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Radiation Therapy Side Effects

It's very important to remember that every person reacts differently to treatment. Any side effect you might have depends on the type and location of cancer, the dose of radiation being given, and your general health. Some people have few or no side effects, while others have quite a few.

to be short-term, mild, and treatable. They're usually gone within a few weeks after treatment ends. The most common early side effects are fatigue (feeling tired) and skin changes. Other early side effects usually are related to the area being treated, such as hair loss and mouth problems when radiation treatment is given to this area.

- **Late side effects** can take months or even years to develop. They can occur in any normal tissue in the body that has received radiation. The risk of late side effects depends on the area treated as well as the radiation dose that was used. Careful treatment planning can help avoid serious long-term side effects. It's always best to talk to your radiation oncologist about the risk of long-term side effects.

Radioprotective drugs for reducing side effects

One way to reduce side effects is by using radioprotective drugs, but these are only used for certain types of radiation given to certain parts of the body. These drugs are given before radiation treatment to protect certain normal tissues in the treatment area. The one most commonly used today is amifostine. This drug may be used in people with head and neck cancer to reduce the mouth problems caused by radiation therapy.

- **Protect the treated area from the sun.** Your skin may be extra sensitive to sunlight. If possible, cover the treated skin with dark-colored or UV-protective clothing before going outside. Ask your cancer care team if you should use sunscreen. If so, use a broad spectrum sunscreen with a sun protection factor (SPF) of at least 30. Reapply the sunscreen often. Continue to give your skin extra protection from sunlight, even after radiation therapy ends.
- **Use only lukewarm water and mild soap.** Just let water run over the treated area. Do not rub. Also be careful not to rub away the ink marks needed for your radiation therapy until it's done.
- **Check with your cancer care team before shaving the treated area.** They might recommend that you use an electric shaver.

Ask your cancer care team before using anything on the skin in the treatment area. This includes powders, creams, perfumes, deodorants, body oils, ointments, lotions, hair-removal products, or home remedies while you're being treated and for

not common.

Talk with your cancer care team about what to expect from your specific treatment plan.

If you're getting radiation therapy to the head or neck

People who get radiation to the head and neck might have side effects such as:

- Soreness (or even open sores) in the mouth or throat
- Dry mouth
- Trouble swallowing
- Changes in taste
- Nausea
- Earaches
- Tooth decay
- Swelling in the gums, throat, or neck
- Hair loss
- Changes in skin texture
- Jaw stiffness

How to care for your mouth during treatment

If you get radiation therapy to the head or neck, you need to take good care of your teeth, gums, mouth, and throat. Here are some tips that may help you manage mouth problems:

- Avoid spicy and rough foods, such as raw vegetables, dry crackers, and nuts.
- Don't eat or drink very hot or very cold foods or beverages.
- Don't smoke, chew tobacco, or drink alcohol – these can make mouth sores worse.
- Stay away from sugary snacks.
- Ask your cancer care team to recommend a good mouthwash. The alcohol in some mouthwashes can dry and irritate mouth tissues.
- Rinse your mouth with warm salt and soda water every 1 to 2 hours as needed. (Use 1 teaspoon of salt and 1 teaspoon of baking soda in 1 quart of water.)
- Sip cool drinks often throughout the day.
- Eat sugar-free candy or chew gum to help keep your mouth moist.
- Moisten food with gravies and sauces to make it easier to eat.
- Ask your cancer care team about medicines to help treat mouth sores and control

pain while eating.

If these measures are not enough, ask your cancer care team for advice. Mouth dryness may be a problem even after treatment is over. If so, talk to your team about what you can do.

How to care for your teeth during treatment

Radiation treatment to your head and neck can increase your chances of getting cavities. This is especially true if you have dry mouth as a result of treatment.

Before starting radiation, talk to your cancer care team about whether you should get a complete check-up with your dentist. Ask your dentist to talk with your radiation doctor before you start treatment. If you have one or more problem teeth, your dentist may suggest removing them before you start treatment. Radiation (and dry mouth) might damage them to the point where they'll need to be removed anyway, and this can be harder to do after treatment starts.

If you wear dentures, they may no longer fit well because of swollen gums. If your dentures cause sores, you may need to stop wearing them until your radiation therapy is done to keep sores from getting infected.

Your dentist may want to see you during your radiation therapy to check your teeth, talk to you about caring for your mouth and teeth, and help you deal with any problems. Most likely, you will be told to:

- Clean your teeth and gums with a very soft brush after meals and at least one other time each day.
- Use fluoride toothpaste that contains no abrasives.
- Rinse your mouth well with cool water or a baking soda solution after you brush. (Use 1 teaspoon of baking soda in 1 quart of water.)
- If you normally floss, ask your dentist or cancer care team if this is OK during treatment. Tell your cancer care team if this causes bleeding or other problems.

If you're getting radiation therapy to the breast

If you have [radiation to the breast](#)⁵, it can affect your heart or lungs as well causing other side effects.

Short-term side effects

Radiation to the breast can cause:

- Skin irritation, dryness, and color changes
- Breast soreness
- Breast swelling from fluid build-up (lymphedema)

To avoid irritating the skin around the breasts, try to go without wearing a bra. If this isn't possible, wear a soft cotton bra without underwires.

If your shoulders feel stiff, ask your cancer care team about exercises to keep your shoulder moving freely.

Breast soreness, color changes, and fluid build-up (lymphedema) will most likely go away a month or 2 after you finish radiation therapy. If fluid build-up continues to be a problem, ask your cancer care team what steps you can take. See [Lymphedema](#)⁶ for more information.

Long-term changes to the breast

Radiation therapy may cause long-term changes in the breast. Your skin may be slightly darker, and pores may be larger and more noticeable. The skin may be more or less sensitive and feel thicker and firmer than it was before treatment. Sometimes the size of your breast changes – it may become larger because of fluid build-up or smaller because of scar tissue. These side effects may last long after treatment.

After about a year, you shouldn't have any new changes. If you do see changes in breast size, shape, appearance, or texture after this time, tell your cancer care team about them right away.

Less common side effects in nearby areas

Although it's rare, radiation to the breast can affect organs in the chest, including the heart and lungs. This is not as common today as it was in the past, because modern radiation therapy equipment allows doctors to better focus the radiation beams on the area with cancer, with less affect to other areas.

Rib fractures: In rare cases, radiation therapy may weaken the ribs, which could lead to a fracture. Be sure you understand what to look for and tell your cancer care team if you notice any of these side effects.

Heart complications: Radiation to the breast can also affect the heart. It can cause hardening of the arteries (which can make you more likely to have a heart attack later on), heart valve damage, or irregular heartbeats.

Lung damage (radiation pneumonitis): Getting radiation to the breast can sometimes cause an inflammation of the lungs, which is called radiation pneumonitis. See “If you’re getting radiation to the chest” below for more details.

Damage to the nerves in the shoulder and arm: Radiation to the breast can sometimes damage some of the nerves to the arm. This is called **brachial plexopathy** and can lead to numbness, tingling, pain, and weakness in the shoulder, arm, and hand.

Side effects of brachytherapy

If your treatment includes brachytherapy (internal radiation implants), you might notice breast tenderness, tightness, redness, and bruising. You may also have some of the same side effects that happen with external radiation treatment. Let your cancer care team know about any problems you notice.

If you’re getting radiation therapy to the chest

Radiation treatment to the chest may cause side effects such as:

- Sore throat
- Swallowing problems
- Loss of appetite
- Cough
- Shortness of breath

Radiation can also cause other problems in the heart or lungs.

Heart complications

Getting radiation to the middle portion of the chest can raise your risk of heart disease. This risk increases with higher radiation doses and larger treatment areas in this part of your body. Radiation can also cause hardening of the arteries (which can make you more likely to have a heart attack later on), heart valve damage, or irregular heartbeats.

Radiation pneumonitis

Radiation pneumonitis is inflammation of the lungs that can be caused by radiation treatment to the chest (or less often, the breast). It may occur about 3 to 6 months after getting radiation therapy. It's more likely if you have other lung diseases, like emphysema (which involves gradual damage of lung tissue). Common symptoms of radiation pneumonitis include:

- Shortness of breath that usually gets worse with exercise
- Chest pain, which is often worse when taking in a deep breath
- Cough
- Pink-tinged sputum
- Low-grade fever
- Weakness

Sometimes there are no symptoms, and radiation pneumonitis is found on a chest x-ray.

Symptoms often go away on their own, but if treatment is needed, it is based on trying to decrease the inflammation. Steroids, like prednisone, are usually used. With treatment, most people recover without any lasting effects. But if it persists, it can lead to pulmonary fibrosis (stiffening or scarring of the lungs). When this happens, the lungs can no longer fully inflate and take in air.

Be sure you understand what to look for, and tell your cancer care team if you notice any of these side effects.

If you're getting radiation therapy to the abdomen (belly)

If you are getting radiation to your stomach or some part of the abdomen (belly), you may have side effects such as:

- Nausea
- Vomiting
- Belly cramps
- Diarrhea
- Constipation

Eating or avoiding certain foods can help with some of these problems, so diet planning is an important part of radiation treatment of the stomach or abdomen. Ask your cancer care team about what you can expect, and what medicines you should take to help relieve these problems. Check with your cancer care team about any home remedies or over-the-counter drugs you're thinking about using.

These problems should get better when treatment is over.

Managing nausea

Some people feel queasy for a few hours right after radiation therapy. If you have this problem, try not eating for a couple of hours before and after your treatment. You may handle the treatment better on an empty stomach. If the problem doesn't go away, ask your cancer care team about medicines to help prevent and treat nausea. Be sure to take the medicine exactly as you are told to do.

If you notice nausea before your treatment, try eating a bland snack, like toast or crackers, and try to relax as much as possible. See [Nausea and Vomiting](#)⁷ to get tips to help an upset stomach and learn more about how to manage these side effects.

Managing diarrhea

Many people have diarrhea at some point after starting radiation therapy to the abdomen. Your cancer care team may prescribe medicines or give you special instructions to help with the problem. Diet changes may also be recommended, such as:

- Try a clear liquid diet (water, weak tea, apple juice, peach nectar, clear broth, popsicles, and plain gelatin) as soon as diarrhea starts or when you feel like it's going to start.
- Don't eat foods that are high in fiber or can cause gas or cramps, such as raw fruits and vegetables, beans, cabbage, whole-grain breads and cereals, sweets, and spicy foods.
- Eat frequent, small meals.
- Do not drink milk or eat milk products if they irritate your bowels.
- When the diarrhea starts to improve, try eating small amounts of low-fiber foods, such as rice, bananas, applesauce, yogurt, mashed potatoes, low-fat cottage cheese, and dry toast.
- Be sure you take in enough potassium (it can be found in bananas, potatoes, beans, peaches, and many other foods). This is an important mineral you may lose through diarrhea.

If you're having radiation therapy to the pelvis

Radiation therapy to the pelvis (for example, as treatment for bladder, ovarian, or prostate cancer) can cause side effects such as:

- Bladder problems
- Fertility problems
- Changes in your sex life

You might also have some of the same problems people get from radiation to the abdomen, such as nausea, vomiting, diarrhea, or constipation.

Bladder problems

Radiation to the pelvis can cause problems with urination, including:

- Pain or burning sensations
- Trouble passing urine
- Blood in the urine
- An urge to urinate often

Most of these problems get better over time, but radiation therapy can cause longer-term side effects as well:

- **Radiation cystitis.** If the radiation damages the lining of the bladder, radiation cystitis can be a long-term problem that causes blood in the urine or pain when passing urine.
- **Urinary incontinence.** Radiation treatments for certain cancers, such as prostate and bladder cancer, may make you unable to control your urine or have leakage or dribbling. There are different types and degrees of incontinence, but it can be treated. Even if incontinence can't be corrected completely, it can still be helped. See [Bladder and Bowel Incontinence⁸](#) to learn more. This side effect is most often a problem for men being treated for prostate cancer, but some of the information might also be helpful for women dealing with treatment-related incontinence.
- **Fistulas.** In rare cases, radiation can cause an opening called a **fistula** to form between organs in the pelvis, such as between the vagina and the bladder, or between the bladder and the rectum. These can be fixed with surgery.

How fertility might be affected

For women: Talk to your cancer care team about how radiation might affect your

fertility (ability to have a baby). It's best to do this **before** starting treatment so you are aware of possible risks to your fertility.

Depending on the radiation dose, women getting radiation therapy in the pelvic area

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