

Radiation Therapy for **Head and Neck Cancers**



This year, the American Cancer Society estimates that in the United States, approximately 3-5% of all cancer will be in the head and neck region. An estimated 54,010 Americans (38,800 men and 15,210 women) will develop head and neck cancer and 10,850 (7,620 men and 3,230 women) deaths will occur this year as a result of this cancer diagnosis.

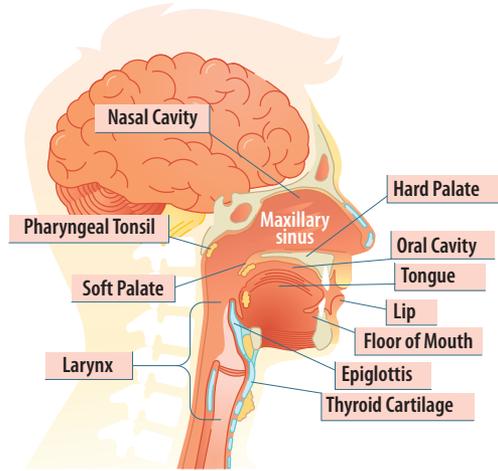
ASTRO

TARGETING CANCER CARE



TREATING HEAD AND NECK CANCER

Treatment for head and neck cancers depends on several factors. These include the type of cancer, tumor size, stage, and tumor location. The patient's general health is also considered. Effective treatment requires a team approach. The team includes a surgeon, a radiation oncologist and a medical oncologist. Surgery and/or radiation therapy are the best options for cancer found at an early stage. For more advanced tumors, combination therapy including surgery, radiation therapy and/or chemotherapy may give the best results.



Head and neck cancer treatment options include:

Radiation Therapy

Radiation therapy is one of the best treatments for head and neck cancer. Radiation focuses directly on the cancer cells. Surrounding healthy tissue may also be affected. However, healthy cells can heal from radiation injury. For head and neck cancer, new technologies in radiation treatment preserve important organs. These new technologies result in equal cure rates with better swallowing and/or voice function when compared to surgery. In some cases, radiation will be combined with surgery, chemotherapy or both.

Surgery

Surgery is another important approach to treat head and neck cancer. Obtaining biopsies and looking at the nose, mouth and throat with a flexible camera help your doctor determine whether the tumor has spread. If surgery will be part of your treatment, your surgeon will aim to remove the tumor along with some surrounding healthy tissue. Depending on the tumor location and size, the surgeon may also remove lymph nodes in the neck. The lymph nodes are part of your normal immune system. Lymph nodes are also a path for some tumors to spread. Ask your doctors whether the lymph nodes in your neck need treatment.



In some cases, surgery is combined with radiation therapy. If radiation therapy is the main treatment, surgery may help later. If surgery is the main treatment, radiation therapy may be helpful after surgery if more advanced disease is found. Your doctors will determine the best treatment for you.

Medical Therapy

Surgery and radiation therapy focus directly on treating the tumor. Medication is often recommended to improve cure rates. A medical oncologist will evaluate you and determine what medications may be most helpful. There are two main categories of systemic therapy (treatment that is injected into the blood stream).

- **Chemotherapy** can destroy cancer cells by different methods. Often, one to three different types of drugs may be combined to get the best outcome. The dose and schedule for treatment varies. In some cases, chemotherapy may be helpful before radiation treatment. This type of treatment is called induction chemotherapy.
- **Targeted therapy** involves focusing an anti-cancer medication on certain molecules. Targeted therapy can be used with radiation therapy as well. Ask your medical oncologist whether these drugs may be helpful for you.

EXTERNAL BEAM RADIATION THERAPY

Radiation oncologists use various types of radiation to safely and effectively treat cancer. In most cases radiation is delivered in the form of high-energy **X-rays**. Treatments are usually scheduled daily, Monday through Friday, for five to seven weeks. In some cases, your radiation oncologist may schedule your radiation treatments twice a day.

Before beginning treatment, you will be scheduled for a planning session. Your radiation oncologist will map where to treat. This procedure, called pretreatment planning, or simulation, involves having a CT scan.

You need to stay in position during treatment. You may have a plastic mask over your head and shoulders. You can see and breathe through this form-fitting mask. It is made to comfortably minimize movement during treatment. Other devices may be used to reduce radiation to normal parts of your mouth and



throat. You may also receive tiny marks on your skin, like a permanent tattoo. These marks help precisely position you for daily treatment. Sometimes, these marks can be made on the plastic mask. Then there are no permanent marks on your skin. Different techniques can be used to give radiation for head and neck cancer:

- **Three-dimensional conformal radiotherapy (3-D CRT)** combines multiple radiation treatment fields to deliver precise doses of radiation to the affected area.
- **Intensity modulated radiation therapy (IMRT)** is a specialized form of 3-D CRT that varies the intensity of each radiation beam. IMRT can help lower the chance of having a dry mouth or other side effects.
- **Image-guided radiation treatment (IGRT)** is a form of 3-D CRT or IMRT that uses imaging to precisely deliver radiation treatment. Your radiation oncologist may take X-rays and/or a CT scan before each treatment. These images are used to precisely align you each day before the treatment starts. This can reduce radiation to your normal tissue.

INTERNAL RADIATION THERAPY

Internal radiation therapy is also called brachytherapy. This treatment involves inserting radioactive material into a tumor or surrounding tissue. This can give a more focused dose of radiation. For head and neck cancers, brachytherapy is often used with external beam radiation therapy. It may also be used alone or after surgery. During brachytherapy, your radiation oncologist places thin, hollow, plastic tubes into the tumor and surrounding tissue. These tubes are loaded with tiny radioactive seeds. These seeds remain in place for a short time to kill the cancer. The seeds and the tubes are then removed. With **low-dose-rate** brachytherapy, the seeds will be left in place for one to three days. **High-dose-rate** brachytherapy uses a single radioactive seed that is usually administered in a few sessions over two or more days. The seed stops at various positions along the tubes for short intervals to deliver the radiation.



DENTAL CARE

Dental care is an essential part of preparing for head and neck radiation treatment. Before you begin therapy, you may need to be examined by a dentist or oral surgeon. Your mouth may become dry during and following the treatments. This puts you at increased risk for cavities. Your dentist may ask you to use a plastic tray filled with fluoride to improve dental health.

If the dentist determines that you need any dental work, like removing bad teeth, this should be done before beginning treatment. After radiation treatment your jawbone may not heal as well. Dental work may delay starting radiation treatment for up to two weeks to allow time for healing. Ask your doctor whether you need to see your dentist before starting treatment.

CARING FOR YOURSELF DURING TREATMENT

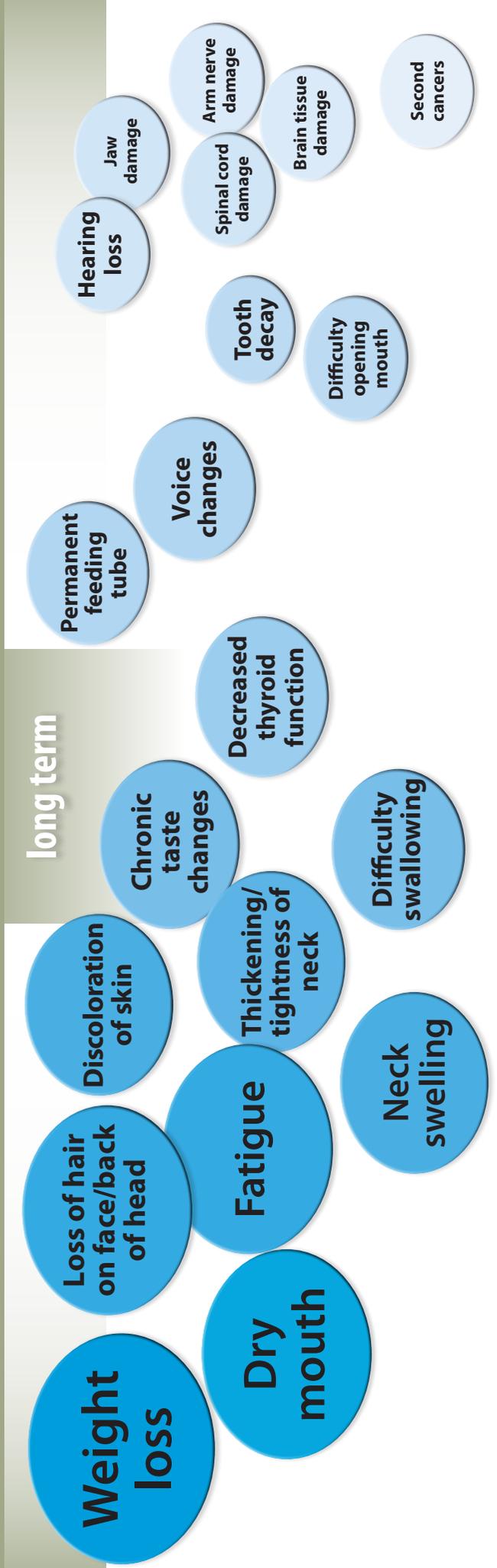
Cancer treatment can be difficult. You have many issues to cope with. Your oncology team, along with family and friends, is available to help.

- Seek help from support groups and friends ahead of time. Having a support network in place before and during treatment will help you cope. If you need additional support, let your doctor or nurse know.
- Get plenty of rest during treatment.
- Follow your doctor's orders. Ask if you are unsure about anything.
- Tell your doctor about any medications, vitamins or supplements you are taking to make sure they are safe to use during radiation therapy.
- Eat a balanced diet. The doctor, nurse or dietitian can help suggest foods if you are having trouble eating or if food tastes funny.
- Treat the skin exposed to radiation with special care. Stay out of the sun.
- Avoid hot or cold packs. Use lotions and ointments only after checking with your doctor or nurse. Clean the area with warm water and mild soap.
- Good dental care can reduce the risk of mouth infections and tooth decay.
- Use fluoride toothpaste without abrasives. Floss gently between your teeth daily using waxed, non-shredding dental floss. If needed, rinse daily with a salt and baking soda solution.

Note: During radiation patients very often can't brush their teeth or floss due to mucositis. Be sure to talk with your radiation oncologist.



RT for Head and Neck Cancers Side Effects



*Larger/darker bubbles show higher likelihood of occurrence. Smaller/lighter bubbles show lesser likelihood of occurrence. This list doesn't represent all of the possible side effects. Please talk to your doctors about your specific diagnosis. For side effects for specific locations of the head and neck, visit rtanswers.org.

LEARNING ABOUT CLINICAL TRIALS

The radiation oncology treatment team is always exploring new ways to improve treatments through studies called clinical trials. Today's treatments are a result of trials completed years ago, proving that radiation therapy safely and effectively kills cancer cells and is a safe long-term treatment. For more information on clinical trials, visit:

National Cancer Institute

www.cancer.gov/clinicaltrials

Radiation Therapy Answers

www.rtanswers.org

Radiation Therapy Oncology Group

www.rtog.org

ABOUT THE RADIATION ONCOLOGY TEAM

Radiation oncologists are doctors who specialize in the use of radiation therapy as a treatment for cancer. Other members of the treatment team include radiation therapists, radiation oncology nurses, medical physicists, dosimetrists, social workers and nutritionists. For information on what each does or to find a radiation oncologist near you, visit www.rtanswers.org.



ABOUT ASTRO

The American Society for Radiation Oncology is the largest radiation oncology society in the world with more than 10,000 members who specialize in treating patients with radiation therapies. ASTRO is dedicated to improving patient care through education, clinical practice, advancement of science and advocacy. Visit www.astro.org for more information.

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