Treating Laryngeal and Hypopharyngeal Cancer

How are laryngeal and hypopharyngeal cancers treated?

Treatment for laryngeal or hypopharyngeal cancer may include:

- Surgery for Laryngeal and Hypopharyngeal Cancers
- Radiation Therapy for Laryngeal and Hypopharyngeal Cancers
- Chemotherapy for Laryngeal and Hypopharyngeal Cancers
- Targeted Therapy for Laryngeal and Hypopharyngeal Cancers
- Immunotherapy for Laryngeal and Hypopharyngeal Cancers

Common treatment approaches

Depending on the stage of the cancer and your overall health, different treatment options may be used alone or in combination. In making your treatment plan, important factors to consider are the site and the stage (extent) of the cancer. Your cancer care team will also take into account your general health and your personal preferences. A major focus of treatment is to try to save your larynx and voice if possible. Most experts don’t recommend surgery that will totally remove the larynx unless there are no other options.

- Treating Laryngeal and Hypopharyngeal Cancers by Stage

Who treats laryngeal and hypopharyngeal cancers?

Based on your treatment options, you might have different types of doctors on your treatment team. These doctors can include:
• An **otolaryngologist** (also known as an *ear, nose, and throat*, or *ENT* doctor): a surgeon who treats certain diseases of the head and neck.
• A **radiation oncologist**: a doctor who treats cancer with radiation therapy.
• A **medical oncologist**: a doctor who treats cancer with medicines such as chemotherapy, targeted therapy, or immunotherapy.
• A **plastic surgeon**: a doctor who specializes in reconstructing or repairing parts of the body
• An **oral and maxillofacial surgeon**: a dental surgeon who treats diseases of the mouth, teeth, and jaws.

A **speech therapist**, an **audiologist**, and a **dietician** are also key players on your cancer care team. You'll meet with them before treatment starts so they can see how well you can swallow and make a nutrition plan for you to follow during treatment. Many other specialists could be involved in your care as well, including physician assistants, nurse practitioners, nurses, nutrition specialists, speech therapists, social workers, and other health professionals.

• **Health Professionals Associated with Cancer Care**

**Making treatment decisions**

It's important to discuss all treatment options, including their goals and possible side effects, with your doctors to help make the decision that best fits your needs. For instance, if the cancer is too advanced to be cured, the goal may be to remove or destroy as much of the cancer as possible to keep the tumor from growing, spreading, or returning for as long as possible. Some of the treatments can also be used as palliative treatment if all the cancer cannot be removed. Palliative treatment is meant to relieve symptoms, such as pain or trouble swallowing, but it's not expected to cure the cancer.

It is often a good idea to seek a second opinion. A second opinion can give you more information and help you feel more confident about the treatment plan you choose.

• **Questions to Ask Your Doctor About Laryngeal or Hypopharyngeal Cancer**
• **Seeking a Second Opinion**

**Thinking about taking part in a clinical trial**

Clinical trials are carefully controlled research studies that are done to get a closer look
at promising new treatments or procedures. Clinical trials are one way to get state-of-the-art cancer treatment. In some cases they may be the only way to get access to newer treatments. They are also the best way for doctors to learn better methods to treat cancer. Still, they’re not right for everyone.

If you would like to learn more about clinical trials that might be right for you, start by asking your doctor if your clinic or hospital conducts clinical trials.

- Clinical Trials

Considering complementary and alternative methods

You may hear about alternative or complementary methods that your doctor hasn’t mentioned to treat your cancer or relieve symptoms. These methods can include vitamins, herbs, and special diets, or other methods such as acupuncture or massage, to name a few.

Complementary methods refer to treatments that are used along with your regular medical care. Alternative treatments are used instead of a doctor’s medical treatment. Although some of these methods might be helpful in relieving symptoms or helping you feel better, many have not been proven to work. Some might even be harmful.

Be sure to talk to your cancer care team about any method you are thinking about using. They can help you learn what is known (or not known) about the method, which can help you make an informed decision.

- Complementary and Integrative Medicine

Help getting through cancer treatment

People with cancer need support and information, no matter what stage of illness they may be in. Knowing all of your options and finding the resources you need will help you make informed decisions about your care.

Whether you are thinking about treatment, getting treatment, or not being treated at all, you can still get supportive care to help with pain or other symptoms. Communicating with your cancer care team is important so you understand your diagnosis, what treatment is recommended, and ways to maintain or improve your quality of life.

Different types of programs and support services may be helpful, and can be an important part of your care. These might include nursing or social work services,
financial aid, nutritional advice, rehab, or spiritual help.

The American Cancer Society also has programs and services – including rides to treatment, lodging, and more – to help you get through treatment. Call our National Cancer Information Center at 1-800-227-2345 and speak with one of our trained specialists.

- Palliative Care
- Find Support Programs and Services in Your Area

Choosing to stop treatment or choosing no treatment at all

For some people, when treatments have been tried and are no longer controlling the cancer, it could be time to weigh the benefits and risks of continuing to try new treatments. Whether or not you continue treatment, there are still things you can do to help maintain or improve your quality of life.

Some people, especially if the cancer is advanced, might not want to be treated at all. There are many reasons you might decide not to get cancer treatment, but it's important to talk to your doctors and you make that decision. Remember that even if you choose not to treat the cancer, you can still get supportive care to help with pain or other symptoms.

- If Cancer Treatments Stop Working

*The treatment information given here is not official policy of the American Cancer Society and is not intended as medical advice to replace the expertise and judgment of your cancer care team. It is intended to help you and your family make informed decisions, together with your doctor. Your doctor may have reasons for suggesting a treatment plan different from these general treatment options. Don’t hesitate to ask him or her questions about your treatment options.*

---

**Surgery for Laryngeal and Hypopharyngeal Cancers**
Studies have shown that people with head and neck cancer who are treated at centers that perform a lot of head and neck cancer surgeries, tend to live longer. And because of the complicated type of surgeries, along with the need for coordination between cancer specialists to make a complete treatment plan, it’s very important to have a surgeon and cancer center who has experience treating these cancers.

**Quit smoking before laryngeal and hypopharyngeal cancer surgery**

If you smoke, you should quit. Smoking during cancer treatment is linked to poor wound healing, more side effects, and less benefit from treatment which can raise your risk of the cancer coming back (recurrence). Smoking after treatment can also increase the chance of getting another new cancer. **Quitting smoking for good (before treatment starts, if possible) is the best way to improve your chances of survival.** It is never too late to quit. For help, see [How To Quit Using Tobacco](#).

**What kind of surgery is done to treat laryngeal or hypopharyngeal cancer?**

Surgery is commonly used to treat laryngeal and hypopharyngeal cancers. Depending on the type, stage, location of the cancer, and other tissues involved, different operations might be used to remove the cancer and sometimes other tissues near the larynx or hypopharynx. In almost all surgeries, the plan is to take out all of the cancer along with a rim (margin) of healthy tissue around it.

Surgery might be the only treatment needed for some early-stage cancers. It also might be used along with other treatments, like chemotherapy or radiation, for later stage cancers.

After the cancer is removed, reconstructive surgery might be done to help make the changed areas look and work better.

**Endoscopic surgery**

For this surgery, an endoscope is passed down your throat to find the tumor. The endoscope is a long thin tube with a light and camera on the end of it. Using the camera, the doctor can see the tumor and pass long surgical instruments through the endoscope to find, biopsy, and treat some early-stage cancers of the larynx. For early-stage laryngeal cancer, studies have shown that endoscopic surgery can be as effective as radiation therapy.
Vocal cord stripping

If the cancer or pre-cancer is confined to the surface of the vocal cords, this type of surgery can strip away the cancer and the superficial layers of tissue on the vocal cords. Most people can speak normally again after this operation.

Laser surgery

Lasers can also be used through the endoscope. They can be used to excise (cut out) the tumor. This is sometimes called transoral laser microsurgery (TLM).

Laryngectomy

Laryngectomy is the removal of part or all of the larynx (voice box). It involves making an incision (cut) on the outside of the neck over the area of the Adam’s apple.

Partial laryngectomy: Smaller cancers of the larynx often can be treated by removing only part of the voice box. There are different types of partial laryngectomies, but they all have the same goal: to take out all of the cancer while leaving behind as much of the larynx as possible.

In a supraglottic laryngectomy, only the part of your larynx above the vocal cords is removed. This procedure can be used to treat some supraglottic cancers, and will allow you to speak normally afterward.

For small cancers of the vocal cords, the surgeon might be able to remove the cancer by taking out only one side of the larynx (one vocal cord) and leaving the other behind. This is called a hemilaryngectomy. Some ability to speak remains after this surgery.

Total laryngectomy: This procedure removes your entire larynx. The trachea (windpipe) is then brought up through the skin of the front of your neck as a stoma (or hole) that you breathe through (see the picture below). This is called a tracheostomy. If your entire larynx is removed, you will no longer be able to speak as you did, but you can learn other ways of speaking. (See Living as a Laryngeal or Hypopharyngeal Cancer Survivor) The connection between the throat and the esophagus (swallowing tube) is usually not affected, so you can swallow food and liquids just as you did before the operation.

**Total or partial pharyngectomy**

Surgery to remove all or part of the pharynx (throat) is called a pharyngectomy. This operation might be used to treat cancers of the hypopharynx. Often, the larynx is removed along with the hypopharynx. After surgery, you may need reconstructive surgery to rebuild this part of the throat and improve your ability to swallow.

**Lymph node removal**

Cancers of the larynx and hypopharynx can spread to the lymph nodes in the neck. If your doctor thinks that lymph node spread is likely, lymph nodes (and other nearby tissues) may be removed from your neck. This operation, called a **neck dissection**, is often done at the same time as the surgery to remove the main tumor. This might be needed to be sure that all of the lymph nodes likely to contain cancer are removed. Doctors determine the likelihood the cancer has spread to the lymph nodes based on
the size and location of the tumor and whether or not the lymph nodes look enlarged or abnormal on an imaging test.\(^7\)

The two most common forms of neck dissection are the comprehensive neck dissection and the less extensive selective neck dissection. They differ in the amount of tissue removed from the neck.

- **Comprehensive neck dissection:** Some nerves, veins, and muscles might be removed, while still removing all of the lymph nodes in the neck.
- **Selective neck dissection:** No nerves, veins, or muscles are affected during this type of neck dissection and only lymph nodes in selected parts of the neck are removed. This type of surgery removes fewer normal structures to try to keep your shoulder and neck working normally.

**Thyroidectomy**

Sometimes the cancer spreads into the thyroid gland and all or part of it must be removed. The thyroid sits in the front of your neck and wraps around to the sides of the trachea (windpipe). It makes hormones that control your metabolism and how your body uses calcium.

If all of the thyroid gland is removed, your body can no longer make the thyroid hormone it needs. In this case, you must take thyroid hormone (levothyroxine) pills to replace the loss of the natural hormone.

**Reconstructive surgery**

These operations might be done to help restore the structure or function in areas affected by surgery to remove the cancer.

**Myocutaneous flaps:** Sometimes a muscle and attached piece of skin, from an area close to your throat, such as the chest (pectoralis major flap), may be partly removed and turned upward to reconstruct or rebuild part of your throat.

**Free flaps:** With the advances in microvascular surgery (sewing together small blood vessels under a microscope), surgeons now have many more reconstruction options. Tissues from other parts of your body such as a piece of intestine or a piece of arm muscle can be used to replace parts of your throat.
Tracheostomy

A tracheostomy is made when the trachea (windpipe) is connected to a hole (stoma) in the front of the neck to help a person breathe by letting air in and out of the lungs through that hole. It may be used in certain cases.

For instance, after a partial laryngectomy or pharyngectomy, a temporary (short-term) tracheostomy may be needed to help protect your airway while you recover from surgery. To do this, a small plastic tube (a trach tube; short for tracheostomy tube) is put into your trachea through a hole in the front of your neck. The tube stays in place for a short time, and is removed when it’s no longer needed. You then breathe through your mouth and nose like you did before.

As described above, a permanent tracheostomy is needed after a total laryngectomy. In this case, the opening in the trachea is attached to a hole in the skin in the front of your neck. A trach tube or stoma cover may be needed to help keep the tracheostomy hole open. You will breathe through this opening instead of through your mouth and nose.

If a laryngeal or hypopharyngeal cancer is blocking the windpipe and is too big to remove completely, an opening may be made to connect the lower part of your windpipe to a stoma (hole) in the front of your neck to bypass the tumor and allow you to breathe more comfortably.

Gastrostomy tube

Cancers in the larynx and hypopharynx might make it hard for you to swallow enough food to maintain good nutrition and a healthy weight. This can make you weak and make it harder to finish treatment.

Some people with laryngeal or hypopharyngeal cancer may need to have a feeding tube (usually called a gastrostomy tube or G-tube), put in place before treatment. A G-tube is put through the skin and muscle of your abdomen (belly) right into your stomach. The tube is often put in place with the help of a flexible, lighted instrument (endoscope) passed down your mouth and into the stomach. This is done while you are sedated (asleep). When it’s placed through an upper endoscopy, it’s called a percutaneous endoscopic gastrostomy, or PEG tube. Another option is to put the tube in during an operation. Once in place, liquid nutrition and medicines can be put right into the stomach through the tube.

Often, the gastrostomy tube is only needed for a short time to help you get enough
nutrition during cancer treatment. The tube is often removed once you can swallow again after treatment. It’s important to keep swallowing even when you’re getting most of your nutrition through a G tube. This helps keep those muscles active and gives you a better chance of going back to swallowing normally after treatment is complete.

**Possible risks and side effects of surgery**

All surgery carries some risks, including [blood clots](#), [infections](#), complications from anesthesia, and pneumonia. These risks are generally low but are higher with more complicated operations. Rarely, some people do not survive the surgery.

Patients who have a laryngectomy or pharyngectomy typically lose the ability to speak normally. Some people will need a tracheostomy after surgery. Less extensive operations can also affect speech in some cases. (See [Living as a Laryngeal or Hypopharyngeal Cancer Survivor](#) for more about speech after surgery.)

Surgeries that involve the throat or voice box can lead to a gradual narrowing (stenosis) of the throat or larynx. Sometimes this can make it hard to breathe. If this happens, you might need a tracheostomy.

Throat or larynx surgeries might also sometimes make it hard to swallow well. This can affect how you eat, and might be severe enough to require a permanent feeding tube.

Laryngectomy and pharyngectomy can also lead to the development of a fistula (an abnormal opening between 2 areas that are not normally connected). Surgery may be needed to fix it.

A very rare but serious complication of neck surgery is rupture of a carotid artery (the large artery on either side of the neck).

**More information about Surgery**

For more general information about surgery as a treatment for cancer, see [Cancer Surgery](#).

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#).

**Hyperlinks**

3. [www.cancer.org/treatment/understanding-your-diagnosis/tests/endoscopy.html](http://www.cancer.org/treatment/understanding-your-diagnosis/tests/endoscopy.html)

**References**


Lippincott Williams & Wilkins; 2019.


Last Revised: January 21, 2021

Radiation Therapy for Laryngeal and Hypopharyngeal Cancers

*Studies have shown that people who are treated at centers that treat a lot of head and neck cancers with radiation, tend to live longer. And because of the complicated types of surgeries, along with the need for coordination between cancer specialists to make a complete treatment plan, it's very important to have a cancer center and radiation oncologist who has experience treating these cancers.*

Radiation therapy uses high-energy x-rays or particles to kill cancer cells. It can be used
in many ways to treat laryngeal and hypopharyngeal cancers:

- **As the main (primary) treatment** for some early-stage laryngeal and hypopharyngeal cancers. If the cancer is small, it can often be destroyed by radiation and surgery isn't needed. This can help to preserve better voice quality.
- **For people who are too sick to have surgery.**
- **After surgery (adjuvant treatment),** to try to kill any small areas of cancer (too small to be seen by the naked eye) that might be left behind and help lower the chance the cancer will come back.
- **For cancer that comes back after treatment** (cancer recurrence).
- **To ease symptoms** of advanced laryngeal and hypopharyngeal cancer such as pain, bleeding, trouble swallowing, and problems caused when cancer spreads to the lungs or bones. (This is called palliative or supportive care.)

Many times, for advanced laryngeal and hypopharyngeal cancers, chemotherapy is given at the same time as the radiation. This combination, called chemoradiation, often works better than radiation alone, but it also has more side effects.

Radiation to this part of your body can cause problems to your teeth and gums, so it’s important to see a dentist before starting treatment. A dentist can make sure your mouth is healthy before treatment. They might recommend that certain bad teeth be removed before you start radiation because this can increase your chance of infection during treatment. During and after treatment your dentist can help check for and treat any problems that may come up, such as infection or tooth and bone damage.

**Quit smoking before laryngeal and hypopharyngeal cancer treatment**

If you smoke, you should quit. Your cancer might not shrink as well if you smoke during radiation treatment, you might have more side effects, and your benefit from radiation treatment might be less (which can raise your risk of the cancer coming back). Smoking after treatment can also increase the chance of getting another new cancer. Quitting smoking for good (before treatment starts, if possible) is the best way to improve your chances of survival. It is never too late to quit. For help, see How To Quit Using Tobacco.

**Types of radiation therapy for laryngeal and hypopharyngeal cancer**

The types of radiation therapy that might be used to treat laryngeal and hypopharyngeal cancer are:
External beam radiation therapy

The main type of radiation therapy used to treat laryngeal and hypopharyngeal cancer is **external beam radiation therapy**\(^6\). External beam radiation therapy (EBRT) focuses radiation from a source outside the body on the cancer.

Before your treatments start, the radiation team will use a CT scan\(^7\) to take careful measurements to determine the correct angles for aiming the radiation beams and the proper dose of radiation. A flexible, but sturdy, head and neck mask made from a plastic mesh might be made to hold your head, neck, and shoulders in the exact same position for each treatment. Some people might feel a bit confined while this mask is on and might need to ask for medicine to help them relax during the treatment. Sometimes, the mask can be adjusted so that it is not too constricting. Your radiation oncologist can discuss the options with you.

Radiation therapy is much like getting an x-ray, but the radiation is much stronger. The procedure itself doesn't hurt. Each treatment lasts only a few minutes, but the setup time – getting you into place for treatment – usually takes longer.

Standard EBRT for laryngeal and hypopharyngeal cancer is usually given in daily fractions (doses), 5 days a week, for about 7 weeks. Other schedules for radiation that might be used to treat laryngeal or hypopharyngeal cancer include:

- **Hyperfractionation radiation**: a slightly lower radiation dose is given more than once a day (for example, radiation is given twice a day for 7 weeks)
- **Accelerated fractionation radiation**: a standard dose of radiation is given each day over a shorter amount of time (5 to 6 weeks) instead of the usual 7 weeks (for example, radiation is given 6 days a week over 5 weeks instead of the standard 5 days a week for 7 weeks)
- **Hypofractionation radiation**: a slightly higher radiation dose is given each day to lessen the number of treatments (for example, a higher radiation dose is given each day for 6 weeks, not the standard 7 weeks)

There are also more advanced EBRT techniques that help doctors focus the radiation more precisely:
Three-dimensional conformal radiation therapy (3D-CRT): 3D-CRT uses special computers to map the location of the tumor precisely. Several radiation beams are then shaped and aimed at the tumor from different directions, which makes it less likely to damage normal tissues.

Intensity modulated radiation therapy (IMRT): IMRT is a form of 3D-CRT. It uses a computer-driven machine that actually moves around the patient as it delivers radiation. Along with shaping the beams and aiming them at the tumor from several angles, the intensity (strength) of the beams can be adjusted to limit the dose reaching nearby normal tissues. This helps the doctor deliver a higher dose to the tumor.

Brachytherapy

Internal radiation therapy, also known as brachytherapy, puts radioactive material right into or near the cancer. It’s rarely used to treat laryngeal and hypopharyngeal cancer as first treatment, but might be used if the cancer recurs (comes back).

Side effects of radiation therapy for laryngeal or hypopharyngeal cancer

If you are going to get radiation therapy, it’s important to ask your doctor about the possible side effects, so you know what to expect.

Common side effects depend on where the radiation is aimed and can include:

- Skin problems in the area being treated, ranging from redness to blistering and peeling
- Mouth sores
- Dry mouth
- Worsening of hoarseness
- Trouble swallowing
- Change of taste
- Possible breathing trouble from swelling
- Tiredness
- Hearing problems

Most of these side effects slowly go away when treatment is over. Side effects of
radiation tend to be worse if chemotherapy is given at the same time. Tell your doctor about any side effects you have because there are often ways to help.

**Mouth sores and problems swallowing**

Many people treated with radiation to the neck and throat area have painful sores in the mouth and throat that can make it very hard to eat and drink. This can lead to weight loss and malnutrition. The sores heal with time after the radiation ends, but some people might continue to have problems swallowing long after treatment ends.

*Ask your speech pathologist about swallowing exercises you can do to help keep those muscles working and increase your chance of eating normally after treatment.*

**Dry mouth**

Radiation aimed at the head and neck might damage the salivary glands, leading to dry mouth that doesn't get better with time. This can cause discomfort and problems swallowing, and can also lead to tooth decay and damage to the jaw bone. People treated with radiation to the neck and throat must pay close attention to their oral health and see a dentist regularly.

**Thyroid problems**

Radiation might damage your thyroid gland. Your doctor will order regular blood tests to see how well your thyroid is working. You may need treatment if it's been damaged and not working well.

**Lymphedema**

Some people treated with radiation therapy might be at risk of developing lymphedema in the head and neck areas that were radiated. These areas can become swollen and firm. This can be worse if the person also had surgery. Sometimes, medicines, physical therapy, or massage therapy might be helpful.

**Damage to the carotid artery**

A person who has had radiation to the neck area might have an increased risk of stroke many years after treatment. This might be because of health problems that were already present before radiation such as narrowing of the artery or an increase in plaque both of which can decrease blood flow. People who smoke are also at risk.
Because of this some doctors might schedule regular ultrasounds for you after treatment, to keep an eye on your arteries.

**More information about radiation therapy**

To learn more about how radiation is used to treat cancer, see [Radiation Therapy](#)\(^{12}\).

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)\(^{13}\).

**Hyperlinks**


**References**


Last Revised: January 21, 2021

---

**Chemotherapy for Laryngeal and**
Hypopharyngeal Cancers

Quit smoking before laryngeal and hypopharyngeal cancer treatment

If you smoke, you should quit. Smoking during chemotherapy treatment can cause more side effects and can cause the chemo drugs to not work as well. It can give you a higher chance of getting an infection and is linked to worse outcomes. Smoking after treatment can also increase the risk of the cancer coming back and of getting another new cancer. Quitting smoking (before treatment starts, if possible) is the best way to improve your chances of survival. It is never too late to quit. For help, see How To Quit Using Tobacco¹.

How is chemotherapy used to treat laryngeal or hypopharyngeal cancer?

Chemotherapy (chemo) is treatment with anti-cancer drugs that are injected into a vein or taken by mouth. These drugs enter the bloodstream and reach most parts of the body. Chemo may be used at different times during treatment for laryngeal and hypopharyngeal cancers:

- **As the primary (main) treatment:** For more advanced cancers of the larynx, chemo is given along with radiation. This treatment, called chemoradiation, is commonly used for laryngeal and hypopharyngeal cancers. It can allow some patients to avoid having a laryngectomy² which means they won't have trouble speaking after treatment. It can also be used as the main treatment for people who are too sick for surgery or don't want to have surgery.
- **After surgery (adjuvant chemotherapy):** Chemo along with radiation can be used after surgery to try to kill any cancer cells that might have been left behind but are too small to be seen on imaging tests. This can also lower the chance the cancer will come back, especially if cancer is found at the edges (margins) of the removed tumor, or if the cancer has other features that make it more likely to come back.
- **Before surgery (neoadjuvant or induction chemo):** Chemo can be given alone (induction chemo) or with radiation (neoadjuvant chemoradiation) before surgery to help shrink a large tumor so it's easier to treat or to ease problems it might be causing. How much the tumor shrinks with induction chemo may help in deciding the next treatment. If there is no sign of cancer left, radiation alone may be best. If the tumor shrinks a lot but can still be seen on imaging tests, chemoradiation or radiation alone may be options. (These are covered in the chemoradiation section.)
If there's little or no tumor response, surgery may be needed.

- **For locally advanced cancer**: Chemo might be given to help relieve symptoms from cancers that are too big or have spread too far to be completely removed with surgery. This may be called **supportive or palliative care**.

- **For metastatic cancer (cancer that has spread to distant organs)**: Chemo might be given for cancer that has spread to areas outside the head and neck area such as the **lungs** or **bones**.

### Chemoradiation

Chemoradiation is chemotherapy given at the same time as radiation. This combination has been shown to shrink laryngeal and hypopharyngeal tumors more than either treatment alone. Some call this **organ preservation treatment** because chemoradiation can be used instead of surgery so the structures in and near the larynx are "preserved" and not changed.

A common regimen is a dose of cisplatin every 3 weeks (for a total of 3 doses) during radiation. Sometimes, a smaller dose of cisplatin is given every week (for a total of 7 doses) along with radiation. For people who cannot tolerate chemo, the targeted drug cetuximab is often used with radiation instead.

### How is chemotherapy given?

Chemo drugs for laryngeal or hypopharyngeal cancer that are given into a vein (IV), can be given either as an infusion over a certain period of time. This can be done in a doctor's office, infusion center, or in a hospital setting.

Often, a **slightly larger and sturdier IV** has to be put in the vein system to give chemo. These are known as central venous catheters (CVCs), central venous access devices (CVADs), or central lines. They are used to put medicines, blood products, nutrients, or fluids right into your blood. They can also be used to take blood for testing. There are many different kinds of CVCs. The most common types are the port and the PICC line.

Chemo is given in cycles, followed by a rest period to give you time to recover from the effects of the drugs. Cycles can be weekly or every 3 weeks long. The schedule varies depending on the drugs used. For example, with some drugs, the chemo is given only on the first day of the cycle. With others, it is given for a few days in a row, or once a week. Then, at the end of the cycle, the chemo schedule repeats to start the next cycle.
Adjuvant or neoadjuvant chemo can be given over weeks or months, depending on the drugs used. The length of treatment depends on how well it is working and what side effects you might have.

**Chemotherapy drugs used to treat laryngeal and hypopharyngeal cancers**

Chemo drugs work by attacking cells that are dividing quickly, this includes cancer cells. Some of the chemo drugs commonly used for cancers of the larynx and hypopharynx include:

- Cisplatin
- Carboplatin
- 5-fluorouracil (5-FU)
- Docetaxel (Taxotere)
- Paclitaxel (Taxol)
- Methotrexate
- Capecitabine (Xeloda), a pill that is changed into 5-FU once it gets to the tumor.

You might be treated with a single drug or 2 or more together. Commonly used chemotherapy drugs include cisplatin or carboplatin alone, or in combination with 5-FU, but other combinations are also available.

**Possible side effects of chemo for laryngeal and hypopharyngeal cancers**

Chemo drugs kill cells that are dividing quickly, which is why they work against cancer cells. But other cells, such as those in the lining of the mouth and intestines, and the hair follicles, are also dividing quickly. Chemo can affect these cells too, which can lead to side effects\(^7\).

The side effects of chemo depend on the type and dose of drugs used, their dose, and how long you take them. Side effects tend to be worse when chemo is given along with radiation. Common side effects of chemo can include:

- Nausea and vomiting
- Loss of appetite or weight loss
- Mouth sores
- Diarrhea
Hair loss
Nail changes
Skin changes
Ringing in the ears

Chemo can also affect the blood-forming cells in the bone marrow, which can lead to:

- An increased chance of infection (from low white blood cell counts)
- Easy bleeding or bruising (from a low blood platelet counts)
- Fatigue or shortness of breath (from low red blood cell counts)

Other side effects are specific to certain drugs. Ask your cancer care team about the possible side effects of the specific drugs you are getting. For example:

**Neuropathy** (nerve damage) is a common side effect of cisplatin, docetaxel, and paclitaxel, which can lead to numbness, tingling, or even pain in the hands and feet. The nerve damage caused by cisplatin can also cause hearing loss. This often improves once treatment is stopped, but it can last a long time in some people. If you might be treated with any of the drugs mentioned here, talk with your doctor about the side effects beforehand, and let him or her know right away if you start having numbness or tingling feelings or other side effects.

**Hand-foot syndrome** can happen during treatment with capecitabine or 5-FU (when given as an infusion). It can start out as redness in your hands and feet, and then might progress to pain and sensitivity your palms and soles. If it worsens, the skin may blister or peel, sometimes leading to painful sores. It’s important to tell your doctor right away about any early symptoms, such as redness or sensitivity, so that steps can be taken to keep things from getting worse.

Although most side effects get better once treatment is stopped, some can last a long time or even last forever. If your doctor is planning treatment with chemo, be sure to discuss the drugs that will be used and their possible side effects. Once chemo is started, let your health care team know if you have side effects, so they can be treated. There are ways to prevent or treat many of the side effects of chemo. For instance, there are many drugs that can help prevent or treat nausea and vomiting. In some cases, the doses of the chemo drugs may need to be lowered or treatment may need to be delayed or stopped to help keep the problem from getting worse.

**More information about chemotherapy**
For more general information about how chemotherapy is used to treat cancer, see [Chemotherapy](https://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/chemotherapy.html)⁹.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](https://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html)¹⁰.

**Hyperlinks**


**References**


Mendenhall WM, Dziegielewski PT, Pfister DG. Chapter 45- Cancer of the Head


Last Revised: January 21, 2021

---

**Targeted Therapy for Laryngeal and Hypopharyngeal Cancers***
What is targeted drug therapy?

Targeted drug therapy is the use of medicines that target or are directed at proteins on cancer cells that help them grow, spread, and live longer. These drugs work to destroy cancer cells or slow their growth. Their side effects are different from chemotherapy\(^1\) (sometimes less severe) and many are taken as a pill. Targeted drug therapy can be used to treat laryngeal and hypopharyngeal cancers.

Some targeted drugs, for example, monoclonal antibodies, work in more than one way to control cancer cells and may also be considered immunotherapy\(^2\) because they boost the immune system.

Drugs that target cancer cells with EGFR changes

Epidermal growth factor receptor (EGFR) is a protein that helps cancer cells grow. Drugs that target EGFR can be used to treat some advanced laryngeal and hypopharyngeal cancers.

Cetuximab for laryngeal or hypopharyngeal cancers

Cetuximab (Erbitux) is a monoclonal antibody\(^3\), which is a man-made version of an immune system protein that targets EGFR. Laryngeal and hypopharyngeal cancer cells often have more than normal amounts of EGFR. By blocking EGFR, cetuximab can slow or stop cancer cell growth.

Cetuximab might be combined with radiation therapy for people with more advanced cancers, such as those that have spread locally but are not candidates for chemotherapy. Sometimes cetuximab might be combined with chemo drugs like cisplatin and 5FU in cases where the cancer has come back or has spread to distant parts of the body.

Cetuximab is given by infusion into a vein (IV), either once a week or every other week.

Possible side effects of drugs that target EGFR

The most common side effects of cetuximab are skin problems such as an acne-like rash on the face and chest during treatment, which can sometimes lead to infections\(^4\). An antibiotic cream or ointment may be prescribed to help lessen the skin rash and related infections. Developing this rash might suggest the cancer is responding to treatment.
Other side effects can include headache, tiredness\textsuperscript{5}, fever\textsuperscript{6}, and diarrhea\textsuperscript{7}. A rare but serious side effect of cetuximab is an allergic reaction during the first infusion, which could cause problems with breathing and low blood pressure. You will be given medicine before treatment to help prevent this.

Talk to your doctor about the side effects you should watch for and what can be done to help prevent or treat them.

**More information about targeted therapy**

To learn more about how targeted drugs are used to treat cancer, see Targeted Cancer Therapy\textsuperscript{8}.

To learn about some of the side effects listed here and how to manage them, see Managing Cancer-related Side Effects\textsuperscript{9}.

**Hyperlinks**


**References**


Last Revised: January 21, 2021
Immunotherapy for Laryngeal and Hypopharyngeal Cancers

Immunotherapy is the use of medicines that help a person’s own immune system find and destroy cancer cells more effectively.

**Immune checkpoint inhibitors**

An important part of your immune system is its ability to keep itself from attacking normal cells. To do this, it turns “checkpoints” or proteins on immune cells on (or off) to start an immune response. Cancer cells sometimes use these checkpoints to avoid being attacked by the immune system.

Drugs that target these checkpoints (called **checkpoint inhibitors**) can be used to treat some people with laryngeal and hypopharyngeal cancer.

**PD-1 inhibitors**

**Pembrolizumab (Keytruda)** and **nivolumab (Opdivo)** target PD-1, a protein on T cells in the immune system. PD-1 normally helps keep T cells from attacking other cells. By blocking PD-1, these drugs boost the immune response against cancer cells. This can shrink some tumors or slow their growth.

In people with laryngeal or hypopharyngeal cancer that has returned after treatment or that has spread to other parts of the body, pembrolizumab can be used first, either alone or in combination with chemotherapy, unless the person is not a candidate for immunotherapy. Nivolumab and pembrolizumab can also be used by themselves if chemotherapy stops working.

These drugs are given as an intravenous (IV) infusion, typically every 3, 4, or 6 weeks.

**Possible side effects of checkpoint inhibitors**

Side effects of these drugs can include fatigue, cough, nausea, diarrhea, skin rash, loss of appetite, constipation, joint pain, and itching.

Other, more serious side effects occur less often:

**Infusion reactions:** Some people might have an infusion reaction while getting these
drugs. This is like an allergic reaction, and can include fever, chills, flushing of the face, rash, itchy skin, feeling dizzy, wheezing, and trouble breathing. It’s important to tell your doctor or nurse right away if you have any of these symptoms while getting these drugs.

**Autoimmune reactions:** These drugs work by basically removing one of the safeguards on the body’s immune system. Sometimes the immune system starts attacking other normal parts of the body, which can cause serious or even life-threatening problems in the lungs, intestines, liver, hormone-making glands, kidneys, nerves, skin, or other organs.

It’s very important to report any new side effects during or after treatment with any of these drugs to your health care team promptly. If serious side effects do occur, you may need to stop treatment and take high doses of corticosteroids to suppress your immune system.

**More information about immunotherapy**

To learn more about how drugs that work on the immune system are used to treat cancer, see [Cancer Immunotherapy](http://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/fatigue.html).

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](http://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/nausea-and-vomiting.html).

**Hyperlinks**

6. [www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/stool-or-urine-changes/constipation.html](http://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/stool-or-urine-changes/constipation.html)
8. [www.cancer.org/treatment/treatments-and-side-effects/treatment-]

**References**


Last Revised: January 21, 2021
Treating Laryngeal and Hypopharyngeal Cancers by Stage

Treatment of laryngeal or hypopharyngeal cancer is based largely on the stage (extent) of the cancer, but other factors are also important, such as your overall health and your personal preferences.

Talk to your doctor if you have any questions about the recommended treatment plan. Ask if the treatment will change how you look, talk, breathe, and eat.

Smoking during cancer treatment is linked to more side effects, worse outcomes, and reduced benefit of treatment. It is best to stop smoking completely before starting treatment. Smoking also increases the risk of the cancer coming back after treatment as well as the risk of getting a new cancer. Quitting smoking for good is the best way to improve your survival.

Laryngeal cancers

Stage 0

These cancers are almost always glottic (vocal cord) cancers that are found early because of voice changes. They are nearly always curable with either endoscopic surgery or radiation therapy. The patient is then watched closely to see if the cancer returns. If the cancer does come back, radiation can be used.

At this stage, almost all cancers can be cured without major surgery. But, it's important for people to know that if they continue to smoke, this makes treatment less likely to work and increases the chance that another tumor will develop.

Stage I and II laryngeal cancers

Most stage I and II laryngeal cancers can be treated successfully without removing the whole larynx.

Either radiation alone or surgery with a partial laryngectomy can be used in most people. Many doctors use radiation therapy for smaller cancers. Voice problems tend to be less with radiation therapy than with partial laryngectomy, and there tend to be fewer problems with radiation treatment.
The treatment for glottic (vocal cord) cancers and supraglottic cancers (those starting above the vocal cords) is slightly different.

**Glottic cancer:** Some early glottic cancers might be treated by removing the vocal cord with cancer (cordectomy), or even by laser surgery. Radiation or surgery is usually enough to treat most glottic cancers unless there are signs that the treatment might not have cured the cancer (such as finding cancer cells at the edge of the removed tumor). If you need more treatment after surgery, your options might include radiation therapy, chemoradiation, or surgery to remove more of the larynx.

**Supraglottic cancer:** Supraglottic cancers are more likely to spread to the lymph nodes in the neck. If you're having surgery for supraglottic laryngectomy, the surgeon might also remove lymph nodes from your neck (called a lymph node dissection). If your treatment is radiation therapy alone, you will also get radiation to the lymph nodes in the neck. If, after surgery, the cancer is found to have features that make it more likely to come back, more treatment (such as radiation therapy, chemoradiation, or more extensive surgery) might be needed.

**Stage III and IV laryngeal cancers**

The main options for initial treatment for these cancers are surgery, chemotherapy followed by chemoradiation, or chemotherapy with radiation. Radiation therapy alone (or with the targeted drug cetuximab) may be an option for people who cannot tolerate more intensive treatments. Immunotherapy might be another option for some people with stage IV cancer.

Surgery for these tumors is almost always complete removal of the larynx (total laryngectomy), but a small number of these cancers might be treated by partial laryngectomy.

If they haven't spread already, these cancers have a high risk of spreading to nearby lymph nodes in the neck, so these lymph nodes are often removed along with the tumor if surgery is being done. Radiation therapy, often given with chemo, might be needed after surgery, especially if the cancer has spread to the lymph nodes or has other features that make it more likely to come back.

**Instead of using surgery as the first step, many doctors now prefer to start treatment with chemoradiation (radiation and chemotherapy given together).** If any cancer remains after treatment, surgery can then be done to try to remove it. Chemoradiation can be difficult to tolerate, but it often works as well as total laryngectomy and gives a chance to save the larynx. If the framework of the larynx (such as the thyroid cartilage) has been destroyed by the cancer, the larynx may never
work normally again, no matter what treatment is chosen. In these cases, the best
treatment may be surgery to remove the larynx and nearby tissues with cancer (such as
the thyroid gland).

Another option may be to start with just chemotherapy, which is called induction
chemotherapy. If the tumor shrinks, radiation therapy or chemoradiation is then given. If
the tumor doesn’t shrink, surgery is usually the next treatment.

Cancers that are too big or have spread too far to be completely removed by surgery
are often treated with radiation, usually combined with chemotherapy or cetuximab.
Another option might be treatment with an immunotherapy drug, either alone or with
chemotherapy. Sometimes, if the tumor shrinks enough, surgery of the tumor and the
lymph nodes in the neck might be an option. But for many advanced cancers, the goal
of treatment is often to stop or slow the growth of the cancer for as long as possible and
to help relieve any symptoms it may be causing. Most experts agree that treatment in
a clinical trial should be considered if you have advanced stage laryngeal cancer.

Hypopharyngeal cancers

These cancers are often harder to treat than laryngeal cancers. Because they don’t
cause symptoms when they're small, most are already at an advanced stage when
they're diagnosed. Tumors in this area also tend to spread to the lymph nodes, even
when there's no obvious mass in the neck. Because of this, treatment of the lymph
nodes in the neck is often recommended.

Stage I hypopharyngeal cancers

The main options for initial treatment of these cancers are surgery with or without
radiation to the lymph nodes.

Surgery includes removing all or part of the pharynx (throat) as well as lymph nodes on
one or both sides of the neck (lymph node dissection). The larynx (voice box) often
needs to be removed as well. People who have a high chance of the cancer returning
(based on what's found during surgery) might then be treated with radiation or
chemotherapy combined with radiation (chemoradiation).

Some patients with small tumors may get radiation as their main treatment. The cancer
is assessed again after the treatment is complete and if there's any cancer left, surgery
is done.

Stage II, III, and IV hypopharyngeal cancers
One option to treat these cancers is surgery to remove the pharynx, larynx, thyroid gland, and lymph nodes in the neck. This is usually followed by radiation alone or radiation with chemo, especially if there’s a high chance that the cancer will come back based on what is found during surgery.

Another option is to first treat with both radiation and chemo (chemoradiation). If any cancer remains after treatment, surgery can try to remove it.

A third option is to get chemotherapy as the first treatment, called induction chemotherapy. This is usually followed by radiation therapy or chemoradiation, depending on how much the tumor shrinks. If the tumor does not shrink, surgery might be done. If the lymph nodes in the neck are still enlarged after treatment, surgery can be done to remove them (lymph node dissection).

Cancers that are too big or have spread too far to be completely removed by surgery are often treated with radiation, usually combined with chemo or cetuximab. Another option might be treatment with an immunotherapy drug, either alone or with chemotherapy. Sometimes, if the tumor shrinks enough, surgery to remove the tumor and the lymph nodes in the neck may be an option. But for many advanced cancers, the goal of treatment is often to stop or slow the growth of the cancer for as long as possible and to help relieve any symptoms it may be causing.

Most experts agree that treatment in a clinical trial should be considered if you have advanced stage hypopharyngeal cancers.

Laryngeal and hypopharyngeal cancers that progress or recur after treatment

If cancer continues to grow during treatment (progress) or comes back (recur), further treatment will depend on the location and extent of the cancer, what treatments have been used and when, and also on the person’s health and desire for more treatment. Recurrence can be local (in or near the same place it started) or distant (spread to other parts of the body, like the lungs or bone). It’s important to understand the goal of any further treatment – if it is to try to cure the cancer, to slow its growth, or to help relieve symptoms. It is also important to understand the benefits and risks of more treatment.

Because cancer recurrence is hard to treat, patients might want to think about taking part in clinical trials of newer treatments.

Local recurrence
Local recurrence in people who have already had limited surgery such as partial laryngectomy, can often be treated with more extensive surgery (such as a total laryngectomy). This may be followed by radiation therapy or chemoradiation (radiation and chemo are given at the same time).

Local recurrence might also be treated with immunotherapy alone or combined with chemotherapy. In some cases, chemotherapy might be given along with cetuximab. Or, chemoradiation may be used.

If cancer comes back locally after radiation therapy, the usual treatment is total laryngectomy, but more radiation therapy is sometimes used.

If surgery can't be done, immunotherapy alone or in combination with chemotherapy or chemoradiation can be used to help control the cancer and ease any problems it might be causing. (This is called palliative or supportive care\textsuperscript{15}.)

**Distant recurrence**

A distant recurrence, where radiation therapy and surgery are not options, can be treated with immunotherapy alone or immunotherapy combined with chemotherapy. Another option might be treatment with a targeted agent, either alone or with chemotherapy. Chemoradiation might also be used, if a person can physically tolerate it.

If there are only a few tumors, surgery may be done. Radiation or chemo are also options.

Chemotherapy, immunotherapy or chemoradiation can be used to help control the cancer and ease any problems it might be causing. (This is called palliative or supportive care\textsuperscript{16}.)

**Hyperlinks**

5. [www.cancer.org/treatment/understanding-your-diagnosis/lymph-nodes-and-]
References


National Cancer Institute. Physician Data Query (PDQ). Hypopharyngeal Cancer


Last Revised: January 21, 2021

Written by


Our team is made up of doctors and oncology certified nurses with deep knowledge of cancer care as well as journalists, editors, and translators with extensive experience in medical writing.

American Cancer Society medical information is copyrighted material. For reprint requests, please see our Content Usage Policy ([www.cancer.org/about-us/policies/content-usage.html](http://www.cancer.org/about-us/policies/content-usage.html)).