

## **PATIENT EDUCATION – RADIATION THERAPY**

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## 1 WHAT IS RADIATION THERAPY?

*Radiation therapy* uses high-energy particles or waves, such as x-rays, gamma rays, electron beams or protons, to destroy or damage cancer cells. Other names for radiation therapy are radiotherapy, irradiation or x-ray therapy.

Radiation therapy is most often part of the treatment for certain types of cancer, such as cancers of the head and neck, bladder, lung, breast, prostate and Hodgkin disease. Many other cancers are also treated with radiation therapy.

Radiation can be given alone or used with other treatments, such as surgery or chemotherapy. In fact, certain drugs are known to be radiosensitizers (**ray-dee-oh-SENS-it-tie-zers**). This means they can actually make the cancer cells more sensitive to radiation, which helps the radiation to better kill cancer cells.

There are also different ways to deliver radiation. Sometimes a patient gets both internal and external radiation treatment for the same cancer.

## 2 WHO GIVES RADIATION TREATMENTS?

During your radiation therapy, you will have a team of medical professionals caring for you. Your team may include these people:

- **Radiation oncologist:** A doctor specially trained to treat cancer patients with radiation. This person is in charge of your radiation treatment plan.
- **Radiation physicist:** This is the person who makes sure the radiation equipment is working as it should and that it gives you the dose prescribed by your radiation oncologist.
- **Dosimetrist:** Supervised by the radiation physicist, this person helps the radiation oncologist plan the treatment.
- **Radiation therapist or radiation therapy technologist:** This is the person who operates the radiation equipment and positions you for treatment.
- **Radiation therapy nurse:** This nurse has special training in cancer treatment and can give you information about radiation treatment and managing side effects.
- **Medical assistant:** This person supports both the physicians and nurses in the care for their patients.

You may also need the services of a dietitian, patient navigator, dentist or other healthcare professional.

### 3 HOW IS RADIATION GIVEN?

Radiation therapy can be given in two ways:

- External radiation
- Internal radiation

After a physical exam and a review of your medical history and test results, the doctor will pinpoint the area to be treated. This is done before starting radiation therapy in a process called *simulation or Radiation Therapy Planning CT scan*. **You will probably be doing this today.** You will be asked to lie still on a CT table to define your treatment field. These are the first in a series of marks that may be used for treatment.

Radiation beams are very precisely aimed. A special mold, mask or cast of a body part may be made to help you stay still during treatment. These will also help get you in the same position for each treatment. The CT technologist may mark the treatment field with freckle-sized dots of semi-permanent ink and stickers to help the marks last. The marks will likely fade away over time, but they are needed for your first day on the treatment machine. Do not use soap or scrub these marks off. Based on the simulation, other tests and your medical diagnosis, the radiation oncologist will decide radiation dosage, how it will be given and treatment you should have.

*External radiation therapy* is usually given with a machine called a linear accelerator (often called a “LINAC” for short). It is an open machine, and you will not be enclosed in a small space (see photo below).

*Internal radiation therapy* is also called *brachytherapy* (**brake-ee-THER-uh-pee**). It uses a radioactive source, called an implant, that’s put inside the body in or near the tumor. The radiation from the implant travels only a short distance, so it has very little effect on normal body tissues. If you are having this type of treatment, you will receive a separate informational brochure.



## **4 COMMON SIDE EFFECTS OF RADIATION**

### **FATIGUE**

Fatigue is feeling tired physically, mentally and emotionally. It's very common with cancer and its treatment, and often happens with radiation therapy. Managing fatigue is an important part of care.

Fatigue means having less energy to do the things you normally do or want to do. It can last a long time and can get in the way of your usual activities. Along with your doctor, you may visit with our patient navigator(s) for assistance dealing with fatigue.

### **HAIR LOSS**

Radiation therapy can cause hair loss (the medical word for this is *alopecia* [al-o-**PEE**-shuh]). But hair is only lost in the area being treated. For instance, radiation to your head may cause you to lose some or all of the hair on your head (even eyebrows and lashes), but if you get treatment to your hip, you will not lose the hair on your head.

### **LOSS IN APPETITE/DIGESTION PROBLEMS**

Radiation to the head and neck or parts of the digestive system (stomach or intestines) might cause eating and digestion problems. You may lose interest in food during treatment. But even if you are not hungry, try to eat protein and high-calorie foods. Doctors have found that patients who eat well can better handle their cancer treatments and side effects. Along with your doctor, you may visit with our dietitian for nutritional assistance.

### **WILL SIDE EFFECTS LIMIT MY ACTIVITY?**

Side effects might limit your ability to do some things, but what you can do will depend on how you feel. Talk to your doctor about this. Some patients are able to go to work or enjoy leisure activities while they get radiation therapy, while others find they need more rest than usual and cannot do as much. Your doctor may suggest you limit activities that might irritate the area being treated.

### **NOTES:**

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## 9 LET'S GET STARTED!

Change of clothes – What should I wear?

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Immobilization devices – Will I be confined?

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Does this require a needle stick?

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Will I be radioactive and can I be around people?

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What do I do with these marks?

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When do I come back and start my treatments?

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