

# Repetitive Transcranial Magnetic Stimulation (rTMS) Factsheet





## **Introduction**

This leaflet is for anyone who wants to know more about rTMS (repetitive Transcranial Magnetic Stimulation). It looks at how rTMS works, why it is used, its effects and side effects, as well as alternative treatments. If you are not sure about anything in this leaflet please ask a member of staff.

## **What is rTMS?**

rTMS is a treatment for depression. It works by delivering magnetic pulses that stimulate the areas of the brain that regulate mood. This increases the activity of the brain cells and improves the symptoms of depression in the process.

A large body of research on this treatment has been published. It shows that many patients experience a significant improvement in their depressive symptoms when treated with rTMS and some recover completely. This is despite the fact that most of these patients had already tried antidepressants unsuccessfully before they tried rTMS. The effectiveness of rTMS has been recognised by the National Institute for Health and Clinical Excellence (NICE), which now recommends this intervention as a treatment for depression.

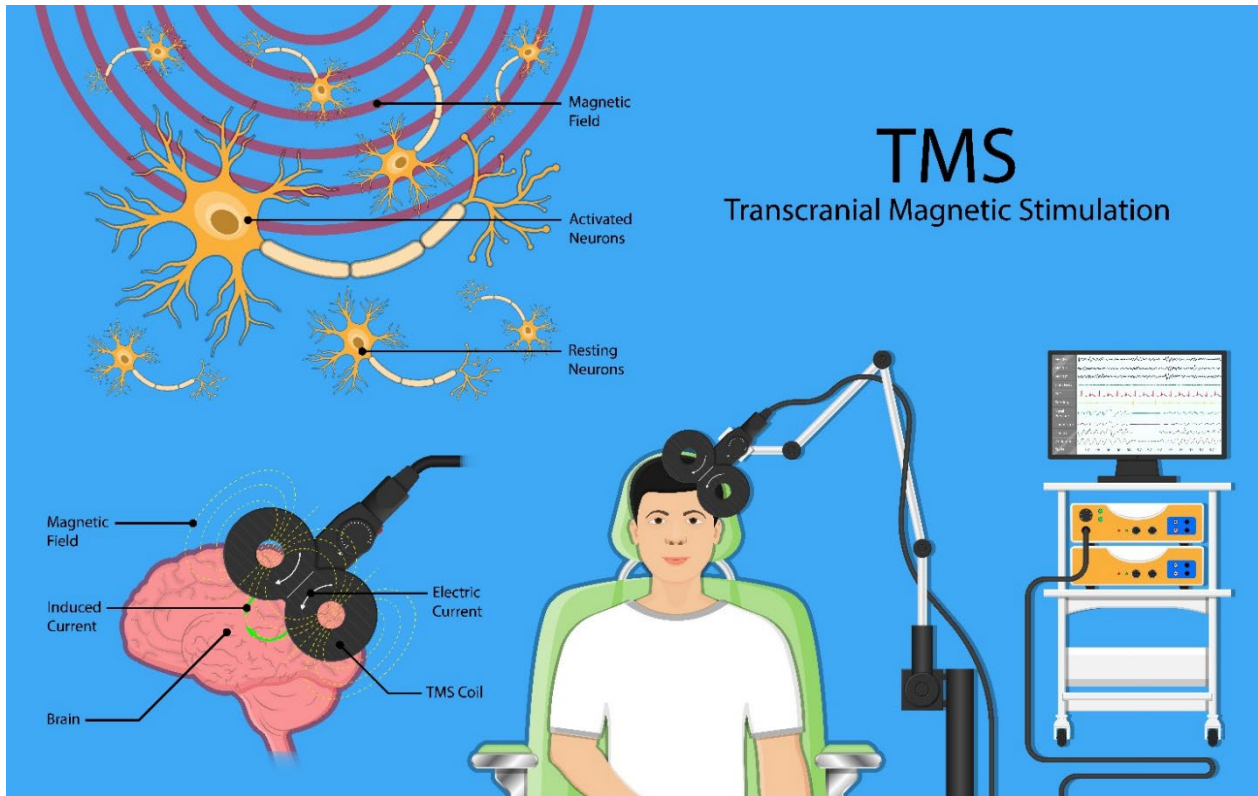
## **Is it suitable for all patients?**

rTMS is recommended for depressed patients who either have not benefitted from taking antidepressant medication, or do not wish to take this type of medication. In order to have this treatment, you must have a diagnosis of depression, or mixed anxiety and depression, although this does not necessarily need to be your only diagnosis.

You will need to be able to come to the Physical Treatment Centre, Hadrian Clinic, Campus for Ageing and Vitality, Westgate Road, Newcastle upon Tyne, NE4 6BE, daily (Monday – Friday) for a period of several weeks.

rTMS is not recommended for people experiencing hallucinations or who have psychotic beliefs, or for those who are actively suicidal, unless they are in-patients on a ward.

## What does the treatment involve?



This non-invasive method of brain stimulation relies on electromagnetic induction using an insulated coil placed over the scalp, focused on an area of the brain thought to play a role in mood regulation.

The coil generates brief magnetic pulses, which pass through the skull and into the brain. The pulses generated are of the same type and strength as those generated by magnetic resonance imaging (MRI) machines. People often say that rTMS feels like a tapping on the side of their head.

The procedure does not need to be done under anaesthetic and you can leave hospital the same day. You can drive or go to work after having treatment.

## **Who administers rTMS treatment?**

The treatment itself is administered by an experienced rTMS technician who has had the required training to safely administer the treatment under the supervision of an rTMS nurse. The technician will be with you during your treatment and can answer any questions you may have.

You can stop a treatment at any time by asking the staff member present. The treatment can be paused and resumed at any point during the session.

## **Where and when will I have my rTMS?**

Currently rTMS is delivered at the Physical Treatment Centre, Hadrian Clinic, Campus for Ageing and Vitality, Westgate Road, Newcastle upon Tyne, NE4 6BE.

It is usually given once daily, Monday to Friday, over two to six weeks. The staff will give you an allotted time for your appointment. The treatment usually takes less than 30 minutes depending on the type of treatment you are prescribed.

It is possible to have days off treatment if you are unable to make one due to illness or other commitments. We suggest a gap of no more than three days without treatment, and that the full treatment course (usually 20 sessions) is completed within six weeks.

## **Are there any special preparations before I have my rTMS treatment?**

You will need to remove any hearing aids, jewellery, including necklaces, earrings, face or tongue studs, and hairgrips. You can take your phone into the room but this will need to be put to one side during treatment. You can wear your own clothes. Please ensure you have had something to eat and drink before your appointment. There will be plenty of time to use the bathroom before your treatment if you need to.

## **What can I expect at my first appointment?**

The first session will be approximately 1 hour long, all following treatments will be 30 minutes. rTMS administration involves placing a device on the surface of your scalp, whilst you are sitting comfortably in a chair.

We all differ in terms of the strength of magnetic stimulus required to stimulate our brains. To determine the appropriate level for you, we will first deliver short magnetic pulses to define the level at which small twitches are noticed in your hand. This is done by placing the device on the scalp surface directly above the brain region responsible for your hand movements.

Following this, we will position the device at a different brain region that is relevant for treating depressive symptoms. You will receive a sequence of several short bursts of stimulation via the device, with routine gaps in between each burst. During these bursts you will hear a series of clicking sounds and will feel a tapping sensation from the magnet. This will last for 20 minutes.

A technician will stay with you throughout your treatment. You can listen to music or read a magazine however it is important to keep your head still. The clinic chair is fitted with head supports to make this a little easier.

## **What happens after the rTMS treatment?**

As rTMS does not require any sedation or general anaesthesia, and you are fully awake and aware during the treatment there is no “recovery time”. Some patients may feel tired after the treatment; this is normal. You can drive after having an rTMS session and continue with other activities as normal.

During the course of treatment the team may need to reassess your progress and nurses may ask you to complete questionnaires to measure improvement.



## **Is it safe?**

rTMS is non-invasive, which means that it doesn't require any needles or anaesthetic. It is administered as an outpatient procedure which takes around half an hour per session. NICE states that there are no major safety concerns with rTMS. There is a very small risk of having a seizure, but this is comparable to the risk associated with taking an antidepressant tablet. Before embarking on the treatment, a clinician will go through a safety checklist with you and rule out any potential safety issues.

## **Will I experience any discomfort?**

The magnetic pulses produce a clicking sound which can be loud, but you can wear ear plugs if this is more comfortable. You will feel a tapping sensation on your scalp where the coil is placed. In most cases, this sensation is neutral and perfectly bearable, although in a minority of cases it can be a little uncomfortable. Some people also experience twitching in their face during the treatment. If either of these things happen, the position of the coil can be altered to make it more comfortable.

## **What are the side effects of rTMS?**

- rTMS is well-tolerated and associated with few side-effects. Current evidence suggests around 1 in 20 people may experience an adverse effect.
- The most common side-effect is discomfort at the treating site. This is usually mild and generally gets less noticeable over the course of the treatment. Over-the-counter pain medication can be used to treat discomfort if needed and can be taken half an hour before treatment.
- Headaches can sometimes occur after the treatment, again over the counter pain medication can be used.
- Very rarely people feel faint or dizzy during the treatment. This can happen at any time during treatment and the technician will discontinue treatment and lie you flat until you feel better. Treatment can usually continue the following day.
- There is a small risk of a seizure with this treatment but this is very low (less than 1 in 1000).

## **Can I eat or drink before my rTMS treatment?**

Yes, rTMS does not need anaesthesia therefore you are advised to make sure that you have something to eat and drink before your appointment.

## **Should I take my medication before having rTMS?**

You should take your medication as prescribed, unless otherwise specified by your doctor. Generally your mental health medication will remain unchanged during treatment. It may be that some medication can be stopped after a successful course, this will be done in consultation with your GP or psychiatrist. Most patients elect to continue antidepressants especially if it has made some positive difference to symptoms and where side effects are not too troublesome. Continuing antidepressants also reduces the risk of experiencing a relapse of depressive symptoms in the future.

## **How long do the benefits last?**

Like any other treatment for depression, once an improvement or even recovery has been achieved, there is a need to maintain this improvement, so you do not become ill again. In the case of rTMS, you may need to have top-up sessions every so often in order to keep you well, as well as any other maintenance intervention that your consultant psychiatrist may recommend for you, such as tablets, etc.

## **Why is it given when there are other treatments available?**

Treatments for depression include a range of psychological therapies and antidepressant medications. In severe depression that has not responded to other treatments, electroconvulsive therapy (ECT) is sometimes used.

rTMS is usually used in patients who have not recovered with psychological therapies or antidepressants; or who develop side effects with medications.



## How does it compare with ECT?

People who are very severely depressed, to the point that they may have stopped eating, or are experiencing psychotic symptoms, will do better with ECT. In other cases, rTMS and ECT are similarly effective.

## Can I change my mind?

Yes. We will ask you to sign a consent form before your course of rTMS starts but you can withdraw your consent at any time. If you do withdraw your consent it is important to discuss your reasons for doing so with your doctor so that you can consider alternative treatments.

Detained patients under the Mental Health Act or patients lacking mental capacity are currently not considered for this treatment.

## Where can I get more information?

### Further information

- National Institute for Health and Clinical Excellence (NICE) Repetitive transcranial magnetic stimulation for depression. Available from: <https://www.nice.org.uk/guidance/ipg542>
- National Institute for Health and Clinical Excellence (NICE). Interventional procedure overview of repetitive transcranial magnetic stimulation for depression. Available from: <https://www.nice.org.uk/guidance/ipg542/evidence/overview-final-pdf-6723934381>
- Depression in adults: the treatment and management of depression in adults. NICE clinical guideline 90 (2009). Available from: <http://www.nice.org.uk/guidance/CG90>
- The Royal College of Psychiatrists Statement on Repetitive Transcranial Magnetic Stimulation for Depression. Available at: [https://www.rcpsych.ac.uk/docs/default-source/about-us/who-we-are/ectcommittee-repetative-transcranial-magnetic-stimulation-statement-may18.pdf?sfvrsn=695e93be\\_2](https://www.rcpsych.ac.uk/docs/default-source/about-us/who-we-are/ectcommittee-repetative-transcranial-magnetic-stimulation-statement-may18.pdf?sfvrsn=695e93be_2)
- NHS Treatment for Clinical Depression. Available from: <https://www.nhs.uk/conditions/clinical-depression/treatment/>

## References

A full list of references is available on request by emailing [pic@cntw.nhs.uk](mailto:pic@cntw.nhs.uk)

## What if I have a comment, suggestion, compliment or complaint about the service?

If you want to make a comment, suggestion, compliment or complaint you can:

- talk to the people directly involved in your care
- ask a member of staff for a feedback form, or complete a form on the Trust website [www.cntw.nhs.uk](http://www.cntw.nhs.uk) (click on the 'Contact Us' tab)
- telephone the Complaints Department Tel: 0191 245 6672
- email [complaints@cntw.nhs.uk](mailto:complaints@cntw.nhs.uk) Please note that information sent to the Trust via email is sent at your own risk
- We are always looking at ways to improve services. Your feedback allows us to monitor the quality of our services and act upon issues that you bring to our attention.

You can provide feedback in the following ways:

- the quickest way for you to do this is to complete our short online survey at [www.cntw.nhs.uk/poy](http://www.cntw.nhs.uk/poy)
- complete a Points of You survey, available on wards, reception areas or from staff.





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