



Patient Information

# TMS

# Service

(Transcranial Magnetic Stimulation)



**The Southport  
Private Hospital**

Part of Ramsay Health Care

# What is Transcranial Magnetic Stimulation

Your psychiatrist has recommended that you receive treatment with 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 booklet 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.

When you are depressed it is often difficult to concentrate, don't be concerned if you cannot read through the whole booklet initially. Just pick out the sections that seem important to you at the time, and come back to it later.

You may wish to use it to help you to ask questions of your psychiatrist, nursing staff or relatives.

## 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 effectiveness of TMS in the treatment of depression is recognised by the Royal Australian and New Zealand College of Psychiatrists and similar organisations in the USA, Canada, Britain and many other countries.

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 The Southport Private Hospital by your Psychiatrist/Doctor.

TMS is available 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, 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 treatment also does not produce a convulsion
- 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
- Patients receiving ECT are sedated with a general anaesthesia and paralysed with muscle relaxants
- Recovery from an ECT treatment session occurs gradually, and all patients are quite closely monitored for several hours after an ECT treatment
- Confusion and loss of memory in the immediate period after ECT treatment, is common
- Long-term memory problems have been shown to occur after ECT treatment

## 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.

## Consent

Your psychiatrist will explain the treatment, answer questions and request a written consent.

The consent process should detail alternative treatment considerations, the possible benefits of TMS, the side effects and adverse events, including the possibility of seizures and the induction of mania.

A voluntary patient who lacks the capacity to give informed consent cannot be given TMS. A voluntary patient also has the right to refuse or consent to TMS.

Before consenting to TMS, you have the right to obtain a second opinion from another psychiatrist of your choice or one recommended to you. You can also seek legal advice and you have the right to be represented by another person of your choice before consenting. This representative is permitted to be with you when the psychiatrist explains the treatment.

Written consent may be withdrawn at any time. You should understand the risks of prematurely

stopping TMS and be informed of other treatments. When TMS is stopped prematurely there is a high risk of relapse and likelihood that the entire treatment will need to be repeated.

## What will actually happen to me when I have TMS?

During the treatment you are seated in a comfortable chair. You are fully conscious and responsive. There are no medications involved in the treatment. The TMS Nurse rests the magnet over the appropriate area of the scalp and activates the magnet.

During treatment, you hear a clicking sound and feel a tapping sensation on your head. Many patients will be able to watch television, read a magazine or talk with the Nurse who stays with you during treatment.

You will need to remove any metal hair clips. For ease of treatment it is preferable that you do not have gel, mousse or other products in your hair. Hearing aids, glasses, earrings and studs are removed during the treatments.

### The first treatment is approximately 20 to 40 minutes:

- Prior to the actual treatment, the TMS Psychiatrist will measure your own resting motor threshold and also locate/ pinpoint the exact location on the scalp, for treatment.
- This will help to tailor the TMS treatment regarding the site and dosage levels. This will take about 10-15 minutes.
- Then the TMS Psychiatrist will issue the prescription for future treatment sessions, which will be adhered to by the TMS treatment team.
- Hence, this will then enable the TMS Nurse to accurately position the area on the scalp/head (for treatment) and also adjust the correct dosage level.
- The TMS treatment will be applied by the TMS nurse based on the prescription which is specific to you.
- After the session, you can generally return to your usual routine activities.

## How many treatments will I need?

The number of TMS treatments that you will need cannot be predicted ahead of time.

The number of treatments will depend on your psychiatric condition, how quickly you respond to the treatment, and the clinical judgment of your psychiatrist.

TMS is typically given 5 times a week, normally over a period of 21 days.

Your psychiatrist may prescribe maintenance treatment (one or two sessions) every 4-6 months, or once a year.

Treatment needs vary from individual to individual, but typically your psychiatrist will prescribe maintenance treatment if your depression symptoms are returning.

## What risks are involved?

Like other medical procedures, TMS involves some risks. The research to date indicates that TMS is relatively safe when patients are carefully screened for relevant exclusions, including seizure risk, and treatment is given within recommended safety parameters and evidence based guidelines. With appropriate screening, the overall risks are low.

In deciding whether to give TMS a careful assessment of specific risk will be made. The relative benefits and risks of TMS will be considered and discussed with you. Additional precautions may also be necessary (for example, adjustment of medications, or consultation with a neurologist).

You will be also be carefully monitored for worsening symptoms, signs or symptoms of suicidal behaviour and/or unusual behavior during your treatment.

You should inform your Treating Psychiatrist/Doctor if your symptoms do not improve, or if they get worse. If you have thoughts of death or suicide you should immediately discuss this with your treating Psychiatrist.

Your treating Psychiatrist will determine whether TMS Treatment should be discontinued and, if so, what other treatment options are available.



## How can these risks be reduced?

To reduce the risk of medical complications, you will require a medical evaluation prior to starting TMS.

### Please inform your Psychiatrist if you have any of the following:

- 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

Your current medications will also be reviewed. Most treatments for medical conditions will be continued.

This physical examination will be required to be renewed every six months whilst undergoing TMS.

However, in spite of these precautions there is a small chance that you may experience a medical complication.

Should this occur, emergency medical care and treatment will be instituted immediately.

To ensure that our practitioners possess the knowledge and skills required to provide safe and effective treatment The Southport Private Hospital provides TMS training credentialing before Psychiatrists and Nurses are granted clinical TMS privileges.

This commitment to quality patient care and service is further demonstrated by our full accreditation with ISO 9001:2008 Standards for Safety and Quality in Healthcare.

## What happens if a complication occurs?

In the event of a medical complication, neither the The Southport Private Hospital nor the treating physicians are required to provide long-term medical treatment.

The patient would be responsible for the cost of such treatment whether personally or through medical insurance or other medical coverage.

No compensation will be paid for lost wages or other consequential damages.

Patients will be transferred to the appropriate medical facility for care.

## 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.

- TMS treatment does not cause weight gain
- TMS treatment does not cause any sexual difficulties
- TMS does not damage your scalp or hair
- TMS can cause short-term hearing impairment if hearing protection is not used. Disposable earplugs will be made available.

## Summary

- TMS is not Electroconvulsive Therapy (ECT). ECT is a treatment for depression and involves the use of electricity to produce a seizure. An anaesthetic is required for ECT. TMS does not require an anaesthetic and does not involve producing a seizure.
- If you are not sure why you are being given TMS, don't be afraid to ask. It's sometimes difficult to remember things when you are depressed so you may need to ask several times.

- TMS is a treatment for 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).
- TMS may help if you have responded well to TMS in the past.
- TMS is usually given 5 times a week, normally over a period of 21 days.
- TMS may also be given as maintenance treatment.
- The effects of TMS aim to relieve the symptoms of your depression but will not resolve all your problems.
- You can refuse to have TMS and you may withdraw your consent at any time, even before the first treatment has been given. Withdrawal of your consent to TMS will not in any way alter your right to continued treatment with the best alternative methods available.
- You have the right to seek a second opinion about having this treatment.
- You have the right to have your family/significant others informed and educated about your treatment.

**The The Southport Private Hospital TMS Information Booklet is an attempt to be as comprehensive as possible but it cannot cover every eventuality or query as the circumstances of individuals and patients psychiatric treatment may differ substantially. This material is not a substitute for advice from your Psychiatrist.**



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