

When you return to begin your treatments, you will meet the radiation therapists who deliver your daily treatments. Treatments are scheduled Monday through Friday. The exact number of treatments will be determined by your physician and is designed to best meet your specific treatment needs.

Radiation therapy is closed for certain holidays, and you will be notified if a holiday occurs during your course of treatment. Due to the number of patients under treatment and emergency hospital patients, there can be delays in the time of your daily treatment. We appreciate your patience.

Side Effects

At your initial consultation, your radiation physician reviewed the anticipated results and side effects of the radiation plan determined to best fit your needs. This handout is to acquaint you with some of the most common side effects that can occur because of your treatment. It will also explain some of the things that can be done to help manage these side effects.

It is important to remember that most people do not experience all of the side effects mentioned here. Please keep us informed of your particular needs so that appropriate recommendations can be provided for you.

Fatigue

Fatigue is a common experience in patients with cancer. It is believed that this results from a combination of factors, including: 1) your body's effort to reserve energy for healing; 2) your body's effort to process the waste products from the cancer cells killed from treatment; 3) anemia related to cancer treatments; 4) the act of going to radiation treatments 5 times a week.

Fatigue may occur around the second or third week of radiation and can persist up to 3 months after the completion of treatment.

Strategies you can use to reduce energy expenditure:

- Planning/scheduling activities (e.g., spreading chores over the course of the week; planning to take a nap in the afternoon).

- Decreasing non-essential activities, such as cleaning, cooking, or socializing.
- Increasing dependence on others (allowing family members or friends to assist in housework, childcare, and shopping).

Other activities that patients have reported helpful in reducing their fatigue during treatment include:

- Walking/light exercise
- Distractions (gardening, listening to music)
- Balancing pleasurable activities with work activities

Sore Throat or Mouth

Radiation to the mouth or throat causes inflammation of the mucous membranes. Inflammation causes swelling and tenderness.

- This generally begins 2 to 3 weeks after the start of radiation.
- If chemotherapy is combined with your radiation, the symptoms can occur earlier and may be significantly increased.
- It will be important that you maintain adequate hydration and weight during your treatment.

Some general recommendations for patients receiving radiation to the head and neck area:

- Brush your teeth with a soft toothbrush after each meal and at bedtime.
- Floss your teeth if this is a usual practice.
- Use baking soda mouth rinses (1-2 teaspoons baking soda in 1 quart of water) at least 6 times daily.

- Avoid drying agents, such as alcohol or glycerine-based products with your oral care.

Some interventions that can be helpful when mouth tenderness occurs:

- Mouth care at least 4 to 6 times daily.
- Obtain topical anesthetic from our clinical staff to use prior to meals and as needed for comfort.
- Minimize the use of dentures; limit to meal times only.
- Modify your diet to soft, non-acid, non-spicy foods.
- Avoid foods at extreme temperatures (either hot or cold).
- Obtain information on dietary supplements from our clinical staff.
- Most importantly, maintain your hydration.

If pain is poorly controlled, discuss management with our clinical staff.

NOTE: We may recommend placement of a feeding tube before treatment begins if we anticipate this problem placing you at risk for dehydration or significant weight loss.

Nutrition

Maintaining your weight is an important part of your treatment program. This will not only decrease your symptoms during treatment, but also speed up your recovery after completing treatment. A high-calorie, high-protein diet is strongly recommended. You may want to try to increase your weight as much as possible before a sore throat begins (approximately 2 weeks after the first radiation treatment).

If you are having difficulty with eating or maintaining your weight, please inform our clinical staff so appropriate recommendations may be provided for you. Please note that if you have a feeding tube placed before or during treatment, our clinical staff is available to discuss management of feedings with you.

Pain Medications

You may be given pain medications during your treatment to help you with eating and drinking. This is essential to maintain hydration and weight. This will enable you to recover more quickly once radiation is completed.

Constipation

Constipation is extremely common when patients are receiving pain medications. The stool becomes hard in consistency and can be difficult to pass. Symptoms of constipation can include 1 or more of the following:

- small, hard stools
- stomach ache or cramps
- passing of excessive gas or belching frequently
- belly appears puffy or blown up
- no regular bowel movement in the last 3 days
- feeling of fullness or discomfort.

NOTE: If you are on pain medications or experience constipation, please alert our clinical staff. They will provide you with general information and interventions to manage your constipation.

Dry Mouth

Salivary glands are extremely sensitive to radiation. Symptoms of dryness generally begin 1 to 2 weeks after the start of treatment. Generally the saliva begins to become thick and ropery, followed by complete dryness. Adapting to a dry mouth can be challenging because it affects many aspects of daily living, such as eating, talking, and sleeping.

General recommendations that patients have found helpful in dealing with dry mouth include:

- Frequent mouth care to prevent the buildup of plaque and debris in the mouth.
- Avoid the use of mouthwashes that contain alcohol.

- Oral lubricants (i.e., olive oil) can help decrease the sensation of mouth dryness.
- Modify your diet to include foods that have sauces or can be moistened.
- Avoid thick, dry foods such as peanut butter or dry breads.
- Use sauces and gravies over foods.
- Drink fluids with meals.
- Sucking on hard, sugarless candy or chewing sugarless gum can stimulate saliva production.
- There are saliva substitutes and medications that the clinical staff may provide you to help decrease your symptoms.

Decreased Taste

Receiving radiation to the head and neck area can affect the taste buds, which line the tongue and other parts of the oral cavity.

- You may note changes in taste, blunting of taste sensations, or increased abnormal tastes.
- The taste of sweets tends to be affected more than the salty sensation.
- Some patients report increased bitter taste.
- Many patients continue to report little to no taste for 3 to 6 months following completion of their radiation.
- Remember that patients with chronic dry mouth after treatment will have permanent decrease in taste after treatment.

Suggestions patients have made that helped taste changes include:

- Identify and emphasize foods that continue to have some taste.
- Some patients indicate that sweet and sour foods retain more taste than others. (Some food products, such as sweet and sour salad dressings, may be used over foods other than salads to provide flavor.)
- Chew foods longer.

- Perform mouth care before meals to help freshen the mouth and remove residual unpleasant tastes.
- Smell your foods before eating. This can enhance the sense of some taste.

Inflammation in the Throat

When the throat and esophagus are within the treatment field, the mucous membranes lining these areas can become inflamed.

- Symptoms generally begin after 2 weeks of treatment. These may be sooner or more severe if chemotherapy is used together in your care.
- Symptoms can vary greatly:
 - Some patients may notice a sensation of a lump in the throat.
 - Some will progress to a sore throat with pain on swallowing.
 - Discomfort can progress, resulting in difficulty swallowing foods and fluids.
- Symptoms are temporary and will resolve slowly as treatment is completed.

Interventions that patients have described as helping with their symptoms include:

- Avoid harsh and coarse foods.
- Avoid spicy and acidic foods.
- Emphasize soft foods with sauces and gravies.
- Most importantly, maintain hydration.
- Our clinical staff may provide topical anesthetics or pain medications prior to meals to help you with swallowing.

Hoarseness

This may occur when the voice box is in the treatment field. The vocal cords can become swollen, leading to hoarseness.

- Laryngitis rarely occurs before the third week of treatment.
- Symptoms resolve once treatment is completed.

Patients have found that symptoms can be helped by the following:

- Avoid straining your voice to minimize irritation of the vocal cords.
- Avoid use of tobacco and alcohol.
- Speech should be kept to a minimum to avoid further irritation.
- Mouth care and gargling with warm saline can be soothing.
- Our clinical staff can provide topical anesthetics if you experience throat pain.
- Emphasize non-spicy and non-acidic soft foods for your meals and snacks.

Skin Reactions

Because radiation beams must penetrate the skin to reach the target area, most patients will experience some degree of skin irritation. This can affect the skin, hair follicles, and moisturizing glands. The degree of skin reaction is influenced by a number of factors:

- Reactions are worse in skin folds such as the low neck or behind the ears.
- Skin reactions are increased with prior or concurrent use of chemotherapy agents.
- Acute skin reactions generally begin 2 to 3 weeks after the initiation of radiation.
- Skin reactions generally resolve within approximately 2 to 4 weeks after completion of treatment.
- Late effects in the skin can include atrophy, pigment changes, thinning, and changes in the appearance of superficial blood vessels.
- Your skin may become quite firm in the treatment area, especially if you have had prior neck surgery.

Hearing Changes

If the middle ear is within the treatment field, hearing changes may occur. The decrease in hearing is usually a result of accumulation of fluid in the middle ear, hardening of ear wax, or both.

Some patients have noted benefit with the use of a decongestant, such as pseudoephedrine. Consult with our clinical staff to see if this would be appropriate for you.

- Do not use foreign objects for itchy or irritated ear canals. Our clinical staff can provide anti-inflammatory drops if needed.
- Occasionally infections can occur, and we may need to have you see an Ear, Nose, and Throat physician if symptoms persist.

Teeth Care

Because radiation affects the vascularity of the bones of the mandible, it is important to maintain good long-term oral care after the completion of treatment.

- For persistent dry mouth, it is important to continue regular fluoride treatment with your dentist.
- Poorly fitting oral/dental prostheses can traumatize the tissues of the mouth and cause breakdown of tissue in bone. Please consult your dentist to repair poorly fitting prostheses to avoid this problem.
- Make sure that your dentist is aware of your radiation before any tooth extractions are performed. They can contact us for details of the region having received treatment in your case.

Effect on Chewing

Sometimes radiation can result in scarring of the muscles in the jaw that help with chewing. This effect can occur a few months to years after completion of your treatment.

- We do encourage patients to exercise the mouth regularly with chewing exercises.
- Inform our clinical staff if opening the mouth or chewing becomes difficult after treatment so that appropriate exercises or intervention can be arranged for you if needed.

Effect on Thyroid Function

If you received radiation to the low neck, your thyroid gland was likely included in the treatment region. This can result in decreased thyroid function (i.e., hypothyroidism) following treatment. We recommend you obtain thyroid function studies with your primary care physician approximately 6 months after completing treatment and then yearly thereafter (or more frequently if recommended by your primary care physician).

While Receiving Radiation

You will have scheduled visits with our clinical staff at least one time per week during treatment. We will be assessing your progress and making recommendations to you on changes in your care program as needed. Our clinical staff will be available at any time if you have questions or concerns that need to be addressed between these scheduled weekly visits.