

To get to the tumor, the beam of radiation must pass through some area of normal tissue, generating side effects in those areas. The amount of radiation that any one area of the body can tolerate varies. Approximately two weeks after your first treatment, you may experience some mild side effects (described below). The side effects are the most severe the last two weeks of treatment, lasting for two weeks after treatment. Your doctor will discuss the side effects depending on the dose of radiation and the site being treated.

It is very important that you notify your doctor or nurse as soon as you experience any side effects. They can be much better managed if they are treated at the earliest onset.

If you are receiving chemotherapy and radiation therapy simultaneously, side effects may be enhanced or may start earlier than two weeks into treatment.

Skin

Skin exposed to radiation may become dry and itchy. You may also experience some peeling at the end of treatment. As with a sunburn or tanning, your skin may darken during treatment, but this should fade over time and your skin will return to a normal color following the end of treatment. All symptoms will subside within a few weeks after completing therapy.

Recommendations

- Keep the treated area clean and avoid using anything topical (applied to the skin) unless your doctor recommends it.
- Use mild soaps like Dove® or Ivory®.
- Your doctor will recommend special topical creams that help protect your skin. It is important to apply these creams when you start treatment. This will help minimize skin irritation. Remember, use only lotions or creams that are recommended by your physician.
- Commonly recommended topical creams:
 - Hydrocortisone cream (three times a day)
 - Pure aloe vera gel
- Always advise your physician of any skin irritations.

Fatigue

Some patients may experience fatigue during radiation therapy treatment. The fatigue may begin within two weeks after the start of your therapy. At two weeks post treatment, most people feel 80 percent normal and at six weeks, the fatigue is usually resolved. In general, with radiation treatment-induced fatigue, if you rest it will get better.

Recommendations

- Adjust your daily schedule to minimize fatigue and allow yourself to take naps and rest as needed.
- Eat a balanced diet.
- Avoid weight loss.
- Drink plenty of liquids.
- Low-level exercise may be helpful in increasing your energy level.

Esophagus

This is the tube that food travels down from the mouth to the stomach. This area is commonly affected because it runs down the center of the chest and is frequently exposed to the radiation. When this happens, you may experience sore throat and difficulty swallowing, particularly of solid foods. This is a temporary side effect that usually occurs three to four weeks into the radiation treatment and continues for about two weeks afterwards. If you are receiving chemotherapy at the same time, these symptoms can present as early as two weeks into radiation treatment.

Maintaining a healthy weight is very important during your treatment. The registered dietitian will assist you with monitoring your weight and creating a personalized diet plan to ensure an optimal weight. If you are unable to maintain your weight, dietary supplements (such as Ensure or other liquid supplements) may be recommended. If you still are unable to maintain a healthy weight, a gastric tube may be recommended.

Recommendations

- Try eating foods that are bland, semisolid or soft and easy to swallow. Cream soups, cheeses, mashed potatoes, yogurt, eggs, custards, puddings, cooked cereals, ice cream, casseroles, gravies, shakes and smoothies are usually easy to eat.
- Make smoothies with soothing fruits such as melons, bananas, peaches and kiwi fruit. Add yogurt, frozen yogurt, milk, ice cream or silken tofu for extra protein.
- Take your time while you eat. Chew and swallow foods carefully and allow ample time between bites.

- Choose lukewarm or cool foods that are soothing. Very cold or very hot foods can cause distress.
- Several small meals a day are easier to eat and digest than three large meals. Space meals two to three hours apart to get the most comfort. Remember to stop eating two to three hours before bed and to sleep with your head elevated if gastric reflux and heartburn are problems.
- Avoid tart, acidic or salty beverages and foods that can be irritating, such as citrus fruit juices (grapefruit, orange, lemon and lime), pickled and vinegary foods, tomato-based foods (chili, salsa, pasta sauces and pizza) and some broths.
- Avoid coarse or rough-textured foods, such as dry toast, granola and raw fruits or vegetables. Blend or moisten foods that are dry and solid.
- Avoid commercial mouthwashes, alcoholic beverages and tobacco. They can dry and irritate your mouth.
- Talk to your doctor or nurse about medication that numbs and soothes your mouth and throat.

Lungs

Radiation can cause irritation of the lungs, creating a persistent cough. Although side effects are mild in most people, for others with poor underlying lung function, it may be more severe. Cough usually resolves a few weeks after treatment ends.

Pneumonitis, which causes temporary irritation of the lungs, is a possible side effect of radiation therapy. Side effects of pneumonitis include shortness of breath, cough and pleuritic chest pain. The onset may be six weeks to three months post treatment, depending on if you also receive chemotherapy. Treatment for pneumonitis is with oral steroids; no additional treatment is usually needed.

Radiation treatment can cause fibrosis of the lungs. This is a permanent scarring of the lungs that can be seen on a chest X-ray or CT scan. Your physician will design a treatment field that minimizes the amount of lung tissue in the treatment field, which in turn minimizes the amount of fibrosis.

Recommendations

- Drinking plenty of fluids and the use of a cold mist humidifier can help to keep the secretions in the lungs thin so you do not have to cough forcefully.
- Cough medicine may be taken for cough.
- Be sure to advise your physician if any of the above mentioned symptoms occur.

Post-treatment note

When your course of radiation therapy is complete, you will be scheduled for follow-up visits with your radiation oncologist. Follow-up appointments will be scheduled regularly while side effects are present. Our team will manage any resultant side effects until they have disappeared entirely.