

Patient information factsheet

Thalamotomy

We've given you this factsheet because we believe you may benefit from a surgical procedure called a thalamotomy. It explains what a thalamotomy is, what the procedure involves, and what the possible benefits and risks are. We hope it will help to answer some of the questions you may have. If you have any further questions or concerns, please speak to a member of our team.

What is a thalamotomy?

A thalamotomy is a surgical procedure used to treat a tremor (when you are not able to control shaking or trembling in part of your body). It involves destroying a tiny area of the thalamus (a part of the brain that controls our movements) using radiofrequency ablation (heat made by radio waves). The area that is destroyed by this procedure is called a 'lesion'.

Why have I been offered this procedure?

A thalamotomy is usually offered to people who have a movement disorder (a group of neurological conditions that cause either increased movements or reduced or slow movements), such as Parkinson's disease or benign essential tremor, and have trouble controlling their involuntary movements.

A member of our team has performed a physical examination to assess your condition and has discussed your medical history with you, including what treatments you have already received for your tremor. Following this assessment, we believe this procedure is the best treatment option for you.

What are the benefits of this procedure?

This procedure can:

- reduce the severity of your tremor (most people achieve around 80 to 90% improvement in their tremor after having this procedure)
- improve your quality of life

It is important to note that this procedure will not provide a cure for the underlying cause of your tremor. For example, if you have Parkinson's disease, the procedure will not improve any of your other symptoms caused by Parkinson's disease.

Are there any alternatives to this procedure?

There are some alternatives to having a thalamotomy, including continuing with medication or having deep brain stimulation. We will explain these alternative treatments to you in more detail during your clinic appointment.

Preparing for the procedure

Pre-assessment appointment

We will send you a letter in the post for a pre-assessment appointment. This will usually be a telephone appointment, but we may ask you to come into hospital if we need to perform a blood test. During this appointment, we will ask you questions about your health, medical history and home circumstances to ensure you are well enough for the procedure. We will also explain how to prepare for the procedure.

Eating and drinking

You must not eat or drink anything (nil by mouth) for six hours before each stage of the procedure. This is because each stage will involve a type of anaesthetic (medicines that are used during tests and surgical operations to numb sensation in certain areas of the body or induce sleep).

Medications

We will inform you during your pre-assessment appointment about which medications you will need to temporarily stop taking and which you can continue taking.

Please contact us as soon as you receive your appointment letter if you are taking:

- aspirin
- warfarin (if you are taking warfarin, we may need to admit you before the day of your procedure, so that we can make sure your blood is clotting properly)
- clopidogrel
- any other drugs which thin the blood (including some types of painkillers, such as ibuprofen and diclofenac)

If you are unsure, please check with us during your pre-assessment appointment.

New symptoms

Please contact us if you develop any new symptoms or are given a new medical diagnosis while you are waiting for your procedure, as this may affect your treatment plan.

Staying overnight

Although both stages of a thalamotomy are usually performed as day cases, some people may need to stay in hospital for a couple of nights after the procedure to recover. For this reason, please bring an overnight bag with you on the day of your procedure, including all the medications you are currently taking in their original packaging.

During the procedure

The procedure is split into two stages:

Stage one: An MRI brain scan

We will arrange for you to have an MRI scan of your brain a few weeks before the procedure. An MRI scan is a type of scan that uses strong magnetic fields and radio waves to produce detailed images of the inside of the body. The scan will help us to plan the finer details of your procedure.

The scan will be performed by a radiographer (a healthcare professional specialising in taking scans) and a radiologist (a doctor specialising in interpreting scans).

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To help us take high-quality images of your brain, we will give you a general anaesthetic (medicine to make you go to sleep) before this scan. This will help to control your tremor and reduce any movement during the scan. An anaesthetist (a specialist doctor who is responsible for providing anaesthesia to patients for operations and procedures) will explain this to you in more detail on the day of your scan. They will also be able to answer any questions you may have. If you are happy to proceed with the scan, we will ask you to sign a consent form.

Before your scan, we will place a cannula (a thin, plastic tube) into a vein in your arm, through which we will inject the general anaesthetic. Once you are asleep, we will take you to our scanning room and gently lie you on your back on the motorised bed of the MRI scanner (a short tube that is open at both ends). We will then move you into the scanner head-first to perform the scan. Once the scan is over, we will move you out of the scanner, remove the cannula from your arm and take you to our recovery room to wake up.

The scan will take approximately 45 minutes. However, please expect to be in hospital for approximately three hours in total.

You will be able to go home on the same day as your scan as soon as you are feeling well enough to do so. Please arrange for a responsible adult to take you home after your scan and stay with you for 24 hours.

Stage two: Thalamotomy (the surgical procedure)

We will send you an appointment letter in the post containing the details of where and when to report to on the day of your procedure.

When you arrive for your procedure, we will complete your admission documents and then check your blood pressure, blood oxygen levels, temperature, heart rate and respiratory rate. We will also ask you for proof (ideally an email or text notification) of a recent **negative** rapid lateral flow test. We will then ask you to change into a hospital gown.

The surgeon and anaesthetist performing your procedure will come and visit you to explain the procedure, including the possible benefits and risks, and answer any questions you may have. If you are happy to go ahead with the procedure, we will ask you to sign a consent form.

We will begin the procedure by inserting a cannula (a thin, plastic tube) into a vein in your arm. Once in place, you shouldn't be able to feel the cannula. We will then numb the area of your scalp that is to be treated with some local anaesthetic injections. Although you will be awake for the whole procedure, you should not feel any pain.

When the area is numb, we will temporarily fix a stereotactic frame (a medical device) to your head using some pins. The frame will help to keep your head completely still during the procedure.

Once the frame is in place, we will take you to have a CT scan. We will combine your CT scan images with your MRI brain scan images to help us identify the precise location for the treatment.

We will then take you back to the operating room, where we will give you a sedative (a medicine to help relax you) via your cannula. Once the sedative has taken effect, we will make a small hole in your skull using a drill. We will then insert a small, thin probe through this hole into the targeted area in your thalamus. Once we are happy with the position of the probe, we will ask you to follow some simple instructions in order to stimulate your thalamus. For example, we may ask you to move your arms. This allows us to assess how stimulation affects your tremor and to check for any side effects.

When we are happy we have successfully located the target area, we will heat the tip of the probe using radiofrequency. This is called lesioning.

Once the lesioning is complete, we will carefully remove the probe and the frame from your head.

The procedure will take approximately three hours.

After the procedure

Recovery

After the procedure, we will take you to our recovery room where you will stay for a short period of time while the sedative wears off.

We will then take you back to the ward where you will rest in a hospital bed until you are ready to go home. While you are on the ward, we will monitor your pulse, blood pressure and wound regularly. We will also offer you regular pain relief medication. Please let us know if you feel sick or if you have any pain.

It is important that you change your position in bed at least once every two to three hours to prevent pressure sores developing.

Going home

All being well, you should be able to go home the same day once the sedative and local anaesthetic have both worn off and you have started moving around. We will carry out some observations to make sure you are well before you go home.

If you go home on the day of your procedure, you will need to have a responsible adult take you home and stay with you for 24 hours.

We will explain what to expect after the procedure before you go home.

Work

After the procedure, you will need to have some time off work to rest and recover. We advise you to take four to six weeks off work. We will provide you with a sick note before you go home.

Driving

You will need to contact the DVLA to let them know what procedure you have had. It is likely that they will ask you not to drive for a period of six months after your procedure.

Washing and showering

You will be able to shower the same day after having your procedure. However, it is advisable not to get your wound wet for seven days after your procedure. When showering or bathing during this time, cover your wound with a waterproof dressing to protect it.

The first time you have a shower, it's a good idea to have a responsible adult at home with you, in case you feel dizzy or faint after having a sedative. Do not lock the bathroom door.

Are there any risks or complications?

A thalamotomy is a safe procedure, but as with any surgical procedure, there are some risks and potential complications. These include:

Stroke or neurological injury

This is a rare (0.5% chance), but serious complication.

Call **999** immediately for an ambulance if you experience any of the symptoms below:

- **Face** – your face drops on one side, you can't smile, or your mouth or eye droops
- **Arms** – you can't lift both your arms above your head and keep them there because of weakness or numbness in one arm
- **Speech** – your speech may be slurred or garbled, or you may not be able to talk at all, or you may have difficulty understanding what others are saying

Recurrence and reduction of tremor

10 to 20% of people who have this procedure may experience recurrence of their tremor after a few months. If this is the case, your neurology team will discuss what the next steps are with you.

The improvement in your tremor may not be as much as you had hoped for. Unfortunately, we are unable to say for certain before the procedure how much it will improve your tremor.

Infection

There is a very small risk that you may develop an infection after the procedure. To help minimise this risk, we will give you a dose of antibiotics before the procedure.

If you experience any of the symptoms below, please contact our movement disorder team on **023 8120 6157** (Monday to Friday, 9am to 4.30pm):

- pain
- a temperature (fever)

If you have any concerns outside of these hours, please contact your GP or go to your nearest emergency department.

Epilepsy

There is a small risk that this procedure may cause you to have epilepsy. Epilepsy is a common condition that affects the brain and causes frequent seizures (bursts of electrical activity in the brain that temporarily affect how it works). For more information about epilepsy, including the symptoms to look out for, please visit: www.nhs.uk/conditions/epilepsy/symptoms

If you think you may have experienced a seizure, please contact our movement disorder team on **023 8120 6157** (Monday to Friday, 9am to 4.30pm). If you have any concerns outside of these hours, please contact your GP or go to your nearest emergency department.

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Unwanted side effects

The lesion we create during the procedure will be permanent. This means if you experience any side effects because of the lesion, such as slurred speech, pins and needles or weakness, they may also be permanent. Unwanted side effects usually decrease in severity after a few months.

Risk to life

There is always a risk of death with any major surgical procedure. However, the risk of death resulting from this procedure is very low (less than 1%).

We will discuss all possible risks and complications with you before your procedure.

Follow-up care

We will arrange an appointment to see you in our clinic approximately three months after your procedure. We will discuss follow-up care during this appointment, if necessary.

Contact us

If you would like to proceed with this procedure, or if you have any questions or concerns, please contact us.

Neuro modulation team

Email: neuromodulation@uhs.nhs.uk

Useful links

www.nhs.uk/conditions/tremor-or-shaking-hands

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For help preparing for your visit, arranging an interpreter or accessing the hospital, please visit **www.uhs.nhs.uk/additionalsupport**

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