

Localized Prostate Cancer: A Patient Guide



Tony's Journey Back to Health: A Patient Story

Tony Crispino was diagnosed with prostate cancer in December 2006, just three days before Christmas. He had no symptoms, but at a routine health exam, his doctor found that his PSA level was 20, quite high. *"At that point we learned that I would need treatments."*

Tony was in luck to find a surgeon skilled in Robotic Surgery. With notice to his age and his wish to remove the tumor, he chose to have a radical prostatectomy. The surgery and radiation were a success, curing Tony. Though Tony faced some lasting side effects from treatment, he now feels healthy and strong. He feels grateful to have had a great healthcare team on his side.

If Tony could offer men in a like place some help, he would tell them to be a patient-patient and to stay positive. Tony clearly feels that making a choice based on knowledge is always better than one based on feelings. Tony believes that this is a reason why he is happy and healthy today.



Introduction: Localized Prostate Cancer

About 1 in 7 men will be diagnosed with prostate cancer in his lifetime or about 160,000 men this year. Prostate cancer is the second-leading cause of cancer death for men in the U.S. The good news is that localized prostate cancer is a curable disease. Most men who are diagnosed early can live long, useful lives.

As men grow older, it is common to have urinary symptoms. Things like a slower urinary stream and more trips to the bathroom could be signs of prostate cancer, or something less serious like prostate enlargement.

Because there are no clear alerts for prostate cancer, tests that find (detect) cancer early are valued by many doctors.

To learn how best to screen for prostate cancer, get diagnosed and grasp treatment options, it helps to start with the basics.

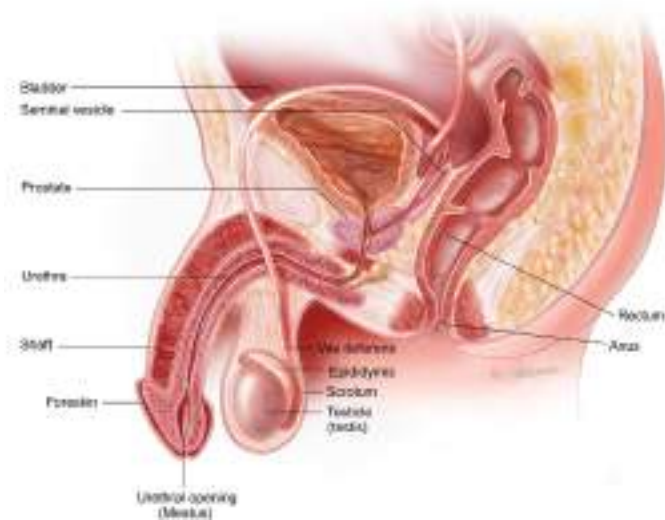
How Does the Prostate Work?

The **prostate** and **seminal vesicles** are part of the male reproductive system. The prostate is about the size of a walnut. The seminal vesicles are two, smaller paired glands attached to each side of the prostate. The prostate sits below the **bladder**, in front of the **rectum**. It goes all the way around the **urethra**, a tiny tube that carries **urine** from the bladder out through the penis.

The main job of the prostate and seminal vesicles is to make fluid for **semen**. During **ejaculation**, **sperm** made in the **testicles** moves to the urethra. At the same time, fluid from the prostate and the seminal vesicles also moves into the urethra. This mixture—semen—goes through the urethra and out of the penis as ejaculate.

When prostate cells grow abnormally, they can form a **tumor** (prostate cancer) in the prostate.

MALE REPRODUCTIVE SYSTEM



What is Localized Prostate Cancer?

Prostate cancer is when abnormal cells form in the prostate gland. Prostate cancer stays “localized” when cancer cells are found only in the prostate. If the cancer moves to other parts of the body, it is much harder to treat and is called “advanced” prostate cancer. Growths in the prostate can be benign (not cancerous) or malignant (cancerous).

Benign growths (such as benign prostatic hypertrophy or BPH):

- Are rarely a threat to life
- Don't invade the **tissues** around them
- Don't spread to other parts of the body
- Can be removed and may grow back very slowly (but often don't grow back)

Malignant growths (prostate cancer):

- May sometimes be a threat to life
- Can invade nearby organs and tissues (such as the bladder or rectum)
- Can spread (metastasize) to other parts of the body (like **lymph nodes** or bone)
- Often can be removed but sometimes grow back

Prostate cancer cells can spread by breaking away from a prostate tumor. They can travel through blood vessels or lymph nodes to reach other parts of the body. After spreading, cancer cells may attach to other tissues and grow to form new tumors, causing harm where they land.

What Causes Prostate Cancer?

Though the cause of prostate cancer is unknown, researchers do know many things that can raise a man's risk for the disease.

- **Age:** As men age, their risk of getting prostate cancer goes up. Harm to the DNA (or genetic material) of prostate cells is more likely for men over the age of 55.
- **Ethnicity:** African American men have, by far, the highest rate of the disease. One in five African American men will be diagnosed. They also tend to be diagnosed when the disease is more advanced.
- **Family History:** Men who have a father or brother with prostate cancer face a two to three times higher risk of also getting the disease. The age when a close family member was diagnosed should also be kept in mind.
- **Smoking:** Studies show prostate cancer risk may double for heavy smokers.
- **Weight:** Obesity (or being very overweight) is linked to greater risk for death from prostate cancer. One way to avoid death from prostate cancer is to lose weight and keep it off.

What are the Signs and Symptoms of Prostate Cancer?

In its early stages, prostate cancer may have no symptoms. When symptoms do occur, they can be urinary symptoms like those of an enlarged prostate or **Benign Prostatic Hyperplasia (BPH)**. Prostate cancer can also cause symptoms unrelated to BPH.

Talk with your healthcare provider if you have any of these symptoms:

- Dull pain in the lower pelvic area

- Frequent urinating
- Trouble urinating, pain, burning or weak urine flow
- Blood in the urine (Hematuria)
- Painful ejaculation
- Pain in the lower back, hips or upper thighs
- Loss of hunger
- Loss of weight
- Bone pain

GET DIAGNOSED

Who Should Get Screened?

"Screening" means testing for a disease even if you have no symptoms. Screening for prostate cancer is urged if you have no symptoms and are a man who is:

- Between 55–69 years old
- African American
- Have a family history of prostate cancer

If you have symptoms, or have close family members who were diagnosed with prostate cancer at a younger age, you should talk with your doctor about getting screened sooner.

How are Men Screened for Prostate Cancer?

PSA BLOOD TEST

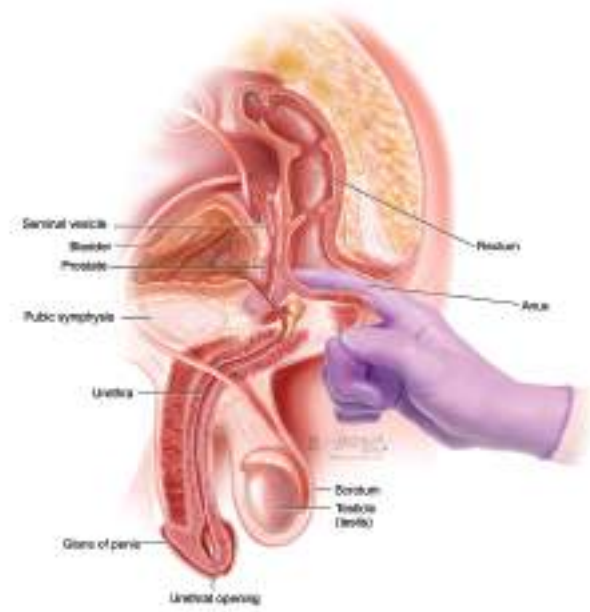
The **prostate-specific antigen (PSA)** blood test is one way to screen for prostate cancer. This blood test measures the level of PSA in the blood. PSA is a protein made only by the prostate gland. The test can be done in a lab, hospital or healthcare provider's office.

A low PSA is a sign of prostate health. A rapid rise in PSA may be a sign that something is wrong. Prostate cancer is the most serious cause of a high PSA result. A high PSA can also be from benign (non-cancer) enlargement of the prostate or **prostatitis**, (inflammation of the prostate). This test may miss cancer (a "false negative"), or spot cancer that is not there (a "false positive"). The PSA might also spot very slow growing cancer that will never cause problems or need treatment.

The PSA test is not used alone to make a diagnosis. Your doctor will also use the DRE test for a better sense of your prostate health.

DRE

Digital Rectal Exam (DRE)



The **digital rectal examination (DRE)** is done to feel for abnormalities. For this exam, the healthcare provider puts a lubricated gloved finger into the rectum. Either the man bends over or lies curled on his side on a table. The healthcare provider will feel the prostate for an abnormal shape or thickness.

DRE is safe and easy, but cannot spot early cancer by itself.

It should be done with a PSA test. Together, the PSA and DRE can help to find prostate cancer early, before it spreads. When found early, it can be treated early which helps stop or slow the spread of cancer. This is likely to help some men live longer.

BIOPSY

If **screening tests** show abnormalities, a prostate **biopsy** is then performed. This is the only way to make an accurate diagnosis. Biopsy is a type of surgery. For a prostate biopsy, tiny pieces of tissue are removed from the prostate and looked at under a microscope. The pathologist is the doctor who will look carefully at the tissue samples to look for cancer cells.

The biopsy is best done with an **ultrasound** and a probe to look at the gland's size and shape at the same time. Antibiotics may be used to prevent infection.

If cancer cells are found, the **pathologist** will assign a "Gleason Score" to each tissue sample. This helps to decide the risk of the disease and make an accurate diagnosis.

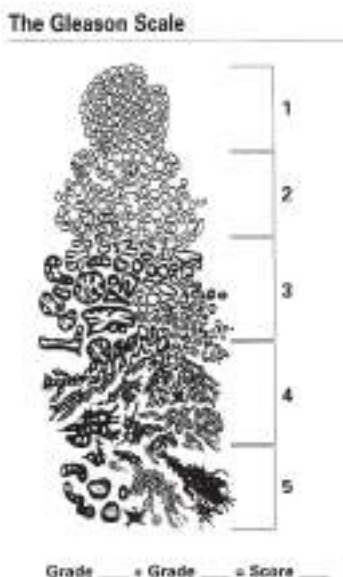
Grading and Staging Prostate Cancer

Grading (with the Gleason Score) and staging defines the progress of cancer. It is a measure of how quickly the cells are likely to grow and how likely they are to spread (how aggressive the cancer is).

GRADING

The **Gleason score** grading system is a way to give each tissue sample a grade between 3 and 5. A grade of less than 3 means the tissue is close to normal. A grade of 3 suggests a slow growing tumor. A high grade of 5 suggests a highly aggressive, high-risk form of prostate cancer.

The Gleason system then develops a "score" by combining the two most common grades found in core biopsy samples. For example, a score of grades



$3 + 3 = 6$ suggests a slow growing cancer. The highest score of grades $5+5 = 10$ means that the cancer is very aggressive.

Often, Gleason scores of 6 are treated as low risk cancers. Gleason scores of around 7 are treated as intermediate level cancers. Gleason scores of 8 and above are treated as high-risk cancers.

STAGING

Tumor stage is also measured with the DRE and special imaging studies. Staging describes where the cancer is within the prostate, how extensive it is and if it has spread to other parts of the body. One can have low stage cancer that is very high risk, for example.

The system used for tumor staging is the **TNM staging system**. TNM stands for Tumor, Nodes and Metastasis. The "T" stage is found by DRE and other imaging tests such as **ultrasound scan, CT scan, MRI scan**. The imaging tests show if and where the cancer has spread, for example to lymph nodes or bone.

Imaging tests for staging are often done for men with a Gleason grade of 7 or higher and a PSA higher than 10. Sometimes more images are needed to measure changes seen on the bone scan.

What are the Survival Rates for Prostate Cancer?

Many men with prostate cancer will not die from it; they will die from other causes. For men who are diagnosed, it is better if it is caught early.

Survival rates for men with prostate cancer have grown over the years, thanks to better testing and treatment options. Today, 99% of men with prostate cancer will live for at least five years after diagnosis. Many men having treatment are cured. Most prostate cancer is slow growing and takes many years to progress. One out of three men will survive after five years, even if the cancer has spread to other parts of the body.

GET TREATED

Some prostate cancers grow so slowly that treatment may not be needed at all. Others grow fast and are life threatening. Deciding what treatment you should get can be complex. Make sure you stay informed and ask questions to help you make the right choice for you.

Your treatment plan will depend on:

- The stage and grade of the cancer (Gleason score and TNM stage)
- Your risk category (whether the cancer is low, intermediate or high risk)
- Your age and health
- Your preferences about side effects, long-term effects and treatment goals
- Results from other diagnostic tests that help your doctor know if the cancer can spread or return after treatment

If you have time before you start treatment, think over your range of choices. Keep in mind how side effects from treatment will change your life now and in the future. Also, keep in mind that you may have to try many things over time. If you can, get a second or third point of view from different prostate cancer experts. You can make a more informed choice after talking with a **urologist**, **oncologist** and/or radiation oncologist.

Think over the skill of your doctor before you start. With more skilled surgeons, the risk of lasting side effects (like incontinence or ED) is lower. Also, it helps to talk with other survivors and learn from their experiences.

You can also use this time to get or stay healthy. Eat a well-balanced diet, keep a healthy weight, exercise and avoid smoking in order to do your best when fighting prostate cancer.

Surveillance

ACTIVE SURVEILLANCE

Active Surveillance is best if you have a small, slow growing (low-risk) cancer. It is good for men who do not have symptoms. If you want to avoid sexual, urinary or bowel side effects for as long as possible, this may be the treatment for you. Active surveillance is mainly used to delay or avoid aggressive therapy. On the other hand, this method may need you to have many biopsies over time to track cancer growth.

Active surveillance lets men keep their quality of life longer

without risking the success of treatment (if and when it's needed). Action is taken only if the disease changes or grows. For many men, they never need treatments that are more aggressive.

WATCHFUL WAITING

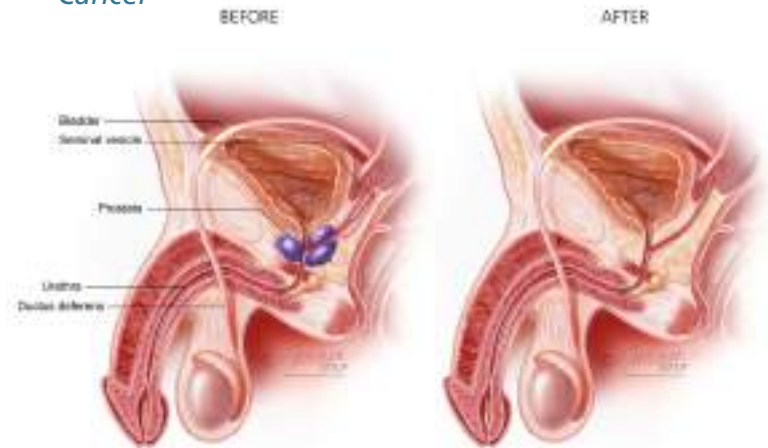
Watchful waiting is a way to track the cancer without treating it. It does not involve routine biopsies or other active surveillance tools. The risk of watchful waiting is that the cancer could grow and spread between follow-up visits. This makes it harder to treat over time.

Watchful waiting is best for men with prostate cancer who do not want or cannot have therapy. It is also good for men who have other health issues that would interfere with more aggressive forms of treatment.

Localized Therapy

SURGERY

Radical Prostatectomy (Surgery) for Prostate Cancer



Before and after radical prostatectomy

A **radical prostatectomy** is the surgical removal of the prostate, seminal vesicles and nearby tissue. Often the lymph nodes in the pelvis that drain from the prostate are also removed. This procedure calls for **anesthesia** and a short hospital stay.

There are four types of radical prostatectomy surgery:

- **Robotic Assisted Laparoscopic Radical Prostatectomy (RALP).** A robotic system is used to remove the prostate through tiny ports placed in your belly. RALP surgery is one of the most common types of prostate surgery today.

- **Retropubic Open Radical Prostatectomy.** Your surgeon will make a cut (incision) in your lower belly and remove the prostate through this hole. This type of surgery lets your doctor get to the prostate gland and nearby tissue. A blood transfusion may be needed.
- **Perineal Open Radical Prostatectomy.** The prostate is removed through a cut between the anus and scrotum. Because the complex pelvic veins are avoided, bleeding is rare.
- **Laparoscopic Radical Prostatectomy.** This surgery uses small surgical tools and a video camera that fit through cuts in the belly to remove the prostate. This surgery has mostly been replaced with robotic assisted laparoscopic surgery.

After surgery, your surgeon will review your healing plan and the final pathology report. As with all surgery, there is risk for bleeding, infection and pain in the short term. The main side effects from this surgery to keep in mind are **erectile dysfunction** (ED) and, urinary incontinence (loss of urine control). You should work with your surgeon to manage side effects and make plans for next steps.

RADIATION THERAPY

Radiation therapy uses high-energy rays to kill or slow the growth of cancer cells. Radiation can be used as the main treatment for prostate cancer (in place of surgery). It can also be used after surgery if the cancer is not fully removed or if it returns. Imaging tests help find the exact place of the tumor.

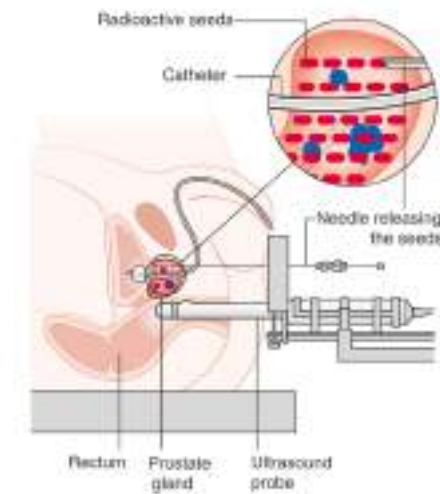
Patient Receiving External Radiation



NIH Medical Arts, National Cancer Institute (NCI)

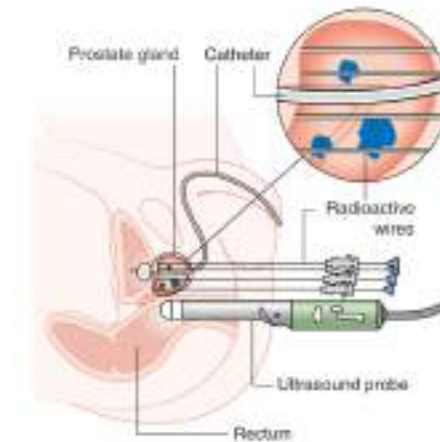
- **External beam radiation therapy (EBRT):** sends a targeted photon beam (x-ray) of radiation from outside the body to the prostate. A small amount of radiation is delivered in daily doses to the prostate for a number of weeks. Your healthcare team will try to limit radiation going to healthy organs like the bladder and rectum. Newer EBRT technology makes three-dimensional images with conformal radiotherapy (3DCRT), Proton Beam Therapy (PBT) or Stereotactic Body Radiation Therapy (SBRT) may also be available (also known by the names of machines like: Gamma Knife®, X-Knife®, CyberKnife® and Clinac®).

Low dose rate (LDR) brachytherapy



Cancer Research UK

High Dose Rate (HDR) Brachytherapy



Cancer Research UK

- **Prostate Brachytherapy (Internal Radiation Therapy):** is radiation treatment targeting the prostate from inside the body. Radioactive material is placed in the prostate using needles or a tube. There are two types of brachytherapy: low dose rate (LDR) brachytherapy and high dose rate (HDR) brachytherapy. Anesthesia and an overnight stay in the hospital are needed for both.

Sometimes radiation therapy is combined with hormone therapy to shrink the prostate before starting. Or, hormone therapy may be combined with external beam therapy to treat intermediate-risk cancers. Common short-term side effects after radiation are incontinence and erectile dysfunction.

CRYOTHERAPY

Cryotherapy or cryoblation for prostate cancer is the controlled freezing of the prostate gland. The freezing kills cancer cells. Special needles called "cryoprobe" are used.

are placed in the prostate under the skin, guided by ultrasound, to direct the freezing process. Cryotherapy is done under general or spinal anesthesia. After cryotherapy, a patient is checked with routine PSA tests and biopsy. ED, incontinence and other urinary or bowel problems may happen as side effects.

HIFU AND FOCAL THERAPY

Focal therapy is a new treatment under study for men with small, localized prostate tumors. With this method, small tumors inside the prostate are targeted and destroyed. This targeted approach leads to less side effects. The FDA has approved this method to kill prostate tissue, but not clearly to treat prostate cancer.

The types of **High-intensity focused ultrasound (HIFU)** and Focal Therapy are:

- **High-intensity focused ultrasound (HIFU)** uses the energy of sound waves to target and superheat the tumor to kill cells (with the help of MRI scans). It can be used for the whole gland.
- **Focal Cryoablation** uses a needle-thin probe to circle the tumor with a special mixture that kills the tumor by freezing it.
- **Irreversible electroporation** uses a “NanoKnife” to pass an electrical current through the tumor. The electricity makes very tiny holes (called pores) in the tumor’s cells leading to cell death.

There are other types in clinical studies.

SYSTEMIC THERAPY

HORMONE THERAPY OR ANDROGEN DEPRIVATION THERAPY (ADT):

Prostate cancer cells use the hormone testosterone to grow. **Hormone therapy** (also known as ADT or androgen deprivation therapy) uses drugs to block or lower testosterone and other male sex hormones that fuel cancer. ADT can slow growth in cancers that are advanced or have come back after first local aggressive therapy. It is also used for a short time during and after radiation therapy.

Hormone therapy is done surgically or with medication:

- **Surgery:** Removes the testicles and glands that make testosterone with a method called an orchiectomy.
- **Medication:** There are varieties of medications that can be used. Two types are used at first. One is the shot of luteinizing hormone releasing hormone (LH-RHs) inhibitors. These are also called either agonists or antagonists. They hold back the body's natural ability to turn on testosterone production. A second type (which is

often given with the first type) is called non-steroidal anti-androgens. These pills block testosterone from working in the testicle and adrenal glands.

Though it causes many side effects, it may be a good choice for men who cannot have or do not want other care. If your cancer is resistant to hormone treatments, chemotherapy may be a choice.

Hormone therapy mostly works for a while (maybe for years) until the cancer “learns” how to bypass this treatment. There are new medications available in recent years that may be used after other hormone therapy fails. This condition is called “castrate resistant prostate cancer” (CRPC). For more information on this, review our Advanced Prostate Cancer website article: www.UrologyHealth.org/urologic-conditions/advanced-prostate-cancer.

CHEMOTHERAPY

Chemotherapy uses drugs to kill cancer cells any place in the body. These drugs are used for advanced stages of prostate cancer, or cancer that has metastasized (spread) into other organs or tissue. The drugs spread in the bloodstream. Because they kill any quickly growing cell, they attack both cancerous cells and non-cancerous ones. Dose and rate are controlled with care to reduce the side effects this may cause. Often, chemotherapy is used with other treatments. It is not the main treatment for prostate cancer patients.

IMMUNOTHERAPY

Immunotherapy is a treatment that can stimulate your body’s immune system to find and attack cancer cells. There are many approaches in clinical studies, not yet approved for routine use. Provenge® is one type of immunotherapy that is FDA approved to treat prostate cancer. For this treatment, the health team must remove immature immune cells from the man with advanced prostate cancer. Next, the cells are re-engineered to spot and attack prostate cancer cells, and then put back into the body.

CLINICAL TRIALS

Clinical trials are research studies to test if a new treatment or procedure is safe, useful and maybe better than other choices. The goal is to learn which treatments work best for certain sickness or groups of people.

Clinical trials follow strict scientific standards. These standards help protect patients and produce more reliable study results.

Ask your doctor if you can get a prostate cancer trial. Learn as much as you can about the benefits and risks of the study. To search for data on current clinical trials, visit the UrologyHealth.org Clinical Trials Resource Center - you may also visit the National Institutes of Health website: www.clinicaltrials.gov

AFTER TREATMENT

Prostate cancer can be managed if caught early and treated appropriately. Each year, more men are surviving prostate cancer and winning back their lives.

Once you have finished treatment, you will have to manage treatment side effects. You will also make a long-term plan with your doctor for future tests.

Erectile Dysfunction (ED)

After surgery or radiation treatment, many men have erectile dysfunction (ED). ED is when a man cannot keep an erection long enough for sexual satisfaction. Your doctor can help you know why blood flow or nerve signals are blocked and offer aids that could help you get better.

Treatments to help with ED are oral pills, vacuum pumps, urethral suppositories, penile shots and penile implants. For some men, mild workout and keeping a healthy weight will help with ED. A healthcare provider can help you decide the best treatments to try. If the nerves to the penis were spared, a man's ability to hold an erection will often return over time (on average, between 4-24 months). Even with no erection, or a weak erection, men can orgasm.

Incontinence

After prostate cancer surgery or radiation, you may experience a loss of urine control:

- **Stress Incontinence (SUI):** urine leaks when coughing, laughing, sneezing or exercising
- **Overactive Bladder (OAB) or Urge Incontinence:** the sudden need to go to the bathroom even when the

bladder is not full because the bladder is overly sensitive

- **Mixed Incontinence:** a mixture, with traits from both types

Short-term incontinence after surgery is common. If you have SUI, you may only need to wear a pad for a few weeks to months. Most often incontinence does not last long and urinary control will return. Still, it can last as long as six to twelve months.

Physical therapy focused on the pelvic floor muscles may help you get better bladder control sooner. Your healthcare provider can write a prescription for Kegel therapy. There are also medications and other choices that may also help.

Long-term (after 1 year) incontinence is rare. It happens in less than 5–10 percent of all surgical cases. When it does happen, there are ways to solve the problem.

Emotional Stress

After treatment, some men feel thrilled. Many men may still feel nervous and unsure as they worry about cancer coming back (**recurrence**). Prostate cancer may return. If the cancer returns, you and your doctor will talk about next steps and make a plan.

Whatever you're feeling, it's worth telling your healthcare provider about it. Cancer is always stressful and a trained counselor can help you manage your emotional health.

QUESTIONS TO ASK YOUR DOCTOR

If you had a biopsy and were told that you had prostate cancer, you will face choices about what to do about it. A diagnosis of prostate cancer can bring about a feeling of doubt about how to decide about care. Most patients choose to talk with their doctors before making a choice. Even if you have done a lot of research on your own, sitting down with your doctor can help you sort out your knowledge and your thinking. Having your partner involved is of great value as well because your partner can help you listen, ask questions and talk about choices.

Some doctors may direct you to use an aid, a booklet or an online tool that helps you sort out how your diagnosis, your choices and your partners' choices line up to help you make a healthcare plan. You can then be ready for your talk with your doctor. No matter if you got help or have just done your own thinking, here are some samples of questions you might ask when you see your doctor:

Questions to Ask About a Prostate Cancer Diagnosis:

- ☐ Can you explain what kind of prostate cancer I have – how aggressive is it, does it look like it is just inside the prostate or does it look like it has spread outside the prostate?
- ☐ Do I need any other tests to help me decide what treatment I need?
- ☐ Can you explain what my PSA and Gleason numbers mean?

Questions to Ask About Treatment:

- ☐ Can you explain my treatment choices?
- ☐ What are the pros and cons of each?
- ☐ What is the likely survival with each treatment?
- ☐ What are the likely problems right after each treatment?
- ☐ Can you explain the side effects of each treatment – do they get better over time?
- ☐ How will each treatment affect me in terms of length of healing, time out of work and care at home?
- ☐ Does my insurance cover my treatment options?
- ☐ Is there an aid that you could point me to that would help me think over my choices?

Other Experts and Second Opinions

- If you have localized prostate cancer, which means that it is only inside the prostate and has not spread, you may have a number of choices for treatment. Many experts may help. A urologist will perform a surgery and a radiation oncologist can suggest many kinds of radiation treatments.
- If your cancer has spread to other parts of your body, you may need to talk to a medical oncologist.
- Your doctor can help you find the experts so that you can have a talk with them about the care they give. Refer to the questions above when seeking their help.
- It is quite normal to want to have a second opinion. You can ask your doctor to suggest someone. Often, doctors are quite comfortable making such a referral. If you do not feel comfortable asking your cancer doctor, ask your primary doctor for a referral.