

What are the side effects of radiation treatment for head and neck cancer?

- Ulcers (sores) in the mouth
- Dry mouth and throat
- Thick saliva
- Increased mucus
- Taste changes (may have metallic taste)
- Decreased taste or loss of tastes
- Tooth decay
- Mouth infections (gums, teeth, or tongue)
- Jaw stiffness or trouble opening the mouth
- Skin irritation or peeling
- Mouth or throat pain

Why does radiation cause these side effects?

Radiation kills cancer cells, however normal cells can also be damaged. Cells that line the mouth, make up the skin of the neck, and make saliva within saliva glands can also be damaged or killed by radiation. When normal cells are damaged, side effects like those in the list above can arise. Normal cells will eventually recover with good nutrition.

How long do I have to wait for these side effects to get better?

Some side effects last only a short while. For example, sores in the mouth and skin irritation usually begin to improve around 2 weeks after your last treatment. Some side effects take time to improve. Changes in sense of taste

may take 6 months to 1 year to improve, and in a few people, taste changes may never improve. Some side effects, like dry mouth, may never completely go away.

How can I prevent side effects caused by radiation?

Skincare:

- Keep your skin moist and flexible by applying Aquaphor, Vaseline, or Alra to the treated area 1-2 times daily:
 - Apply to the area after your treatment and again before bedtime.
 - Stop using lotions/ointments 4 hours before a radiation treatment.
 - Aquaphor should be available at any grocery store or pharmacy over the counter. Alra is over the counter as well, and it is stocked by the University of Michigan Cancer Center Pharmacy (734-647-8911).
- Prevent additional irritation in the area being treated:
 - Do not shave with a razor blade (electric shavers are generally okay)
 - Do not use perfumes, cologne, aftershave, powders or cosmetics
 - Do not scratch or rub in the treatment area
 - Do not use anti-bacterial, deodorant or heavily-scented soaps

Mouth care:

- While you are being treated with radiation, be sure to look carefully at the inside of your mouth each and every day. Tell your doctor if you see new mouth sores, white patches, or other things that are unusual or new.
- Keep your mouth clean:
 - Brush your teeth, gums, and tongue after every meal and at bedtime.
 - At least 4-5 times each day, **rinse your mouth** with a solution of ¼ teaspoon baking soda and 1/8th teaspoon salt mixed in 1 cup of warm water. If your throat is irritated, you can gargle with this mixture as well. This salt and soda rinse will help sores and ulcers heal while keeping your mouth clean.

- Clean dentures by brushing them or soaking them daily.
- Avoid irritating the inside of your mouth:
 - Use an extra-soft toothbrush, and run warm water over your toothbrush to soften bristles before each use.
 - Do not use mouthwashes that contain alcohol.
 - Gently floss every day. If gums bleed with flossing, avoid the area of bleeding but floss the rest of the teeth each day.
 - Make sure that your dentures fit well. They may need to be adjusted when you finish radiation if you lose weight.
- Avoid dry mouth:
 - Frequently sip water throughout the day.
 - Hold ice chips in your mouth.
 - Use sugar-free gum or sugar-free hard candy.
 - Use a saliva substitute or salivary stimulant. Over the counter products commonly used for dry mouth include Xylimelt lozenges, Biotene mouthwash/lozenge/spray, and ACT mouthwash.
- Protect your teeth by using a fluoride toothpaste every day and following your dentist's recommendations for the use of fluoride gel.
- Do not eat or drink things that are high in sugar because this increases the risk of tooth decay.
- Eat foods that are easy to chew and swallow and that will not irritate your mouth and throat. Usually these foods are soft and moist and do not have strong flavors. Take your time when eating, and sip liquids.
 - Avoid foods that have sharp edges or that are crunchy.
 - Avoid hot or spicy foods.
 - Avoid acidic fruits or fruit juices.
- Be sure that you get adequate nourishment. See page 4 for details.

General care:

- Stop using tobacco products (cigarettes, pipes, cigars, snuff, and chewing tobacco). Ask your doctor if you need help.
- Do not use alcohol while you are being treated.
- Exercise the muscles in your jaw by opening and closing your mouth 20 times (open as far as you can and then close until your teeth touch). Repeat this exercise 3 times daily to prevent jaw stiffness.

Follow up:

- Speak with your doctor once per week while you are being treated. Let your doctor know if you develop new symptoms or concerns.

When should I call my doctor about side effects?

If you are having side effects, reach out with issues earlier in the day when we have more resources to address your concerns. The best person to answer your medication questions is the doctor who prescribed the medication. If we try an approach to treat a symptom and it does not work, let us know, and we can try something else. By trying different approaches, we will find the symptom treatment that works best for you.

Will I lose weight or become dehydrated during radiation treatment?

People who are treated with radiation to the head and neck often develop sore throat, decreased appetite, loss of taste, and dry mouth. These may limit the amount that you eat, causing you to lose weight. You may also become dehydrated if you do not drink enough fluids. Weight loss and dehydration can be dangerous, so it is important that you take steps to eat and drink enough to keep your body healthy.

What can I do to avoid losing weight or becoming dehydrated?

- Try to consume at least 2000 calories per day. Ideally, this would include 30 grams of protein.
- Drink at least ½ gallon of liquid each day. Avoid caffeinated drinks. Water is preferred.
- Weigh yourself daily at home. If you lose more than 2 pounds per week, you should consume more calories.

How can I reverse weight loss or dehydration if they occur?

We might consider placing a feeding tube if you lose more than 10% of your weight.

- If you have difficulty eating solid foods, we recommend that you drink liquid nutritional supplements such as High Calorie Boost, Ensure, Glucerna (use if you have diabetes), Scandishakes, Benecalorie, and others to supplement your nutrition.
- If you are able to take your blood pressure at home daily, this helps to monitor your hydration. Call your doctor if you are dizzy when you stand up or if your blood pressure is below 95/55.

What should I buy before I start radiation?

- Aquaphor, Vaseline, or Alra for skin care.
- Baking soda and table salt to prepare a mouth rinse (see recipe on page 1).
- Liquid nutritional supplement of your choice such as High Calorie Boost, Ensure, Glucerna (use if you have diabetes), Scandishakes, Benecalorie.
- Your favorite over the counter pain reliever.

What should I do if I develop problems while getting radiation?

Tell your doctor during your weekly visit during treatment. You can also call our office any time to leave a message about any new symptoms or concerns. After understanding your problem, your doctor can prescribe medications to treat your symptoms.

How can I reach my doctor if I have a question?

Call (734) 936-4300, and leave a message with the staff. They will forward this message to your doctor. You can also send a message through the MiChart patient portal.

Where can I find more information?

- **National Institute of Dental and Craniofacial Research:** Provides resources on oral health while receiving cancer therapy. Visit their website at: <https://www.nidcr.nih.gov/health-info/cancer-treatments>.
- **Smokefree.gov:** Provides information and access to resources such as quit lines and guides on cessation. Visit their website at: <http://www.smokefree.gov>. They can also be reached by phone at: 1 (877) 448-7848.

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