

What is the process like?

Before treatment:

Your psychiatrist will refer you for an assessment with a pTMS doctor. You will have a pre-treatment consultation with the doctor and will be given a set of questions to complete. A nurse will schedule you for a fMRI brain scan prior to your treatment.

During treatment:

The pTMS procedure does not require any anesthesia or sedation, so you will remain awake and alert throughout the treatment. A precision tracker will be attached to your head to ensure accurate placement of the magnetic coil.

You will be required to wear earplugs to minimise noise during the treatment. It is important to refrain from activities, such as using your phone or reading, during treatment.

Once seated, a magnetic coil will be gently placed on the side of your head. The pTMS device will be adjusted to deliver a series of pulses—just enough to cause a twitch in your hand or foot. The magnetic coil will then be positioned at the front of your head, targeting the areas involved in depression or OCD. The treatment will consist of a series of pulses aimed at alleviating your symptoms. During which, you will hear a clicking sound and feel a tapping sensation on your scalp.

Our team is committed to your progress after treatment. We encourage you to discuss any concerns and feelings you may have and to ask questions as they arise. Please inform our nurses if you experience any side effects during or after treatment, or of any changes in the following:



Your caffeine intake



Your sleep pattern



Your medication



Scan for
more information



National University Hospital

5 Lower Kent Ridge Road, Singapore 119074

OneNUHS Hotline: (65) 6908 2222

OneNUHS General Enquiries: contactus@nuhs.edu.sg

OneNUHS Appointments: appointment@nuhs.edu.sg

www.nuh.com.sg

Take charge of your health and
access health information and
services across NUHS institutions.

[Download the NUHS App now!](#)



Scan to download

The information provided in this brochure is meant for educational purposes and may not be used as a substitute for medical diagnosis or treatment. Please seek your doctor's advice before starting any treatment, or if you have any questions related to your health, physical fitness or medical conditions.

© 2025, National University Hospital (Singapore) Pte. Ltd. All rights reserved. No part of this publication may be reproduced or shared without prior permission from National University (Singapore) Pte. Ltd.

Information is correct at time of printing (AUG/2025) and is subjected to revision without prior notice.



Personalised Transcranial Magnetic Stimulation (pTMS)

What is Transcranial Magnetic Stimulation?

Standard transcranial magnetic stimulation (TMS) is a non-invasive medical procedure that stimulates specific areas of the brain to treat conditions such as depression or Obsessive-Compulsive Disorder (OCD) in adults.

Using an insulated coil placed on the scalp, Personalised TMS (pTMS) generates brief magnetic pulses, similar in type and strength to those used in magnetic resonance imaging (MRI) machines, targeting the regions of the brain associated with these conditions.

pTMS adds a target based on the advanced analysis of an individual's functional brain scan (fMRI). This approach allows for multiple treatments in a single day, increasing the likelihood of response to treatment while reducing the time needed to elicit a response.

Who should consider pTMS?

pTMS may be a beneficial option for patients who have not responded well to antidepressants and psychotherapy, or for those who cannot tolerate medication.

However, it is not suitable for everyone. It is essential to consult your doctor to determine if pTMS is right for you, particularly if you have:

- A history of seizures
- Non-removable magnetic-sensitive metal in your head or within twelve inches of the magnetic coil, such as
 - + Aneurysm clips or coils
 - + Cardiac pacemakers or implantable cardioverter defibrillator (ICD)
 - + Cardiac stents
 - + Electrodes to monitor your brain activity
 - + Facial tattoos with metallic or magnetic-sensitive ink
- + Implanted stimulators
- + Metallic implants in your ears or eyes
- + Stents in your neck or brain
- + Shrapnel or bullet fragments
- + Other metal devices or objects implanted in or near your head

What are the risks of pTMS?

While pTMS is generally well-tolerated, there are some potential risks associated with it. It is important to speak with your doctor beforehand if you have any concerns and communicate any discomfort to our staff during treatment.

Side Effects



Tapping over the stimulation site and facial twitching:

About one third of patients report a tapping sensation or facial twitching when the magnetic coil is activated. Our staff can adjust the settings or change the coil's location to make the procedure more comfortable for you.



Headaches:

Approximately one in 10 patients may experience headaches, typically due to muscle stimulation on the scalp. These headaches usually subside within a few hours and respond well to over-the-counter pain medications, like paracetamol.



Short-term hearing impairment:

The pTMS device may produce a loud clicking sound during treatment, so wearing ear plugs is necessary to protect your hearing. There have been no reported cases of permanent hearing impairment with proper hearing protection.

Please inform our staff right away if your earplugs become loose or fall out during the procedure.

Other Risks

There is an extremely small risk of experiencing a seizure during pTMS. If this occurs, your treatment will be stopped immediately, and our trained nurses will provide necessary medical assistance. Your doctor will be notified as well.

There is also a slight risk of the development of mania because of the pTMS treatment. Your doctor will monitor you for any signs of manic symptoms and advise what to look out for. Should you notice any concerning symptoms, please alert your doctor immediately.

For some patients, pTMS may not be effective, and there may be a risk of worsening of existing depression or OCD symptoms. It may be helpful for you to have a family member or caregiver assist you in monitoring any changes in your condition and to report them to your doctor immediately.

