



Your Guide to Prostate Radiation Therapy

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Your radiation treatments will be at UWMC - Montlake campus.



Preparing for Radiation Treatment

For prostate cancer

This handout explains how to prepare when having radiation treatment for prostate cancer at University of Washington Medical Center.

You have chosen radiation therapy for your prostate cancer. Radiation therapy is a *minimally invasive* treatment, which means you will not feel any physical discomfort during treatment.

Please follow the instructions below. Doing so will help us provide you the best possible treatment, help ensure the accuracy of treatment, and limit your side effects.

How should I prepare?

Before your first simulation/treatment planning visit (SIM) and also for your daily treatment appointments, please:

- Have your bladder comfortably full, but not so full that it causes discomfort. When your bladder is comfortably full, it helps limit the amount of radiation your bladder receives.
- Empty your bowels as much as you can. This helps us make your daily treatment more consistent and accurate. The prostate can move slightly if there is stool or gas in your rectum.

The Day of Your Appointments

- Before you come to the clinic, empty your bowel and bladder fully.
- When you arrive at the clinic (or about 30 minutes to 1 hour before your treatment time), drink 8 to 16 ounces of water. How much and when you need to do this depends on your ability to have a full bladder and still be comfortable.
- After drinking the water, try not to empty your bladder until your treatment is done for the day.
- If your full bladder becomes too uncomfortable, please tell your care team. We may need to change how much and when you drink the water before your treatment.

Questions?

Your questions are important. Call your doctor or healthcare provider if you have questions or concerns.

Radiation Oncology: Call 206.598.3100, weekdays from 8 a.m. to 5 p.m.

After hours and on weekends and holidays, call 206.598.6190 and ask for the Radiation Oncologist on call.

About Your Radiation Treatment

Answers to common questions

This handout answers some questions you may have during your radiation treatment. If you have other questions or concerns, please talk with your care provider. You can also talk with the radiation team during your weekly clinic visit, also called “doctor day.”

When will I start my treatments?

Most patients start their treatments 7 to 10 business days after their Planning CT/Simulation visit. If needed, we may start treatment sooner than that. But it can take 2 to 4 weeks to plan a treatment that is more complex. Most patients find out their start date at their Planning CT/Simulation visit.

May I choose the time of day for my treatments?

When we are setting up your treatment visits, please tell the Simulation Staff what start time works best for your schedule. We will do our best to plan your visits for a time that works well for you.

If the start time you want is already filled, it is possible that it may open up later. If so, we may be able to move your start time. However, some types of treatment must be done at specific times of day and cannot be changed.

Sometimes emergency treatments or procedures last longer than their scheduled time, which may delay your start time. We will let you know if this happens. Thank you for being flexible if there are delays or if we ask you to change your start time.

May I choose my start date?

You can help decide when your treatment will start, unless your doctor tells us that it is very important to start your treatment on a certain date. Please tell us if you are planning a vacation or important event that could interrupt your treatment.



Linear Accelerator used to deliver radiation treatments

For best health outcomes, please limit any breaks in your treatment to weekends, holidays, and emergencies. Talk with your doctor if you want to take a break that has not been planned. If your doctor says it is safe for you, it may be possible to take a short break in your treatment.

How does radiation work?

Radiation works in 2 ways to kill cancer cells:

- It works with the oxygen in your body to create *free radicals* inside and outside your cells. These free radicals damage the cancer cells.
- Radiation also damages the *DNA* in the cancer cells. This DNA contains genetic information that is needed to create new cancer cells.

Healthy, normal cells are usually able to fix both of these types of damage, but cancer cells cannot.

How do you know the radiation is going to the right place in my body?

We always make sure your body is in the right position before we give you your radiation treatment. Before each treatment, we will:

- Help place you in your treatment position.
- Use your *immobilization device*, as well as your tattoos and tracings along the laser lines, to position your body.
- Use a low-energy scan called a *cone beam CT (CBCT) scan* or films to make sure your position is correct. Many treatments need films only once a week to make sure the radiation is going to the right place.

Will these scans show if the radiation is working?

CBCT scans and films are used only to help check your body position. The images from these scans do not show the details of body tissues very clearly. It is very rare that we can see the cancer or the results of radiation treatment with these types of imaging.

How do we know the radiation is working?

The radiation starts working after your first treatment. If you have symptoms caused by the cancer, they may get worse after treatment because your cells are inflamed. Your symptoms may also improve because the cancer is shrinking. Both of these changes in your symptoms usually mean the radiation has started to work.

When do we find out if the radiation treatment was successful?

This depends on the type of radiation you received and where the cancer is in your body. Most times, we do not know how well the radiation worked until the follow-up visit, usually 6 weeks to 3 months after treatment is finished.

Why do we have to wait so long?

It can take 6 weeks to 3 months after your last radiation treatment for the cancer cells to die and for your body to resolve any inflammation.

- One goal of radiation is to damage the DNA in the cancer cells so that the cells die when they are trying to create new cells. Even after you are done with your treatment sessions, the damaged cancer cells keep trying to create new cells at different rates. This means they also die at different rates.
- We also wait to check on the results of radiation because you will have some inflammation while your body is cleaning up the dead cancer cells. This inflammation can look like disease on a scan.

How long do side effects last?

There is no way to know ahead of time how long you will feel the side effects of radiation treatment. But most people feel improvement within 2 to 6 weeks after they finish treatment, if they keep giving their body the tools it needs to heal.

You can help your body recover by:

- Eating plenty of protein
- Drinking plenty of fluids
- Staying active
- Reducing stress
- Taking care of your skin and teeth

How tired will I be?

Each person is unique. Most patients will get a little tired and some may be very fatigued. And everyone recovers from the fatigue at different rates. It is hard to predict how long it will be until you are feeling “normal.”

To help you through the fatigue, eat nutritious foods, do some physical activity every day, and find ways to reduce stress.

Questions?

Your questions are important. Call your doctor or healthcare provider if you have questions or concerns.

Weekdays from 8 a.m. to 5 p.m., call UWMC Cancer Center at 206.598.4100. Press 1 after the call goes through.

After hours and on weekends and holidays, call 206.598.6190 and ask for the Radiation Oncology resident on call to be paged.

Radiation to the Pelvis

What you should know

This handout explains the side effects after having radiation therapy to your pelvis.

Radiation therapy can cause side effects in the treatment area. These side effects vary from person to person. Most will last only a short time and will go away after your radiation treatments are done.

Side Effects

The most common side effects after radiation treatment to the pelvis are:

- Skin reactions
- *Diarrhea* (loose or runny stool)
- *Dysuria* (painful urination)
- *Proctitis* (painful rectum)
- *Fatigue* (feeling very tired)
- Bone marrow *suppression* (decreased blood counts)



Talk with your care provider if you have any questions or concerns about side effects after radiation therapy.

Skin Reactions

Skin reactions occur after radiation therapy because X-rays must pass through your skin to reach the tumor. Take special care of the skin in the treatment area to help prevent or lessen skin reactions. (Ask for our handout “Skin Care During Radiation Therapy.”)

Follow these tips to lessen skin reactions:

- **Minimize moisture.** Use mild soap without perfumes or deodorants, such as Neutrogena or Dove for Sensitive Skin. Avoid using lotions or perfumes on the treatment area.
- **Minimize chafing.** Wear clothes that are loose and soft. Avoid wearing tight waistbands, other tight clothing, or materials that irritate your skin on your lower body.
- **Avoid shaving.** Radiation will suppress hair growth in the treatment area.

Diarrhea (Loose Stool)

Radiation to your pelvic area can irritate the lining of your intestines. This causes food to pass through your intestines without being fully

digested and absorbed. This can cause cramps and diarrhea. These side effects usually occur around the 3rd or 4th week of treatment.

If you have diarrhea, try these tips:

Avoid:

- Foods that are high in fiber such as beans, broccoli, corn, onions, garlic, popcorn, nuts, whole grains, and raw fruits and vegetables
- Foods that cause gas and cramps such as carbonated drinks, chewing gum, beans, cabbage, nuts, and sweets
- Coffee
- High-fat foods, especially fried and greasy foods
- Milk or milk products *if* they irritate your bowels

Try:

- Small meals and snacks instead of large meals
- Plenty of fluid to stay hydrated such as Kool-Aid, popsicles, Jell-O, water, juice (not orange or grapefruit), or Gatorade
- Only fruits and vegetables that are peeled and cooked
- Foods that are warm or at room temperature (very hot or very cold foods move through your intestines more quickly)
- Potassium-rich foods such as bananas, peach, or apricot nectar; potatoes, fish, and meat (your body loses potassium when you have diarrhea)

Tell your nurse if you have diarrhea. You may need an anti-diarrhea medicine.

Problems Urinating

Sometimes, radiation to the pelvic area causes frequency, urgency, or pain when urinating (*dysuria*).

- Tell your nurse or doctor if you have these symptoms. We will test a urine sample for infection. Your doctor may prescribe *antispasmodics* or other medicines.
- Increase your fluid intake. Drink plenty of water, Gatorade, light fruit juices, or Kool-Aid.

Sore Rectum

If your rectal area is in the treatment area, you may get proctitis. This is when the lining of your rectum is inflamed. It may feel irritated or painful.

If you get proctitis:

- Keep the area clean and dry.
- Ask your doctor or nurse if *sitz* baths (soaking in warm water) or medicines might help.

Bone Marrow Suppression

Bone marrow is a spongy tissue inside many bones in the body. These bones include the hip and leg bones, ribs, collarbones (*clavicles*), and breastbone (*sternum*),

Bone marrow plays important roles in the body. It helps produce:

- Red blood cells, which carry oxygen
- White blood cells, which fight infection
- Platelets, which help the blood clot

Bone marrow is very sensitive to radiation. If bones that contain marrow are in your treatment area, your blood counts may be affected. You will have blood draws during your radiation treatment to check your blood counts.

Fatigue

During radiation therapy, the body uses a lot of energy. This means you can feel fatigue. Other things that add to fatigue are stress related to your illness, daily trips for treatment, and the effects of radiation on normal cells.

The amount of fatigue varies with each person. It will likely go away over time when your radiation treatment is done. Pace your activities and plan to rest often so that you do not get too tired.

Ask someone to help you clean the house, shop, or cook meals. If someone offers to help, accept their help. If you live alone and are too tired to cook, try some of the well-balanced frozen dinners. Also consider using a community service such as Meals on Wheels.

Other Side Effects

Other less common side effects may also occur. Tell your doctor, nurse, or therapist if you have any other symptoms.

How Nutrition Can Help

Eating a healthy diet will help your body heal. It may also help ease side effects from radiation treatment.

We encourage you to get enough protein and calories to maintain your weight. We can refer you to a dietitian who can help you choose nutritious foods.

Questions?

Your questions are important. Call your doctor or healthcare provider if you have questions or concerns.

Radiation Oncology: Call 206.598.3100, weekdays from 8 a.m. to 5 p.m.

After hours and on weekends and holidays, call 206.598.6190 and ask for the Radiation Oncologist on call.

Radiation Therapy

What it is and what to expect

Radiation therapy is often used to treat cancer and other medical conditions. This handout explains radiation therapy and what to expect before, during, and after treatment.

What are the steps in my treatment?

One of the most common radiation treatments is called *external beam radiation therapy*. With this treatment, beams of radiation are focused from outside your body on areas of diseased tissue. You can imagine this beam like a specialized flashlight.



Before your first treatment, your plan is double-checked to be sure it is accurate.

CT Simulation

After your radiation oncologist decides on your treatment plan, you will usually have a *CT simulation*. CT stands for *computed tomography*, and is a way to create internal images of the body. The purpose of the CT simulation is to make sure you are in the same position every day for your treatment. During this session, you will meet our radiation therapists. The therapists may tattoo small dots on your skin or draw on your skin with a marker. They may also make a custom body mold or face mask, or give you special breathing instructions. The CT simulation is an important part of making sure your treatment delivery is accurate.

CT Scan

Next, you will have a *CT scan*. In a CT scan, technicians use X-rays to create a 3-dimensional computer model of your body. Your doctor and care team will use this CT scan model to design a custom radiation treatment plan for you.

Testing the Treatment Plan

When your treatment plan is ready, *medical physicists* (experts in CT and radiation) will review it. They will test your plan and the machines to make sure your treatment is delivered accurately and safely. One way they do this is by testing your treatment on a special device called a *phantom*, which is made of a type of material similar to a human body.

Before starting treatment, we may ask you to come in for a “virtual simulation” when we run your treatment plan without turning on the radiation beam.

If you have any questions about our safety protocols or how the machines work, ask to speak with a medical physicist and they will be happy to schedule a consultation with you.

What happens on my treatment days?

- First, the radiation therapists will help you get in the same position you were in during your CT simulation. You may notice some lasers pointing at your body, which are used to position you more accurately.
- After you are in position, the therapists will leave the room. While the therapists are out of the room, they continuously monitor you on a TV screen and can talk to you through an intercom system.
- Next, X-ray pictures are taken to make sure you are in the right position. We will adjust your position, if needed. Getting you in an accurate position is often the longest part of your treatment session. These X-ray pictures do **not** show us how your cancer is responding to treatment.
- Once the X-ray confirms you are in position, the radiation beam is turned on. Your treatment is typically completed in a few minutes after positioning is confirmed. If you wish, please ask the therapists to play your favorite song or album during your treatment.



Low doses of X-rays are used to image and precisely position you prior to treatment.



Beams of radiation are precisely directed at diseased tissue for treatment.

What will the radiation feel like?

Just like a CT scan or chest X-ray, radiation treatment sessions are not painful. Most patients say they do not feel any new sensations during a radiation treatment.

Is it safe for others to be around me after treatment?

Yes! After receiving treatment, you are not at risk of spreading harmful levels of radiation to others. And, no, radiation therapy will not cause you to glow in the dark.

What are the different types of external radiation beams?

We use 4 types of radiation using particles called *electrons*, *protons*, *neutrons*, and *photons* (X-rays). Electrons, protons, and neutrons are the 3 particles that make up *atoms* (the smallest unit of matter). Photons are particles of light. These 4 types of radiation travel through tissue differently, because they all have different mass and charge. We can use what we know about these differences to choose the most appropriate type of radiation for your treatment.

Photons

Photons (particles of light) are the most common type of external beam radiation therapy. The photons used in radiation therapy are called X-rays. You may be familiar with X-rays from a chest X-ray or CT scan. The X-rays we use to treat cancer have 100 to 1000 times more energy than X-rays used for a CT scan. X-ray beams have many uses, including treating cancers deep within the body.

Electrons

Electrons do not travel deep into the body, so we use electron therapy to treat cancers on the skin or near the surface of the body.

Protons

Like X-rays, protons can treat cancers deep within the body, and we can control where the protons stop in your body.

Neutrons

Neutrons travel through the human body in the same way as X-rays. However, neutrons deposit far more energy than X-rays, electrons, or protons when they contact a tumor cell. This means neutrons are a good treatment option for certain types of cancers that do not respond to other types of radiation. UWMC is the only medical center in North America that can safely treat cancer patients with this unique form of radiation.

Questions?

Your questions are important. Call your doctor or healthcare provider if you have questions or concerns.

Department or Clinic: Call 206.598.4100 weekdays from 8:00 a.m. to 5:00 p.m.

After hours and on weekends and holidays, call 206.598.6190 and ask to page the nurse on call.

Skin Care During Radiation Therapy

This handout is for people having radiation treatments. It offers tips to protect your skin and specific care tips for the area being treated.

How Radiation May Affect Your Skin

After 2 to 3 weeks of radiation treatment, your skin in the area being treated may:

- Look red, irritated, or sunburned
- Be dry and itchy or begin to peel

Closely watch all places with skin folds. These include your neck, stomach, armpits, under your breast, and in your groin or crotch. The skin in these areas is more likely to become irritated.

Tips to Help Protect Your Skin

- Ask your radiation therapist what area of your skin may be affected by your radiation therapy.
- Bathe and shower as normal. But, do **not** use soaps that contain lotions, perfumes, or deodorants. Instead, use brands such as Ivory, Sensitive Skin Dove, Basis, or Neutrogena.
- Be extra gentle with your skin.
- Wear loose, soft clothing over the treated area.
- Your skin in the treated area will be very sensitive. If you must shave in the treated area, use **only** an electric razor. Do **not** use straight-edge or safety razors.
- Wear a hat, scarf, or other clothing to protect your skin from the sun.



Be very gentle with your skin while you are having radiation therapy.

- Keep the treatment area clean and dry.
- Gently wash off all creams and lotions before each radiation treatment.
- Talk with your radiation nurse if you have questions about your skin. Tell your nurse if you have any problems with your skin, or notice any changes in your skin.

Basic Skin Care

- Do **not** use perfume, pre-shave or aftershave, deodorant, hair conditioner, or other styling products on the area being treated, unless your doctor or nurse says it is OK to do so.
- Do **not** use products that contain metals like aluminum or zinc, including zinc oxide ointment.
- Do **not** use oil- or petroleum-based products such as Vaseline, baby oil, ointments, or vitamin E oil during your treatment.
- Do **not** apply any gel, lotion, or cream to your skin for 2 hours before each treatment.
- Do **not** use cornstarch or powder on your skin. These products can lead to fungus on your skin.
- Do **not** apply heat or cold to your treated skin. Do not use heating pads, electric blankets, hot water bottles, or ice packs.
- Do **not** expose the treated area to extreme heat or cold. Avoid very hot showers or baths, saunas or steam rooms, direct sunlight, or cold air direct from an air conditioner.
- Do **not** use tape or Band-Aids on the treatment area.
- Do **not** scrub your skin with a washcloth.
- Do **not** scratch, scrub, or rub your skin.
- Do **not** wear tight clothing over the treatment area.

Care for the Area Being Treated

Scalp

- Use baby shampoo or Neutrogena.
- Do **not** use conditioners, shampoo with conditioners, or styling products.
- Always wear a hat when you are outside.

Face and Neck

- Do **not** use makeup, moisturizer, sunscreen, perfume, or aftershave.
- Keep the area shaded from the sun.

Chest

- Do **not** use deodorant, unless your doctor says it is OK to do so.
- Wear clothes that protect your chest from the sun.

Belly or Pelvis

- Do **not** use lotion, powder, or cream on the area.
- Clean your bottom well after bowel movements.
- Allow your skin to air dry, or dry it with a hair dryer on the cool setting at a short distance. If your skin is irritated, do **not** scrub or towel dry.

Arms, Hands, Fingers, Legs, Feet, or Toes

- Do **not** use lotion, cream, or sunscreen.
- Wear loose clothing.
- Wear shoes that do give your toes and feet plenty of room.

Keep Your Skin Safe from the Sun

Your skin in the treatment area will be very sensitive to the sun for years after radiation treatment. You will need to treat your skin carefully. Sunburn may cause your skin to have the same reaction it did to the radiation.

After your skin heals from treatment:

- Use sunscreen (30 SPF or higher) **every** time you go outside.
- Do **not** let the treatment area be in direct sun for long periods.

