

Cancer of larynx

J A S C A P

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MUMBAI, INDIA

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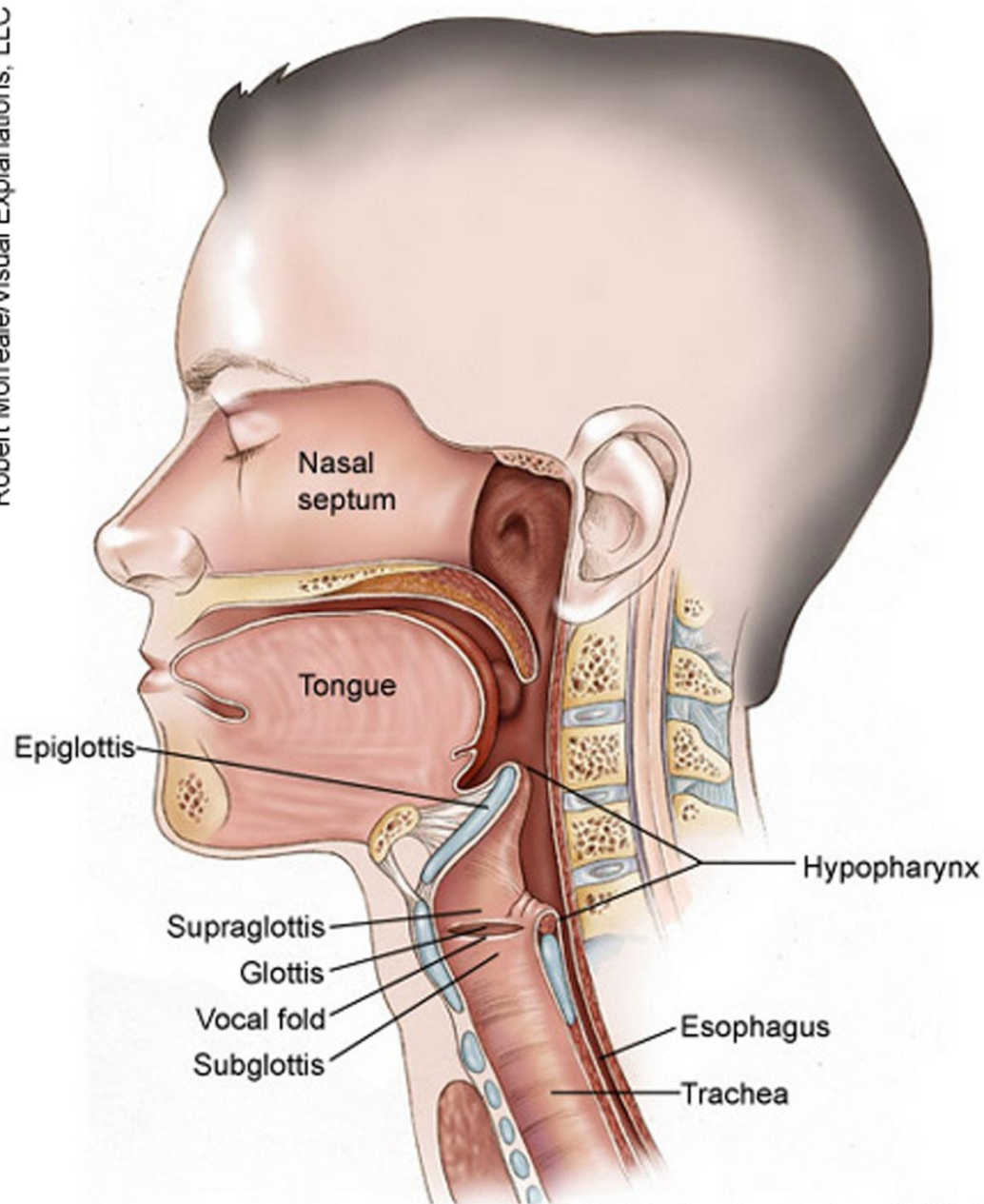
JASCAP is a charitable trust that provides information on various aspects of cancer. This can help the patient and his family to understand the disease and its treatment and thus cope with it better.

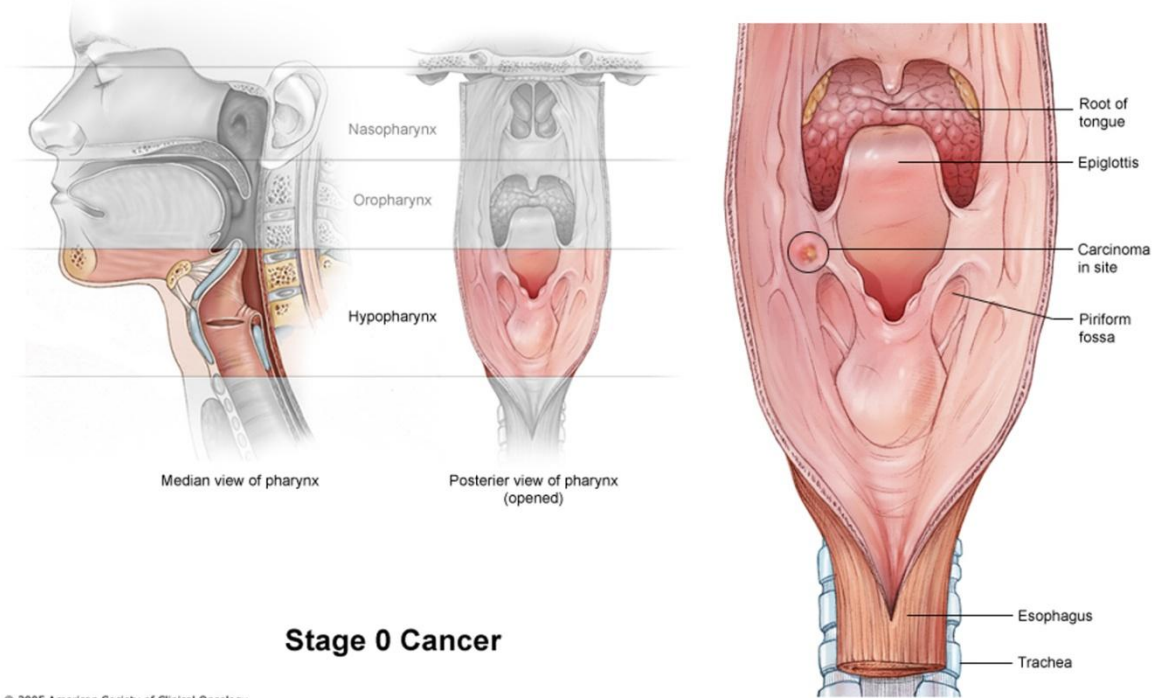
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Contact: Mr. Prabhakar K. Rao or Mrs. Neera P. Rao

Donation suggested Rs.20.00

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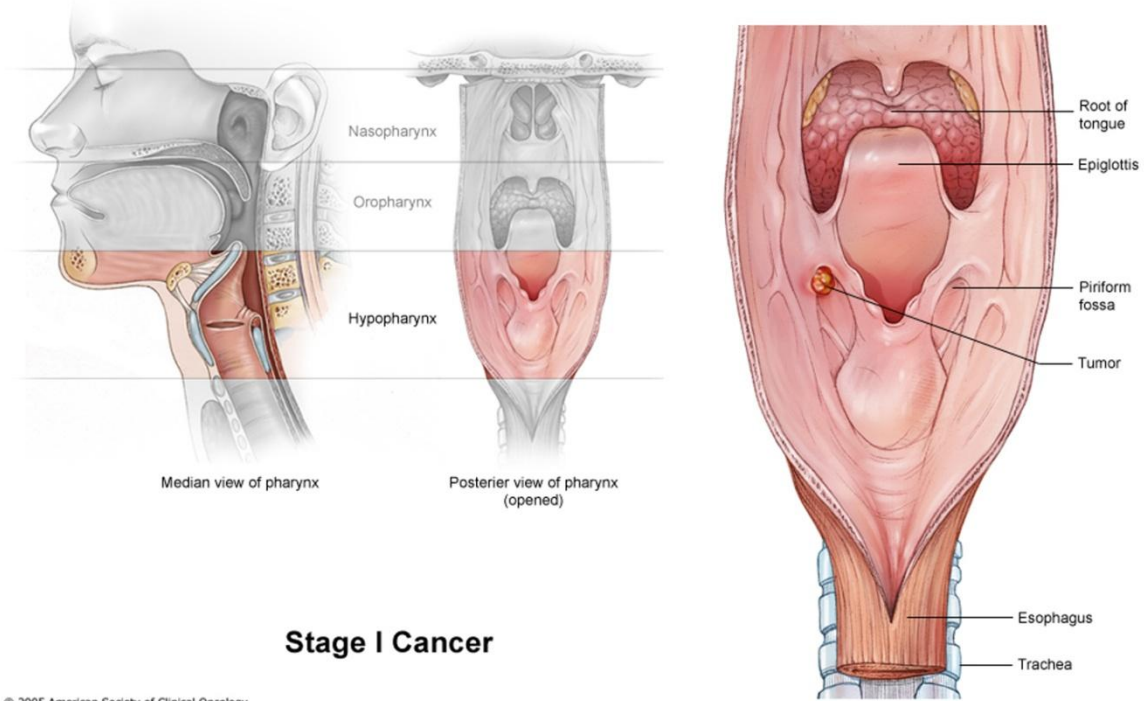




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Stage 0 Cancer

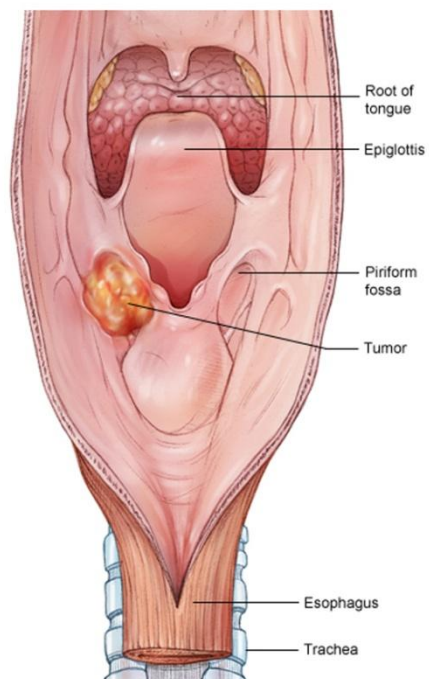
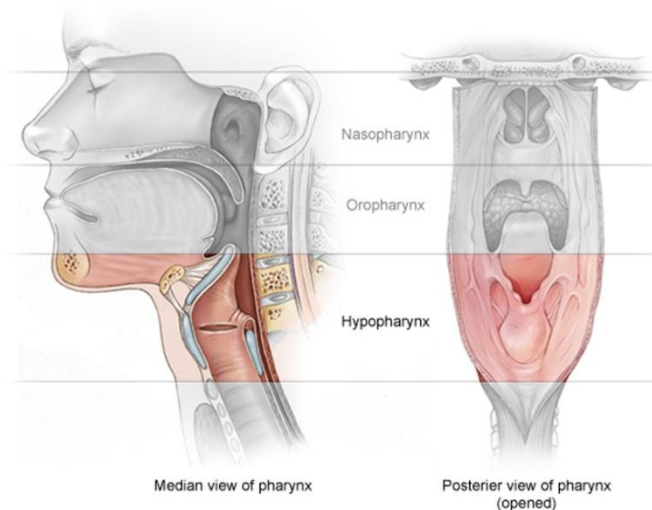
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Stage I Cancer

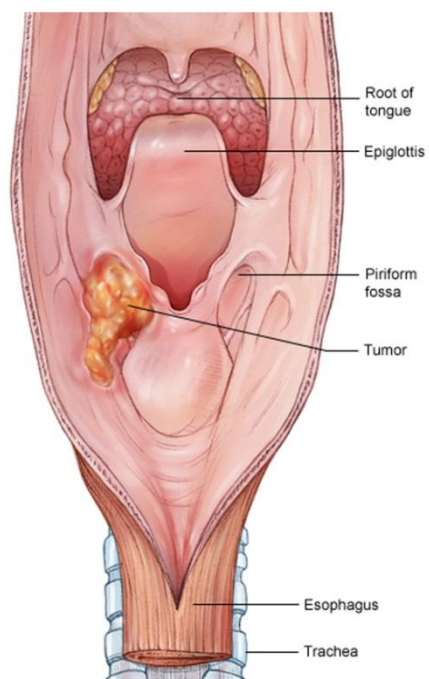
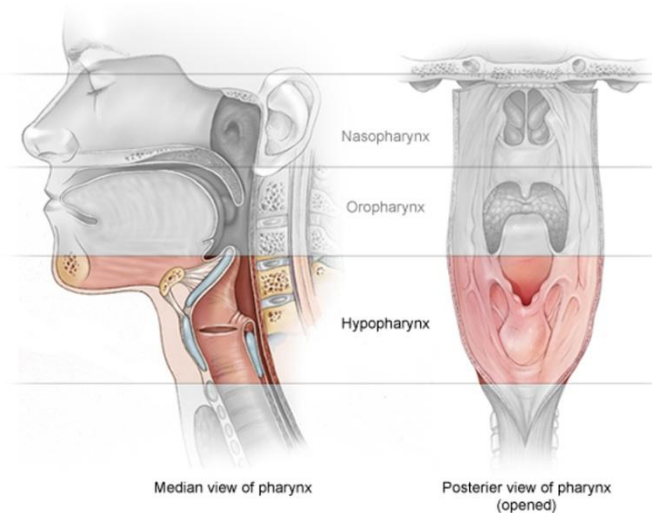
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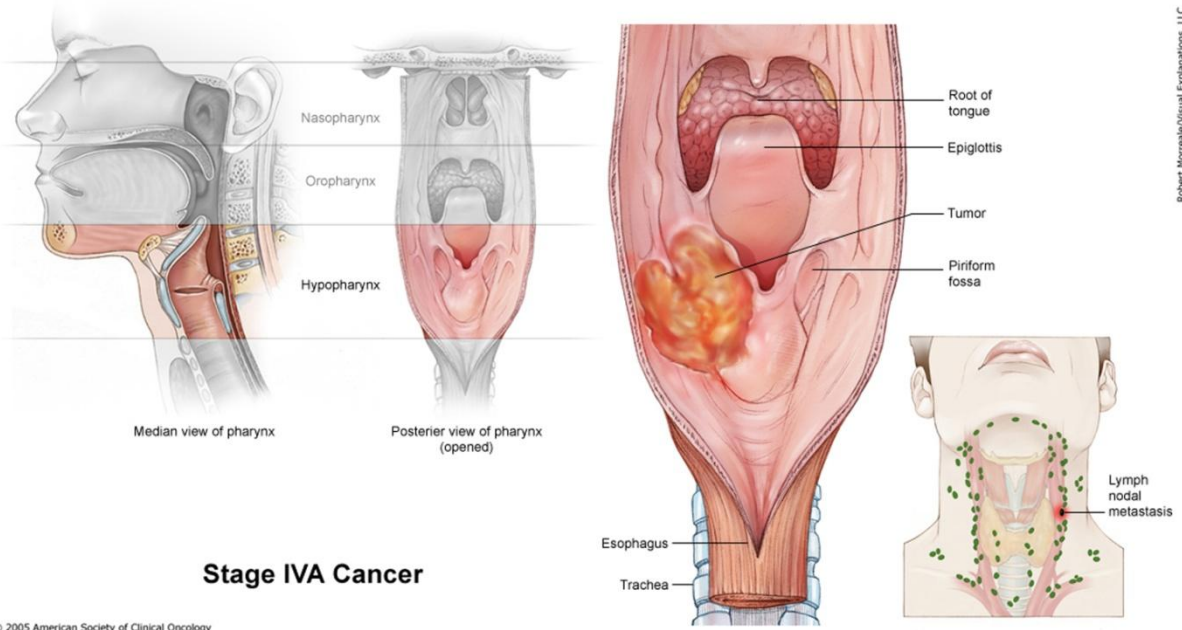
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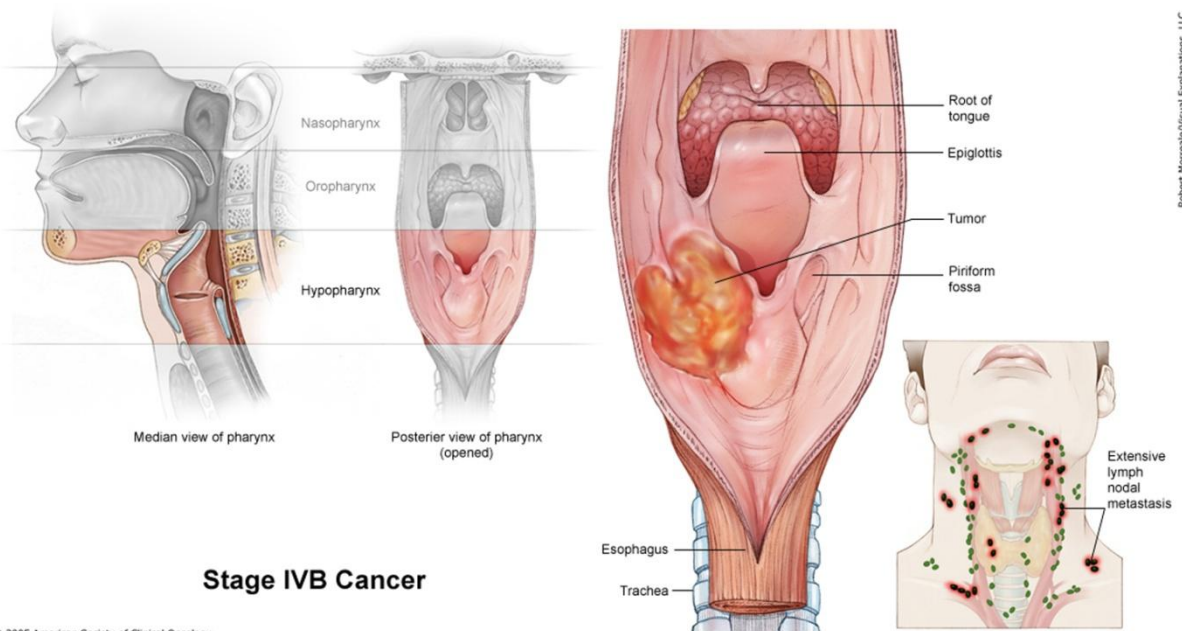
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Stage IVA Cancer

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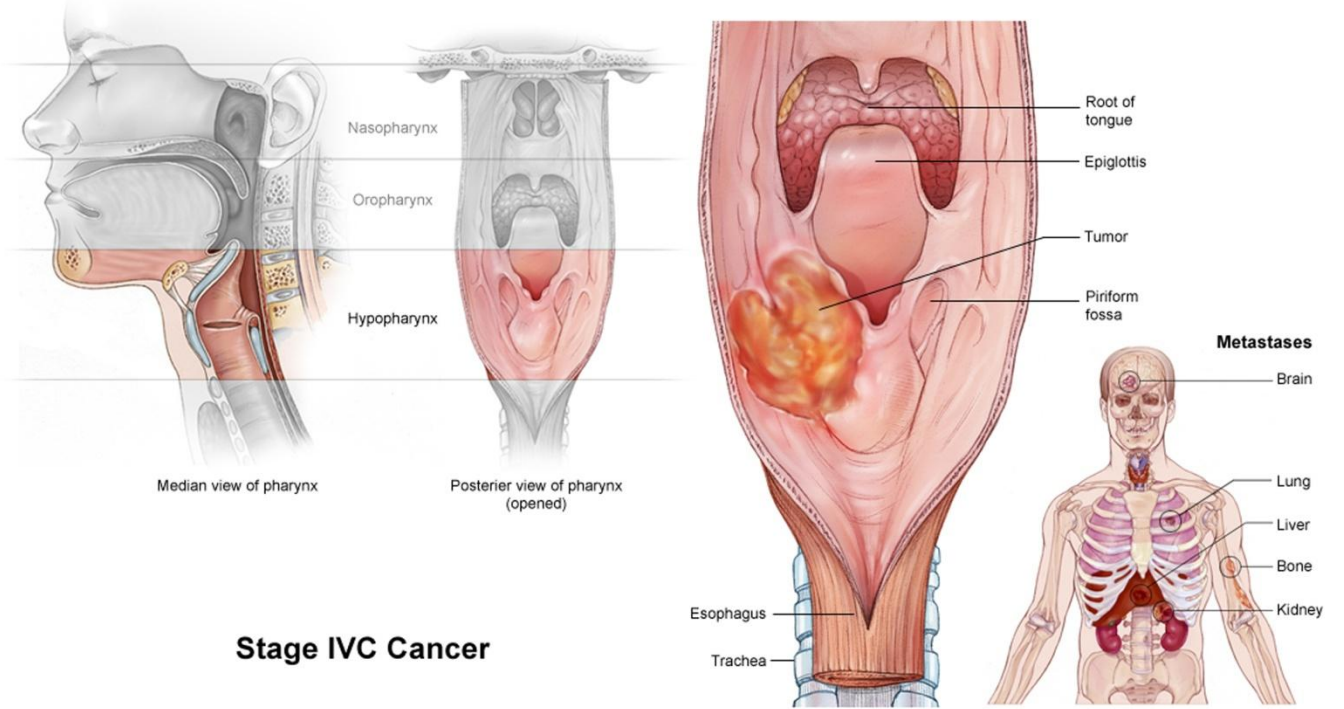
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Stage IVB Cancer

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Stage IVC Cancer

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About laryngeal cancer

Introduction

This booklet is for you if you have or someone close to you has cancer of the larynx.

If you are a patient your doctor or nurse may wish to go through the booklet with you and mark sections that are particularly important for you.

The voicebox (larynx)

The voicebox, or larynx, is a tube-shaped structure, about 5cm (2in) long, which sits at the entrance to the windpipe (trachea).

It can be seen, or felt, as the normal lump in the front of the neck known as the Adam's apple. There are three main parts to the larynx.

The **supraglottis** is the area above the vocal cords.

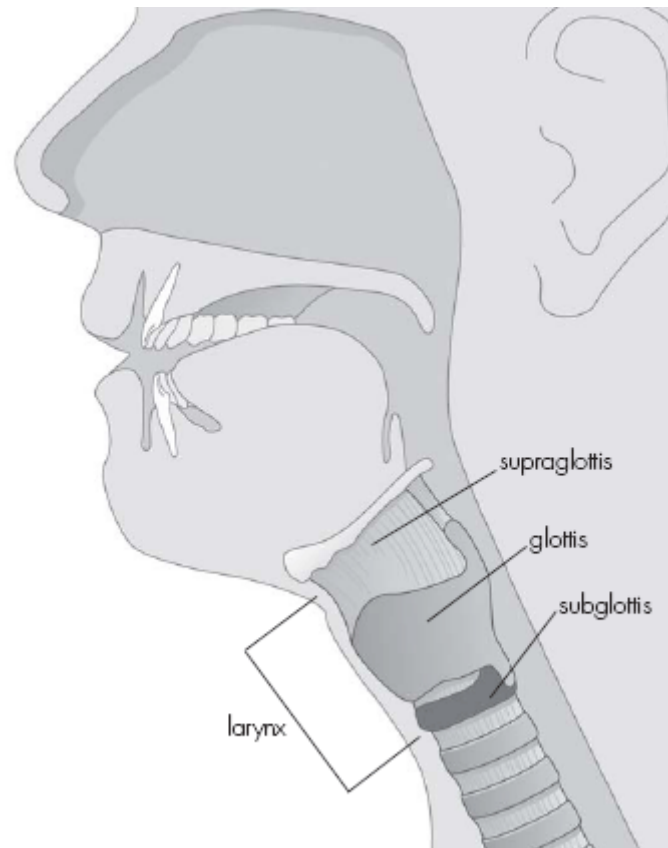
The **glottis** is the area containing the vocal cords.

The **subglottis** is below the vocal cords.

Air breathed in through the nose and mouth is warmed and moistened, and then passes through the larynx and down the windpipe to the lungs.

The larynx:

- allows the air breathed in to reach the lungs
- acts as a valve which closes to prevent food and drink entering the windpipe when you swallow
- contains the two vocal cords, which vibrate together when air passes between them, to produce the sound of the voice.

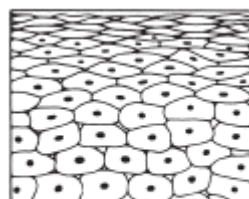


The parts of the larynx

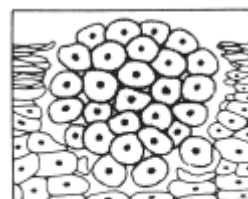
What is cancer?

The organs and tissues of the body are made up of tiny building blocks called cells. Cancer is a disease of these cells.

Cells in different parts of the body may look and work differently but most reproduce themselves in the same way. Cells are constantly becoming old and dying, and new cells are produced to replace them. Normally, cells divide in an orderly and controlled manner. If for some reason the process gets out of control, the cells carry on dividing, developing into a lump which is called a **tumour**.



Normal cells



Cells forming a tumour

Tumours can be either **benign** or **malignant**. Cancer is the name given to a malignant tumour. Doctors can tell if a tumour is benign or malignant by examining a small sample of cells under a microscope. This is called a **biopsy**.

In a benign tumour the cells do not spread to other parts of the body and so are not cancerous. However, if they continue to grow at the original site, they may cause a problem by pressing on the surrounding organs.

A malignant tumour consists of cancer cells that have the ability to spread beyond the original area. If the tumour is left untreated, it may spread into and destroy surrounding tissue. Sometimes cells break away from the original (primary) cancer. They may spread to other organs in the body through the bloodstream or lymphatic system.

The lymphatic system is part of the immune system - the body's natural defence against infection and disease. It is a complex system made up of organs, such as bone marrow, the thymus, the spleen, and lymph nodes. The lymph nodes (or glands) throughout the body are connected by a network of tiny lymphatic ducts.

When the cancer cells reach a new area they may go on dividing and form a new tumour. This is known as a **secondary cancer** or **metastasis**.

It is important to realise that cancer is not a single disease with a single type of treatment. There are more than 200 different kinds of cancer, each with its own name and treatment.

Types of cancer

Carcinomas

The majority of cancers, about 85% (85 in a 100), are carcinomas. They start in the epithelium, which is the covering (or lining) of organs and of the body (the skin). The common forms of breast, lung, prostate and bowel cancer are all carcinomas.

Carcinomas are named after the type of epithelial cell that they started in and the part of the body that is affected. There are four different types of epithelial cells:

- squamous cells - that line different parts of the body, such as the mouth, gullet (oesophagus), and the airways
- adeno cells - form the lining of all the glands in the body and can be found in organs such as the stomach, ovaries, kidneys and prostate
- transitional cells - are only found in the lining of the bladder and parts of the urinary system
- basal cells - that are found in one of the layers of the skin.

A cancer that starts in squamous cells is called a squamous cell carcinoma. A cancer that starts in glandular cells is called an adenocarcinoma. Cancers that start in transitional cells are transitional cell carcinomas, and those that start in basal cells are basal cell carcinomas.

Leukaemias and lymphomas

These occur in the tissues where white blood cells (which fight infection in the body) are formed, i.e. the bone marrow and lymphatic system. Leukaemia and lymphoma are quite rare and make up about 6.5% (6.5 in 100) of all cancers.

Sarcomas

Sarcomas are very rare. They are a group of cancers that form in the connective or supportive tissues of the body such as muscle, bone and fatty tissue. They account for less than 1% (1 in 100) of cancers.

Sarcomas are split into two main types:

- bone sarcomas - that are found in the bones
- soft tissue sarcomas - that develop in the other supportive tissues of the body.

Others forms of cancer

Brain tumours and other very rare forms of cancer make up the remainder of cancers.

Risk factors and causes of laryngeal cancer

There is no single cause of cancer of the larynx. It's likely that several factors are involved. Not all of these risk factors are known, but research is ongoing into the possible causes.

Smoking and heavy drinking of alcohol (especially spirits) greatly increase the risk of developing cancer of the larynx.

Cancer of the larynx occurs mainly in middle-aged and older people, but it can occur in younger people who started smoking at an early age. It is much more common in men than in women.

It's thought that the human papilloma virus (HPV) may play a part in the development of cancer of the larynx.

Exposure to certain chemicals such as formaldehyde, nickel, sulphuric acid mist and isopropyl alcohol may increase your risk of developing this cancer.

As with other cancers, cancer of the larynx is not infectious and can't be passed on to other people.

How common is Cancer of Larynx in India?

Cancer of Larynx (voice box) is one of the common cancers among men from the Indian subcontinent. The incidence (newly diagnosed cases of Cancer in a year) of Cancer of Larynx for men from India is about 5 men per 1,00,000 population¹.

¹ Globocan 2008: Cancer incidence and mortality rates worldwide

In India, between the years 2001-2003, across five urban centers - Mumbai, Delhi, Chennai, Bhopal and Bangalore, – and one rural center - Barshi, a total of 2,276 cases of Cancer of Larynx were registered (5.16% of all cancers) for males across all age groups; while 276 cases of Cancer of Larynx were registered (0.62% of all cancers) for females across all age groups. Considering all men, women and children with all types of cancers together, a grand total of 2,552 cases of Cancer of Larynx (2.88% of all cancers) were registered at the six centers mentioned above, between the year 2001-2003².

The TATA Memorial Hospital (T.M.H.) in Mumbai, India registered a grand-total of 19,127 cases of all types of cancer patients in the year 2006, for men, women and children combined, out of which 478 (2.5% of the total cases) were diagnosed with the Cancer of Larynx. Out of the total 478 patients diagnosed with Cancer of Larynx, mentioned above at the T.M.H., 445 (93%) were males and 33 (7%) were females³.

Symptoms and diagnosis

Symptoms of laryngeal cancer

Most cancers of the larynx begin on, or close to, one of the vocal cords. Even a small tumour can stop the two vocal cords meeting together and vibrating properly, and so a change in voice is usually an early symptom. Hoarseness is often the first sign of cancer of the larynx. If you have had hoarseness for longer than four weeks, you should ask your GP to refer you to an ear, nose and throat (ENT) specialist.

Less commonly, cancer can start in a part of the larynx that is not close to the vocal cords. In this case the voice may not change. The first symptom may then be a lump in the throat or neck, or discomfort or pain when swallowing. Occasionally, the first sign is ongoing earache or breathlessness.

If you have any of the above symptoms it's important to let your doctor know. However, the symptoms are more likely to be due to conditions other than cancer. For example, laryngitis (inflammation of the larynx), often occurs due to ordinary viral infections and causes a hoarse voice. Most people with the above symptoms will not have cancer.

How laryngeal cancer is diagnosed

Usually you begin by seeing your GP (family doctor) who will examine you and may arrange for some tests or x-rays. Your GP may then refer you to an ear, nose and throat (ENT) specialist at a hospital.

The ENT doctor will take your full medical history and examine you. The doctor will feel for enlarged glands in your neck. They will examine the back of your mouth and throat

²Population based cancer registry 2001-2003 Mumbai, Delhi, Chennai, Bhopal, Barshi and Bangalore, Indian Cancer Society.

³ TATA Memorial Hospital Registry Data for 2006

(including the larynx) using a small mirror, like the one a dentist uses when checking your teeth. The specialist may want to look at the larynx with a thin, flexible tube with a light on the end (a nasendoscope). The nasendoscope is passed up your nose and into the throat. This may be a bit uncomfortable, but your throat can be sprayed first to numb the area.

If anything abnormal or unusual is seen in your throat, or if the doctor can't see your larynx clearly with the mirror or nasendoscope, you will need to be admitted to hospital to have an examination of your larynx under general anaesthetic. While you are under the anaesthetic, the doctor can usually see all parts of the larynx very well. Using an endoscope (a thin tube with a light on the end) the doctor will take a closer look at the larynx. If any areas look abnormal a very small sample of tissue is removed and examined under a microscope. This is called a **biopsy**.

You may have an overnight stay in hospital because this examination is done under general anaesthetic. However, some people can go home on the same day once they've recovered from the procedure. Your doctor or specialist nurse will give you more information about this.

Further tests for laryngeal cancer

Blood tests

There isn't a specific blood test that can detect laryngeal cancer, but blood tests may be taken to check your general health.

X-rays

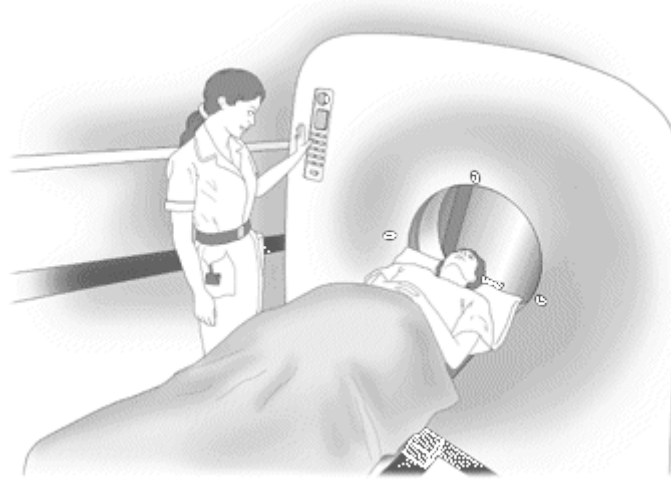
You may have a chest x-ray to check your general health and to see if the cancer has spread to the lungs (which is uncommon).

CT scan

A CT (computerised tomography) scan takes a series of x-rays, which are fed into a computer to give a detailed picture of the throat and neck. It's used to check whether there has been any spread of the cancer to other parts of your throat and neck.

Once you're lying comfortably on the couch the scan can be taken. The scan itself is painless but it will mean lying still for around 10–20 minutes. To give more detail, a dye may be injected into a vein in your arm. This may make you feel hot all over, but the feeling won't last long.

Most people are able to go home as soon as their scan is over.



A CT scan

MRI scan

An MRI (magnetic resonance imaging) scan is similar to a CT scan, but uses magnetic fields instead of x-rays to build up a series of cross-sectional pictures of the body.

During the test you will be asked to lie very still on a couch inside a metal cylinder that is open at both ends. The whole test may take up to an hour and is painless – although the machine is very noisy. You will be given earplugs or headphones to wear.

The cylinder is a very powerful magnet, so before going into the room you should remove all metal belongings. You should also tell your doctor if you have ever worked with metal or in the metal industry or if you have any metal inside your body (for example, a cardiac monitor, pacemaker, surgical clips, or bone pins). You may not be able to have an MRI because of the magnetic fields.

Some people are given an injection of dye into a vein in the arm, but this usually does not cause any discomfort.

You may feel claustrophobic inside the cylinder, but you may be able to take someone with you into the room to keep you company. It can help to mention to the staff beforehand if you do not like enclosed spaces. They can then offer extra support during your test.

PET-CT scan

A PET (positron emitted tomography) scan uses low dose radiation to measure the activity of cells in different parts of the body. This is combined with a CT scan. This gives more detailed information about the part of the body being scanned. PET-CT scans are a new type of scan and you may have to travel to a specialist centre to have one.

You will be asked not to eat for six hours before the scan, although you may be able to drink. You will be given an injection of a mildly radioactive substance into a vein, usually in your arm. The radiation dose used is very small. You will then have to wait at least an hour after the injection until you have the scan. The scan itself usually takes between 30 and 90 minutes. You should be able to go home after the scan is over.

Waiting for your test results

You may have to wait several days for the results, and this may be a very anxious time for you. You may wish to contact our cancer support specialists or another support organisation for emotional support.

Staging and grading of laryngeal cancer

The stage of a cancer is a term used to describe the size of the cancer and whether it has spread beyond where it started in the body. The grade of a cancer refers to how abnormal the cancer cells look under the microscope. The grade gives an idea of how quickly the cancer may develop.

Knowing the stage and grade of your cancer is very important. Your doctors can decide what treatment will be best for you with this information. The stage and grade of a cancer can help doctors to predict how that cancer might behave, how it might respond to treatment, and what the chance of cure might be.

Staging

A staging system is a way of reporting the size of a tumour and how far it has grown. The most commonly used staging system for cancer of the larynx is the **TNM staging system**. TNM stands for tumour, node and metastases.

T describes the size of the tumour

N describes whether the cancer has spread to the lymph nodes and

M describes whether the cancer has spread to another part of the body (secondary or metastatic cancer)

The exact TNM system for laryngeal cancer will depend on which part of the larynx the cancer is affected. Your doctor or specialist nurse can give you more details about the stage of your cancer. If you want more information on the TNM staging system for cancer of the larynx contact our cancer support specialists.

Grading

There are three grades of laryngeal cancer:

Grade 1 (well differentiated or low grade). The cancer cells look very like the normal cells of the larynx.

Grade 2 (moderately differentiated or intermediate grade). The cancer cells look less like the normal cells of the larynx.

Grade 3 (poorly differentiated or high grade). The cancers cells look abnormal and different from normal cells in the larynx.

Treating laryngeal cancer

Treatment for laryngeal cancer

Radiotherapy, surgery and chemotherapy can all be used to treat cancer of the larynx. Generally how laryngeal cancer is treated depends on where the cancer is in the larynx, the stage of the cancer, and your age and overall health.

If the cancer is small and at an early stage, it can be treated and usually cured by radiotherapy or surgery (usually laser surgery).

With larger tumours you may need surgery to remove all or part of the larynx. Radiotherapy may also be given after surgery to help to get rid of any cancer cells that may have been left behind.

Chemotherapy given with radiotherapy (chemoradiation) may also be a treatment option.

Chemotherapy is sometimes used to help to reduce the size of the cancer before radiotherapy or surgery. It can also be used if the cancer has spread beyond the larynx or has come back after radiotherapy.

Giving up smoking and drinking

If you have cancer of the larynx, your treatment is more likely to be successful and the side effects of treatments more manageable if you can give up, smoking and drinking alcohol before you start your treatment. It will also reduce the risk of the cancer returning, and the risk of other cancers developing.

Giving up smoking can be very difficult, especially at times of stress, but several organisations can help you such as QUIT. Your GP or cancer specialist can also give you advice.

Multidisciplinary team

In most hospitals, a team of specialists will decide which treatment is best for you. This is known as a multidisciplinary team and will include an ear, nose and throat (ENT) surgeon, a clinical oncologist (chemotherapy and radiotherapy specialist) and will often include a number of other healthcare professionals such as a:

- specialist nurse

- speech and language therapist

- radiologist to help analyse x-rays or other scans

- pathologist to advise on the type and extent of the cancer

Together they will be able to advise you on the most appropriate treatment, taking into account a number of factors like your age, general health, the cancer type and stage.

Other staff will also be available to help you if necessary, such as:

physiotherapists

counsellors and psychologists

dietitians

social workers.

Treatment choices

If two treatments are equally as effective for your type and stage of cancer, for example surgery or radiotherapy for early stage laryngeal cancer, your doctors may offer you a choice of treatments. Sometimes people find it very hard to make a decision.

If you are asked to make a choice, make sure that you have enough information about:

- the different treatment options
- what is involved
- the side effects you might have.

Having this information can help you decide what the right treatment is for you.

Giving your consent

Before you have any treatment your doctor will explain the aims of the treatment to you. You will usually be asked to sign a form saying that you give your permission (consent) for the hospital staff to give you the treatment. No treatment can be given without your consent. Before you are asked to sign the form you should have been given full information about:

- the type and extent of the treatment you are advised to have
- the advantages and disadvantages of the treatment
- any other treatments that may be available
- any significant risks or side effects of the treatment.

If you don't understand what you have been told, let the staff know straight away so that they can explain again. Some cancer treatments are very complex, so it's not unusual for people to need to have the information repeated.

People often feel that the hospital staff are too busy to answer their questions, but it's important that you know how the treatment is likely to affect you. The staff should be willing to make time for you to ask questions.

You can always ask for more time to decide about the treatment, if you feel that you can't make a decision when it's first explained to you. You are also free to choose not to have the treatment, and the staff can explain what may happen if you do not have it. It's essential to

tell a doctor or the nurse in charge so that they can record your decision in your medical notes. You do not have to give a reason for not wanting to have treatment, but it's helpful to let the staff know your concerns so that they can give you the best advice.

Second opinion

Usually a number of cancer specialists work together as a team and they use national treatment guidelines to decide on the most suitable treatment for a patient. Even so, you may want to have another medical opinion. Either your specialist or your GP may be willing to refer you to another specialist for a second opinion, if you feel it will be helpful. Getting a second opinion may cause a delay in the start of your treatment, so you and your doctor need to be confident that it will give you useful information.

If you do go for a second opinion it may be a good idea to take a friend or relative with you. It can also help if you make a list of questions so that you can make sure your concerns are covered during the discussion.

Benefits and disadvantages of treatment

Many people are frightened at the idea of having cancer treatments, because of the side effects that can occur. Although cancer treatments can cause side effects, these can usually be controlled with medicines.

Treatment can be given for different reasons and the potential benefits will vary for each person. For some people with laryngeal cancer, treatments like radiotherapy or surgery may be used with the aim of curing the cancer.

Sometimes if the cancer is very advanced or has come back, treatment may be used with the aim of controlling the cancer. This can lead to an improvement in symptoms and a better quality of life. However, for some people in this situation the treatment will have no effect on the cancer and they will get the side effects with little benefit.

If you have been offered treatment that aims to cure your cancer, deciding whether to have the treatment may not be difficult. However, if a cure is not possible and the treatment is being given to control the cancer for a period of time, it may be more difficult to decide whether to go ahead.

Making decisions about treatment in these circumstances is always difficult. You may need to discuss in detail with your doctor whether you wish to have treatment. If you choose not to, you can still be given supportive (palliative) care, with medicines to control any symptoms.

Radiotherapy for laryngeal cancer

Radiotherapy treats cancer by using high-energy rays to destroy the cancer cells, while doing as little harm as possible to normal cells. It will cure most people whose cancer has not spread outside the larynx.

When it is given

In people with larger tumours, radiotherapy may be given after removal of the larynx (laryngectomy). In this situation, the aim of the treatment is to destroy any cancer cells that may have been left behind after the surgery, particularly in the lymph glands in the neck.

Radiotherapy treatment is usually given as a series of short, daily treatments in the hospital radiotherapy department. The treatments are normally given from Monday to Friday with a rest over the weekend. However, sometimes you may also have treatment at the weekend, or more than one treatment each day. It's important to follow the treatment plan and avoid any unnecessary gaps in your course of treatment.

Radiotherapy treatment usually lasts from 3–7 weeks, depending on the type and size of the cancer. Your radiotherapy doctor will discuss your treatment plan and any possible side effects with you.

Before your treatment

Radiotherapy is carefully planned to make sure it is as effective as possible. The radiotherapy is aimed very precisely at the area of the larynx. It's important that you are able to lie still, in exactly the same position, each time the treatment is given. To help you to do this, a special mask (or shell) of your head and shoulders is made. The shell fits over your head and neck and is then fixed to the treatment couch. This holds you firmly in the right position.

Making the mask

The mask is made on one of your first visits to the radiotherapy department. It's made in the mould room of the radiotherapy department by a mould technician or radiographer (the person who gives the radiotherapy treatment). The process of making the mask can vary slightly between hospitals. It usually takes around 30 minutes.

There are two ways to make a mask. One technique uses wet plaster bandages and the finished mask is made of perspex (a type of plastic). The other way uses a type of mesh plastic, which is moulded to fit the shape of your face.

Our radiotherapy booklet has more information about radiotherapy masks.

Planning the treatment

Your treatment will be planned by a clinical oncologist (radiotherapy and chemotherapy doctor). You may need to make a few visits to the radiotherapy department to plan the radiotherapy. You will have a CT (computerised tomography) scan taken of the area to be treated. This scan takes lots of images from different angles to build up a three-dimensional picture of the area. At the same time, therapy radiographers will take measurements from you which are needed for treatment planning.

You will need to wear the mask for the planning sessions. You won't be able to speak while you have the mask on. However, the radiographers will tell you how to signal to them if you want to communicate with them.

Marks are drawn on the mask (or sometimes on your skin) to help the radiographer to position you accurately and to show where the radiotherapy rays will be directed. If the marks are drawn on your skin they must stay there throughout your treatment, but they can be washed off once the course of treatment has ended.

Once the scans and measurements have been taken, your doctors and a team of medical physicists will use special computer programmes to work out the exact dosage of your treatment. The planning process may take a week to ten days to complete, and then the actual treatment can start.

Treatment

Before each session of radiotherapy, the radiographers will position you carefully on the couch with the mask fitted. They will make sure that you are comfortable. The treatment only takes a few minutes. During this time you will be left alone in the room. However, you can signal to the radiographers, who will watch you on a television monitor from the next room. You have to lie still while the treatment is given, but you won't feel the radiotherapy. It's similar to having an x-ray.

Side effects

Before you start your treatment, your doctor will explain the likely side effects and how they can be controlled. Radiotherapy to the larynx can cause the following side effects:

Breathing problems

During radiotherapy treatment the tissues in your throat will become inflamed. Sometimes this inflammation leads to swelling which can lead to breathing problems. If this happens it's important that it's treated quickly. If you develop any breathing difficulties, or your breathing sounds different, then let a doctor or the hospital know as soon as possible.

Sore skin

The skin at the front of your neck will become red or darker. It will also become sore and feel like sunburn. The changes in the skin begin about two weeks after the treatment has begun and may continue until about 2 to 4 weeks after the treatment has ended. Sometimes the skin may peel or crack.

The staff in the radiotherapy department will advise you how to look after your skin during the treatment. They may prescribe creams or lotions for you to use if your skin becomes very sore. If the skin on your neck peels you may need a dressing on the area. This can be done by a community nurse or a practice nurse at your GP's surgery.

Men should not wet-shave during radiotherapy but can use an electric razor.

Some chemicals in soaps, creams, perfumes or beauty products can make your skin more sensitive to the effects of the radiotherapy. You should not use any soap, creams or lotions on the skin in the treatment area without first asking the radiotherapy staff. Avoid using perfumes and aftershave until the skin has healed. Even once the skin has recovered it may always be slightly darker than before.

Hair loss

Radiotherapy to the throat does not affect the hair on your head, but men lose their beard (usually permanently) from the areas of skin which are treated.

Sore throat

The lining of your throat will become sore and inflamed during the treatment. This can make it difficult to swallow. Your doctor can prescribe painkillers to ease this, which can be taken as a liquid. You will be given advice on foods which are easy to swallow. Most people manage to eat a soft diet until the soreness has settled, which usually occurs within a few weeks after the treatment has finished.

Some people find that their throat becomes too sore to eat or drink easily. If this happens, a thin tube (nasogastric tube) is passed up their nose and down into the stomach. A special liquid diet prescribed by a dietitian can then be given through the tube. Sometimes instead of a nasogastric tube a gastrostomy tube may be used instead. This is a feeding tube that passes directly into your stomach through the skin near your waist. PEG (percutaneous endoscopic gastrostomy) and RIG (radiologically-inserted gastrostomy) tubes are types of gastrostomy tubes that may be used.

Our nutritional support booklet has more information about nasogastric, PEG and RIG tube feeding.

Dry mouth or throat

Occasionally radiotherapy treatment to the larynx can affect the salivary glands, so that less saliva is produced.

This means the lining of your throat or mouth may become dry during treatment. Sometimes the dryness can continue for a long time after the treatment has finished. You may notice a feeling of sticky mucus in the throat, which will gradually clear up. You may also have a persistent tickly cough for a time.

Loss of voice

Your voice may already be hoarse before you start the treatment. It's likely to become more hoarse (or may even be lost completely) during the radiotherapy. Your voice will then gradually improve and get stronger over the following weeks and months after treatment. Sometimes it's helpful to see a speech and language therapist, who can advise you on voice exercises to speed up the recovery. Your doctor or specialist nurse can arrange this for you.

Loss of appetite

Some people find that they lose their appetite. If you don't feel like eating, your doctor, or a dietitian can prescribe nutritious, high calorie drinks to supplement or replace your meals until your appetite comes back.

Our diet booklet has some helpful hints on how to eat well when you are feeling ill, or if you find swallowing painful.

The loss of appetite may be at its worst towards the end of the course of treatment and during the first couple of weeks after your treatment has finished. It can be mild or more troublesome, depending on the dose of radiotherapy given and the length of your treatment. Your doctor will let you know what to expect.

Loss of taste and smell

Your sense of smell and taste may become dulled or changed during treatment and for a few months afterwards.

Tiredness

Radiotherapy often causes tiredness (fatigue). It's helpful to get as much rest as you can, especially if you have to travel a long way for treatment each day. The tiredness may last many months after the treatment has ended.

Radiotherapy does not make you radioactive and it's perfectly safe for you to be with other people, including children and pregnant women, throughout your treatment.

Surgery for laryngeal cancer

The type of surgery you have will depend on the size of the cancer and where it is in the larynx.

Surgery may be used to remove the tumour if:

- The cancer has stopped the vocal cords moving at all.
- The cancer has affected more of the larynx than just the vocal cords.
- You have an early tumour (a small tumour which is only in the larynx) that has not completely gone after radiotherapy treatment (which is unusual).
- The cancer comes back some time after radiotherapy.

Surgery may also be used to control symptoms of advanced cancer of the larynx.

Laser surgery (laser treatment)

If the tumour is very small, it may be destroyed by directing a laser light beam at the tumour. A thin, flexible, fibre optic tube with a light at the end is passed down the throat so that the laser can destroy the cancer cells.

Laser surgery is done under general anaesthetic. It may be possible to go home later the same day, but you might need to stay in hospital overnight. You may have some pain in your throat, but it shouldn't last for more than a couple of days. You may be asked to rest your voice after surgery. Your doctor or specialist nurse will give you more information about this before you go home from hospital.

Endoscopic resection

This type of surgery is used for small early stage cancer of the larynx. It is done under general anaesthetic. An endoscope (thin, flexible tube with a camera and light) is passed through your mouth and down to your throat. The camera gives the surgeon a magnified view of the affected area on special screens in the operating room. The surgeon uses either surgical instruments or laser to remove the affected area. You won't have a wound in your neck after this type of surgery as the endoscope is passed through your mouth to the throat. However, you may have some soreness in your mouth and throat.

Partial laryngectomy

Sometimes, part of the larynx will need to be removed – this is known as a partial laryngectomy. There are different types of partial laryngectomy operations. You might hear your surgeon use the terms **vertical partial laryngectomy** or **horizontal partial laryngectomy**. The type of operation you have will depend where in the larynx your cancer is.

Part of the voicebox will be left so that you will still be able to speak, but your voice is likely to be weaker or hoarse. After this operation, you may have a temporary opening in your neck (held open by a tube) to allow you to breathe. This is called a temporary tracheostomy or temporary stoma. This helps the remaining part of the larynx to heal. While you are recovering from surgery the tube will be removed and the stoma will then eventually close up. When the stoma closes up you may be left with a small scar on your neck.

Temporary tracheostomy

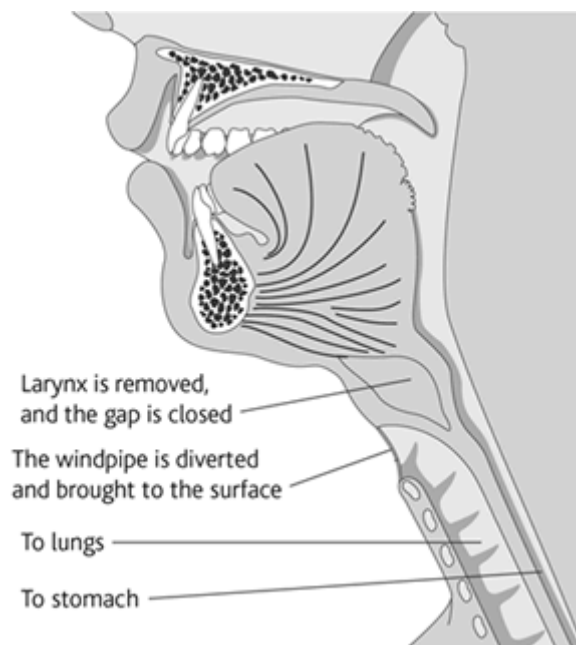
Sometimes a temporary tracheostomy may be needed to help with your breathing if you have a partial laryngectomy. It can also be necessary in the following situations:

- Before you start treatment if the cancer is likely to block or is actually blocking your airway.
- During radiotherapy if the tissues become inflamed and swollen leading to narrowing of your airway.
- To help with breathing difficulties if the cancer is very advanced.

Usually these temporary tracheostomies will only be needed for a short time.

Total laryngectomy

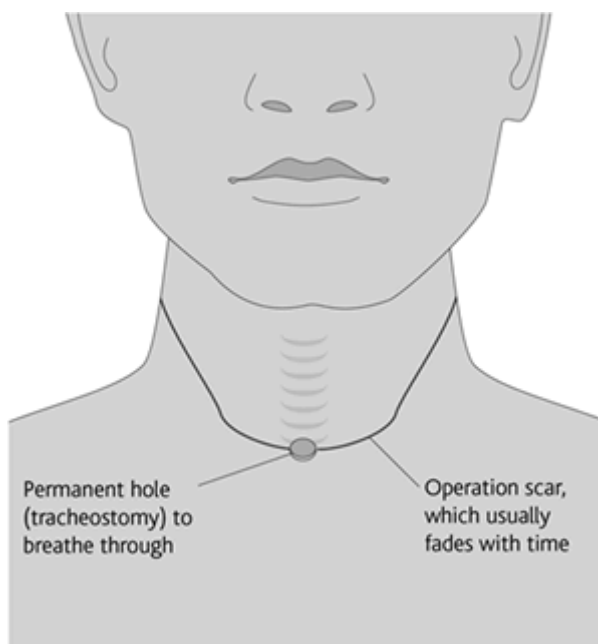
Some people need to have the whole voicebox removed. This operation is known as a **total laryngectomy**. People who have had a laryngectomy are sometimes called laryngectomees.



Laryngectomy

When the larynx is completely removed, there is no connection between the mouth or nose and the lungs. So, during the operation the surgeon creates an opening called a **tracheostomy** (or stoma) in the lower part of the neck for you to breathe through.

Sometimes during the operation your surgeon may need to remove some lymph nodes from around the larynx. This is called a neck dissection. Sometimes this is done because the nodes may contain a small number of cancer cells that did not show up in the earlier scans.



Tracheostomy (stoma)

After a total laryngectomy operation

Immediately after the operation the stoma will need to be held open by a tube (sometimes called a laryngectomy tube or tracheostomy tube) while it heals. You won't be able to speak at first and may need to communicate by writing. Our section on voice restoration discusses the different ways of being able to speak again.

In time, the stoma will stay open without the tube, but it's common for a tube to be used for the first few days or weeks. You will be taught how to keep the tube clean and how to replace it if necessary. You will breathe and cough through the tracheostomy.

A drip going into a vein in your arm will give you fluids for a few days. You may also have liquid foods given through a tube going into your nose which goes down into your stomach (NG tube). After a few days or weeks you will be able to eat and drink normally again. However you will need to build up your eating gradually and the hospital dietitian can advise you about this. Our diet booklet contains helpful tips.

There will be thin plastic tubes going into your wound to drain off fluid and allow healing.

You will have your tracheostomy for the rest of your life. This may be frightening at first, but you will be taught how to look after the tracheostomy until you are confident about doing it yourself.

Chemotherapy for laryngeal cancer

Chemotherapy is the use of anti-cancer (cytotoxic) drugs to destroy cancer cells. The drugs circulate in the bloodstream and can reach cancer cells anywhere in the body.

Chemotherapy is sometimes given before radiotherapy (called neoadjuvant or induction chemotherapy) for large laryngeal tumours. It may help to shrink the tumour to make the radiotherapy more likely to cure the cancer. Giving chemotherapy as well as radiotherapy can avoid having to remove the larynx with surgery. This means that the person does not lose their voice. Chemotherapy is sometimes given at the same time as the radiotherapy (sometimes called chemo-radiation). Chemotherapy may be used to treat tumours that have spread outside the larynx, or have come back after surgery and/or radiotherapy.

Chemotherapy for cancer of the larynx is usually given by injection into a vein (intravenously).

Your doctor or specialist nurse will tell you about the side effects your treatment may cause. The most commonly used drugs for cancer of the larynx are cisplatin and 5FU (fluorouracil). Other drugs that might be used include carboplatin, docetaxel (Taxotere®), gemcitabine and paclitaxel (Taxol).

Side effects

While the chemotherapy drugs are acting on the cancer cells in your body, they also temporarily reduce the number of normal cells in your blood. When this happens, you are more likely to get an infection and you may get tired easily. During chemotherapy, your blood will be tested regularly and, if necessary, you will be given antibiotics to treat any infection. Blood transfusions may be given if you are anaemic.

Other side effects may include feeling sick (nausea), being sick (vomiting), constipation, diarrhoea and hair loss. Some drugs also make your mouth sore and may cause small mouth ulcers. Regular mouthwashes are important and your nurses will show you how to do these properly. If you don't feel like eating, you can supplement or replace your meals with nutritious, high-calorie drinks which your doctor can prescribe. Medicines are also available from your doctor to help stop you feeling sick.

Although they may seem difficult to cope with at the time, remember that these side effects are temporary and will disappear once your treatment is over. If your hair falls out, it will grow back within a few months. Many people wear wigs, hats or scarves. You may be entitled to a free wig from the NHS and your doctor or the nurse looking after you will be able to arrange for a wig specialist to visit you.

Chemotherapy affects different people in different ways. Some people can lead a normal life during their treatment, while others find that they become very tired and have to take things more slowly. Just do as much as you feel like and try not to overdo it.

Our chemotherapy booklet discusses the treatment and its side effects in more detail.

Biological therapies for laryngeal cancer

Biological therapies use substances that are produced naturally in the body to destroy cancer cells. There are several types of biological therapy that may be used to treat different cancers. These include monoclonal antibodies.

Monoclonal antibodies

Monoclonal antibodies are drugs that recognise and bind to specific proteins (receptors) that are found in particular cancer cells or in the blood stream.

Some cancer cells have receptors known as epidermal growth factor receptors (EGFR). When growth factors attach to the receptor, the cancer cell is stimulated to grow and divide. The monoclonal antibodies lock onto the EGFR and may prevent the cancer cells from growing and dividing. They may also make the cancer cells more sensitive to the effects of radiotherapy.

The monoclonal antibody cetuximab (Erbix®) has been recommended by NICE (National Institute for Health and Clinical Excellence) and the SMC (Scottish Medical Consortium) as a possible treatment for some people with laryngeal cancer. It's approved to be used with radiotherapy for people with locally advanced (whose cancer has not spread to another area

of their body) squamous cell head and neck cancer who are unable to have chemotherapy. Laryngeal cancer is a type of head and neck cancer.

Cetuximab is given by drip (infusion) into a vein.

Research - clinical trials for laryngeal cancer

Cancer research trials are carried out to try to find new and better treatments for cancer. Trials that are carried out on patients are known as clinical trials.

Clinical trials may be carried out to:

- test new treatments, such as new chemotherapy drugs, gene therapy or cancer vaccines
- look at new combinations of existing treatments, or change the way they are given, to make them more effective or to reduce side effects
- compare the effectiveness of drugs used to control symptoms
- find out how cancer treatments work
- see which treatments are the most cost-effective.

Trials are the only reliable way to find out if a different operation, type of chemotherapy, radiotherapy, or other treatment is better than what is already available.

Taking part in a trial

You may be asked to take part in a treatment research trial. There can be many benefits in doing this. Trials help to improve knowledge about cancer and develop new treatments. You will also be carefully monitored during and after the study. Usually, several hospitals around the country take part in these trials but you may have to travel a long way to take part. It's important to bear in mind that some treatments that look promising at first are often later found not to be as good as existing treatments, or to have side effects that outweigh the benefits.

If you decide not to take part in a trial your decision will be respected and you do not have to give a reason. There will be no change in the way that you are treated by the hospital staff and you will be offered the best standard treatment for your situation.

Blood and tumour samples

Many blood samples and tumour biopsies may be taken to help make the right diagnosis. You may be asked for your permission to use some of your samples for research into cancer. If you are taking part in a trial you may also be asked to give other samples which may be frozen and stored for future use, when new research techniques become available. These samples will have your name removed from them so you can't be identified.

The research may be carried out at the hospital where you are treated, or it may be at another hospital. This type of research takes a long time and results may not be available for many years. The samples will, however, be used to increase knowledge about the causes of

cancer and its treatment. This research will, hopefully, improve the outlook for future patients.

Living with laryngeal cancer

Loss of speech and voice restoration after a laryngectomy

Not being able to speak is a great loss for anyone who has had a laryngectomy. It can take a long time for you and your family and friends to adjust to this change. However, there are several methods to help people with a laryngectomy to produce sound and learn to speak again.

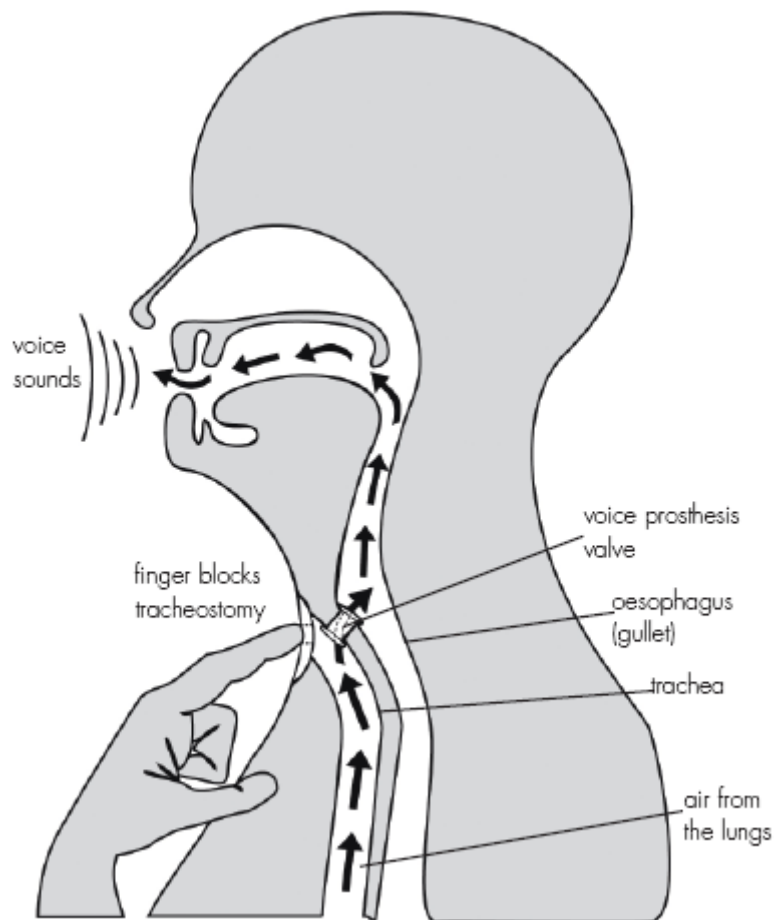
A speech and language therapist will usually visit you before your operation to discuss the different ways of communicating. You may be able to meet someone who has had similar surgery or watch videos of people talking after they have had a laryngectomy. Some people find this very helpful, while other people prefer to have written information. The method of speech you can use will depend on the type of surgery you have, your individual circumstances and what you prefer.

Voice prosthesis

During the laryngectomy operation, a channel (tract) is made through the wall between the windpipe and the gullet (oesophagus). A valve (voice prosthesis) is inserted into the opening. When you breathe out and cover the tracheostomy with a thumb or finger, air from the lungs passes through the valve and vibrates in your gullet to produce a voice. As with normal speech, movements of your lips, cheeks and tongue shape the sound into words.

The valve also prevents food and fluids from passing into the windpipe. It may take a while to learn how to speak with a voice prosthesis. The voice can sound quite natural, although in women it's usually a lower pitch than before the operation.

There are several types of valve. The most common examples are BlomSinger, Groningen and Provox valves. Some types are completely within the stoma and are known as in-dwelling valves. They need to be changed by a doctor, speech and language therapist or nurse. Others (ex-dwelling) have a strap outside the stoma and can be changed by you or your carer. There are benefits and disadvantages of each type and these should be discussed with you by a doctor, specialist nurse or speech and language therapist.



Position of the voice prosthesis valve between the trachea and the oesophagus

Oesophageal speech

Another method is a technique known as oesophageal speech. As soon as you have recovered from a laryngectomy, you can be taught to use this technique. Air is squeezed into the gullet from the mouth. As the air moves up from the gullet, it vibrates and can be used to give a voice. Movements of the lips, cheeks and tongue shape the sound into words.

Some people find it easy to make oesophageal speech, or use a voice prosthesis, but other people find it more difficult. It's usually best to practise little and often. A speech and language therapist will be able to help you have the best speech as comfortably as possible. They will also help you to use your new way of talking for social situations and on the telephone.

At least two-thirds of people with a laryngectomy are able to use a voice prosthesis or oesophageal speech. Some people can go back to jobs which involve a lot of talking: for example, telephone operators and salespeople.

Electropharynx

Several types of electronic aids are available to help produce a voice. While you are in hospital you may be given one to use while you practice developing your new voice. You may choose to use it as your main way of communicating. The electronic devices are held next to the neck under the chin and make sound vibrations that can be formed into speech. Your speech and language therapist will help you to choose the type that suits you best. They will show you how to use it and look after it.

To use an aid properly or to have good oesophageal speech takes training from a speech and language therapist. You'll need plenty of practice, but it's well worth the effort.

Electronic keyboards

Most people with laryngectomy can learn to speak effectively using one of the techniques described here. Some people also like to use electronic keyboards (like small typewriters) to communicate. Palm-tops or using your mobile phone to create a text message for other people to read can also be effective. Several different types of writing device are available. Your speech and language therapist will be able to show you these.

Living with a laryngectomy

Coping and support

Some people who have had a laryngectomy are very worried about the change in their appearance. You may feel embarrassed about the stoma, which can affect your self-confidence and may be distressing. It can take time for you to adjust, but help is available.

In the hospital your doctor, nurse and speech and language therapist can give you expert advice. They can give information and support and put you in touch with someone in your area who has had a laryngectomy, to get practical advice. The National Association of Laryngectomee Clubs and the Cancer Laryngectomee Trust have national networks. The support of a partner, family member or close friend can also be very helpful at this time.

Effects of a tracheostomy

After a laryngectomy, the air breathed in through the stoma goes directly into the lungs and so is no longer warmed and moistened by the nasal passages. The cooler, dry air going into the throat can irritate the lining of the throat and lungs. This can increase the production of mucus (sputum) and may cause coughing.

It's very important to keep the stoma covered with a stoma cover or filter. You will be shown different types of stoma filter while you are on the ward and will be taught how to use them. It's also important to avoid getting any liquid into the stoma.

You won't be able to sniff or blow your nose. If you have a cold or a chesty cough the mucus (phlegm) will be coughed up through the tracheostomy, not through your mouth.

Reduced sense of smell and taste

After a total laryngectomy, you do not breathe through your nose and mouth and may lose your sense of smell. After a few months this can go back to normal. You may be able to have some sense of smell by learning the 'polite yawning technique', where you yawn with closed lips. This draws air in through the nose, allowing you to smell. It can also improve your sense of taste. Your speech and language therapist may be able to teach you how to do this.

Stoma filters

Small devices known as stoma filters are available. They are also known as heat and moisture exchangers (HMEs). These can be attached over the stoma or put onto the tracheostomy tube to warm and moisturise the air. HMEs can reduce the production of sputum and help to prevent coughing and chest infections. Your doctor, nurse or speech and language therapist can show you these devices.

Hands-free valves allow people using a voice prosthesis to speak without needing to cover the stoma with a finger. As well as being known as hands-free valves they are sometimes called Tracheostoma valves. They are not suitable for everyone, but you could ask your specialist or speech and language therapist whether they would be appropriate in your case. They are available on prescription.

Chest infection

A tracheostomy can make you more likely to get chest infections. If you notice any change in the colour of your sputum, or have a cough that does not go away, it's important to report it to your doctor straight away. They may prescribe antibiotics for you.

Shower aids

Shower aids are available to prevent water going into the stoma whilst you have a shower. You can ask your specialist nurse or speech and language therapist about these.

Swimming equipment

Once you have a tracheostomy, you won't be able to swim without using specialist equipment. This equipment can be used to stop water from going into the stoma. It is only available (in the UK) through the National Association of Laryngectomee Clubs, which give training to make sure that people can use the equipment safely.

Follow-up after treatment for laryngeal cancer

After your treatment has ended, your cancer specialist will ask you to go back to the hospital for regular check-ups and possibly scans or x-rays. These will often continue for several years. If you have any problems or notice any new symptoms in between appointments, let your doctor know as soon as possible.

For people whose treatment is over apart from regular check-ups, our booklet on adjusting to life after cancer treatment gives useful information and advice.

Two things that may increase your risk of cancer of the larynx coming back are smoking and alcohol. Your cancer specialist or GP can advise you on your alcohol intake and give information on how to stop smoking. There is also a free NHS smoking helpline and QUIT, which both give help and support if you are trying to give up smoking.

Living with and after cancer

Emotional effects

Information on the emotions you might experience as a result of your cancer diagnosis, ways that you might manage them and other sources of support.

Relationships and communication

Advice on how to talk to other people, talking to children, relationships and sexuality.

Note: JASCAP has booklets for the above subjects.

Questions you might like to ask your doctor

You can fill this in before you see the doctor or surgeon, and then use it to remind yourself of the questions you want to ask, and the answers you receive.

1. _____

Answer _____

2. _____

Answer _____

3. _____

Answer _____

4. _____

Answer _____

5. _____

Answer _____

JASCAP : We need your help

We hope that you found this booklet useful.

To help other patients and their families we need and intend to extend our Patient Information Services in many ways.

Our Trust depends on voluntary donations. Please send your donation by Cheque or D/D payable in Mumbai in favour of "JASCAP".

Note for Reader

This JASCAP booklet is not designed to provide medical advice or professional services and is intended to be for educational use only. The information provided through JASCAP is not a substitute for professional care and should not be used for diagnosing or treating a health problem or a disease. If you have, or suspect you may have, a health problem you should consult your doctor.

JASCAP

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