

What is a High-Dose Rate (HDR) Implant?

Radiation therapy is a treatment for cancer that uses high-energy X-rays to destroy cancer cells. There are two types of radiation therapy: external beam radiation therapy (EBRT) and internal radiation therapy (brachytherapy). High-dose rate (HDR) implants are a type of internal radiation therapy used to treat prostate cancer. HDR implant therapy is accurately planned so that specific parts of the prostate receive the correct dose. At the same time, the organs near the prostate gland (bladder and rectum) receive much less. For most patients, additional external beam radiation treatment of five (5) weeks is also required.

The HDR implant procedure is done in the operating room. This procedure is generally performed by the Radiation Oncologist and Urologist. During the HDR implant procedure, the doctor places small plastic tubes through the skin directly into the prostate gland using ultrasound guidance. A CT scan will then be carried out with the catheters in the prostate. Afterwards, a computer plan is made so that the radiation is accurately delivered to the cancer, but minimally to the surrounding tissues.

Then, the doctor connects the catheters to a special machine called an "afterloader" within the Department of Radiation Oncology. The afterloader will direct a radiation source within the tubes for around 10 minutes. The position of that source will be controlled by a computer which has been programmed to deliver the correct dose of radiation to different parts of the prostate. The radioactive source and the tubes are removed from the prostate at the end of the treatment. After the treatment, you will return to a hospital room.

What Can I Expect After a High-Dose Rate (HDR) Implant?

The tubes remain in place for 48 hours. During this two (2) day period, you will stay in the hospital and you will receive a total of three (3) HDR treatments of 10 minutes each. After the last treatment, the doctor removes the tubes before you go home. **Note: There are no radiation safety concerns with this therapy after the procedure is completed.**

What Can I Expect After a High-Dose Rate (HDR) Implant?

(continued)

Side effects of this therapy may include frequent urination, urinary urgency, burning on urination, slow urinary stream, and fatigue. Less often, patients may experience diarrhea and soft stools. There may be some discomfort that can be well managed with pain medication. The nursing and medical staff are available to discuss the management of side effects and discomfort with you.

How Do I Set Up This Therapy?

Step One – Consulting with a Specialist About Your Care

- Your Urologist refers you to the Department of Radiation Oncology.
- You schedule a consultation with the Radiation Oncologist. You and the Radiation Oncologist determine whether you are a candidate for this treatment therapy.

Step Two – Having an Ultrasound Procedure (2 to 3 Weeks Before Surgery)

- You return to Radiation Oncology for a *Volume Study*. During the Volume Study, the staff brings you into an examination room.
- There, the staff positions you on a table with your knees flexed up in stirrups (*lithotomy* position). The doctor inserts a rectal probe which connects to an ultrasound machine. Using ultrasound images, the Radiation Oncologist locates the prostate gland and measures your bone structure and the size of the gland.

Pre-Register for Surgery Online or by Phone

Pre-registration is a **two-step** process that is necessary for you to complete before having an HDR implant procedure. Step one (1) involves registration of your insurance and personal information. Step two (2) involves speaking with a registered nurse (RN), who informs you of any necessary testing you may need before your surgery.

1. **Pre-register online at www.cpmc.org/services/pre-reg.html**. Click “Register online” for the campus where your surgery is scheduled. Follow the online instructions to complete the Surgery Pre-Admission form. This will take about 10 to 15 minutes. Be sure to have your insurance information readily available when you complete the online form. If you do not wish to pre-register online, you may call (415) 600-2500 to register by phone.

Pre-Register for Surgery Online or by Phone *(continued)*

2. **Speak with a nurse by calling (415) 600-2500** no earlier than 2 weeks before your surgery. You may speak with a nurse at that time or schedule a phone appointment for a later time. Please have a current list of medications you are currently taking, including vitamins, over-the-counter medications, and herbal preparations. The nurse will inform you of any further testing you may need.

How Do I Prepare for the HDR Implant Surgical Procedure?

7 – 10 Days Before Surgery

- If you are taking blood-thinning medications such as Aspirin, Heparin, Coumadin (Warfarin), Plavix (Clopidogrel), or Non-Steroidal Anti-inflammatory medications such as Naprosyn (Naproxen), Advil (Ibuprofen), Motrin (Ibuprofen), stop taking these medication seven (7) days before surgery. **Note:** If you take Coumadin (Warfarin) or Plavix (Clopidogrel), talk with your primary doctor prior to stopping these medications.
- You may continue to take Tylenol (Acetaminophen) and Vicodin (Hydrocodone and Acetaminophen).

The Day Before Surgery

- Eat a low-fiber diet. For example, avoid raw and cooked vegetables, whole grain bread, brown rice (white rice is all right), and raw fruit.
- **Nothing to eat or drink after midnight:** Do not eat or drink anything including coffee, water, Lifesavers[®], and chewing gum after midnight the night before your surgery, unless otherwise indicated by your surgeon/primary doctor. If you have had something to eat or drink, please notify your surgeon.
- Fill any prescriptions you may have before you go to the hospital.

On the Day of Surgery

- Plan to arrive two (2) hours before your scheduled procedure. **Note:** If you are scheduled for surgery at 7:00, 7:15, or 7:30 a.m., please arrive at 6:00 a.m.
- The procedure takes approximately 1 – 1 ½ hours.
- Go to: **Ambulatory Care Unit (ACU)**
2351 Clay Street
Stanford Building – 6th floor
(415) 600-3480

After Surgery

- Family members and friends may visit once you are transferred to the nursing unit after your surgery.
- You will have a thin tube (catheter) in your urethra to drain the bladder after surgery. The catheter drains urine into a bag. Most often, the nurse removes the catheter before you go home. Sometimes, the catheter remains in place if there is increased swelling of the prostate after surgery. If you are sent home with the catheter, nurses will teach you how to care for it. You will return in a few days to have your catheter removed.
- **Your medications include:**
 - 1) an antibiotic: Cipro (Ciprofloxacin Hydrochloride), Septra (Sulfamethoxazole and Trimethoprin)
 - 2) a prostate relaxant: Flomax, (Tamsulosin), Hytrin (Terazosin)
 - 3) and pain medication: Vicodin, (Hydrocodone and Acetaminophen), Tylenol (Acetaminophen)

The nurses will teach you about these medications. It is important that you begin taking these medications on the night of your HDR implant surgery.

Managing Pain

The doctors and nurses will ask you about your pain. Please report right away if pain is limiting or stopping you from doing the activities your doctors and nurses recommend. Report any problems with sleep, mood, or appetite caused by pain. If you are comfortable, you will feel better and recover faster.

IV medication through a PCA pump: The PCA pump connects to a tube into your vein. When you push the button, the PCA pump is set to give you a specific dose of pain medication, as ordered by your doctor.

- **For your safety, only you may push the button.** It is not safe for anyone else to push the button for you.
- A time limit is also set in between doses (usually 6 – 15 minutes). During this set time limit, if you push the button, the PCA pump will not deliver a dose of medication. The time limit is set so that you can safely give yourself pain medication.

Before You Go Home

- The Radiation Oncologist removes the HDR implant tubes before you go home on the hospital unit.
- Talk to the nurses and doctors about any special instructions you may need.
- Arrange for a designated driver (responsible adult) to drive you home.

Caring for Yourself at Home

- **There are No Radiation Concerns with this Therapy:** No radiation precautions need to be followed.
- **Measure Your Urine Output:** The nurse teaches you to measure your urine in a container. Measure your urine for 24 hours. If your urine output is less than 150 cc in a 6-hour period or you develop significant pain or pressure in your abdomen, call your doctor. In rare cases, patients may develop a blockage in the bladder that prevents urination.
- **Drink Plenty of Fluids (Water, Juices) Once You Go Home for 4 – 6 Hours After You Leave the Hospital (unless on fluid restriction):** This ensures normal flow of urine and may help to prevent blockages. If on fluid restriction, discuss with your doctor.
- **Having an Increased Sense of Urinary Urgency:** You may feel an increased sense of urinary urgency the first 1 – 2 weeks after surgery. This may include urinary frequency up to every 15 – 20 minutes during the day and night. This is due to swelling of the prostate and the radiation therapy. These symptoms will usually decrease about 4 – 6 weeks after the implants are placed.
- **It is normal to have blood-tinged urine** for 3 – 5 days after surgery. You may also notice some small blood clots when you urinate. Drink plenty of liquids to keep the urine diluted and light pink if possible; if on fluid restriction, discuss with your doctor.
- **Check the Insertion Sites of the HDR Implant Tubes for any Bleeding or Drainage:** Be sure to keep the area clean.
- **Apply Ice to the Surgery Site as Needed for Discomfort:** You may experience bruising or tenderness in this region.
- **Take the antibiotics as prescribed until finished.**
- **Take pain medication prescribed as needed.**

Caring for Yourself at Home *(continued)*

- **Do not take Aspirin, blood-thinning medications, Non-Steroidal Anti-Inflammatory Medications** such as Motrin or Advil (Ibuprofen), or Aleve (Naproxen), Naprosyn (Naproxen) for three (3) days after surgery.
- **About Your Diet:** Resume your usual diet. Avoid caffeine (coffee, tea, cola) for three (3) days to prevent bladder spasms or problems with urinary flow. Herbal teas are all right.
- **Bathing:** You may shower the next day.
- **Activity Level:** Walking and moving about are encouraged. No prolonged sitting for periods over 3 – 4 hours at a time. No lifting objects greater than 10 pounds for three (3) days. No bike riding or lower body exercises for 3 days.
- **Sexual Activity:** You may sleep in the same bed with your partner. You may resume sexual activity when you feel able. The first few times you ejaculate, you may notice some blood in the semen, which is normal. Also, there is less volume (amount) of ejaculate. In most cases, this is temporary.

Call Your Doctor if You Have Any of the Following Symptoms

- Urine output less than 150 cc in six (6) hours or have increased pressure or distension in the lower abdomen.
- Inability to urinate for over six (6) hours.
- Burning pain with urination.
- Fever (101°F / 38.3°C or above), chills.
- Persistent bleeding, redness at the HDR implant tube insertion site.
- Yellowish discharge from the implant site.
- If you go home with a catheter and experience any problems, call your doctor for assistance.
- If you have any questions or problems not covered by these instructions, call your doctor.

When Do I Make My Follow-Up Appointments?

- Schedule your next appointment with the urologist two (2) weeks after your procedure.
- Schedule your next appointment with the radiation oncologist four (4) weeks after your procedure.

Urologist Telephone #: () _____

Radiation Oncologist Telephone #: () _____

More Ways to Learn About Your Health

- Go to www.cpmc.org/learning.
- If you are interested in attending a support group, visit www.prostateawarenessfoundation.org.
- For information on how to obtain a Personalized Health Research Information Packet on your specific condition, please contact the Health & Healing Library (a Planetree affiliate) at (415) 600-3681.
- Visit the National Cancer Institute at www.nih.gov and search under "Prostate."

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Note: This information is not meant to replace any information or personal medical advice which you get directly from your doctor(s). If you have any questions about this information, such as the risks or benefits of the treatment listed, please ask your doctor(s).