



## Your Guide to Head and Neck Cancer Treatment

There are many cancers of the head and neck. Despite some similarities, they can be vastly different and respond to different treatments. Yet most head and neck cancer patients have the same fears: will they survive the cancer, and what problems might the treatment cause?

You can be assured that at Cleveland Clinic, experts from the Head & Neck Institute will work closely with specialists in the Taussig Cancer Institute to recommend a treatment plan with the highest likelihood of curing your cancer while preserving vital functions, such as speech and swallowing.

The good news is that when head and neck cancers are detected early, they are highly curable. For this reason, Cleveland Clinic will arrange for you to get the care you need as quickly as possible.

## Why Choose Cleveland Clinic?

For many cancers there are significant differences in outcomes between centers. Cleveland Clinic makes its outcomes available at [clevelandclinic.org/outcomes](https://clevelandclinic.org/outcomes).

In addition to improved survival rates, comprehensive cancer centers like Cleveland Clinic offer programs that optimize quality of life, such as speech and swallowing therapy, reconstructive surgery and prosthetics. Also, Cleveland Clinic patients are likely to experience shorter hospital stays, fewer complications, better management of side effects and access to new therapies through clinical trials.

While there are many head and neck cancer treatment options, you should also consider the experience of the physicians treating your cancer. The ear, nose and throat program and the cancer program are both top-ranked in Ohio and among the top 10 in America, according to *U.S. News & World Report's* "America's Best Hospitals" survey.

Please use this guide as a resource as you examine your treatment options. Remember, it is your right as a patient to ask questions and to seek a second opinion.



# About Head and Neck Cancer

## Want to Quit Smoking?

Tobacco use is the single most preventable cause of most head and neck cancers. Giving up smoking or tobacco chewing is not only one of the best ways to prevent head and neck cancer (as well as other cancers), but is equally important to obtaining good treatment results once you have been diagnosed with cancer.

We are committed to helping you in this effort and offer several programs through Cleveland Clinic's Tobacco Treatment Center. If you are ready to quit smoking or chewing tobacco—or to begin thinking about it—we have a program that makes it easier to quit than you think.

Visit [clevelandclinic.org/tobacco](https://clevelandclinic.org/tobacco) for more information.

Cancer can occur in any region of the head and neck. These cancers may spread to the lymph nodes of the neck, creating lumps. Swollen lymph glands are often the first—sometimes the only—manifestation of the disease at the time of diagnosis. Other symptoms may include sores in the mouth or on the lips lasting more than two weeks; prolonged hoarseness; sudden loss of voice; a sore throat that lingers; pain in the mouth, ear or neck; or difficulty speaking or swallowing.

Head and neck cancers occur twice as often in men as in women, and generally appear after age 50.

However, the number of otherwise healthy young people being diagnosed with cancer of the throat is growing rapidly, due to exposure to the sexually transmitted human papillomavirus (HPV). As a result, throat cancer is fast becoming the most common head and neck cancer in the United States. The good news is that cure rates for this cancer at Cleveland Clinic exceed 90 percent, and cure rates for many other forms of head and neck cancer are also excellent.

Most head and neck cancers are preventable. In fact, 85 percent are associated with cigarette smoking, which increases the risk 15 times over that of nonsmokers. Smokers who use alcohol are at even greater risk. HPV-related throat cancer may largely be prevented with the HPV vaccine, which Cleveland Clinic pediatric and adolescent medicine physicians highly recommend for all young men and women. The incidence of other head and neck cancers could be reduced by lowering the use of alcohol and chewing tobacco, wearing sunscreen during daylight hours and reducing exposure to wood dust.



## The HPV Vaccine

The HPV vaccine provides one of the few opportunities to gain protection against several potentially deadly cancers caused by the sexually transmitted virus. The Centers for Disease Control and Prevention notes that the vaccine may protect against head and neck cancers in addition to cervical and anal cancer.

Because it is possible to get HPV from the first sexual contact, the vaccine is most effective when given before the onset of sexual activity. The HPV vaccine is safe, and Cleveland Clinic pediatricians and adolescent medicine physicians feel all boys and girls should be vaccinated by age 14. If you have any questions about this vaccine, ask your pediatrician or your Cleveland Clinic head and neck cancer physician.

## Individualizing Treatment

Cleveland Clinic medical oncologists, radiation oncologists and head and neck surgeons work together to develop an optimal treatment plan for each patient that will be most likely to preserve the patient's long-term quality of life. This means that in addition to recommending a treatment most likely to result in a cure, they consider the option that will have the least effect on important functions and on appearance.

Treatment is complemented by multiple services that help support quality of life. These include speech and swallowing therapists to help patients regain lost function, dental experts to help preserve dental health and function, and nutritional therapists to ensure patients with swallowing challenges maintain a healthy weight.

At Cleveland Clinic, the comprehensive, individualized treatment plan designed for each patient is based on sound scientific evidence. Our multidisciplinary tumor board discusses each individual case and together decides what is the best combination of treatments for the patient.

As national leaders in the treatment of head and neck cancer, Cleveland Clinic physicians also carefully document the effect of treatment on each patient. This type of outcomes research enables them to determine the most effective treatment and least toxic treatments. As a result, they have been able to dramatically reduce the side effects of treatment without compromising cure rates.

# Treatment Options

Most head and neck cancers arise in the squamous cells lining the mouth, throat, sinuses and voice box. Nevertheless, these cancers may require different treatments, depending on their location and how advanced the disease is at the time of diagnosis. Treatment may include surgery, chemotherapy, targeted systemic therapies, radiation therapy or a combination of these therapies.



## Surgery

Many head and neck cancers can be removed surgically through the nose or mouth, often with a laser or robotic assistance (transoral robotic surgery). Such techniques are possible in the majority of patients, and allow the surgeon to remove only the cancerous tissue, leaving vital structures such as the voice box intact.

In advanced cancers, open surgery may be necessary to remove lymph nodes and prevent the cancer from spreading. True radical neck dissection is rarely performed today.

In some patients, a small opening in the neck below the larynx (tracheotomy) may be required after surgery as a temporary measure to overcome throat swelling and assist in breathing. A permanent tracheostomy is needed only when the entire larynx is removed.

## Systemic Treatments

Multiple chemotherapy drugs are effective in head and neck cancers. Chemotherapy may be used alone or given in conjunction with radiation therapy or surgery. Chemotherapy is highly effective in increasing the success of these other treatment methods.

An exciting new type of treatment for some head and neck cancers is the use of monoclonal antibodies and oral medications that target specific molecules on or in cancer cells. Because these systemic agents are very selective, they cause few side effects and may increase the rate of cure.



## Radiation Therapy

Radiation may be used as primary therapy to kill cancer cells without surgery, or as secondary therapy to kill any cancer cells that might remain following surgical removal of the tumor. The following types of radiation are used in the treatment of head and neck cancers:

- **External-beam therapy (EBT).** EBT delivers a beam of high-energy x-rays to a tumor to destroy cancer cells. Careful treatment planning spares the surrounding tissue. The painless treatments are generally given five days a week for several weeks.
- **Intensity-modulated radiation therapy (IMRT).** IMRT utilizes computer-controlled x-ray accelerators to deliver a maximum amount of radiation to a tumor while minimizing exposure to surrounding healthy tissue—a vitally important consideration when the tumor lies near a critical structure such as the salivary glands, swallowing muscles or voice box. IMRT delivers multiple beams of radiation, each of which contains a bundle of beamlets. This enables the radiation oncologist to design a plan that conforms the radiation beams to the three-dimensional shape of the tumor.
- **Image-guided radiation therapy (IGRT).** IGRT units have a CT scanner built in. Prior to each treatment session, a CT scan with minimal radiation is performed to image the tumor in three dimensions. This ensures the radiation field will cover the tumor completely and extend no further than one-tenth of one inch beyond it, sparing healthy tissue.
- **Hyperthermia.** In hyperthermia, microwaves are applied to the tissue immediately before radiation is delivered to increase blood flow and increase the effectiveness of the radiation. Hyperthermia is used in some forms of head and neck cancer.

## Clinical Trials

Cleveland Clinic head and neck physicians participate in multiple clinical trials. Many of these are initiated here at Cleveland Clinic, while others are conducted with various academic partners around the country and/or pharmaceutical or other industry partners.

A long history of clinical trial participation has led to many discoveries and continues to ensure that patients have access to the latest therapies designed to improve length of life and preserve quality of life.

Current clinical trial offerings at Cleveland Clinic are investigating systemic agents with potential to cure cancer with fewer side effects; the addition of antibody therapy to radiation therapy following surgery; new surgical techniques; and new imaging protocols and techniques.

If you qualify for a clinical trial, your Cleveland Clinic medical oncologist, radiation oncologist or surgical oncologist will explain the trial in detail and discuss the potential risks and benefits with you.

The head and neck cancer team maintains an extensive database of treatment outcomes, which allows the physicians to conduct a variety of research studies aimed at better understanding the factors leading to successful treatment and superior quality of life.

### Clinical Trials Directory Available Online

Cleveland Clinic's Taussig Cancer Institute offers an online tool for patients and caregivers to search for open clinical trials. The web-based clinical trial database lists all trials being managed by oncologists in the Taussig Cancer Institute that are accepting patients. At any given time, several hundred cancer clinical trials are under way on the main campus and at Hillcrest and Fairview hospitals. To search the database, visit [clevelandclinic.org/cancerclinicaltrials](https://clevelandclinic.org/cancerclinicaltrials).

# How Specific Head and Neck Cancers Are Treated

## Oropharyngeal (Throat) Cancer

Cancer of the pharynx (throat) is the most common head and neck cancer in the United States. Although a significant percentage is caused by smoking and tobacco use, the recent increase in incidence is due to infection with the sexually transmitted human papillomavirus (HPV). The good news is that more than 90 percent of patients with HPV-associated oropharyngeal cancer can be cured. Research is now focused on reducing the short- and long-term side effects of treatment.

There are multiple effective treatment options for oropharyngeal cancer. The best choice for each patient includes consideration of functional results. Today, the cancer might be treated with transoral robotic surgery (TORS)—a minimally invasive, more patientfriendly procedure—plus radiation therapy, or with a combination of chemotherapy and radiation therapy.

## Laryngeal (Voice Box) Cancer

This cancer forms in the tissues of the larynx, the area of the throat containing the vocal cords. When the cancer occurs in the upper part of the larynx, for example in the epiglottic area above the vocal cords, it is called supraglottic cancer. Most laryngeal cancers are squamous cell carcinomas.

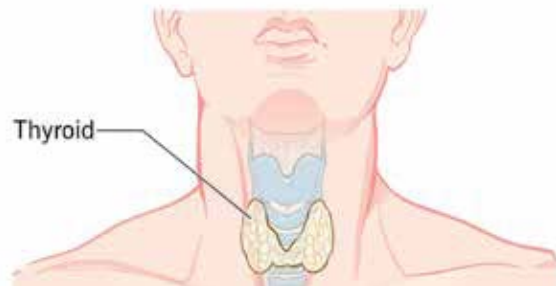
The goal of treatment is to cure the cancer while preserving the ability to speak. Today, this is possible, even in advanced cases of laryngeal cancer, thanks to larynx-preserving treatments such as transoral laser microsurgery. Up to 90 percent of patients are cured and retain excellent voice quality.

Only a small percentage of patients require total laryngectomy (removal of the voice box), and even these patients are able to regain useful speech with speech therapy.

Surgery for laryngeal cancer is usually done through the mouth with a laser or robot. Postoperative radiation or chemotherapy may be given if the cancer has spread beyond the larynx.

## Thyroid Cancer

The thyroid is a butterfly-shaped gland in the neck that produces hormones to regulate the body's metabolism and temperature. Treatment for most thyroid cancers involves removing all or part of the thyroid and, often, lymph nodes near the gland. Surgery is usually followed by planned treatment with radioactive iodine. Thyroid cancer has become a fertile area for targeted systemic therapies, which appear to be highly effective.





## Oral Cavity Cancer

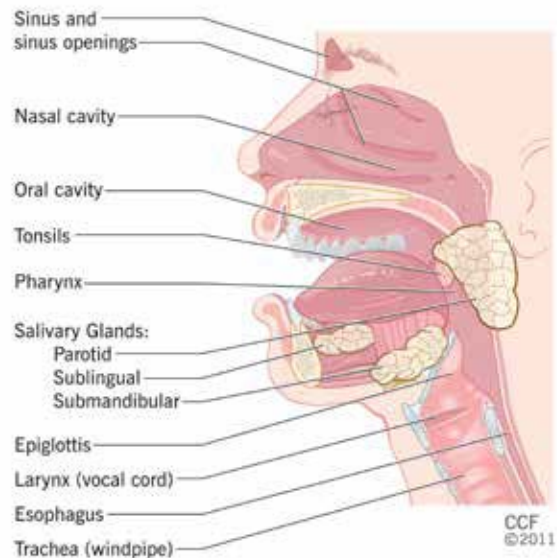
Oral cavity cancer most commonly involves the tongue, but it may also occur on the floor of the mouth underneath the front of the tongue, in the lining of the cheeks, on the gums or lips or on the roof of the mouth (palate). Oral cavity cancers are usually squamous cell carcinomas that grow slowly and generally respond to nondeforming surgery. In advanced cases, postoperative treatment may include chemotherapy and radiation therapy. At Cleveland Clinic, conformal radiation to the neck helps preserve salivary glands.

When very large tumors require extensive surgery, patients may need plastic or reconstructive surgery to rebuild the bones or tissues of the mouth. Advanced reconstructive techniques enable most patients to enjoy excellent outcomes and long-term function.

## Sinonasal Cancer

Sinonasal cancer occurs inside the nose (nasal cavity) or in the hollow, air-filled spaces around the nose (sinuses). The most common type of sinonasal cancer involves the maxillary sinuses located in the cheeks. Cancer can also occur in the ethmoid and frontal sinuses, located above and between the eyes, and in the sphenoid sinuses, located behind the ethmoids.

Sinonasal cancers are a diverse group of diseases that respond to different types of treatments. Many sinonasal cancers can be removed surgically through the nostrils, even when the tumors are large. When radiation is given, IMRT with IGRT is used to minimize radiation to the eyes, brain and other vital structures. Clinical trials are evaluating the success of chemotherapy given along with radiation.



## Salivary Gland Cancer

Most salivary gland cancers occur in the parotid glands, which lie in front of and just below both ears. Cancer can also form in the submandibular glands located beneath the jaw and in the sublingual gland found under the tongue.

Almost all salivary gland cancers are treated surgically. Many important nerves lie near the salivary glands, and Cleveland Clinic head and neck surgeons do everything possible to spare these nerves when removing the cancerous tissue. In cases where a nerve is affected, nerve repair is often successful in restoring normal function.

Surgery may be followed by radiation. For these patients, Cleveland Clinic radiation oncologists utilize one-sided IMRT to spare salivary gland function.

Several national clinical trials of chemotherapeutic agents and/or targeted systemic therapies are being conducted for salivary gland cancer. If you qualify for one of these trials, your doctor will discuss the risks and benefits with you.



## Reconstruction

While the majority of head and neck cancers can be removed through the nose or mouth to eliminate visible scarring, open surgery is sometimes necessary. For these patients, Cleveland Clinic's renowned reconstructive surgery team uses the latest techniques to restore physical appearance, function and confidence. The team includes seven surgeons with experience in complex reconstructions and three surgeons dedicated to facial plastic and reconstructive surgery. Their expertise allows cancer survivors to enjoy a better quality of life. Our surgeons are known for their creativity in using tissue from other parts of the body to replace skin, muscle or mucosa that has been removed. For example, a section of bone from the leg may be taken and reshaped to form a new jaw.

Skin and muscle from the thigh or skin and fascia (connective tissue) from the forearm may be transferred to the neck. The blood vessels are then reconnected using advanced micro-surgical techniques to ensure the long-term health of the graft. Cleveland Clinic success rates for this type of surgery, called free-tissue transfer, are among the best in the world.

The surgeons are combining new techniques in the treatment of facial paralysis with nerve grafting and free-tissue transfer to reconstruct patients after surgery for cancers of the parotid gland, skull base and other areas where facial nerve function is affected. These methods allow for restoration of facial function and contour in the same operation in which the tumor is removed.

The surgeons also have extensive experience with bony reconstruction of the upper and lower jaws, and employ groundbreaking methods for reconstructing the cheekbones, eye sockets and palate. Their goal is to restore normal appearance, maintain vision and normal mouth function, and lay the groundwork for reconstructive dental work.

Reconstruction may begin at the time the tumor is removed or after healing has taken place. It is not uncommon to perform additional reconstructions over time, either in the office or in the operating room, to help patients meet their goals. The surgeons' expertise helps patients achieve the best possible results.

## What is Maxillofacial Prosthetics?

Maxillofacial Prosthetics is a subspecialty of Prosthodontics, or the branch of dentistry that deals with restoring/replacing teeth. This subspecialty involves rehabilitating patients with head and neck defects or disabilities – either those they were born with or that were the result of an injury.

Maxillofacial prosthodontists work hand-in-hand with head and neck surgeons, oral surgeons, general and specialty dentists, plastic surgeons, radiation oncologists, speech language pathologists, anaplastologists and other support personnel. At Cleveland Clinic, a board-certified prosthodontist, who works with our entire team of experts, develop the best treatment plan that will help restore the patient's confidence and quality of life.

We offer a variety of prostheses (artificial devices used to replace missing body parts) which correct deformities, such as those in the:

- mouth and jaw
- eye and surrounding tissue
- ear
- nose
- face (may involve more than one structure)



## Rehabilitation

Cleveland Clinic head and neck cancer physicians do everything possible to avoid or minimize treatments that may affect speech or swallowing. When speech or swallowing is impacted to any degree, rehabilitation plays a key role in recovery. Speech and swallowing therapy can help patients maintain or regain function following surgery, radiation or chemotherapy. In addition to reconstruction experts and therapists, the rehabilitation team includes social workers and case managers, who help ensure that care continues as long as needed. When patients live a great distance from Cleveland Clinic, they can arrange for rehabilitation services closer to home.

Physical therapy is also used to help patients regain physical abilities temporarily lost during treatment—for example, when arm function is weakened from nerves disturbed during neck surgery. Physical therapy can also be helpful when muscle is taken from a leg or abdomen to replace tissue removed in the neck, or when a leg or hip bone is removed to make a new jaw.



# Contacting Cleveland Clinic

To learn more about the services we offer or to schedule an appointment, please contact our representative in Saudi Arabia at +966.11.416.9660.

## Global Patient Services

Complimentary assistance is available for international patients and families traveling to Cleveland Clinic through our Global Patient Services Department. To learn more about the services provided by this dedicated team, visit [clevelandclinic.org/gps](http://clevelandclinic.org/gps).

## Still Have Questions?

If you have additional questions after reviewing this guide, Cleveland Clinic's Cancer Answer Line can help. Two oncology clinical nurse specialists and their staff can provide information and answer questions about cancer. The Cancer Answer Line is operational 8 a.m. – 5 p.m., ET, Monday – Friday. Please call **001.216.444.7923** or toll-free **866.223.8100**.

## Need a Second Opinion but Cannot Travel to Cleveland?

Our MyConsult service offers secure online second opinions for patients who cannot travel to Cleveland. Through this service, patients enter detailed health information and mail pertinent test results to us. Cleveland Clinic experts then render an opinion that includes treatment options or alternatives and recommendations regarding future therapeutic considerations. To learn more about [MyConsult](http://MyConsult), please visit [clevelandclinic.org/myconsult](http://clevelandclinic.org/myconsult).

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