




An Introduction to **PROSTATE CANCER**



Prostate Cancer
Foundation
Curing Together.



Being diagnosed with prostate cancer can be a life-altering experience. It requires making some very difficult decisions about treatments that can affect not only the life of the man diagnosed, but also the lives of his family members in significant ways for many years to come.

More than 161,000 men in the United States will be diagnosed with prostate cancer this year, and each and every one of them will need to make very personal and individualized decisions about treatment options and diet and lifestyle changes. But most importantly, each and every one of them will have to find a strong, knowledgeable team of physicians, nurses, and other healthcare providers to help guide him through the process at each step of the way.

This brief introductory guide is designed to help men and their families and friends understand the risk factors for prostate cancer, find out how prostate cancer is diagnosed, and look at the different treatment options that may be selected, depending on the aggressiveness of one's cancer.



Risk Factors for Prostate Cancer

Prostate cancer is the most common non-skin cancer in America; **1 in 8 men will be diagnosed with it at some point in their lives**. The older you are, the more likely you are to be diagnosed with prostate cancer. Although only 1 in 10,000 under age 40 will be diagnosed, the rate shoots up to 1 in 39 for ages 40 to 59, and 1 in 14 for ages 60 to 69. In fact, nearly 60% of all prostate cancers are diagnosed in men over the age of 65.

But the roles of race and family history are important as well. **African-American men are 73% more likely to develop prostate cancer** compared with Caucasian men, and are nearly 2.4 times as likely to die from the disease. **Men with a relative with a history of prostate cancer are twice as likely to develop the disease**, while those with two or more relatives are nearly 4 times as likely to be diagnosed. The risk is even higher if the affected family members were diagnosed at a young age, with the highest risk seen in men whose family members were diagnosed before age 65.

Although genetics might play a leading role in deciding why one man might be at higher risk than another, social and environmental factors, particularly diet and lifestyle, likely have an effect as well. The exact relationship between obesity and prostate cancer remains unclear, but there is no doubt that obesity can have a negative effect on outcomes. Research has shown that prostate-specific antigen (PSA) test results in obese men can be lower despite the presence of disease, potentially leading to a delay in diagnosis and treatment; recovery from surgery tends to be longer and more difficult; and the risk of dying from prostate cancer can be higher.

Detection, Diagnosis, and Staging

The PSA blood test and Digital Rectal Exam (DRE) can be used to detect the presence of prostate cancer when no symptoms are present. They can help catch the disease at an early stage when treatment is thought to be more effective and potentially has fewer side effects.

During a **DRE**, the physician inserts a gloved, lubricated finger into the rectum and examines the prostate for any irregularities in size, shape, and texture. During a **PSA test**, a small amount of blood is drawn from the arm, and the level of PSA, a protein produced by the prostate, is measured. PSA levels under 4 ng/mL are usually considered “normal,” results over 10 ng/mL are usually considered “high,” and results between 4 and 10 ng/mL are usually considered “intermediate.” It is important to note that some men with prostate cancer can have “low” levels of PSA. Also, high levels can be seen following certain medical procedures, or in the presence of infection or the non-cancerous overgrowth of the prostate known as benign prostatic hyperplasia (BPH). This is why both the PSA and DRE are used to detect the possible presence of disease.

The American Urological Association recommends that both the PSA and DRE should be offered annually, beginning at age 40, to men who have at least a 10-year life expectancy. Men at high risk, such as men of African descent and men with a strong family history of one or more first-degree relatives diagnosed at an early age, are encouraged to also begin testing at age 40.

Because a decision of whether to be screened for prostate cancer is a personal one, it's important that each man talk with his doctor about whether prostate cancer screening is right for him.

Making the Diagnosis and Staging the Disease

Although the PSA and DRE tests cannot diagnose prostate cancer, they can signal the need for a biopsy to examine the prostate cells and determine whether they are cancerous. In some men, changes in urinary or sexual function lead to a full evaluation by the doctor, and, if prostate cancer is suspected, a biopsy will be performed.

During a **biopsy**, needles are inserted into the prostate to take small samples of tissue. If prostate cancer is found when looking at the biopsied tissue under the microscope, the pathologist assigns a **Gleason score**, on a scale from 2–10, based on how closely the cancer cells resemble normal cells. In general, cancers with lower Gleason scores (2–4) tend to be less aggressive while cancers with higher Gleason scores (7–10) tend to be more aggressive; cancers with intermediate Gleason scores (5–6) fall somewhere in the middle.

Staging determines the extent of prostate cancer and provides an idea of how the cancer should be treated. **Localized prostate cancer** means that the cancer is confined within the prostate. **Locally advanced prostate cancer** means that most of the cancer is confined within the prostate, but some has started to escape to the immediate surrounding tissues. In **metastatic disease**, prostate cancer is growing outside the prostate and its immediate environs, possibly into the lymph nodes, and possibly to more distant organs.



Treatment Options

There is no “one size fits all” treatment for prostate cancer, so each man must learn as much as he can about various treatment options and, in discussion with his physicians, make his own decision about what is best for him. Consultation with all three types of prostate cancer specialists—a urologist, a radiation oncologist, and a medical oncologist—will offer the most comprehensive assessment of the available treatments and expected outcomes.

Treating Localized or Locally Advanced Prostate Cancer

A man diagnosed with localized or locally advanced prostate cancer has three major treatment options: active surveillance, surgery, and radiation. Choosing the best treatment for localized or locally advanced prostate cancer is generally based on the man’s age, the stage and grade of the cancer, the man’s general health, and the man’s evaluation of the risks and benefits of each therapy option.

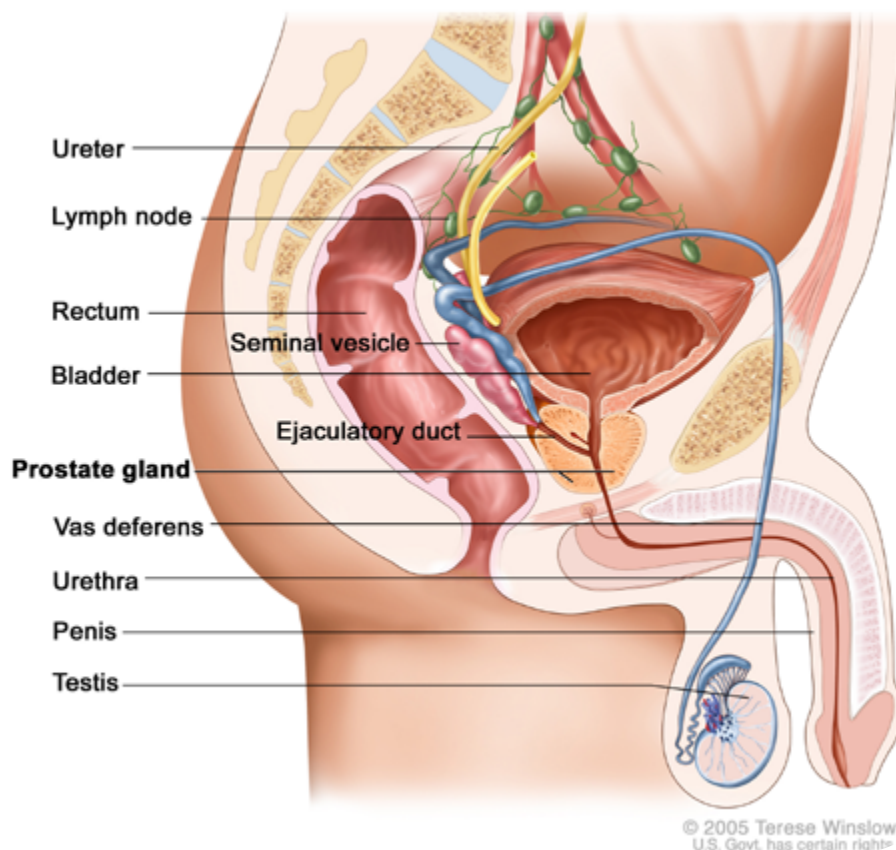
During **active surveillance**, the cancer is carefully monitored for signs of progression. A PSA blood test and DRE are usually administered every six months along with a yearly biopsy of the prostate. If symptoms develop, or if tests indicate that the cancer is growing, treatment might be warranted.

A **radical prostatectomy** is the surgical removal of the entire prostate gland plus some surrounding tissue. The procedure can produce significant side effects that might affect the quality of life, including erectile dysfunction and urinary incontinence. Improvements in surgical techniques have enabled many urologists to maintain high cure rates while minimizing side effects. Often, the experience and skill of the surgeon can be a major factor in the success of the surgery. Radiation involves the killing of cancer cells and surrounding tissues with directed radioactive exposure. With **external beam radiation**, high-intensity beams of radiation are directed at the target area; with **brachytherapy**, tiny radioactive metal seeds or pellets are surgically inserted into the prostate. Hormone therapy is often given in conjunction with radiation, either before, during, or after treatment. Although high doses of radiation are needed to kill prostate cancer cells, higher doses can also increase the rate of side effects such as urinary problems, erectile dysfunction, and rectal bleeding. Improvements in technology have allowed for very precise targeting of radiation, enabling skilled and experienced radiation oncologists to deliver higher doses to more focused areas while minimizing side effects.

Treating Metastatic Prostate Cancer

If prostate cancer is diagnosed after it has spread beyond the prostate and its immediate environs or if the cancer returns after surgery or radiation, treatment with **hormone therapy** to lower testosterone levels is typically initiated. Because prostate cancer growth is fueled by testosterone, these therapies—such as drugs that stop the production or effects of testosterone—can make prostate cancer shrink or grow more slowly. As the cancer growth slows down, the PSA levels start to drop. However, hormone therapy may only work for a few years before the cancer starts to grow again, as indicated by a rising PSA. Side effects of the hormone therapies result from the loss of testosterone, and include loss of sex drive, breast tenderness and enlargement, loss of bone density and muscle mass, weight gain, and hot flashes. Many of these side effects can be managed or minimized by making changes in the treatment regimen or by using additional therapies specially designed to combat these effects.

If the cancer has spread widely beyond the prostate area and/or if the PSA continues to rise despite hormone therapy, **chemotherapy** is often used to kill the circulating cancer cells. Some drugs offer relief from symptoms associated with cancer spread, and some might help prolong life by a few months or years. Side effects typically associated with chemotherapy include hair loss, nausea and vomiting, diarrhea, fatigue, and an increased risk of infection. These side effects generally disappear completely when chemotherapy is stopped. Researchers have been exploring the use of chemotherapy earlier in the treatment course.



Other therapies, often referred to as **targeted or novel therapies**, are being studied for metastatic disease as well. These treatments also kill or slow the growth of cancer cells, and might be able to offer benefit with fewer side effects. Some of these treatments are only available by enrolling in **clinical trials** that are designed to test whether they are as effective as the currently available treatments. Every man with prostate cancer should talk with his doctors about whether a clinical trial is right for him.

For more information on clinical trials, visit www.pcctc.org.

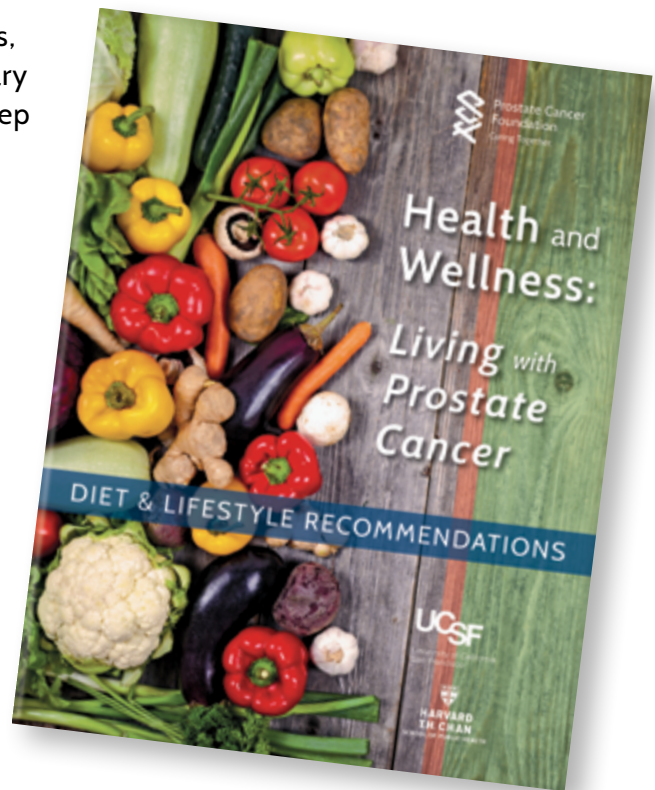


Nutrition and Lifestyle

Research in the past few years has shown that **diet modification** might decrease the chances of developing prostate cancer, reduce the likelihood of having a prostate cancer recurrence, or help slow the progression of the disease. Although it will likely take some time before results of these studies conclusively demonstrate the benefits of nutrition in prostate cancer, there is already good evidence indicating that some dietary changes, such as increasing consumption of fruits and vegetables rich in antioxidants as well as fish rich in omega-3 fatty acids, are beneficial in other chronic diseases, particularly heart disease. Adoption of these dietary changes can therefore be seen as an important step in a path toward a more **healthy lifestyle** overall.

For a detailed review of how dietary and lifestyle changes can affect the risk of prostate cancer development and progression, see the Prostate Cancer Foundation's ***Health and Wellness: Living with Prostate Cancer—Diet & Lifestyle Recommendations*** guide.

Visit www.pcf.org/guides for an electronic copy or call 1-800-757-CURE to order a free copy today.





The Prostate Cancer Foundation (PCF) has a simple, yet urgent goal: to fund the world's most promising research to improve the prevention, detection and treatment of prostate cancer and ultimately cure it for good.

The Prostate Cancer Foundation (PCF) is the world's leading philanthropic organization funding and accelerating prostate cancer research. Founded in 1993, PCF has raised more than \$700 million and provided funding to more than 2,000 research programs at more than 200 cancer centers and universities. The PCF global research enterprise extends to 19 countries. PCF advocates for greater awareness of prostate cancer and more efficient investment of governmental research funds for transformational cancer research. Its efforts have helped produce a 20-fold increase in government funding for prostate cancer. For more information, visit www.pcf.org



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