



# Radiation Therapy

## What It Is, How It Helps

### What's in this guide

If your doctor has told you that you have cancer, you may have a lot of questions. Can I be cured? What kinds of treatment would be best for me? Will it hurt? How long will treatment take? How much will it cost? How will my life change while I'm being treated and after treatment ends? These are all normal questions for people with cancer.

This guide will explain one type of treatment – radiation therapy – a little better. We'll try to help you know what radiation therapy is and what it will be like.

If you have more questions, ask your doctor or nurse to help you. It's always best to be open and honest with them. That way, they can help you decide which treatment is best for you.

### Questions about radiation therapy

#### What is radiation therapy?

Radiation (**ray-dee-A-shun**) therapy (**ther-uh-pee**) is the use of radiation to treat cancer and other problems. There are different types of radiation. One that you may know about is x-rays. If you've ever had an x-ray of your chest or any other body part, you've had some radiation. Radiation is used in much higher doses to treat some types of cancer.

#### How does radiation therapy work?

Your body is made up of trillions of normal, healthy cells. Cancer starts when something changes a normal cell into a cancer cell. This cancer cell can then grow and make more cancer cells until a tumor is formed. Tumors can keep growing and cause problems. If the cancer is not treated, it can spread to other parts of the body and form more tumors.

Radiation is used to kill cancer cells. Special equipment sends high doses of radiation to the cancer cells or tumor. This keeps the cells from growing and making more cancer cells. Radiation can also affect normal cells near the tumor. But normal cells can repair themselves and cancer cells cannot.

Sometimes radiation is the only treatment needed. Other times it's one part of a patient's cancer treatment plan.

Your doctor may suggest radiation therapy to treat your cancer. Sometimes radiation can cure cancer. At other times the goal may be to slow the cancer's growth to help you feel better. Be sure to talk to your doctor about the goal of your treatment.

Radiation therapy is not like chemotherapy (**key-mo-THER**-uh-pee, often called chemo). Radiation treats just the tumor. Chemo uses drugs to treat the whole body. So chemo might be used if a person has cancer in many places. Radiation affects only the part of the body being treated.

## How much does radiation therapy cost?

Radiation therapy can cost a lot. How much yours will cost depends on the type of treatment you get and the number of treatments you need.

Most health insurance plans cover radiation therapy. Find out who can talk to you about your coverage and how much you will have to pay. Try to do this before you start treatment. If your income is low and you can get Medicaid, it will help pay for treatments.

If you do not have insurance or Medicaid, talk with your hospital's social service office. Or call the American Cancer Society at 1-800-227-2345 to learn more about what help there might be for you.

## What should I ask my doctor?

Cancer is different for each person, and your radiation therapy will be planned just for you. Work closely with your doctor and nurse to decide what's best for you. Ask the doctor, nurses, and others on your team all the questions you have. They know the most about radiation and how it works.

Be ready. Write down questions ahead of time. Take them with you, and don't be afraid to say you need to know more. Nothing you say will sound silly or strange to your doctor or nurse. They know you want to learn as much about radiation as you can. All patients who get radiation have questions. Here are some you might want to ask:

- What is the goal of radiation therapy in my case?
- Will it stop the spread of cancer?
- Will it kill or shrink the tumor?

- How will we know if the radiation is working?
- If I'm getting radiation after surgery, will it kill any cancer cells left behind? Could radiation alone be used instead of surgery?
- Are there other ways to treat my cancer?
- How will I get radiation, how often, and for how long?
- What side effects should I watch for?
- Will any of these side effects change my eating, drinking, exercise, work, or sex life?
- Will the treatment or side effects change the way I look?
- How long might the side effects last?
- What's the chance that the cancer will spread or come back if I get radiation? What's the chance that the cancer will spread or come back if I don't get it?
- Does my insurance cover radiation? If not, how will I pay for it?
- Will I still be able to work (or go to school) during treatment?

## Will I be able to work during treatment?

Some people work all the way through treatment, and others don't. Even if you do keep working, you may still need to take some extra time off. It's good to know about your rights at work and how to keep your health insurance. If you have any questions about work or your insurance, please call the American Cancer Society at 1-800-227-2345.

If you have stopped working, you can go back to your job as soon as you and your doctor believe you are up to it, even while getting radiation. Make sure you explain what you do each day at work and how it affects your body. If you have to do a lot of lifting or heavy work, you may need to find out if you can change what you do until you get your strength back. Talk with your doctor or call us if you have questions about going back to work.

## How is radiation given?

Radiation can be given in 2 ways – from a machine outside the body and/or from objects put inside the body. Some people get both.

Radiation that comes from outside your body is called **external beam radiation**. (External means outside.) A machine sends high-energy beams from outside the body to the tumor and some of the area around the tumor.

When a radiation source is put inside you, it's called **internal radiation therapy**. (Internal means inside.) This lets the doctor give a large dose of radiation to the cancer cells. The radioactive source is called an implant. It might look like a wire, pellet, or

seeds. The implant is put very near or right inside the tumor, and the radiation travels only a very short distance. The implant can be left in place forever or just for a short time. If it's left in your body, the implant gives off less and less radiation over time until it stops.

## External beam radiation therapy

### How long does the treatment take?

For most people, treatments are given 5 days a week for 1 to 10 weeks. The number of treatments you need depends on the size and type of cancer, where the cancer is, how healthy you are, and what other treatments you are getting. Patients often get a break on weekends so their normal cells can recover.

### What happens during each treatment visit?

External radiation therapy is like getting an x-ray. It's painless and only takes a few minutes. But it takes time to get the machines set up, so it may take 15 to 30 minutes to get each treatment. It's often given in a walk-in clinic, so you don't have to be in the hospital.

You will lie flat on a treatment table, under the radiation machine. The radiation therapist may put special shields or blocks between the machine and other parts of your body. These protect your other body parts from the radiation. You will be asked to stay still during the treatment, but you don't have to hold your breath.

Once you're all set and the machine is ready, the therapist goes into a nearby room to run the machine and watch you. You and the therapist can talk over an intercom. While the machine is working, you'll hear clicking and whirring. Sometimes you'll hear something that sounds like a vacuum cleaner. That sound is the machine moving to aim the radiation. The radiation therapist controls this movement and checks to make sure the machine is working the way it should.

If you are worried about anything that happens while the machine is on, talk to the radiation therapist. If you start to feel sick or scared, let the therapist know right away. The machine can be stopped at any time.

## Internal radiation therapy

### How are implants put in the body?

Sometimes implants are put in the body with needle-like tubes. This might be done in an operating room, and drugs may be used to make you relax or sleep.

## **Some implants are left in.**

If you have implants that will be left in your body, you may not be allowed to do some things, such as be close to children or pregnant women, for a certain time. But you can go back to the other normal things you do right away.

The implants will stop giving off radiation after a few weeks to a few months. Once the radiation is gone, the implants just stay in and cause no harm.

## **Some implants are taken out.**

Some implants are taken out after they have been in for many hours or days. While the implants are in place, you'll stay in a private hospital room. Doctors and nurses will take care of you, but they'll need to limit how much time they spend with you.

Most implants are taken out right in your hospital room. The treated area may be sore for some time, but most patients get back to normal quickly.

## **What about radiation side effects?**

Some people have no side effects at all, while others do. The most common side effects are:

- Feeling very tired (fatigue [fuh-teeg])
- Skin changes
- Not wanting to eat (appetite loss)

Other side effects depend on the part of the body being treated. For instance, if you get radiation to your head, you might have hair loss. Or if you get radiation to your chest, you might have a cough or sore throat.

Most side effects go away in time. But there are ways to help you feel better. If you have bad side effects, the doctor may stop your treatments for a while, change the schedule, or change the type of treatment you are getting. Tell your doctor, nurse, or radiation therapist about any side effects you have so they can help you with them.

Now we will talk about a few of the more common side effects.

## **How do I deal with fatigue?**

Fatigue (fuh-teeg) means you feel very tired. It can last for a long time and keep you from doing the things you want and need to do. It's not like the fatigue a person feels at the end of a long, hard day. That kind gets better after a good night's sleep. The fatigue caused by cancer and/or cancer treatment is worse and causes more problems. Rest does not always make it go away.

Cancer fatigue is very common. By knowing about fatigue, you can cope with it better. No lab tests or x-rays can show fatigue or tell how bad it is for you. Only you know if you have fatigue and how bad it is.

If you have fatigue, be sure to tell your doctor or nurse. You can say it's mild, moderate, or severe. Or, you can use a scale from 0 to 10. A 0 means you have no fatigue, and a 10 means you have the worst fatigue ever.

This weak or weary feeling will go away over time after your treatment ends. Until then there are some things you can do to help reduce your fatigue:

- Do the things that you need to get done when you feel your best.
- Ask for help, and let people help you.
- Put things that you use often within easy reach.
- Set up a daily routine.
- Try to relax to reduce stress. Many people feel better with deep breathing, prayer, talking with others, reading, listening to music, and painting, among other things.
- Balance rest and activity. Don't spend too much time in bed, which can make you weak. Don't let rest or daytime naps keep you from sleeping at night. A few short rest breaks are better than one long one.
- Talk to your doctor about how to keep your pain and nausea – if you have these – under control.
- Depression can make you feel more tired. Talk with your doctor about treatment if you think you may be depressed. Feeling sad or worthless, losing interest in life, thinking about death a lot, or thinking of hurting yourself are some signs of depression.
- Get some exercise each day. Talk to your doctor before you start.
- You may be told to eat a special way. If so, try to do it. It's good to eat a healthy diet that includes protein (meat, milk, eggs, and beans). It's also good to drink about 8 to 10 glasses of water a day.

Let your doctor or nurse know about your fatigue and talk with them if:

- It doesn't get better, keeps coming back, or gets worse.
  - You are more tired than usual during or after an activity.
  - Your fatigue doesn't get better with rest or sleep.
  - You become confused or can't think.
  - You can't get out of bed for more than 24 hours.
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- You can't do the things you need or want to do.

## What can I do about skin changes?

Skin over the part of your body being treated may look red, swollen, blistered, sunburned, or tanned. After a few weeks, your skin may become dry, flaky, itchy, or it may peel. Be sure to let your doctor, nurse, or radiation therapist know about any skin changes. They can suggest ways to ease the discomfort, help keep it from getting worse, and try to prevent infection.

Most skin changes slowly go away after treatment ends. In some cases, though, the treated skin will stay darker and might be more sensitive than it was before. You need to be gentle with your skin. Here are some ways to do this:

- Wear loose clothes made from soft, smooth fabrics.
- Do not rub, scrub, scratch, or use adhesive tape on treated skin. If your skin must be covered or bandaged, use paper tape or other tape for sensitive skin. Try to put the tape outside the treatment area, and don't put the tape in the same place each time.
- Do not put heat or cold (such as a heating pad, heat lamp, or ice pack) on the treated skin. Talk with your doctor first.
- Protect the treated area from the sun. It may be extra sensitive to sunlight. Protect your skin from sunlight even after radiation therapy ends. Wear clothes that cover the skin, or use sunscreen.
- 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.
- Do not use a pre-shave or after-shave lotion or hair-removal products. Use an electric shaver if you must shave the area, but first check with your doctor or nurse.
- Ask your doctor or nurse before using anything on the skin in the treatment area. This includes powders, creams, perfumes, deodorants, body oils, ointments, lotions, or home remedies while you are being treated and for several weeks afterward.

## Will I have eating problems?

You may not feel like eating during your treatment. Eating may be more of a problem if you're getting radiation to your stomach or chest. Even if you don't feel like eating, you should try to eat foods high in protein and calories.

Doctors have found that patients who eat well can better handle cancer treatment and side effects. There are many recipe books for patients who need help with eating problems. Ask your nurse about these.

If you have trouble swallowing, tell your doctor or nurse. If you have pain when you chew and swallow, you may be told to try a liquid diet. Liquid nutrition drinks come in many flavors. You can buy them at grocery stores and drugstores, or you can make them yourself. They can be mixed with other foods or added to milk shakes.

Here are some tips to help when you don't feel like eating:

- Eat when you are hungry, even if it's not mealtime.
- Eat 5 or 6 small meals during the day rather than 2 or 3 large ones.
- Try to eat with family or friends, or turn on the TV or radio.
- If you drink alcohol, ask your doctor if it's OK during treatment. Ask if alcohol will affect any medicines you are taking.
- Keep healthy snacks close by.
- If others offer to cook for you, let them. Don't be shy about telling them what you want to eat.
- Add calories to your diet by drinking milk shakes or liquid supplements, adding cream sauce or melted cheese to vegetables, and mixing canned cream soups with milk or half-and-half (half milk and half cream) instead of water.

## Will my emotions be affected?

You may feel tired from the radiation therapy, and this can affect your emotions. You also might feel depressed, afraid, angry, alone, or helpless. Talking to others sometimes helps.

One way to meet other people with cancer is to go to a support group. These groups often meet at local cancer treatment centers. Ask your doctor or nurse or call the American Cancer Society to find out how you can meet with or talk to others who share your problems and concerns.

## Will I have pain?

Radiation therapy isn't painful, but some of the side effects it causes can be. For instance, if you are getting radiation to the head and neck area, you might have a sore throat, trouble swallowing, or mouth sores. These can hurt.

If you have a tumor that's causing pain, radiation can shrink the tumor and help relieve that pain.

If you have any pain, talk to your doctor or nurse. Describe your pain and where it is in as much detail as you can. This will help your doctor know how best to help you with your pain.

Pain is not part of cancer treatment. Get help if you have pain.



## What can I do to take care of myself during radiation?

During radiation therapy, you need to take special care of yourself. Your doctor or nurse will give you tips on how to do this. But here are some basic things that you should do:

- **Get plenty of rest.** You may feel more tired than normal. This can last for 4 to 6 weeks after your treatment ends, and sometimes longer.
- **Eat healthy foods.** Your doctor, nurse, or dietitian may work with you to make sure you're eating the right foods to get what your body needs. They may suggest changes to reduce side effects if your stomach or throat is in the area being treated.
- **Take care of the skin in the treatment area.** Clean the skin each day with warm water and a mild soap that your nurse says is OK to use. Don't use other products on the treatment area unless your doctor or nurse tells you it's OK.
- **Tell your doctor about all medicines you are taking.** If you take any medicines, even aspirin, herbs, or vitamins, let your doctor know before you start radiation.

## Follow-up care

### What does "follow up" mean?

No matter what type of cancer you had, after your radiation treatments end you will still need to see your doctor. Your doctor will check your progress and help you deal with problems that may come up. This part of your treatment is called follow-up care.

After treatment, there's a chance that the cancer might come back. There's no way of knowing if this will happen to you, but your doctor will want to watch for this.

Here are some questions you may want to ask your doctor after radiation ends:

- When can I go back to doing my normal activities?
- How often will I need to see you?
- Which tests will be done and why?
- Do I need to be on a special diet?

### When should I call the doctor?

After treatment, you may be more aware of your body and any changes in how you feel from day to day. If you have any of the problems listed here, tell your doctor or nurse right away.

- Pain that doesn't go away or is getting worse
- New lumps, bumps, or swelling
- Nausea, vomiting, diarrhea, not wanting to eat, or trouble swallowing
- Weight loss when you are not trying to lose weight
- Fever or cough that doesn't go away
- A new rash, new bruises, or bleeding
- Any other signs that your doctor or nurse wants to know about

## How can I learn more about cancer and cancer treatment?

If you would like more detailed information on radiation therapy, please call us for a free copy of *Understanding Radiation Therapy: A Guide for Patients and Families*. You can also read it online at [www.cancer.org](http://www.cancer.org).

No matter who you are we can help. Contact us anytime, day or night, for information and support. Call us at **1-800-227-2345**, or visit [www.cancer.org](http://www.cancer.org). We want to help you get well.

For cancer information, answers, and support, call your American Cancer Society 24 hours a day, 7 days a week at 1-800-227-2345.

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1-800-227-2345 or [www.cancer.org](http://www.cancer.org)