



Duke Prostate Center
DUKE UNIVERSITY HEALTH SYSTEM



***Radical Retropubic Prostatectomy (RRP)
Patient Guide***

You have elected to undergo a radical retropubic prostatectomy (RRP). The primary purpose of a radical prostatectomy is to cure the cancer by removing the prostate gland completely. Other key goals are to preserve sexual function (erections) and to preserve urinary control or continence. This brochure is aimed at helping you understand your surgery, what will happen in the hospital, and what you can expect when you go home. Remember, the understanding and treatment of prostate cancer continues to change and evolve as our knowledge of prostate cancer grows. You should talk to your surgeon or a member of your healthcare team any time you have concerns or questions. Please keep this information. You may want to read it again later.

[The Surgery](#)

Your surgery is called a radical retropubic prostatectomy. A retropubic prostatectomy is done through an incision in the lower abdomen in the midline above the penis and below the belly button. It involves the removal of the prostate and the seminal vesicles. The entire prostate is removed because the cancer cells tend to be randomly spread throughout the prostate. The seminal vesicles are attached to the prostate and store fluid until it is ejaculated. They are removed because they are sometimes one of the first places the cancer spreads. Also, by removing the entire prostate gland, the pathologists can accurately assess the extent and aggressiveness of the cancer, which can help your physicians decide if further treatment is necessary. It takes at least 1 to 2 weeks for the pathologists to finish their report. It will be available when you return for follow-up or by a phone consultation, and a copy will be sent to your primary physician and local urologist. You are also welcome to request a copy for yourself.

[Before Surgery](#)

If your prostate biopsy was performed at a hospital or clinic other than at the hospital where your surgery will be performed, you must have the biopsy slides that showed prostate cancer sent for a review. It is critical that we confirm you do, in fact, have prostate cancer. Before your surgery, you will undergo a pre-operative screening evaluation. This is usually done in the pre-operative screening clinic. The pre-operative evaluation consists of a physical exam, chest x-ray, blood tests, a urine sample, electrocardiogram (heart tracing), and other tests as needed. There you will also meet with representatives of your surgeon and the anesthesiologist (the doctor who will be taking care of you while the surgeon is doing the operation), who will answer any last minute questions. At this time, you will also be told which medications to take the morning of surgery. You should continue your current medicines unless your doctor tells you otherwise. You will also be given instructions as to what you should eat and drink before surgery. You should not eat or drink anything after midnight the day before surgery. You will also be given an enema to clean out your lower bowels before surgery. In most cases, a full bowel clean out is not necessary.

The Day of Surgery

The Operating Room

On the day of your surgery, you will report to the hospital operating room area. You will be told where and when to arrive. There is a waiting room available for family and friends. After the surgery, the surgeon or a member of the surgery team will come and talk to the family. The family can call from the waiting room and get updates from the operating room. The surgery itself takes approximately 1.5 to 3 hours. However, it takes at least 1 to 2 hours to get the patient ready for the surgery, and the patient will spend anywhere from 1 to 3 hours after surgery in the recovery room. Following surgery the patient will be transported to his room on the urology floor.

The Urology Floor and Your Room

Once you are awake enough after surgery, you will be transferred to your room where you will be reunited with your family. Often people are awake and feeling good by this time. Some people are still sleepy from the medicines used in the operation. Occasionally, the medicines used in the operation make some people sick to their stomach. If you have pain or nausea, you can ask for medicine to help with this. Most patients find that they do not have a great amount of pain after surgery. Most people will receive a shot of pain medicine every six hours for the first 2 days after surgery. If you need more pain medicine you can ask for it. The majority of patients use only oral pain medicine to relieve the pain. You must ask for your pain medicine. The nurse will not bring it unless you ask for it. You will also receive antibiotics to prevent infection, a stool softener, and IV fluids to prevent dehydration. Most patients will also be ordered a medication to relax the bladder. Frequently after prostate or bladder surgery, the bladder becomes irritated and undergoes uncontrolled squeezing. This can be felt as sharp shooting pain or spasms in the lower abdomen. If you feel these, ask for the bladder relaxant medication, which will help calm the bladder. Depending upon the time of surgery, some people may be allowed to have some jello and clear liquids for dinner on the same day of the operation. Others will only be allowed their medications and ice chips. While in your room, you will be asked to wear leg hose and leg pumps, which will squeeze your legs to prevent blood clots. You will also be asked to use an incentive spirometer every 1 to 2 hours while you are awake. This is a breathing machine that helps to keep your lungs from getting an infection. The evening after surgery you will be asked to at least sit in a chair for a while.

The Hospital and Who You Will Meet

The hospital is a busy place. Once you get to your room, lots of people will be coming and going at all hours. You will have a primary nurse who will frequently be helped by a nurse's aide. They will be responsible for getting your medicines, checking your vital signs, changing your dressings, and helping you with your daily activities. Your vital signs will be monitored frequently. They will also teach you how to take care of your incision and catheter before you leave. There will also be people to draw your blood, start IVs, dieticians, physical therapists, cleaning staff, and many others.

The Resident Staff

While in the hospital, your care will generally be directed by the urology team, which includes interns and resident doctors. You will be checked on by members of the urology team several times each day to assure that your recovery is uneventful. Any specific questions about your surgery should be directed to your attending surgeon.

Some surgeons also have nurse practitioners or physician assistants who are part of the care team. These health care providers may facilitate the scheduling and follow-up and are invaluable resources.

Day 1 After Surgery

On the morning after surgery, if you did not receive a liquid diet the night before, you will receive one for breakfast. If you had a liquid diet the previous evening, you may receive a regular breakfast. You will have blood drawn this morning to check your blood count and kidney function. There will be a small drain called a J-P drain that is left near your incision after surgery. This drain might be removed today. Later in the morning, you should get out of bed and walk around. The first time you walk there should be a nurse or nurse's aide there to help you. Much of the day should be spent in the chair or up walking. When you are sitting in the chair, you should sit on a horseshoe cushion, which the nurses will give you. Today the nurses will begin teaching you how to take care of the catheter and your incision. Continue to use your incentive spirometer/breathing machine today. If you have walked around the floor more than three times today, you don't need to wear your leg squeezers. It is normal to have some discomfort today. Ask for your pain medicine if you need it.

Day 2 After Surgery

Most people are up walking the halls without difficulty and eating a regular diet. Today, you may finish your catheter and wound care teaching. Patients with slower recoveries will stay until the following day. If you have to stay an extra day, the urology team will explain this to you. Most people leave between 9:00 am and noon. Some people who have a long distance to travel may wish to leave earlier, and arrangements for this can be made by talking to the nurses and the urology team. Some people may choose to stay an extra night at a local hotel. Make sure your drain is removed this morning if it was not removed the night before. If you are traveling more than a short distance, you will need to stop every 45 minutes to 1 hour. When you stop, you should get out of the car and walk around for a few minutes. While in the car, use your horseshoe cushion. You cannot drive home from the hospital.

Recovery After Your Prostatectomy

The Catheter

Immediately after surgery, you will not be able to control your urine flow. You will have a Foley catheter in your bladder, which will drain the urine. It is essential that this catheter stays in place while the tissues connecting the bladder and the urethra are healing. There is a balloon on the end of this catheter, which is inflated with water to prevent the catheter from falling out. It is difficult to pull out the catheter with the balloon inflated, but it is possible, so be careful! The catheter stays in place for about 10 days to 3 weeks, depending on your surgery and your surgeon. A few days more or less won't make a big difference. You likely will be given an antibiotic to take while the catheter is in and several days after removal to prevent infection.

The catheter is connected to a bag that holds the urine. You will be given 2 bags when you leave the hospital. One bag can be strapped to your leg during the day and hidden under long pants or sweat pants while walking around. The larger bag can be used at night or when at home.

- Sometimes the catheter in the bladder causes irritation and bleeding. It is not uncommon to see some blood or bloody fluid mixed with the urine.
- Even with the catheter in place, some urine, fluids secreted by glands in the penis, and blood can leak around the catheter. This happens more commonly during bowel movements. You can clean your catheter with soap and water, daily. Also clean the connecting sites on the bags and catheter with alcohol when switching from one to another.
- You may continue to have bladder spasms after you go home. You may feel these as intense cramping pain in the lower abdomen combined with a need to urinate. This is caused by the irritation from the catheter. These should decrease with time.

- Occasionally, catheters become stopped up and stop draining. Always make certain urine is collecting in your drainage bag. In the rare event it is not, call your physician or go to the local emergency room. It may need to be irrigated clear.
- Usually, men have some swelling and bruising in their scrotum and penis after surgery. This is not a problem and usually subsides within a couple of weeks. Some people prefer to wear briefs or a jock strap for support. Also, you can elevate your scrotum and testicles when lying down by placing a rolled washcloth or towel under them.
- It is not uncommon to feel occasional twinges or sharp pains in your penis or scrotum while the catheter is in place.
- You will be asked to put some Bacitracin ointment at the tip of the penis where the catheter exits several times a day to help lubricate and protect this junction.

Catheter Removal

Your catheter may be removed either at the hospital or by your local physician or urologist, whichever is most convenient for you. The balloon is deflated and the catheter slides out. **DO NOT** take any bladder relaxer medication the night before or morning of catheter removal. Bring a Depends undergarment (Depends Guards For Men® work well) with you to the clinic the day the catheter is removed and expect to wear pads for protection for a period of time until your urinary control returns.

Urinary Control

Once the catheter is removed, it takes some time for the bladder to learn how to function properly again. As the bladder learns how to hold more urine and the muscles in the bladder and urethra heal, your control will improve. While some people regain control quickly, most men require a period of time before their control returns. By three months after surgery, over 60% of men have fairly good control. This improves to well over 80% by six months, and over 90 to 95% at one year. Some men will continue to have mild leakage or stress incontinence when they bend over, lift, cough, or exercise vigorously. This gets worse when the bladder is full or they are tired or drink alcohol. Leakage is usually worse in the evening when the pelvic muscles are tired. Some doctors recommend Kegel exercises to improve control. People do these by tightening and releasing the muscles around the urethra. The National Association for Continence (NAFC) offers a training booklet and audio tape that teaches proper Kegel exercises (1-800-BLADDER). If you find your control is not getting better, ask your surgeon. There are things that can be done!

Sexual Function

The operation may affect your sexual function in several ways, but it does not prevent you from enjoying a sex life after surgery. For men, sexual function involves erection, ejaculation and orgasm. Ejaculation occurs when seminal fluid is expelled. This fluid is made and stored in the prostate and seminal vesicles so when these organs are removed only a small amount of fluid, if any, will come out during ejaculation and orgasm. The operation should not affect your ability to experience a pleasurable orgasm, even if there is little fluid ejaculation.

Erection occurs when the penis fills up with blood. This usually occurs in response to nerve signals. These nerve signals are carried in 2 nerve bundles that run along either side of the prostate. Attempts are made to not cut these nerves during your surgery, but even preservation of these nerves does not guarantee the return of erections. The return of erections after surgery is usually slower than the return of urinary control. The average time until recovery of erections is 6 to 18 months, and it can improve for as long as 2 to 3 years after the operation.

While waiting for the return of erections that are spontaneously firm enough for vaginal penetration, several methods can be used to help induce and improve erections. These include Viagra, Levitra or Cialis pills, injection medications like Caverject, urethral suppositories such as Muse and vacuum erection devices. We generally suggest waiting at least 4-6 weeks before using any of these methods.

It is a well-known fact that some patients develop penile shortening and fibrosis after radical prostatectomy. One theory proposed for this frequent post-operative occurrence is the absence of sexual and nocturnal erections and the oxygenated blood that regular erections bring to erectile tissues. Efforts to reestablish erectile tissue oxygenation and prevent this phenomenon have been called, by some, penile rehabilitation.

Such rehabilitative efforts have been facilitated by producing erections artificially on a regular basis using oral drugs (Viagra), penile injections, external vacuum devices and intraurethral pharmacotherapy. In particular, some doctors recommend external vacuum therapy in the early post-radical prostatectomy patient to increase chances of recovery of rigid erections and to enhance penile oxygenation and prevent corporal fibrosis.

Vacuum therapy (without the tension ring) may be an effective treatment that can be used once or twice daily in a true rehabilitative fashion in an effort to prevent penile shortening in the patient who has a radical prostatectomy. There also may be some facilitation of more rapid return to normal erectile function in these patients.

By using the vacuum device without the tension ring, the patient produces a full erection inside the vacuum cylinder, maintains it for five minutes, and then releases the vacuum pressure for one minute and repeats. This exercise is performed twice daily until normal erectile function returns or treatment for erectile dysfunction is initiated.

You may attempt sex as soon as you feel well enough to do so after the catheter is removed, your incision is healed, and your urinary control is satisfactory. You will **NOT** be able to father children after this operation.

Postoperative Instructions for Using the Vacuum Erection Device (VED)

With removal of your prostate cancer, a frequent side effect of the surgery is erectile dysfunction or impotence. This side effect occurs in nearly everyone who has had non nerve-sparing surgery and in approximately 50-60% of patients who have had nerve-sparing surgery, with younger patients doing better. Recent clinical research would suggest that even with nerve preservation, a finite period of at least 9 months is usually required for the nerves to recover from the trauma of the surgery. In some cases, this period of nerve recovery or neuropraxia can last up to 2 years.

During this period of nerve recovery, the penis is often inactive and unstimulated since it is not being engorged with blood on a daily basis as it once was before surgery with your nighttime or nocturnal erections. These nocturnal erections help keep the small blood vessels in your penis from scarring, a process referred to as corporeal fibrosis. We feel that keeping these small blood vessels active immediately after surgery is an important aspect of your recovery of erectile function. We would like the penile vasculature or blood supply to be maintained optimally during this period of nerve recovery.

To help maintain the penile blood flow optimally, your doctor may prescribe a vacuum erection device (VED). Your doctor may feel the daily use of this system following radical prostatectomy will enhance or shorten the time needed for recovery of your erectile function. We would like you to familiarize yourself to the use of the VED. You may be asked to use the vacuum therapy system on a daily basis once the Foley catheter is removed postoperatively. This protocol only requires you to engorge the penis, using the vacuum component of the VED, not the constricting bands or rings.

Be sure to ask your doctor or his/her assistants about VED therapy.

Postoperative Routine:

1. With removal of your urethral catheter, which is usually done 14-21 days after surgery, your doctor may like you to begin engorging your penis on a daily basis. The penis should be engorged and the erection maintained for 1-3 minutes before releasing the pressure inside the cylinder. Occasionally, there can be minor bleeding or ecchymosis under the penile skin created from the pressure of the system. If this occurs, stop using the vacuum therapy system for one week and then restart your daily routine.
2. When you are ready to have sexual relations or vaginal intercourse again, you may apply the constrictor bands or rings to the base of the penis and begin sexual intercourse. However, your doctor may prefer that you wait for at least one month following your surgery to begin sexual intercourse again.
3. When you begin having any degree of natural erections or begin experiencing nocturnal erections (erections during sleep), contact your doctor or the nursing coordinator. Your doctor is also interested in knowing when you can achieve vaginal intercourse naturally for the first time.

Skin Care

It is important to try to keep your skin clean and dry to prevent a rash around your scrotum. If you get a rash, use a hair dryer on the cool setting twice a day to keep the area dry. Some people use creams such as Desitin if they get a rash. Because of the antibiotics you are given to prevent urinary infections while the catheter is in place, it is common to get a yeast infection. You may want to use a topical antifungal cream or powder such as Nystatin if you think you are getting a yeast or fungal infection. These infections frequently present as itching or a red rash.

At Home

- You may shower the day after you get home. Avoid tub baths until the catheter is removed.
- It is important to walk several times daily. This prevents blood clots from forming in your legs by keeping the blood circulating. Daily exercise such as walking or climbing stairs carefully will help you recover faster.
- Do no heavy lifting (over 30 pounds) for 6 weeks to allow the incision to heal completely.
- Your incision is closed with staples or dissolving stitches, depending on the preference of the surgeon. If closed with staples, they will need to be removed 1-2 weeks after the operation.
- It is normal to feel fullness or tenderness in the rectal area during bowel movements. This occurs because the prostate used to be in this area, and your body is adapting to the swelling caused by surgery. Any symptoms of urgency or fullness will go away soon after surgery.

Diet and Bowel Function

When you go home, you can eat the foods you normally eat. It is important to avoid constipation. While it is generally acceptable to leave the hospital without having a bowel movement, you should have one within 3 to 5 days after surgery. The narcotic pain pills tend to induce constipation. You will be given a stool softener to take when you leave the hospital, but if you have trouble, you can take a mild laxative such as Milk of Magnesia or Magnesium Citrate. Do not take an enema or put anything in your rectum for at least 4 weeks after surgery.

Fluids

Drink at least 2 quarts of fluid daily. This will help keep your urine clear, and it also helps avoid constipation.

Driving

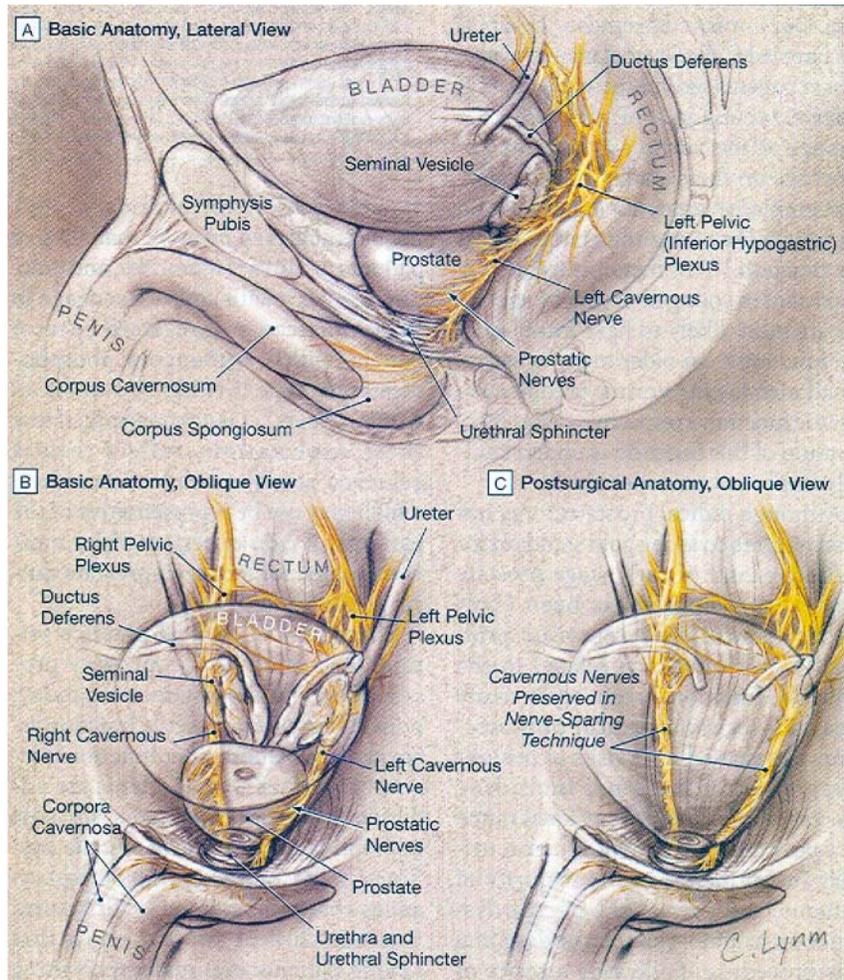
Do **NOT** drive until you have stopped taking narcotic pain medicine. Most surgeons will tell you not to drive until the catheter has been removed.

Work

Some people return to light work as early as 2 weeks after surgery. However, you should plan on being away from work for at least 3 to 4 weeks since people's recovery times vary as do job requirements. In some cases, you may be authorized up to 6 weeks before going back to work.

Follow-ups

After discharge, you may be asked to return in 7 to 14 days for skin incision staple removal. You will also be asked to return to the hospital or your local urologist for catheter removal at 10 days to 3 weeks after the operation. You may be asked to return or to make a telephone call to discuss the pathology report. You will be asked to obtain regular follow-up PSA tests, usually every 3 months in the first year and every 6 months in the next several years. Your doctor will also want to see you regularly to evaluate your progress in urinary control and sexual recovery.



Schematic of the Cavernous Nerves and Their Preservation During Radical Prostatectomy

Call your surgeon if you have...

- **Temperature >100.5° F or higher**
- **Pain not controlled by pain medication**
- **Uncontrolled nausea and vomiting**
- **Swelling in your feet or ankles or tenderness/pain in your calves that does not go away**
- **Constipation that does not respond to laxatives**
- **Wound separation or severe wound redness or drainage**
- **Catheter problems**