Plain language statement

Melbourne School of Psychological Sciences

Project: Neural Development of Threat Learning

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Introduction

We would like to invite you to participate in a project at the University of Melbourne.

This project studies how humans know when they are safe and when they are in danger. The project involves you answering some questions online about your thoughts and behaviours (30 minutes). Examples of questions include things like how typical are different moods for you, how much sleep do you get each night, how difficult do you find things that are unexpected.

Then you will come to University of Melbourne campus and get a brain scan (2 hour session, 60-90 minutes of scanning).

You will be asked to participate in three brain scan visits, each 1 year apart. You will answer questions before each visit and get your brain scanned at each visit.

The brain scan uses a magnetic resonance imaging machine (MRI), which is a large magnet that takes pictures of the brain. During the brain scan you will play several games where you make decisions about how to act.

This document contains detailed information about the project and is designed to clearly explain all the procedures involved prior to your final decision about you taking part.

Please read the following information carefully and feel free to ask any questions about the project.

If you agree to participate, you will be asked to sign a form saying you want to participate (this is called a consent/assent form). Your participation is voluntary, and you do not have to participate if you do not want to.

You will be reimbursed for your time in this study at a rate of $100 for the first session, $120 for the second, and $150 for the third.

What will I be asked to do?

If you are interested, we will make sure we have your permission by you signing the consent/assent form. If you are under 18 years of age, we will also make sure your parent and/or guardians give their permission for you to participate by signing the form.

Next, we will send you an email with a link to fill out some questionnaires online about your thoughts and behaviour (taking approximately 30 minutes).

We will also schedule a time for you to come to the Parkville campus of University of Melbourne to have a brain scan. The in-person brain scan visit will take a total of approximately 2 hours at the Melbourne Brain Centre Imaging Unit, located on the ground floor of the Kenneth Myer Building at the University of Melbourne in Parkville.

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You will be asked to complete the same questionnaires and additional brain scans at two more sessions one year later. For example if you participate in your first MRI scan in May 2025, we will ask you to come back around May 2026 and May 2027 to complete the study.

Your Brain Scan Visit

First we will ask some questions about whether you have metal in your body, your general health, and you will be able to ask any questions about the brain scan.

Then, you will be set-up in the scanner by the researchers. You will be asked to remove your clothes in a private changing room and to put on hospital pyjamas that fully cover your body. You can keep on your undergarments and socks, but no bras with underwire can be worn in the scanner. Exercise apparel such as lycra or spandex often contain tiny metallic thread that can heat up in the scanner and cannot be worn. You may wear cotton or other non-athletic tank tops, bras, undergarments, and socks into the scanner under the hospital pyjamas, which consist of trousers and a top.

An MRI scanner is a large magnet that takes pictures of your brain. There is **no radiation or x-ray**.

This is a picture of an MRI scanner. During your scan, you will be laying down like the person in this picture.

As you can see in the picture above, the MRI scanner has a short tunnel in the centre and a flatbed for you to lie on. When you are set up on the flatbed, you will have some electrodes attached (with Velcro) to the surface of your skin on one hand. These electrodes will measure your sweat level and will not be painful. Your other hand will be free to respond to the games by pressing buttons on a keyboard we give you.

You will also have a helmet like piece of equipment over your head that we call a “head coil”. The head coil helps us get pictures of your brain.

When you are all set up, the flatbed will slowly move into the centre of the tunnel for scanning. You will be moved inside up to your waist, like the picture below. During the scan researchers will communicate with you over an intercom, but no one will be in the scan room with you. Research staff will take all measures possible to make you as comfortable as possible before moving you into the MRI scanner and starting the games.


The games in the scanner involve cartoon pictures. Some of them are of animals and weapons like the ones above. We may ask you to rate pictures, for example by telling us how safe you estimate each picture is.

You will be taught about how all of the games work prior to starting. If you lose during the game you may hear an unpleasant tone through the headphones. You will receive feedback on your responses throughout the games.

What are the risks?

None of the procedures involved in this study have any serious threat to your physical safety or well-being. We would like you to consider some helpful information below.

First, the screening phone call and some of the questionnaires contain items that some may find uncomfortable or upsetting to think about. For example, we will ask whether you have a psychiatric illness diagnosis and whether you are currently taking medications. If you do experience any kind of discomfort during the study, please tell one of the researchers immediately.

Second, while brain MRI is a safe, painless, and routine, it does involve being placed within a powerful magnetic field. So we need to ask about safety information including recent surgeries. If you have any metal in your body (for example, braces, a pacemaker, metal pins from a broken bone) you cannot participate. If you have any piercings, these will need to be removed and any recent tattoos may be affected by the scanning process.

No one (including your parent/guardian) will be able to come with you into the MRI room. The researchers will be in the next room communicating with you over a speaker and checking on you.

Very rarely (less than 2%), the MRI reveals potential brain problems. If this happens, we will send your brain images to a clinical radiologist for further screening. You (and your parent/guardian if you are under 18) will only be contacted if the radiologist determines that the brain image findings require further follow-up. We will contact you within one month of the scan if this is the case. In general, we will not contact you about the scan results unless there is a potential problem. The Melbourne Brain Centre Imaging Unit and researchers cannot provide any funding for testing or treatment of potential problems.

You may find some of the tasks used during scanning to be boring or irritating. Tiredness including eyestrain is possible. Noise will be used during the study, which does not cause any physical damage or pain but may be irritating or uncomfortable. You may also experience stress or anxiety due to the scan environment (i.e., tight spaces). Research staff will be present throughout and will check in with you regularly to see how you're doing.

If you express discomfort, the research staff will (1) offer to pause the experiment, provide you with a break, talk with you to determine whether you are willing and able to return to the experiment; (2) if a pause or break does not provide relief, the staff will suggest testing stop for the day and pay you for your time; (3) if you continue to express distress, staff will have contact information for mental health services (such as headspace and beyondblue) on hand and can provide information for these services as required. You can also contact a counselling service such as LifeLine (13 11 14) or the University of Melbourne Psychology Clinic (Tel: +61 3 9035 5180; email: clinic@psych.unimelb.edu.au).

What are the benefits?

It is hoped that this research can develop a better understanding of how the human brain develops and how that might lead to anxiety.

How will my confidentiality be protected?

By participating, you give permission to the investigators collecting and using the information you provide for the research project. All data (e.g., questionnaire responses and MRI data) will be stored on secure servers at the Melbourne Neuropsychiatry Centre and University of Melbourne High Performance Computing system. Access to these data will be available to named, password-carrying researchers only. In the long term, non-identifiable data (i.e., data with all participants' identifying features removed) from this study will be stored indefinitely and only made available to external investigators for use in research projects.

No data collected will be shared with anyone, including your parent/guardian if you are under 18. The data provided by you is confidential. After the study, we will remove identifying information from your data and provide it to other researchers for use in future research, but none of the data will be able to be tied back to you.

What if I want to withdraw from the research?

Participation in this research is completely voluntary. You are free to withdraw at any time. However, data you provide that has been processed and de-identified cannot be withdrawn. That data will not be able to be tied to your identity.

If you want to stop your participation, please tell a member of the research team. Withdrawing from the research would have no effect on your relationship with the University of Melbourne or any member of the School of Psychological Sciences or anyone else's relationship who is close to you. It would not affect your grades, assessment or any ongoing or future treatment.

Who is funding this research?

This research is funded by a grant to Dr Sarah Tashjian from the Australian National Health and Medical Research Council (Grant #2033400) and Brain & Behavior Research Foundation (Grant #30788).

Where can I get further information?

If you have not understood any of this information, please contact any of the researchers listed above. This research project has been approved by the Human Research Ethics Committee of The University of Melbourne. If you have any concerns or complaints about this research project that you do not wish to discuss with the research team, you should contact the Manager, Human Research Ethics, Office for Research Ethics and Integrity, University of Melbourne, VIC 3010 (Tel: +61 3 8344 2073; Fax: +61 3 9347 6739; email: HumanEthicsComplaints@unimelb.edu.au). All complaints will be treated confidentially. Please note that you are contacting ethics about HREC No. 30856.

How do I agree to participate?

If you wish to participate, please let the research team know by responding to their email and we will schedule your session.