

Having heat treatment in your lungs for severe asthma (bronchial thermoplasty)

Respiratory Medicine

Information for Patients

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What is bronchial thermoplasty?

Bronchial thermoplasty is a procedure which may be offered as a treatment for severe asthma. It is sometimes used in patients who have asthma that is not controlled by medication. The procedure is only done in specialist hospitals, including Glenfield Hospital in Leicester. It is only available to patients aged 18 and over.

What does thermoplasty do?

The lungs contain lots of tubes called airways. Over time, severe asthma causes the tissue around the airways to change and thicken. This change is called 'airway remodelling'. This causes the airways to become narrower and makes it harder to breathe.

Thermoplasty reverses these 'airway remodelling' changes using heat. It can reduce the number of asthma attacks you have and improve your asthma symptoms. The benefits can last for over 10 years.

Does thermoplasty always work?

Thermoplasty is sometimes done in patients with severe asthma which is not controlled by medication. Most patients who have thermoplasty get some benefit, although some patients do not. It is not clear why some patients do not get the same benefits as others.

How will I be assessed for the procedure?

You will be seen by the asthma team in clinic so they can discuss thermoplasty with you and check if it is the right treatment for you. These checks will involve having some tests, such as breathing tests, blood tests, and a scan of your lungs.

**Health information and support is available at www.nhs.uk
or call 111 for non-emergency medical advice**

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What does thermoplasty treatment involve?

The treatment is done over 3 sessions about 3 weeks apart. A different part of the lungs is treated each time:

- Procedure 1: lower part of right lung
- Procedure 2: lower part of left lung
- Procedure 3: upper parts of both lungs.

A long thin flexible camera (bronchoscope) is passed through the mouth and into the lungs. A special probe is passed down the camera into the airway. The probe heats up the walls of the airway for 10 seconds. This heating is the thermoplasty treatment. The heat reduces the thickened tissue around the walls of the airways to open them up.

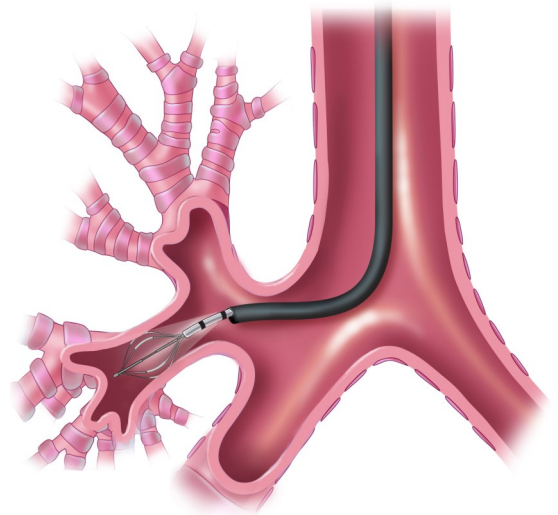
The probe is then moved to another part of the airway and the heating is repeated. This is done until all of the airways have been treated.

You will be awake during the procedure, but will be given sedation medication to make you comfortable. Local anaesthetic is sprayed in your mouth, throat and airways to numb these areas.

Each procedure takes about 30 to 40 minutes. There will be at least 4 members of staff (doctors and nurses) in the room with you during the procedure.

Thermoplasty is usually done as a day case. This means that most people go home the same day, after being checked for 3 to 4 hours. If you live a long way from the hospital, or have side effects, you may need to stay in hospital overnight. Please bring an overnight bag with you in case you need to stay in hospital.

You can usually eat and drink 3 hours after the procedure. You will need someone to take you home and stay with you for 12 hours after having sedation. You must not drive, operate machinery, drink alcohol, or sign legal documents for 24 hours after having sedation.



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What do I need to do before the treatment?

You should tell the asthma team if you have a chest infection or asthma attack in the 4 weeks before thermoplasty treatment. The team may need to rearrange your procedure if this happens.

You will be given a 5 day course of steroid tablets (prednisolone) to take before each thermoplasty procedure. These should be taken in the morning on the days listed here:

- For the 3 days before the procedure.
- The morning of the procedure.
- The morning after the procedure.

You should have nothing to eat or drink for 6 hours before the procedure (“nil by mouth”). This means that if your procedure is in the morning you should not eat or drink after 2am. If your procedure is in the afternoon you should not eat or drink after 7am. You may take small sips of water with any medication you need to take up to 2 hours before the procedure. You can take your inhalers as normal.

If you take blood thinning medication you will need to stop this for a few days before the procedure. This includes medication such as clopidogrel, ticagrelor, enoxaparin, dalteparin, warfarin, rivaroxiban, apixaban, dabigatran and edoxaban. **Your appointment letter will tell you how long to stop taking it for.**

If you take medication for diabetes (insulin or tablets), then please read the section ‘**Preparing for a bronchoscopy with diabetes**’ in leaflet number 255 ‘**Having a bronchoscopy**’. This will be sent to you with your appointment letter. It tells you what to do about your diabetes medication while you are nil by mouth.

Are there any side effects or risks from this procedure?

Although most patients have no major problems, there are some possible side effects of thermoplasty. We will explain these risks to you and you will be asked to sign a consent form.

The most common side effects, which are usually mild, are:

- a sore throat
- coughing up a small amount of blood
- a fever
- wheeze or tightness in the chest
- a cough

Serious side effects or risks are rare, but can include:

- difficulty breathing
- low oxygen levels
- abnormal blood pressure or heart rate
- chest infection
- lung puncture
- major bleeding from the lungs
- asthma attack

If you have any side effects you will be treated straight away. You may need to stay in hospital for observation or treatment. If you have any side effects after going home please follow the advice in the next section of this leaflet.

Aftercare advice following a bronchial thermoplasty procedure

After your procedure, one of our team will contact you on 2 occasions to check how you are and to see if you have any ongoing symptoms. We will usually contact you after 1 day, and after 1 week.

After the procedure you may:

- have a sore throat and some soreness in the chest.
- feel wheezy and breathless. You should use your rescue inhaler or nebuliser as needed (e.g. salbutamol/ Ventolin).
- cough up some phlegm which has streaks of blood in it. This normally disappears within 48 hours.
- have some coughing episodes. This should improve within 48 hours. You can use cough medication if the cough is disrupting your sleep or every day activities.

We will check on these symptoms by phone when we call you as a follow-up.

Medication you should already have at home (if you don't then let us know):

- Steroid tablets (prednisolone 50mg) to be taken the day after thermoplasty.
- Emergency antibiotics and prednisolone in case you need it – these should have already been provided at your asthma clinic appointment.
- Salbutamol/ Ventolin rescue inhaler or rescue nebuliser treatments.
- Cough medication (optional) - either over-the-counter or prescribed.

Contact the Severe Asthma Team on the number at the end of this leaflet, or seek immediate medical care if you:

- have a fever over 38 degrees.
- cough up more than 2 tablespoons of blood, or cough up blood for more than 48 hours.
- have a hoarse voice for more than 48 hours.
- can feel bubbles under your skin around your collarbone. These may crackle and pop when you press on them.
- have pain in your chest that does not get better after 48 hours.

Call 999 if you feel seriously unwell and think you need emergency medical help, or if you:

- cough up large amounts of fresh red blood.
- have sudden chest pain and shortness of breath.
- have severe trouble breathing, even after using your rescue inhalers.
- pass out (lose consciousness).
- have severe pain in your chest.

What happens after I have completed thermoplasty treatment?

Thermoplasty is a one-off treatment. After the 3 treatment sessions have been completed you will not need to have any further procedures.

Thermoplasty does not replace your other asthma medication and you should continue to take this as normal unless the asthma team tells you otherwise. You will be seen in the asthma clinic 6 weeks, 12 weeks and 6 months after your final thermoplasty session, to check how you are doing and adjust your medication if needed.

Being involved in research

The reason you are having thermoplasty is to treat your asthma. Sometimes the asthma team do research into the effects of thermoplasty. If you are suitable to take part in research then the team will discuss this with you. It is up to you to decide if you want to take part or not. No research data will be collected without your consent.

Contact details

If you have a problem attending your thermoplasty appointment please contact either:

- Endoscopy Unit: 0116 258 3130 (Monday to Friday, 8am to 5pm)
- Bronchoscopy appointments: 0116 258 2259 (Monday to Thursday, 8.30am to 2pm)

If you have any other queries about this procedure or your asthma, please contact the nurses in the Severe Asthma Team on **0116 258 3257** (Monday to Friday, 8am to 4pm) or email **severeasthaservice@uhl-tr.nhs.uk**

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