Neck Dissection

QUICK FACTS

- A neck dissection is an operation to remove groups of lymph nodes from the neck.
- You will have a scar and skin numbness after the operation.
- You may have a stiff shoulder and neck. It is important to do gentle neck and shoulder exercises soon after a neck dissection.
- Common problems after the operation include wound infection and blood clot or fluid collecting under the skin.
- Complications from this operation are more likely if you previously had radiotherapy, you smoke, or you have other medical conditions such as poorly controlled diabetes.
- If all goes well, patients can usually go home in one or two days.

ABOUT THE CONDITION

What is a neck dissection?

A neck dissection is an operation to remove groups of lymph nodes from the neck. This operation is performed on patients with cancer of the head and neck.

What are lymph nodes?

Lymph nodes are small oval-shaped glands. They form part of the body's immune system, catching bacteria, viruses, and cancer cells.

We have hundreds of lymph nodes in our body. Each group of lymph nodes drains a certain area.

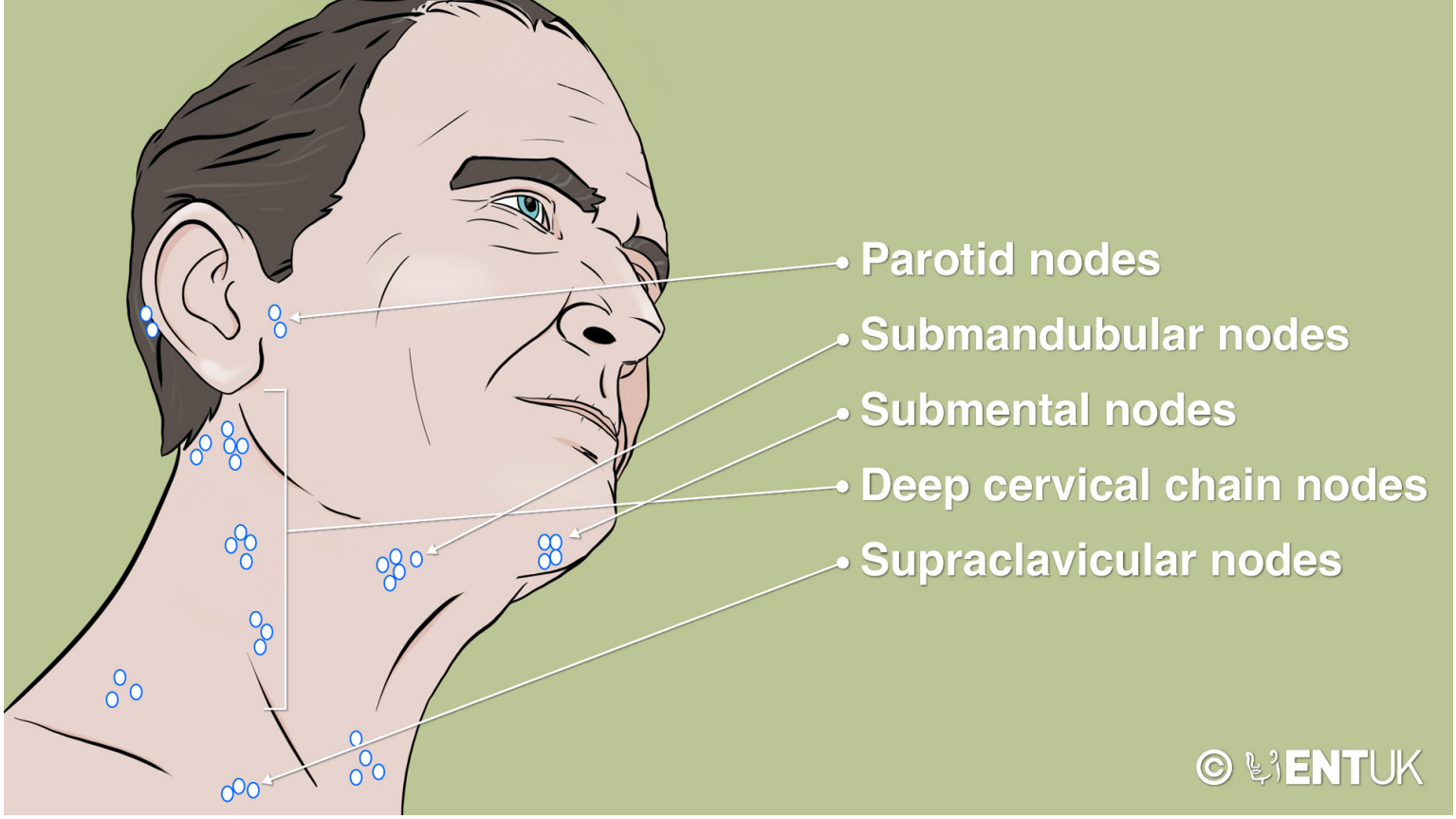


Figure 1. The main groups of lymph nodes in the neck

The lymph nodes in the neck drain the skin of the head and neck, pharynx (throat), larynx (voice box), upper oesophagus (food pipe), nose, saliva glands and trachea (windpipe).

Removing groups of lymph nodes does not affect your immune system.

Why do I need a neck dissection?

Cancers of the head and neck may spread to nearby lymph nodes. This is common. It is less common for cancers of the head and neck to spread to more distant parts of the body. Once one cancer cell has been caught in a lymph node, it can grow and multiply there, making the node grow larger. In time, the cancer cell can spread to more lymph nodes and surrounding structures.

Some types of head and neck cancers have a higher chance of spreading to lymph nodes.

Not all cancer cells in lymph nodes can be picked up on a scan or by clinical examination. So, this operation might be performed because cancer has been found in the lymph nodes. Or it might be performed because the surgeon suspects there may be microscopic cancer cells in the lymph nodes.

A neck dissection is often performed at the same time as removing the main (primary) site of the cancer. Sometimes a neck dissection is performed after you have had other treatment such as radiotherapy. This is called a **salvage** neck dissection.

Are there different types of neck dissection?

The term ‘neck dissection’ is used to describe several types of operation for removing lymph nodes. These are called **selective**, **modified radical**, **radical,** and **extended** neck dissection.

Your surgeon will be able to tell you what is planned for your operation.

In a **selective** neck dissection, selected groups of lymph nodes are removed from one side of the neck. We only remove the lymph nodes likely to be affected by the type of cancer you have. The fatty tissue around them is also removed. This is the most common type of neck dissection surgery.

You may need a **bilateral** neck dissection. This means lymph nodes from both sides of the neck will be removed.

Sometimes we may need to take out one or two other parts of the neck or lymph nodes to remove the cancer fully. This is called a **modified radical** neck dissection.

The parts that may need to be removed are:

- the internal jugular vein (a large blood vessel taking blood back to the heart)
- the sternocleidomastoid muscle (the muscle you can see on both sides of your neck)
- the accessory nerve (the nerve that makes you shrug your shoulders).

If all three parts of the neck listed above must be removed along with the lymph nodes, this is called a **radical** neck dissection.

Sometimes more tissue needs to be removed because it is close to the cancer, or the cancer is in the tissue. This is called an **extended** neck dissection. Your surgeon will tell you what tissue might need to be removed if an **extended** neck dissection seems likely.

What happens to the lymph nodes removed?

The lymph nodes that have been removed are sent to a lab to find out how many lymph nodes contain cancer. The lab will also look to see if any other tissues contain cancer. These other tissues could include muscles, nerves, and blood vessels. The results from the lab will help guide the next step of your treatment plan.

Will I need any other treatment?

Possibly. The next step of your treatment plan will depend on:

- where your cancer is
- what type of cancer it is
- how advanced the cancer is
- what treatment you have had already.

The next treatment may include:

- radiotherapy (a special x-ray treatment)
- a combination of both radiotherapy and chemotherapy (strong drugs that help kill cancer).

Some people may not need any further treatment.

The additional treatment steps are agreed by a team of surgeons, oncologists (cancer doctors) and other experts. This is known as a multi-disciplinary cancer team (MDT). They will have weighed up together

whether your health will be able to withstand the side effects of treatment, and whether the treatment is likely be effective and give you a better quality of life. The recommendations will be discussed with you and your next of kin, with your permission, so that a shared decision can be made.

What are the alternatives to surgery?

Your case will have been discussed by the MDT, which will have agreed that a neck dissection is the most suitable treatment for you.

Other options to treat your cancer were also considered. These will have included radiotherapy, either with or without chemotherapy. Patients who have non-surgical treatments may still need a neck dissection if there is some disease left over in the lymph nodes after radiotherapy.

No treatment. Some patients' general health is poor. Surgery or radiotherapy may cause complications that reduce the length or the quality of their life.

Some patients choose not to have treatment despite understanding its aim and risks. The surgical team will make sure that the information is explained to you. If you decided not to have treatment, the team would respect your decision, after making sure that you understand its implications.

Deciding whether to have the treatment

Decision to have surgery is based on the MDT recommendation, your wishes, taking into consideration your circumstances. You may wish to change your mind about the surgical procedure at any time and signing a consent form does not mean you must have the operation.

If you would like to have a second opinion regarding the treatment, you can discuss with your specialist or your GP who can arrange this for you.

ABOUT THE PROCEDURE

What does surgery involve?

The operation is performed under general anaesthetic. To reach the lymph nodes, a long cut will be made in the skin of the neck. The type of cut will depend on what structures need to be removed. Some of the more common types of cuts are shown in Figure 2.

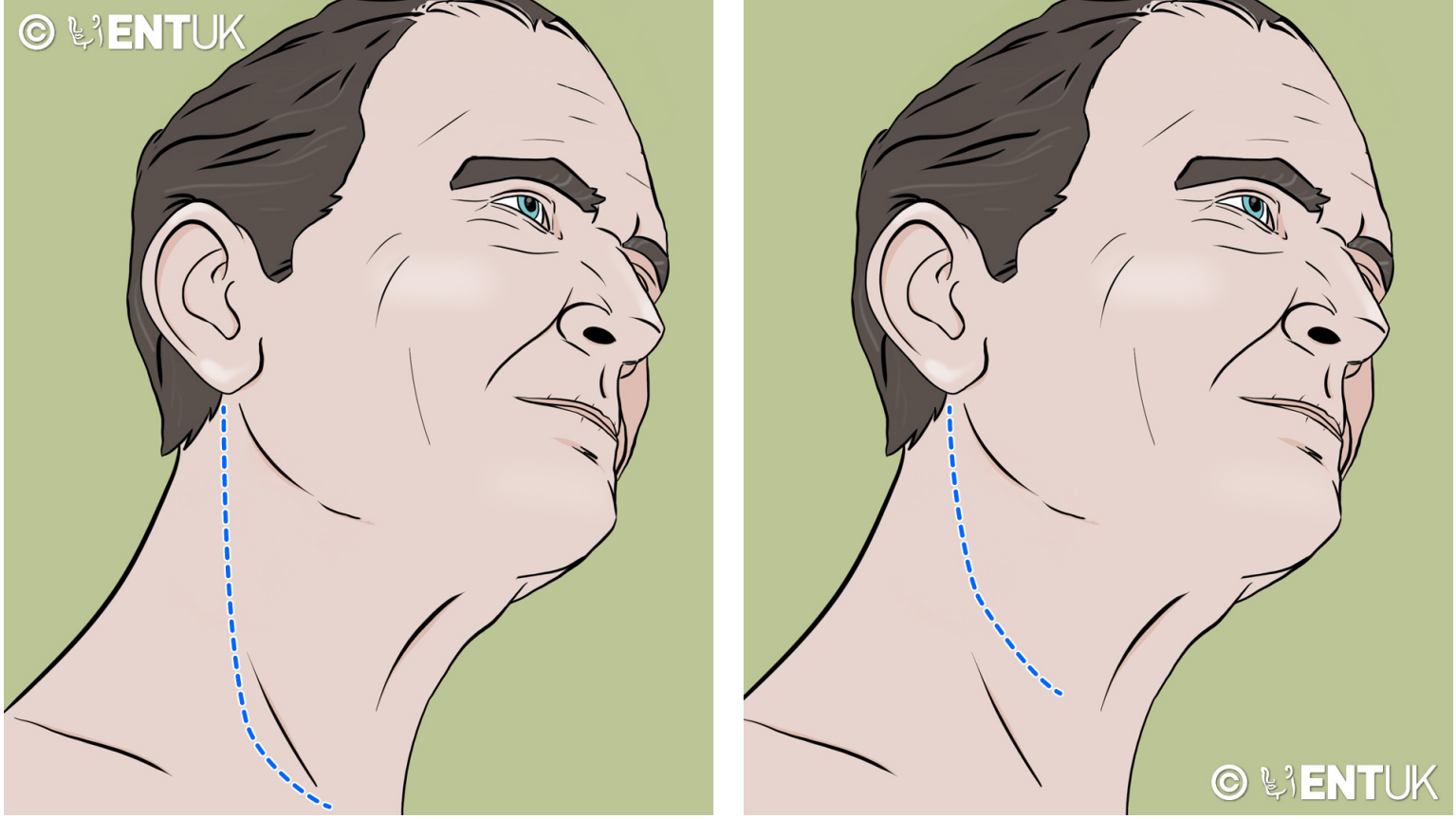


Figure 2. Different types of skin incisions may be used

Groups of lymph nodes removed will depend on what type of cancer you have. At the end of the operation, you may have one or two plastic tubes, called drains, placed in your neck. These allow blood and fluid to drain from the neck wound to stop it collecting under the skin.

Some surgeons will close the wound with staples, stitches, or skin glue.

What can I expect after the operation?

After the operation, you will be taken to the recovery area. When you are fully awake, you will be taken to a ward or day surgery unit.

Pain
Most patients do not have much pain after the operation. Simple painkillers should help.

Neck stiffness
Patients often find that their neck feels stiff after the operation. They may feel worried that moving their neck and shoulders will loosen the stitches. This is not the case. Gentle neck movement is encouraged, and we will tell you when to start this.

Scar
You will have a scar on the skin of your neck. Scars in the neck usually heal very well, especially when placed in a skin crease or the natural shadows of the neck. They usually fade significantly after six months. Use a simple moisturiser to massage the scar every day.

Scars may look thickened, but it is uncommon to develop a bulbous or keloid scar. Keloid scars are more common in people from Afro-Caribbean descent or the Indian subcontinent. If you have thickened, unsightly scars elsewhere on your body, please let your surgeon know in advance. They can discuss options with you in more detail.

Appearance of the neck
It is very common for your neck to look less full following this operation. If one of the large muscles from the neck, (the sternocleidomastoid muscle), is removed, your neck may look a bit flatter on that side.

Numbness of the skin
The skin of the neck (and sometimes the earlobe) will be numb after the surgery. This happens in all neck dissection as the nerves that give sensation to the skin are cut to get to the lymph nodes. It usually improves with time but can be permanent. If you shave, you should take extra care not to cut yourself.

ABOUT THE RISKS

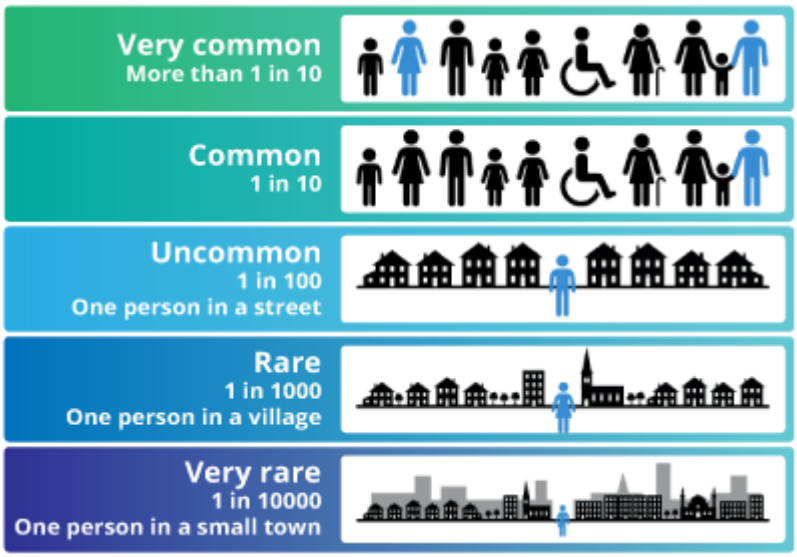
Are there any complications to this operation?

All surgery involves some risks. Most patients who have this operation recover well.

You can help reduce some of the risks discussed below if you stop smoking, drink alcohol within recommended limits, exercise regularly and eat healthy food.

Some patients are more likely to have certain complications. These include patients who have previously had radiotherapy to the neck, who suffer from medical conditions such as diabetes, or who require more complex surgery

Complications fall into the following groups.



Official complication rates for this operation can vary widely. Your surgeon will be able to tell you their own complication rate.

Poor wound healing
Most wounds in the neck are healed after seven days. The wound may not heal well and may open again. This can happen in 22 out of 100 cases. It is more likely in patients who have had radiotherapy or are smokers.

Wound infection
When a wound is infected, the skin of the neck may look red and swollen and feel warm to touch. Sometimes, infected fluid (pus) can be seen in the drain. Infections are treated with antibiotics. Draining the pus, washing out the wound and putting in new drains may be needed.

Wound infection occurs in seven out of 100 neck dissections. Sometimes a connection between the neck and mouth or throat is needed to perform the operation. If there is a connection, this carries a much higher risk of wound infection (ranging from 15 to 80 out of 100 cases).

Salivary leak
A little over 2 out of 100 neck dissections will involve leaking saliva. This may happen if there is a connection between the mouth or throat and the neck. Saliva can also leak if the bottom part of the parotid salivary gland is bruised or cut during surgery. This is probably very common but is rarely a real problem.

Seroma
The body tends to fill empty gaps with a collection of fluid under the skin called a seroma. This is common. Properly functioning neck drains should prevent this from happening.

Left untreated, a seroma can lead to infection and skin breakdown. To stop this, your surgical team may drain the seroma several times with a needle and syringe. Sometimes another operation is required to wash out the wound and replace the drains.

Bleeding
Bleeding or blood clots (haematoma) can collect under the skin. This can also be removed with drains. The drain may become blocked causing fluid, blood, and clot to collect. This may occur in seven to 14 out of 100 cases. Sometimes medication to make your blood thinner (to prevent blood clots, heart attacks or strokes) can contribute to the haematoma.

If a haematoma occurs, the patient will usually need to return to the operating room to have the clot removed and the drains replaced. You may also be given antibiotics to reduce the risk of getting a wound infection.

Damage to the large blood vessels in the neck
Significant bleeding can happen from injury to the carotid artery. This is rare. The carotid artery is the large blood vessel that delivers blood from the heart to the brain, face, and neck. This may be more likely if the cancer is stuck to the wall of the blood vessels, or if you have had radiotherapy. It can also be more likely if there is an infection, if there is a collection of fluid, such as saliva, or if the wound has opened and exposed the artery to air.

Damage to the internal jugular vein (IJV), may cause a clot to form in this blood vessel after surgery. The IJV takes blood from the brain and neck back to the heart. You have two IJVs, one on the right and one on the left. If you have a wound infection or radiotherapy after your operation, these make it more likely that clots will form. Sometimes both IJVs must be tied off during surgery. This is rare, but if it happens, you will have significant facial swelling. There may also be swelling of the brain tissue. These issues usually go away on their own over time.

Lymphoedema
Removal of lymph glands may disrupt the flow of lymphatic fluid or tissue fluid. This can build-up in the soft tissue of the neck and is called lymphoedema. This is not uncommon and is more likely in patients who

have had radiotherapy or had their IJV tied during surgery. A lymphoedema specialist nurse can help if needed.

Chyle leak

Chyle is a fluid that helps the body absorb fats. It runs in thin tubes which drain into the neck. Sometimes, one of these tubes (called the thoracic duct) can leak during or after a neck dissection. This can cause chyle to collect under the skin, and it happens between one and eight out of 100 cases. Most chyle leaks happen on the left side of the neck.

If a chyle leak takes place, you will need to stay in hospital longer than planned. To stop the leak, we may remove all fats from your diet for a short period of time. You may have to be fed through a feeding tube, passed through your nose and down to your stomach. Alternatively, we may give you the nutrients you need directly into your blood through a vein. Sometimes, patients might need an operation to close the thoracic duct.

Tying off the thoracic duct can cause pressure from chyle fluid to build in the chest. This is called chylothorax. It is thought to be very rare. The same treatment is given as for a chyle leak. Sometimes patients may need to have surgery to correct this.

A stiff shoulder

You may find that your shoulder is stiff. It may be difficult to lift your arm above shoulder level or carry heavy objects, such as shopping bags. This is quite normal and can be treated with shoulder exercises. It is important to keep moving your neck and shoulder gently after surgery.

The accessory nerve controls one of the muscles of the shoulder. An injury to the accessory nerve can happen in about five out every 100 cases. The nerve is very close to lymph nodes. It can be moved around in surgery to remove these lymph nodes. This can make the muscle around the shoulder weaker, causing a shoulder droop. Your team can arrange for you to have physiotherapy to help with this if needed.

Sometimes, the nerve needs to be removed when it is too close to lymph nodes containing cancer. This is to make sure the cancer is completely removed. This may occur between one and two out of 100 cases.

A weak tongue

The hypoglossal nerve controls movement of one side of the tongue. Sometimes this nerve may have to be removed during an extended neck dissection because it is affected by the cancer. This is thought to be rare.

If one of the hypoglossal nerves is removed or damaged (less than one in 100 cases), you will find it more difficult to move your tongue when eating. It can also affect your swallowing and how you speak. If this happens, you will be referred to a speech and swallowing therapist.

A numb tongue and a change in taste

The lingual nerve carries taste and feeling from the tongue. It is thought to be very rare for the lingual nerve to be injured during a neck dissection. However, this may occur where there are cancerous lymph nodes under the jawbone. If this nerve is injured, your tongue will be numb on the same side, and you may catch it between your teeth when chewing. Food and drink may taste different.

Weakness to the corner of the mouth

The marginal mandibular nerve controls some of the muscles in the lower face. If this nerve is damaged or bruised, between five and six out of 100 cases have weakness at the corner of your mouth. This will be

most obvious when smiling. It is more common when the lymph glands under the jaw are removed, close to where the nerve runs. Sometimes saliva can drool at the corner of the mouth. If this happens, you will be referred to a speech and swallowing therapist.

The weakness is usually temporary and recovers after a few months. However, in a small number of patients, this weakness can be permanent.

Voice or swallowing problems
The vagus nerve moves the voice box and gives some sensation to the throat. Injury to this nerve can cause voice and swallowing problems. It is thought to be very rare for this nerve to be injured during a neck dissection.

Breathing and coughing difficulties
The phrenic nerve moves the diaphragm (the thin sheet of muscle that separates the chest from the tummy). Injury can cause breathing and coughing difficulties, especially in frail patients. It is rare for this nerve to be injured (one in 1,000 cases).

Horner's syndrome
Damage to nerves close to the top part of the carotid artery can cause a droopy eyelid, a small pupil and the face on that side will no longer produce sweat. Sometimes patients have pain in the jaw at the start of a meal. This is a rare complication (less than one in 200 cases).

Collapsed lung (pneumothorax)
The top of the lungs can be damaged during a neck dissection. This is thought to be a very rare complication. It can be diagnosed with a chest examination and an x-ray. A drainage tube inserted in the chest wall may be required.

General anaesthetic
The operation is performed under general anaesthetic. Problems can include blood clots in the legs (called deep vein thrombosis) or lungs (called pulmonary embolism). They can also include heart attack, chest infection, stroke, and death. The pre-assessment team and anaesthetist will explain what happens during a general anaesthetic and the associated risks that are relevant to you. **This link** summarises the common events and risks of a general anaesthetic.

AFTER THE SURGERY

Will I have a drain in my neck?

A wound drain may be inserted (see 'What does surgery involve?', above). Some units do not use drains. Your surgeon will let you know whether they usually insert a drain.

Will I have stitches?

Some surgeons will close the wound with staples, stitches, or skin glue. If you have staples or stitches, the ward nurse will organise for these to be removed either at your GP practice, usually seven days after the operation, or in the outpatient department.

If you have previously had radiotherapy, your stitches may be removed ten days after your surgery.

How long will I stay in hospital?

You will be discharged home once your surgical team feels that your drain can be removed, that the wound looks healthy and that you are doing well.

Most patients having a neck dissection stay in hospital an average of two days after surgery.

If you had surgery to remove the main cancer at the same time as the neck dissection, or you develop an infection or collection in your neck, you will be in hospital for longer.

How long will I need off work?

You will need at least two weeks off work to recover from a neck dissection. If you had an operation to remove the main cancer, you may need more time off work. If you need a sick note, please ask your surgical team.

Follow up

Your surgical team will tell you when you will be followed up at the head and neck cancer clinic. At this appointment, you will be told the results from the pathology lab and whether any further treatment is required.

Date Published: 29/01/2024 **Review Date:** 29/01/2027