



Stanford Health Care Head & Neck Oncology

Speech & Swallowing Rehabilitation

Pre-Radiation Education Guide

Managing side effects during radiation is important for completing treatment. Your speech pathologist has reviewed the major side effects that can occur during radiation treatment for head and neck cancer. Below is a review of these side effects as well as some tips for managing them. It is important to remember that radiation effects are cumulative, so side effects tend to get worse as treatment goes on. Be sure to talk to your care team as problems arise so that they can be managed early.

Taste and smell changes

Cancer and its treatments can change your senses of taste and smell. These changes can affect your appetite and contribute to weight loss. For most patients, the taste will be relatively good during the first two weeks of treatment and then start to fade out. Most patients report food loses taste and seems “like cardboard” towards the end of treatment. Your taste will begin recovering 6-8 weeks after treatment ends and will continue to improve over a 12-month period. Most patients will report taste is 75-80% back to normal about 6 months after treatment.

- ✓ Rinse your mouth with baking soda, salt, and water mouthwash before eating to help foods taste better. (Mix 1 teaspoon salt and 1 teaspoon baking soda in 1-quart water. Shake well before swishing and spitting.)
- ✓ Try using plastic flatware and glass cups and plates if you have a metallic taste when eating.
- ✓ Try sugar-free lemon drops, gum, or mints to stimulate saliva.
- ✓ Try fresh or frozen fruits and vegetables instead of canned.
- ✓ If red meats taste strange, try other protein-rich foods like chicken, fish, eggs, or cheese.
- ✓ Blend fresh fruits into shakes, ice cream, or yogurt.
- ✓ For many people, the sweet taste is the longest lasting. Keep trying a variety of foods to find ones that are pleasurable.

Mouth dryness or thick saliva

Radiation therapy to the head and neck areas, chemotherapy, and some medicines may cause dry mouth or thick saliva. The glands that make saliva are very sensitive to radiation and often stop producing thin, watery saliva during radiation. You may notice your mouth is dry or that you have thick, sticky, ropy mucous. Short-term, dry mouth can make it difficult to eat drier foods and may lead to longer mealtimes. Long-term, dry mouth can increase your risk of dental issues like cavities as saliva typically works as a protective barrier for our teeth. A dry mouth usually is detected around the second week of radiation and gets worse over time. You will not likely notice any improvement in your dry mouth until at least 2 months after radiation ends. Recovery is often slow, and patients may experience continued improvement in saliva production up to 1-2 years after radiation.

- ✓ Drink 8 to 10 cups of liquid a day (water is best) and take a water bottle wherever you go. (Drinking lots of fluids helps thin mucus.)
- ✓ Take small bites and chew your food well.
- ✓ Eat soft, moist foods.
- ✓ Avoid foods that stick to the roof of the mouth like peanut butter or soft bread.
- ✓ Moisten foods with broth, soup, sauces, gravy, yogurt, or creams.

- ✓ Suck on sugarless candy or chew sugarless gum to stimulate saliva. Citrus, cinnamon, and mint flavors often work well, though may cause irritation during treatment.
- ✓ Keep your mouth clean. Rinse your mouth before and after meals with plain water or a mild mouth rinse (made with 1 quart water, 1 teaspoon salt, and 1 teaspoon baking soda – shake well before using). Use a soft-bristle toothbrush. It's a good idea to gently brush your tongue, too. Ask your doctor if it's OK to floss.
- ✓ Avoid commercial mouthwashes, alcoholic and acidic drinks, and tobacco.
- ✓ Limit caffeine intake, from coffee, tea, energy drinks, and caffeinated soft drinks.
- ✓ Avoid carbonated beverages which can cause irritation.
- ✓ Use a humidifier to moisten room air, especially at night. The humidifier should be as close to your head as possible. (Be sure to keep the humidifier clean to avoid spreading bacteria or mold in the air.)
- ✓ Fresh papaya may help to stimulate saliva production and provides a protective barrier in the mouth.
- ✓ Saliva substitutes are helpful if your salivary glands have been removed by surgery or damaged by radiation therapy. These products add moisture to your mouth. Biotene is one commercially available product that is easy to find at most drug stores.
- ✓ Many patients like Xylimelt lozenges for more durable salivary stimulation.
- ✓ Acupuncture can be beneficial for restoring saliva, particularly after radiation therapy is complete.
- ✓ Coconut oil, or some other palatable oil, may be used to coat the inside of the mouth (inside of cheeks, roof of mouth and gums). Try doing this before bedtime (after gargles) and during the day.

Mouth or throat pain or sores

Radiation and chemotherapy can cause mouth and throat pain. These issues typically begin around the second or third week of treatment and increase over the course of treatment. Pain control is important to getting through treatment successfully. You will want to start pain medication before pain becomes a major issue. We have found that when patients start pain medication early, they have much less pain during treatment. Avoid tart, acidic, spicy, or salty foods, all of which tend to increase irritation.

- ✓ Avoid rough-textured or hard foods, like dry toast, crackers, chips, nuts, granola, and raw fruits and vegetables.
- ✓ Choose lukewarm or cold foods that are soothing. Very hot and very cold foods can cause discomfort.
- ✓ Stay away from alcohol, caffeine, and tobacco.
- ✓ Avoid irritating spices like chili powder, cloves, curry, hot sauces, nutmeg, and pepper. Season foods with herbs like basil, oregano, and thyme.
- ✓ Eat soft, creamy foods like cream soups, cheeses, mashed potatoes, yogurt, eggs, custards, puddings, cooked cereals, and canned liquid food supplements.
- ✓ Blend and moisten foods that are dry or solid. Mix them in with soups or sauces, gravies, and casseroles.
- ✓ Avoid using mouthwashes that contain alcohol (which will cause burning).

Nutrition Tips for Patients Receiving Head & Neck Radiation Therapy

Radiation therapy can cause many side effects that may contribute to weight loss and poor nutrition. These side effects include lack of appetite, taste changes, painful chewing and swallowing, dry mouth, nausea, and disinterest in food and eating. The type and severity of side effects usually depends on the location of the radiation.

Calorie and protein needs are increased in patients receiving treatments for cancer. These increased needs, combined with the many possible side effects, may lead to weight loss. It is very important to try and maintain your weight while receiving radiation. The registered dieticians in the cancer center can help you to make sure you are getting what you need to reduce the chance of weight loss.

- ✓ Eat small frequent meals — six to eight times per day.
- ✓ Make every bite and sip count by eating calorie-dense foods and adding calories to foods.

- ✓ Limit foods and beverages low in calories.
- ✓ Always carry food with you to consume while waiting for treatment, in the car, waiting to see the doctor, etc.
- ✓ As side effects become worse, most patients must focus on liquids and soft foods to obtain adequate calories. Nutritional supplements like Ensure or Boost can be very helpful in the late stages of treatment. The dietician can help determine the right supplement for you.

Exercise Protocol: Before, During and After Radiation

Swallow Exercises

These exercises are designed primarily to reduce the potential for future swallowing problems. Even if you are swallowing normally now, these exercises are important to reduce the possibility of permanent swallowing problems that can arise shortly after treatment or many years later. **You should do each of these exercises in 3 sets of 10 repetitions, twice a day throughout radiation and after radiation is completed.** Your speech pathologist will let you know if/when it is safe to stop your exercises.

1. Tongue-hold Maneuver (Masako)

- 1) Place and hold your tongue tip between your front teeth/lips.
- 2) Swallow with your tongue out.
- 3) The further your tongue is out, the more exercise you will get. Feel free to pause and take sips of water as needed between repetitions.

2. Effortful Swallow

- 1) Push your tongue up against the roof of your mouth.
- 2) Swallow as hard as you can. Think about squeezing your throat muscles as you swallow. You can do this exercise while swallowing liquids or food.

3. Mendelsohn Maneuver

- 1) First, swallow normally and feel how the voice box (Adam's apple) moves upward.
- 2) For this exercise, the goal is to hold your Adam's apple in that "up" position for 3-5 seconds. Think of it like you are pausing the swallow halfway. You can do this exercise while swallowing liquids.

Jaw Stretches

These stretches are designed to help you maintain or improve mouth/jaw opening which may be a problem after surgery and/or radiation therapy for cancer to the head & neck. **Ideally, these should be performed 3x per day.**

1. Jaw Opening

- 1) Open your jaw as wide as you can until you feel stretching, but no pain.
- 2) Hold this open position for 10 seconds.
- 3) Relax.
- 4) Repeat 10X.

2. Side-to-Side Movement

- 1) Move your jaw to the right side as far as you can until it pulls but does not hurt.
- 2) Hold it there for 10 seconds.
- 3) Relax.
- 4) Repeat 10X.
- 5) Move your jaw to the left side as far as you can until it pulls but does not hurt.
- 6) Hold it there for 10 seconds.
- 7) Relax.
- 8) Repeat 10X.

3. Increasing Circular Jaw Movement

- 1) Pretend to chew (as if you were chewing gum) in large circles with your mouth open, rotating first to right, then left for a total of 20 times.

Neck Stretches

Remember to breathe while doing these exercises. **Ideally, these should be performed 3x per day.**

- 1) Turn your head to look over your shoulder and hold for 10 seconds, repeat 10 times, and then complete on the other side.
- 2) Tilt your ear to your shoulder and hold for 10 seconds, repeat 10 times, and then complete on the other side.



The HNC Virtual Coach app is available for free to support you in doing the swallowing exercises.

- Guided twice daily swallowing exercises for the duration of the patient's radiation treatment.
- Daily automated reminders.
- Completing brief surveys to collect symptom data and track adherence to exercises.
- Self-paced challenges and educational content developed to support patients during treatment.