



## **Education**

### **Radiation Therapy**

#### **What is radiation therapy?**

Radiation therapy is the use of high-energy radiation (x-rays) to kill cancer cells and shrink tumors. Radiation can kill cells or keep them from growing. Cancer cells grow and divide more quickly than normal cells. This means that carefully planned doses of radiation can kill or stop the growth of cancer cells, while most normal cells are able to recover from the radiation.

More than half of all people with cancer have radiation therapy at some point in their treatment. Radiation therapy is sometimes called x-ray therapy, radiotherapy, or irradiation.

#### **When is it used?**

Radiation therapy alone can cure some cancers, such as Hodgkin's disease. However, it is most often combined with surgery or chemotherapy to control symptoms or spread of the cancer. Radiation may be used to:

- Shrink a tumor before surgery to remove it. This makes it easier to remove the tumor.
- Destroy cancer cells that are left after surgery or other treatments.
- Work with another treatment, such as chemotherapy, to destroy the cancer.
- Help control pain, pressure, and other symptoms of cancer even if a cure is not possible.

#### **What happens during the procedure?**

There are 2 kinds of radiation therapy: external and internal. External radiation is delivered from outside the body. For internal radiation, a radiation source is placed next to or in a tumor.

External radiation is usually given during outpatient visits to a hospital or treatment center. A machine directs a beam of radiation at the tumor. Temporary marks on the skin help the radiation technologist target the exact area to be treated. The radiation oncologist calculates the dose of radiation to use on the tumor. (A radiation oncologist is a doctor who specializes in treating tumors with radiation.)

Each external radiation treatment lasts just a few minutes. The treatment is painless. Small daily doses are given so that the body can tolerate the treatment better and normal tissues affected by the radiation can recover. The total dose is given over several weeks. For example, you may have treatment for several days in a row, followed by several days without treatment. This pattern is repeated until you have received the total dose of radiation.

For internal radiation therapy, a radioactive material is put inside the body. It may be left in place for a few hours or many hours. Once implanted, the radioactive material generally does not cause any pain. If you have any discomfort, you will be given pain medicine. In some cases you may swallow the radioactive material, or it may be injected into your body.

If you have internal radiation therapy, you will need to stay in your hospital room while the implant is in place. Depending on the type of implant, you may be asked to stay in bed.

#### **What are the side effects of radiation therapy?**

Radiation therapy can cause damage to normal cells in the area of the tumor as well as death of tumor cells. Side effects depend on the area of the body that is receiving the radiation treatment. Some possible side effects are:

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- skin sores
- loss of head and body hair
- increased risk of infection
- bleeding problems
- nausea, vomiting, and diarrhea
- weakness, tiredness, and fatigue
- sores in the mouth.

To help relieve skin problems caused by radiation treatment:

- Avoid tight or scratchy clothing that irritates the skin.
- Use lukewarm water and mild soap for bathing.
- Avoid being in the sun. When you are outside, put sunscreen with an SPF of 15 or higher on exposed parts of the body.
- Do not use any powders, creams, perfumes, deodorants, body oils, ointments, or lotions without first checking with your provider. They may interfere with your treatment.

To help you deal with the fatigue get plenty of rest and sleep.

If you have a loss of appetite:

- Eat frequent small meals.
- Snack between meals.
- Add extra protein to your diet by eating more cheese, meat, fish, nuts, and soy products.
- Use nutritional supplements as directed by your provider.
- Ask a friend or family member to prepare food if cooking odors bother you.

To reduce nausea and vomiting:

- Eat small meals throughout the day.
- Avoid sweets and fried or fatty foods.
- Eat food heated to room temperature.
- Eat slowly, and chew food well.
- Eat dry foods like toast or crackers to help ease an upset stomach.
- Avoid food odors that increase nausea.
- Drink cool, unsweetened, and noncarbonated drinks, such as apple juice or flat ginger ale.

To help relieve diarrhea:

- Change to a clear liquid diet.
- Drink plenty of fluids, such as apple juice and flat sodas.
- Avoid milk and other dairy products if they make the diarrhea worse.

If the side effects become severe, treatment may be stopped for a while, or the dose lowered. In extreme cases, treatment may be discontinued.

### **What are the benefits of this procedure?**

Radiation therapy can cure or help cure the cancer or lessen the symptoms of cancer or its spread.

### **What are the risks associated with this procedure?**

External radiation does not make you radioactive. If you have internal radiation treatment, the radioactive material may send its high-energy rays outside your body. This means that other people in close range may be exposed to small doses of radiation. Visitors and hospital staff can spend time in your room as long as they are not too close

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and do not stay too long. Hospital staff members may wear a lead apron or shield because they are exposed to radiation more often than your visitors.

There are uncommon but severe complications of radiation therapy. However, cancer can be a life-threatening illness and the benefits of the treatment are usually greater than the risks. You and your provider will discuss the risks and benefits.

**When should I call my health care provider?**

Call your provider right away if:

- You get a fever.
- Your pain or symptoms change or get worse.

Call your provider during office hours if you have questions about the procedure or its result.

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