

# Thyroidectomy – an operation to remove all or part of the thyroid gland

Information for patients





## What is the thyroid gland?

The thyroid gland is an endocrine gland which makes hormones that are released into the bloodstream. These hormones affect cells and tissues in other parts of the body and help them to function normally.

The thyroid is made up of two lobes, each about half the size of a plum. The two lobes lie on either side of your windpipe, with the gland as a whole lying just below your Adam's apple.

The thyroid gland produces three hormones, that are released into the bloodstream:

- thyroxine, often called T4
- triiodothyronine, often called T3. In the body, T4 is converted into T3 and this is what influences the way cells and tissues work.
- calcitonin – this is involved in controlling calcium levels in the blood. With medullary thyroid cancer (MTC), too much calcitonin is produced, however this does not lead to any significant change in calcium levels.

Thyroxine and T3 can both be replaced by medication and the body can function perfectly well with little or no calcitonin.

Thyroid hormones T3 and T4 help to control the speed of body processes – otherwise known as your metabolic rate. If too much of these thyroid hormones is released, your body starts to work faster than normal and you develop 'hyperthyroidism'. This would make you feel overactive and anxious, hungrier than usual, and you would lose weight. However, if too little of these thyroid hormones is produced, your body will start to work slower than normal and you develop 'hypothyroidism'. This makes you feel tired and sluggish.

## Abnormal conditions of the thyroid

Abnormal conditions involving the thyroid include:

- part of the gland becoming enlarged (a nodule)
- the whole thyroid gland becoming enlarged (a goitre)
- production of too much hormone (hyperthyroidism)
- too little production of hormone (hypothyroidism)
- inflammation of the thyroid (thyroiditis).

## How are these conditions treated?

Thyroid disorders can be treated with medication, but sometimes surgery is required. We would recommend surgery if:

- you have cancer of the thyroid
- you have an enlarged thyroid which affects your breathing or swallowing
- you have hyperthyroidism and your overactive thyroid cannot be treated with anti-thyroid drugs or radioactive iodine. You would still need to take anti-thyroid medication or iodides before the operation, and might also need to take propranolol to control your heart rate. You would need to continue with all your treatment until the day of the operation.

## How is thyroid disease diagnosed?

Your surgeon will carry out an assessment of your symptoms and a clinical examination before deciding what tests are needed to diagnose your condition.

We will also carry out blood tests, which will show the levels of active hormone circulating in your body.

If you have a nodule, we will take a sample of tissue (fine-needle biopsy or aspiration of fluid) during your outpatient visit. This will help us to find out what type of cells are in the nodule (i.e. whether it is cancerous or not).

You may also have an ultrasound or CT (computerised tomography) scan, which will show the size and location of any abnormality in relation to surrounding structures, such as the windpipe.

# Thyroidectomy

A total thyroidectomy is an operation to remove all of the thyroid gland.

A thyroid lobectomy is an operation to remove one half (a lobe) of the thyroid gland.

Both operations are carried out under general anaesthetic, which means you are unconscious during the procedure.

The benefit of these operations can be:

- Removal of a large goitre which may be obstructing your airway.
- Treatment for Graves' disease (hyperthyroidism – overactive thyroid gland).
- Treatment of thyroid cancer.

## What does the operation involve?

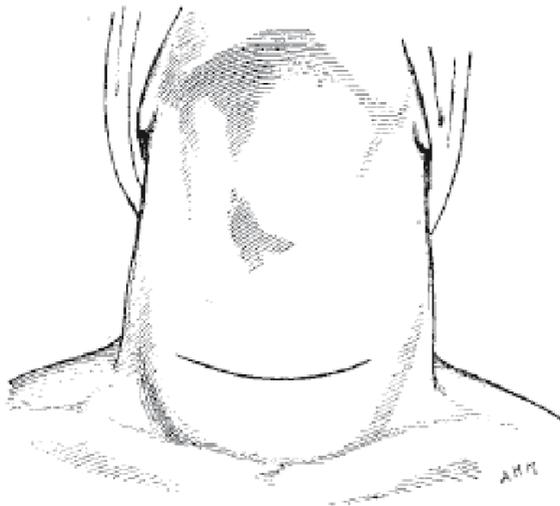
The surgeon will make a 2-2½ inch (5-7cm) cut across the front of your neck, just above your collar bone (see Figure 1).

The surgeon will then find and take care not to injure your parathyroid glands and the nerves which are attached to your larynx (voice box). The surgeon will free your thyroid gland from these and other surrounding structures and then remove all or part of it. The operation usually takes 1-2 hours, depending how big your thyroid is.

During your thyroid operation it may be necessary to remove some of the lymph glands from your neck. If your surgeon expects to remove lymph gland, this will be discussed with you in more detail.

The skin in your skin cut will be closed with a continuous stitch under the skin and some Steristrips (paper stitches).

Figure 1.



# What are the risks of having a thyroidectomy?

## **Voice changes**

There are three possible reasons why your voice may be affected after this operation:

- **Injury to the recurrent laryngeal nerve(s) (risk 1 in 100):**

There are two recurrent laryngeal nerves, one on each side of the neck. They pass behind the thyroid gland in the neck and into the larynx, where they control movements of the vocal cords.

If these nerves become 'bruised', they will not work properly after the surgery. However, they will recover and return to normal during the following few days or weeks.

Permanent damage to one of these nerves (a risk of 1 in 100) causes a hoarse, croaky and weak voice. Your body usually adapts to the damage and symptoms may get better with time. If your voice problems continue for more than 3 months we will refer you for voice therapy.

Permanent damage to both nerves is very rare, but is a serious problem. If this happens it may have to be treated by putting a permanent tracheostomy (breathing tube) into your windpipe in your neck.

- **Injury to superior laryngeal nerve(s) (risk 1 in 20):**

The external branch of the superior laryngeal nerve travels close to the blood vessels that feed the thyroid gland. These nerves control the tension of the vocal cords. Damage to one of these nerves results in a weak voice, although the sound of your voice will be unchanged. You might have difficulty in reaching high notes when singing, your voice may tire more easily and you might not be able to shout loudly.

- **Non-specific voice changes:**

Any operation on the neck can produce some change in the

voice, even when there is no injury to the nerves controlling movement of the vocal cords. Fortunately this is not normally significant and will recover within a few months of the operation. You might find your voice is slightly deeper and you might experience voice fatigue, when you find you need to have a little break after talking longer. This is significant mainly if you use your voice for professional reasons.

Voice changes are more likely to occur if you have a very large goitre or cancerous tumour. Approximately 15% of our patients (1 in 6) notice a change in the pitch of their voice, but most of them recover fully.

### **Low calcium levels (risk 1 in 50):**

During thyroid surgery the parathyroid glands can be bruised or damaged. There are four parathyroid glands, two on each side of the neck, each about the size of a grain of rice and tightly attached to the thyroid gland. They are involved in controlling the calcium level in the bloodstream.

It is normally possible for the surgeon to identify and save some or all of these glands, which helps to avoid a long-term problem.

Unfortunately, even when the glands have been saved they may not work properly for few weeks after the operation. This may cause your calcium levels to drop and you might experience tingling in your fingers and lips, a bit like 'pins and needles'.

About 25% of people (1 in 4) experience a drop in calcium levels in the first 2 days after surgery. To prevent the side effects you will be prescribed calcium tablets for the first two weeks after your operation. By then, your parathyroid glands should have returned to normal function. If the problem persists you might need to take extra calcium and/or vitamin D permanently.

There is a 1-2% (1-2 in 100) risk that you might need to be on long term calcium or vitamin D tablets; this could be for life or for up to a year.

**Bleeding after the operation:**

This is a rare complication that can lead to neck discomfort or, in more severe cases, breathing difficulties. Very rarely, you might need to return to theatre to have your neck explored so that we can deal with the cause of bleeding.

**Neck numbness:**

At the beginning of the operation, once you are asleep, we will give you an injection of local anaesthetic to help control pain at the site of the cut in your neck. This may cause a loss of sensation over your neck skin (up to your jaw line). This will gradually return within 24 hours, as the effect of the local anaesthetic wears off.

**Swallowing difficulties:**

Usually swallowing is improved after thyroid surgery, especially if you had a large goitre.

Occasionally, some mild difficulty with swallowing may develop after the operation. This is usually due to a tight scar between the skin and the windpipe. This creates discomfort during swallowing as the windpipe moves upwards and pulls on the scar. To prevent this from happening, you should keep your neck mobile, do some neck stretching exercises and massage the wound.

**Scar:**

The scar may become relatively thick and red for a few months after the operation, before fading to a thin white line. You may develop a thick exaggerated scar, but this is very rare. It takes about six months to one year for the scar to reach its final appearance.

**Wound infections:**

These rarely occur (1 in 200 people) but, if they do, can be treated with antibiotics.

## **Thyroid storm:**

This is an extremely rare complication that can occur after a thyroidectomy. Thyroid storm is a medical emergency and requires immediate treatment. It is caused when excessive amounts of thyroid hormones are released during the operation. This can affect people with hyperthyroidism who are not well treated with appropriate medication before their operation.

The symptoms are fever, weakness, palpitations, changes in mental status and, in some cases, coma (loss of consciousness). Death from thyroid storm is in the range of 20-30% (20-30 in 100) in people who experience thyroid storm. We have not seen this complication in our hospital for more than 10 years.

## **Risks of general anaesthesia:**

Modern anaesthesia is very safe and serious problems are uncommon.

After an anaesthetic it is common (risk 1 in 10) to experience the following:

- nausea or vomiting
- sore throat
- dizziness
- blurred vision
- headache
- itching
- aches
- pains
- backache.

Rare complications (1 in 1000 people) include:

- chest infection
- bladder problems
- muscle pains
- slow breathing
- damage to teeth, lips or tongue
- an existing medical condition getting worse.

Extremely rare complications (1 in 10,000 or less) are:

- damage to the eyes
- a serious drug allergy
- nerve damage
- equipment failure
- awareness (becoming conscious during your operation)
- death.

The risk to you as an individual will depend on: whether you have any other illness, personal factors (such as smoking or being overweight) or if you are having surgery which is complicated, long or done in an emergency.

Please talk to your anaesthetist about any pre-existing medical conditions you have, including any allergies.

For more information about risks associated with your anaesthetic visit [www.rcoa.ac.uk](http://www.rcoa.ac.uk) or talk to your anaesthetist on the day of your operation.

## Pre-operative assessment

Before your operation you will need to come for an appointment at the Pre-operative Assessment clinic. At this clinic we will ask you for details of your medical history and carry out any necessary clinical examinations and investigations to make sure you are fit to have the operation and anaesthetic. This is a good opportunity for you to ask us any questions you might have.

We will ask you about any medicines or tablets that you are taking – either prescribed by a doctor, bought over the counter or herbal remedies. It helps us if you bring details of your medicines with you – for example, bring the packaging with you.

## Consent

At the Pre-operative Assessment clinic we will give you a copy of the consent form and further information about what happens on the day of your operation. Please read these carefully. If you have any further questions, please ask a member of the surgical team on the day of your operation before signing the consent form.

## What happens on the day of your operation

We have a separate leaflet which explains how you should prepare for your operation, fasting instructions, the admission process, and going to the operating theatre. We will give you a copy of this leaflet at your Pre-operative Assessment visit.

When you come into hospital please bring all your medicines with you in the special green pharmacy bag, which we will give you at your Pre-operative Assessment appointment.

## Recovery after the operation

You will wake up in the recovery area with an oxygen mask on your face. The recovery nurse will look after you until you are awake and ready to go to the ward.

## Back on the ward

The ward nurse will check your temperature, pulse, breathing and blood pressure, and ask you about any pain you may have. We will offer you pain relief if you need it.

You will be allowed to drink water at first. Once you are able to drink without feeling sick, you will be able to have a warm drink and something light to eat. You will have an intravenous drip in your arm which will give you fluids. This can be removed as soon as you are drinking enough.

When you get out of bed for the first time a member of staff should be with you in case you feel light-headed or dizzy.

## After your operation

### **Thyroid function**

The day after your total thyroidectomy we will test your blood to check the level of active hormone and you may be started on thyroid medication.

If all of your thyroid gland was removed you will require lifelong replacement of the hormone it would have produced, thyroxine. This is a straightforward once-a-day tablet with little need for adjusting the dosage over time. We will give you a supply to take home with you and to take every day. It is very important that you continue to take it every morning, as you need more energy in the early part of the day. If you miss your thyroxine tablet for a day or two you will feel no difference, but if you miss it for several days you will gradually start to feel more tired, sluggish and "slowed-down".

If only half of your thyroid was removed (thyroid lobectomy) you will not need any thyroxine tablets. We will carry out a blood test to check the function of your remaining thyroid at your follow-up appointment.

## Going home

You are likely to be discharged between 1 and 2 days after a total thyroidectomy. If you are having a thyroid lobectomy you may be discharged on the same day as your operation.

### **Is there anything I should look out for when I go home?**

If you have any concerns about your wound or it becomes red, hot, swollen or painful, you should seek advice from your GP or practice nurse.

### **Wound care**

Your wound should be kept dry for 48 hours and it can be left without a dressing. You may want to wear a loose scarf to cover the wound. You are likely to have dissolvable stitches which do not need to be removed; your nurse will let you know the type of stitches you have before you are discharged.

The Steristrips should stay on for one week, after which time you can remove them. You can shower 48 hours after your surgery, but shouldn't have a bath, as this will make the Steristrips peel off too early.

When your wound is completely healed it can be gently massaged with a cream (e.g. vitamin E cream) to soften the scarring.

## Follow-up

We will give you an appointment to be seen in the Outpatient department about six weeks after your operation. At this appointment the surgeon will talk to you about the results and any further treatment and follow-up you may need.

You may be asked to have a blood test with your GP before your appointment with the surgeon. This is to check whether your parathyroid glands have been affected by the operation.

## Resuming normal activity and returning to work

A thyroidectomy is a major operation and you should rest for 2-3 days when you get home. You will normally be well enough to return to work in 1-2 weeks, but this will vary depending on the type of work you do. It is normal to feel tired for the first few weeks.

You can drive as soon as you are able to perform an emergency stop without pain, but also check with your insurance company, as policies vary.

You should not drive, return to work, drink alcohol, operate machinery, sign any important documents or be responsible for small children in the first 48 hours after your operation. General anaesthetic can still affect your judgement during this time, even if you think you feel fine.

If there is any information in this booklet that you do not understand, or if you are unclear about any other details of your operation, please speak to one of the surgical team.

## Further information

If you have any questions or need further information, please telephone Pre-operative Assessment team:

### **Pre-operative Assessment**

(John Radcliffe)      **01865 220 640**  
(8.00am to 5.00pm, Monday to Friday)

### **Pre-operative Assessment**

(Churchill Hospital)      **01865 226 982**  
(8.00am to 5.00pm, Monday to Friday)

If you have been diagnosed with thyroid cancer you will receive a separate information booklet containing more information about your treatment.

You may find information on the following websites useful:

- [www.btf-thyroid.org](http://www.btf-thyroid.org)  
(British Thyroid Foundation)
- [www.baets.org.uk](http://www.baets.org.uk)  
(British Association of Endocrine and Thyroid Surgeons)
- [www.british-thyroid-association.org](http://www.british-thyroid-association.org)  
(British Thyroid Association)
- [www.rcoa.ac.uk](http://www.rcoa.ac.uk)  
(Royal College of Anaesthetists)



Please sign below to confirm that you have received this information booklet with details of your operation and that you have read it. Please do not sign the consent form until you are happy that you understand the information and that any questions have been answered.

Patient signature .....

Date .....

Surgeon providing information .....

Signature .....

Grade ..... Date .....

If you have a specific requirement, need an interpreter, a document in Easy Read, another language, large print, Braille or audio version, please call **01865 221 473** or email **[PALSJR@ouh.nhs.uk](mailto:PALSJR@ouh.nhs.uk)**

Author: Radu Mihai, Consultant in Endocrine Surgery  
January 2016  
Review: January 2019  
Oxford University Hospitals NHS Foundation Trust  
Oxford OX3 9DU  
[www.ouh.nhs.uk/information](http://www.ouh.nhs.uk/information)

