

Transcranial Magnetic Stimulation

TMS Service

What is Transcranial Magnetic Stimulation

Transcranial Magnetic Stimulation (TMS) is a therapeutic, medical procedure for the treatment of psychiatric disorders, such as major depression.

TMS involves stimulation of an area of your brain using a pulsing magnet placed on your scalp. The magnet is designed to give a focused beam of magnetic energy inducing small electrical currents with the aim of altering brain function for therapeutic purposes.

TMS works by changing brain electrical activity and the brain chemicals that are involved in controlling mood.

This information is designed to provide you with a description of TMS, to assist your understanding of the procedure and to answer some of the questions you may have.

This material is not a substitution for advice from your psychiatrist.

Why is TMS used?

Your treating Psychiatrist/Doctor will consult with you to make a decision about a referral to the TMS Treatment Program.

TMS may be an appropriate treatment option for adult patients with Major Depression, who have failed to achieve a satisfactory response from prior antidepressant medications and focused psychological therapy sessions (defined as treatment resistant depression).

The aim of TMS treatment is to lift your mood. With an improvement in mood there is often an associated improvement in sleep, appetite, energy and concentration and a decrease in negative thoughts. TMS is an acute treatment for depression and you will require ongoing treatment from your Psychiatrist to maintain remission.

The evidence base for the use of TMS in schizophrenia is less substantive than that for depression. Clinical trials have found TMS to have beneficial effects in reducing the severity and/or frequency of auditory hallucinations.

TMS may be offered on a restricted basis to carefully selected patients with schizophrenia who have auditory hallucinations that have not improved with adequate trials of antipsychotic medications.

The nature of this treatment, including the risks and benefits that you may experience, will be fully explained to you by your Psychiatrist.

Who can have TMS?

Like with any other treatment for Depression, not all patients benefit from TMS treatment. However, you will be observed and clinically assessed for a response to treatment.

To receive TMS you will require a referral to Albert Road Clinic by your Psychiatrist/Doctor.

TMS is available in a clinical research trial setting for patients with depression and a history of poor response to, or an inability to tolerate the side effects of, antidepressant medications.

It is also available to those patients who have had a previous good response to TMS at other facilities providing TMS.

As TMS involves magnetic energy, there are some people who are unable to have TMS. Exclusions to TMS include:

- Cardiac Pacemakers / Defibrillators
- Previous head / brain surgery
- Cochlear Implants
- Brain Aneurysm Clips
- Previous seizures / fits / epilepsy
- Neurostimulator / Biostimulator
- Significant neurological disorder (MS, Cerebral lupus, Brain Tumour, etc)
- Facial tattoos which have metallic or magnetic-sensitive ink, any other metal devices or object implanted in or near the head

NB. Standard dental fillings and braces are not affected by the magnetic field and are acceptable for treatment with TMS.

TMS is a treatment for serious psychiatric conditions. It is important for you to understand that there may be alternative treatments for your condition, which may include medications and psychotherapy. Although there is a range of treatments, individuals will recover and respond in different ways and at different rates. Some people do not recover completely and others may take a long time to respond and recover.

Whether TMS or an alternative treatment is most appropriate for you is based upon a thorough physical and psychiatric evaluation and depends on your prior experience with these treatments, the nature of your psychiatric condition, your response to medication and other considerations.

Your psychiatrist has/will explain to you why TMS has been recommended for your specific case.

How does TMS work?

The brain is an organ that functions through complex electrochemical processes, which may be impaired by certain types of mental illnesses. Scientists believe TMS acts by temporarily altering some of these processes, thereby returning function towards normal.

TMS treatment is a non-invasive treatment based on repetitive transcranial magnetic stimulation, which delivers magnetic pulses to stimulate nerve cells in the part of the brain controlling mood, which is often underactive in patients with depression.

TMS treatment delivers magnetic fields via a coil head that is applied to one side of the patient's scalp, generally above the left side of the head (above the prefrontal cortex).

Repeated stimulation of this part of the brain has been proven to produce an antidepressant effect on people suffering from depression.

The technology is similar to that of magnetic resonance imaging (MRI) and the magnetic fields produced are about the same type / strength as an MRI machine.

The magnetic fields produce only tiny electrical currents which then go on to activate cells within the brain which (as believed) release neurotransmitters (chemicals in the brain), which do play an important role/function in mood regulation.

Since depression is believed to be caused by an imbalance of neurotransmitters/chemicals in the brain, TMS treatment helps restore balance of these chemicals in the brain and goes on to relieve the symptoms of depression.

The treatment does not involve seizure induction or loss of consciousness. The patient is completely alert during the procedure and an anaesthetic is not required.

Treatment with TMS can occur in combination with psychological therapies or medications.

How is TMS different to ECT?

TMS is not as effective as electroconvulsive therapy (ECT), and is not a replacement for ECT.

Currently there is no evidence to support the use of TMS and ECT concurrently.

The treatments should be seen as complementary with some patients whose depression does not warrant treatment with ECT being appropriate for TMS treatment.

The two treatments are really very different:

- TMS treatment does not require anaesthesia
- TMS treatment does not require sedation
- TMS therapy does not have a risk of memory or concentration disturbances
- TMS treatment sessions are longer in duration and require more sessions
- ECT intentionally causes a seizure

What about pregnancy?

In view of the paucity of evidence on the safety of TMS in pregnancy, pregnant women should not have TMS outside of a properly conducted and ethically approved clinical trial.

How will TMS help me?

The potential benefit of TMS for you is that it may lead to improvement in your psychiatric condition.

TMS has been shown to be a highly effective treatment for a number of conditions. However, not all patients respond equally well.

As with all forms of medical treatment, some patients recover quickly, others recover only to relapse again and require further treatment, while others may fail to respond at all.

It may take up to 2 weeks after the TMS treatment and in some instances longer (up to 2 weeks after treatment is completed), before symptom improvement occurs.

Some patients may also require further follow up maintenance treatments.

Are there any side effects?

The research to date indicates that TMS is relatively safe when patients are carefully screened for relevant exclusions and treatment is given within recommended safety parameters and evidence based guidelines. With appropriate screening, the overall risks are low. Patients may experience localised pain, neck pain and/or possible headaches, which can be relieved with analgesics. TMS does not lead to any memory difficulties or loss in concentration.

Making a Referral

Healthcare professionals should direct all referral enquiries to our **EasyAccess Service via telephone 1300 251 243** from 8.30am to 5.00pm Monday to Friday.