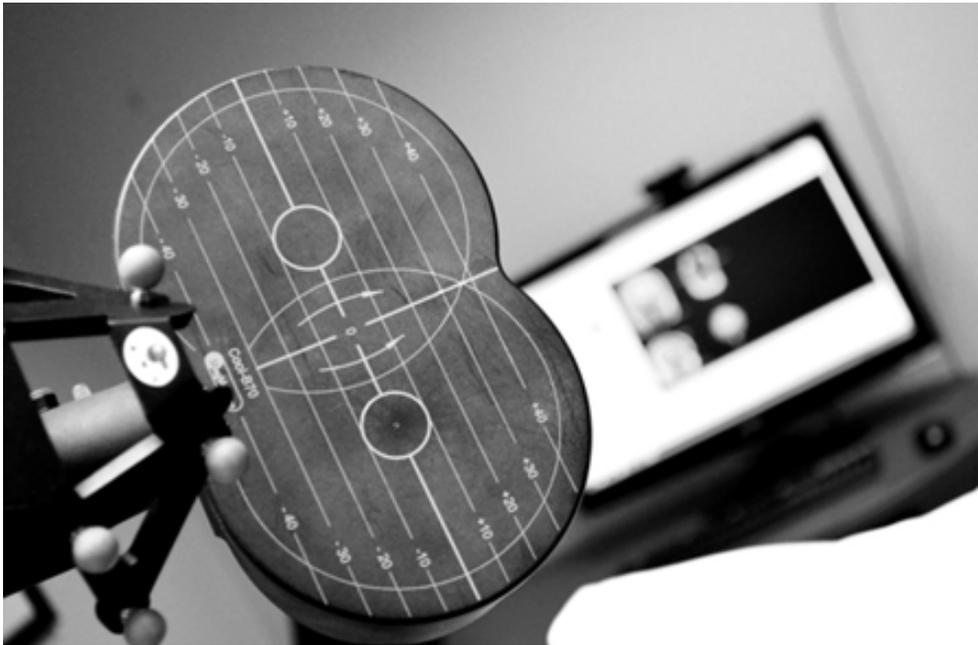


# Repetitive Transcranial Magnetic Stimulation (rTMS)

## at Toronto Western Hospital



rTMS treatment coil

Read this resource to learn:

- what rTMS is
- who is eligible for treatment
- what are the risks and benefits of rTMS
- what to expect during, before and after treatment
- where to get more information



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**What is repetitive transcranial magnetic stimulation (rTMS)?**

rTMS is a Health Canada approved treatment for treatment-resistant **major depressive disorder**. It is also being studied for use in other mental health conditions such as:

- Bipolar affective disorder
- Generalized anxiety disorder
- Obsessive compulsive disorder (OCD)
- Post-traumatic stress disorder (PTSD)
- Substance use disorders
- Eating disorders (anorexia and bulimia nervosa)
- Psychotic disorders
- Autism spectrum illness



All patients are screened to make sure they are eligible for rTMS brain stimulation

## **Who is eligible for rTMS?**

Most people consider rTMS when they:

- have major depressive disorder
- had more than 1 treatment (such as medication or therapy) that has not worked
- cannot tolerate side effects from medications

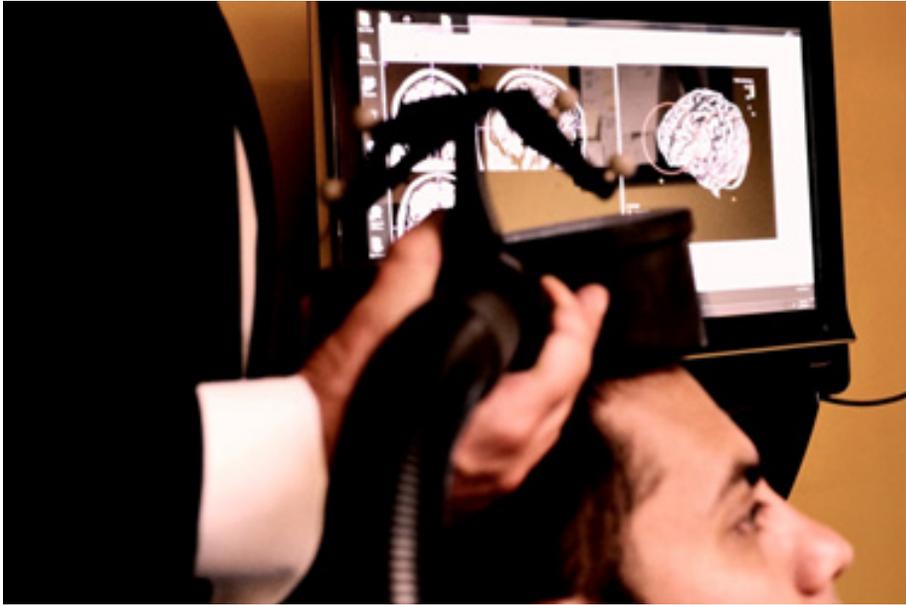
## **Who is usually not eligible for rTMS?**

- Patients with a history of seizures, epilepsy or certain neurological conditions
- Patients with implanted devices or metal foreign objects in the head or eyes (not including dental implants)
- Patients not able to stop taking medications that block the beneficial effects of rTMS

## **How does rTMS work?**

rTMS uses a focused electromagnetic field to stimulate certain areas of your brain. These areas affect your impulses, thoughts, emotions and behaviours, and may be more or less active in people with depression and other mental health disorders.

The doctor or rTMS technician stimulates the brain by placing a magnetic coil against your scalp in a specific area. The coil delivers magnetic pulses to the brain. Research shows that a full course of rTMS can help the brain return to normal functioning.



A technician positioning the coil for a patient receiving TMS treatment

### **What can I expect at the rTMS clinic?**

First, the doctor completes an assessment to see if rTMS is right for you. You learn about the risks, benefits and can ask any questions you have. If you are eligible, the doctor orders the type of rTMS you are planned to receive.

### **Day 1 of treatment**

- The doctor reviews the treatment process again. You are asked to sign an informed consent form for the treatment you will receive.
- The first appointment focuses on a calibration session or “**motor threshold**”. This session determines the dose of the stimulation you will receive. This visit lasts about 45 minutes.
- A full course of rTMS is usually 30 treatment sessions each day. Most patients receive treatment from Monday to Friday (9:00 am – 5:00 pm) for 6 weeks.
- Each session lasts about 15 minutes and your appointment time is the same each day. Missing treatment appointments may affect how well the rTMS treatment will work.

If you miss more than 1 treatment appointment, you need to speak with the doctor about your treatment.

## **How long do the effects of rTMS last?**

rTMS is more like exercise than surgery. The effects of rTMS do not last forever for most patients. Many patients have their symptoms again. If it works, the effects of rTMS usually last at least 4 to 6 months.

## **Will rTMS work for me?**

About half of people who receive rTMS for depression see at least some improvement. For example, for every 3 patients who receive rTMS:

- 1 will see full improvement of their symptoms
- 1 will see only some improvement, and will need other treatments to help control their symptoms
- 1 will not see any improvement and should explore other treatment options

## **What are the possible side effects?**

The side effects are usually mild and improve after the session. Patients can take ibuprofen (Advil) or acetaminophen (Tylenol) 1 to 2 hours before treatment to help relieve pain or headaches.

### **Common side effects**

- Scalp pain during treatment (feels like static electricity and gets better after the first few sessions)
- Headaches
- Fatigue (feeling tired) after treatment

### **Uncommon side effects**

Serious side effects are rare. They can include:

- seizures
- fainting spells
- manic episode, especially for people with bipolar disorder

Your doctor will talk with you about the side effects at your first appointment.

rTMS has been used since the early 1990s. So far, no long-term risks have been shown.

### **Can I continue taking my antidepressant medication while getting rTMS?**

Yes. If you are taking medication for depression, you can keep taking it before starting rTMS.

The rTMS doctor may suggest stopping certain medications if they affect your treatment.

**Important:** Do NOT make changes to your medication during the 4 weeks before and during the treatment. Any changes to medication would make it more difficult to see if rTMS works for you or not.

Also, tell your rTMS doctor of any changes to any drug or substance use during your treatment. Try to have the same amount of caffeinated beverages, such as coffee during your course of treatment. Any changes can affect your dose of rTMS.

### **What medications should I NOT take while getting rTMS?**

Talk to your doctor if you are taking any of these medications. They may cause the rTMS not to work as well.

<b>Brand Name</b>	<b>Generic Name</b>
Ativan	Lorazepam
Klonopin	Clonazepam
Valium	Diazepam
Xanax	Alprazolam

<b>Brand Name</b>	<b>Generic Name</b>
Other benzodiazepines (medications that end in “pam”)	
Lamictal	Lamotrigine
Lyrica	Pregabalin
Neurontin	Gabapentin
Tegretol	Carbamazepine
Topamax	Topiramate
Dilantin	Phenytoin
Epival	Divalproex/Valproate
Frisium	Clobazam
Keppra	Levetiracetam

### **Do I have to pay for rTMS?**

No. rTMS is not covered by OHIP at this time but our clinic pays your treatment costs.

## **Preparing for Treatment**

### **1. First Appointment:**

You meet with the psychiatrist in the clinic who sees if you are eligible and helps you decide if rTMS is right for you.

### **2. Calibration Session:**

The doctor meets with you to explain the treatment and review the risks, benefits, and answer any questions you may have. You will be asked to sign an informed consent to treatment form before your calibration session and rTMS treatments.

The doctor puts the magnetic coil on an area near the top of your head and watches to see if your thumb or toe moves. The amount of stimulation it takes to move your thumb or toe helps to decide your stimulation level.

It may feel strange and new for your thumb and toe to move in this way but most patients get used to it quickly.



A doctor finding the target region during the calibration session.

## **During Treatment**

### **Where do I go for treatment?**

Check in at the reception desk before each session (see the end of this brochure for directions).

Please arrive on time for each session to fill out the daily questionnaires.

The rTMS technician will provide you with a new questionnaire each day. The daily questionnaire helps you and the doctor track your treatment progress. Be sure to call the clinic 48 hours before your appointment if you need to cancel a session

## **What happens during the treatment?**

1. You sit in a comfortable chair. You are awake the entire time. You won't need anesthesia or medication.
2. The rTMS technician places the rTMS coil against your forehead. You are asked to hold your head steady during the treatment. This is so the coil stays in place.
3. When the treatment begins, you feel short bursts of stimulation on your scalp followed by short pauses. Many patients describe the feeling as similar to static electricity on their nose, teeth and forehead. This feeling tends to be the most intense during the first few sessions until the nerves get used to it.

Each treatment lasts about 15 minutes.

## **After Treatment**

### **Do I have to change my activities after rTMS?**

No. You can return to your usual activities right after the session including driving.

You may bring a support person to the first few sessions. They will be asked to wait in the hallway during the treatment. There may be restrictions on this depending on current hospital policies.

### **What happens when I finish my course of treatment?**

You will be asked to return to the clinic for a follow-up appointment. The clinic administrative assistant will help you to book this appointment. Your follow-up appointments will be with the rTMS clinic doctor.

Once the rTMS clinic doctor sends the results of the rTMS back to your referring doctor, your referring doctor can help you follow-up with any recommendations included in their summary.

If rTMS treatment helped you and you want to try it again in the future, you will need a new referral to the clinic.

## When to get medical help

**In case of an emergency, call 911.**

If you are having thoughts of harming yourself at any time, please call the Distress Centre Helpline **416 408 HELP (4357)** or visit your closest emergency department.

Do not use the clinic voicemail or email because we may not be able to respond quickly.

## Where can I find more information about rTMS?

Visit the Poul Hansen Family Centre for Depression website:

- [https://www.uhn.ca/MCC/Clinics/Poul\\_Hansen\\_Centre](https://www.uhn.ca/MCC/Clinics/Poul_Hansen_Centre)

## Where to find us

### The Poul Hansen Family Centre for Depression

Toronto Western Hospital

399 Bathurst Street (northeast corner of Bathurst and Dundas Streets)  
Main Pavilion – 7th Floor, Room 418 (take **Main elevators** to the 7th floor and follow the signs for Poul Hansen Family Centre for Depression)

Phone: 416 603 5106

Visit [www.uhn.ca](http://www.uhn.ca) for more detailed directions and maps.



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