but not with age-related cognitive decline. *Intelligence*, 46, 9-17.

Shah, S., McRae, A. F., Marioni, R. E., Harris, S. E., Gibson, J., Henders, A. K., Redmond, P., Cox, S. R., Pattie, A., Corley, J., Murphy, L., Martin, N. G., Montgomery, G. W., Starr, J. M., Wray, N. R., Deary, I. J., & Visscher, P. M. (2014). Genetic and environmental exposures constrain epigenetic drift over the human life course. *Genome Research*, 24, 1725-33

**Would you like to talk to us?**

**You can contact us at:**



**Lothian Birth Cohort 1936,  
University of Edinburgh,  
7 George Square,  
Edinburgh,  
EH8 9JZ**

**Telephone: 0131 651 1681**

**Email: [lbc1936@ed.ac.uk](mailto:lbc1936@ed.ac.uk)**

Do, please, let us know if there is any change to your address, or if you would like a copy of any of the papers listed.

You can stay up to date on the most recent LBC research by checking the regularly-updated list of publications at:

**[www.lothianbirthcohort.ed.ac.uk](http://www.lothianbirthcohort.ed.ac.uk)**

**and**

**<https://twitter.com/CCACE>**

