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Age-ility Project: Flexible minds for life

This form provides you with information about the *Age-ility Project*. It is important that you read and understand this information before deciding whether you would like to participate.

Healthy living in our complex and unpredictable world depends on the ability to flexibly adjust to novelty and change. We will study how cognitive flexibility matures from adolescence to adulthood, identify the brain networks that mediate this change and explore the implications for successful adaptation in everyday life. This study is supported by Australian Research Council funding to an international research team headed by Associate Professor Frini Karayanidis in the School of Psychology, University of Newcastle.

Can I participate in the Age-ility Project?

We are recruiting people aged between 15 and 35 years. If you decide to participate, you will first complete a brief telephone screening. As the study is focussed on healthy brain development, people who have suffered severe head trauma or have a chronic psychiatric or neurological illness will be excluded from the study. Due to regulations regarding brain imaging, people who have claustrophobia or ferromagnetic/metal implants (e.g., pacemaker, aneurism clip) and women who are or may be pregnant cannot participate.

What will I have to do?

You will be invited to attend two sessions at the University of Newcastle (Functional Neuroimaging Laboratory, School of Psychology) and one at the Calvary Mater Hospital (Radiography Department).

Session 1: Abilities and Attitudes You will complete a comprehensive assessment of memory, attention, flexibility and problem-solving. You will also complete questionnaires that ask about your background, personality, mood, coping style and lifestyle choices (including risk-taking behaviours, substance use and sexual activity). (2-2.5hrs)

Session 2: Brain Activity You will complete a computer-based test of mental flexibility while we measure the electrical activity that is continuously generated by your brain using an electroencephalogram (EEG). EEG is measured using an electrode cap. Each electrode is filled with a small amount of salty gel which is removed upon completion. (2-2.5hrs)

Session 3: Brain Imaging You will undertake a magnetic resonance imaging (MRI) scan that takes a detailed image of the structure of your brain. This specialised scan is taken by a radiographer while you lie in an MRI scanner that has a strong magnetic field. All participants are screened to ensure that it is safe for them to enter the scanner (see *Can I participate in the Age-ility Project?*). The MRI scanner is very noisy, so you listen to your choice of music through noise-reducing headphones during scanning. (2hr)

You are also asked to complete some questionnaires at home either online or on paper (1-1.5hr). Finally, we would like you to ask a close friend or relative to complete two questionnaires about your habits and preferences.

Free parking is available at the University of Newcastle and the Mater Hospital. We offer \$20 per hour of participation to cover your time commitment and any out-of-pocket expenses (maximum 10hrs).

What choice do I have?

Participation in this study is voluntary. If you choose not participate, this will not affect your relationship with the University of Newcastle or the Calvary Mater Hospital. If you choose to participate, you may withdraw from the project at any time without giving a reason. You also have the right to withdraw all data relating to you, except in the case of an adverse event, where the data need to be retained for regulatory reporting. The researchers may also withdraw a participant from the study, if it is in the participant's best interest or it is appropriate to do so for another reason. If either case, the researcher will explain the reasons for discontinuation and advise about any follow-up procedures.

Are there any risks and benefits for me?

There are no direct benefits from participating in this study.

The technique for recording EEG is non-invasive (i.e., does not pierce the skin), safe and painless (i.e., the electrodes record the electrical activity that exists at the surface of the scalp, but cannot give electrical stimulation). In a small minority of people with very dry skin, the salty gel may produce minor irritation. All caps and electrodes are washed and sterilised between uses.

MRI uses a strong magnetic field to measure brain structure and function and is also non-invasive. For people who pass the MRI screening procedure, there are no health risks. The radiographer will confirm that there are no risks to you before starting the scan (e.g., claustrophobia, pregnancy, metal implants). With 3.0 Tesla scanners such as the one at the Calvary Mater, there is a minimal risk of heating and induced electric currents in body tissues. The radiographer will be present throughout the scan session and you may discontinue testing at any time using an exit button.

Some of the questionnaires include sensitive questions about personal behaviours, preferences and feelings. You retain the right not to respond to these questions. Examples of sensitive questions are available for viewing at our website (<http://www.age-ility.org.au>). You will be debriefed after completion of these questionnaires. If you experience any concern about your responses, you are advised to seek support from Lifeline (13 11 14) or talk to your GP for a referral to a qualified professional. You may also seek an appointment with the School of Psychology Clinic (4921-5075).

How is my privacy protected?

All information about you remains confidential and can be disclosed only with your permission. If you decide to participate, all your data will be assigned a code and the information that links your name to that code will be stored securely in a locked filing cabinet with access limited only to the research staff directly involved in this project. Coded computer files are stored on hard-drives and university network with access limited to staff directly involved in the project.

In rare cases, it is possible that MRI data may reveal evidence of a structural brain abnormality. It is also possible that some responses may indicate serious risk of harm to self or others. This is very rare in healthy people without clinical symptoms so you need not be alarmed. In either event, we will send a report to your GP who will invite you for consultation. To cover this possibility, we ask you to provide us with details of your GP's name and address on the consent form.

Aggregated results from coded files with no identifying information are presented in scientific journals, research newsletters, conferences and the *Age-ility Project* website (<http://www.age-ility.org.au>).

How can I participate?

For more information, questions or to address any concerns about this study, please contact Associate Professor Frini Karayanidis (02 4921-5457, frini.karayanidis@newcastle.edu.au).

To make the first appointment, please call

Dr Renate Thienel at the School of Psychology (02 4921-7161, renate.thienel@newcastle.edu.au).

By signing the attached consent form, you confirm that you have read the above information and agree to participate in this research study. **Participation in the study is voluntary. You are free to withdraw from this study at any time.** The consent form also asks you to indicate whether we can contact you about follow-up testing for this study. If you agree, you are under no obligation and may rescind your decision.

Thank you for your interest in this study.

A/Prof Frini Karayanidis