



## *MRI-Guided Prostate Ablation*

### A Treatment for Prostate Cancer

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This information explains MRI-guided prostate ablation. It is a procedure to treat prostate cancer.

During the procedure, your care team uses magnetic resonance imaging (MRI) to see your prostate and the cancer. The care team uses heat or cold to destroy, or ablate, the cancer.

This information explains:

- The prostate and prostate cancer.
- The types of ablation that can be used for partial or whole prostate gland treatment. These ablation types also are called focal therapies or modalities.
- What you need to know before your procedure, including how to prepare for it.
- What usually happens the day of the procedure, including whether you stay one night in the hospital after your procedure.
- Possible risks of the procedure. This includes side effects and complications.
- What you need to know after you leave the hospital, including recommendations for follow-up appointments.

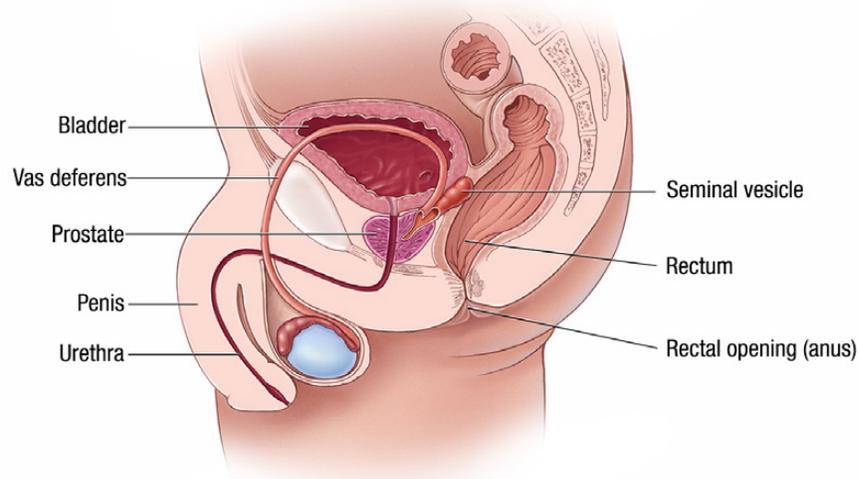
Read this information to help you prepare for and have a better understanding of MRI-guided prostate ablation. If you have any questions or concerns after you read this information, be sure to talk with your health care provider or another member of your care team.

# The Prostate and Cancer

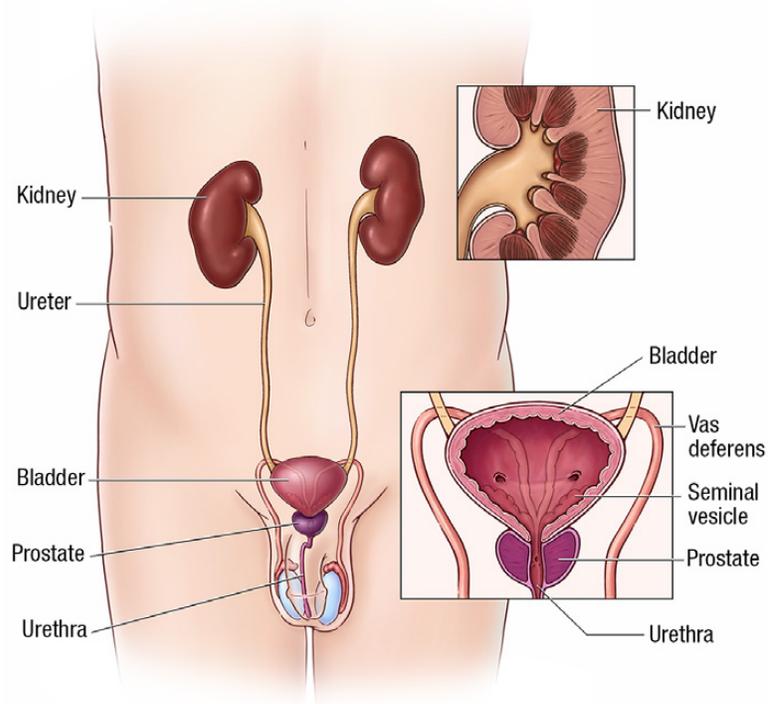
The prostate gland is located just below the bladder and in front of the rectum. See Figures 1 and 2. The size of the prostate varies from man to man, but it is usually 1 to 2 inches in diameter.

The prostate makes semen, the fluid that carries sperm when you ejaculate.

The urethra is a tube that goes through the prostate and penis. It is the path that urine takes from the bladder to outside your body when you urinate.



**Figure 1**

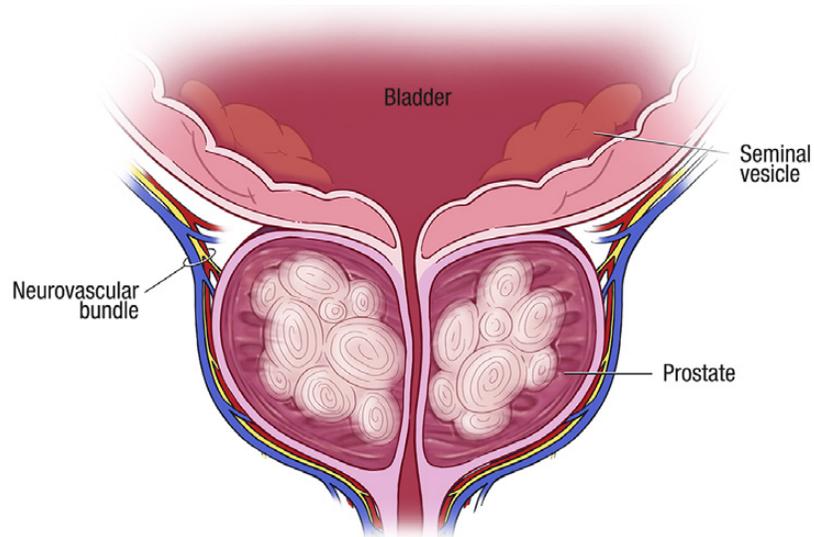


**Figure 2**

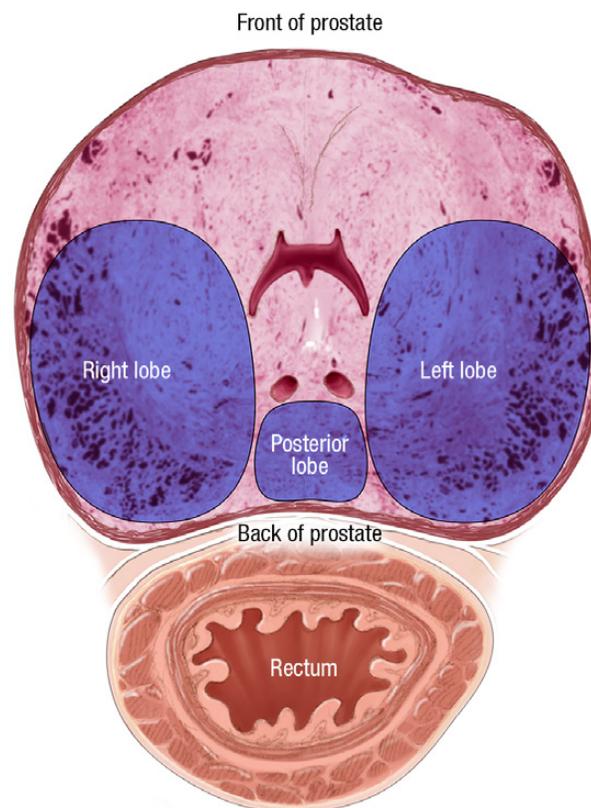
Prostate cancer is the most common cancer in adult men. Its cause is not known. Cancer of the prostate can replace normal prostate tissue. It also can spread, or metastasize, to other parts of the body.

Cancer can be in any part of the prostate, but it is most often found in the outer rim of the gland, particularly towards the back and on the sides of the gland.

Your health care provider may use Figures 3 and 4 to help explain the prostate and your cancer.



**Figure 3**



**Figure 4**

## Types of Ablation

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Traditional prostate cancer therapies or treatment include surgery, radiotherapy or hormone therapy. Newer treatments include focal ablative therapies.

Focal ablative therapies can be used for new or recurrent prostate cancer. After traditional prostate cancer treatments, prostate cancer recurs about 20 percent of the time.

Focal ablative therapies are done with a magnetic resonance imaging (MRI) scanner designed for procedures. MRI allows the care providers to see the prostate cancer so they can target the treatment. MRI helps the care team monitor the treatment's progress.

Focal ablative therapies include:

- **MRI-guided laser ablation.** Heat made by laser light is used to destroy cancer cells. It is used for a new cancer that is focal to one side of the prostate.
- **MRI-guided cryo ablation.** Cold made by high pressure gases is used to destroy cancer cells. It is used for a new or recurrent cancer that involves a small part, half or all of the prostate.
- **MRI-guided high-intensity focused ultrasound ablation.** Heat made with strong ultrasound waves is used to destroy cancer cells. It most often is used for a new small focal cancer.

Your health care team evaluates your situation and talks with you about the focal ablative therapies to determine which type of ablation is right for you and your cancer. **Talk with your care provider about how the treatment's heat or cold is delivered to the prostate.**

Your care team can explain the details of the ablative procedure with you. The procedure is tailored to your particular cancer and its location relative to other structures.

The MRI-guided ablation treatment takes between two and four hours. It is important to know that this procedure requires careful preparation and precise needle position to deliver focal ablative therapy to the prostate cancer. This helps prevent harm to the prostatic nerves, urethra, ureter and rectum. However, the risks of the procedure depend on where the cancer is in the prostate. Your care team can talk with you about your individual risks with treatment.

## Getting Ready for Your Procedure

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Your health care team gives you information about:

- How to prepare for your MRI-guided prostate ablation. This may include:
  - Eating and drinking instructions before your procedure.
  - Medication instructions before your procedure.
- What you need to know about anesthesia or sedation for your procedure.

It is important for you to follow the instructions carefully. If you do not, your procedure may need to be scheduled for another time. If you have any questions about how to prepare for your procedure, talk with a member of your health care team.

Talk with your health care provider about any medications you take. If you need to stop any of them before the procedure, ask your health care provider when you may start them again.

**Please note:** You likely will stay one night in the hospital the day of your procedure. You may ask for a private room if one is available, especially if you want someone to stay with you during the night. Usually, you are asked to stay at a nearby hotel for one night after you leave the hospital if you do not live nearby. It is best to arrange for the hotel stay before you have your procedure.

A urinary drainage catheter is used during the procedure. How long you need the catheter depends on the location of the cancer and how much of your prostate is treated. Your health care team can tell you how long you need the catheter and arrange to have it removed.

### **Anesthesia or sedation**

If you have general anesthesia, for your safety and the safety of others, do not drive for 24 hours.

If you have sedation, it is common to have lapses of memory, slowed reaction time and impaired judgment. Arrange for someone to accompany you to and from your appointment and drive you home. For the rest of the day after being sedated:

- Rest.
- Do not drive or operate motorized vehicles or equipment.
- Do not return to work or school.
- Do not take on responsibility for children or anyone who depends on your care.
- Do not use exercise equipment or take part in rough play or sports.
- Do not drink alcoholic beverages.

## For your safety

Due to the strong magnetic field made by the MRI machine, people with certain types of implanted devices cannot have an MRI. The MRI's magnet may cause an implanted device to not work as it should and cause serious injury.

Tell your health care provider about any metal or implanted devices in your body. This is particularly important if you have had surgery on your brain, ear, eye, heart or blood vessels.

If you have a metal tracheostomy, bring your metal obturator with you to the exam. A respiratory therapist can change your metal tracheostomy to a plastic one before the MRI and change it back afterward.

If you have an implanted device and you have a card with information about it, bring the card to your appointment. Also bring any other equipment related to the implanted device such as a remote control for a neurostimulator. You may be asked to turn off the device during the scan.

Examples of items that can create a danger during an MRI:

- Pacemaker, pacemaker wires or leads
- Implantable cardioverter defibrillator (ICD)
- Stimulator (for example, deep brain, spinal cord, bone growth, TENS, vagal nerve)
- Aneurysm clip or coil
- Cochlear implants
- Implanted drug infusion device
- Foreign metal objects, especially in or near the eye
- Shrapnel or bullet fragments
- Permanent cosmetics, tattoos or body piercings
- Removable dentures and teeth with magnetic keepers
- Other implants that involve magnets
- Medication patch (transdermal patch) that contains metal foil
- Tissue expanders
- Any metal implant

Plates and screws used to repair bones and routine dental work, such as fillings, do not usually cause problems.

# What Usually Happens on the Day of Your Procedure

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The care team during your procedure may include one or more radiologist, urologist, anesthesiologist, nurse anesthetist, nurse, radiology technologist and physicist.

## **Before the procedure**

Carefully fill out the MRI safety screening form you are given when you check in for your MRI. If you have questions about the form or need help filling it out, ask the desk receptionist. Even if you have had an MRI before, you still complete a new MRI safety screening form.

Remove metal objects including watches, hearing aids, jewelry and glasses. Because of the strong magnetic field made by the MRI machine, great care is taken to prevent objects made of steel, iron or other metals from entering the MRI room. The magnet can cause metal objects to move suddenly and with great force towards the center of the MRI machine. This can be dangerous to anyone in the way of the object.

A member of your care team asks you some general health questions and checks your pulse and blood pressure. After this, you change into a hospital gown.

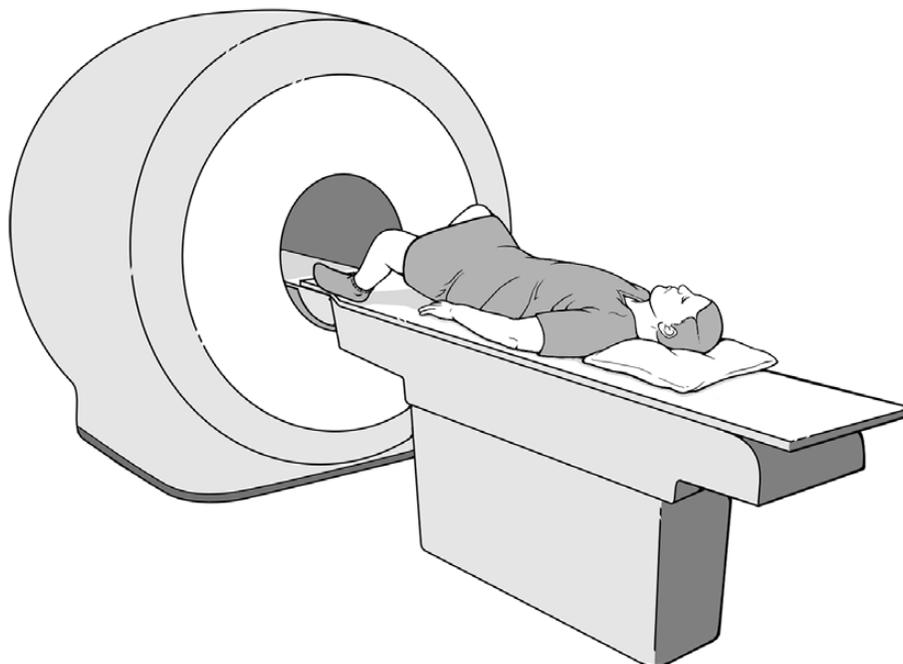
An intravenous (IV) line is put into a vein in your arm. The IV is used to give you general anesthesia, pain medication and, if needed, MRI contrast dye.

If ureteral stents are needed for your procedure, you are taken to an area to have them placed by a urologist. Ureteral stents help keep the ureter open and help your care team better see the urethra during treatment. Before the stents are placed, you receive general anesthesia, which causes you to go to sleep. After the stents are placed, you are taken to the MRI room for your procedure.

If your procedure does not require ureteral stents, you will be taken to the MRI room after the IV is put into your arm. You receive general anesthesia, which causes you to go to sleep.

You are positioned on your back on the MRI table. See Figure 5. The table slides in and out of the MRI machine. During the procedure, your body is inside the MRI machine; your head and shoulders are at the opening.

To help prevent a blood clot, sequential compression devices are put on your calves.



**Figure 5.** MRI positioning

### **During the procedure**

The radiologist and urologist use MRI pictures to identify, target and monitor your focal ablative treatment. The urologist places a urethral catheter through your penis. Saline is moved through the catheter to protect your urethra from heating or cooling.

Your care team follows the treatment plan discussed with you before your procedure.

A contrast dye may be injected through your IV. This dye shows how your blood is flowing in the prostate cancer. During the procedure, the contrast dye helps your care team assess how well the cancer is ablated, or killed. The blood flow to the cancer should be reduced or absent after the ablation.

At the end of the procedure, the urologist places a urinary catheter through your urethra into your bladder. You have the catheter in for one to four days after your procedure. The time depends on swelling and location of the treatment.

### **After the procedure**

After your procedure, you are taken to a recovery area to wake up from the anesthesia. After about one hour, you are taken to a hospital room to recover.

Your care team members can guide you through your hospital stay and help you with what to expect. They can explain how long you will be in the hospital. Typically, one night is all that is needed. The time depends on your procedure and your situation.

Talk with a care team member about any pain or discomfort you have.

## Risks of the Procedure

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If you received IV contrast, risks include:

- A bruise at the IV injection site.
- A very rare but very serious condition known as nephrogenic systemic fibrosis (NSF). This can happen if you already have damaged kidneys. If your MRI requires IV contrast, you may have a blood test before the MRI to check your kidney function.
- An allergic reaction to the IV contrast. Symptoms of an allergic reaction include a rash, itching, hives, and shortness of breath. If you have symptoms while in the MRI, alert your MRI team. If you have symptoms in the exam area, tell the staff right away. If you have left the area and have symptoms of an allergic reaction, seek emergency medical care. There are medications to treat these symptoms.

Other risks are rare but may include:

- Hearing damage. You are given ear plugs to prevent hearing damage from the loud sounds made by the MRI machine.
- Tissue heating caused by the radiofrequency energy.

There are no known harmful effects from exposure to the magnetic fields or radio waves used to make MR images as long as safety requirements are followed.

**If you have any of the following problems and you are still in the hospital, tell a member of the health care team right away. If you have left the hospital or cannot reach your health care team, call 9-1-1 or get emergency medical care. Do not try to drive yourself to the hospital or another care center.**

### **Skin changes**

Redness or firmness in the treated area, skin breakdown, frostbite, burns, puckered skin, or scars are risks of this procedure. These skin changes are not common side effects. You and your care team should know about these effects right away after treatment. Talk with your health care provider about how these conditions should be treated.

## **Blood clot in your vein(s)**

Your blood does not move, or circulate, as much as normal when you are lying still during this treatment. As a result, you have a small risk of getting a blood clot. To help prevent a blood clot, sequential compression devices are put on your calves at the start of your procedure.

Talk with your health care provider before treatment to learn how you can lower your risk of a blood clot after this treatment.

There are three types of blood clots:

- A venous thrombosis is a blood clot that develops in a vein. Clots can stick to the wall of veins and cause pain, redness and swelling.
- A deep vein thrombosis (DVT) is a blood clot that develops in a deep vein.
- A pulmonary embolism (PE) is a blood clot that has traveled to the lungs. If you have a PE, your lungs and body may not get enough blood.

**DVTs and PEs can be life-threatening.** Get emergency care if you have:

- An arm or a leg that is:
  - Swollen.
  - Tender or painful.
  - Warm to the touch.
  - Reddish-blue or white.
- Chest pain.
- Difficult or painful breathing.
- Cough (that may produce bloody spit or mucus).
- Rapid heartbeat.
- Light-headedness.
- Bluish-colored skin, especially around the lips or finger tips.
- Clammy skin or a lot of sweating.
- Fever.

## Erectile dysfunction

Risk of erectile dysfunction usually is low. However, it depends on any procedures or treatments you have had in the area. There can be a small change in erectile function, but this depends on how close the prostate cancer is to the prostatic nerves. Your care provider explains this risk when discussing your procedure. If you have any concerns or questions, be sure to tell your care provider.

## Urinary leakage

Risk to urinary function usually is low. However, it depends on any procedure or treatments you have had in the area. There can be a small change in urinary function, but this depends on how close the prostate cancer is to the urethral sphincter valves. Your care provider explains this risk when discussing your procedure. If you have any concerns or questions, be sure to tell your care provider.

## Damage to your bowel

Risk to the bowel is a rare complication. However, it depends on any procedure or treatments you have had in the area. Your care provider explains this risk when discussing your procedure. If you have any concerns or questions, be sure to tell your care provider.

If you have pain in your abdomen several days after your procedure, contact a member of your care team. If the pain is severe and you cannot reach your health care team, call 9-1-1 or get emergency medical care. Do not try to drive yourself to the hospital or another care center. This problem may need further treatment or surgery.

## After You Leave the Hospital

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After you leave the hospital, be sure you follow any instructions your care team gives you. This may include how to care for your urinary catheter and activity restrictions.

After you leave the hospital, you may return home if you live nearby. Otherwise, you are asked to stay at a nearby hotel for one night as a precaution.

If the catheter in your urethra was not removed before you left the hospital, you will have a follow-up appointment to have it removed. How long you need the catheter depends on the location of the cancer and how much of your prostate is treated. Your health care team can tell you how long you need the catheter and arrange to have it removed.

After the catheter is removed, your care provider will have you follow some instructions to make sure you can urinate without difficulty.

Be sure to ask any questions you have before you leave from your follow-up appointment.

*This material is for your education and information only. This content does not replace medical advice, diagnosis or treatment. New medical research may change this information. If you have questions about a medical condition, always talk with your health care provider.*