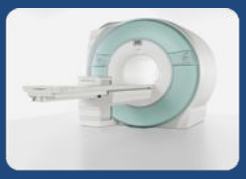




Research Newsletter
July 2012

The Plasticity Group at FMRIB, University of Oxford, use Magnetic Resonance Imaging (MRI) techniques to examine how the brain is able to change and adapt in health and disease. Our newsletter provides updates about our latest findings, information on upcoming events, and opportunities to participate in our studies.

In July's Newsletter

Our Research

Learning to Juggle Changes Brain Wiring

In each newsletter, one of our team will provide a brief overview of their research and latest findings. First in this series, Prof Heidi Johansen-Berg will explain how learning to juggle can lead to changes in brain structure.

The men and women participating in the London 2012 Olympics and Paralympics this summer have endured gruelling training regimes to reach phenomenal levels of sporting expertise. What effect might such training have on the brain? There is some evidence that expert brains differ from non-experts, but these observations cannot tell us whether the differences are innate, or result from those endless hours of practice.

Prof Johansen-Berg explains how research is beginning to shed light on this question; "We are interested in how training shapes brain structure, though we don't typically study this in elite athletes. It was long thought that the adult brain is hardwired and cannot change its structure. However, brain imaging research has shown that even a few weeks of training in a new skill can alter the grey matter of the adult brain. In one study, we were interested in testing whether training can also change white matter- the connecting pathways of the brain."

Prof Johansen-Berg's team taught 24 healthy young people to juggle over a six-week period and scanned their brains before and after this period using imaging methods designed to study white matter. Another group of 24 people were scanned in the same way but were not trained. After six weeks of juggling training, the researchers detected changes in the white matter in the juggling group but not in the untrained group. The changes were in regions of the brain that are involved in reaching and grasping in the periphery of vision.

Prof Johansen-Berg explains, "Of course, this doesn't mean that everyone should go out and start juggling to improve their brains. We chose juggling purely as a complex new skill for people to learn. But there is a 'use it or lose it' school of thought, in which any way of keeping the brain working is a good thing, such as going for a walk or doing a crossword. While most of us are unlikely to make it to the Olympics, this research shows that taking up a new skill, even as an adult, can strengthen our brain pathways."

Upcoming Events

Talk on Late-Life Depression at Science Oxford

Later life is frequently a time of happiness and increased contentment, however, for some adaption to ageing can be difficult. At a 'Health Matters' talk on Tuesday 31st July 2012 7.30pm at Science Oxford, Charlotte Allan and Claire Sexton will discuss the causes of late-life depression, including results from a recent brain imaging study. They will discuss how individuals can build resilience to depression e.g. through exercise, and will review the latest treatments.

Tickets are available at https://kiosk.iristickets.co.uk/k?scienceoxfordlive&1084 and are free to NHS Trust Members and Science Oxford Friends.

Opportunities to Volunteer

Research on Sleep

Oxfordshire REC B – 11/H0605/12

We are looking for volunteers to take part in a research study. The study aims to find out how stroke affects sleep. We would like to hear from people who have had a stroke and also from healthy people.

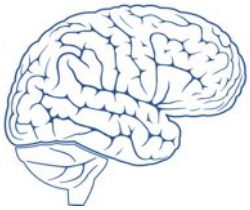
The study involves having a brain scan and then wearing a wrist band to measure your activity for 3 weeks. During those 3 weeks we would monitor you sleep using brain recordings over 3 nights in your own home. You would be reimbursed for your time and expenses.

If you are interested, or would like to know more, we would be happy to discuss the study further with you – please contact us on 07836324934 or sleep@fmrib.ox.ac.uk

Research on Neurological Disease

Oxfordshire REC A 10/H0604/99

We are looking for volunteers for a study looking, non-invasively at the levels of various chemicals in the brain. We will use a technique called Magnetic Resonance Spectroscopy. By doing this we hope to understand more about how the brain responds in diseases such as MS. The study would involve lying in an MRI scanner for about 1 hour on 2 occasions, a year apart. We are able to recompense expenses and time.



We need volunteers between 18 and 95 years of age, in good health and without a history of epilepsy or any other disease affecting the brain or spinal cord. If you have a metallic implant, cardiac pacemaker, are pregnant or suffer from claustrophobia you should not volunteer.

If you are interested or would like further information, please don't hesitate to get in touch with us: Dr Charlotte Stagg, 01865 222736, recovery@fmrib.ox.ac.uk.

Focus Group

Would you be interested in helping us make research relevant to over 60s? We are looking for a group of adults over 60 years of age to help shape future research in the field of psychology. We are adapting many of our tasks and measures for use with older adults and we want to make sure the changes we make are relevant. If you have an hour or two to spare and would be willing to help, please contact cha@psych.ox.ac.uk or phone Erin Drazich on 01865 613197.

Thank you for your interest in our work

Please send any comments or suggestions to: claire.sexton@ndcn.ox.ac.uk
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