



# LBC1921 Christmas Newsletter

**LBC  
1921**

## Merry Christmas from the LBC1921 Research Team

### **2004 update**

We hope you are all well at this hectic time of year. We have sent you this newsletter to keep you updated about our work from the past year, and our plans for the year ahead.

### **Still hitting the headlines**

The LBC1921 Study continues to produce findings from the information you have provided us with which are of great interest to other researchers (brief summaries of a few selected articles are listed at the end). The study has also recently been in the news, with an article written by Professor Ian Deary appearing in *The Evening News*, an extract of which is also included at the end of this newsletter for you to read. It is your enthusiasm and cooperation that has made these publications possible, and we are very grateful for your continued support.

### **Continuing the study**

The aim of our study is to find out how some people keep their mental abilities so sharp in old age. We have gained valuable insights into parts of this question, but as you are such a special group, we know there is still much more that you can help us to discover. Part of this continuing follow-up included the questionnaire booklet many of you were sent in April/May. We received an overwhelming response to this and we would like to thank all those who were able to find the time to fill in this booklet. We have begun looking in detail at the

information contained in your responses, and hope these will shed more light on our main question. Many thanks once again.

A number of you have also already been to visit us at the Princess Alexandra Eye Pavilion to complete tests similar to those you did before. This is very important as it gives us an idea of how well you are doing now, which we can compare to the last time we saw you about 3-5 years ago. For those who have already been to see us (over 160 to date), it was a pleasure to see you again, and we are grateful for your participation. If you haven't heard from us yet, you may be contacted next year by Alison Pattie, to see if you'd like to help us with this next stage of the study. When we contact you, we will give you more details, and we hope you are able to come along and see either Alison or Alan Gow.

### **Many thanks again**

We would once again like to take this opportunity to thank you for your continued enthusiasm and participation in the LBC1921 project. It is always a pleasure to meet with you, and we look forward to seeing many of you in 2005.

We wish you a Merry Christmas, and send best wishes for the New Year.

Yours sincerely,

**Professor Ian J. Deary, Dr John M. Starr  
& Professor Lawrence J. Whalley,**

Study Directors,

**Mrs Alison Pattie,** Research Associate

**Mr Alan Gow,** PhD Research Student

**Dr Martha Whiteman,** Research Fellow

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*Extract from the Evening News article written by Professor Deary.*

**Evening**  **News**

Mon 20 Sep 2004

## **Inspired research has come of age**

**Loss of memory and dementia are often viewed as an inevitable part of growing old. But a ground-breaking study could challenge that perception, says Ian Deary**

ON one day in June 1932, and on one day in June 1947, Scotland built national monuments that we can still take pride in - and they cost next to nothing. They are the priceless data collected in two national surveys of children's reasoning. Today they are providing invaluable foundations to answer the question of what helps the brain to age successfully. Scotland is contributing world-class research to our understanding of how the brain ages. Specifically, research at the universities of Edinburgh and Aberdeen is following up the Scottish Mental Surveys of 1932 and 1947.

In Scotland today, there are greater numbers of older people than ever before. Life expectancy has increased. For most people, old age is a serene stage in life, with time to enjoy families growing up, to pursue leisure interests, to take part in lifelong learning, and to contribute to the community. But for some, it is fraught with increasing dependency and a lower quality of life. One of the principal contributors to a poorer old age is dementia and the impairment of mental skills. One of the greatest contributions to health in our society will be the prevention of age-related decline in mental functions.

The risk of dementia doubles about every five years from the age of 60. About a third of people older than 80 have some form of dementia, with Alzheimer's disease being the commonest form. But it is not just dementia that limits life in old age. Milder forms of mental impairment can also affect people's ability to lead a fulfilling life. These forms of mental impairment precede dementia and it is important to detect them because intervention will probably be more effective at that stage.

My long-time collaborator Professor Lawrence Whalley and I study the normal age-related changes in the human brain. In 1997, we came across the Scottish Mental Surveys of 1932 and 1947. On June 1, 1932, and June 4, 1947, almost everyone born in 1921 and 1936 and attending school on those days took the same test of reasoning ability. Today, Scotland remains the only country in the world to have tested the entire population in this way. The existence of such data is making a substantial

*Lothian Birth Cohort 1921 Study - Christmas 2004*

contribution to our understanding of how mental functions change in old age.

TO appreciate this, take the example of height. Some people become a bit shorter as they grow older. But suppose that we wanted to study what made some people's height shrink more than others. We could measure their height in old age. The next thing we want to know is what height they used to be, when they were young. It's the same with mental functions. If someone is suspected of declining in their memory or other thinking skills, we can measure how good they are on memory and thinking tests. But that is most informative if it can be related to the person's previous performance.

The problem is, worldwide there are few research teams working on mental aging that can relate mental performance in old age to performance in youth - except Scotland. For the last seven years, we have been working with surviving volunteers from the original 1932 and 1947 surveys, and trying to find the factors that lead to successful mental ageing. Once we started trying to trace and contact people from the surveys, we found hundreds of willing volunteers to come to our research clinics.

One of the first discoveries was that there is quite a strong association between reasoning skills at age 11 and the same skills at age 80. On top of that, our research teams have discovered a whole group of factors that are related to retaining mental capacities.

People with more education and those in more professional jobs seemed to keep their mental skills relatively well. This is sometimes called the "use-it-or-lose-it" idea.

A stimulating environment keeps the brain fitter. It agrees with the discovery by other research teams that people who engage in mentally stimulating hobbies and games keep their faculties sharper. Our Edinburgh and Aberdeen teams have also found that not smoking helps people to stay mentally able.

We have conducted studies of brain imaging on people from the Scottish Mental Surveys and found people with fewer changes in the white matter parts of the brain are less likely to decline in mental functions. People without high blood pressure also did better. There were some associations between nutritional factors and mental changes with age. And the old saying about a "healthy mind in a healthy body" has some truth: people with relatively good muscle and lung functions have relatively good thinking powers.

Current research for our Scottish teams is supported by the charities Research Into Ageing and the Alzheimer's Research Trust. In addition to continuing to look at lifestyle and social effects on mental aging, they are doing more to examine genetic influences. And they are conducting a large study to investigate more closely how brain structure and function relates to the slowing down of the brain as people grow older. This massive research effort aimed at discovering what can improve the lives of older people could not have been done without the surveys of 1932 and 1947.

In Edinburgh, my research team members have already enjoyed seeing more than 500 people who were born in 1921 and who took part in the Mental Survey of 1932. Over the next four years my team will be contacting people in Edinburgh and the Lothians who were born in 1936 and went to school in Scotland in 1947. Over 100 have already offered to take part and the team will eventually see more than 1000 people.

It promises to be among the most valuable studies of the normal mental aging process ever undertaken. Scotland can take pride in making significant and novel contributions to the science of healthy aging.

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### **Research reports**

The LBC1921 and related studies have already led to around 40 publications in major scientific journals. Listed below are brief summaries of just 5 of these, all from this year alone. Please get in touch with us if you would like a copy of any of these articles.

Deary, I.J., Whiteman, M.C., Starr, J.M., Whalley, L.J., & Fox, H.C. (2004). The impact of childhood intelligence on later life: following up the Scottish mental Surveys of 1932 and 1947. *Journal of Personality and Social Psychology*, 86, 130-147.

**This is the main paper about the LBC studies. We reported that people's IQ test score at age 80 was strongly related to their IQ test score at age 11. We also discuss the links between IQ scores at age 11 and health later in life.**

Deary, I.J., Whiteman, M.C., Pattie, A., Starr, J.M., Hayward, C., Wright, A.F., Visscher, P.M., Tynan, M.C., & Whalley, L.J. (2004). Apolipoprotein E gene variability and cognitive functions at age 79: follow up of the Scottish Mental Survey 1932. *Psychology and Aging*, 19, 367-371.

**The type of 'apolipoprotein E' gene people have may affect their verbal memory at age 79.**

Hart, C.L., Taylor, M.D., Davey Smith, G., Whalley, L.J., Starr, J.M., Hole, D.J., Wilson, V., & Deary, I.J. (2004). Childhood IQ and cardiovascular disease in adulthood: prospective observational study linking the Scottish Mental Survey 1932 and the Midspan studies. *Social Science and Medicine*, 59, 2131-2138.

**Childhood IQ is associated with later-life heart disease and risk factors for heart disease.**

Starr, J.M., McGurn, B., Whiteman, M.C., Pattie, A., Whalley, L.J., & Deary, I.J. (2004). Life long changes in cognitive ability are associated with prescribed medications in old age. *International Journal of Geriatric Psychiatry*, 19, 327-332.

**Some medications for heart disease may have the added benefit of slowing down cognitive decline in older people.**

Starr, J.M., Taylor, M.D., Hart, C.L., Davey Smith, G., Whalley, L. J., Hole, D.J., Wilson, V., & Deary, I.J. (2004). Childhood mental ability and blood pressure at midlife: linking the Scottish Mental Survey 1932 and the Midspan studies. *Journal of Hypertension*, 22, 893-897.

**IQ measured in childhood is related to blood pressure levels in adulthood.**