1**Patient Information and Consent Form for the Research Project**

Bio-markers for Mild Traumatic Brain Injury, Blast Injury and Post-Traumatic Stress Disorder

Document Version 10.0: dated 9th of Febuary 2017

Contacts:

Dr Peter Malycha
Phone: 07 3443 7813
Peter.Malycha@tri.edu.au

Lisa Rich – Nurse Coordinator
Phone: 07 3176 9002
Lisa.Rich@tri.edu.au

You are invited to take part in the research project stated above. This project is being conducted by researchers by the Translational Research Institute in collaboration with the Centre for Magnetic Resonance in Health at the University of Newcastle, the University of Queensland, The Centre for Traumatic Studies - University of Adelaide, the Metro South Health Services and the Australian Department of Defence in collaboration with the USA Combating Terrorism Technical Support Office. This study is being conducted in order to better understand and diagnose Post-Traumatic Stress Disorder. Please read all information provided prior to signing the consent form.

This study is inviting Defence members who:

Have experienced a blast injury in the past five years
OR
Have suffered from mild traumatic brain injury (concussion) within the last five years
OR
Have been diagnosed as suffering from post-traumatic stress disorder (PTSD)
OR
Have served in the military and have not experienced suffered from concussion, blast injury or PTSD
AND
Are between 18 and 60 years of age

Background

Post-Traumatic Stress Disorder (PTSD) is a complex condition where sufferers are affected by a varying range of symptoms following an exposure to a traumatic event. Sufferers experience a range of symptoms following this event which include recurrent and intrusive thoughts, nightmares, flashbacks, distress and avoidance of situations similar to where the event first occurred.

It is not yet known why some people experience PTSD following a traumatic event and others do not. This research aims to determine if there are any differences in the neurochemicals of affected and non-affected individuals. We will scan these volunteers using Magnetic Resonance Spectroscopy (MRS) and compare these results to unaffected, age matched controls. It is hoped that this may isolate some neurochemical abnormalities in sufferers of PTSD that could lead to new treatments for PTSD.

It is hypothesised that individuals who have been diagnosed with PTSD, BI or mTBI have unique chemical changes in their brain. If there are unique chemical changes in the brain with PTSD, BI or mTBI and these changes can be identified through magnetic resonance testing, this could guide future diagnostic tests and therapies. Any unique chemical changes found could be monitored whilst trialling new drug therapies for PTSD, BI or mTBI.

Magnetic Resonance Imaging (MRI) is a non-invasive medical test. MRI uses a magnetic field, radio frequency pulses and a computer. MRI produces detailed pictures of organs, soft tissues, bone and other internal body structures. The data for MRS is recorded using a MRI scanner. MRS is used to determine chemical properties of molecules in cells and tissues. MR spectroscopy can provide detailed information about the nature and chemical environment of molecules.

This study aims to use these two Magnetic Resonance methods to monitor and predict the response to therapy and identify those who are resistant to treatment. Likewise, if there is an early response to therapy, these imaging modalities may help to tailor the type of treatment delivered to an individual sufferer, which will improve recovery times.

Consent

This Participant Information form contains detailed information about the research project and explains all the procedures involved. Knowing what is involved will help you decide if you wish to take part in the research.

Please read this information carefully and ask any questions you may have about this study. Participation is voluntary. If you don't wish to take part, you don't have to. You will receive the best possible care whether or not you take part.

Once you know what the project is about and if you agree to take part, you will be asked to sign the Consent Form. By signing the Consent Form, you indicate that you:

- understand the information;
- consent to take part in the research project;
- consent to have the tests that are described;
- consent to the use of your personal and health information as described.

You will be given a copy of the Participant Information and Consent Form to keep as a record.

Procedure

Participants will need to return a signed consent form prior to study screen. Upon return of the consent form participants will be asked to;

(a) Undertake a 30 minute telephone brief screen with the team's Study Nurse prior to the day of scanning. This interview will be carried out at a time convenient to you. The assessment will ask questions relating to; current medications, previous history of any mental health condition, previous history of injuries to your head or neck and past medical history.

(b) If you meet the initial inclusion criteria you will be asked to complete a survey online prior to having an MRI scan. The survey will be sent by email to the participant

with the participant's name replaced with a participant number and will ask more in-depth questions about previous medical history, depression/anxiety, drug and alcohol use, previous head injuries and pain. The survey will take approximately 30 minutes to complete and is self-administered.

(c) You will then meet the initial inclusion criteria, an appointment will be made to see the study Psychologist. This appointment will be held at the Clinical Research Facility at the Princess Alexandra Hospital. The Psychologist will perform a psychological assessment through a structured interview process and completion of questionnaires. For those who are unable to attend a face-to-face interview due to location, the Clinical Psychologist will contact you via Skype or telephone. The assessment will ask questions relating to: current medications, injuries to your head or neck, your emotional health (including questions about your current mood, the presence of different types of anxiety symptoms, and other mental health screening questions) the presence of traumatic stress reactions (in relation to your exposure to traumatic incidents) and a brief summary of the positions you have held within the ADF. This will take approximately one hour depending on your responses. If you do not meet the inclusion criteria, the Clinical Psychologist will notify you during or after your psychological assessment. If you require follow up assessment, the Clinical Psychologist will provide a written referral to your General Practitioner on base.

(d) Undertake an online 30- 60 minute WebNeuro cognitive assessment. This assesses your motor tapping, choice reaction time, verbal memory recall and digit span.

(e) Visit the Princess Alexandra Hospital or Herston Imaging Research Facility at the Royal Brisbane and Women's Hospital, Bowen Bridge Road or the Hunter Medical Research Institute: Have two MR scans including imaging and MR spectroscopy.

- The first scan will require you to lie in the scanner for approximately 40 minutes and images of the brain and neurochemical information will be obtained.
- The second component of imagining assesses the blood flow in different areas of the brain. This is a non-invasive technique and will be obtained a using functional Magnetic Resonance Imaging. This scan will take approximately 45 minutes.
- The two scans will be obtained on the same day with a short break in between.
- This is the clinical scanner used for routine examinations. These are additional MR scans which you would not be undergoing unless you were part of the study.

NB: if you are female and suspect you are pregnant, a urine pregnancy test will be completed.

Travel to Newcastle, NSW or Brisbane, QLD for the MR scanning or psychological assessment will be completed whilst the participant is 'on-duty'. Travel and accommodation will be arranged and paid for by the study.

The major discomforts of MRI are noise, and possibly a feeling of claustrophobia. Should you become distressed while lying in the MR scanner the healthcare specialist working with you at that time will provide information and advice regarding additional support and/or referral for your particular concerns. You can signal at any time that you wish to be removed from the scanner and the specialists will remove you.

Possible Benefits

There are no benefits to the individual for participating in this study. Although, there are benefits to the wider community, which include:

- Assisting researchers and clinicians to better understand Post-Traumatic Stress Disorder, mTBI and BI
- Developing new objective methods for diagnosis.
- Identifying effectiveness of future treatment.

Possible Risks
There are no known risks associated with standard MR procedures, unless you have any electrically, magnetically or mechanically activated implants or vascular clips, metallic plates or metal fragments in your body. If you have implants or suffer from claustrophobia you will not be NOT be able to participate in this Study.

It is possible that during the course of the psychological interview you may be identified as suffering from a mental health disorder. If this occurs, it will be recommended that you seek follow up with your General Practitioner.

It is possible that reliving distressing experiences and other traumatic events as part of the psychological assessment may be distressing. There will be many opportunities to discuss this in the interview with the trained psychologist performing the interview. If you find your involvement or the questions asked in the psychological interview distressing, after the interview, you can talk to someone about it:

Lifeline – 131114.
Beyond Blue – 1300 22 4636
Professor Peter Malycha (Associate Investigator) - 07 3443 7813
Dr Katie Trickey (Clinical Psychologist) – 07 3443 7779

Defence all hours support line – 1800 628 036

1800 IM SICK (1800 467 425).

We cannot promise you any benefit from participating in this research. You are able to request an individual summary of your assessment results. This summary might be beneficial to you in terms of your medical history.

Disclosure of results.
If you agree to be contacted and we identify any abnormalities in your imaging scans, based on your consent, we will contact your GP on your behalf to arrange referrals to appropriate specialists. You may also require repeat testing in a clinical setting.

Privacy and Confidentiality.
All personal information obtained throughout the study, including psychological assessment and images of the brain, will only be accessible in identifiable form to the chief investigators and study coordinator.

Data that is collected as part of the WebNeuro assessment will be processed by owners of the software, the Brain Resource Company. All data will be de-identified and your name will be replaced by a participant code. The data will be transferred for analysis using the same encryption used by many banks. A report about this data will be generated and given to the study team; the raw data from the cognitive assessment will be destroyed after 15 years.

All data will be stored in secure locations in either electronic or paper format. No identifiable information will be used in publication of the results. Your personal information will only be used for the purpose of this research study and will only be disclosed with your permission, except as required by law.

Further information and complaints

If you require further information or if you have any problems concerning this project, you can contact the Associate Researcher;

Peter Malycha
Phone: 07 3443 7813
peter.malycha@tri.edu.au

Or

The Australian Defence Human Research Ethics Committee;

ADHREC
Protocol No: 732-13
Human Research Ethics Committee at the following address:
Executive Officer
Australian Defence Human Research Ethics Committee
Department of Defence
CP3-6-036
PO Box 7912
ADHREC@defence.gov.au

Withdrawing from the study
You can withdraw from the study at any time by contacting the principal investigator with your decision. Your decision to withdraw from the study, will not affect your relationship with the universities or hospitals involved or the Australian Defence Force and Veteran Affairs.

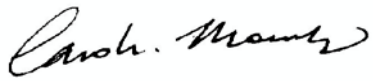
Ethical Guidelines
This project will be carried out according to the *National Statement on Ethical Conduct in Human Research* (2007) produced by the National Health and Medical Research Council of Australia. This statement has been developed to protect the interests of people who agree to participate in human research studies.
The ethical aspects of this research project have been reviewed by the Australian Defence Human Research Ethics Committee

If you would like to participate, please complete the consent form for the project. Please return it directly to the research team. A member of the research team will then contact you directly to arrange an appointment, convenient to you, where the assessments will be completed.

ADHREC's Guidelines for Volunteers.

A copy of ADHREC's Guidelines for Volunteers is in your information pack, and is available at http://www.defence.gov.au/health/shc/ddhrc/adhrec/forms.asp#Adhrec

Thank you for considering this invitation.



Professor Carolyn Mountford

Magnetic Resonance Spectroscopy to Document Alterations to Neurochemistry Associated with Post-Traumatic Stress Disorder (PTSD)

Consent Form

Document Version 8.0: dated 10th November 2016

Declaration by the participant:

- I have read the Participant Information Sheet or someone has read it to me in a language that I understand.
- I understand the purposes, procedures and risks of the research described in the project.
- I have had an opportunity to ask questions and I am satisfied with the answers I have received.
- I freely agree to participate in this research project as described and understand that I am free to withdraw at any time during the project without affecting my future health care or detriment to my career.
- I understand that I will be given a signed copy of this document to keep.
- I may be approached again to participate in future components of this study or future studies conducted by the investigators but I am under no obligation to do so.
- I understand that my de-identified data may be used for other ethically approved studies.
- I understand that all data collected including contact details will remain on file for 15 years.
- I understand that my personal information will remain confidential, except as required by law.
- I have been given a copy of ADHREC's *Guidelines for Volunteers*. (http://www.defence.gov.au/health/shc/ddhrc/adhrec/forms.asp#Adhrec)
- I understand that if I choose not to participate there will be no detriment to my career or future health care, and
- I understand I am deemed to be 'on duty' whilst participating in the research.

☐ I consent to the inclusion of de-identified images of only my brain in publications and presentations.

☐ I consent to my data collected in this study to be used in future research.

☐ I would like to receive personal, individual feedback on the results of my assessment.

Name_____ **Signature** _____

Date and time _____