

# Radiation Therapy Education



## **A Note Regarding COVID-19**

*Moffitt Cancer Center is committed to the health and safety of our patients, families, caregivers, visitors and team members. Moffitt policies related to COVID-19 may have changed since the printing of this booklet. For the most up to date information about Moffitt policies related to COVID-19, please contact your healthcare team or go to <https://Moffitt.org/Covid19>.*

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## ***Radiation Oncology at Moffitt Cancer Center***

The following information will help you understand and prepare for your radiation therapy treatment. Your doctor and nurse will review this information with you and answer any questions you may have.

### ***Initial Consultation:***

During your first appointment, your radiation oncologist and nurse will discuss your health history and review your medical records, x-rays and pathology reports. A physical examination will be performed and treatment options will be discussed.

After your questions have been answered and you have made a decision about your treatment, you will be asked to sign a consent form. You will be scheduled to return for a treatment planning session called a **simulation**.

### ***Research:***

If you are eligible for and considering a research study, members of the research staff will meet with you to explain the study and answer any questions you may have.

### ***Simulation (Treatment Planning):***

Simulation is not a radiation treatment. Simulation is an important planning step before radiation treatment can begin. During this planning phase, imaging studies such as CT scans, PET/CT scans and X-rays may be performed. Some of these imaging studies require special preparation, such as IV (intravenous) contrast. You will be informed if you need to do anything before your simulation.

Simulation may take up to an hour. Your doctor and radiation therapist will assist you into a "treatment position." A positioning device will be made which will be used for your daily treatment. Please let the doctor and therapist know if this position is difficult for you because you will need to lie still during the entire procedure. Small permanent ink dots called "tattoos" may be placed in the area of your planned treatment. These tattoos are used to ensure the positioning and accuracy of your daily treatment.

Treatment usually does not start on the day of simulation. Your treatment will begin as soon as your radiation treatment plan is completed by the Radiation Oncology team. This planning may take 5 to 10 days to complete.

### ***Treatment:***

Radiation treatments are usually given five days a week, Monday through Friday; however, this can vary. Some treatment plans specify that treatments be given once, twice, or three times per day. Your doctor will discuss your treatment plan and treatment schedule with you.

Please register at the front desk each day. A staff member will verify your name and birth date. They will place an identification band on your wrist. When it is time for your treatment, a radiation therapist will escort you to your treatment room. Your family will be asked to remain in the waiting room while you are having your treatment. Due to federal regulations, only the patient is allowed in the treatment area.

During your first treatment visit, a radiation therapist will orient you to the room where you will receive your treatments and review your schedule. Each room has a camera so the therapist can monitor you from outside the room during your treatment. An intercom system is also in place so you and the therapist can communicate during treatment.

The radiation therapist will assist you into your treatment position. Please let the radiation therapist know if you are having a difficult time getting in or staying in your treatment position. The table may be uncomfortable, but it is important to lie very still.

An x-ray, or port film, will be taken once you are in your treatment position. A port film is an X-ray picture of the area being treated. Port films will be taken every week during your treatment. These films are not taken to follow any changes in a tumor, but to verify your treatment position. During treatment and port films, the therapist will leave the room. He/she will continue to monitor you using the room camera. Treatment can take from 15 to 45 minutes.

Appointment times usually remain on schedule. Delays may occur due to emergencies or machine checks. If you need to come at a different time, please notify the therapist a day or two before you arrive in order to avoid a long wait. If you are unable to keep your appointment, please call the **Radiation Oncology Department** at 813-745-8424 or 1-800-456-3434 ext. 8424.

### ***On Treatment Visit (OTV):***

The doctor and nurse will meet with you once a week while you are receiving radiation treatment. This visit is called an On Treatment Visit, or OTV. This visit will be on a day you are here for a radiation treatment. Your doctor or nurse will let you know which day you will have your OTV.

Treatment side effects are different for everyone depending on the area being treated. During your OTV, your doctor or nurse will discuss potential side effects with you and help manage any radiation related problems. If you have questions or concerns at any time, please let a staff member know so we can address any problems or concerns in a timely manner.

### ***Nutrition:***

Good nutrition is important during radiation therapy. During your treatment your doctor or nurse will talk with you about your individual nutrition plan. A dietitian in Radiation Oncology will be available to speak with you during your course of treatment.

### ***Skin Care:***

Good skin care is important. Daily baths or showers are recommended. Lotion, deodorant, anti-perspirant, soap and powders should not be applied to your treatment area without speaking to

your nurse or doctor. They will talk with you about which skin care products to use during treatment. Avoid sun exposure to the treatment area during and even after the completion of your treatment. **Please use a sunscreen with a minimum SPF of 30.**

***Tobacco Products and Alcohol:***

Using tobacco products, e-cigarettes, or drinking alcohol during radiation treatment is not recommended as it can reduce the effectiveness of your radiation treatment and put you at a greater risk for possible complications, such as infection. Moffitt has a Tobacco Cessation Specialist available to help you quit using tobacco products. Please speak with your doctor or nurse about making a referral for you.

***Psychosocial Care:***

Social workers are available to meet with you and your family members. If you need counseling or assistance with housing, transportation, home health care, or financial matters, please ask the nurse to contact the social worker. There is no charge for this service.

Several local hotels offer discounts while you are undergoing treatment at Moffitt. A social worker can provide information and assist with hotel arrangements or discuss the option of staying at the American Cancer Society's Hope Lodge, which is located on the Moffitt campus. Please feel free to call the Patient and Family Services Department at 813-745-8407 or 1-800-456-3434 ext. 8407, for more information.

If you have any questions or concerns during treatment, please ask to speak to a staff member or call the **Radiation Oncology Department** at 813-745-8424. If you are being seen at **Moffitt at International Plaza**, call 813-745-1600.

***Glossary of terms:***

**Blocks:** pieces of metal that can be used to shape the radiation beam.

**Boost:** an extra dose of radiation given after an initial course of radiation to enhance tumor control. A boost may be given to the tumor and areas to which the tumor may have spread.

**Brachytherapy:** a form of internal radiation therapy that involves placing radioactive material inside or near the tumor.

**CT or CAT scan:** a computer assisted tomography scan is an X-ray procedure that uses a computer to produce detailed pictures of the body. CT scans are often used to help plan radiation treatment.

**Dosimetrist:** a licensed health care professional who helps plan and calculate doses for radiation treatment.

**Immobilization device (or positioning device):** a device to help the patient stay in the same position for each treatment.

**Intensity modulated radiation therapy (IMRT):** a specialized form of external beam therapy that allows radiation to be shaped to fit your tumor.

**Linear accelerator:** the most common type of machine used to deliver external radiation therapy. It is sometimes called a “linac.”

**OTV (On Treatment Visit):** a required weekly visit with the doctor during radiation treatment. The visit happens once a week while you are receiving radiation treatment.

**Port films:** X-ray pictures of the position of the radiation beams. It is used to verify the treatment position and may be taken weekly.

**Radiation therapist:** a health professional, specially trained and licensed to operate equipment that delivers radiation.

**Radiation oncologist:** a doctor who specializes in using radiation therapy to treat cancer and other diseases.

**Radiation physicist:** a licensed health professional who works with the radiation oncologist to design treatment plans and calculate radiation doses.

**Simulation:** the process of planning radiation therapy treatment to ensure it is delivered to the proper location on the patient’s body. During this planning, CT scans and X-rays are used to locate the area to be treated.

**Tomotherapy:** a technique using 3-dimensional CT imaging to make sure the entire tumor is within the area being treated, known as the radiation field.

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## ***Call the Doctor For...***

- Chest pain. **Call 911** and notify your doctor.
- Difficulty breathing or shortness of breath. If symptoms are severe, **call 911** and notify your doctor.
- Cold, upper respiratory tract infection, chest and/or sinus congestion, or flu-like symptoms
- Fever of 100.4°F or greater
- Shaking chills
- Unable to eat or drink for more than 24 hours
- More than 3 episodes of vomiting in a 24-hour period
- Mouth sores, pain with swallowing, or very dry mouth
- Problems taking medications (hard to swallow your pills, causes you to vomit, etc.)
- No bowel movement in 3 days
- More than 3 watery stools per day, especially if you also have stomach cramps
- Black, tarry stools, persistent bleeding or bruising, nose bleeds, bleeding gums, or vomit that looks like coffee grounds
- Problems urinating or unable to urinate, flank pain, burning, urinating more often, or blood in your urine
- Swelling, redness, unusual warmth, or pain to feet or legs
- Severe pain unrelieved by your pain medication or pain that gets worse, not better
- Any redness, tenderness, or drainage from your wound, incision, or IV catheter site
- Skin changes such as a rash, yellow skin, itching, bruising, or purple-red “freckles” (petechiae)
- Hiccups for more than 24 hours
- Any change in level of consciousness, awareness, disorientation, or confusion
- Extreme fatigue (feeling tired), lightheadedness, dizziness, fainting, or a recent fall
- Changes in vision
- Any unexpected symptoms or symptoms you are concerned about

## ***When you call...***

- Please be ready to describe any or all of the symptoms you may be having.
- Have your pharmacy phone number ready in case your doctor needs to contact them.
- If you have questions, concerns, or are experiencing any symptoms listed above, please call the Patient Care Hotline at (813) 745-8000 to reach your healthcare team (assistance available 24 hours/7 days week).



## ***Radiation Therapy Skin Care Guidelines***

### ***Skin reactions caused by radiation therapy***

Skin changes in the treatment area are expected and common during radiation treatment. It is important to know these changes are related to the part of the body receiving the radiation. If you have skin changes they will generally appear within a few days to weeks after treatment is started. Skin reactions vary in intensity. Discuss with your doctor or nurse what you should expect in terms of a skin reaction and how it should be managed.

You may notice the skin in the treatment area becoming dry, itchy, or have a sunburned look. Some people may develop a rash or blisters to the skin or skin folds of the treatment area.

### ***Taking care of your skin during treatment***

- Check your skin in the area being radiated for signs of redness and irritation. Pay close attention to the areas under the breast, armpits and groin.
- Keep your skin clean and dry.
- Wash the skin in the radiation field with lukewarm water. If you are receiving radiation to the head, wash your scalp with gentle shampoo such as baby shampoo.
- Use a gently moisturizing soap such as Dove®. Avoid antibacterial or deodorant soaps.
- Do not rub your skin; pat it dry with a soft towel.
- Moisturize your skin often with a fragrance and alcohol free moisturizer. If your skin is itchy that is a reminder to apply more lotion. Applying moisturizer to damp skin allows for better absorption. Some over the counter moisturizers include Aquaphor®, Lubriderm®, A & D ointment, 100% Aloe Vera or Calendula cream. Discuss with your doctor and nurse which product they recommend.
- Apply moisturizer to the skin of your treatment area 3-4 times each day, but NOT 2 hours before treatment.
- Do not rub, massage or scratch the treatment area.
- Wear soft loose fitting clothing; avoid anything tight especially irritating straps, underwire bras and sports bras.
- DO NOT sunbathe. Avoid direct sun exposure to the treated area. If you are going out in the sun wear sun block with an SPF of 30 or greater, a wide brimmed hat., and long sleeve shirt and pants.

- Avoid exposing the skin in the treatment area to extreme hot or cold such as heating pads or ice packs.
- Use an electric razor for shaving hair in the treatment area. Do not use perfumes, after-shave, or powders to the area being treated.
- Do not use alcohol or apply tape or patches to the treatment area.
- You should continue to moisturize your skin with the same frequency for at least 2 weeks after treatment. You may decrease to 3 times a day until seen at your 4-6 week follow up appointment. After that you will probably need to moisturize daily.
- No swimming in pools, oceans, rivers or lakes. Do not use a hot tub.
- Do not smoke during your treatment. Doing so can make the side effects of the radiation treatment worse. Ask about our *Smoking Prevention Program*.
- Speak to your doctor or nurse if you have excessive itching, your skin stays wet, or you notice sores forming at your radiation site. Your doctor may need to prescribe medication.

#### ***When to call your healthcare team***

- A new rash, sores, or blistering at your radiation site.
- Fever of 100.5°F (38.1°C) or higher.
- Pain at the site of your radiation.
- Drainage from your skin in the treated area.
- Any other new problems or symptoms.
- Excessive itching that is not relieved with moisturizer.

#### ***Who and when to call***

- Monday thru Friday, 8:00 am to 4:30 pm, please call the Radiation Oncology Clinic at 813-745-8424.
- After 4:30 pm, holidays, and weekends, please call Toll Free 1-800-456-3434 or the hospital operator at 813-745-4673. Ask the operator to page the Radiation Oncology resident on-call.

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## ***Hints to Help with Cancer Related Fatigue***

The following information has been developed to give you some hints on coping with your fatigue.

### ***What is cancer-related fatigue?***

Cancer-related fatigue is a feeling of tiredness, often much worse than the tiredness healthy people feel. It may not go away with sleep and can occur when you are not doing anything. It can appear suddenly and is often overwhelming.

### ***Symptoms of fatigue***

- Physical, emotional and/or mental exhaustion.
- Your body, especially your arms and legs, may feel heavy.
- You may have less of a desire to do normal activities, like eating or shopping.
- You may find it hard to concentrate or think clearly.
- Some words often used to describe fatigue include weakness, a lack of energy, sleepiness, drowsiness, confusion, impatience, worn-out, pooped, low energy with a strong desire to stop and rest or lie down and sleep.
- Some have described fatigue as ‘I don’t feel like myself’ or feeling drained after activities like cooking or bathing.

### ***Causes of fatigue***

- Fatigue is one of the most common symptoms for people with cancer.
- Treatments such as surgery, radiation therapy, chemotherapy and their side effects.
- Patients who have nausea and vomiting may not eat enough to keep up their energy levels.
- Anemia or low red blood cells is a common side effect of cancer treatment that is known to cause fatigue. Your doctor will check your blood counts and may order treatment if the counts are low.
- Problems like sleep disruption, stress, not eating or drinking enough may make fatigue worse
- Emotional stress, coping with anxiety, conflict, sadness, traveling to and from treatments and even tension among loved ones require extra energy, which can add to the feeling of fatigue.
- Changes in your routine such as sleeping, eating, and working patterns may change and affect your level of energy.

### ***To help avoid or lessen fatigue***

Fatigue can vary among persons with cancer. Here are some tips to help you cope with fatigue:

- Plan rest breaks into your day. Take short naps or breaks, rather than one, long rest period. Don’t overdo it with rest and sleep. Too much rest can decrease your energy level.
- Eat as well as you can.
- Drink plenty of fluids.
- Pace yourself and stay as active as you can. Do regular light exercise such as short walks if possible.

- Try easier and shorter versions of activities you enjoy.
- Try less strenuous activities such as listening to music or reading.
- Keep a diary of how you feel each day. This can help you plan your daily activities.
- Share your feelings with others such as in a support group. This can help ease the burden of fatigue and can help you learn hints from talking about your situation.
- Save your energy for the most important things. Spread your activities throughout the day. Do not force yourself to do more than you can manage.
- Store items you will use a lot within easy reach and close by to reduce trips.
- Allow others to do some things that you usually do. Mowing the lawn, food shopping, helping with meals, and running errands are good examples.
- Become aware of what helps you to feel less tired and make those activities a priority for you.
- Use proper body mechanics. When sitting, use well-supporting chairs; adjust work heights when possible to avoid bending over; bend at hips and knees, not at back; and carry several smaller loads or use a cart.
- Limit overhead work by using long handled tools, storing items lower, and asking for help.
- Avoid extremes of temperature, smoke or noxious fumes, and long, hot showers or baths.
- Wear a terry cloth bathrobe to dry off after bathing instead of a towel.
- Learn techniques to help you relax.

### ***Call your doctor if you***

- Get dizzy
- Feel a loss of balance when walking, getting out of bed or up from a chair
- Fall or hurt yourself
- Have a problem waking up
- Have a problem catching your breath
- Have a sudden increase in fatigue
- Have been too tired to get out of bed for the past 24 hours
- Feel confused or cannot think clearly
- Feel your fatigue has worsened

### ***Fatigue Resources***

1. American Cancer Society <https://www.cancer.org/treatment/treatments-and-side-effects/>
2. Cancer.Net <http://www.cancer.net/navigating-cancer-care/side-effects/fatigue>
3. Tuck Advancing Better Sleep <https://www.tuck.com/sleep-and-cancer/>



## ***Radiation Oncology Online Resources***

### **Moffitt Cancer Center**

<http://www.moffitt.org> (*Cancer Types and Treatments → Cancers We Treat*)

### **American Cancer Society (ACS)**

<http://www.cancer.org/> (*Search for “Understanding Radiation Therapy”*).

### **CancerCare.org**

<http://www.cancercare.org/>

### **Cancer.Net**

<https://www.cancer.net/>

### **LIVESTRONG Fertility**

[www.livestrong.org/fertility](http://www.livestrong.org/fertility)

### **LIVESTRONG Foundation**

[www.livestrong.org/we-can-help](http://www.livestrong.org/we-can-help)

### **MedlinePlus**

<https://medlineplus.gov/> (*search “Radiation Therapy”*)

### **National Cancer Institute (NCI)**

<http://www.cancer.gov/> (*Search for “Radiation Therapy and You”*).

### **National Comprehensive Cancer Network (NCCN)**

[www.nccn.org/patients](http://www.nccn.org/patients)

### **National Institute of Health (NIH)**

<http://nih.gov/>

### **Patient Resource**

[www.patientresource.com](http://www.patientresource.com)

### **RT.Answers**

<https://rtanswers.org/>



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