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CHOOSING THE
RIGHT TREATMENT
FOR YOUR
PROSTATE CANCER

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CHOOSING THE RIGHT TREATMENT FOR YOUR PROSTATE CANCER

If you have received a diagnosis of prostate cancer, you are far from alone. Prostate cancer is now the third leading cause of cancer death (following lung and colon and rectal cancer). The rate of death from prostate cancer is declining and this figure may change in the near future. An American boy born today has a 16% chance of developing prostate cancer and about a 3% risk of dying from it. Prostate cancer may progress so slowly that some patients live with it for years and end up dying of something else; however, once it spreads to the bones it is often incurable. The American Cancer Society estimates that there will be about 232,090 new cases of prostate cancer in the United States in 2007, with about 30,350 men dying from the disease this year.

The good news is that reliable diagnostic tests and numerous treatment options are available for prostate cancer, and death rates from prostate cancer are on the decline. Moreover, most prostate cancer is slow growing, so usually you can give yourself time to learn about and carefully weigh all the options available to treat prostate cancer. And it's important that you take the time to do so. *Of all the cancers, cancer of the prostate is unusual in that there is no consensus among doctors about the best treatment—or even whether any type of treatment is absolutely necessary.*

This decision guide can help you gain insight into your own situation and familiarize you with the options currently available for treating prostate cancer. Leading experts in the field at Johns Hopkins describe the major types of treatment and explain which patients are the most appropriate candidates for each type. They carefully review the advantages and disadvantages of each, and also present questions that they are asked most frequently by their patients with prostate cancer—questions that are very likely on your mind as you make decisions about your treatment.

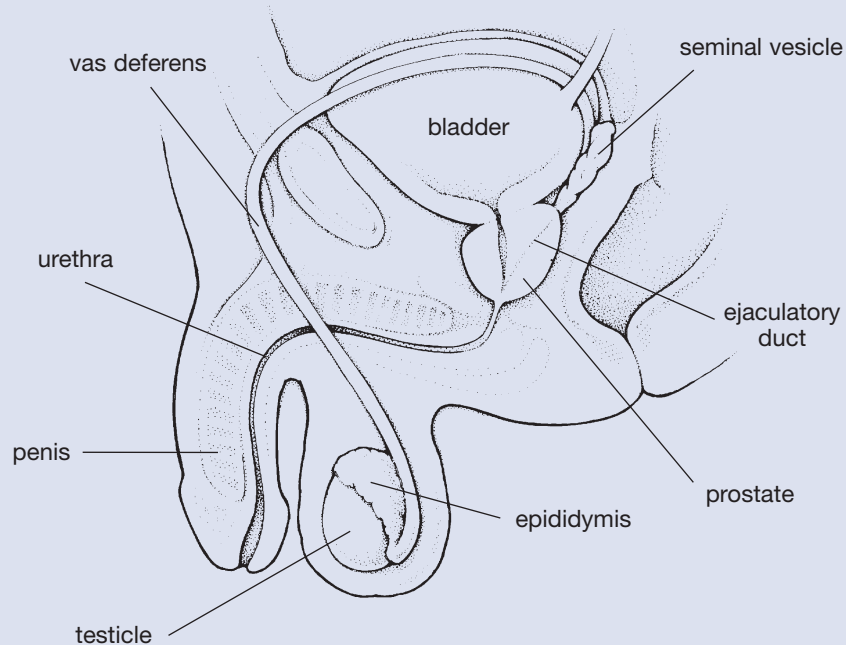
Of course, you will make final decisions about your treatment with your doctor. You should talk to your doctor about the relative risks and benefits of each treatment and also consider consulting physicians from different fields to get a broader spectrum of opinion (see page 7). The information presented here will provide you with the crucial issues to consider in treating your prostate cancer and the important questions to ask your doctor.

Current Treatment Options

The standard treatment options for prostate cancer include *expectant management*, *radical prostatectomy*, *radiation therapy*, and *hormone treatment*. Radiation therapy can be delivered from an external source (external beam radiation therapy) or by implantation of radioactive



How the Prostate Functions



The prostate is a crab apple-shaped gland that secretes prostatic fluid, a component of semen. Located just below the bladder, the prostate surrounds the urethra, the channel that carries both semen and urine through the penis and out of the body. When a man ejaculates, muscles in the prostate contract and push prostatic fluid through tiny ducts into the urethra, where it mixes with sperm and fluid from the seminal vesicles. (Sperm is produced by the testicles, passes through the epididymis and vas deferens, and enters the urethra from the ejaculatory ducts located on either side of the prostate.) Because the prostate encircles the urethra, prostate disorders—such as benign prostatic hyperplasia (BPH) or prostate cancer—can cause urinary symptoms or interfere with sexual function. ■

seeds (brachytherapy).

Radical prostatectomy can cure and radiation therapy is thought to cure or at least slow down prostate cancer when the disease is in its early stages. Hormone therapy is not curative and is generally used to slow the progression of the disease once it has spread to other sites. Though chemotherapy is effective in treating some types of cancer, it has been less successful for prostate cancer.

Key Factors to Consider in Choosing a Treatment

Men eventually make their treatment decision based on a variety of factors, including the potential for side effects, perceived long-term risks, psychological ramifications, and financial costs of each of the therapies. While aggressive treatment may prolong life, it can also damage



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the quality of life by compromising sexual performance and the ability to control urination, and rectal function, in the case of radiation therapy.

Ultimately, however, prostate treatment depends on two factors: the clinical stage of the cancer (the extent of disease) and the age and general health of the individual. Researchers have found that, in healthy men who have more than a 10-year life expectancy, about 80% of prostate cancers detected by PSA testing have the potential to progress and thus warrant treatment. (The PSA test, which measures prostate-specific antigen—a protein produced in the prostate and released into the blood—is widely used as a tool to screen for the presence of prostate cancer.) Still, with increased use of PSA testing, some men will be diagnosed with small prostate cancers (which cannot be felt during a digital rectal exam but are suspected from PSA tests and confirmed by biopsy) that pose no immediate threat and, indeed, may never need treatment. Two recent studies suggest that 30% to 50% of cancers detected by PSA screening would never have become apparent otherwise.

Doctors use several methods to help predict the seriousness of prostate cancer, and this information is factored into the treatment decision. One method is the **Gleason score**, which ranges from 2 to 10. A score of 2 to 4 indicates a greater probability of an insignificant cancer—a cancer that is unlikely to grow rapidly and spread. Higher scores suggest a greater likelihood of a significant, life-threatening cancer. Men with “high-grade” disease (defined as a Gleason score of 7 to 10) are considered poor candidates for expectant management, since the high score indicates an aggressive cancer.

Another method helpful in determining the best treatment option is the **Partin tables**, named after the Johns Hopkins physician who developed them. The tables help doctors predict whether cancer is confined to the prostate or has spread to adjacent tissue, seminal vesicles, or lymph nodes. (You can view the Partin tables on pages 4 and 5 and at the Brady Urological Institute web site: <http://urology.jhu.edu/prostate/partintables.php>).

The prediction is based on the patient’s PSA levels, biopsy Gleason score, and TNM cancer stage, which is a system for expressing the size and degree of spread of prostate cancer by separately describing the extent of tumor at its **original location (T)**, whether and to what extent the cancer has spread to nearby **lymph nodes (N)**, and whether and to what extent the cancer has **metastasized (M)** to other sites in the body. If cancer has spread outside the prostate, surgery may not be the best treatment option. (See page 6)

You must also consider possible complications when deciding on a treatment option. If a man chooses surgery or radiation therapy, he risks the possibility of bowel, urinary, or sexual problems. If he chooses expectant management (no treatment is provided, but the patient is closely monitored for cancer growth), he may be anxious about the progress of the disease, and urinary or sexual symptoms may arise if the disease progresses.

As you will read in the section about expectant management by Dr. Ballentine Carter, Johns

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GLOSSARY

Here you will find dozens of prostate terms, organized and cross-referenced for your convenience. If a word used in a definition is in *italics*, that word has its own entry.

The terms are those most often used by urologists in describing prostate disorders.

A

Ablation: Removal, elimination. For example, hormonal ablation means eliminating the androgens (male hormones) that nourish prostate cancer.

Acid phosphatase: An enzyme (such as *prostate-specific antigen*) that is secreted by the prostate gland. Elevated levels may indicate something is wrong with the prostate.

Acute bacterial prostatitis: A form of *prostatitis* associated with urinary tract infections. The ailment comes on quickly, accompanied by fever, pain in the perineum (area between the scrotum and rectum) and lower urinary tract symptoms that demand prompt medical attention.

Adenocarcinoma: A cancer originating in glandular tissue. Prostate cancer is classified as adenocarcinoma of the prostate.

Adjuvant: An additional treatment used to increase the effectiveness

of the primary therapy given concurrently or after the primary treatment. Hormonal therapy is often given concurrently with radiation therapy as an adjuvant therapy.

Adrenal androgens: Weak male hormones made by the adrenal glands. They include androstenedione, dehydroepiandrosterone (DHEA), and dehydroepiandrosterone sulfate (DHEAS). Their overall effect on the prostate is controversial. Most (95 percent) of the testosterone in the blood comes from the testicles.

Agonist: A drug that triggers an action by a cell, another drug, or a hormone.

Alpha blockers: Medications, originally designed to treat hypertension, that act on the prostate by relaxing smooth muscle tissue within the prostate and at the bladder neck. Used to treat lower urinary tract symptoms in men with *BPH*.

5-alpha reductase: An enzyme in the prostate that converts testosterone to *DHT*.

5-alpha reductase inhibitors: Medications that block the formation of *DHT* by blocking the enzyme 5-alpha reductase, causing the prostate to shrink by about 20-30 percent. These drugs are used to treat lower urinary tract symptoms in men with *BPH*.

Analgesic: Painkiller.

Analog: A synthetic drug that can mimic one of the body's natural signaling molecules.

Anal stricture: Tight scar tissue that can interfere with a bowel movement.

Androgen: A substance with male hormone activity, such as *testosterone*.

Androgen ablation therapy: A treatment designed to inhibit the body's production of *androgens* (male hormones) or block the action of the androgen.

Androgen-dependent, or -sensitive cells: Prostate cancer cells that are dependent on male hormones for survival. These cells undergo *apoptosis* (cell death) when the hormones that nourish them are shut off.

Androgen-independent, or -insensitive cells: Prostate cancer cells that are *not* dependent on male hormones and therefore do not respond to hormone-blocking therapy by undergoing *apoptosis*.

Angiogenesis: The body's process of forming new blood vessels. Some anti-cancer drugs called angiogenesis inhibitors work by blocking angiogenesis, thus preventing blood from reaching and nourishing a tumor. Although the tumor may not die, its growth may be slowed or stopped.

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Send for The 2007 Johns Hopkins White Paper on Prostate Disorders on 30-day Free Home Preview!

This thorough, 88-page White Paper reviews the newest information on prostate disorders, focusing on prostate cancer, benign prostatic hyperplasia, and prostatitis. Topics include:

- Promising new drug treatments under investigation right now for prostate cancer.
- When does watchful waiting for prostate cancer make sense, and when is it a dangerous game?
- Factors that raise the risk of erectile dysfunction with prostate problems.
- New robotics technology leads to faster recovery and fewer complications after prostate cancer surgery.
- The latest research on tomatoes, saw palmetto and pomegranates to relieve prostate problems.
- Botox for enlarged prostate? Surprising new experimental drug treatments under study.
- Best drugs to provide significant relief for prostate cancer pain.
- New research: Does calcium help prevent prostate cancer, or put you at greater risk?
- The Johns Hopkins prostate cancer risk-reduction program: A 2-pronged approach.
- New advances in prostate imaging that promise better-targeted therapy.
- Coping with androgen-deprivation side effects when the impact of this hormone therapy is rough.
- Options for managing rising PSA levels after radical prostatectomy.

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