Information for Patients and Families

RADIATION THERAPY FOR

PROSTATE CANCER

The Grampsas
Urologic Oncology Program
and
Radiation Oncology
• Evaluation • Treatment
• Education • Research

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Radiation Therapy

Radiation therapy can be a good treatment choice for many prostate cancer patients. Radiation therapy uses a special type of energy called ionizing radiation to treat prostate cancer. You may also hear it called radiotherapy, external beam therapy, or irradiation. At University of Colorado Hospital we use advanced methods to shape your treatment to the size and shape of the region, and location of your cancer. The treatment results of radiation therapy are similar to radical prostatectomy in some patients. In addition, radiation therapy may be used for recurrent prostate cancer after surgery. It is also used at a lower dose to help provide relief of bone pain associated with advanced prostate cancer.

Treatment Procedure

Patients are usually referred to a radiation oncologist by their primary physician or a specialist, such as a surgeon or medical oncologist. The referring physician will usually make the appointment for the initial consultation. The first visit included a medical history and physical examination. It also allows time to talk with the radiation oncology staff about initial questions you have about radiation therapy.

The next appointment is a simulation or treatment planning session. It usually lasts 1 to 1 1/2 hours. It helps if you have a full bladder (without being uncomfortable) during this session. During this appointment the tumor is measured and the treatment field is marked on your body. You will not receive any radiation treatment at this visit. Special blocks to protect healthy tissue and organs are designed and “cut” before actual treatment starts. During this appointment the radiation oncologist and his staff design your treatment plan on the computer and review it to determine the total dose of radiation required to treat the tumor. Also, the total number of needed treatments is determined.

Depending on your treatment plan, radiation therapy to treat prostate cancer generally takes 7 or 8 weeks. A radiation therapist administers your treatments 5 days a week, Monday through Friday. Each visit lasts about 15 minutes. Most
of that time is spent getting you into the specific position ordered by your radiation oncologist. The actual delivery of the radiation takes 2 to 3 minutes. You need to have a full bladder (without being uncomfortable) and an empty bowel during each treatment. This helps to make sure things are the same as they were at the time of your radiation planning session. You will not become radioactive by this type of external radiation therapy. You will have weekly check-ups with your radiation oncologist while you are undergoing treatments.

**SIDE EFFECTS**

There are few side effects of the radiation therapy used to treat prostate cancer. If they occur, most symptoms will begin two to three weeks after starting treatment. Some patients experience fatigue that may continue several days after completion of treatment. Some of the side effects include:

- Changes in urinary function that may include urinary frequency or minimal loss of urinary control.
- Burning sensation with urination or difficulty emptying the bladder.
- Changes in bowel movements that may include diarrhea.
- Changes in sexual function may include decreased erectile function. This occurs over time in a way similar to the normal loss of erectile function as men age.

If any of these side effects occur talk to your radiation nurse or doctor about treatment to correct the problems. Most urinary and bowel side effects will decrease or disappear within six weeks after completing treatment.

Please call 720-848-0167 (Anschutz Outpatient Pavilion) or 303-372-0854 (University of Colorado Hospital at Ninth Avenue) if you have any questions. The University of Colorado Hospital's Radiation Oncology staff is always available to answer questions, provide support, or assist you.
SEED IMPLANTS FOR

PROSTATE CANCER

The Grampsas

Urologic Oncology Program

and

Radiation Oncology

- Evaluation
- Treatment
- Education
- Research

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PROSTATE SEED IMPLANT

General Information
Radioactive Seed Implant is an option that can be offered to some men with localized prostate cancer. Radioactive seeds (small pellets about the size of a grain of rice) will be precisely guided into your prostate using ultrasound. This is done in the operating room. Typically, your physician places about 70 to 150 seeds into your prostate gland. The exact number depends on the size of your prostate. Even though your cancer is only visible in portions of your prostate, we treat the entire gland because there are microscopic amounts of cancer throughout the gland. Radioactive seeds, such as Iodine 125 (I-25), give off low energy x-rays that destroy cancer cells in your prostate but do not destroy normal tissue in the rest of your body. Most seeds give up almost all of their radioactivity within 6 months.

The implant does not require an incision. Needles are passed into the prostate gland through the skin between your scrotum and rectum (perineum). As the needles penetrate through the prostate, they are seen using an ultrasound probe inserted in the rectum. After each needle is in the correct position, the needle is slowly withdrawn while the seeds are injected into the prostate gland. Both the probe and the needles are then removed.

BEFORE THE IMPLANT

Planning for the Implant
Before the procedure, the radiation oncologist and urologic oncologist determine the size of your prostate using ultrasound. This will be similar to the ultrasound used when you had your original biopsy. This takes about 15 minutes and helps the doctors determine the number and location of seeds they will implant.

Prostate Measurement Ultrasound
We will schedule this appointment for you. If you wish to check the status of the appointment, call 720-848-0170. You do not need to do any special preparation and will be able to drive yourself home after the ultrasound.

Preparation for the Seed Implant
- Do not take any non-prescription products containing aspirin and anti-inflammatory medications such as ibuprofen, naproxen, Advil®, Naprosyn®, Indocin® (indomethacin), Motrin®, and Aleve® for 7 to 10 days before your ultrasound. This list does not include all items that contain aspirin or anti-inflammatories. Please check with your doctor if you are unsure about whether to stop a medication.
- Do not take any echinacea, ephedra, garlic, gingko, ginseng, kava, St. John’s wort, and valerian for 7-10 days prior to your implant.
• If you are taking prescription blood thinners such as Coumadin® (warfarin) or heparin please discuss this with your doctor. He will need to discuss with you and your primary care physician as to when you can safely discontinue these medications prior to your surgery.

• Once your implant has been scheduled, you will receive a letter in the mail. This letter includes instructions of when to report for your pre-operative history and physical by a physician. This appointment is usually the day before, or sometimes several days before, your implant.

• After having your history and physical, you will be sent to PreProcedure Services to be seen by the anesthesiologist who will discuss the anesthesia you will receive during the implant. Any needed lab work or tests, such as a chest X-ray or EKG, will be done at this time. You will be given instructions on what time and where to report on the day of your implant.

• We try to coordinate these appointments as much as possible. However, it usually takes five to six hours to complete this work-up.

Pre-Operative Seed Implant Instructions

• The day before your implant (beginning 24 hours before the scheduled implant) drink only fluids you can see through. This includes such things as tea, soda, juices without pulp, bouillon, and Jell-O™.

• Around 4:00 p.m., the day before your implant, drink one bottle (10-ounces) of magnesium citrate. This can be purchased over the counter at your drugstore or pharmacy section in the grocery.

• The night prior to your implant please give yourself a fleet® enema. This can be purchased at any drugstore.

• Do not eat or drink anything after midnight the night before your implant.

• Since the implant is done in the operating room and requires an anesthetic, the hospital policy requires that you do not drive home after your implant. Please arrange to have a ride to and from the hospital.
During and Immediately After the Implant

- The seed implant procedure last 1 to 2 hours. It is done in the same-day surgery operating room at the Anschutz Outpatient Pavilion. You will receive either a spinal or general anesthetic for the procedure.

- After the seeds have been implanted, you will have a urinary catheter placed to drain your bladder. You will go to the recovery room for about two hours. You will have an ice bag placed between your legs to reduce the swelling in your perineal area.

- You should only experience mild pain in the perineal area and legs for 2 to 3 days. If needed, you will receive pain medication.

- You may resume fluids and eating after you recover from the anesthetic.

Discharge Instructions Following Prostate Seed Implant

Diet

- You may eat a regular diet, unless you are on a special diet.

- Some foods and liquids are acidic or high in amino acids and may irritate your bladder. It is usually not necessary to eliminate these foods from your diet, but you might wish to decrease the amount. Some of the foods and beverages that could cause problems are acidic fruits, coffee, carbonated beverages, tomatoes, spicy food, chocolate, vinegar, cheese, yogurt, sour cream, mayonnaise, soy sauce, alcoholic beverages and foods high in yeast.

- Try to drink at least two quarts of water each day.

Activity

- You should avoid heavy lifting (nothing heavier than a large phone book) or strenuous activity for three days after returning home. Then you may return to your normal activities.

- You should not drive for 2-3 days.

Medications

You will receive three different types of medication.

1. An antibiotic - Please take as directed on the bottle until it is gone. If you develop a rash or any other side effects, stop taking it immediately and call your physician.

2. A medicine to help your flow of urine - This medication relaxes blood vessels in the prostate and can improve the flow of urine. The medicine usually does not cause side effects, but lightheadedness or dizziness may occur. Change positions slowly and sit down if you become lightheaded. Usually, these side effects go away after a couple of days. If the side effects become intolerable, please call your physician.

3. Pain medicine - You may take this, as needed, for pain at any time after your implant.
Possible Side Effects
There are usually very few side effects from the implant procedure. However, some that could occur are listed below:

- After your implant, it is normal to experience some difficulty with your urination. You may experience a burning sensation when you pass urine the first few times and have some blood or clots. This usually goes away in a day or two.

- On rare occasions, complete blockage of urination may occur. If this should occur, call your physician or go to an Emergency Room.

- You could also experience minor burning on urination, urinating more frequently, mild pain or feeling unable to pass urine freely. Usually these side effects stop in 1 to 4 months.

When to Call Your Physician
If you experience any of the following side effects, immediately call your Radiation Oncology doctor or Urologist. (See phone numbers listed on the next page.)

- You experience severe pain or bleeding.
- You still have visible blood in your urine or begin to pass clots 24 hours after your implant.
- You develop a skin rash or allergic reaction from the antibiotics.
- You have a fever greater than 101 degrees F.
- You have a great deal of dizziness or feel lightheaded from the medicine taken to relax your bladder.
- You cannot pass urine freely or feel that your urine flow is blocked.

Radiation Safety
Radiation safety is a common concern of patients. I-25 and other forms of seeds are low energy radioactive materials and lose their activity quickly. The low energy of the seeds means that, for the most part, their radiation is contained within the prostate gland. However, some amount of the radiation is given off to structures close to the prostate, such as the rectum. The precautions listed below are to ensure those around you are protected from unnecessary radiation. Objects that you touch or items that you use are not radioactive. Your bodily wastes (urine and stool) also are not radioactive.

- Any pregnant, or possibly pregnant, woman should avoid close contact with you for the first two months. She should not hug or sit very close to you. She can briefly greet you and then should move to a distance of at least six feet away from you. Children should not sit on your lap for the first two months after the implant.

- Sexual intercourse with a condom may be resumed two weeks after the implant. Your ejaculate could be discolored dark brown or black. This is normal and a result of bleeding that might have occurred during the implant. After six months, it is not necessary to use a condom.
Follow-up

- Please make an appointment to see your doctor in the Radiation Oncology department (720-848-0150) for four weeks after your seed implant. A CAT scan will be scheduled for the same time in Radiation Oncology. The CAT scan will enable the physicians to determine the exact position of each seed in the prostate. This is necessary to determine if your prostate gland is receiving the proper amount of radiation throughout the entire prostate gland. On rare occasions it has been necessary to give an additional amount of radiation with either external beam radiation or another implant.

- A follow-up appointment will be given to you at the time of your implant. Plan on visiting about every 4 to 6 months checkups.

- Physical examinations and PSA blood tests will be done at certain intervals as part of your follow-up visits.

For Emergencies

If you have any questions or problems, please call 720-848-0293 during office hours, Monday through Friday.

After hours and on weekends, call 720 848-0100 have the operator page the radiation oncology doctor on call. Wait on the line while the operator pages the doctor. If you are unable to reach your health-care provider, call the Emergency Department at 303-372-8911.
Cystitis

Sometimes those receiving radiation therapy to the pelvis will develop cystitis. This is a swelling of the bladder, which is what collects your urine inside the body. The symptoms of cystitis usually stop within the first couple weeks after finishing radiation treatments.

**Symptoms of Cystitis**

Tell your doctor or nurse if you have any of the following symptoms of cystitis:

- Burning or stinging when you urinate.
- Blood in your urine.
- Needing to go to the bathroom more frequently even though you are not drinking an increased amount of fluids.
- Feeling like you have to urinate soon after you last urinated.
- Feeling of urgency or that you “can’t hold it”.
- Fever along with any of the above symptoms.

**What You Can Do to Help Reduce Symptoms of Cystitis**

- Drink eight (8 ounce) glasses of fluid throughout the day. Drinking plenty of fluid helps to decrease bladder irritation. In order to prevent frequent waking during the night, try to take in these fluids four hours before bedtime.
- Avoid caffeine (coffee, tea, or colas), alcoholic beverages, spicy foods, and tobacco products. These substances can irritate the bladder.

**Monitoring**

We closely monitor all patients that are undergoing radiation. We will see you at least weekly, or more often if needed. A nurse and a physician evaluate you for the development of cystitis and other urinary symptoms.

**Treatment**

Your physician may prescribe medications that will help relieve your symptoms. The treatment may include antibiotics, pain relievers, and medications to help control bladder wall spasms. You may need to have your urine checked if a urinary tract infection is suspected. Should your symptoms be severe, it may be necessary to take a break from radiation treatment.

**Medications**

- Over the counter medication
  - AZO Standard®, 1 to 2 tablets taken orally three times a day (same as pyridium).
• Prescription medication options – for painful urination
  - Pyridium® (phenazopyridine) 200 mg, 1 tablet taken orally three times a day. (Your urine turns reddish-orange when taking this medication.)
  - Urispas® 100 mg, 1 to 2 tablets taken orally three to four times a day. (Your urine turns blue when taking this medication. Patients with glaucoma should not take this medication)
  - Urised® 2 tablets taken orally four times a day (This should not be taken along with sulfa antibiotics).

• Other prescription medication options - for painful urination or urinary infections
  - Pain medication, as needed
  - Antibiotics, as needed

• Prescription medication options for bladder spasms
  - Detrol® 2 mg, 1 tablet taken orally two times a day
  - Ditropan® (oxybutynin) 5 mg, 1 tablet taken orally two to four times a day
  - Levsin® (hyosoyamine) 0.125mg, 1 to 2 tablets taken orally every 4 hours (maximum 12 tabs a day)
  - B & O® suppositories, 1 suppository placed in rectum one to four times a day

Sources:


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Prostate Brachytherapy
High Dose Rate (HDR)

High dose rate brachytherapy (HDR) is placement of an intense radiation source into or around a tumor for a brief period of time. Prostate brachytherapy requires surgical placement of flexible, small diameter needles into the perineum (area beneath the scrotum). Then high dose radiation is delivered through the needles. You will receive a total of 2 or 3 treatments.

Placing the Needles
While you are under general or spinal anesthesia 13 to 20 needles are threaded through the skin into the prostate. The doctor uses ultrasound to help guide the placement of the needles. The needles are held in place with a small, plastic plate sutured to your perineum. You will also have a Foley catheter placed in your bladder while you are in the operating room. Your legs will be kept elevated and leg wraps will be put on your legs to help prevent blood clots. These procedures take approximately 1 to 1 1/2 hours in the operating room. The needles, stabilizing plate, and Foley remain in place until your radiation treatments are all completed.

Preparing for your Radiation Treatments
- You need to schedule an appointment for a measurement ultrasound. Please call 720-848-0170 to schedule this appointment. The radiation oncologist and urologic oncologist use this information to determine the size of your prostate. They use an ultrasound machine similar to the one used when you had your original biopsy. This takes about 15 minutes and helps the physicians know how many needles to use and where to insert them. You do not need to prepare in any way for the ultrasound, and will be able to drive home when it is finished.

- Once your HDR has been scheduled you will receive a letter or a phone call with the dates for you pre-operative appointments and your preoperative instructions. Please read this information carefully. The exact time of your procedure will not be scheduled until the afternoon before the day of your procedure. The letter you receive will give you the phone number you need to call for your check in time for the procedure.

- You should not take aspirin, ibuprofen (Advil®, Motrin®), naproxen (Aleve®), kava, ginseng, ginko, ephedra, echinacea, or any blood thinning medications (Coumadin® or warfarin) for 7 days before your procedure. You may take Tylenol® (acetaminophen) as needed. If you have any questions please call Radiation Oncology at 720-848-0167.

- The process of planning the radiation treatments takes place after the needles are inserted. After the placement of the needles, you will be taken down to the Radiation Oncology department. Here a CAT scan of your prostate will be done. Each of the needles are identified and numbered. This information is then entered into a special computer where your specific treatment is planned. The planning takes several hours to complete.
• After the planning session is over, you will receive your first treatment. You will remain in Radiation Oncology and be monitored by our nursing staff until the planning and your first treatment is complete. Then you will be transferred by ambulance to the University of Colorado Hospital to stay overnight. You will be transferred back to Radiation Oncology the next day for the completion of your treatments.

During and Immediately after your Radiation Treatment
• Your actual treatments are done in the Radiation Oncology department and take approximately 15 to 30 minutes. If you are scheduled to receive 2 treatments in the same day, the treatments will be about 6 hours apart. In-between your same day treatments you will be monitored in the Anshutz Outpatient Pavilion’s Postoperative Care Unit.
• Your leg wraps will be connected to an alternating pressure machine in Radiation Oncology. This helps prevent blood clots from forming in your legs. Catheters from the radiation treatment machine will be attached to the previously placed needles. These catheters will guide the radiation source into the needles and to your prostate.
• The needles, stabilizing plate, and Foley will be removed in Radiation Oncology after your last treatment. At that time you will have an ice bag and pressure dressing placed between your legs to reduce the swelling in your perineal area. You should only experience mild pain in the perineal area and legs. If needed, pain medication will be given to you. You will be asked to empty your bladder before being released to go home.
• During your treatment, you will receive medications to control any pain.

Side Effects of HDR Treatment
The side effects of HDR vary from patient to patient.
• You may experience mild to moderate urinary frequency and burning. To lessen these symptoms drink large amounts of water, and avoid caffeine, alcohol and spicy foods. You will also be given medications to help ease these symptoms.
• You may have irritation to your rectal area and increased gas or loose stools for a few days.
• The skin in the area of the needle insertion will be tender for a few days.
• You may experience fatigue for a few days but most patients are able to return to work and most of their usual activity (non-strenuous) in 4 to 7 days.
• In general most patients (60-70%) regain their potency to the level it was prior to treatment.
Activity
- You may experience fatigue for a few days. Most patients are able to return to work and resume most of their usual, non-strenuous activities in 4 to 7 days.
- Avoid heavy lifting (anything more than 20 pounds) or strenuous activity for the first 3 days after your treatments.

Diet
- Eat your regular diet, as tolerated.
- You may want to decrease foods and liquids that are acidic or high in amino acids. Some of the foods and beverages that could cause problems are:
  - acidic fruits
  - coffee
  - carbonated beverages
  - tomatoes
  - spicy foods
  - chocolate
  - vinegar
  - cheese
  - yogurt
  - sour cream
  - mayonnaise
  - soy sauce
  - foods high in yeast
- Avoid spicy foods
- Drink at least 2 quarts of fluid a day.

Medications
You will receive a prescription for the following medication. Please take as directed.
- Cipro 500mg tablet.
  Take 1 tablet 2 times a day for 5 days to prevent infection.
- Tylenol® with Codeine 30mg tablets (also called Tylenol #3®)
  Take 1 or 2 tablets every 4 hours as need for pain. (You will receive a total of 10 pills.) Take with food.
- Medrol dose pack
  Take as instructed on the package to help with swelling and inflammation. Take with food.
- Flomax 0.4mg capsule
  Take 1 capsule every day. You may increase to 2 times per day as needed to help improve urine flow.

Personal Hygiene
- You may take a shower in the evening when you get home. Change the dressing if it gets wet.
- Change the dressing as needed to keep it clean and dry. Apply antibiotic ointment to perineum with dressing change.
Possible Side Effects and Actions to Take:

- Your urine will often appear pink in color. You may even see some blood in your urine over the next couple of days. Increase your fluid intake to help flush any blood from your urine. Water and juice are especially good, but avoid caffeine and alcohol.

- Frequent urination, burning, and dribbling commonly occur for 4 to 7 days after your procedure. Wearing a pad, such as DependSTM, will protect your undergarments. Frequent urination may continue for 3 to 6 weeks.

- Some bruising, swelling, and discoloration of your scrotum and perineum frequently occur. Keep ice on the first night for 20 minutes at a time, and then as needed. This will help decrease the swelling. The bruising and discoloration can last for about 3 to 4 weeks, and then it will go away on its own. It does not require specific treatment.

- Some mild bleeding at the needle sites can occur. Apply steady pressure to the area with a washcloth or gauze pad and ice to stop the bleeding.

- You may experience rectal irritation and have increased gas or loose stools for 3 to 7 days. Medications such as Imodium AD® (over the counter) or Lomotil® (prescription) are available to treat this, if necessary.

- Some mild bleeding at the needle sites can occur. Apply steady pressure to the area with a washcloth or gauze pad and ice to stop the bleeding.

- Penile numbness occasionally occurs and lasts 1 to 2 months. The numbness resolves on its own. It does not require treatment.

- Rarely, a patient maybe unable to urinate due to swelling or blocking of the urethra. Call your radiation oncologist immediately or go in to an emergency room:
  - If it has been 6 hours since the removal of the catheter from your bladder and you haven’t urinated.
  - If you are becoming uncomfortable because you are unable to urinate.

- The most frequent long-term side effect is a 5% incidence of urethral stricture. This is a narrowing of the urine passage way from your bladder caused by scar tissue. Your urologist can treat this condition if it occurs.

Follow Up

- You will need to see your Radiation Oncologist for a brief visit in approximately one month. Call the scheduler at 720-848-0150 to make a follow up appointment.

When to Call the Doctor

Call the radiation oncologist if you experience any of these symptoms.

- Unable to urinate for 6 hours or longer.
- Bleeding that saturates more than one pad per hour.
- Increasing pain not relieved with pain medicine.
- Nausea and vomiting that continues over several hours.
- Fever over 101 degrees F.

For Emergencies:

For questions or concerns please call Radiation Oncology at 720-848-0167, Monday through Friday, 7 a.m. to 5:30 p.m.

If after hours, call 720-848-0100 and have the operator page the radiation oncology doctor on call. Remain on the line while the doctor is paged. If unable to reach your doctor, call the Emergency Department at 303-372-8911.