

Frequently Asked Questions - rTMS

What is MRI-guided Neuronavigation?

At Modalis we utilise MRI-guided neuronavigation as our method for determining the target site during coil placement in TMS. This means that the patient's individual MRI image is used to allow for 3D-guided placement of the coil, taking into consideration the specific anatomical details of the patient's individual brain structure and external navigation points. This allows the TMS Clinician to position the coil precisely over a specified target location within millimeter accuracy. The coil's correct positioning is one of the most critical elements of a successful treatment.

Are there any patients who should not receive TMS?

A clinician who has expertise in TMS treatment will complete a thorough assessment prior to treatment to ensure safety and suitability. In general, patients who have a history of epileptic seizures or those who have magnetic metal in their heads should not receive TMS. This can include (not exhaustive):

- Metal stents in the neck or brain
- Deep brain stimulators
- Aneurysm clips or coils
- Metallic implants in your head, ears, eyes or neck (not including dental implants)
- Facial tattoos with metallic ink
- Other metal objects around your head region

Patients with non-epileptic seizures are generally safe to have TMS treatment.

Do patients need to be hospitalised for TMS?

No, TMS can be conducted in an outpatient setting, at any of our multiple clinics. No sedation or anaesthesia is required and the patient is fully awake and aware during the treatment. There is no specific recovery time, so patients can drive home after their treatment and resume their normal daily activities.

What happens after being referred for TMS?

After we receive the referral, our TMS Clinicians will contact the patient for a short screening call, and organise an MRI referral (if applicable). After having the MRI, patients will be booked for their Initial Consult & RMT appointment. Some patients may also have a short pre-consent phone call prior to this appointment.

Is there any specific preparation required?

Prior to the initial consult, patients will usually be sent for an MRI to rule out any organic causes for their depression. The MRI brain images will also be uploaded to the TMS neuronavigation program and used to guide the treatment, to ensure accurate targeting of the brain area. In most cases, patients will not need to do any other specific preparation before the treatment.

What happens during the Initial Consult & RMT?

The first appointment is the Initial Consult & RMT with one of our accredited TMS Specialists. This appointment is to determine treatment suitability and prescribe the specific treatment plan and protocol. This is followed by a "brain mapping session". This is done to ensure the TMS coil will be in the correct position and the right level of stimulation is applied. This involves placing the TMS coil over the scalp and several brief pulses are applied to establish what is called the patient's "Resting Motor Threshold" (RMT). The resting motor threshold is the minimum amount of energy needed to elicit a twitch in the thumb muscles. This level varies between individuals, but ensures the right amount of energy is used to stimulate the brain cells. Once this level has been established treatment can then be commenced. The motor threshold is not checked at every treatment, but may be reassessed if there is a concern this has changed.

What happens during a TMS treatment?

During each treatment patients will be asked to remove any magnetic related objects (e.g. mobile phones, jewellery). The patient will be seated in a comfortable reclining chair, with the TMS coil resting on the scalp to target the required location of the brain. During the treatment, patients will hear a series of clicking sounds and feel a tapping sensation on the scalp adjacent to where the coil is applied. This is produced from the TMS coil as it delivers the pulses of stimulation. The treatment is administered by an experienced TMS Clinician under the supervision of the treating TMS Specialist. The clinician will always be present to monitor the patient during the treatment, and ensure their safety and comfort. The patient can stop a treatment at any time by asking the staff member present.

How does the treatment feel?

Patients who have undergone TMS Therapy describe the first treatment as a 'tapping' sensation, which occurs alongside each TMS pulse. The sensation may feel uncomfortable, but can be managed effectively with buffers or over-the-counter pain relievers if required, and usually reduces with each subsequent treatment.

The TMS machine can produce a loud clicking sound when delivering the pulses of stimulation, so some patients may desire to wear earplugs during the treatment for their comfort. The sound is similar to that of an MRI machine, but usually quieter.

Are there any side effects?

TMS is a safe and well-tolerated treatment with no serious side effects. It does not affect memory or brain functioning. TMS has been used to treat thousands of people and only a small percentage of people discontinue treatment because of side effects. Some uncommon side effects include:

- **Headache & Fatigue:** these are the most common side effect and occur in about half of patients treated with TMS. The headaches are usually minor and generally resolve over the course of treatment. Simple over the counter pain medication (e.g. paracetamol) is usually sufficient to treat these headaches, but they are self-resolving.
- **Scalp discomfort:** this is usually minor and occurs in about 1/3rd of patients. This occurs where the coil is placed over the scalp and often resolves over the course of treatment. Adjustments can be made to the coil position and stimulation settings to reduce discomfort.
- **Seizures:** this is an extremely rare side effect and typically occurs in people at an independent risk of seizures. These seizures are usually of short duration and self-limiting. Patients are screened prior to treatment to ensure they do not fall in this at risk category. The chances of having a seizure during a TMS treatment is lower than the chance of having a seizure while taking an antidepressant or analgesic drug.

It is important to note that all patients are monitored during each treatment session by specially trained clinical staff. Any side effects will be managed and are reversible once the TMS treatment stops. As TMS is a relatively new treatment, there may be unforeseeable risks that are not currently recognised.

What do patients do during TMS sessions?

During each TMS session, patients are welcome to spend this time how they most prefer. Many patients listen to our relaxing meditation music, watch television, listen to their own music, read a book, or simply relax during the treatment session. Others like to have a chat to the TMS Clinicians, or observe the 3D-computer pictures demonstrating the location of the stimulated brain areas on a monitor. During each session, the treatment will be continually monitored by the TMS Clinician to ensure correct coil positioning and comfort level.

What happens at the end of a TMS course?

The patient's progress will be monitored throughout treatment (and adjusted as necessary), and a Final Review will be conducted to evaluate their outcomes and experience following their course of TMS therapy. Because of how TMS works in the brain, many patients continue to show improvements in the 2 weeks after finishing treatment. Final Review appointment will be scheduled for approximately two weeks after the final treatment session, to allow time to measure these continued changes, better assess how the TMS therapy has worked, and discuss the plan going forward.

What is maintenance TMS?

A maintenance course of TMS is usually comprised of a smaller number of sessions. How often a patient receives a top up session can also vary. Some patients receive one-off courses of maintenance when needed (known as "rescue TMS"), and others may benefit from an ongoing maintenance treatment plan (known as "routine TMS"). Patients who previously responded well to their acute course of TMS usually respond well to their maintenance sessions as well.

I have more questions, how do I get in contact?

If you have any further queries, please do not hesitate to contact one of our friendly reception staff by calling (08) 6166 3733 or emailing us at tms@modalis.com.au.

You can also book a free information call with one of our TMS Clinicians by filling out our form on our website: www.modalis.com.au/book-a-consultation