Prostate Radiation:
Patient Care Packet

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Includes:

*Prostate radiation side effect timeline
*Tips and instructions for side effect management
*CT simulation and daily treatment preparation instructions

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INTRODUCTION

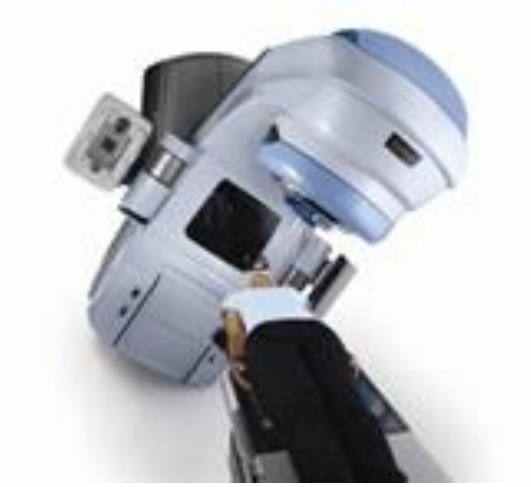
Over the course of the next few weeks, you will more than likely have many questions about various aspects of radiation therapy. This brochure has been designed to educate you regarding a variety of topics associated specifically with prostate/ prostate bed irradiation treatments utilizing IMRT (Intensity Modulated Radiation Therapy). It is meant to give you some insight on what the treatments will be like, and also explain the side effects involved. This brochure is meant to be a supplement to reconfirm many of the areas that were discussed with you by your radiation oncologist and is not intended to be a substitute for good communication. If you find that you still have questions after reading this brochure please do not hesitate to ask any of the Radiation Therapist who will be administering your daily treatments. If they are unable to answer your questions, they will gladly refer the questions to the doctor for a more detailed answer.

Radiation Therapy for Prostate Cancer

Radiation therapy uses high energy x-rays or particles to kill cancer cells. There are two main types of radiation therapy; external beam radiation and Brachytherapy (internal high dose radiation- also known as HDR).

External beam radiation therapy (EBRT) remains one of the primary treatment modalities for patients with localized or locally advanced prostate cancer. In external beam radiation therapy (EBRT), beams of radiation are generated by a machine called a linear accelerator. These beams of radiation are then focused on the prostate gland (or prostate bed). Radiation beams kill cancer cells by destroying the genetic material that controls how cells divide and grow. Intensity-modulated radiation therapy (IMRT) can achieve tightly conformal dose distributions with the use of nonuniform radiation beams. The intent of this form of therapy is to create highly conformal fields by treating the patient with multiple static portals or dynamic fields. Multileaf collimators (MLCs) are reshaped many times as the machine performs a series of rotations around the target. The goal of external beam radiation for prostate cancer is to destroy the cancerous cells while sparing as much of the normal surrounding tissue as possible

Brachytherapy (high dose radiation therapy -HDR) is internal radiation therapy, it is used in combination with EBRT. HDR uses high doses of radiation for a short period of time. Hollow needles are placed through the skin between the scrotum and anus and into the prostate. Radioactive iridium-192 is then placed into the prostate, usually for 5 to 15 minutes. Generally, about 4 brief treatments are given; twice a day- a week from each other. The radioactive substance does not stay in you; it is removed after every treatment. The catheters are also removed after the last treatment. **If** HDR is an option for you, external treatments will begin approximately a week after your final HDR treatment.



A **Linear Accelerator** (also called a **LINAC**) is an electrical device used to produce high energy X-rays which are then manipulated to deliver external beam radiation treatments for patients with cancer. The produced x-ray beam comes out of the part of the accelerator called the gantry. This gantry rotates around the patient while delivering the radiation treatment.

The patient lies on a moveable treatment "couch," lasers are then used to make sure the patient is in the proper position. Radiation can be delivered to the tumor from any angle by rotating the gantry and moving the treatment couch.

A linear accelerator is made up of many complex electrical elements that contribute to the production of X-rays. Consequently, minor technical glitches occur that are normal and expected to happen. If a minor technical glitch occurs during treatment, our machine features a built-in safety system that safeguards from any mistreatment. As we anticipate these events, we ask for your patience and understanding while our machine servicemen repair the problem. Once repaired, the machine undergoes a thorough quality assurance check to ensure treatment parameters are within tolerance to continue treatment.

Series of Steps for External Beam Therapy (IMRT) Planning

1. Before you undergo external beam radiation therapy for prostate cancer, you will be scheduled for insertion of fiducial "seeds". Several marker seeds will be inserted into your prostate/prostate bed by your radiation oncologist and/or urologist. These markers help to more precisely locate your prostate/prostate bed during each radiation treatment session. After the marker insertions you will be scheduled for a CT scan. This CT scan appointment- known as *CT simulation scan,* is used to plan your radiation therapy treatments. The CT images will allow your Radiation Oncologist and his staff to very precisely reconstruct a 3-D image of your prostate/prostate bed, rectum, bladder, pelvis, hips and small bowel (if necessary). From this computer 3-D model, a very detailed treatment plan will be constructed and treatments will then begin once your radiation oncologist is 100% satisfied with the treatment plan.

2. You will begin your external treatments 5-9 days after your initial CT simulation scan. Everyday, prior to treatment, the Radiation Therapist will take a low dose CT image of your pelvis (CBCT). These images are used to verify the current location of your prostate/prostate bed (the prostate is mobile and may move up/down, in/out and left/right depending on how full or empty the bladder and rectum are) and match the targeted area of the treatment plan. Matching of the images will be aided by the fiducial markers placed during the surgery.

3. Your treatments will be scheduled Monday through Friday- for approximately six to nine weeks- depending on the treatment option you chose. This means you will make **approximately** 33-47 visits to the radiation therapy department. Each treatment takes approximately 15 - 20 minutes. There is no pain or discomfort with the treatment and **it is ok to drive yourself to treatment**. During the treatments you are required to hold still in the position the radiation therapists have moved you into, breathe normally and relax, but keep the lower half of your body as still as possible.

4. Not all, but some patients will require a second scan, at the discretion of your Doctor. For these patients, approximately 2-3 weeks into your treatment you will be scheduled for a second CT simulation scan appointment. The sole purpose of this new scan is to begin planning for the next phase of your treatment. Please keep in mind this scan **is not a diagnostic scan- it is NOT used to determine progress or disease status**, its sole purpose is for treatment planning. This appointment will follow your radiation appointment. Plan to be here about 45 minutes this day. If you have any specific questions regarding any of the information above please let your therapist know.

PREPARATION INSTRUCTIONS FOR CT SIMULATION AND RADIATION THERAPY

What type of preparation is required of me?

An empty rectum and full bladder are required not only for your initial CT simulation scan appointment but also for every daily radiation treatment appointment.

Why do I need bladder and rectum preparation?

Following the preparation instructions will help reduce the side effects of the treatment for you in the short and long term. The bladder preparation requires you to have a full bladder for treatment. Why? Your bladder sits directly above your prostate/prostate bed, when you fill your bladder with water it stretches and moves up and away from the treatment area. This helps decrease the amount of bladder in the treatment area which in turn means less dose to the bladder and therefore less side effects. Having a full bladder also helps keep the prostate in the same position for daily treatments as well as pushes your bowels up and out of the way from the treatment area. The rectum preparation requires you to have an empty rectum for treatment. The rectum sits below the prostate/ prostate bed, a rectum full of gas/stool stretches the rectum out and into the treatment area causing increased dose to the rectal tissue. By keeping these organs the same size for your simulation scan and daily treatments you will help reduce some of the possible side effects from your radiation therapy treatments.

What steps should I take when filling my bladder?

One hour before your CT simulation scan and daily treatment appointments you should first urinate, then drink 20 ounces (two and a half cups) of water. For example, if your appointment is scheduled for 10:00am, you should urinate at 8:45am, and then drink 20 ounces of water between 8:45am and 9:00 am. It is important that you complete drinking the 20 ounces of water 1 hour before your simulation or treatment appointment. **Do not urinate** again until after simulation/treatment. If you are unable to hold the urine for the full hour please let the radiation therapy staff know.

What steps should I take when emptying my rectum?

Try having a bowl movement the night before or morning of your simulation CT scan AND each of your radiation therapy treatments.

When should I arrive for my treatments?

Once you start your treatment we would like you to come in 5-10 minutes early to every appointment. Once you arrive please take a seat in the waiting room. A member of the radiotherapy team will be with you shortly.

POSSIBLE SHORT TERM SIDE EFFECTS FROM

RADIATION TREATMENT

During the radiation treatments, you **may or may not** experience some of the following symptoms. Below is a list of possible side effects of radiation to the pelvic area as well as tips on how to manage. **IF** you experience any of these side effects please notify one of the therapists or nurses so that they may be able to assess the situation accordingly.

- **IF** you are experiencing **FATIGUE:**
    - Fatigue may occur around the third week of radiation treatment as a result of the radiation interacting with the body.

    - **What to do**:
        - Exercising will help give you more energy.
        - Take a short nap (15-30min) if needed to help restore energy.

- **IF** you are experiencing **DIARRHEA**:
    - Diarrhea is the presence of frequent, soft or liquid bowel movements which may be accompanied by gas and cramping. Diarrhea may begin 2-3 weeks after treatment starts and can arrive for about two weeks after treatment is completed. While diarrhea can be uncomfortable and distressing, relief can be obtained.

    - **What to do**:
        - Follow residue restricted/minimal fiber diet - restrict fresh fruits and vegetables
        - Eat foods high in potassium. These include bananas, apricots or peaches, fish, potatoes and meat.
        - Take Imodium after having a bowel movement and continue taking Imodium until diarrhea is gone.
        - Drink plenty of fluid that is at room temperature - 2 to 3 quarts daily. Avoid extremely hot or cold fluids. Take liquids 1/2 to 1 hour before or after meals but not with them.
        - Avoid gas forming foods and drinks such as cabbage, beans, chewing gum, beer and carbonated beverages.
        - Avoid milk and milk products except for cottage cheese, yogurt and non-fat boiled milk.

- AVOID ALCOHOLIC AND CAFFEINATED BEVERAGES.

- **IF** you are experiencing **INCREASED GAS:**
  - Increased gas may occur during radiation treatments.

  - **What to do**:
  - Try using gas X or any other over the counter medications similar to gas X.

- **IF** you are experiencing **URINARY FREQUENCY:**
  - Increased frequency or urination at night almost always occurs during the course of radiation treatment. This may lead to increased urination during the day and/or waking you up throughout the evening.

  - **What to do:**
    - Continue taking the amount of Tamsulosin Dr. Tokita prescribed. (other drugs include: Hytrin and Cardura).
    - Drink fluids only when you are thirsty.
    - Avoid drinking alcoholic and caffeinated beverages.
    - Avoid drinking fluids after 8pm to decrease the amount of times you are waking up throughout the night.

- **IF** you are experiencing **BURNING DURING URINATION**:
  - What to do:
    - Take Pyridium (a prescription is required)
    - Take AZO Standard (over the counter)

- **IF** you are experiencing **HEMORRHOIDS:**
  - Hemorrhoids or rectal irritation can be aggravated after the HDR treatments.

  - What to do:
    - Use calmoseptine or apply preparation H (ask your therapist for ointment)
    - Do a hot sitz bath 2X's a day

- **IF** you are experiencing **CONSTIPATION:**
  - Take 2 teaspoons of Metamucil twice a day with plenty of water

WHAT TO EXPECT AFTER HDR (IF APPLICABLE)

After completion of the first Brachytherapy HDR treatments, you should be on the following medications to alleviate some of the side effects:

- To alleviate **Frequency, Urgency, Nocturia** (excessive urination at night),:
  - Flomax (as prescribed)
- To alleviate **Dysuria** (pain when urinating):
  - Aleve or Ibuprofen
- To alleviate **Obstruction** (unable to urinate):
  - Catheterization

Once External Beam Radiation is started, you can expect the following:

- Week 1: Urinary symptoms from the HDR surgery will continue
- Week 1 – 2: Anal irritation may or may NOT occur
  - If so, use Calmoseptine, Betamethasone, Vaseline, A & D ointment
- Week 3 – end of treatment: Loose stools, Diarrhea or Constipation
  - If so, follow the recommendations from the previous page (page 7).

****WE CANNOT STRESS ENOUGH THAT AN OPEN LINE OF COMMUNICATION IS KEY TO ALLEVIATING SIDE EFFECTS, PLEASE TALK TO YOUR THERAPISTS IF YOU HAVE ANY QUESTIONS OR CONCERNS****

Frequently Asked Questions (FAQ)

- *Will I feel anything during the radiation treatments?*
    - No. The radiation treatments are similar to getting an x-ray. You will not feel or see anything- you will hear the machine buzzing while the radiation is being administered.
- *What are the side effects from radiation to the prostate/prostate bed?*
    - Side effects **may** include tiredness, diarrhea or constipation, upset stomach, frequency or burning with urination, rectal irritation. These symptoms will go away on their own after completion of the radiation treatments. Keep in mind, everyone is different and you may/may not experience any of the listed side effects at all.
- *Can I drink alcohol or caffeinated beverages?*
    - It is not recommended to drink alcoholic or caffeinated beverages during radiation treatment, as they will increase frequency of urination. However, it is recommended to drink fluids, such as Gatorade, when you are thirsty during the treatments to prevent dehydration. There is no need to push fluids.
- *What diet should I be on during radiation treatments?*
    - There is no specific diet regimen required while on treatment. You may eat what you like. There are instances where patients experience diarrhea or increase gas- the Radiation Therapist will then go over dietary restrictions to minimize the effects (i.e. decrease intake of fruits and vegetables).
- *What if I need to miss a day of treatment?*
    - Missing a day of treatment is permissible; however, all absences should be cleared with the Doctor or Radiation Therapist first. It is optimal for the radiation treatments to be delivered consecutively.
- *How important is it to follow the preparation instructions?*
    - It is crucial for you to follow the full bladder- empty rectum regimen. This will not only allow for a smoother treatment process but most importantly

will decrease any possible side effects that can occur from the radiation treatments.

- *What happens after completion of the radiation treatments?*
    - Once all the radiation treatments are completed, you will return for a 2-week follow-up. This follow up is a quick 10-15 minute visit with the radiation oncologist used to assess any side effects. A 3-month follow-up visit will come after that, where we will draw the first PSA levels.