Bionics Institute

Participate in research for

Alzheimer's Disease

Investigating a new treatment for Alzheimer's disease

Research Aims

The purpose of this research study is to:

Our research is examining whether a non-invasive form of brain stimulation, Theta Burst Stimulation (TBS), can improve the cognitive symptoms of mild to moderate Alzheimer's disease such as memory and thinking difficulties.

Who Can Participate?

- Men and women, age 50 - 85 years
- Individuals with a diagnosis of mild to moderate Alzheimer's disease
- Those interested in participating
- Have a close family member or partner able to attend appointments with you.

This study has been approved by: St Vincent's Hospital (Melbourne) Human Research Ethics Committee, reference number: 249/22

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What is ‘Theta Burst Stimulation’

Theta Burst Stimulation (TBS) is a form of magnetic stimulation which uses a magnetic pulse to stimulate brain cells.

- This is done by placing a handheld coil over your head while you are seated comfortably in a chair.
- The magnetic field generated by the coil is able to stimulate brain cells, making them more active.
- By delivering TBS to four important regions of the brain we hope to increase communication between these brain regions.

During TBS, the magnetic stimulus is applied in very short bursts (3 pulses at a time) at a high frequency (50 pulses per second). TBS has been shown to improve cognition and strength brain connections in healthy populations.

TBS has been approved by the Australian Therapeutics Goods Administration (TGA) for use in this trial.

Please feel free to discuss this project with your doctor, family, friends and relatives.

What does it involve?

During treatment you will recline in a chair whilst TBS is delivered to four regions of the brain. Delivering treatment to all four locations will take approximately 12 minutes. Treatment sessions, including setup time, will each take less than 30 minutes.

The full treatment course in this study will involve you receiving 36 treatments with TBS over a 12-week period. This includes:

- Six weeks of daily treatment on weekdays (Monday-Friday).
- Six weeks of once-weekly treatment.

Does this study have a placebo condition?

This is a randomised-controlled clinical trial and as such participants will be randomly allocated to receive either:

- Active TBS stimulation for 36 treatment sessions.
- Placebo (inactive) stimulation for 36 treatment sessions.
- Participants will not be told which treatment they were allocated to receive until the end of the six-month follow-up appointment. Importantly, if you were initially randomised to the placebo group, *you will then be offered active stimulation.*

Other procedures involved

As part of the study, you will be invited to attend appointments to examine symptoms of Alzheimer's disease before and after treatment, and at follow-up appointments at 3, 6, and 12-months after-treatment.

These include appointments to assess your memory and thinking skills, as well as to ask questions about how Alzheimer's disease is affecting your day-to-day life.

We will collect blood samples before the first treatment and after the last treatment to examine the broader effects of TBS

We will also record brain activity using various techniques so that we can examine the effects of TBS on your brain.

Contact Persons

Professor Kate Hoy
Principal Investigator
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Study Coordinator
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This research has been initiated by Professor Kate Hoy. Professor Hoy is a Clinical Neuropsychologist and Head of Cognitive Therapeutics at the Bionics Institute.

You may contact our team via email (dementia@bionicsinstitute.org) or via phone (03 9667 7526). You can find out more about our research centre by visiting our website: www.bionicsinstitute.org

Get in touch

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Overview of Study Appointments