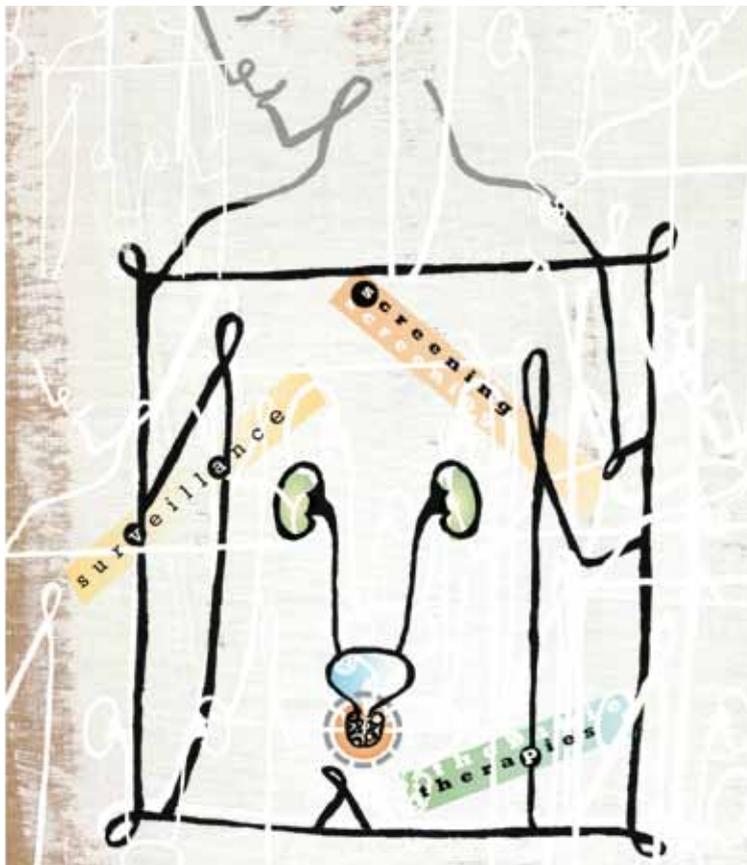


A Patient's Guide to Prostate Cancer



Prevention Strategies ■ Screening & Diagnosis ■ **Treatment Options**
Side Effects ■ **Resources** ■ Tips for Dealing with Sexual Dysfunction

cure

CANCER UPDATES, RESEARCH & EDUCATION

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A Patient's Guide to Prostate Cancer

MORE THAN 240,000 MEN will be diagnosed this year with cancer of the prostate, a walnut-sized gland involved in the production of semen. The more sobering number is this: More than 2 million men are either living with prostate cancer or have been diagnosed with it at some point. The disease is so common that studies suggest that as many as nine out of 10 men could have prostate cancer by their 80th birthday, although many will never know it. (Many men also suffer from benign prostatic hyperplasia, or BPH, a noncancerous enlargement of the prostate that blocks the normal flow of urine.) Prostate cancer can grow sluggishly, taking sometimes years to reach beyond the boundaries of the prostate gland—this means that men are more likely to die of something other than their cancer. But if the malignancy spreads to the bone and other tissues, it can turn deadly. This year, more than 33,000 American men are expected to die from prostate cancer.

WHILE ANY MAN can get the disease, the risk increases with age. For unknown reasons, African-American men are both more likely to be diagnosed with prostate cancer at younger ages and to die from it. The role of lifestyle in prostate cancer risk remains unclear—research into factors, such as diet, weight and exercise, hasn't been consistent. (Although cancer experts say that, generally, diets high in fruits and vegetables appear to protect against cancer.) Men with close family members who have been diagnosed with prostate cancer appear to be at higher risk.

Treatment for prostate cancer is improv-

ing, and the statistics for surviving the disease couldn't be better; on average, the five-year survival rate for prostate cancer that is not progressing is close to 100 percent. In fact, many men with prostate cancer do not need active treatment, only active surveillance in which doctors closely monitor the cancer for change. But techniques for surgery, radiation and treatment with drugs are also evolving and offer hope of treating advanced disease with fewer side effects.

This guide offers an overview on the latest methods of preventing, detecting and treating prostate cancer. For more details, ask your doctor or healthcare provider.



Prevention

NO ONE KNOWS how to prevent prostate cancer, although researchers are studying it. The biggest known risk factors—such as age, family history and race—are not under your control. Lifestyle choices that you can control (such as diet, obesity and alcohol consumption) are still under investigation. One large study published in 2011 found that smokers diagnosed with prostate cancer had a greater risk of recurrence and death from the disease (though men who had quit at least 10 years before their diagnosis did not have this greater risk).

Could you take a supplement to prevent it? So far, the answer is unclear. Dietary supplements selenium and vitamin E were hypothesized to help prevent prostate cancer, but a large study—the first results of which were published in 2005—not only found no reduction in prostate cancer, but also a slight increased incidence in men taking vitamin E.

Scientists have also examined whether drugs currently used to treat prostate enlargement might also prevent prostate cancer. Two drugs, Proscar (finasteride) and Avodart (dutasteride), treat BPH by preventing the body's ability to convert testosterone into a similar hormone called dihydrotestosterone (DHT). (Proscar at a much lower dose is the drug Propecia, which is prescribed to prevent hair loss.) Since male hormones encourage the growth of prostate cells, the theory is that reducing DHT may also keep early tumors from growing. Laboratory tests have also supported the idea.

One large study published in 2003

involved more than 18,000 men who were randomly assigned to take Proscar or a placebo. The trial was stopped ahead of schedule when men taking Proscar showed a nearly 25 percent reduction in prostate cancer prevalence. This would have been unabashedly good news had one troubling find not emerged: When men did get prostate cancer, the disease was more likely to be advanced. (Among men taking Proscar, 6.4 percent of cancers were advanced, compared with 5.1 percent of those taking the placebo.)

In 2010, researchers published results of a study with Avodart, which had similar findings. In a study that included almost 7,000 men, those who took Avodart for four years were about 23 percent less likely to be diagnosed with prostate cancer than those who did not take the drug. There was a slightly higher risk of more advanced cancer. In June 2011, the Food and Drug Administration recommended that the label for drugs such as Proscar and Avodart reflect a higher risk of developing a more advanced form of prostate cancer.

But some doctors have questioned whether the FDA needed to add the warning—subsequent analysis suggests that the drugs did not cause the high-grade cancers, but that the tumors may have become more detectable after the drugs shrank the size of the prostate. Both the American Society of Clinical Oncology and the American Urological Association recommend discussing use of the drugs with your physician.



Screening & Diagnosis

LIKE MANY MALIGNANCIES, prostate cancer typically doesn't show symptoms until it has advanced outside of the prostate. Unlike many other cancers, however, its growth is so slow that it can take decades to reach a size that can pose a serious threat.

One study followed men with early prostate cancer for 21 years; in the majority of patients, the cancer hardly stirred for the first 15 years. In fact, while the lifetime odds of a man getting prostate cancer are about 1 in 6, the odds of dying from it are 1 in 36. But the plodding nature of the malignancy presents challenges in detecting the disease at its earliest and most curable stage.

Some healthcare professionals recommend that men be offered screenings after age 50, and even earlier for men at higher risk because of their race or family history. The term “offered” is used because not all medical experts agree that screening saves lives, and research into understanding the benefits of screening is ongoing.

Whether to be screened for prostate cancer is a decision to be made by you and your doctor after discussing the facts. Screening has a benefit when it detects cancer early and makes treatments more effective. It can provide peace of mind. But screening is not without a downside. It can lead to treatments of cancers that would never have posed a danger to a man's health, sometimes with long-term side effects.

Two common ways to check for prostate cancer are the digital rectal exam, or DRE, and prostate-specific antigen, or PSA, test. During a DRE, your doctor will insert a gloved, lubri-

cated finger into the rectum and check for any physical abnormalities of the gland, which sits next to the rectum. The PSA test analyzes the level of a protein made by the prostate gland that is in the blood. In general, the higher the number, the more likely it is to signal cancer.

PSA numbers are expressed as nanograms of PSA per milliliter of blood, or ng/mL.

Doctors hope for a number lower than 4. But don't get overly fixated on that number; unlike common tests, such as cholesterol or blood pressure, there is no consensus on the threshold for normal. A PSA level can be elevated for other reasons. For example, PSA levels increase when a man has an enlarged prostate, even though there is no evidence that BPH causes prostate cancer; in general, PSA levels slowly increase with age. And a number below 4 doesn't mean you're in the clear. In one study, for example, 15 percent of men with a PSA of 4 or below actually had cancer. Drugs to treat BPH can also affect PSA test results by lowering PSA levels.

No cancer screening is perfect, and the PSA test has attracted its share of controversy. In a small number of cases, the PSA can miss cancers, leaving men to falsely think they do not have cancer when they actually do. It can also lead to unnecessary tests in an effort to rule out cancer, causing additional anxiety and expense—and exposing men to possible side effects, such as bleeding and infection. And while it may detect cancers earlier, it may not lower the mortality rate. In the Prostate, Lung, Colorectal, and Ovarian (PLCO) trial, prostate cancer deaths were no different in the screened group (50 deaths out of 38,343) compared with the unscreened group (44 deaths out of 38,350)

after seven years of follow-up. All of these are factors to consider before taking the test.

The U.S. Centers for Disease Control and Prevention (CDC) explains the numbers this way: If 100 men over the age of 50 take a PSA test, 85 will have a normal PSA level (though a few may have cancer that was missed by the test). Of the 15 who have a higher-than-expected level of PSA, 12 will be found on further testing to be free of cancer, while three will have prostate cancer. So out of every 100 PSA tests, three cancers are

found that would likely have been missed without the test. And there's no guarantee that those three cancers would be life-threatening.

If your PSA level arouses suspicion but you have no sign of cancer, your doctor may recommend waiting and repeating the PSA test and the DRE. If your PSA continues to rise or symptoms appear, you may undergo further testing to determine whether the cause might be cancer or something benign. Ultimately, doctors cannot determine whether cancer is present until you have a biopsy. During a

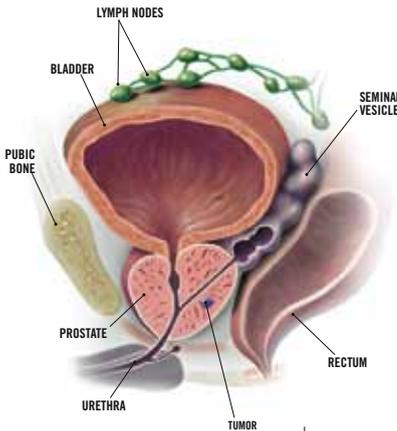
When diagnosing prostate cancer, doctors consider staging and grading. In grading, a score is assigned based on the Gleason grading system.

Stage 1:

The cancer is located on one side of the prostate. At this stage, the tumor is very small or found accidentally, possibly during surgery or by an elevated prostate-specific antigen (PSA) level. The Gleason score is low.

Stage 2:

The cancer is located only in the prostate but can be seen on imaging scans or felt during a digital rectal exam. The Gleason score may range from 2 to 10.



The Gleason grading system defines prostate cancer by grade based on the pathologist's review of a biopsy or surgical specimen, with 1 being the least aggressive and 5 being the most aggressive. The grade of the most common tumor pattern is added to the grade of the second most common tumor pattern in the tissue examined to create the Gleason score. A Gleason score of 2 to 4 is considered low grade, 5 to 7 is intermediate grade, and 8 to 10 is high grade.

biopsy, doctors use a needle to remove a small amount of tissue from the prostate to view under a microscope.

In the future, scientists hope to improve the PSA test, and perhaps introduce other, more precise methods to screen for prostate cancer. One proposed variation for PSA is to follow the rate of change in the number—a figure that rises quickly over time may be a more worrying signal. Another method of interpreting PSA might be to compare the PSA number to the size of the prostate. If

a man has an enlarged prostate for benign reasons, a high PSA might not be concerning (though this idea is still unproven).

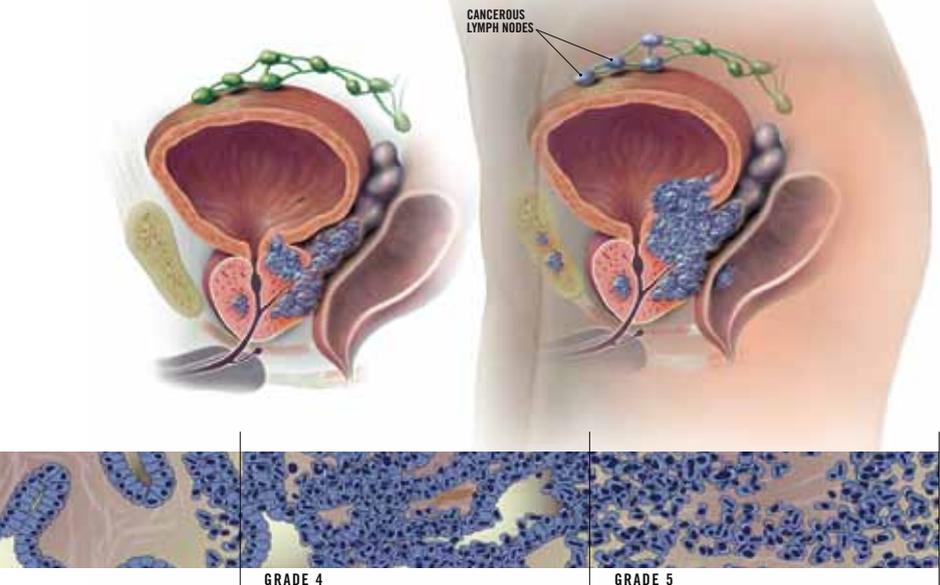
Researchers are also looking for ways that might detect prostate cancer through more precise methods. For example, doctors might one day be able to examine biomarkers, genetic changes in prostate cancer cells that appear in the urine. And new blood tests are being developed that look for other proteins, in addition to PSA, that might indicate the presence of cancer.

Stage 3:

The cancer has extended through the outer layer of the prostate and into surrounding tissues and may be found in the seminal vesicle but not in the lymph nodes. The Gleason score may range from 2 to 10.

Stage 4:

The cancer has spread to the lymph nodes near or far from the prostate or has spread to distant tissue or organs, such as the liver or bones. The Gleason score may range from 2 to 10.





Treatment Options

IF TESTS CONFIRM that the prostate contains a tumor, you have to make choices, none of which are perfect or easy. The first step is to decide how aggressively to treat the cancer, weighing the severity of the disease against the risk of side effects, age and general health. Since early prostate cancer tends to grow slowly, there is seldom a need to rush into a decision. Among the options:

ACTIVE SURVEILLANCE

During active surveillance, doctors monitor the PSA level and check for signs that the cancer is starting to grow. Men commonly think that active surveillance means ignoring the cancer, but, in fact, it means paying special attention to it with PSA tests, exams and biopsies until a test triggers the need for treatment. (Experts estimate that up to 60 percent of men diagnosed with prostate cancer may never require therapy.) It is the option with the fewest side effects. A study published in 2010 in the *Journal of the American Medical Association* reported that men with low-risk tumors who chose active surveillance scored higher on measures of quality of life than men who chose active treatment, such as radiation or removal of the prostate.

SURGERY

Younger men, those with more aggressive cancer, or those who simply feel knowledge of their cancer would cause them too much anxiety, may choose more aggressive treatment. Surgery to remove the prostate (along with the nearby tissues and seminal vesicles, which are also involved in semen production) is an option for men whose cancer has not spread. The two most common side effects

of treatment are incontinence and impotence. However, if the cancer is not too entangled with the nerves that control erections, doctors can remove the prostate with less damage to the nerves, lowering the risk of impotence.

Men once only had the option of radical surgery with a large incision. Today, however, many men have a choice of other methods that are less invasive and lead to less blood loss, shorter hospital stays and faster recovery times.

HORMONE THERAPY

Since prostate cancer cells are fed by male hormones, drugs that lower them help to starve the prostate cells of their needed fuel. This is called androgen deprivation therapy. This does not get rid of the cancer but can make it smaller or make it grow slower. Doctors will often prescribe hormone therapy to shrink tumors before surgery to men whose cancer has already spread beyond the prostate, to those whose cancer remains or has recurred after the first treatment, or to those who are at high risk for recurrence after radiation therapy. Several types of drugs are available for this, and your doctor can discuss the best options.

One recently approved drug is Zytiga (abiraterone), an oral medication that has been found to improve survival in men with advanced prostate cancer. One study published in 2011 in *The New England Journal of Medicine* found that men with advanced disease who had previously received chemotherapy with Taxotere (docetaxel) and then took Zytiga had an overall survival of almost 15 months, compared with about 11 months for men who took a placebo.

RADIATION THERAPY

For cancer that is limited to the prostate or nearby tissue, men may choose radiation therapy, which uses high-energy radiation to kill the cancer cells. The problem is that healthy tissue can get hit in the crossfire. Techniques for radiation therapy, however, have become more refined, allowing doctors to focus more radiation on the tumor and less everywhere else. The most traditional form of radiation is called external beam radiation therapy, or EBRT, in which radiation is delivered by a computer-guided machine that comes from outside the body. There are several types of EBRT.

Another form of radiation is brachytherapy, or internal radiation therapy, in which doctors insert small radioactive pellets into the cancer. Radiation from the seeds does not travel far, so the technique can minimize the radiation exposure to healthy tissues. This is often an option for low-grade prostate tumors.

A newer option is proton beam therapy, which uses proton particles instead of X-rays to kill the cancer cells. Many experts believe that proton particles can be more precisely delivered into the tumor, therefore giving the treatment a lower risk of side effects. However, researchers are still testing the pros and cons of this treatment, and with fewer than 10 proton beam facilities nationwide, travel and treatment can be costly.

CHEMOTHERAPY

Chemotherapy is used when cancer has spread beyond the prostate and hormone therapy isn't working. There are many types of chemotherapy drugs used in different combinations. They cannot get rid of the cancer, but might slow the progression of the disease

or reduce symptoms. The chemotherapy drug most commonly utilized is Taxotere (docetaxel), and it is used along with the steroid prednisone in advanced cancers that do not respond to hormone therapy. For men whose cancer continues to spread after treatment with Taxotere, the FDA recently approved Jevtana (cabazitaxel).

IMMUNOTHERAPY

In 2010, the government approved the use of the drug Provenge (sipuleucel-T) for advanced prostate cancer, following studies showing that men using the drug lived an average of four months longer than those not receiving the treatment. This drug provokes a patient's own immune system to attack the cancer.

INVESTIGATIONAL APPROACHES

Other treatments are under investigation, either to be used in combination with the available treatments, or before or after them. These include:

- MDV3100, a new form of hormone therapy. Instead of lowering the amount of hormone in a man's body, it prevents the tumor cells from taking it in.
- Prostavac-VF, a vaccine that is also under investigation for advanced disease. Like Provenge, it works by enlisting a patient's immune cells to target the cancer. Scientists are currently running a trial of the drug and expect results in late 2012.
- Yervoy (ipilimumab), another drug that boosts the immune system to attack the cancer. It is already approved for advanced melanoma and is in testing for prostate cancer.



Side Effects

SINCE SOME MEN are more likely to die *with* prostate cancer than *because of it*, the issue of side effects is essential to making a decision about treatment. You might be willing to tolerate a higher level of collateral damage when the therapy is a matter of life and death. But when the life-saving benefits are less certain, the trade-offs become harder to justify.

Plus, it's hard to know until treatment kicks in which side effects you will experience and how bad they might be. Studies have found that certain factors increase the risk of side effects, such as obesity, a large prostate and a higher PSA level. Older men also tend to do worse over time than younger men.

Some side effects of treatment will go away shortly after the treatment stops, while some might persist for months or years, and some may never go away. Fertility will almost certainly be impacted. Here are side effects of some of the most common treatments:

SURGERY

The prostate sits in tight quarters, surrounded on all sides by sensitive tissues. Surgery to remove the gland can damage nearby nerves and muscles. That means the two most serious, and dreaded, side effects of surgery—impotence and incontinence—are possible. If you experience either (or both) of these problems after treatment, the first message: Don't panic. Many men commonly experience these side effects, only to have them resolve after several months.

The risk of impotence is smaller when doctors are able to remove the tumor without traumatizing the nearby nerves. The degree

and speed of recovery is hard to predict because it depends on the level of function before the surgery, age and whether nerves were damaged; men with vascular problems or conditions, such as diabetes, tend to have a more difficult time regaining function. If the impotence persists, talk to your doctor about medical options.

Incontinence, too, tends to get better over time. A study published in 2008 in *The New England Journal of Medicine* found that, overall, urinary incontinence was at its worst two months after surgery but then started to improve. While about half the men who had their prostates removed reported daily bladder leakage two months after surgery, that number dropped to 14 percent two years later. If it persists, some drugs and other treatments might help. Your doctor can also tell you how to perform Kegel exercises to strengthen the muscles of your pelvic floor and to help with bladder control.

Radiation treatment can also lead to impotence and urinary problems for the same reasons—tumors can entrench themselves in nerves and muscles, which bear some of the radiation. Incontinence seems to occur more often in men treated with internal radiation or brachytherapy, which uses radioactive seeds that are implanted in the prostate gland, rather than external beam treatment.

Since the prostate lies next to the rectum, it too can be a victim of friendly fire during radiation treatment. Damage to the rectum can lead to diarrhea and rectal bleeding, but these problems also tend to improve over time. While 16 percent of men in *The New England Journal of Medicine* study said they had bowel problems two months after receiv-

ing external beam radiation, the number was 11 percent after two years.

Few medical options exist to help manage diarrhea, but some men find their symptoms improve by making changes to their diet.

HORMONE THERAPY

The goal of hormonal therapy in prostate cancer treatment is to lower androgens, which include testosterone and dihydrotestosterone. The problem is, male hormones are normally quite busy throughout the body. The list of possible side effects from hormone deprivation is long and can be somewhat daunting: impotence, loss of sex drive, hot flashes, decrease in muscle mass, fatigue and even depression. Breast tissue may become larger, and bones could weaken. Men also may experience cardiovascular side effects, including an increase in cholesterol levels and weight gain, and be at an increased risk of hypertension, diabetes, heart attack and stroke.

Every man will not suffer all of this. Which side effects occur and how severe they become depends on the drug and the patient. The estimates for any one problem vary widely. For example, one 2005 review of side effects found that incidences of impotence in studies varied from 50 to 100 percent.

Whether you experience one side effect or many, it's hard to undergo hormone therapy scot-free. Doctors say the best way to manage side effects is to try to maintain as healthy a lifestyle as possible while taking the drugs; exercise, eat a good diet and get plenty of rest. If those measures aren't helping—or aren't helping enough—you can also talk to your doctor about prescriptions that may help. Antidepressants can help depression and

mood; other drugs may strengthen bones. But hormone therapy typically only lasts a few months, and most of these side effects start to improve once you stop taking the drug.

CHEMOTHERAPY

The side effects of chemotherapy in general are well known and include gastrointestinal problems, such as nausea, diarrhea and loss of appetite; increased risk of infection; mouth sores; hair loss; depression; fatigue; and neuropathy. The degree to which you will be affected depends on the dose, the drug combination and regimen.

ACTIVE SURVEILLANCE

Even if you choose active surveillance to avoid the side effects of other treatments, you may experience an unwanted side effect: the anxiety of living with untreated cancer. But if you have low-grade prostate cancer, or are older or have another serious illness, the quality of life you gain by watching and waiting may be worth the apprehension. New research shows that, in men with very low risk of disease progression, delaying prostate cancer intervention treatments for more than six years was a safe alternative.

THE BOTTOM LINE

Most prostate cancers are diagnosed when they are highly curable, but the cure may come with a price. Sometimes that price may be high. The best treatment should be decided on by you and your doctor, after considering factors like your age, the severity of the disease and your overall health. Take the time to make the best decision for you—in most cases, you'll have that advantage.



A Personal Perspective

By Ed Weinsberg, EdD, DD

SEXUAL DYSFUNCTION and subsequent depression are fairly common after prostate cancer and treatment, even after erectile nerve-sparing surgery.

For instance, although I was pain-free following robotic surgery in April 2007, my prostatectomy traumatized my pelvic area. This, other chronic illnesses and various medications led to erectile dysfunction (ED), which made me feel sexually inadequate. For me, it was a real “downer,” which led to my unwitting withdrawal from my wife, physically and emotionally.

Like many others, I’ve dealt with ED by taking prescribed devices, pills and potions, including supplemental testosterone. This helped restore much of my self-confidence and energy. But I realized that “medical mechanics” were not enough. That’s why I developed these strategies to overcome the sense of being “less than a man.”

- **If you mourn the loss of your “manhood,” openly admit it to yourself and those you love.** Just “getting it out” will help you reduce your depression and agitation.
- **Redefine yourself as a man by accentuating personal qualities** such as self-awareness, self-discipline, decisiveness and caring. This will remind you that you are still potent despite your sexual impotence.
- **“Make love,” don’t just “have sex.”** After all, intimacy and sexuality involve far more than intercourse.
- **Get in touch, literally and figuratively, with someone you cherish.** Do so through mutual stroking, kissing and cuddling.
- **Sharpen your communication skills.** If you can’t implement this and other strategies on your own, seek the guidance of a sex therapist or intimacy coach.

Editor’s Note: Ed Weinsberg is a rabbi, healthcare educator and certified sexuality counselor.



Questions & Resources

ASK YOUR DOCTOR:

- What type, stage and grade of prostate cancer do I have?
- How will my age affect my cancer, treatment options and chance of recovery?
- What are the treatment options for my specific cancer?
- What are we hoping to achieve with this treatment method? Will this treatment option cure my cancer?

ADDITIONAL RESOURCES:

Prostate Awareness Foundation
prostateawarenessfoundation.org
415-675-5661

Prostate Cancer Foundation
pcf.org
800-757-CURE (800-757-2873)

Us TOO International, Inc.
ustoo.org
800-80-UST00 (800-808-7866)

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