PioneerHealth TMS

TRANSCRANIAL MAGNETIC STIMULATION

FOR OTHER CONDITIONS

Information Booklet

What is Transcranial Magnetic Simulation (TMS)?

TMS is a safe, effective and non-invasive therapy for depression as well as several other psychiatric and neurological conditions. This form of therapy has been in use for over 30 years and is currently extensively used in North America, Europe as well as Australia. The treatment works on the principle of neuromodulation of the brain circuitry. Brain circuits which have become under or overactive are either stimulated or supressed to restore the healthy functioning of the brain. This is achieved by stimulating the surface layer of the brain, also called the cortex, with magnetic impulses using a TMS machine and coil assembly. In the treatment of depression these magnetic impulses are typically used to stimulate an area of the brain called the left dorsolateral prefrontal cortex (DLPFC). Magnetic stimulation of this part of the brain with the associated activation of brain circuity deeper in the brain, has been proven to be effective treatment for depression, including depression which is resistant to anti-depressant medication therapy.

If you are currently on anti-depressants or other medications, you can safely continue to take all your medications whilst undergoing TMS therapy.

TMS is NOT electroconvulsive therapy (ECT). Unlike ECT, in TMS therapy patients are awake and able to interact during treatments. TMS is generally well tolerated and it does not impair memory.

What will Transcranial Magnetic Stimulation (TMS) involve for me?

Your TMS therapy will start with an induction meeting, at which our Pioneer Health TMS team will ensure that the treatment is safe and appropriate for you. The consent form and this Induction Booklet explain the risks, benefits and costs of TMS therapy and form part of the induction.

For TMS therapy you will be seated in a comfortable reclining chair with a head support. The first TMS session involves measuring the strength of the magnetic impulse required for your treatment. This process of testing is called testing for the "resting motor threshold". Next your clinician will measure the optimal treatment spot for impulse administration. (This is typically the left dorsolateral prefrontal cortex (DLPFC) in depression.) Once the magnetic coil assembly is placed in the correct location and orientation, just touching your scalp, the treatment will commence. The TMS impulse feels like someone tapping your scalp with a pencil, and the machine emits a clicking noise as this occurs. You will be wearing earbuds during therapy sessions. TMS therapy sessions typically take around 20 minutes.

If you are having TMS for "off label" conditions, then your therapy may be of different duration and a different treatment spot on your scalp may be selected. Depending on your condition your clinician will also select a suitable frequency of TMS pulsation. This pulsation may be high frequency for stimulation of an area of the brain or low frequency to reduce cortical excitability.

TMS for Smoking Cessation

The length of your smoking cessation TMS treatment session is usually 15 minutes with a cue provocation procedure before each TMS session and a brief motivational video after each session. You will have a total of 13 TMS sessions spaced over 5 weeks. (For the first two weeks you will have 5 sessions per week, followed by weekly sessions for 3 weeks.)

How effective is Transcranial Magnetic Stimulation (TMS) for conditions other than Depression?

TMS is currently widely used around the world for psychiatric and neurologic conditions other than depression. Conditions for which TMS therapy is used include the following:

- Post Traumatic Stress Disorder (PTSD)
- Obsessive Compulsive Disorder (OCD)
- Schizophrenia
- Generalised Anxiety Disorder
- Bipolar Affective Disorder
- Tinnitus
- Chronic Pain Disorders
- Smoking Cessation

Research is currently underway to investigate the role of TMS in other conditions such as Autism Spectrum Disorder (ASD), Attention Deficit and Hyperactivity Disorder (ADHD), Stroke, Parkinson's Disease and Dementia.

There is a large body of high-quality evidence to support the efficacy of TMS in anti-depressant medication resistant depression. TMS used for conditions other than treatment resistant depression is currently deemed as a "off label" treatment in Australia. It's important for patients wishing to undergo such "off label" TMS therapy to understand that such therapy is supported by less evidence and should be conducted as part of a research initiative. All patients offered TMS at Pioneer Health Albany are invited to participate in research into TMS therapy in general practice, as will be outlined below in greater detail.

For patients undergoing off label TMS, your doctor will attach additional information about efficacy of TMS for your particular condition.

What are the adverse effects of Transcranial Magnetic Stimulation (TMS)?

TMS is a safe and well tolerated therapy.

Common adverse effects of TMS are as follows:

- Headache (these tend to settle after the first few sessions)
- Scalp discomfort
- Tingling, facial muscle twitching
- Noise related discomfort (patients wear ear plugs during TMS therapy)

Rare adverse effects of TMS are as follows:

- Seizure. The chance of seizure is one in 30 thousand, which is lower than the seizure rate for patients treated with anti-depressants. *Please note that in the unlikely event that you do experience a seizure during treatment, this will affect your fitness to drive.*
- Syncope (fainting)
- Mood elevation (elevated mood tends to settle on cessation of TMS)

Unlike electroconvulsive therapy (ECT) TMS causes NO adverse cognitive effects.

Who should not have Transcranial Magnetic Stimulation (TMS)?

Patients with a pre-existing vulnerability to seizures should not undergo TMS. This includes patients with a past history of:

- Epilepsy
- Acute brain disease (such as recent strokes, head injury or growing brain tumours)
- Alcohol or drug withdrawal states

Patients with metallic materials in their head and upper body region may also not be safe for TMS as the therapy utilizes strong magnetic impulses. This includes patients with:

- Metallic (ferrous) implants
- Cochlear implants
- Metallic foreign bodies in the eye (from past injuries).
- Vagal nerve stimulators
- Cardiac pacemakers
- Spinal cord stimulators

Please note that metallic implants, stimulators and pacemakers deemed MRI safe are generally safe for TMS therapy.

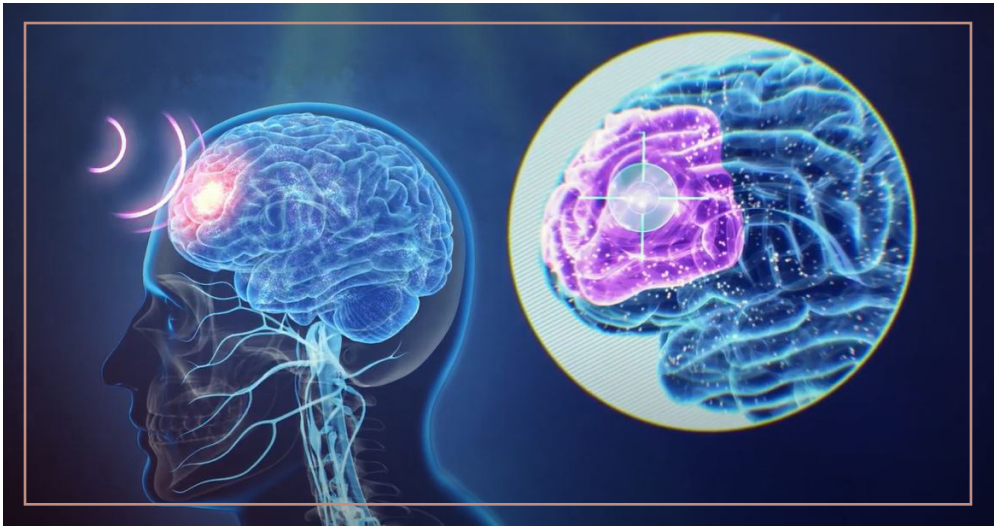
The Pioneer TMS team will perform a detail screening process of patient candidates to ensure that TMS will be safe for you. Pregnancy, childhood and certain occupations (metalworkers, welders, truck drivers) are relative contra-indications to TMS which your doctor will discuss with you.

What is the cost of Transcranial Magnetic Stimulation (TMS)?

TMS for conditions other than treatment-resistant depression is not covered under Medicare and will incur a private fee. Costs vary from patient to patient and condition to condition. You will be provided with a quote at your initial consultation.

Infection control measures at the Pioneer Health TMS service.

Pioneer Health makes every endeavour to make your TMS sessions as safe as possible to minimise your risk of infection with respiratory viruses such as COVID. We have a special ventilation system in the TMS room to safeguard our patients we furthermore suggest that patients wear a mask to TMS sessions to give them additional protection from infections such as COVID. Of course, should patients develop cold and flu symptoms we ask you to phone our TMS at your earliest convenience.



Why am I invited to participate in research into TMS in general practice?

Whilst TMS is a well established therapy for depression for decades around the world, it is still an evolving therapy with current research underway into using TMS in a range of other brain related conditions. TMS was initially provided by large metropolitan teaching hospitals and has over recent years made its way into private practice. The use of TMS in Australian general practice is a relatively new development. If TMS therapy can be successfully made available to the wider Australian community then we have an exciting opportunity to revolutionise the treatment of depression and other psychiatric and neurologic conditions. To achieve this, we need to collect data that supports the safety and efficacy of TMS in general practice. Hence at Pioneer Health we invite every TMS patient enrol in out TMS research project.

If you consent to be being included in our research project, we will use some of your de-identified information in our research data set. Information we would collect would include your sex, age, diagnosis, assessments scores for your condition pre, intra and post treatment as well as the type and duration of TMS provided to you. This information would be used for the purposes of research and education and may eventually be published in a medical journal. We may collaborate with research institutions such as Universities, and in this case your data may be used and published as part of a multi-centre trial. If such collaborative research efforts proceeded, you may be contacted by us to provide additional consent for such research.