

# Repetitive transcranial magnetic stimulation (rTMS)

Repetitive Transcranial Magnetic stimulation (rTMS) is a medical treatment for major depression.

It involves placing a padded device on the head. The device uses a magnetic coil to stimulate parts of the brain that regulate our moods.

rTMS is a safe treatment and has few side effects. However, as it is relatively new, rTMS can be difficult to access outside major cities. It can also be expensive.

## Why is rTMS used?

- It provides an additional treatment option for depression.
- It's useful when you're having trouble coping with medication, or if medication is not working.
- It is safe and has few side effects.
- It doesn't affect memory or thinking ability.
- It improves depression in about half of patients.

“rTMS is particularly useful for patients who have not got better with antidepressant medications, or for those who have difficulty coping with the side effects of medication.”

Professor Colleen Loo, psychiatrist

## What happens during rTMS?

Treatment is provided in a specially equipped room.

You are awake and sit in a comfortable chair. You'll be asked to put on some hearing protection (like a pair of ear-muffs) because the rTMS device makes loud clicking noises.

The device is placed on your forehead. As the treatment begins, you may hear a clicking sound. As the magnetic field stimulates the nerves and muscles, you may also feel a tapping sensation on your scalp.

A nurse will stay in the room with you during treatment.

Afterwards, you will be able to get up and carry on with your day as usual.

A course of treatment usually involves daily sessions of around 30–40 minutes, over a period of 4–6 weeks. Your psychiatrist will decide how long your treatment should be.

## How does rTMS work?

The magnet used in rTMS stimulates nerve cells (neurons) in the brain.

Repeatedly stimulating the nerve cells helps the frontal areas of the brain (responsible for thinking and impulse control) to regulate the deeper, emotional areas of the brain. This has an anti-depressant effect.

## What are the side effects?

The most common side effects of rTMS are:

- headache
- scalp discomfort
- muscle twitches.

Many patients report that side effects disappear after treatment, and get less noticeable over time.

There is a small chance that rTMS could cause a seizure. This is extremely rare but it means that rTMS should only be performed under the supervision of a psychiatrist.

## Who can give rTMS?

A psychiatrist recommends rTMS treatment and manages your overall treatment plan.

A nurse will usually deliver the actual treatment, under the guidance of your psychiatrist.

## Where do I go to have rTMS?

You can have treatment in a hospital or clinic. In New Zealand, rTMS is available only in private clinics and through research trials at some universities.

Generally, psychiatrists recommend outpatient treatment (where you come in during the day) over inpatient (staying overnight in hospital) to avoid interrupting your day-to-day life.

It's important to stay connected to your family and other supports during and after treatment.

“Treatment has been really good for me. I've had no side effects at all.

I go and have my treatment and then get on with the rest of my day.

Sometimes I've gone shopping afterwards.

My depression is improving. I feel happier and more balanced and not so hopeless.”

Katie, rTMS patient, Victoria

## How much does rTMS cost?

A single session of rTMS costs around \$160–\$200 AUD. You might need a course of 20 or more sessions over 4–6 weeks.

If you are admitted to hospital, private health insurance **may** cover some of the costs.

A limited number of private health insurers cover outpatient appointments. Call your health insurer to check if you are covered.

In Australia, Medicare does not cover the cost of rTMS. In New Zealand, rTMS is not subsidised.

## How do I arrange to get rTMS?

Ask your psychiatrist if this treatment could be suitable for you.

If you don't have a psychiatrist you see regularly, speak to your GP. You can discuss your symptoms and your GP can refer you to a psychiatrist if needed.

➔ Find a psychiatrist [www.yourhealthinmind.org/find](http://www.yourhealthinmind.org/find)

“The safety of rTMS is well-established. There are no common adverse side effects, and none of the side effects that are associated with anti-depressant medications. Very few patients stop treatment due to side effects.”

Professor Paul Fitzgerald, psychiatrist

## Common questions about rTMS

### Is rTMS safe?

Yes. Scientific studies have shown that rTMS is a safe procedure.

### When will I notice a difference in how I feel?

Most people begin to notice their mood improves after two weeks of treatment. Some people say their mood goes up and down during a course of treatment.

### Will rTMS cure my depression?

Half of people who receive rTMS for depression say it improves their symptoms.

There is a chance that the depression will come back. You may need a further course of treatment if this happens.

Some people may need ongoing rTMS treatments to stay well.

Medication and/or psychological treatment (talking therapy) may also be offered to help you manage your symptoms after rTMS treatment is over.

## Will rTMS hurt?

No. rTMS usually doesn't hurt. You may notice some discomfort on your scalp during treatment and a tapping feeling on your forehead. The discomfort goes away as soon as the treatment session is finished.

## Is rTMS the same as electroconvulsive therapy?

No, rTMS is a completely separate treatment. rTMS uses a magnetic field, rather than an electrical current to stimulate the brain.

Both treatments are effective for treating depression.

Your psychiatrist will prescribe the treatment that will best help you to manage your depression or other mental health condition.

➤ More about electroconvulsive therapy  
[www.yourhealthinmind.org/ect](http://www.yourhealthinmind.org/ect)

## Cultural aspects

If you are Māori, be advised that rTMS treatment involves touching your head.

You may request to involve a cultural advisor for any aspect of your treatment.

## Remember

- ✓ rTMS is a safe treatment for major depression.
- ✓ Around half of patients who have rTMS treatment notice an improvement.
- ✓ Side effects are minimal, and usually resolve after a few treatment sessions.
- ✓ rTMS may be hard to access and can be expensive.
- ✓ Speak to your GP or psychiatrist if you think this treatment could be right for you.

This fact sheet is also available online at [yourhealthinmind.org](http://yourhealthinmind.org)

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