

December 2015 Aberdeen Birth Cohort 1936 Study News

We would like to thank you all for your continued support with The Aberdeen Birth Cohort 1936 study and wish you all a very Merry Christmas and a healthy and happy New Year!



Once again we would like to thank you for contributing to this important and productive study. Since Prof Lawrence Whalley established the Aberdeen Birth Cohort studies in 1997 much has happened with brain imaging research. We are hugely grateful to you and your friends and relatives who have supported you while contributing your valuable time, thinking abilities, blood samples, health data and brains to this study, whether in the past or more recently. Studies such as this are crucial to understand the normal brain as we get older and how we can prevent or lessen the impact of dementia.

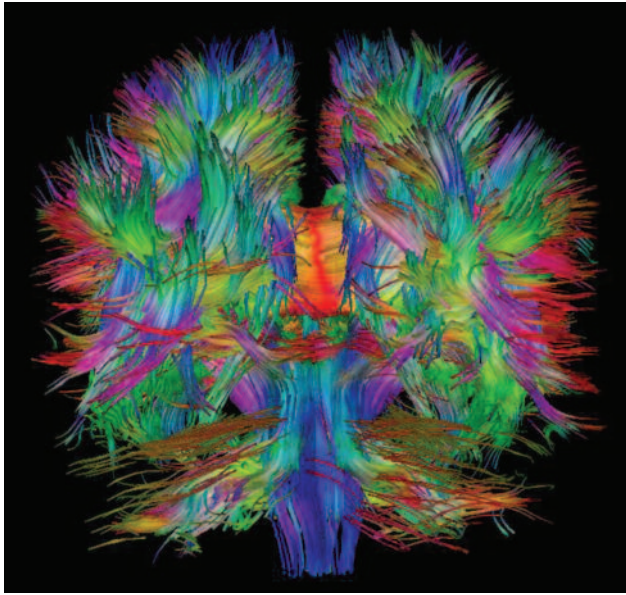
This year we would like to update you on:

- What have we been doing since our last reunion in 2013
- Recent publications
- Ongoing projects
- Meet our current research team at the Aberdeen Biomedical Imaging Centre

Alison D. Murray

Prof. Alison Murray
Roland Sutton Chair of Radiology
Director of the Aberdeen Biomedical
Imaging Centre

What have we been doing since our last reunion in 2013?



RECENT PUBLICATIONS:

Triad of impairment

As we age, many of us will develop some challenges that are related to low mood, physical difficulties and some reduction in our cognitive abilities. Minor symptoms are completely normal, but if these become severe can seriously impact on quality of life. In our recent publication: **“Brain hyperintensity location determines outcome in the triad of impaired cognition, poorer physical health and depressive symptoms: A cohort study in late life”** Prof Alison Murray and her colleagues used data from the brain scans and tests from the 1936 birth cohort to understand how these impairments commonly occur together. We found that people with more small vessel disease in the brain can promote low mood, but only as a consequence of reduced physical and cognitive health. This research greatly improves our understanding of the causes and relationship between three important challenges we can face as we age.

Flynn effect

Dr Roger Staff and his team have recently published a fascinating study, using data from the 1936 and 1921 birth cohorts, investigating the Flynn effect, an observations that humans are becoming more intelligent through the generations. The team examined information from those born in 1921 and born in 1936 and found that at age 11 found an increase in IQ of 3.7 points which was within the range seen in other studies. However, comparison in late life found an increase in IQ of 16.5 points which is over three times what was expected. This large increase may be in part due to the remarkable changes Aberdeen has seen over the past 70 years. Yet again, the unique value of the Aberdeen Birth Cohorts for science is demonstrated!

Early life socioeconomic status and brain pathology

The question of how important our childhood, or even our prenatal experience in the womb is for our brain in later life was investigated by Dr Staff, Prof Murray and her team, in two papers. These papers investigated if hardship during early life might have long lasting effects on vascular disease in the brain, and the size of the hippocampus. These MRI detected indications of deterioration were compared in members of the 1936 cohort who were raised in affluent versus less affluent households during childhood. The team found that there was a small, but detectable increase in these important markers of deterioration in the brains of the less affluent group. This important work highlights that the challenge of keeping our brains healthy as we age starts far earlier than we first thought! Dorota Chapko, a PhD student with Prof Murray has spent an internship at the World Bank, an international institution in Washington DC, to raise awareness of the importance of early life environment for brain health across the globe.

CURRENT PROJECTS:

The study “Investigating Links Between Use of Information Technology and Cognitive Reserve in Older Adults”

Last year we invited you to participate in our new questionnaire study on the topic of information technology use (computers, telephones, television etc.). In this study we investigate if the use of information technology throughout the lifespan has any effect on brain functioning later in life. More than 130 of you returned completed questionnaires and some participated in the interview. In the spring 2015, our PhD student (Dorota Chapko) in collaboration with Dr. Leila Eadie (University of Aberdeen) and Dr. Robin Hill (University of Edinburgh) interviewed 10 Aberdeen Birth Cohort 1936 members and collected rich data about their attitude to and history with information technology. The interviews have been transcribed and currently undergo a thematic analysis. Our preliminary results were presented at the British Neuroscience Festival 2015 in Edinburgh. Most respondents reported experience with information technology and the majority viewed it favourably. Those who reported experience with computers and

internet appeared to be more resilient to memory declines than those who reported “none”.

Microparticles project

Moving into 2016, we are inviting a small number of 1936 birth cohort members to participate in a new study on biomarkers of cognitive function. This study will ask volunteers to give a small blood sample, which will then be analysed for extremely small fragments called **microparticles**. By testing these tiny particles in the blood, we hope to develop a useful test for detecting and treating diseases of the brain’s blood vessels, before they progress to more serious conditions such as stroke and vascular dementia. This project is led by Dr Isobel Ford of the University of Aberdeen.

Stratifying Resilience and Depression Longitudinally (STRADL)

Our team in collaboration with the University of Edinburgh has been awarded £4.7million from the Wellcome Trust to study depression in the hope of developing better treatments. The study ñ known as Stratifying Resilience and Depression Longitudinally (STRADL) - uses data from Generation Scotland (GS) - a large family-based sample of over 21,000 people - including a sub-sample of people from the Aberdeen Children of the Nineteen Fifties (ACONF). As part of this study, we will look at early life data and how this relates to imaging biomarkers that are associated with dementia risk and risk of depressive symptoms. Work from the Aberdeen Birth Cohorts of 1921 and 1936 has been crucial to design of this study and to our success in obtaining funding.

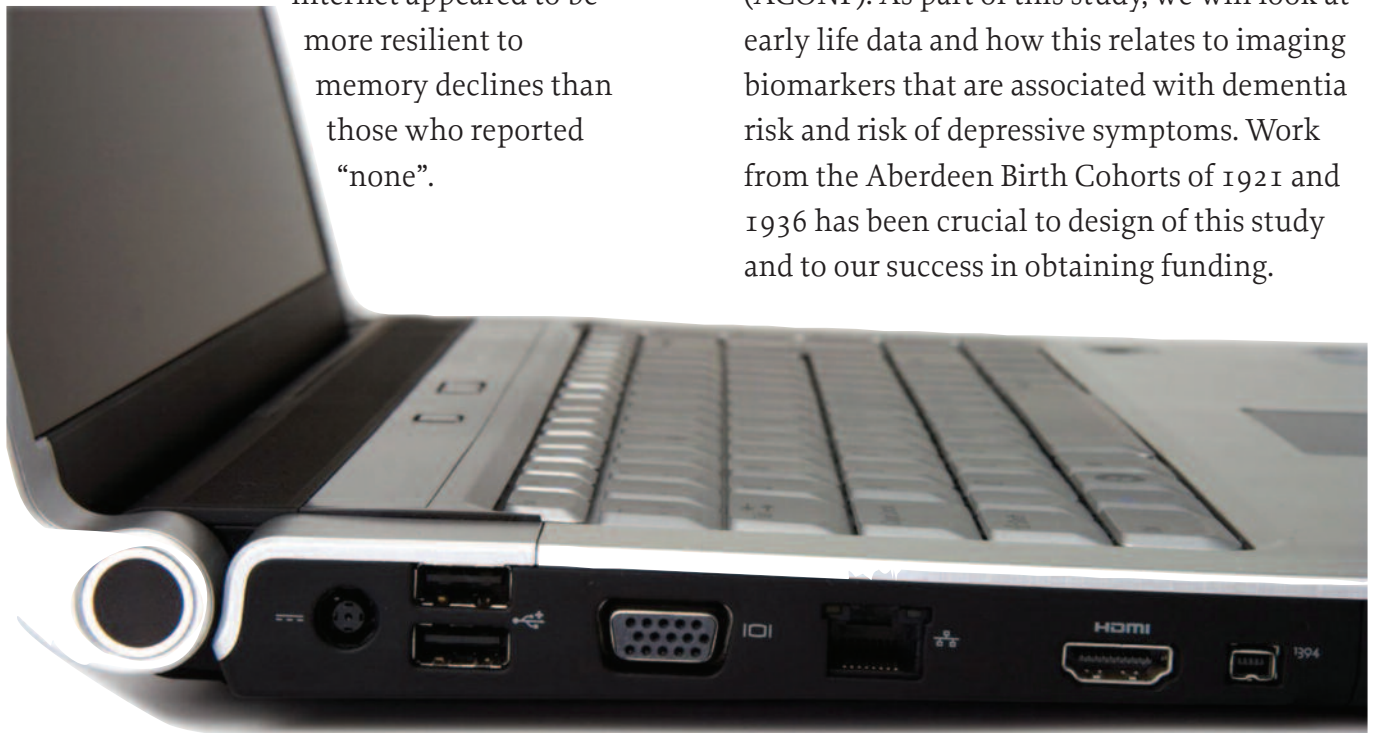




Photo (from the left): Teresa Morris, Julia Scheel, Nichola Crouch, Nick Senn, Maria Goni , Anca Sandu-Giuraniuc, Alison Murray, Dorota Chapko, Gabriella Baio, Clarisse de Vries, Vesna Vuksanovic, Jiabao He, Gabriel Cheung, Michael Stringer

Aberdeen Biomedical Imaging Centre would like to thank you for your continuous support and involvement in Aberdeen Birth Cohort 1936!

Depending on funding, you may hear from us in the near future.

We hope to contact many of over the next year and so we would ask you to keep us up to date with your contact details. Also, if you would like more information about the study please contact:

Aberdeen Biomedical Imaging Centre

Lilian Sutton Building

Foresterhill

Aberdeen

AB25 2ZD

Phone: +44 (0)1224 438365

E-mail: d.younie@abdn.ac.uk

You can also look at our Web-site:

<http://www.abdn.ac.uk/birth-cohorts/1936>

