Fourth Edition

Advanced
Prostate Cancer

A TREATMENT GUIDE FOR
PATIENTS AND THEIR FAMILIES

WHERE INFORMATION EQUALS HOPE

CONTENT REVIEWED BY A DISTINGUISHED MEDICAL ADVISORY BOARD
An estimated one out of every seven men in the U.S. will be diagnosed with prostate cancer during his lifetime; in fact, the disease is the most common cancer in men after skin cancer. Advanced prostate cancer – which includes Stages III and IV – is the most aggressive form of the disease. The cancer cells have migrated from the prostate to surrounding tissues and lymph nodes, through the blood and possibly into the bones, tissue and distant organs.

Despite the severity of this disease, however, many treatment options are available for men with advanced prostate cancer that are effective in not only shrinking tumors but also managing treatment-related symptoms and side effects.

This publication will guide you through the basic facts about this disease, along with effective treatment options for you to research and ask your doctors about.

As a patient, you are faced with many important decisions and responsibilities. Educate yourself about all of your options before you commit to a treatment plan, and ask plenty of questions before you decide on the treatment team that will ultimately work with you to manage your health.

ABOUT THE PROSTATE

A healthy prostate gland is the size and shape of a walnut, situated under the bladder and in front of the rectum. The prostate wraps around the urethra, which is the tube that carries urine from the bladder and semen from the prostate through the penis (Figure 1).

The main job of the prostate is to produce seminal fluid that protects and transports sperm out of the body. Cancer develops when prostate cells start to mutate into abnormal cells, forming tumors. Some cancer cells slowly and silently spread without causing any symptoms, while others can cause painful symptoms that quickly alert the patient to a problem.

RISK FACTORS

While the actual cause of prostate cancer remains unknown, there are a few risk factors that may increase your chances of developing this disease:

- **Age** – Men over the age of 65 are the most likely to be diagnosed.
- **Race** – Not only are African-American men two times more likely to develop this disease than any other race, they are also much more likely to be diagnosed with prostate cancer than any other type of cancer.
- **Family history** – Your chances significantly increase if close family members were also diagnosed with prostate cancer (especially relatives such as a father, brother or uncle). Changes in the genes inherited from your father or mother also increase the risk of prostate cancer. For example, mutations in the \( BRCA1 \) and/or \( BRCA2 \) genes, determined through blood testing, can promote cancer growth.
- **Veterans** – Men who were exposed to Agent Orange (typically Vietnam veterans) are at a higher risk of contracting this disease than those who weren’t. Studies show exposure makes men twice as likely to develop prostate cancer (see enclosed chart).
- **Hormones** – High levels of testosterone can promote the growth of cancerous cells and may increase the risk of prostate cancer.
- **General health** – While research is still being conducted to connect a man’s diet with his chances of developing prostate cancer, studies show that men who consume high levels of fat are more likely to be affected by this disease.

SYMPTOMS AND SIDE EFFECTS

Advanced prostate cancer patients often encounter disease or treatment-related side effects when cancer spreads to other areas of the body. Be aware of your body and ask your doctor how to manage or prevent the following symptoms:

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**OVERVIEW**

**BY THE NUMBERS**

**WHO GETS PROSTATE CANCER?**

<table>
<thead>
<tr>
<th>Number of New Cases (Per 100,000 Persons) by Race/Ethnicity</th>
<th>SEER 18 2008-2012, Age-Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American</td>
<td>214.5</td>
</tr>
<tr>
<td>Non-Hispanic</td>
<td>141.5</td>
</tr>
<tr>
<td>White (Caucasian)</td>
<td>130.4</td>
</tr>
<tr>
<td>Hispanic</td>
<td>114.7</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>74.0</td>
</tr>
<tr>
<td>Alaskan Native/American Indian</td>
<td>67.1</td>
</tr>
</tbody>
</table>
• Pain in hips, thighs or lower back
• Weakened or interrupted urine stream
• Painful or burning urination
• Urgent feeling of having to urinate but not being able to
• Difficulty getting or maintaining an erection
• Blood in the semen or urine
• Shortness of breath, dizziness, paleness
• Unexplained weight loss
• Anemia
• Fatigue
• Bone fractures

OVERVIEW

The success of your treatment depends on several factors, including the expertise of the specialists you choose to care for you. Do plenty of research and question your potential treatment team about their abilities and experience treating your specific type and stage of cancer. As with all important decisions, you should also pay close attention to your instincts and trust your gut before committing to any type of treatment.

Also, don’t be shy about getting a second opinion. Choosing the right treatment and selecting the right people to be in your corner during this time is crucial and is one of your biggest responsibilities as a patient. Here are a few of the different types of doctors you’ll likely encounter during your treatment and recovery:

- **Urologist** – A physician trained to treat the male reproductive system and problems related to the urinary tract (kidneys, ureters, bladder, prostate and urethra).
- **Urologic oncologist** – A specialized surgeon who treats cancer of the urinary tract and reproductive system.
- **Radiation oncologist** – A physician who uses radiation to treat cancer and manages side effects of your treatment.
- **Medical oncologist** – A physician who treats cancer with chemotherapy and hormone therapy and manages general problems that arise. Some medical oncologists specialize in treating patients with urinary and male reproductive tract cancers.

Once treatment begins, it will be very important to keep everyone on your team posted about any symptoms or side effects you encounter so that they can be managed to make you more comfortable and keep you on schedule. It can be hard to strike a balance between effective disease control and living with the side effects, but your treatment team can help you find that balance.

While you’re undergoing treatment, you will have frequent follow-up visits with your doctors to make sure the disease is responding to your treatment and to evaluate your progress. These are two very important factors when it comes to deciding whether to continue with your current treatment or switch to something else that might be more effective.

You may find it helpful to keep a journal of how you’re feeling on a daily/weekly basis so that you can relay any changes or concerns you experience to your treatment team.

HOW TO USE THIS GUIDE

This publication will give you and your loved ones plenty of information about advanced prostate cancer, how it’s treated and resources to help get you through recovery.

Always reach out to others when you have questions, especially if you need guidance, encouragement or just a reminder that others have survived this same disease. Make it your mission to keep yourself healthy while undergoing treatment so that your body and your doctors can work on fighting the cancer while you remain as comfortable as possible in the process.

ADDITIONAL RESOURCES

- **American Society of Clinical Oncology** (patient website): www.cancer.net
- **CancerCare**: www.cancer.org
- **Prostate Cancer**
- **Centers for Disease Control and Prevention**: www.cdc.gov/cancer/prostate
- **My Prostate Cancer Roadmap**: www.myprostatecancerroadmap.com
- **National Cancer Institute**: www.cancer.gov/types/prostate
- **Prostate Cancer**
- **American Legion**: www.legion.org (800-433-3318)
- **Veterans of Foreign Wars**: www.vfw.org/unmetneeds (816-756-3390)
- **Veterans of America**: www.vva.org (800-827-1316)
- **Us TOO International**: www.us too.org/find-financial-assistance (630-795-1602)
- **National Comprehensive Cancer Network**: www.nccn.org
- **Prostate Cancer**
- **ZERO – The End of Prostate Cancer**: http://zerocancer.org

Statistics

**Estimated**

- **percentage of men whose prostate cancer is advanced at the time of diagnosis**
- **Estimated**

More than **50** percent of spouses take an active role in their husband’s cancer experience.

PATIENT RESOURCES

Several groups are dedicated to helping veterans diagnosed with prostate cancer linked to exposure to Agent Orange. The following websites and phone numbers can help you research your options and find out if you qualify for assistance:

- **American Legion**: www.legion.org (800-433-3318)
- **U.S. Department of Veterans Affairs**: www.va.gov (800-827-1000)
  - www.publichealth.va.gov/exposures/agentorange/shiplist/list.asp
  - www.benefits.va.gov/compensation/claims-postservice-agent_orange.asp
- **Us TOO International**: www.us too.org/find-financial-assistance (630-795-1602)
- **Veterans of Foreign Wars**: www.vfw.org/unmetneeds (816-756-3390)
- **Veterans of America**: www.vva.org (800-827-1316)
Numerous tests are used to identify and monitor prostate cancer, which also provide clues about the severity of your disease. Once cancer cells have metastasized (spread) from the prostate, doctors will need to pinpoint to which areas the cells have migrated so they can suggest the most effective treatment options for you. Your symptoms are important clues about the possibility of advanced disease, so be sure to tell your doctor about anything you notice so that he or she can order the appropriate tests to determine if cancer has recurred (returned) or spread. Depending on your symptoms, your doctor can use a variety of tests to detect and monitor your prostate cancer, including a digital rectal exam (DRE), a measurement of the prostate-specific antigen (PSA) in the blood, imaging tests, and a biopsy. In addition, other blood tests and urine studies (urinalysis) may be helpful in determining whether prostate cancer has progressed.

Common tests used to diagnose and monitor prostate cancer include:

- **Digital rectal exam (DRE)** – A common test performed by doctors or nurses is a digital rectal exam (DRE). For this exam, the doctor inserts a lubricated, gloved finger into your rectum and feels the prostate through the rectal wall. This diagnostic test is also performed throughout treatment to check for progress or recurrences during follow-up visits.

- **Prostate-specific antigen (PSA) test** – The prostate-specific antigen is a protein produced in the prostate gland by both normal prostate cells and cancerous cells. Some of this protein enters the blood, which means that the PSA level can be measured in a small sample of blood taken from a vein in your arm. Measuring your PSA level is very useful for monitoring the status of disease and assessing the effectiveness of treatment. Your doctor will compare your PSA levels over time and watch for an increase, which may indicate that the cancer has progressed.

- **Imaging tests** – Imaging tests such as a bone scan, computed tomography (CT) and magnetic resonance imaging (MRI) may be used to identify areas of cancer outside the prostate and to determine whether cancer has recurred after treatment. A ProstaScint scan or a PET scan can be used to detect prostate cancer that has spread to other sites.

If cancer spreads, it's likely to travel first to nearby lymph nodes and then to the bones (but may involve other organs). A bone scan can detect whether prostate cancer has spread to bones. For this test, a small amount of radioactive material is injected into a vein in your arm. The material will travel through your blood and collect in abnormal cells in the bones. While you lie on a special table, a scanner will detect the radioactive material and create an image of your skeletal system.

A CT or MRI scan of the abdomen or pelvis can determine whether the prostate cancer has spread to nearby organs (known as “locally advanced” disease), the pelvic lymph nodes or the liver, or if the tumor is blocking the urinary tract. With CT, a computer is linked to an X-ray machine, and detailed pictures of areas inside the body are taken from different angles. A dye may be injected into a vein in your arm, or you may be asked to drink a liquid with dye in it to help the organs or tissues show up more clearly on the images. With MRI, magnets, radio waves and a computer are used to make a series of detailed pictures of areas inside the body. Your doctor may also order an X-ray or CT scan of your chest, which may be helpful in identifying prostate cancer that has spread to the lungs.

- **Blood tests** – Your doctor will frequently test your blood to make sure you are healthy enough to receive treatment and to make sure your hormone levels, blood lipids, blood sugar and blood counts are all normal. These tests will be conducted often and will be an important part of your diagnosis and treatment.

- **Transrectal ultrasound (TRUS)** – A lubricated probe is inserted into your rectum, and sound waves are used to evaluate your internal organs (Figure 1). TRUS is an important part of the biopsy process, as it helps the doctor guide the needle into the prostate.

- **Transrectal prostate biopsy** – One of the best ways to definitively diagnose prostate cancer is with a biopsy, which is the removal and microscopic review of tissue by a pathologist (a doctor who specializes in diagnosing disease). Your doctor can also take samples of your pelvic lymph nodes, bones or other organs to determine how advanced your cancer has become. A needle is inserted into the prostate through the wall of the rectum to remove a small tissue sample. This is usually repeated between eight to 18 separate times to gather enough samples to determine if the cancer has spread. Nearby pelvic lymph nodes might also be examined for evaluation; however, this is more involved and usually reserved for a separate appointment. Biopsies also help your treatment team establish your Gleason score (which ranges from 2 to 10 depending on the likelihood that your cancer will spread). The higher the number, the more aggressive the disease and the more likely your cancer will metastasize.
As with any type of cancer, doctors use staging information to plan your treatment and to help predict the likely outcome (prognosis) of the therapy you choose. In addition to the advanced stages, information about each of the other stages is also included to help you better understand how the disease can progress over time. Discussing your stage and your treatment options with your doctors will help you select the best plan for your specific type of cancer.

When cancer cells have spread from the prostate into the lymphatic system, blood, or other organs, the disease is considered advanced and may require a much more aggressive treatment plan.

Prostate cancer stages are based on the tumor, node, metastasis (TNM) system developed by the American Joint Committee on Cancer (Table 1). The doctor who evaluates the diagnostic tests will assign a clinical stage based on the evaluation of one or more of the following: a prostate biopsy sample, a physical examination and the results of imaging studies (bone scans, MRI scans and CT scans). These tests allow your doctor to determine the size and location of the tumor(s) (T category), and to see whether cancer has spread to nearby lymph nodes (N category) or other parts of the body (M category).

If your prostate was removed surgically, a pathologist will examine it and assign a more precise pathologic stage (Table 2), which will help determine your prognosis and help you choose a personalized plan that works best for your cancer.

The pathologist will also examine a sample from the prostate biopsy under the microscope and assign a grade to the tumor. This grade, known as the Gleason score, ranges from 2 to 10. To determine the Gleason score, the cancerous tissue patterns are given a grade, from one (non-aggressive) to five (very aggressive). The pathologist will assign a low score when the tumor looks more like normal prostate tissue and higher scores when the cancer looks “less differentiated,” or less like normal tissue. Because one tumor may contain multiple grades, the two most dominant grades in the tumor sample are added together. If the most common grade within the tumor is 3 and the second most common type is 2, then the Gleason score is 5. The higher the Gleason score, the more likely the tumor is to spread:

- **Gleason 6** – Tumor tissue is well differentiated, less aggressive and more likely to grow slowly.
- **Gleason 7** – Tumor tissue is somewhat
differentiated, moderately aggressive and likely to grow, but it is less likely to spread quickly.

**Gleason 8 to 10** – Tumor tissue is poorly differentiated or undifferentiated, very aggressive and likely to grow quickly and very likely to spread.

Along with your stage, your doctor will consider your Gleason score and your initial PSA level (before surgery or radiation) when planning the best treatment for you.

According to the AJCC classification, Stages III and IV prostate cancer are considered to be advanced. In these stages, the tumor extends outside of the prostate into nearby tissues, lymph nodes, organs and/or bones.

Stage III is also known as locally advanced prostate cancer, as it has extended beyond the prostate but is still confined to the “local” area of the prostate. Stage IV cancer may be either regional disease, which means the cancer has spread to nearby lymph nodes but has not spread to other parts of the body, or distant disease, which means the cancer has spread to distant lymph nodes, bone or other organs (see Figure 1).

Most cases of advanced prostate cancer begin as early-stage cancer but spread to other areas, such as the bladder, rectum, bones, lungs or liver. Once cells have migrated to other organs and tissues, the cancer is considered to be “advanced,” which is almost always signaled by a rising PSA level after the initial treatment. Some patients may be diagnosed with advanced prostate cancer at the original diagnosis.

While the TNM system is the most commonly used staging system in the U.S., the Whitmore-Jewett system used in the past stages the cancer as A, B, C or D. If your doctor uses this system, ask him or her to translate your stage into a stage based on the AJCC system.

Talk to your doctor to learn more about your stage and the results of your biopsy and other diagnostic tests so you can work with your health care team to plan a treatment regimen that’s appropriate for you. Don’t be afraid to ask for copies of test results and ask questions about the staging process so you can fully understand how it will affect your care.

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**ADDITIONAL RESOURCES**

- **Us TOO International**: [www.ustoo.org](http://www.ustoo.org)
- **NEWLY DIAGNOSED**
- **ZERO – The End of Prostate Cancer**: [http://zerocancer.org](http://zerocancer.org)

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Together you and your doctor will develop the best possible plan to treat your cancer based on the specific features of your disease. More effective treatment options are available today than ever before, which means that advanced prostate cancer patients need to be diligent with their research and questions before deciding which treatment plan is the best fit for their disease and quality of life.

The members of your treatment team are important assets to your overall health management, so make sure you’re comfortable and confident with the doctors and specialists you choose. In addition, different hospitals and cancer centers often have different capabilities and don’t always provide the same type or quality of care, so ask questions and be sure that the treatment you want is available nearby. Other factors you should consider when making treatment decisions include:

- Life expectancy
- Biopsy results
- Cancer stage
- Gleason score
- Symptoms
- Overall health

**TREATMENT GOALS**

The goal of your treatment will depend on the characteristics of your disease. Some treatment options are intended to stop or slow down the progression of cancer cells. In cases where cancer can’t be cured, treatment will be focused on managing your symptoms and keeping the cancer contained.

Treatments that stop or slow the growth of advanced prostate cancer include hormone therapy, chemotherapy, immunotherapy and radiation therapy.

Some therapies, medications or surgical procedures can be used in combination with these treatments, depending on your particular symptoms and your response to the treatment.

**MANAGING TREATMENT**

Finding a healthy balance between fighting cancer and feeling well enough to do so is extremely important, so ask about combinations of treatment options that might help alleviate symptoms or conditions that develop.

For example, radiation therapy or transurethral resection of the prostate (TURP) can be performed to relieve symptoms; bone-modifying drugs can be given to prevent bone complications or to treat metastases; and chemotherapy can be used to lower your pain levels.

Because every man and every disease is different, each patient is encouraged to talk to several different types of specialists (oncologist, urologist, radiation oncologist, etc.) while making treatment decisions.

To learn more about how to manage the symptoms and side effects that come with advanced prostate cancer, go to page 18.

**HORMONE THERAPY**

Hormone therapy, also known as androgen deprivation therapy (ADT), usually involves medication to reduce the level of certain hormones in the body or block their effect. Prostate cancer relies on male hormones called androgens – such as testosterone – to grow. Most testosterone is made in the testicles, but the adrenal glands also make small amounts of androgens. ADT blocks production of these hormones, stunting the growth of the tumor. ADT is often given long-term, so some doctors suggest an intermittent schedule if the side effects are substantial. In those cases, treatment will be given for six to 12 months to suppress the cancer and lower PSA levels, and is then stopped and restarted when the PSA levels reach a specific level defined by your doctor. (The effectiveness of intermittent therapy vs. continuous treatment is uncertain, so talk to your doctor to learn more.) Follow-up visits are typically every three to six months to discuss symptoms and to measure your PSA level.

**ADT options**

One category of ADT drug is known as luteinizing hormone-releasing hormone (LHRH) agonists; these agents prevent the testicles from making testosterone. Another category known as an LHRH antagonist works in a similar way and may be used in certain situations. Given as an injection, either type results in what is sometimes called “medical castration.” Another way to reduce the testosterone level is to surgically remove the testicles. However, this treatment option, known as “surgical castration,” is not more effective than treatment with an LHRH agonist or antagonist. (See Table 2.)

Sometimes an antiandrogen drug is combined with either an LHRH agonist drug or surgical castration in a treatment strategy called combined androgen blockade or total androgen blockade, but studies have shown that, in the long run, this approach offers no additional benefit over either method of castration alone in men with metastatic disease. Occasionally, antiandrogens are temporarily combined with LHRH agonists.

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### TABLE 1

**TREATMENT OPTIONS FOR CASTRATION-RESISTANT ADVANCED PROSTATE CANCER**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Type of treatment</th>
<th>Use</th>
<th>Most common side effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>docetaxel (Taxotere)</td>
<td>Chemotherapy</td>
<td>Used in combination with prednisone</td>
<td>Hair loss, fluid retention, mouth sores, weakness, neuropathy (pain or abnormal sensations in the feet and hands), nausea, vomiting</td>
</tr>
<tr>
<td>cabazitaxel (Jevtana)</td>
<td>Chemotherapy</td>
<td>Used in combination with prednisone for cancer previously treated with a docetaxel-containing treatment</td>
<td>Diarrhea, fatigue, nausea, vomiting, anemia, neutropenia, shortness of breath</td>
</tr>
<tr>
<td>abiraterone (Zytiga)</td>
<td>Hormone therapy</td>
<td>Used in combination with prednisone</td>
<td>Joint swelling, diarrhea, heartburn, hot flashes, fatigue, swelling</td>
</tr>
<tr>
<td>sipuleucel-T (PROVEGENCE)</td>
<td>Immunotherapy</td>
<td>Used to treat asymptomatic or minimally symptomatic disease*</td>
<td>Chills, fatigue, fever, back pain, nausea, joint ache</td>
</tr>
<tr>
<td>enzalutamide (Xtandi)</td>
<td>Hormone therapy</td>
<td>Used to treat prostate cancer that no longer responds to a medical or surgical treatment that lowers testosterone</td>
<td>Fatigue, back pain, decreased appetite, constipation, joint pain, diarrhea</td>
</tr>
<tr>
<td>radium-223 (Xofigo)</td>
<td>Radiation therapy</td>
<td>Used to treat men with bone metastases (who have symptoms) but no known metastatic disease in an organ</td>
<td>Nausea, diarrhea, vomiting, swelling, low white blood cell and platelet counts (rare)</td>
</tr>
</tbody>
</table>

*Additional requirements include good performance status (ability to carry out daily activities and perform ordinary tasks) and a life expectancy of more than six months.
to block the brief rise of testosterone that occurs right after the injection. Eventually, ADT will stop being effective, and the cancer will begin to progress (grow). When this happens, the cancer is said to be “hormone refractory” or “castration-resistant.” Treatments available for castration-resistant prostate cancer include hormone therapy, chemotherapy and immunotherapy, depending on the extent of disease and whether symptoms are present (Table 1). Chemotherapy is the recommended option for men with castration-resistant prostate cancer who also have symptoms, whereas immunotherapy is recommended for men who have no or minimal symptoms. Two hormone therapy drugs have both been shown to be beneficial for men with castration-resistant prostate cancer.

Abiraterone (Zytiga) and enzalutamide (Xtandi) are both approved by the FDA for the treatment of castration-resistant prostate cancer either before or after chemotherapy.

Researchers continue to evaluate different combinations of chemotherapy and/or immunotherapy drugs to further improve survival and the time to disease progression.

Side effects
Among the most common side effects of ADT is a loss of bone mass (known as osteoporosis). This occurs when the bone cells that help rebuild bone (osteoblasts) are not replaced at the same rate as cells that naturally break down bone (osteoclasts). As a result, bones become thin and porous (full of tiny holes) and are more likely to fracture (break) or cause pain and disability. Drugs known as bone-modifying agents can be used to prevent or manage osteoporosis in men receiving ADT. The bone-modifying agents used to prevent or manage osteoporosis related to ADT are also used to treat bone metastases.

Other side effects of ADT are treatable, and many may stop once treatment is finished. Men who receive long-term ADT often experience side effects that last more than a year after the drug is discontinued, and for some of these men, side effects may never go away. Among the most common side effects of ADT are:

- Hot flashes or flushes
- Night sweats
- Loss of sex drive and ability to achieve/maintain an erection
- Weight gain
- Fatigue
- Loss of muscle mass
- Mood changes, irritability
- Enlargement or tenderness of breasts

Some studies have found that ADT may be associated with a greater risk of heart disease and diabetes. For this reason, you should have regular checkups with your family physician and follow a healthy diet and exercise plan (see page 22). More information on managing treatment-related side effects is provided on page 18.

Side effects from surgical castration are permanent; for example, sterility (inability to produce children) is a result that cannot be reversed.

Monitoring response
If you receive ADT, your doctor will see you at regular follow-up visits to evaluate how well the treatment is working. If the cancer is locally advanced, a medical history and physical examination along with a DRE and PSA test are done every six to 12 months. If the cancer has spread to lymph nodes or metastasized to other parts of the body, you will have a physical exam that includes a DRE and a PSA test every three to six months, and periodic imaging studies (e.g., CT, bone scan or MRI) may be completed. If your PSA level begins to rise steadily, the “PSA doubling time” is often calculated. This calculation is the time it takes for your PSA to increase to twice its level, and it is useful for predicting outcomes, such as the time until the cancer appears in a new site. If your PSA level rises or fails to fall, other studies will be done to determine if the cancer has spread.

### TABLE 2
**HORMONE THERAPY OPTIONS FOR ADVANCED PROSTATE CANCER**

<table>
<thead>
<tr>
<th>Type of treatment</th>
<th>Drug</th>
</tr>
</thead>
<tbody>
<tr>
<td>LHRH* agonists (medical castration)</td>
<td>goserelin (Zoladex)</td>
</tr>
<tr>
<td></td>
<td>histrelin (Vantas)</td>
</tr>
<tr>
<td></td>
<td>leuprolide (Eligard, Lupron, Viadur)</td>
</tr>
<tr>
<td></td>
<td>leuplode (Trelstar)</td>
</tr>
<tr>
<td>LHRH antagonist</td>
<td>degarelix (Firmagon)</td>
</tr>
<tr>
<td>Surgical castration</td>
<td>Bilateral orchiectomy (removal of both testicles)</td>
</tr>
<tr>
<td>Antiandrogens (androgen receptor inhibitors)</td>
<td>bicalutamide (Casodex)</td>
</tr>
<tr>
<td></td>
<td>enzalutamide (Xtandi)</td>
</tr>
<tr>
<td></td>
<td>flutamide (Eulexin)</td>
</tr>
<tr>
<td></td>
<td>nilutamide (Nilandron)</td>
</tr>
<tr>
<td>Androgen synthesis inhibitor</td>
<td>abiraterone (Zytiga)</td>
</tr>
</tbody>
</table>

*LHRH=luteinizing hormone-releasing hormone

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## MEDICATION ADHERENCE

### FOLLOWING YOUR PRESCRIPTION

**As more anti-cancer drugs become available, the importance of medication adherence becomes increasingly apparent. So what is medication adherence?** In medical terms, the word “adherence” refers to the extent to which a person takes the medication as prescribed or recommended by his or her health care provider. Proper adherence to a medication involves several factors, including taking the right drug, at the right dose, at the right time, and following the schedule and regimen exactly as prescribed. When patients don’t take their medications as prescribed, it’s called non-adherence. This varies from simply forgetting to take a prescribed medication to stopping a medication regimen earlier than instructed.

Taking your medication exactly as prescribed by your doctor is important in the fight against your cancer and in determining the effectiveness of your medication throughout treatment. Most anti-cancer drug regimens are designed to maintain a specific level of drugs in your system for a specific duration of time, based on your cancer type, stage, previous treatments and several other factors. Non-adherence to your medications can lead to cancer progression, unnecessary side effects, physician visits and hospitalizations.

### MEDICATION NON-ADHERENCE

**By the Numbers**

<table>
<thead>
<tr>
<th>Percentage of people with cancer who do not take their medications as prescribed</th>
<th>Number of deaths in the U.S. every year as a result of general medication non-adherence</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>$290 BILLION</td>
</tr>
<tr>
<td>$125,000</td>
<td>Estimated annual cost of medication non-adherence in the U.S.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentage of anti-cancer prescription medications that are never filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 to 30</td>
</tr>
</tbody>
</table>
TREATMENT OPTIONS

CHEMOTHERAPY
Chemotherapy is the use of a cancer-killing drug (or a combination of drugs) to shrink the tumor and limit the survival of cancer cells. Given in cycles of treatment followed by a recovery period (no chemotherapy), it is usually given intravenously (through a vein) but may also be given in pill form (although oral drugs may be more expensive with greater patient responsibility).

Chemotherapy is usually not given until ADT has stopped working, when the cancer has become “castration-resistant” prostate cancer. However, a 2014 study found that the combination of chemotherapy plus ADT in men with advanced prostate cancer resulted in improved outcomes. You should discuss this treatment plan with your physician.

Chemotherapy options
• **Docetaxel (Taxotere)** is a commonly recommended chemotherapy drug, typically given with a corticosteroid, such as prednisone (an anti-inflammatory drug). Docetaxel improves survival by an average of several months (compared with the standard treatment of corticosteroids only) and reduces cancer-related pain.
• **Cabazitaxel (Jevtana)** is recommended if docetaxel fails to stop the disease from progressing. Available as a second-line option, it has been shown to improve survival and reduce symptoms in some patients.

**Mitoxantrone** is an additional chemotherapy drug that can be used for men with castration-resistant prostate cancer who have symptoms and are not candidates for cabazitaxel or radium-223 therapy.

Other chemotherapy drugs recommended for advanced prostate cancer include carboplatin, cisplatin, estramustine (Emcyt) and etoposide (VP-16).

*Side effects*
Chemotherapy drugs kill rapidly growing cancer cells but can harm other cells in the body that also divide rapidly. So while chemotherapy may reduce the pain of metastatic cancer and prolong life, it also may cause significant side effects that affect your quality of life. The side effects depend on the drug and how long it’s given (Table 1, page 19), but the most common include:
- Hair loss
- Fluid retention (leading to foot and leg swelling)
- Mouth sores
- Weakness
- Neuropathy (pain or tingling in feet/hands)
- Nausea, vomiting and diarrhea

While most of these side effects go away when chemotherapy stops, your doctor can suggest medications that may help prevent some side effects or make them less bothersome. More information on managing treatment-related side effects can be found on page 18.

Monitoring response
As with ADT, monitoring your PSA level is one way to see how well chemotherapy is working. Other blood tests, a physical examination and imaging studies provide a more complete picture of how your prostate cancer is responding to treatment.

IMMUNOTHERAPY
Immunotherapy is a type of treatment used to repair or boost the body’s immune system to help fight cancer, infections and other diseases. The immune system is your body’s defense against harmful organisms such as bacteria, viruses and cancer cells.

**Immunotherapy options**
• **Sipuleucel-T (PROVENGE)** is the first FDA-approved immunotherapy for metastatic castration-resistant prostate cancer. Classified as a vaccine, this agent improves survival among men with minimal symptoms who have metastatic prostate cancer that is resistant to castration. Sipuleucel-T is made using your own immune cells. Some of your blood is collected at a cell collection center, and a portion of your white blood cells (including immune cells) is separated from the sample, and the rest of the blood is returned to your body (Figure 1). After the collected white blood cells are exposed to a protein found on prostate cancer cells, they are returned to your body through a vein. This process is repeated two more times for a total of three doses of treated cells, usually given two weeks apart. These treated cells cause other immune system cells in your blood to attack the prostate cancer.

Several other types of immunotherapy are currently being studied in clinical trials, some of which show promise in the treatment of many cancer types, including advanced prostate cancer. Talk to your health care team about participating in a trial and how to find one close to you.

*Side effects*
Sipuleucel-T has relatively few side effects, and most are mild to moderate in severity:
- Fever
- Chills
- Fatigue
- Back and joint pain
- Nausea and headache
Acetaminophen (Tylenol) and diphenhydramine (Benadryl) are recommended before each infusion of sipuleucel-T to prevent these side effects. More serious (but rare) infusion reactions may also occur, including shortness of breath, wheezing, dizziness, high blood pressure and stroke.

Monitoring response
It's difficult to evaluate the effectiveness of sipuleucel-T with currently available tests because even when treatment is effective, this agent does not cause the PSA level to drop or lead to improvement in imaging studies. However, in a large randomized trial, men who received sipuleucel-T lived several months longer on average than men who received an inactive similar vaccine.

RADIATION THERAPY
This type of therapy uses high-energy radiation to kill cancerous cells and shrink tumors.

Adding ADT to radiation treatment improves survival in men with locally advanced prostate cancer. Radiation therapy is more commonly used for earlier-stage prostate cancer but is an option for locally advanced prostate cancer as well. Radiation is also effective in reducing pain or shrinking tumor masses pressing on organs or the spinal cord among men with cancer that has progressed to the bones or other organs.

Radiation therapy options
- **External-beam radiation therapy (EBRT)** comes from a large machine outside the body that aims high-energy X-rays at the cancer site. Treatments are usually given five days a week and may last eight to nine weeks. EBRT may be used alone or in combination with brachytherapy (radioactive seed implants) for locally advanced prostate cancer. Intensity-modulated radiotherapy (IMRT) or image-guided radiotherapy (IGRT) as well as proton beam radiation are also used for locally advanced cancer. In addition, EBRT or IMRT may be used to treat specific sites of cancer that have spread to the bones to reduce pain or prevent fractures.
- **Radiopharmaceuticals** are given intravenously and include a radioactive substance that gives off low levels of radiation. Ideally, this radiation travels primarily to the cancer deposits in the body.

Radium-223 is used in men with metastatic, castration-resistant prostate cancer that has spread to bone but not to other organs. Radium-223 is processed in the body like calcium and deposited in areas of bone damaged by cancer. There it delivers radiation to cancer cells but has a limited effect on normal surrounding tissues. Treatment is usually given every four weeks for a total of six doses. Studies have shown that, compared with standard supportive therapy (prednisone), radium-223 improved survival and lengthened the time to a bone complication (such as a fracture or spinal cord compression) or the need for radiation to treat bone-related symptoms.

Strontium-89 and samarium-153 are two other radiopharmaceuticals that are effective in relieving metastatic bone pain, but unlike radium-223, they have not been shown to improve survival. They also have a high risk of bone marrow suppression, which means your marrow has a decreased ability to produce blood cells. Bone marrow suppression may limit your options for other treatments.

THE FINANCIAL ASPECTS OF CANCER

- **A majority of cancer patients and caregivers experience financial hardship during treatment. By remaining calm, organized and educated about your options, you can find ways to relieve your financial burden and focus on recovering.**

  **GET ADVICE EARLY**

If you realize that paying your bills is getting more difficult, seek advice from a professional immediately. Many organizations, such as the Patient Advocate Foundation (www.patientadvocate.org), provide free counseling to patients burdened by medical debt. The group can help you apply for financial assistance and communicate effectively with your doctors, insurers and creditors.

  **REASSESS YOUR FINANCES**

Take an in-depth look at how and where you spend your money each month. Try to find small steps you can take toward lowering the amount you pay in bills without hurting your health. Some examples are carpooling or taking public transportation, shopping with coupons, removing data from your phone plan, avoiding eating out and canceling paid subscriptions to magazines, internet sites or cable TV.

  **ASK FOR HELP**

Be proactive in looking for solutions to your financial troubles by talking to the billing parties directly. Ask about their charity care program, a discount or a reduced bill, or arrange an affordable payment plan for the remaining balance. Many nonprofit groups also have programs to help patients who can’t pay their bills, including copay assistance, travel aid and child care. Apply for as many of these programs as appropriate or ask someone to help you if you feel too tired or stressed to do it yourself.

  **DEAL WITH DEBT**

If your expenses exceed your income, you can quickly find yourself in debt. Ask creditors if there’s a way you can postpone paying off your debt or settle your debt at a slightly reduced rate. If this is possible, it could buy you time to get back on your feet. Filing for bankruptcy might be another option, but don’t approach this option lightly. Talk to a bankruptcy attorney to help you through the process, or see whether you qualify for free legal services through the court.

  **DON’T SACRIFICE YOUR HEALTH**

No matter what your financial situation is, never alter or stop your treatment without talking to your doctor. Many cancer patients avoid filling prescriptions or receiving treatment when they’re worried about paying the bills, but doing this can seriously damage your health. Never jeopardize your recovery from cancer because of financial difficulties; your health care team can help you find a solution.
TREATMENT OPTIONS

Side effects
Radiation therapy may cause the following side effects, especially in the later weeks of treatment:
• Fatigue
• Frequent urination or burning with urination
• Dry, red and tender areas at radiation site
• Inflammation of the lining of the bladder, rectum or small intestine, resulting in urinary and bowel problems, such as frequent urination and incontinence (inability to hold urine or bowels). Loss of erection may also occur in the later stages of treatment.

Common side effects of radiopharmaceuticals include nausea, diarrhea, vomiting and swelling of the legs and feet.

Monitoring response
After radiation therapy, your PSA level should be checked every six months, and you should also undergo a physical examination (including a DRE). Imaging tests will be done if the PSA level begins to rise. Tell your doctor about any concerns you have or new symptoms you experience after treatment.

SURGERY
Five different surgical procedures can be used to treat patients with prostate cancer, but most are appropriate only for Stage I or II cancer. However, two procedures may be used for advanced prostate cancer:

A radical prostatectomy is the surgical removal of the prostate. This may be an option for some men with locally advanced disease (Stage III).

Transurethral resection of the prostate (TURP) is a surgical procedure that can help relieve symptoms caused when prostate tissue blocks the flow of urine (Figure 2). However, TURP is not performed with the intent of removing all of the cancer or curbing the disease.

To perform the procedure, the surgeon will insert a long, thin scope through the penis into the bladder (the tube that carries urine out from the bladder). With the scope in place, the surgeon moves a wire heated by electricity through the prostate tissue to cut and remove it. TURP may be done with the use of spinal anesthesia, which numbs the lower half of your body, or general anesthesia, which puts you to sleep. The operation usually takes about an hour. After surgery and while you heal, a urinary catheter will be in place to help drain urine. The catheter is inserted through the penis into the bladder and remains in place from a few days to a few weeks. You can usually leave the hospital after two or three days. You will likely have some blood in your urine after surgery and may experience some urinary leaking, but most men regain some bladder control after a few weeks. TURP is a safe procedure with few serious side effects, but possible complications may include problems getting an erection, painful urination, blood in your urine, semen entering your bladder and urine, recurring urinary tract infections, narrowing of the bladder neck, or an inability to control urination (incontinence).

Monitoring response
When TURP is done to relieve urinary blockage due to prostate cancer, relief usually follows quickly. A regular DRE, routine blood tests and a PSA test are recommended after a TURP. Your doctor will want to know about any symptoms or pain.

DRUGS FOR BONE METASTASES
Men with castration-resistant prostate cancer and bone metastases are treated with drugs to prevent or delay skeletal-related events (such as fractures). As noted earlier, the bone-modifying agents used to prevent or manage osteoporosis related to ADT are the same ones used to treat bone metastases.

Two bone-modifying drugs are approved for advanced prostate cancer:
• denosumab (Prolia, Xgeva)
• zoledronic acid (Reclast, Zometa)

Both drugs have similar effectiveness in reducing skeletal-related events, but denosumab has been shown to delay the first skeletal-related event by a few months compared with zoledronic acid. Talk to your doctor about which drug may be better for you.

Monitoring response
Your doctor will probably order a bone scan or another imaging study periodically to monitor bone metastases during treatment. The goal of therapy with direct anti-cancer treatment and bone targeting agents is to slow or stop the development of bone damage. New areas of cancer cells in the bones mean that a different treatment may be necessary.

ADDITIONAL RESOURCES

- American Cancer Society: www.cancer.org
- Bone and Cancer Foundation: www.boneandcancerfoundation.org
- CancerCare: www.cancercare.org/financial
- National Comprehensive Cancer Network: www.nccn.com
- NCCN Guidelines for Patients
- Prostate Cancer Foundation: www.pcf.org
- Prostate Cancer Research Institute: www.pcri.org

FIGURE 2

A transurethral resection of the prostate, also known as TURP, is a procedure to remove the inner part of the prostate gland, which allows your doctor to remove cancerous tissue within your prostate. The treatment can help relieve urinary symptoms caused when prostate tissue blocks the flow of urine.
Caesar Blevins was 52 when he was diagnosed with advanced prostate cancer—no family history of disease, no reason to even have it on his radar. But his family encouraged him to get a physical, and that’s when doctors discovered a PSA level of 100. They immediately sent him for a biopsy, and all 12 samples were positive for cancer.

**Caesar Blevins was afraid and shocked.** I had no knowledge of the disease, no idea what to do or what to expect. And my doctors were all surprised at such a high PSA level, especially because I hadn’t experienced any symptoms or noticed anything out of the ordinary. I went for a second opinion and asked my doctors a lot of questions. I was told that surgery was an option and that my physician was well-trained in robotic-assisted procedures, but he also let me know that a combination of radiation and hormone therapy was another option.

I needed to keep working, and I knew that surgery would require a lot of time off. The potential complications were also concerning, so I decided on radiation and hormone therapy. I was given 43 radiation treatments and began leuprolide acetate (Lupron) injections every three months. I never missed a day of work.

Unfortunately, the Lupron quit working and the cancer progressed. My team switched me to degarelix (Firmagon), which I still receive every 28 days. At every appointment, they test my PSA level, which is down to 0.04—a long way from 100! I’m doing well and managing the side effects of the Firmagon as best I can; hot flashes, weight gain and fatigue are the most prevalent. I go to the gym every morning before work, and I deal with the rest of it as it comes.

I shared my diagnosis with my son and a few close friends, who were very supportive and helped me get everything in order to start my treatment regimen. I trusted my doctors when it came to learning what I needed to know about the disease; but being informed is so important, and one of the best sources of information comes from other survivors. I joined a support group and became good friends with several of the guys. A few of the gentlemen and I actually broke away from that group and started our own: The Prostate Networking Group.

Over the course of my journey, things changed—so I changed. And everything began to happen for the better. My work with the advocacy group empowered me to speak out. I became more knowledgeable, mentally stronger and passion-driven. I was and still am a very private person, but I don’t want men to go through it blindly as I had to. This disease doesn’t affect just one man; it affects all those who love him. And if my being an advocate encourages even one man to go get checked—regardless of the results—I’ve done good work.

I’ll continue hormone therapy for the rest of my life, and with every treatment is the reminder that disease progression is a possibility. I don’t think about it every day, but I wouldn’t be human if it didn’t cross my mind. For me, it helps to read my Bible and remember that we’re human and will all one day pass. I find that focusing on the people I’ve helped through advocacy work also keeps me positive. It’s important for me and those I talk with to remember: Don’t give up, because we’re still alive.

My cancer journey has been a humbling experience, but it’s also been empowering. I’ve learned that cancer does not discriminate. I’ve also learned that you don’t have to go through it by yourself. Look for other survivors and find a support group. Because we are #StrongerTogether.

**Caesar’s work with the Prostate Networking Group has not only made an impact in his life; it’s helped countless others in the battle against cancer. His words of encouragement can be heard throughout the cancer community—as a boisterous and energetic Bingo host at the American Cancer Society Hope Lodge, to his kind posts to friends in treatment on the group’s Facebook page. He’s one of the driving forces behind the group’s advocacy work. Along with founder Steve Hentzen, he continues to reach out to the community as part of a grassroots organization of survivors, their partners and those helping in the fight to raise awareness and spread hope.**

**Several group members recently volunteered at the local Hope Lodge, cooking and serving dinner for patients and their caregivers. “It’s our way of giving back to the very community that has helped us,” said Hentzen. The group celebrated Father’s Day this year at a local baseball game, where they handed out information to guests of all ages, regardless of gender. As Hentzen said, nearly everyone has a father, brother, son, best friend, or just someone who needs to know about prostate cancer.**

The Prostate Networking Group can be found on Facebook and Twitter @ProstateNetwork
WHAT IS ZYTIGA® (abiraterone acetate)?
ZYTIGA® is a prescription medicine that is used along with prednisone. ZYTIGA® is used to treat men with castration-resistant prostate cancer (prostate cancer that is resistant to medical or surgical treatments that lower testosterone) that has spread to other parts of the body.

IMPORTANT SAFETY INFORMATION
Who should not take ZYTIGA® (abiraterone acetate)?
Do not take ZYTIGA® if you are pregnant or may become pregnant. ZYTIGA® may harm your unborn baby. Women who are pregnant or who may become pregnant should not touch ZYTIGA® without protection, such as gloves.
ZYTIGA® is not for use in women or children. Keep ZYTIGA® and all medicines out of the reach of children.

Before you take ZYTIGA®, tell your healthcare provider if you:
- Have heart problems
- Have liver problems
- Have a history of adrenal problems
- Have a history of pituitary problems
- Have any other medical conditions
- Plan to become pregnant (See "Who should not take ZYTIGA®?")
- Are breastfeeding or plan to breastfeed. It is not known if ZYTIGA® passes into your breast milk. You and your healthcare provider should decide if you will take ZYTIGA® or breastfeed. You should not do both. (See "Who should not take ZYTIGA®?")
- Take any other medicines, including prescription and nonprescription medicines, vitamins, and herbal supplements. ZYTIGA® can interact with many other medicines.

If you are taking ZYTIGA®:
- Take ZYTIGA® and prednisone exactly as your healthcare provider tells you.
- Take your prescribed dose of ZYTIGA® one time a day. Your healthcare provider may change your dose if needed.
- Do not stop taking your prescribed dose of ZYTIGA® or prednisone without talking to your healthcare provider first.
- Take ZYTIGA® on an empty stomach. Do not take ZYTIGA® with food. Taking ZYTIGA® with food may cause more of the medicine to be absorbed by the body than is needed and this may cause side effects.
- No food should be eaten 2 hours before and 1 hour after taking ZYTIGA®.
- Swallow ZYTIGA® tablets whole. Do not crush or chew tablets.
- Take ZYTIGA® tablets with water.
- Your healthcare provider will do blood tests to check for side effects.
- Men who are sexually active with a pregnant woman must use a condom during and for one week after treatment with ZYTIGA®. If their sexual partner may become pregnant a condom and another form of birth control must be used during and for one week after treatment with ZYTIGA®. Talk with your healthcare provider if you have any questions about birth control.

ZYTIGA® may cause serious side effects including:
- High blood pressure (hypertension), low blood potassium levels (hypokalemia), and fluid retention (edema).
Tell your healthcare provider if you get any of the following symptoms:
- Dizziness
- Fast heartbeats
- Feel faint or lightheaded
Before you take ZYTIGA®, tell your healthcare provider if you:

- Medicines out of the reach of children.
- Medicines, vitamins, and herbal supplements. ZYTIGA® can interact with many other medicines.
- Swelling in your legs or feet
- Adrenal problems may happen if you stop taking prednisone, get an infection, or are under stress.
- Liver problems. You may develop changes in liver function blood test. Your healthcare provider will do blood tests to check your liver before treatment with ZYTIGA® and during treatment with ZYTIGA®.

The most common side effects of ZYTIGA® include:

- Headache
- Confusion
- Muscle weakness
- Pain in your legs
- Swelling in your legs or feet
- Adrenal problems may happen if you stop taking prednisone, get an infection, or are under stress.
- Liver problems. You may develop changes in liver function blood test. Your healthcare provider will do blood tests to check your liver before treatment with ZYTIGA® and during treatment with ZYTIGA®.

There are not all the possible side effects of ZYTIGA®.

FOR MORE INFORMATION, ASK YOUR HEALTHCARE PROVIDER OR PHARMACIST.

Tell your healthcare provider about all the medicines you take, including prescription and nonprescription medicines, vitamins, and herbal supplements.

ZYTIGA® can interact with many other medicines.

You should not start or stop any medicine before you talk with the healthcare provider who prescribed ZYTIGA®.

Know the medicines you take. Keep a list of them with you to show to your healthcare provider and pharmacist when you get a new medicine.

Call your doctor for medical advice about side effects. You are encouraged to report negative side effects of prescription drugs to the FDA.

Visit www.fda.gov/medwatch, or call 1-800-FDA-1088 (1-800-332-1088).
PATIENT INFORMATION

ZYTIGA® (Zye-tee-ga) (abiraterone acetate) Tablets

Read this Patient Information that comes with ZYTIGA before you start taking it and each time you get a refill. There may be new information. This information does not take the place of talking with your healthcare provider about your medical condition or your treatment.

What is ZYTIGA?
ZYTIGA is a prescription medicine that is used along with prednisone. ZYTIGA is used to treat men with castration-resistant prostate cancer (prostate cancer that is resistant to medical or surgical treatments that lower testosterone) that has spread to other parts of the body.

ZYTIGA is not for use in women.
It is not known if ZYTIGA is safe or effective in children.

Who should not take ZYTIGA?
Do not take ZYTIGA if you are pregnant or may become pregnant. ZYTIGA may harm your unborn baby.
Women who are pregnant or who may become pregnant should not touch ZYTIGA without protection, such as gloves.

What should I tell my healthcare provider before taking ZYTIGA?

Before you take ZYTIGA, tell your healthcare provider if you:

• have heart problems
• have liver problems
• have a history of adrenal problems
• have a history of pituitary problems
• have any other medical conditions
• plan to become pregnant. See “Who should not take ZYTIGA?”
• are breastfeeding or plan to breastfeed. It is not known if ZYTIGA passes into your breast milk. You and your healthcare provider should decide if you will take ZYTIGA or breastfeed. You should not do both. See “Who should not take ZYTIGA?”

Tell your healthcare provider about all the medicines you take, including prescription and non-prescription medicines, vitamins, and herbal supplements. ZYTIGA can interact with many other medicines.

You should not start or stop any medicine before you talk with the healthcare provider that prescribed ZYTIGA.

Know the medicines you take. Keep a list of them with you to show to your healthcare provider and pharmacist when you get a new medicine.

How should I take ZYTIGA?

• Take ZYTIGA and prednisone exactly as your healthcare provider tells you.
• Take your prescribed dose of ZYTIGA one time a day.

• Your healthcare provider may change your dose if needed.
• Do not stop taking your prescribed dose of ZYTIGA or prednisone without talking with your healthcare provider first.
• Take ZYTIGA on an empty stomach. Do not take ZYTIGA with food. Taking ZYTIGA with food may cause more of the medicine to be absorbed by the body than is needed and this may cause side effects.
• No food should be eaten 2 hours before and 1 hour after taking ZYTIGA.
• Swallow ZYTIGA tablets whole. Do not crush or chew tablets.
• Take ZYTIGA tablets with water.
• Men who are sexually active with a pregnant woman must use a condom during and for one week after treatment with ZYTIGA. If their sexual partner may become pregnant, a condom and another form of birth control must be used during and for one week after treatment with ZYTIGA. Talk with your healthcare provider if you have questions about birth control.
• If you miss a dose of ZYTIGA or prednisone, take your prescribed dose the following day. If you miss more than 1 dose, tell your healthcare provider right away.
• Your healthcare provider will do blood tests to check for side effects.

What are the possible side effects of ZYTIGA?

ZYTIGA may cause serious side effects including:

• High blood pressure (hypertension), low blood potassium levels (hypokalemia) and fluid retention (edema). Tell your healthcare provider if you get any of the following symptoms:
  ° dizziness
  ° fast heartbeats
  ° feel faint or lightheaded
  ° headache
  ° confusion
  ° muscle weakness
  ° pain in your legs
  ° swelling in your legs or feet

• Adrenal problems may happen if you stop taking prednisone, get an infection, or are under stress.

• Liver problems. You may develop changes in liver function blood test. Your healthcare provider will do blood tests to check your liver before treatment with ZYTIGA and during treatment with ZYTIGA.

The most common side effects of ZYTIGA include:
  ° weakness
  ° joint swelling or pain
  ° swelling in your legs or feet
  ° hot flushes
  ° diarrhea
  ° vomiting
  ° cough
  ° high blood pressure
  ° shortness of breath
- urinary tract infection
- bruising
- low red blood cells (anemia) and low blood potassium levels
- high blood sugar levels, high blood cholesterol and triglycerides
- certain other abnormal blood tests

Tell your healthcare provider if you have any side effect that bothers you or that does not go away.

These are not all the possible side effects of ZYTIGA. For more information, ask your healthcare provider or pharmacist.

Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.

**How should I store ZYTIGA?**

- Store ZYTIGA at 59°F to 86°F (15°C to 30°C).

**Keep ZYTIGA and all medicines out of the reach of children.**

**General information about ZYTIGA.**

Medicines are sometimes prescribed for purposes other than those listed in a patient information leaflet. Do not use ZYTIGA for a condition for which it was not prescribed. Do not give your ZYTIGA to other people, even if they have the same symptoms that you have. It may harm them.

This leaflet summarizes the most important information about ZYTIGA. If you would like more information, talk with your healthcare provider. You can ask your healthcare provider or pharmacist for information about ZYTIGA that is written for healthcare professionals.

For more information contact Janssen Biotech, Inc. at 1-800-526-7736 (1-800-JANSSEN) or www.Zytiga.com.

**What are the ingredients of ZYTIGA?**

Active ingredient: abiraterone acetate

Inactive ingredients: colloidal silicon dioxide, croscarmellose sodium, lactose monohydrate, magnesium stearate, microcrystalline cellulose, povidone, and sodium lauryl sulfate.

This Patient Information has been approved by the U.S. Food and Drug Administration.

**Manufactured by:**
Patheon Inc.
Mississauga, Canada

**Manufactured for:**
Janssen Biotech, Inc.
Horsham, PA 19044

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Learn how to best support the patient

Men play important roles in every society: as mentors, husbands, grandfathers, fathers, sons, coaches, income earners and friends. So when they’re diagnosed with prostate cancer at an advanced stage, it can affect a large number of people. For many men, however, it’s a challenge to embrace the idea of someone else taking care of them while maintaining their privacy.

The diagnosis of advanced prostate cancer indicates that the disease has spread beyond the prostate gland, and either the cancer has grown or the treated cancer has recurred. With this diagnosis, men are often disheartened, slow to believe the diagnosis, or even in denial.

One of the most beneficial things you can do to help someone with advanced prostate cancer is learn all you can about the disease. This will make you better able to help him with treatment decisions, and manage side effects and the day-to-day tasks associated with prostate cancer. Caregivers may need to schedule doctor visits, accompany their loved one when he meets with his health care professional, and take notes at appointments. It’s a good idea to attend these appointments prepared with questions, such as what side effects are common for certain treatments or how to manage any symptoms he’s experiencing. It’s also important to ask about all of the treatment options available for his specific diagnosis so that you both can make the most informed decisions possible. Prostate cancer, even in its advanced stages, can be slow-growing, and many men live in good health for many years. Treatment options and their side effects, however, may require continued physical, emotional and spiritual care.

If you’re his partner as well as his caregiver, treatment for prostate cancer can cause sexual concerns for both of you. Depending on treatment, erectile dysfunction may occur, which is the loss of the ability to get or maintain an erection and the loss of sex drive (see page 20). Other side effects, such as infertility and incontinence, may result from prostate cancer treatments. Many men with these side effects often don’t want to talk about the issues; however, open and honest conversation with your partner is important for both of you. Talk about your sexual relationship as it was before treatment and as a result of treatment, and discuss the alternatives you have so that you can both find satisfaction. Ask the doctor about recovery time after certain procedures and the possibility of restoring sexual function.

Don’t be afraid to suggest therapy or a support group for help dealing with the physical and emotional challenges associated with prostate cancer. Experts emphasize that healthy communication is a key factor.

In Sickness and in Health

[ Husband and wife continue to battle advanced prostate cancer together ]

So much for the honeymoon period.

A mother of two young daughters, Debb Harelik met her husband, Leibel, through online dating—right after he was diagnosed with prostate cancer. That’s not so bad, she thought. She’s a nurse, after all, and knew enough about the disease to know the success rate. Leibel proposed not long after they began dating, but as the relationship progressed, so did the cancer.

“After going with him to the doctors, I started to realize it was a little more serious than I had thought,” she said.

Since his diagnosis in 2002, there have been biopsies, robotic surgery, hormone therapy, immunotherapy, radiation—all attempting to keep metastatic cancer at bay.

“People would say, ‘Why would you marry someone with cancer when you know they’re going to die so soon?’” Debb said. “And I thought, ‘Who’s to say I’m not going to step off a curb and get hit by a bus?’ Then they would say, ‘Well, what are you teaching your children?’ And I said, ‘I’m teaching my children how to love, and that it doesn’t really matter how long it is.’ And it’s turned out to be much longer than I ever thought possible.”

Even while defying the odds, Debb has served as the primary caregiver for her husband, enduring pessimistic doctors, failed treatments, horrendous side effects and an emotional roller coaster. And just as they began their newlywed life, Leibel was facing the physical and emotional trauma of erectile dysfunction and an annihilated libido.

“In the very beginning, it was a really big hardship emotionally and physically for both of us,” she said. “I think as a wife, it’s very difficult to recognize that even though I know
to successfully navigating the tasks and decisions involved with advanced disease. Good communication can also aid in minimizing any fears and frustrations. Support groups are often good resources to enhance communication between a man living with advanced prostate cancer and his caregiver.

At times, caregivers have difficulty with finding the middle ground between being appropriately positive and becoming unnecessarily frantic. According to experts, many caregivers falsely begin to operate under the belief that if they do enough, they can keep their loved one alive. The fever-pitched activity, or even caring for their loved one for a number of years, can become emotionally and physically exhausting. Caregivers do not have the power to keep a loved one alive; a more realistic goal may be to keep their loved one comfortable. A confident caregiver is one who can identify, build and use his or her strengths in service to the patient. And it’s critical that you take care of yourself so that you can provide the best possible care for your loved one. Remember, it’s OK to ask for help, and you should never feel guilty about taking some much-needed time for yourself. By keeping yourself physically and mentally healthy, you are better able to function as an important member of your loved one’s care team.

that my husband desires me as woman, it’s difficult to realize that. Even though he may have that thought process like, ‘Wow, she’s really pretty,’ there’s absolutely no motivation in that direction. He kept trying to explain that to me. I was daft and never really got it.”

In fact, it was a couple of years before she finally understood: Sex just wasn’t going to be a part of her life with a man with metastatic, castration-resistant prostate cancer being given massive doses of female hormones. Debb said the change in her husband was dramatic.

“It’s like there’s no desire,” she said. “I think he feels like a failure as a man because he can’t do ‘manly’ things. Men aren’t all about sex, but that’s important. And that’s gone.”

While her nursing background has sometimes made things harder for her (“You know a whole lot but you don’t know enough”), Debb said her profession was also her coping mechanism.

“Nurses have this habit of putting on this really cold shoulder because you have to push things far away. It’s really unfortunate, but I’ve done the same thing with my husband. If something is scary, I turn clinical. It’s preservation for me as a woman; if I detach for just a bit, it’s easier for me to focus on what I’m doing and be able to assist him.”

Other times – the “bad days” – called for a more intimate approach, she said.

“Sometimes we just dance in the house—a little slow dance, a little moment.”

The demands on her time and energy didn’t stop with Leibel.

“I felt like I was being pulled in all different directions,” she said. “I had just met a man I was falling in love with who was becoming a stepfather. He wanted my attention; my children needed my attention. There was not enough of me to go around. I know I didn’t give enough to everybody; I sure didn’t give enough to myself. And if I have any piece of information that’s the most important it’s that the caregiver really needs to take a little time for themselves—without feeling guilty.”

Help for herself was often hard to come by, as others didn’t seem to grasp the gravity of Leibel’s condition. Without “typical” visible signs of cancer, his disease was often dismissed.

“Friends and family don’t get it,” she said. “I’m not saying prostate cancer is worse than other cancers, but most other cancers don’t involve hormones. I think the hardest thing about prostate cancer is that they don’t look bad. You can’t tell that something’s different. You don’t know that their brain has totally changed because the amount of hormones they’re on.”

For those rare moments she’s able to get away, Debb’s one escape is to the pool, where she cherishes the time to herself.

“That’s my one quiet place.”

Together, the two have leaned on each other over the years, advocating for prostate cancer research at both the state and federal level, even teaching others the power of laughter through the Association for Applied and Therapeutic Humor and becoming certified laughter leaders through the World Laughter Tour. It’s a technique that’s definitely worked for them.

“We had to develop our intimacy more mentally and more through playfulness: laughter, joking around, just being goofballs,” she said. “We find our moment and still find our laughter.”

For now, Leibel continues to defy the odds – Debb calls him a “walking miracle”– and his wife stays hopeful.

“We cope the very best way we can.”

ADDITIONAL RESOURCES

- My Prostate Cancer Roadmap: www.myprostatecancerroadmap.com
- A Caregiver’s Guide to Caring for the Patient with Prostate Cancer
- Us TOO International: www.ustoo.org
- Issues for Spouses/Partners/Caregivers
- Women Against Prostate Cancer: www.womenagainstprostatecancer.org
As a patient, one of your most important jobs will be to manage the symptoms and side effects of this disease. Most patients not only experience disease-related health issues but must manage the side effects that accompany treatment as well.

Men who know what to expect may have an easier time managing (and in some cases avoiding) the common side effects known to affect advanced prostate cancer patients (Table 1). Everyone reacts differently to various treatments, so be sure to tell your doctor about any changes in your health.

Some health issues will be a minor inconvenience, while others can cause extreme discomfort, pain, and/or emotional distress. Side effects often come in one of three stages:

- Short-term (or acute) side effects occur during treatment and typically disappear when treatment ends.
- Long-term side effects may not completely disappear until months or years after treatment ends.
- Late effects can occur six months or more after treatment ends.

**DEPRESSION**

The emotional distress of a cancer diagnosis can become so overwhelming that many patients (and caregivers) can develop depression. More complex than feeling sad or hopeless, a diagnosis of depression requires that at least five of the following symptoms occur every day for at least two weeks:

- Persistent sad, anxious or “numb” feeling
- Loss of interest or pleasure in once-enjoyed hobbies and activities
- Feelings of guilt, worthlessness or helplessness
- Fatigue and loss of energy
- Difficulty concentrating, remembering or making decisions
- Sleep problems
- Changes in appetite and/or weight
- Thoughts of death or suicide, or suicide attempts
- Restlessness or irritability
- Social withdrawal

**Ways to manage depression**

- See a professional counselor or psychologist.
- Ask about antidepressant or psychostimulant medications.
- Consider joining a support group.
- Be open with your loved ones, and ask for help when you need it.

**PAIN**

With advanced prostate cancer, metastases to bones can cause pain in the back, pelvis and hip, or even fractures. Tumors can also press on surrounding tissues, causing back or neck pain if they press on the spinal cord. Be aware that pain can also affect your immune system and its disease-fighting abilities, interfering with your recovery.

**Ways to manage pain**

- Add a pain specialist to your team.
- Find a combination of medications that keep you comfortable, including drugs designed to strengthen the bones and inhibit bone metastases, including denosumab (Prolia, Xgeva) and zoledronic acid (Reclast, Zometa).
- Ask your doctor about radiation therapy as a pain relief option.
- Be careful to avoid injury.
- Keep a diary so you can have an accurate record of your pain.

**NAUSEA/DIARRHEA**

Chemotherapy drugs are the most common cause of nausea and diarrhea, but other treatments and certain pain medications may also trigger these side effects. From mild to severe, these symptoms are easier to prevent than to control, so eat a healthy diet that doesn’t upset your stomach while trying various options to avoid nausea.

**Ways to manage nausea and diarrhea**

- Drink a lot of water to prevent dehydration.
- Drugs known as antiemetics can help prevent and control nausea.
- Eat bland, low-fiber foods that are easy to digest and full of protein.
- Avoid alcohol and caffeine.
- Take anti-nausea medications even on days when you feel well.
- Learn when eating is best for you, and wait at least one hour after treatment before eating.

**RISK OF INFECTION (NEUTROPENIA)**

A neutrophil is a type of white blood cell that plays an important role in preventing infections throughout your body. Normally, neutrophils make up 50 to 70 percent of your white blood cells. But when the number of neutrophils in your blood drops to an abnormally low level, a condition known as neutropenia occurs. Neutropenia increases your risk for infection and makes it more difficult for infections to resolve if bacteria do enter your body. The lower your neutrophil count, the greater your risk for infection.

Many types of cancer treatments are designed to attack rapidly dividing cancer cells. Because white blood cells also grow and divide quickly, they may be damaged by chemotherapy, radiation and immunotherapy, which can lead to neutropenia.

**Ways to manage neutropenia**

- Wash your hands regularly, or carry hand sanitizer with you to apply often.
- Ask about growth factor treatments, which are special proteins that stimulate the bone marrow to produce more white blood cells. Usually given as an injection under the skin, these medications include filgrastim (Neupogen), filgrastim-sndz (Zarxio), pegfilgrastim (Neulasta) and sargramostim (Leukine).

**FATIGUE**

Men with advanced prostate cancer often experience fatigue, and they describe it using a variety of words, including “exhausted,” “weak” and “worn out.” However it’s described, the fatigue related to cancer and its treatment is different from fatigue that healthy individuals occasionally feel. It usually lasts longer, is more severe and is unrelieved by sleep. Managing fatigue is an essential part of your health care, so be sure to talk to your doctor about your fatigue.

**Ways to manage fatigue**

- Set priorities for activities and do only what’s most important.
- Participate in regular physical activity,
such as walking, yoga or bike riding. 

- Take frequent rest periods or naps, but limit each nap to 45 minutes. 
- Perform deep-breathing exercises. 
- Use imagery techniques. 
- Read, listen to music and play games. 
- Ask your doctor for help managing symptoms that may contribute to fatigue, such as pain, nausea, vomiting and depression. 
- Eat a well-balanced diet to help promote healing and restore your energy. 

**LYMPHEDEMA**

Your lymphatic system carries white blood cells throughout the body to help fight infections, but when lymph nodes are displaced by cancer cells or damaged as part of your treatment, the lymphatic fluid can build up, causing swelling in an arm or leg. Some men experience lymphedema immediately after surgery or radiation, but it can also become an issue months or even years down the road if your cancer spreads to the lymph nodes.

**Ways to manage lymphedema**

- Talk to your doctor about manual lymphatic drainage (MLD), a gentle skin massage that drains lymphatic fluid into the bloodstream, reducing swelling. 
- Apply pressure with the use of a compression garment or tight bandages. 
- Clean and moisturize the affected area often to prevent infection. 
- Elevate swollen limbs to encourage drainage of the lymphatic system. 
- If you have leg edema, avoid standing still or sitting for long periods of time.

**COGNITIVE DYSFUNCTION (“CHEMO-BRAIN”)**

Men being treated for advanced prostate cancer often feel as if they can’t think clearly or they have trouble remembering details such as names, dates and telephone numbers. Many say they have memory lapses in the middle of tasks or conversations and have difficulty paying attention, and they have described the overall feeling as a “mental fog.” These symptoms all represent cognitive dysfunction, which has become popularly known as “chemo-brain” because of the original belief that it was a side effect of only chemotherapy. Research has shown that cognitive dysfunction related to cancer treatment is real, affecting attention, concentration, short-term memory, language skills, organizational ability and arithmetic skills. These problems are usually subtle but can be troublesome and frustrating.

**Ways to manage cognitive dysfunction**

- Ask your doctor about drugs commonly used to treat Alzheimer’s disease, as they may also provide mental clarity. 
- Use a calendar or daily planner to keep all of your important information in one place. 
- Get physical exercise to improve mental alertness. 
- Track memory and attention problems to help you determine when you’re most affected. 
- Don’t try to multitask; focus on one thing at a time. 
- Get proper sleep, eat a balanced diet, and use humor to cope with your forgetfulness. 
- Ask for help. Let friends and family know you’re having trouble, and let them help.

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<table>
<thead>
<tr>
<th>Type of treatment</th>
<th>Short-term side effects</th>
<th>Long-term side effects</th>
<th>Late effects</th>
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</thead>
<tbody>
<tr>
<td>Surgery</td>
<td>Pain</td>
<td>Erectile dysfunction (see page 20)</td>
<td>Lymphedema</td>
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<td></td>
<td>Limited mobility and/or activities</td>
<td>Scars</td>
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<td>Slow digestion</td>
<td>Impaired wound healing</td>
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<td>Chronic pain</td>
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<td>Change in function</td>
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<td>Negative body image</td>
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<tr>
<td>Radiation therapy</td>
<td>Skin sensitivity (redness, dryness, peeling, itchiness)</td>
<td>Fatigue</td>
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<td></td>
<td>Fatigue</td>
<td>Dry mouth</td>
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<td></td>
<td>Anemia</td>
<td>Urinary frequency and urgency</td>
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<td></td>
<td>Hair loss (in the area of the body being treated)</td>
<td>Decline in erectile function</td>
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<td>Bowel frequency/incontinence</td>
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<td>Chemotherapy</td>
<td>Nausea and vomiting</td>
<td>Fatigue</td>
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<td></td>
<td>Neutropenia (increased risk of infection)</td>
<td>Peripheral neuropathy (nerve problems)</td>
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<td></td>
<td>Anemia</td>
<td>Cognitive dysfunction (forgetfulness or trouble concentrating)</td>
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<td></td>
<td>Fatigue</td>
<td>Cardiomyopathy (heart problems)</td>
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<td>Changes in appetite</td>
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<td></td>
<td>Hair loss</td>
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<td>Mouth sores</td>
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<td></td>
<td>Diarrhea</td>
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<td>Skin and nail changes</td>
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<tr>
<td>Hormone therapy*</td>
<td>Hot flashes</td>
<td>Increased risk of blood clot</td>
<td>Cardiovascular disease</td>
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<td>Constipation or diarrhea</td>
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<td></td>
<td>Nausea</td>
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<td>Dizziness and/or headache</td>
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<td>Trouble sleeping</td>
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<td>Erectile dysfunction and/or decreased sex drive</td>
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<td>Weight gain</td>
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<td>Fatigue</td>
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<td>Immunotherapy</td>
<td>Acne-like rash</td>
<td>Increased risk of blood clot</td>
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<td>Increased risk of infection</td>
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<td>Flu-like syndrome</td>
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<td>Dry, itchy skin</td>
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<td></td>
<td>Nausea and vomiting</td>
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<td>Slow-growing, brittle hair</td>
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<td>Diarrhea or constipation</td>
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<td>Mouth sores</td>
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<td></td>
<td>Anorexia</td>
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<td></td>
<td>Increased risk of blood clot</td>
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<td></td>
<td>Growth of eyelashes</td>
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<td></td>
<td>Discomfort or tearing in eyes</td>
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<td>Fatigue</td>
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<td></td>
<td>Cardiomyopathy (heart problems)</td>
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*Hormone therapy is typically given for an extended period, so short-term side effects may last a long time.*

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**TABLE 1**

**MOST COMMON SIDE EFFECTS BASED ON TREATMENT TYPE**
While all cancer-related symptoms and side effects are undesirable, some are more sensitive and emotional than others. Many of the treatments used to treat advanced stages of prostate cancer can affect a man’s sexual health as well as the ability to control his bladder. Even if you’re prepared for bedroom and bathroom issues, they can be embarrassing and frustrating.

ERECTILE DYSFUNCTION (ED)
The delicate nerves and blood vessels that surround the prostate gland can be damaged during aggressive treatment, causing men to lose control of sexual function. While erectile dysfunction (or impotence) is a physical problem, dealing with the emotions that come with ED can actually help alleviate the symptoms. Talking about your feelings on the subject with your partner – no matter how awkward – will help you both feel closer and intimate while you manage this side effect.

Many treatment types may cause ED, including surgery, radiation (external or internal) and hormone therapy. ED can also be a side effect of some medications, all of which are commonly used to treat other cancers and treatment-related symptoms. Talk to your doctor about reducing the dosage of these medications or switching drugs to see whether you notice any positive changes.

URINARY SYMPTOMS
Many patients experience bladder control problems at some point during treatment or recovery, including urinary incontinence (leakage), frequent or urgent urination, or blood in the urine, which can result from radiation therapy or surgery.

In some cases, a tumor blocks the urethra, causing pain and an enlarged bladder. As with ED, this problem can be short- or long-term, depending on the individual patient and his disease. Incontinence can take weeks to months to heal naturally and may be an ongoing problem.

Talk to your doctor about your options when it comes to managing this problem and about the details and risks associated with each of the following:

- **Oral medications** can help improve the flow of urine or relieve an irritated bladder. These medications include tamsulosin (Flomax), doxazosin (Cardura), alfuzosin (Uroxatral), silodosin (Rapaflo), terazosin (Hytrin), tadalafil (Adcirca, Cialis), and tadalafil (Cialis).
- **Penile implants** are surgical procedures that involve inserting an inflatable or malleable implant into a man’s penis. They can help maintain or restore the ability to have an erection.
- **Collagen injections** or other treatments can be used to prevent urinary leakage. Condom catheters are devices that fit over the penis and drain the urine into a storage bag. And penile clamps are V-shaped foam cushions that press on the urethra and allow patients to have more bladder control.
- **Surgery** can help support the urethra and relieve pressure on the bladder.

While some patients will be able to achieve erections naturally over time, others might need to try several options to see improvements. It’s best to talk to your doctor about potential nerve-sparing surgery techniques before treatment, and equally important to follow-up on a regular basis to ensure all issues are quickly addressed. Some of these solutions also come with their own side effects, so make sure you’re aware of the risks and benefits of each.

WAYS TO MANAGE ED

**Muscle exercise**
Walk, run or bike with your partner to increase intimacy while also staying healthy and happy. Exercise can release natural endorphins – similar to those released during sex – and can help relieve tension and aggression while spending time with your significant other. Make sure you get your doctor’s approval before starting any exercise routine.

**Injections or suppositories**
These options may increase blood flow to the penis, possibly helping men achieve an erection after treatment. In addition to oral medications, some drugs can also be injected into the penis or placed inside the penis as a suppository. Drugs such as alprostadil (Caverject) or a combination of other drugs can be given by direct injection into the erectile tissues of the penis using a fine needle, similar to those used to inject insulin into a person with diabetes. The goal of the injections is to produce a functional erection that lasts about 30 minutes when you’re ready for sexual activity.

**Vacuum erection device (VED)**
This is a clear, plastic tube that fits over the penis with a pump that sends blood to the penis by forcing air out of the cylinder. After an erection occurs, a tight-fitting elastic ring is placed around the base of the penis to help maintain firmness during sex. While this can be successful for some men, make sure that you get detailed instructions from your treatment team to avoid injury.

**Emotional solutions**
Anxiety and depression often accompany sexual problems, causing low self-esteem and a low libido. Mental health is an important part of every man’s recovery, so get advice and support as soon as you first notice symptoms of depression due to ED or other side effects. Being stressed and scared won’t improve your situation and can actually make things worse, so try your best to discuss these concerns with your doctors before your health is affected.

**Oral medications**
Certain medications may be helpful for some patients; the most common include:
- **sildenafil (Revatio, Viagra)**
- **tadalafil (Accorda, Cialis)**
- **vardenafil (Levitra, Staxyn)**
- **avanafil (Stendra)**

(These drugs are not an option for men taking nitrates or alpha-blockers for high blood pressure, heart disease or urinary control.)

**Collagen injections**
These can be given via the patient’s urethra, helping to narrow the passageway that transports urine and offering some relief from this problem.

**Surgery**
Can help support the urethra and relieve pressure on the bladder.

Whether your problem is mild or severe, speak with your health care team at the first sign of symptoms.
Maintaining healthy bones is important for men with advanced prostate cancer because of the risk of osteoporosis with ADT and the high rate of bone metastases. Osteoporosis is the thinning of the bones that may lead to painful fractures from the simple act of standing and walking or as a result of a minor injury.

Bone pain is usually one of the first symptoms to occur once prostate cancer has spread to the bone. The first bones affected are usually the pelvic bones, the lower spine and the bones in the upper thigh. It’s important to tell your doctor about any bone pain you may be experiencing, not only so you can receive treatment to relieve the pain but because the presence of bone metastases may affect your treatment options.

Warning signs of bone loss include joint and back pain, arthritis-like symptoms, slouched posture, shorter stature, and broken or fractured bones.

GET TESTED
Doctors can monitor your bone health by using bone density scans, often called DEXA, which can be done before and during treatment to look for any changes. This will give your doctor a baseline bone density level for comparison over the course of treatment. The results show your doctor whether you have had bone loss and, if so, how extensive it is.

OTHER WAYS TO HELP
When cancer has spread to the bone, radiation therapy to the site can shrink or eliminate the cancer, reduce pain and prevent fractures. If a fracture occurs or is imminent, surgery may be required to prevent serious consequences, such as compression of the spinal cord. You can also do several things to help prevent bone loss and fractures:

- Get enough vitamin D and calcium to help replenish bone mass and to prevent breakage. Ask your doctor about taking supplements and increasing your consumption of certain foods (such as yogurt or milk) that can boost your bone strength.
- Ask about bisphosphonates such as zoledronic acid (Reclast, Zometa), which are bone-strengthening medications that can delay bone disease, reduce pain and prevent fractures.

Exercise to build muscle mass and to protect your bones. Start slowly with doctor-approved activities such as walking, running, lifting weights or swimming.

- With your doctor’s permission, look into massage, meditation or acupuncture to promote healing and relieve discomfort. Also, let the practitioner know your condition and what medications you’re taking so he or she can plan your treatment accordingly.
- If bone pain persists, find a pain management specialist and ask about the following medications to control pain: analgesics, opioids and narcotics (such as codeine and morphine). These drugs have their own side effects and dosage instructions, so make sure that you’re taking them as prescribed.

In addition, be aware of activities that may be harmful to your bones. Avoid drinking alcohol or smoking. Both can lower the rate of bone production and increase the rate of bone loss—a dangerous combination. Also, don’t be careless. Take necessary precautions to avoid falls and injuries. Keep your house well-lit inside and out, wear nonskid shoes, get glasses if needed, and practice yoga or ballet to improve coordination and balance.

Finally, don’t ignore your symptoms. Deal with pain immediately, and always communicate any changes to your doctor right away.

SHINING THE LIGHT ON VITAMIN D
A necessary nutrient for the human body, vitamin D regulates the balance of calcium and phosphorous in the body by controlling how much is absorbed from food to how much is added to the bones for optimal bone health. And in recent studies, vitamin D has been shown to reduce the risk of certain cancers and increase survival rates for some cancer patients.

Vitamin D is found in small amounts in fatty fish such as salmon and tuna, fish liver oils, beef liver and egg yolk. Also, much of the milk supply in the U.S. is fortified with vitamin D, along with some cereals, yoghurt and orange juice. The main source of vitamin D, however, is the sun. The body can produce its own vitamin D with enough direct exposure to natural sunlight.

Although you may be tempted to immediately increase your vitamin D intake, remember that it’s possible to have too much vitamin D in your blood, which can be harmful. Like other supplements, vitamin D can also interact with certain medications or treatments, so be sure to talk to your doctor before taking any vitamins or supplements.

COOKBOOKS FOR PEOPLE WITH CANCER

- Betty Crocker’s Living with Cancer Cookbook: Easy Recipes and Tips through Treatment and Beyond
  By Linda Carson, Elyse Cohen and Kris Ghosh Wiley, 2009

- The Cancer-Fighting Kitchen: Nourishing, Big-Flavor Recipes for Cancer Treatment and Recovery
  By Rebecca Katz and Mat Edelson, 2009

- Eating Well Through Cancer: Easy Recipes & Recommendations During & After Treatment
  By Holly Clegg and Gerald Miletello, MD, 2006

- One Bite at a Time: Nourishing Recipes for Cancer Survivors and Their Friends, Edition 2
  By Rebecca Katz, with Mat Edelson, 2008

- What to Eat During Cancer Treatment: 100 Great-Tasting, Family-Friendly Recipes to Help You Cope
  By Jeanne Besser, Sheri Knecht, Kristina Ratley and Michele Szafranski, 2009
**The role of nutrition**

Almost 80 percent of cancer patients will experience some form of malnutrition during their treatment, making optimal nutrition an important goal for men with advanced prostate cancer.

**BEFORE, DURING AND AFTER TREATMENT**

Working toward healthier living before cancer treatment can help you better cope with the effects during and after. Men who eat a healthy diet and stay active are typically able to better manage side effects, have a quicker recovery, reduce their risk of infection and feel better overall. Talking to your doctor or dietitian at the beginning of your cancer journey will help you evaluate your pre-treatment health status and any changes you can start now that will be beneficial once treatment begins.

When preparing for treatment, it's important to talk about side effects that can affect your nutrition. For men with advanced prostate cancer, side effects commonly include loss of appetite and weight loss. Other men, especially those taking ADT, often gain weight as a side effect. Early detection of nutritional problems can help prevent or reduce these and other side effects. A registered dietitian can suggest healthy food choices that will help you meet your nutritional needs.

Making healthy food choices after treatment can help you regain your strength and help your body heal itself. Eating healthy foods and staying active may also improve your quality of life, lead to a longer life, and help reduce the risk of other cancers and chronic conditions, such as heart disease and diabetes.

**WHAT TO EAT**

It's important to maintain a healthy weight by consuming the appropriate amount of calories, avoiding some foods, and eating a variety of healthy foods. No single food has all of the vitamins and nutrients necessary to maintain a healthy diet, so eating foods from all the food groups is important. Protein is essential for helping to build strong muscles and bones, so make sure to include lean protein in your diet by eating low-fat foods such as egg whites, chicken breast, ocean fish and canned tuna.

It's also important to eat a variety of colored vegetables, as each color group offers a different type of antioxidant that can help fight cell damage. Lycopene, the antioxidant found in red fruits and vegetables and in cruciferous vegetables (such as cauliflower, cabbage, broccoli, and other green, leafy vegetables) may have a positive effect on the progression of prostate cancer, but no studies have definitively demonstrated the benefits of these foods in patients with prostate cancer. These fruits and vegetables do have benefits, however, for your overall health.

Dark green, leafy vegetables, as well as beans and low-fat dairy products, are good sources of calcium, a mineral important for bone strength. Healthy sources of vitamin D, such as fatty fish (salmon, tuna, sardines and swordfish) and vitamin-D fortified milk and cereals, can help with bone health and proper calcium absorption.

**WHAT TO AVOID**

Eating a high number of calories provides cells with more energy, and a diet high in fat can stimulate testosterone in the body, both of which may fuel the growth of cancer cells. There is a strong suggestion of a connection between obesity and prostate cancer. Men who grow more obese after treatment may be at greater risk of the cancer growing faster. Try to limit high-fat foods, and avoid processed meats such as hot dogs and bacon. Limit the amount of red meat to no more than three to four servings a week, and avoid smoked and pickled foods. Also, always drink alcohol in moderation; the American Cancer Society recommends limiting alcohol to no more than two drinks per day.

You should also limit your intake of simple sugars, also known as simple carbohydrates. In addition to table sugar, simple sugars are found in candy, cakes, fruit juices and carbonated beverages. A high intake of simple sugars can lead to high levels of insulin in the body, which has been shown to increase the likelihood that prostate cancer cells will grow.

**VITAMINS AND SUPPLEMENTS**

Vitamins and minerals are necessary to maintain the function and growth of your body's cells, but it's best to get them from food rather than supplements. However, your doctor or dietitian may suggest a daily multivitamin to help you get the recommended amounts of vitamins and minerals, especially if you're not eating well. Your doctor may also recommend calcium and vitamin D supplements to help prevent or manage osteoporosis.

Some dietary supplements – such as flaxseed, isoflavones (soy) and zinc – have been advertised as capable of slowing the growth of prostate cancer cells, but the conclusions are not clear, and no effect in humans has been proven. Always talk to your doctor first before adding any supplement to your diet.

**WHAT TO EAT**

Make fruits, vegetables and whole grains the largest part of your diet. When choosing fruits and vegetables, try to choose a variety of colors:

- **red** (tomatoes, watermelon)
- **red/purple** (pomegranate, grapes, berries)
- **orange** (carrots, cantaloupe, sweet potatoes, oranges, peaches)
- **yellow/green** (corn, peas, honeydew melon)
- **green** (tomatoes, watermelon)
- **white/green** (garlic, onions, asparagus)

**MAKING SMART CHOICES**

It seems as if the media reports every day that certain foods or dietary supplements can slow the progression of cancer, making it difficult to know what's true. When considering these stories, remember:

- Much of the research on diet and supplements has been done to determine their effect on preventing prostate cancer. Fewer studies have been done on their effect on the growth of existing cancer.
- Benefits of some dietary changes and supplements have been found in animal studies, but human studies have not produced the same results or have not yet been done.
- Some studies have produced conflicting results because of differences in how the studies were designed or carried out.

Be sure you remember these two important guidelines:

- One of the best things you can do for yourself is to eat a healthy diet and follow a doctor-approved exercise plan.
- Talk to your doctor or another member of your health care team about what's really known about the effects of dietary modifications and supplements.
ADVOCACY & FINANCIAL RESOURCES

BASIC LIVING EXPENSES
American Life Fund ............................................ www.americallifefund.com, 877-393-1198
Brenda Mehlig Cancer Fund (patients 18-40) ........... www.bmf.net, 661-310-7840
Bringing Hope Home ........................................ www.bringinghopehome.org, 484-580-8395
The CHAIN Fund Inc. ............................................. www.thechainfund.com, 203-530-3439
Cleaning for a Reason (free house cleaning)... www.cleaningforareason.org, 877-337-3348
Family Reach Foundation ................................ www.familioreach.org, 973-394-1411
Hugs and Kisses ................................................. www.hugsandkissesinc.org, 561-619-9471
Life Beyond Cancer Foundation www.lifebeyond.org, 281-791-7549
Stupid Cancer ...................................................... 977-735-4673
Team Continuum ................................................. www.teampcontinuum.net, 646-569-5619
Zichron Shlome Refuah Fund ................................. www.zsr.org, 718-GET-WELL

CANCER EDUCATION
American Cancer Society ........................................ www.cancer.org
American Society of Clinical Oncology (patient website) www.cancer.net
CANCER101 ......................................................... www.cancer101.org
CancerCare ........................................................ www.cancer.org
Global Resource for Advancing Cancer Education www.cancergrace.org
The Hope Light Foundation ................................. www.hopelightproject.com
LIVESTRONG Foundation .................................... www.livestrong.org
National Cancer Institute ................................... www.cancer.gov
National Comprehensive Cancer Network .......... www.nccn.org
OncoLink ............................................................ www.oncolink.org
Oncology Nursing Society ................................... wwwansom.org
Pine Street Foundation ......................................... www.pinestreetfoundation.org
Scott Hamilton CARES Initiative ......................... www.scotthamiltoncares.org

CAREGIVERS & SUPPORT
Bloc Cancer Hotline ........................................... 800-433-0464
CancerCare ........................................................ www.cancer.org
Cancer Connection ............................................. www.thecancerconnection.org
Cancer Information and Counseling Line ........... 800-525-3777
Cancer Support Community ................................ www.cancersupportcommunity.org
Cancer Wellness Center ...................................... www.cancerwellness.org
Caregiver Action Network .................................. www caregiversaction.org
CaringBridge ....................................................... www.caringbridge.org
Cooking with Cancer .......................................... www.cookingwithcancer.org
Fighting Chance ................................................ www.fightingchance.com
Friend for Life Cancer Support Network ................ www.friendsl4life.org
Guide Posts of Strength ....................................... www.cancergps.org
The Hope Light Foundation ................................ www.hopelightproject.com
Imanari Angels .................................................... www.imanariangels.org
The LGBT Cancer Project – Out With Cancer ..... www.lgbtcancer.org
Lotta Helping Hands ........................................... www.lottahelpinghands.net
MyLifeLine.org Cancer Foundation ...................... www.mylifeline.org
PearlPoint Cancer Support ................................. www.pearlpoint.org
Strike Out Cancer ............................................... www.strikeoutcancer.com
Well Spouse Association ..................................... www.wellspouse.org
Wellness Place .................................................... www.wellnessplace.org
wisPARK (Cancer Support Center) ...................... www.wispark.org
Wonders & Worries .......................................... www.wondersandworries.org

CLINICAL TRIALS
CenterWatch ...................................................... www.centerwatch.com
Coalition of Cancer Cooperative Groups ............. www.cancertrialhelp.org
LIVESTRONG Foundation ................................ www.livestrong.org/we-can-help/planning-medical-care/considering-clinical-trials
MolecularMatch ................................................ www.molecularmatch.com
My Clinical Trial Locator .................................... http://myclinicaltriallocator.com
PearlPoint Cancer Support ................................ www.pearlpoint.org
Stand Up To Cancer ........................................... www.standup2cancer.com

GRANTS, SCHOLARSHIPS, AWARDS, CAMPS
American Cancer Society .................................... www.cancer.org, 800-ACS-2345
Casting for Recovery .......................................... www.castingforrecovery.org, 888-553-3500
Chai Lifeline ......................................................... www.chailifeline.org
Eagle Mount ........................................................ www.eaglemount.org, 406-586-1781

PAIN MANAGEMENT
American Chronic Pain Association .................... www.theacpa.org
Cancer Pain Research Consortium ..................... http://cancerpainresearchconsortium.org
LIVESTRONG Foundation ................................ www.livestrong.org
The Resource Center of the Alliance of State Pain Initiatives www.trc.wisc.edu
U.S. Pain Foundation .......................................... http://uspainfoundation.org

PRESCRIPTION EXPENSES
CancerCare ........................................................ www.cancer.org, 800-813-HOPE
Foundation for Health Coverage Education .......... www.coverageforall.org
HealthWell Foundation ....................................... www.healthwellfoundation.org, 866-675-8416
Partnership for Prescription Assistance .......... www.ppa.org, 888-APRX-PAA
Patient Access Network Foundation .................... www.panfoundation.org, 888-316-PAN
Patient Advocate Foundation Co-Pay Relief .......... www.copays.org, 888-512-3861
Patient Services Inc. ........................................... www.patientservicesinc.org, 800-386-7741
RxAid Assistance .................................................... www.rxaid.org
RxHope ............................................................. www.rxhope.com, 877-267-0517
Together Rx Access ............................................. www.togetherrxaccess.org, 800-444-4106

PROSTATE CANCER
Arkansas Prostate Cancer Foundation ................. www.prostatecancer.org
Center for Prostate Disease Research ................. www.cdpd.org
da Vinci Prostatectomy ........................................ www.davicinaprostatectomy.com
Ed Randall’s Fans for the Cure ........................... http://fans4thecure.org
Malecare Inc. ...................................................... www.malecare.com
Patient Advocates for Advanced Cancer Treatments www.paa-tu.org
Prostate Cancer Foundation ................................ www.pcf.org
Prostate Cancer International Inc. ...................... http://pcinternational.org
Prostate Cancer Journey ...................................... http://prostate-cancer-log.blogspot.com
Prostate Cancer Research Institute ................. www.pcri.org
Prostate Cancer Roundtable ................................ www.prostatecancerroundtable.net
Prostate Conditions Education Council ................. www.prostatecondition.org
The Prostate Health Education Network .......... http://prostatehealthed.org
The Prostate Net ............................................... www.theprostatenet.net
Prostate Problems Mailing List .......................... http://ppml.info
PSA Rising .......................................................... www.psa-rising.com
Urology Care Foundation ..................................... www.urologyhealth.org
Us TOO International ......................................... www.usto.org
Women Against Prostate Cancer ....................... www.womenagainstprostatecancer.org
ZERO – The End of Prostate Cancer ................. http://zerocancer.org

REIMBURSEMENT & PATIENT ASSISTANCE PROGRAMS
AbbVie Patient Assistance Foundation ............... www.abbviepaf.org, 800-222-8885
Amgen Assist ...................................................... www.amgenassist.org, 888-427-7478
AstraZeneca Patient Assistance Programs ............. www.astrazeneca-us.com/help-affording-your-medicines
Bristol-Myers Squibb Indigent Patient Assistance Program www.800-736-0003
Celgene Patient Support .................................... www.celgenepatientsupport.org
800-931-8891
Dendreon On Call .............................................. 877-336-3736
Genentech Access Solutions ............................... www.gene.com/patients/patient-access, 888-442-2377
Janssen Prescription Assistance ......................... www.janssenprescriptionassistance.com
Johnson & Johnson Patient Assistance ................. www.jnjpatientassistance.com
Lilly PatientOne ................................................... www.lillypatientone.com, 866-472-8863
Merck Patient Assistance Program .................... www.merck.com, 877-524-7500
Novartis Patient Assistance Now ......................... www.patientassistance.com, 800-245-5356
Pfizer RxPathways ............................................... www.pfizerpathways.com, 877-706-2400
Sanofi Patient Connection .................................. www.visitspc.com, 888-847-4877
Seaple Pharmaceutical Company ......................... 800-542-5256
Teva Oncology Core Reimbursement Assistance & Support ........ www.tevacore.com, 888-587-3263
Xofigo Access Services ....................................... www.xofigo-us.com/hcp/patient-support, 855-896-3446
Xtrand Support Solutions ................................. www.xtrand.com/support-solutions, 865-896-2634
ZytigaOne Support ............................................. www.zytigaone.com/support, 877-999-4821

VETERANS’ ASSISTANCE
CancerCare ........................................................ www.cancer.org
Family Caregiver Alliance ................................ www.caregiver.org
Fisher House ...................................................... www.fisherhouse.org
National Hospice and Palliative Care Organization www.nhpco.org, 888-573-9050
U.S. Department of Veterans Affairs ................. www.publichealth.va.gov
Vietnam Veterans of America ............................. www.vva.org/prostate.html

Jack & Jill Late Stage Cancer Foundation .......... http://jajf.org, 404-537-5253
Reel Recovery ..................................................... www.reelrecovery.org

PatientResource.com