PROSTATE CANCER

Advanced Prostate Cancer Patient Guide

Urology Care FOUNDATION™
The Official Foundation of the American Urological Association

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Urology Care Foundation Prostate Health Committee

Patient Story

When I was 55 years old, I had a slightly elevated prostate-specific antigen (PSA) of a little over 5. I went ahead and had a biopsy. The biopsy came back negative. I assumed I was fine; I felt fine. I stayed fit and ran 15-20 miles a week. After a few years, my wife, a nurse, would say, "You have to go and get yourself tested." Finally at 60, she said "Phil, get a physical!" I did. The PSA level was up to 30. The most recent biopsy said I had advanced stage prostate cancer with a Gleason score of 10. I was still running daily and had no sense that I had cancer.

It was really tough to figure out what to do. I felt my choices were limited because the cancer was so advanced. When I look back now, I wish I did not wait so long to be tested again. We have to be our own advocates. We have to be reminded that bad stuff can happen if we do not keep tabs on our health.

When diagnosed with advanced cancer, I was fearful of the unknown. What helped me most was to learn everything I could about my options. I began to learn what I could do and what to expect, and it helped. By learning everything I could, it helped me make treatment decisions along with my doctor. I asked a lot of questions.

Whether we are talking with a surgeon or radiation oncologist, men should not be afraid to ask questions and get second opinions. We must learn everything we can about treating prostate cancer and about the side effects of treatment.

It was tough when I had to deal with the side effects men really fear, like impotence and incontinence. Fortunately, I had surgeries to correct these problems. I am not the same

as I was before, but I am alive and well. I have learned to accept, appreciate and deal with my own situation.

Find someone to talk with. I work as a prostate cancer recovery coach. I help men newly diagnosed talk through what to expect. I like to help others because, for me, it helped to be able to talk to someone else who had been there. I also recommend going to support groups. You have to be open to talking about what you are going through. Men can feel better after talking to someone else who has been there.

Introduction

Prostate Cancer is the second most common cancer in men in the United States. About one in nine men will be diagnosed with prostate cancer during their lifetime. Prostate cancer is more likely to develop in older men and in African American men. Learning you have advanced prostate cancer may be unsettling. You may have a lot to think about, including treatment choices and your future.

You are not alone during your advanced prostate cancer journey. Your journey may include a team with a primary care physician, oncologist, urologist, pharmacist, social worker and other health care providers, as well as your family and friends.

Many men may also work with nurse navigators, also known as patient navigators. These health care professionals help a person with cancer "navigate" the hospital and human services that come along with a cancer diagnosis. This may include assisting with decision-making, coordinating services and advocating for the patient with the other members of the health care team. Navigators strive to identify the barriers and eliminate them to help the patient avoid delays in treatment.

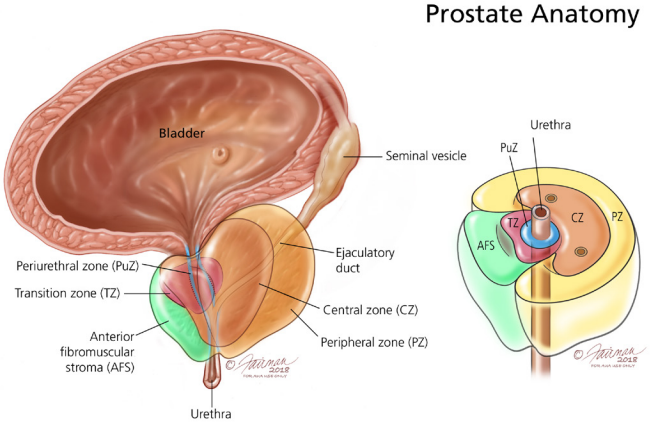
Learning about your prostate, prostate cancer, tests, treatments and side effects may help you during this journey. Your treatment choices should be based on your personal health and age and should be fully discussed with your health care team. In this patient guide, we provide you with information about advanced prostate cancer to help you during your prostate cancer journey.

What Is the Prostate?

The ***prostate**** gland is part of the male reproductive system. The prostate's main job is to make fluid for ***semen***. It is about the size of a walnut and weighs an ounce or so. It sits below the ***bladder*** and in front of the ***rectum***. It goes around a tube called the ***urethra***. The urethra carries urine from the bladder out through the ***penis***.

During ***ejaculation***, ***sperm*** made in the ***testicles*** moves to the urethra. While the sperm moves through the urethra, fluid from the prostate and the ***seminal vesicles*** mixes with the sperm. This mixture—semen—goes through the urethra and out of the penis.

Prostate Anatomy



What Is Prostate Cancer?

Cancer is the result of abnormal cell growth that takes over the body's normal cell function, making it harder for the body to work the way it should. Prostate cancer develops when abnormal cells form and grow in the prostate gland. Not all abnormal growths, also called ***tumors***, are cancerous (malignant). Some tumors are not cancerous (benign).

- **Benign growth**, such as ***benign prostatic hyperplasia*** (BPH), is not life-threatening and does not spread to nearby ***tissue*** or other parts of the body.
- **Cancerous growth**, such as prostate cancer, can spread (metastasize) to nearby organs and tissues such as the bladder or rectum, or to other parts of the body. If the abnormal growth is removed, it can still grow back. Prostate cancer can be life-threatening if it spreads well beyond the prostate (***metastatic*** disease).

Prostate cancer cells spread when they break away from a prostate tumor. They can travel through blood or ***lymph nodes*** to reach other parts of the body. After spreading, cancer cells may attach to other tissues. They can form new tumors that may damage those tissues.

When prostate cancer spreads to another part of the body, the new growth has the same type of cells. For example, if prostate cancer spreads to the bones, the cancer cells found there are still prostate cancer cells. For this reason, the disease is called "metastatic prostate cancer" and not bone cancer. It is treated as prostate cancer, no matter where it is found.

What Is Advanced Prostate Cancer?

When prostate cancer spreads beyond the prostate or returns after treatment, it is often called advanced prostate cancer. Prostate cancer is often grouped into four stages, with stages III and IV being more advanced prostate cancer.

Stages of Prostate Cancer

- **Early Stage | Stages I & II:** The tumor has not spread beyond the prostate.
- **Locally Advanced | Stage III:** Cancer has spread outside the prostate but only to nearby tissues.
- **Advanced | Stage IV:** Cancer has spread outside the prostate to other parts such as the lymph nodes, bones, liver or lungs.

When an early stage prostate cancer is found, it may be treated or placed on surveillance (watching closely). Advanced prostate cancer is not "curable," but there are many ways to treat it. Treatment can help slow advanced prostate cancer progression.

There are several types of advanced prostate cancer:

Biochemical Recurrence

With ***biochemical recurrence***, the ***prostate-specific antigen (PSA)*** level has risen after treatment(s) using surgery or radiation, with no other sign of cancer.

Castration-Resistant Prostate Cancer (CRPC)

Castration-resistant prostate cancer (CRPC) is a form of advanced prostate cancer. CRPC means the prostate cancer is growing or spreading even though testosterone levels are low from ***hormone therapy***. Hormone therapy is also called testosterone depleting therapy or androgen deprivation

**** All words that appear in blue Italics are explained in the glossary.***

treatment (ADT) and can help lower your natural testosterone level. It is given through medicine or surgery to most men with prostate cancer to reduce the testosterone "fuel" that makes this cancer grow. That fuel includes male hormones or androgens (like testosterone). Typically, prostate cancer growth slows down with hormone therapy, at least for some time. If the cancer cells begin to "outsmart" hormone treatment, they can grow even without testosterone. If this happens, the prostate cancer is considered CRPC.

Non-Metastatic Castration-Resistant Prostate Cancer (nmCRPC)

Prostate cancer that no longer responds to hormone treatment and is only found in the prostate. This is found by a rise in the PSA level, while the testosterone level stays low. Imaging tests do not show signs the cancer has spread.

Metastatic Prostate Cancer

Cancer cells have spread beyond the prostate. Cancer spread may be seen on imaging studies and may show the cancer has spread. Prostate cancer is metastatic if it has spread to these areas:

- Lymph nodes outside the ***pelvis***
- Bones
- Other organs, such as the liver or lungs

You may be diagnosed with metastatic prostate cancer when you are first diagnosed, after having completed your first treatment or even many years later. It is uncommon to be diagnosed with metastatic prostate cancer on first diagnosis, but it does happen.

Metastatic Hormone-Sensitive Prostate Cancer (mHSPC)

Metastatic hormone-sensitive prostate cancer (mHSPC) is when cancer has spread past the prostate into the body and is responsive to hormone therapy or the patient has not yet had hormone therapy. This means that levels of male sex hormones, including androgens like testosterone, can be reduced to slow cancer growth. Unchecked, these male sex hormones "feed" the prostate cancer cells to let them grow. Hormone therapy, like ADT, may be used to reduce the levels of these hormones.

Metastatic Castration-Resistant Prostate Cancer (mCRPC)

Metastatic castration-resistant prostate cancer is when cancer has spread past the prostate into the body and it is able to grow and spread even after treatments were used to lower testosterone levels. The PSA levels keep rising and metastatic spots are present/growing. This is disease progression despite medical or surgical castration.

Signs and Risk Factors of Advanced Prostate Cancer

Signs

Men with advanced prostate cancer may or may not have any signs of sickness. Symptoms depend on the size of the new growth and where the cancer has spread in the body. With advanced disease, mainly if you have not had treatment to the prostate itself, you may have problems passing urine or see blood in your urine. Some men may feel tired, weak or lose weight. When prostate cancer spreads to bones, you may have bone pain. Tell your doctor and nurse about any pain or other symptoms you feel. There are treatments that may help.

Risks

Your risks for prostate cancer rise if you are age 65 or older, have a family history of prostate cancer, are African American or have inherited mutations of the *BRCA1* or *BRCA2* genes.

- **Age:** For all men, prostate cancer risk increases with age. About 6 in 10 cases of prostate cancer are found in men older than 65. Prostate cancer is rare in men under the age of 40.
- **Race/ethnicity:** African American men and Caribbean men of African ancestry face a higher risk for being diagnosed with prostate cancer. They are also more likely to be diagnosed with prostate cancer at younger ages. It is not clear why prostate cancer affects African American men more than other racial/ethnic groups.
- **Genetic Factors:** The risk of prostate cancer more than doubles in men with a family history of prostate cancer in their grandfathers, fathers or brothers. Having family members with breast and ovarian cancer also raises a man's risk for prostate cancer. That is because breast, ovarian and prostate cancers share some of the same genes, including *BRCA1* and *BRCA2*. If a person has any of these mutations, they should be screened earlier or more often for prostate cancer. As a health care tool, genetic test results can help determine whether a certain treatment would be helpful. For example, men with an inherited poly-(ADP)-ribose polymerase (PARP) mutation in the DNA of cancer cells could be helped with a PARP inhibitor. This targeted therapy inhibits the PARP mutation and helps stop it from repairing cancer cells. Your doctor may suggest genetic testing because of family history or because you have an aggressive prostate cancer. Genetic testing looks for certain inherited changes

(mutations) in a person's genes and can help find out if a cancer is hereditary. To find out if you have a genetic mutation linked to prostate cancer, you may take a simple blood or saliva test.

GET DIAGNOSED

Advanced cancer may be found before, at the same time or later than the main tumor. Most men diagnosed with advanced prostate cancer have had ***biopsy*** and treatment in the past. When a new tumor is found in someone who has been treated for cancer in the past, usually cancer has spread. Even if you have already been diagnosed with prostate cancer, your health care provider may want to observe changes over time. The following tests are used to diagnose and track prostate cancer.

Blood Tests

The PSA blood test measures a protein in your blood called the prostate-specific antigen (PSA). Only the prostate and prostate cancers make PSA. Results for this test are usually shared as nanograms of PSA per milliliter (ng/mL) of blood. The PSA test is used to look for changes to the way your prostate produces PSA. It is used to stage cancer, plan treatment and track how well treatment is going. A rapid rise in PSA may be a sign something is wrong. In addition, your doctor may want to test the level of testosterone in your blood.

Digital Rectal Exam

The ***digital rectal exam*** (DRE) is a physical exam used to help your doctor feel for changes in your prostate. This test is also used to screen for and stage cancer or track how well treatment is going. During this test, the doctor feels for an abnormal shape, consistency, nodularity or thickness to the prostate gland. The DRE is often done together with the PSA. For this exam, the health care provider puts a lubricated gloved finger into the rectum.

Imaging and Scans

Imaging helps doctors learn more about your cancer. Some types are:

- **Magnetic resonance imaging (MRI):** An ***MRI scan*** can give a very clear picture of the prostate and show if the cancer has spread into the seminal vesicles or nearby tissue. A contrast dye is often injected into a vein before the scan to see details. MRI scans use radio waves and strong magnets instead of ***x-rays***.
- **Computed tomography (CT) scan:** The ***CT scan*** is used to see cross-sectional views of tissue and organs. It combines x-rays and computer calculations for detailed images from different angles. It can show solid versus liquid structures, so it is used to diagnose masses in the ***urinary tract***. CT scans are not always as useful as MRI to see the prostate gland itself but are very good at evaluating surrounding tissues and structures.
- **Positron emission tomography (PET) scan:** The ***PET scan*** may help your doctor better see where and how much the cancer is growing. A special drug (called a tracer) is given through your vein, or you may inhale or swallow the drug. Your cells will pick up the tracer as it passes through your body. The scanner allows your doctor to better see where and how much the cancer is growing.
- **Bone scan:** A bone scan can help show if cancer has reached the bones. If prostate cancer spreads to distant sites, it often goes to the bones first. In these studies, a radionuclide dye is injected into the body. Over a few hours, images are taken of the bones. The dye helps to make images of cancer show up more clearly.

Biopsy

Men diagnosed with advanced prostate cancer from the beginning may start with a prostate biopsy. It is also used to grade and stage the cancer. Most men diagnosed with advanced prostate cancer have had a prostate biopsy in the past. When a new tumor is found in someone who has been treated before, it is usually cancer that has spread.

A biopsy is a tissue sample taken from your prostate or other organs to look for cancer cells. There are many approaches to prostate biopsies. These can be done through a probe placed in the rectum, through the skin of the perineum (between the scrotum and rectum), and may use a specialized imaging device, such as MRI. The biopsy removes small pieces of tissue for review under a microscope. The biopsy takes 10 to 20 minutes. A ***pathologist*** (a doctor who classifies disease) looks for cancer cells within the samples. If cancer is seen, the pathologist will "grade" the tumor.

Staging and Grading

Prostate cancer is grouped into four stages. The stages are defined by how much and how quickly the cancer cells are growing. The stages are defined by the ***Gleason Score*** and the T (tumor), N (node), M (metastasis) Score.

Gleason Score

If a biopsy results in cancer, the pathologist gives it a grade. The most common grading system is called the Gleason grading system. The Gleason score is a measure of how quickly the cancer cells can grow and affect other tissue. Biopsy samples are taken from the prostate and given a Gleason grade by a pathologist. Lower grades are given to samples with small, closely packed cells. Higher grades are given to samples with more spread out cells. The Gleason score is set by adding together the two most common grades found in a biopsy sample.

The Gleason score will help your doctor understand if the cancer is a low-, intermediate- or high-risk disease. The risk assessment is the risk of ***recurrence*** after treatment. Generally, Gleason scores of 6 are treated as low-risk cancers. Gleason scores of around 7 are treated as intermediate/mid-level cancers. Gleason scores of 8 and above are treated as high-risk cancers. Some of these high-risk tumors may have already spread by the time they are found.

Staging

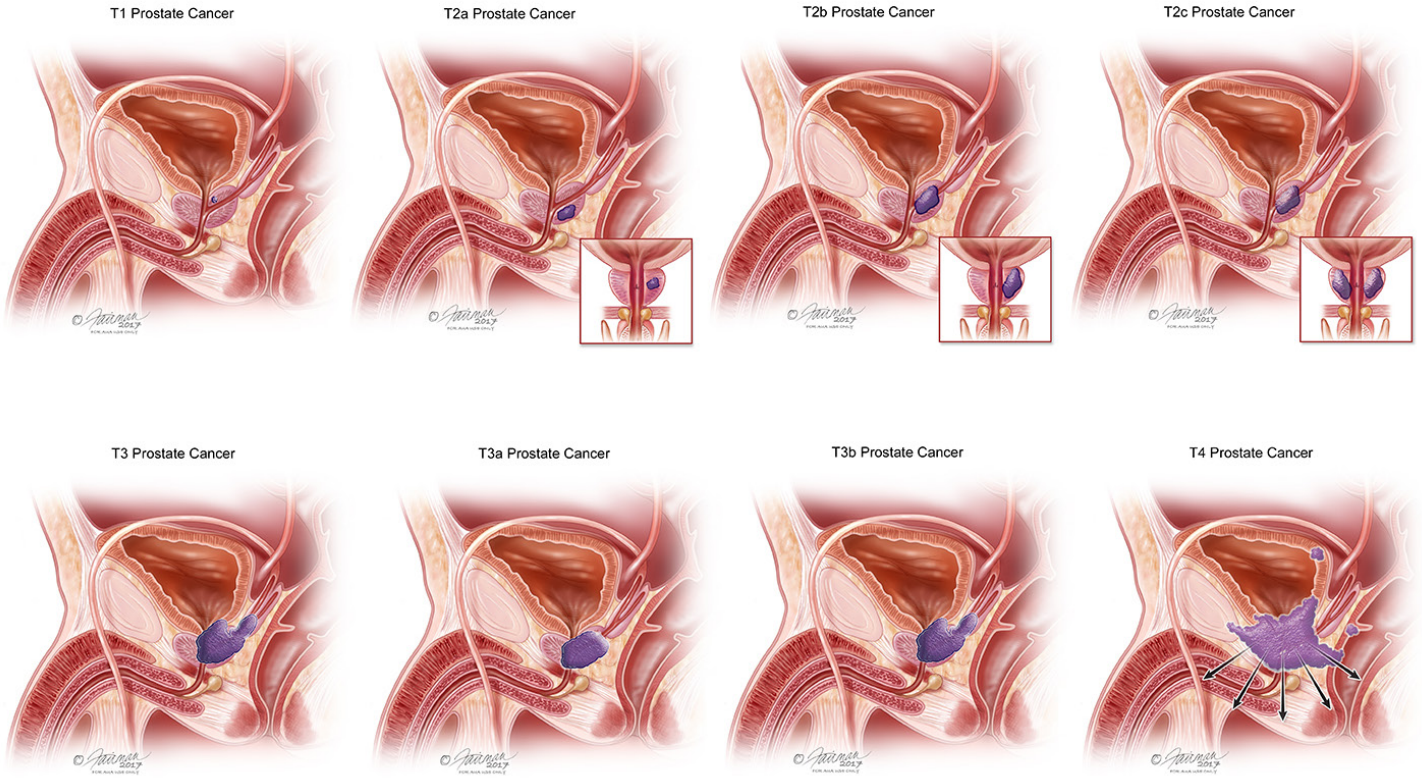
Tumor, Nodes and Metastasis (TNM) staging system is the system used for tumor staging. The T, N, M Score is a measure of how far the prostate cancer has spread in the body. The T (tumor) score rates the size and extent of the original tumor. The N (nodes) score rates whether the cancer has spread into nearby lymph nodes. The M (metastasis) score rates whether the cancer has spread to distant sites.

Tumors found only in the prostate are more successfully treated than those that have metastasized (spread) outside the prostate. Tumors that have metastasized are incurable and require drug-based therapies to treat the whole body.

Prostate Cancer Stage Groupings

Prostate cancer is staged as:

- T1: Health care provider cannot feel the tumor
- T1a: Cancer present in less than 5% of the tissue removed and low grade (Gleason less than 6)
- T1b: Cancer present in more than 5% of the tissue removed or is of a higher grade (Gleason greater than 6)
- T1c: Cancer found by needle biopsy done because of a high PSA
- T2: Health care provider can feel the tumor with a DRE but the tumor is confined to the prostate
- T2a: Cancer found in one half or less of one side (left or right) of the prostate



- T2b: Cancer found in more than half of one side (left or right) of the prostate
- T2c: Cancer found in both sides of the prostate
- T3: Cancer has begun to spread outside the prostate and may involve the seminal vesicles
- T3a: Cancer extends outside the prostate but not to the seminal vesicles
- T3b: Cancer has spread to the seminal vesicles
- T4: Cancer has spread to nearby organs
- N0: There is no sign of the cancer moving to the lymph nodes in the area of the prostate (becomes N1 if cancer has spread to lymph nodes)
- M0: There is no sign of tumor metastasis (becomes M1 if cancer has spread to other parts of the body)

GET TREATED

The goal of advanced prostate cancer treatment is to shrink or control tumor growth and control symptoms. There are many treatment choices for advanced prostate cancer. Which treatment to use, and when, will depend on discussions with your doctor. It is best to talk to your doctor about how to handle side effects before you choose a plan.

Hormone Therapy

Hormone therapy is a treatment that can help lower a man's testosterone, or hormone, levels. This therapy is also called androgen deprivation therapy (ADT). Testosterone, an important male sex hormone, is the main fuel for prostate cancer cells, so reducing its levels may slow the growth of those cells. Hormone therapy may help slow prostate cancer growth in men when prostate cancer has metastasized (spread) away from the prostate or returned after other treatments. Some treatments may be used to shrink or control a local tumor that has not spread.

There are several types of hormone therapy for prostate cancer treatment, including medications and surgery. Your doctor may prescribe a variety of therapies over time.

Hormone Therapy with Surgery

Surgery to remove the testicles for hormone therapy is called ***orchiectomy*** or castration. When the testicles are removed, it stops the body from making the hormones that fuel prostate cancer. It is rarely used as a treatment choice in the United States. Men who choose this therapy want a one-time surgical treatment. They must be willing to have their testicles permanently removed and must be healthy enough to have surgery.

This surgery allows the patient to go home the same day. The surgeon makes a small cut in the scrotum (sac that holds the testicles). The testicles are detached from blood vessels and removed. The vas deferens (tube that carries sperm to the prostate before ejaculation) is detached. Then the sac is sewn up.

There are potential benefits to undergoing orchiectomy to treat advanced prostate cancer. It is simple and has few risks. It only needs to be performed once. It is effective right away. Testosterone levels drop dramatically.

Side effects to your body may include infection and bleeding. Removing the testicles means the body stops making testosterone, so there is also a chance of the side effects listed below for hormone therapy. Other side effects of this surgery may be about body image due to the look of the genital area after surgery. Some men choose to have artificial testicles or saline implants placed in the scrotum to help the scrotum look the same as before surgery. Some men choose another surgery called subcapsular orchiectomy. This removes the glands inside the testicles, but it leaves the testicles themselves, so the scrotum looks normal.

Hormone Therapy with Medications

There are different types of hormone therapies available as injections or as pills that can be taken by mouth. Some of these therapies help stop the body from producing luteinizing hormone-releasing hormone (LHRH, also called gonadotrophin releasing hormone, or GnRH). LHRH triggers the body to make testosterone. Other therapies help stop prostate cells from being affected by testosterone by inhibiting hormone receptors. Sometimes, after the first shot, a blood test is done to check testosterone levels. You may also have tests to monitor your bone density during treatment.

With LHRH treatment there is no need for surgery. Candidates for this treatment include men who cannot or do not wish to have surgery to remove their testicles.

There are different types of medical hormone therapy your doctor could prescribe to lower your body's production of testosterone. After your testosterone levels drop to a very low level, you are at "castration level." Once testosterone levels drop, prostate cancer cells may decrease in growth and proliferation.

Types of Medications

- **Agonists (analogs)**

  LHRH/GnRH agonists are drugs that lower testosterone levels. They may be used for cancer that has come back, whether or not it has spread.

  When first given, agonists cause the body to produce a burst of testosterone (called a "flare"). Agonists are longer acting than natural LHRH. After the initial flare, the drug tricks your brain into thinking it does not need to produce LHRH/GnRH because it has enough. As a result, the testicles are not stimulated to produce testosterone.

  LHRH or GnRH agonists are given as shots or as small pellets placed under the skin. Based on the drug used, they could be given from once every one, three or six months.

- **Antagonists**

  These drugs also lower testosterone. Instead of flooding the pituitary gland with LHRH, they help stop LHRH from binding to receptors. There is no testosterone flare with an LHRH/GnRH antagonist because the body does not get the signal to produce testosterone.

  Antagonists may be taken by mouth or injected (shot) under the skin, in the buttocks or ***abdomen***. The shot is given in the health care provider's office. You will likely stay in the office a while after the shot to ensure you do not have an allergic reaction. After the first shot, a blood test makes sure testosterone levels have dropped. You may also have tests to monitor bone density.

- **Antiandrogen drugs**

  Antiandrogen drugs are taken as a pill by mouth. This therapy depends partly on where the cancer has spread and its effects.

  This treatment lowers testosterone by inhibiting the androgen receptors in the prostate cancer cells. Normally, testosterone would bind with these receptors to fuel growth of prostate cancer cells. With the receptors inhibited, testosterone cannot "feed" the prostate. Using certain antiandrogens a few weeks before, or during, LHRH therapy may reduce flare-ups. Antiandrogens may also be used after surgery or castration when hormone therapy stops working.

- **CAB (combined androgen reducing treatment, with antiandrogens)**

  This method blends castration (by surgery or with the drugs described above) and antiandrogen drugs. The treatment reduces production of testosterone and can help stop it from binding to cancer cells.

  Surgery or taking oral drugs may be ways to lower the testosterone made by your testicles. The rest of the testosterone is made by the adrenal glands. Antiandrogen therapy blocks testosterone made by the adrenal glands.

- **Androgen synthesis inhibitors**

  These drugs help stop other parts of your body (and the cancer itself) from making more testosterone and its metabolites. Men newly diagnosed with metastatic hormone sensitive prostate cancer (mHSPC) or men with metastatic castration-resistant prostate cancer (mCRPC) may be candidates for this therapy.

  Androgen synthesis inhibitors may be taken by mouth as a pill. This drug helps stop your body from releasing the enzyme needed to make androgens in the adrenal glands, testicles and prostate tissue, resulting in reduced levels of testosterone and other androgens. Because of the way it works, this drug must be taken with an oral steroid.

- **Androgen receptor binding inhibitors**

  These drugs block testosterone from linking to prostate cancer cells (like antiandrogens). These drugs may be used in men with advanced prostate cancer.

  Androgen receptor binding inhibitors are taken by mouth as pills. You do not need to take a steroid with this type of drug. This type of drug inhibits the androgen receptor at multiple sites to slow down the growth of cancer cells. These drugs may slow down the spread of cancer.

Hormone Therapy Side Effects

Unfortunately, hormone therapy may not work forever, and it does not cure the cancer. Over time, the cancer may grow in spite of the low hormone level. Other treatments may also be needed to manage the cancer.

Hormone therapies have many possible side effects. Learn what they are. Intermittent (not constant) hormone therapy may also be a treatment option. Before starting any type of hormone therapy, talk with your health care provider.

Possible hormone therapy side effects include:

- **Lower libido** (sexual desire) in most men
- **Erectile dysfunction,** the inability to have or keep an erection strong enough for sex
- **Hot flashes** or sudden spread of warmth to the face, neck and upper body, heavy sweating
- **Weight gain** of 10 to 15 pounds. Dieting, eating fewer processed foods and exercising may reduce weight gain
- **Mood swings**
- **Depression** to include feeling loss of hope, loss of interest in enjoyable activities, not being able to concentrate or changes in appetite and sleeping
- **Fatigue** (feeling tired) that doesn't go away with rest or sleep
- **Anemia** (low red blood cell count) due to less oxygen getting to tissues and organs, causing tiredness or weakness

- **Loss of muscle mass** causing weakness or low strength
- **Weak bones** (loss of bone mineral density) or bones getting thinner, brittle and easier to break
- **Memory loss**
- **High cholesterol**, especially LDL ("bad") cholesterol
- **Breast nipple tenderness** or increased breast tissue growth
- **Increased risk of diabetes**
- **May increase cardiovascular risk**

There are benefits and risks to each type of hormone therapy, so ask questions of your doctor so you understand what is best for you.

Chemotherapy

Chemotherapy drugs can slow the growth of cancer. These drugs may reduce symptoms and extend life. Or they may ease pain and symptoms by shrinking tumors. Chemotherapy is a treatment option for men whose cancer has spread to other parts of the body.

Most chemotherapy drugs are given through a vein (intravenous, IV). During chemotherapy, the drugs move throughout the body. They kill quickly growing cancer cells and non-cancer cells. Often, chemotherapy is not the main therapy for prostate cancer. But it may be a treatment option for men whose cancer has spread. Chemotherapy may be given before pain starts to prevent pain as cancer spreads to bones and other sites.

Side effects may include hair loss, fatigue, nausea and vomiting. There may be changes in your sense of taste and touch. You may be more prone to infections. You may experience neuropathy (tingling or numbness in the hands and feet). Due to the side effects from chemotherapy, the decision to use these drugs may be based on:

- Your health and how well you can tolerate the drug
- What other treatments you have tried
- If ***radiation*** is needed to relieve pain quickly
- What other treatments or clinical trials are available
- Your treatment goals

If you use chemotherapy, your health care team may watch you closely to manage side effects. There are medicines to help with side effects like nausea. Most side effects stop once chemotherapy ends.

Immunotherapy

Immunotherapy uses the body's immune system to fight cancer. It may be a choice for men with mCRPC who have no symptoms or only mild symptoms.

If the cancer returns and spreads, your doctor may offer a cancer vaccine to boost your immune system so it can attack the cancer cells. Immunotherapy may be given to mCRPC patients before chemotherapy, or it may be used along with chemotherapy.

Side effects are often experienced in the first 24 hours after treatment and may include fever, chills, weakness, headache, nausea, vomiting and diarrhea. Patients may also have low blood pressure and rashes.

Combination Therapy

There are also many drug combinations for patients with mCRPC. Your doctor may suggest some combination of the options above based on your symptoms.

Bone-Targeted Therapy

Bone-targeted therapy may help men with prostate cancer that has spread to the bones as they may get "skeletal-related events" (SREs). SREs include fractures, pain and other problems. If you have advanced prostate cancer or are taking hormone therapy, your provider may suggest calcium, vitamin D or other drugs for your bones. These drugs may stop the cancer, reduce SREs and help prevent pain and weakness from cancer growing in your bones.

Radiopharmaceuticals are drugs with radioactivity. They can be used to help with bone pain from metastatic cancer. Some may also be used for men whose mCRPC has spread to their bones. They may be offered when ADT is not working. Radiopharmaceuticals give off small amounts of radiation that go to the exact parts where cancer cells are growing.

Drugs used to reduce SREs may help reduce bone turnover. Side effects include low calcium, worsening kidney function and, rarely, destruction of the jawbone.

Calcium and vitamin D are also used to help protect your bones. They are often recommended for men on hormone therapy to treat prostate cancer.

Radiation

Radiation uses high-energy beams to kill tumors. Prostate cancer often spreads to the bones. Radiation can help ease pain or prevent fractures caused by cancer spreading to the bone.

There are many types of radiation treatments. Radiation may be given once or over several visits. The treatment is like having an x-ray. It uses high-energy beams to kill tumors. Some radiation techniques focus on saving nearby healthy tissue. Computers and software allow better planning and targeting of radiation doses. They target the radiation to pinpoint where it is needed.

Active Surveillance

Active surveillance is mainly used to delay or avoid aggressive therapy. It is often used if you have a small, slow-growing cancer. It may be a choice for men who do not have symptoms or want to avoid sexual, urinary or bowel side effects for as long as possible. Others may choose surveillance due to their age or overall health.

This method may require you to have many tests over time to track cancer growth. This lets your doctor know how things are going and prevents treatment-related side effects. This will also help you and your health care team focus on managing cancer-related symptoms. Talk with your care team about whether this is a good choice for you.

Clinical Trials

Clinical trials are research studies that test new treatments or learn how to use existing treatments better. Clinical studies aim to find the treatment strategies that work best for certain illnesses or groups of people. For some patients, taking part in a clinical trial may be an option.

Clinical trials follow strict scientific standards. These standards help protect patients and help produce reliable study results. You will be given either a standard treatment or the treatment being tested. All of the approved treatments used to treat or cure cancer began in a clinical trial.

It is of great value to learn about the risks and benefits of the treatment being studied. To search for information on current or recent clinical trials for the treatment of prostate cancer, visit **UrologyHealth.org/ClinicalTrials**.

OTHER CONSIDERATIONS

Follow-up Care

You and your doctor may schedule office visits for tests and follow-up over time. There are certain symptoms your doctor should know about right away, such as blood in your urine or bone pain, but it is best to ask your health care team about the symptoms you should report. Some men find it helpful to keep a diary to help remember things to talk about during follow-up visits.

Incontinence

Incontinence is the inability to control the release of urine and can sometimes happen with prostate cancer treatment. There are different types of incontinence:

- **Stress Urinary Incontinence (SUI)**, when urine leaks with coughing, laughing, sneezing or exercising or with any additional pressure on the pelvic floor muscles. This is the most common type.
- **Urge Incontinence,** or the sudden urge to pass urine, even when the bladder is not full, because the bladder is overly sensitive. This might be called overactive bladder (OAB).
- **Mixed Incontinence**, a combination of stress and urge incontinence with symptoms from both types.

Because incontinence may affect your physical and emotional recovery, it is important to understand how to manage this problem. There are treatment choices that may help incontinence. Talk with your doctor before trying any of these options.

- **Kegel exercises** may strengthen your bladder control muscles.
- **Lifestyle changes** may improve your urinary functions. Try eating healthier foods, limiting smoking, losing weight and making timed visits to the bathroom.
- **Medication** may help improve bladder control by affecting the nerves and muscles around the bladder.
- **Neuromuscular electrical stimulation** uses a device to help strengthen bladder muscles.

- **Surgery** to control urination may include injecting collagen to tighten the bladder sphincter, implanting a urethral sling to tighten the bladder neck or an artificial sphincter device.
- **Products**, such as pads, may help you stay dry but do not treat incontinence.
- **Avoiding bladder irritants** that include caffeine, alcohol and artificial sweeteners.

Erectile Dysfunction

Men may have sexual health problems following their cancer diagnosis or treatments. ***Erectile dysfunction*** (ED) is when a man finds it hard to get or keep an erection strong enough for sex. ED happens when there is not enough blood flow to the penis or when nerves to the penis are harmed.

Cancer in the prostate, colon, rectum and bladder are the most common cancers that can affect a man's sexual health. Treatments for cancer, along with emotional stress, can lead to ED.

The chance of ED after prostate cancer treatment depends on many things, such as:

- Age
- Overall health
- Medications you take
- Sexual function before treatment
- Cancer stage
- Damage to your nerves or blood vessels from surgery or radiation

There are treatments that may help ED. They include pills, vacuum pumps, urethral suppositories, penile injections and implants. Treatment can be individualized. Some treatments may work better for you than others. They have their own set of side effects. A health care provider can talk with you about the pros and cons of each method and help you decide which single treatment or combination of treatments is right for you.

Lifestyle Changes

Diet

A healthy diet may help increase your energy levels and enhance your immune system.

It is important to think about the foods you eat and to try to maintain a healthy weight. Healthy eating habits can improve your health.

Healthy food choices may include:

- Plenty of fruits and vegetables
- High fiber foods
- Low-fat foods
- Limited amounts of simple sugars
- Limited amounts of processed foods (especially processed meats like deli foods and bacon)

Because prostate cancer treatment can affect your appetite, eating habits and weight, it is important to try your best to eat healthy. If you have a hard time eating well, reach out to a registered dietitian/nutritionist (RDN). There are ways to help you get the nutrition you need. Always talk with your doctor before making changes to your diet.

Exercise

Exercise may improve your physical and emotional health. It can also help you manage your weight, maintain muscle and bone strength and help manage side effects.

Always talk with your doctor before starting or changing your exercise routine. If approved by your doctor, men may want to strive to exercise about one to three hours per week. Cardiovascular exercise and strength/resistance training may be good choices. This can include walking or more intense exercise. Physical exercise may help you to:

- Reduce anxiety
- Improve energy
- Improve self-esteem
- Feel more hopeful
- Improve heart health
- Reach a healthy weight
- Boost muscle strength
- Maintain bone health

Pelvic floor exercise may help men being treated for prostate cancer. The pelvic floor is a group of muscles and structures in your pelvis between your legs. The pelvic floor supports the bowel, bladder and sexual organs. They help with urinary and fecal functions as well as sexual performance. The muscles contract and relax, just like any other muscle in your body. Pelvic floor exercises can help with side effects like erectile dysfunction and urinary incontinence.

Emotional Support

Support groups may help the emotional well-being of men who have prostate cancer. This can be done in person, through social media or through online cancer organizations. Men in prostate cancer support groups may be of help because they have prostate cancer too. It may help you to talk with other men who have managed similar concerns. These men may offer information, hope and even laughter during your prostate cancer journey.

Hope is important during advanced prostate cancer. Hope is a way of thinking, feeling and acting. It is a tool for managing and adjusting to an illness as serious as cancer. Men with advanced prostate cancer can still have hopes and dreams, even if these might have changed since diagnosis. If you feel hopeless, consider talking to a licensed therapist who knows about working with patients who have cancer. You may choose to ask your health care team about seeking the help of a therapist.

Questions to Ask Your Doctor

- ❑ What does "advanced cancer" mean for me?
- ❑ Are there other tests I should have to understand how advanced my cancer is?
- ❑ What are the treatment options for this grade/stage of cancer?
- ❑ Which treatment do you recommend for me and why?
- ❑ How long should I try a treatment type before we know whether it works?
- ❑ Would a clinical trial be an option for me?
- ❑ What can I do to manage my symptoms?
- ❑ What can I do to manage or prevent treatment side effects?
- ❑ What can I do to protect my bones?
- ❑ What is the average lifespan for people managing my grade/stage of cancer?
- ❑ What kind of care will I receive to keep me comfortable if I decide not to have active treatment?
- ❑ Can you refer me to another expert for a second (or third) opinion?
- ❑ Can you refer me to a dietitian?
- ❑ Can you put me in touch with a support group?
- ❑ How can I help my overall health?

GLOSSARY

Abdomen
Also known as the belly. The part of the body that holds all internal structures between the chest and the pelvis.

Active Surveillance
Watching with regular physical exams, blood tests and imaging tests on a set schedule. If symptoms begin or problems arise, more treatment will be offered.

Benign Prostatic Hyperplasia (BPH)
Enlarged prostate not caused by cancer; symptoms include problems passing urine because as the prostate grows, it places pressure on the urethra.

Biochemical Recurrence
The prostate-specific antigen (PSA) level has risen after treatment(s) using surgery or radiation with no other sign of cancer.

Biopsy
Samples of tissue are removed for review under a microscope to see if they contain cancer or other abnormal cells.

Bladder
The balloon-shaped pouch of thin, flexible muscle that holds urine in the body.

Bone-Targeted Therapy
Treatments to help strengthen the bones, to keep bones healthy and to decrease the number of skeletal-related events.

Chemotherapy
The use of medications to kill prostate cancer cells that have spread throughout the body.

CT Scan
X-rays and computer calculations used to see and measure internal tissue and organs.

Digital Rectal Exam (DRE)
The insertion of a gloved, lubricated finger into the rectum to feel the prostate and check for anything abnormal.

Ejaculation
The release of semen from the penis during sexual climax (orgasm).

Erectile Dysfunction (ED)
Problems getting or keeping an erection.

Gleason Score
The most common grading system for prostate cancer. Cells are given a score from three (least aggressive) to ten (most aggressive).

Hormone Therapy
Uses medications to decrease or block testosterone and other male hormones. The purpose of hormone therapy is to stop or slow the growth of prostate cancer.

Immunotherapy
A treatment that boosts the ability of the immune system to fight prostate cancer.

Incontinence
Loss of bladder control. This may be about urine leakage (urinary) or loss of control with stool (fecal).

Lymph Nodes
Rounded masses of tissue found throughout the body that produce cells to fight invading germs or cancer.

Metastatic
Cancer that spreads beyond its point of origin. For example, spreading from the prostate to the bones.

MRI Scan
Radio waves and a strong magnetic field used to make highly detailed pictures of organs and tissue in the body.

Oncologist
A doctor specializing in the treatment of cancer.

Orchiectomy
Surgery to remove the testicles.

Pathologist
A doctor who identifies diseases by studying cells and tissues under a microscope.

Pelvis
The lower part of the abdomen, between the hip bones.

Penis
The male organ used for sex and passing urine.

PET Scan
A special drug (tracer) given through your vein, or you may inhale or swallow the drug. Your cells will pick up the tracer as it passes through your body. The scanner allows your doctor to better see where and how much the cancer is growing.

Prostate
In men, a walnut-shaped gland below the bladder that surrounds the urethra. The prostate makes fluid that goes into semen.

Prostate-Specific Antigen (PSA)
A protein made only by the prostate. High levels of PSA in the blood may be a sign of cancer or other prostate health issues.

Radiation
Two options for prostate cancer treatment include brachytherapy (small radioactive "seeds" implanted in the prostate) and external beam radiation (rays targeted at the tumor from outside the body).

Radiopharmaceuticals
Drugs with radioactivity that can target radiation to the exact areas in the bones where cancer cells are growing.

Rectum
The lower part of the bowel ending in the anal opening.

Recurrence
The return of cancer after treatment in the same location or another part of the body.

Semen
The fluid that protects and energizes the sperm, also known as seminal fluid or ejaculate fluid.

Seminal Vesicles
Glands that help produce semen.

Sperm
Male reproductive cells made in the testicles that can fertilize a female partner's eggs.

Testicles
Glands inside the scrotum, the pouch below the penis. They produce sperm and the male hormone testosterone.

Tissue
Group of cells, similar in form and function, within an organism.

Tumor
An abnormal mass of tissue or growth of cells.

Urethra
A narrow tube through which urine leaves the body. In males, semen travels through this tube during ejaculation. Extends from the bladder to the tip of the penis.

Urinary Tract
Includes organs that take waste from the blood and carry it out of the body.

Urine
A liquid, often yellow in color and made by the kidneys, that contains waste and water.

Urologist
A doctor who specializes in the diagnosis and treatment of problems linked to the urinary tract and nearby pelvic structures.

X-ray
A test that uses radiation to make pictures of the tissues, bones and organs inside the body.

Notes

About the Urology Care Foundation

The Urology Care Foundation is the world's leading urologic Foundation—and the official Foundation of the American Urological Association. We provide information for those actively managing their urologic health and those ready to make healthy changes in their lives. Our information is based on the American Urological Association resources and is reviewed by medical experts.

To learn more about different urologic issues, visit **UrologyHealth.org/UrologicConditions**. Go to **UrologyHealth.org/FindAUrologist** to find a doctor near you.

Disclaimer

This information is not a tool for self-diagnosis or a substitute for professional medical advice. It is not to be used or relied on for that purpose. Please talk to your urologist or health care provider about your health concerns. Always consult a health care provider before you start or stop any treatments, including medications.

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