

# rTMS Repetitive Transcranial Magnetic Stimulation

## INFORMATION BROCHURE

### Risks

The main concern associated with rTMS is its potential to cause a fit or seizure. Safety guidelines to limit the dose of rTMS used, started in the late 1990's and there have been very few seizures related to the treatment since then. You should always tell your Doctor if you change your medication or experience other medical issues during a course of rTMS as medication changes or medical illness could affect the risk of seizure.

People excluded from rTMS include those with a diagnosis of epilepsy, an active brain illness such as a recent stroke or anything that may be affected by the magnetic field. This can include metal implants in the head, surgical clips, cardiac pacemakers, implanted medication pumps or electrodes. rTMS may also be avoided if a patient has an unstable medical condition (for example, heart disease) that could be exacerbated if they were to suffer a seizure. The safety of rTMS in pregnancy has not been evaluated and is not recommended at this time. If any of those conditions are relevant to you, it is very important that you let us know prior to undertaking treatment.

### How to access rTMS

Patients wishing to access rTMS at Toronto Private Hospital will need a referral from their GP.

Patients will require Private Health Insurance with Hospital Cover to access rTMS, or be willing to self fund.

For further information, call the Toronto Private Hospital Mental Health Intake Officer on 1800 311 470.



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During an rTMS procedure, an electrical current passes through a small coil placed close to the scalp.

## What is rTMS?

Repetitive Transcranial Magnetic Stimulation (rTMS) is a treatment for depression. The procedure involves the focused application of magnetic energy to superficial regions of the brain, thus inducing small electrical currents.

During an rTMS procedure, an electrical current passes through a small coil placed close to the scalp. This current induces a magnetic field. The magnetic field can pass into the brain without resistance. If the magnetic field is of sufficient strength, it will stimulate electrical activity in nerves below the coil, that is, in superficial regions of the brain. This stimulation may be repeated many times per second and with variation in intensity: these variations will determine the effects of the stimulation. rTMS can be applied in differing ways to either increase or decrease local brain activity.

## rTMS in Depression

Studies have evaluated the role of rTMS in the treatment of depression since the mid-1990's.

These studies have clearly shown that rTMS is effective especially in patients who have not responded well to antidepressant medication treatment.

## What happens when you have rTMS?

rTMS is administered five days per week (Monday to Friday) with sessions lasting between 20 and 45 minutes per day. During the rTMS session a patient is awake, alert and aware of what is happening at all times. While the patient is seated comfortably, a coil is placed on the scalp near the front region of the brain. This coil is connected to a machine that generates the electrical current.

The patient may feel a tapping sensation under the coil (this occurs due to a twitch produced in scalp muscles as the magnetic field crosses into the brain). The magnetic field can also stimulate small nerves around the head and face, producing a muscle twitch in the forehead, face or eye region.

Patients suffering with Depression will usually take several weeks to respond to the treatment. As Depression is a relapsing disorder it is likely that it will return after treatment for most patients some time in the future. Therefore, most patients are encouraged to continue with their treatment including antidepressant medications, to try and prevent relapse after the rTMS concludes.

## Side Effects

There are several potential side effects that might be experienced during an rTMS procedure. First, a headache or neck-ache can occur, similar to a tension headache, caused by the stimulation of nerves in the scalp. This occurs in approximately five of every one hundred participants studied and will often improve rapidly with simple pain medication such as 'Aspirin' or 'Panadol'. Second, the stimulation itself may be uncomfortable.

As the magnetic field passes into the brain, it can cause stimulation of muscles in the scalp causing them to contract. This can feel like a twitch, a tapping sensation or a brief muscle cramp. How strong this feels varies dramatically between patients: some feel almost nothing and others a stronger sensation. Those who do find it uncomfortable usually find they get used to the sensation over a few days and the strength of the stimulation pulse can be lowered until then.

