National Cancer Institute

What You Need To Know About™

Prostate Cancer

U.S. DEPARTMENT OF
HEALTH AND HUMAN SERVICES
National Institutes of Health

National Cancer Institute Services

This booklet is only one of many free publications for people with cancer.

You may want more information for yourself, your family, and your friends.

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About This Booklet

This National Cancer Institute (NCI) booklet is for you—a man who has just been diagnosed with **prostate cancer**. In 2012, about 242,000 American men will be diagnosed with prostate cancer.

> Words that may be new to you are shown in **bold**. See the **Words to Know** section on page 32 to learn what a new word means and how to pronounce it.

This booklet tells about medical care for men with prostate cancer. Learning about medical care for prostate cancer can help you take an active part in making choices about your care.

You can read this booklet from front to back. Or, you can read only the sections you need right now.

This booklet has lists of questions that you may want to ask your doctor. Many people find it helpful to take a list of questions to a doctor visit. To help remember what your doctor says, you can take notes. You may also want to have a family member or friend go with you when you talk with the doctor—to take notes, ask questions, or just listen.

Contents

The Prostate

The prostate is part of a man's **reproductive system**. It's located in front of the **rectum** and under the bladder. (See picture on page 2.) The prostate surrounds the **urethra**, the tube through which urine flows.

A healthy prostate is about the size of a walnut. If the prostate grows too large, it squeezes the urethra. This may slow or stop the normal flow of urine.

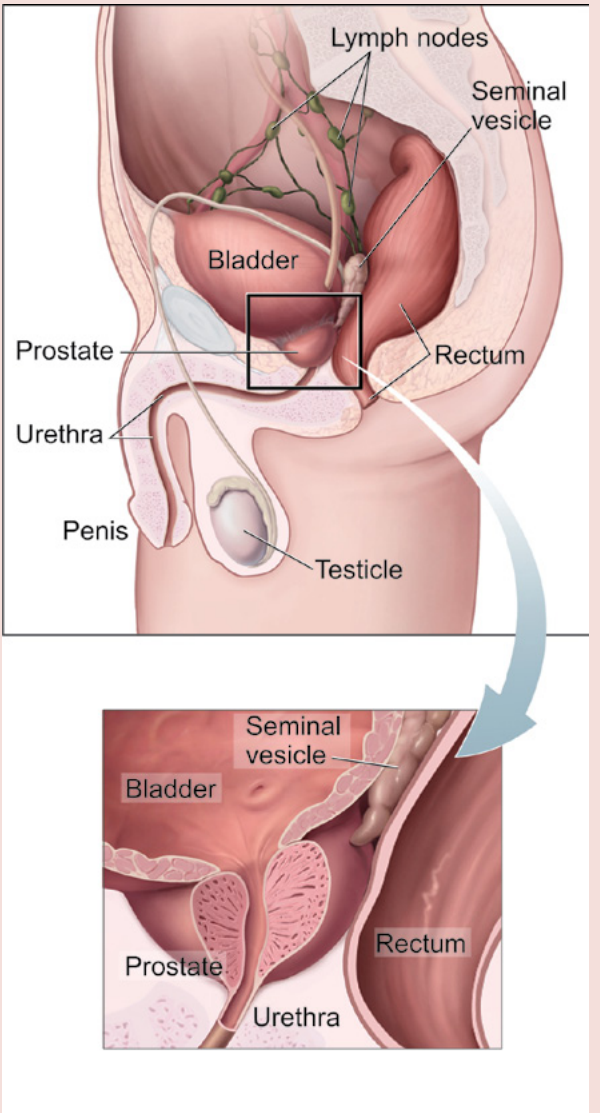
The prostate is a **gland**. It makes part of the **seminal fluid**. During orgasm, the seminal fluid helps carry **sperm** out of the man's body as part of **semen**.

Cancer Cells

Cancer begins in **cells**, the building blocks that make up all tissues and organs of the body, including the prostate.

Normal cells in the prostate and other parts of the body grow and divide to form new cells as they are needed. When normal cells grow old or get damaged, they die, and new cells take their place.

Sometimes, this process goes wrong. New cells form when the body doesn't need them, and old or damaged cells don't die as they should. The buildup of extra cells often forms a mass of tissue called a growth or **tumor.**



The first picture shows the prostate and nearby organs. The second picture shows how the prostate surrounds the urethra.

Growths in the prostate can be **benign** (not cancer) or **malignant** (cancer):

- **Benign growths** (such as **benign prostatic hypertrophy**):
  - Are rarely a threat to life
  - Don't invade the tissues around them
  - Don't spread to other parts of the body
  - Can be removed and usually don't grow back
- **Malignant growths** (prostate cancer):
  - May sometimes be a threat to life
  - Can invade nearby organs and tissues (such as the bladder or rectum)
  - Can spread to other parts of the body
  - Often can be removed but sometimes grow back

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

When prostate cancer spreads from its original place to another part of the body, the new tumor has the same kind of abnormal cells and the same name as the primary (original) tumor. For example, if prostate cancer spreads to the bones, the cancer cells in the bones are actually prostate cancer cells. The disease is **metastatic** prostate cancer, not bone cancer. For that reason, it's treated as prostate cancer, not bone cancer.

Tests

After you learn that you have prostate cancer, you may need other tests to help with making decisions about treatment.

Tumor Grade Test with Prostate Tissue

The prostate tissue that was removed during your **biopsy** procedure can be used in lab tests. The **pathologist** studies prostate tissue samples under a microscope to determine the grade of the tumor. The grade tells how different the tumor tissue is from normal prostate tissue.

Tumors with higher grades tend to grow faster than those with lower grades. They are also more likely to spread. Doctors use tumor grade along with your age and other factors to suggest treatment options.

The most commonly used system for grading prostate cancer is the Gleason score. Gleason scores range from 2 to 10.

To come up with the Gleason score, the pathologist looks at the patterns of cells in the prostate tissue samples. The most common pattern of cells is given a grade of 1 (most like normal prostate tissue) to 5 (most abnormal). If there is a second most common pattern, the pathologist gives it a grade of 1 to 5 and then adds the grades for the two most common patterns together to make the Gleason score (3 + 4 = 7). If only one pattern is seen, the pathologist counts it twice (5 + 5 = 10).

A high Gleason score (such as 10) means a high-grade prostate tumor. High-grade tumors are more likely than low-grade tumors to grow quickly and spread.

For more about tumor grade, see the NCI fact sheet *Tumor Grade*.

Staging Tests

Staging tests can show the stage (extent) of prostate cancer, such as whether cancer cells have spread to other parts of the body.

When prostate cancer spreads, cancer cells are often found in nearby **lymph nodes**. If cancer has reached these lymph nodes, it may have also spread to other lymph nodes, the bones, or other organs.

Your doctor needs to learn the stage of the prostate cancer to help you make the best decision about treatment.

Staging tests may include…

- **Physical exam (digital rectal exam):** If the tumor in the prostate is large enough to be felt, your doctor may be able to examine it. With a gloved and lubricated finger, your doctor feels the prostate and surrounding tissues from the rectum. Hard or lumpy areas may suggest the presence of one or more tumors. Your doctor may also be able to tell whether it's likely that the tumor has grown outside the prostate.
- **Bone scan:** A small amount of a **radioactive** substance will be injected into a blood vessel. The radioactive substance travels through your bloodstream and collects in the bones. A machine called a scanner makes pictures of your bones. Because higher amounts of the radioactive substance collect in areas where there is cancer, the pictures can show cancer that has spread to the bones.

- **CT scan:** An **x-ray** machine linked to a computer takes a series of detailed pictures of your lower abdomen or other parts of your body. You may receive **contrast material** by injection into a blood vessel in your arm or hand, or by enema. The contrast material makes it easier to see abnormal areas. The pictures from a **CT scan** can show cancer that has spread to the lymph nodes or other areas.

- **MRI:** A strong magnet linked to a computer is used to make detailed pictures of your lower abdomen. An **MRI** can show whether cancer has spread to lymph nodes or other areas. Sometimes contrast material is used to make abnormal areas show up more clearly on the picture.

Questions you may want to ask your doctor about tests

- May I have a copy of the report from the pathologist?
- What is the grade of the tumor?
- Has the cancer spread from the prostate? If so, to where?

Stages

Doctors describe the stages of prostate cancer using the Roman numerals I, II, III, and IV. A cancer that is Stage I is **early-stage cancer**, and a cancer that is Stage IV is **advanced cancer** that has spread to other parts of the body.

The stage of prostate cancer depends mainly on…

- **Whether the tumor has invaded nearby tissue, such as the bladder or rectum**
- **Whether prostate cancer cells have spread to lymph nodes or other parts of the body, such as the bones**
- **Grade (Gleason score) of the prostate tumor**
- **PSA level**

On NCI's website at **http://www.cancer.gov/cancertopics/types/prostate**, you can find pictures and more information about the stages of prostate cancer.

Stage I

The cancer is only in the prostate. It might be too small to feel during a digital rectal exam. If the Gleason score and **PSA** level are known, the Gleason score is 6 or less, and the PSA level is under 10.

Stage II

The tumor is more advanced or a higher grade than Stage I, but the tumor doesn't extend beyond the prostate.

Stage III

The tumor extends beyond the prostate. The tumor may have invaded a **seminal vesicle**, but cancer cells haven't spread to lymph nodes. See page 2 for a picture of a seminal vesicle.

Stage IV

The tumor may have invaded the bladder, rectum, or nearby structures (beyond the seminal vesicles). It may have spread to lymph nodes, bones, or other parts of the body.

You and your doctor will develop a treatment plan.

Treatment

Men with prostate cancer have many treatment options. Treatment options include…

- **Active surveillance**
- **Surgery**
- **Radiation therapy**
- **Hormone therapy**
- **Chemotherapy**
- **Immunotherapy**

You may receive more than one type of treatment.

The treatment that's best for one man may not be best for another. The treatment that's right for you depends mainly on…

- **Your age**
- **Gleason score (grade) of the tumor**
- **Stage of prostate cancer**
- **Your symptoms**
- **Your general health**

At any stage of disease, care is available to control pain and other symptoms, to relieve the **side effects** of treatment, and to ease emotional concerns. You can get information about coping on NCI's website at **http://www.cancer.gov/cancertopics/coping**.

Also, you can get information about coping from NCI's Cancer Information Service at **1-800-4-CANCER (1-800-422-6237)**. Or, chat using NCI's instant messaging service, **LiveHelp (https://livehelp.cancer.gov)**.

Doctors Who Treat Prostate Cancer

Your health care team will include specialists. There are many ways to find doctors who treat prostate cancer:

- Your doctor may be able to refer you to specialists.
- You can ask a local or state medical society, or a nearby hospital or medical school for names of specialists.
- NCI's Cancer Information Service can give you information about treatment centers near you. Call **1-800-4-CANCER (1-800-422-6237)**. Or, chat using **LiveHelp (https://livehelp.cancer.gov)**, NCI's instant messaging service.
- Other sources can be found in the NCI fact sheet *How To Find a Doctor or Treatment Facility If You Have Cancer*.

Your health care team may include the following specialists:

- **Urologist:** A **urologist** is a doctor who specializes in treating problems in the urinary tract or male sex organs. This type of doctor can perform surgery (an operation).
- **Urologic oncologist:** A **urologic oncologist** is a doctor who specializes in treating cancers of the male and female urinary tract and the male sex organs. This type of doctor also can perform surgery.
- **Medical oncologist:** A **medical oncologist** is a doctor who specializes in treating cancer with drugs, such as **chemotherapy**, **hormone therapy**, or **immunotherapy**.

- **Radiation oncologist:** A **radiation oncologist** is a doctor who specializes in treating cancer with **radiation therapy**.

Your health care team may also include an **oncology nurse**, a **social worker**, and a **registered dietitian**.

Your health care team can describe your treatment options, the expected results of each option, and the possible side effects. Because cancer treatments often damage healthy cells and tissues, side effects are common. These side effects depend on many factors, including the type of treatment. Side effects may not be the same for each man, and they may even change from one treatment session to the next.

Before treatment starts, ask your health care team about possible side effects and how treatment may change your normal activities. For example, you may want to discuss with your doctor the possible effects on sexual activity. The NCI booklet *Treatment Choices for Men with Early-Stage Prostate Cancer* can tell you more about treatments and their side effects.

You and your health care team can work together to develop a treatment plan that meets your medical and personal needs.

You may want to talk with your health care team about taking part in a research study (**clinical trial**) of new treatment methods. Research studies are an important option for men at any stage of prostate cancer. See the **Cancer Treatment Research** section on page 30.

Questions you may want to ask your doctor about treatment options

- What are my treatment options? Which do you recommend for me? Why?
- What are the expected benefits of each kind of treatment?
- What are the risks and possible side effects of each treatment? How can the side effects be managed?
- What can I do to prepare for treatment?
- Will I need to stay in the hospital? If so, for how long?
- What is the treatment likely to cost? Will my insurance cover it?
- How will treatment affect my normal activities? Will it affect my sex life? Will I have urinary problems? Will I have bowel problems?
- Would a research study (clinical trial) be right for me?

Second Opinion

Before starting treatment, you might want a second opinion about your diagnosis and treatment options. You may even want to talk to several different doctors about all treatment options, their side effects, and the expected results. For example, you may want to talk to a urologist, radiation oncologist, and medical oncologist.

Some men worry that the doctor will be offended if they ask for a second opinion. Usually the opposite is true. Most doctors welcome a second opinion. And many health insurance companies will pay for a second opinion if you or your doctor requests it. Some insurance companies actually require a second opinion.

If you get a second opinion, the second doctor may agree with your first doctor's diagnosis and treatment recommendation. Or, the second doctor may suggest another approach. Either way, you have more information and perhaps a greater sense of control. You can feel more confident about the decisions you make, knowing that you've looked at all of your options.

It may take some time and effort to gather your medical records and see another doctor. In most cases, it's not a problem to take several weeks to get a second opinion. The delay in starting treatment usually will not make treatment less effective. To make sure, you should discuss this delay with your doctor.

Active Surveillance

Your doctor may suggest active surveillance if you're diagnosed with early-stage prostate cancer that seems to be growing slowly. Your doctor may also offer this option if you are older or have other health problems.

Active surveillance is putting off treatment until test results show that your prostate cancer is growing or changing. If you and your doctor agree that active surveillance is a good idea, your doctor will check you regularly (such as every 3 to 6 months, at first). You'll get digital rectal exams and PSA tests. After about a year, your doctor may order another

prostate biopsy to check the Gleason score. Your doctor may suggest treatment if your Gleason score rises, your PSA level starts to increase, or you develop symptoms. Your doctor may suggest surgery, radiation therapy, or another type of treatment.

By choosing active surveillance, you're putting off the side effects of surgery, radiation therapy, or other treatments. However, the risk for some men is that waiting to start treatment may reduce the chance to control cancer before it spreads. Having regular checkups reduces this risk.

For some men, it's stressful to live with an untreated prostate cancer. If you choose active surveillance but grow concerned later, you should discuss your feelings with your doctor. You can change your mind and have treatment at any time.

Questions you may want to ask your doctor about active surveillance

- Is it safe for me to put off treatment? Does it mean I will not live as long as if I started treatment right away?
- Can I change my mind later on?
- How often will I have checkups? Which tests will I need? Will I need a repeat biopsy?
- How will we know if the prostate cancer is getting worse?
- Between checkups, what problems should I tell you about?

Surgery

Surgery is an option for men with early-stage cancer that is found only in the prostate. It's sometimes also an option for men with advanced prostate cancer to relieve symptoms.

There are several kinds of surgery to treat prostate cancer. Usually, the surgeon will remove the entire prostate and nearby lymph nodes. Your surgeon can describe each kind of surgery, compare the benefits and risks, and help you decide which kind might be best for you.

The entire prostate can be removed in several ways…

- **Through a large cut in the abdomen:** The surgeon removes the prostate through a long **incision** in the abdomen below the belly button. This is called a **radical retropubic prostatectomy**. Because of the long incision, it's also called an **open prostatectomy**.
- **Through small cuts in the abdomen:** The surgeon makes several small cuts in the abdomen, and surgery tools are inserted through the small cuts. A long, thin tube (a **laparoscope**) with a light and a camera on the end helps the surgeon see the prostate while removing it. This is called a **laparoscopic prostatectomy**.
- **With a robot:** The surgeon may use a robot to remove the prostate through small incisions in the abdomen. The surgeon uses handles below a computer display to control the robot's arms.
- **Through a large cut between the scrotum and anus:** The surgeon removes the prostate through an incision between the **scrotum** and **anus**. This is called a **radical perineal prostatectomy**. It's a type of open prostatectomy that is rarely used anymore.

Other surgery options for treating prostate cancer or relieving its symptoms are…

- **Freezing:** For some men, **cryosurgery** is an option. The surgeon inserts a tool through a small cut between the scrotum and anus. The tool freezes and kills prostate tissue.

- **Heating:** Doctors are testing **high-intensity focused ultrasound therapy** in men with prostate cancer. A probe is placed in the rectum. The probe gives off high-intensity ultrasound waves that heat up and kill the prostate tumor.

- **TURP:** A man with advanced prostate cancer may choose **transurethral resection of the prostate** (TURP) to relieve symptoms. The surgeon inserts a long, thin scope through the urethra. A cutting tool at the end of the scope removes tissue from the inside of the prostate. TURP may not remove all of the cancer, but it can remove tissue that blocks the flow of urine.

You may be uncomfortable for the first few days or weeks after surgery. However, medicine can help control the pain. Before surgery, you should discuss the plan for pain relief with your doctor or nurse. After surgery, your doctor can adjust the plan if you need more pain relief.

The time it takes to heal after surgery is different for each man and depends on the type of surgery. You may be in the hospital for 1 to 3 days.

After surgery, a tube will be inserted into your penis. The tube allows urine to drain from your bladder while the urethra is healing from the surgery. You'll have the tube for 5 to 14 days. Your nurse or doctor will show you how to care for it.

After surgery, some men may lose control of the flow of urine (**urinary incontinence**). Most men regain at least some bladder control after a few weeks. Your nurse or doctor can teach you an exercise to help you recover control of your bladder. For some men, however, incontinence may be permanent. Your health care team can show you ways to cope with this problem.

Surgery may also damage nerves near the prostate and cause **erectile dysfunction**. Sexual function usually improves over several months, but for some men, this problem can be permanent. Talk with your doctor about medicine and other ways to help manage the sexual side effects of prostate cancer treatment.

If your prostate is removed, you'll have dry orgasms, which means you'll no longer release semen. If you wish to father children, you may consider **sperm banking** before surgery.

Questions you may want to ask your doctor about surgery

- Do you suggest surgery for me? If so, what kind of surgery do you recommend for me? Why?
- How will I feel after surgery? How long will I be in the hospital?
- If I have pain, how can we control it?
- Will I have any lasting side effects? What is the chance that surgery will cause permanent incontinence or erectile dysfunction?

Radiation Therapy

Radiation therapy is an option for men with any stage of prostate cancer. Men with early-stage prostate cancer may choose radiation therapy instead of surgery. It may also be used after surgery to destroy any cancer cells that remain in the area. In men with advanced prostate cancer, radiation therapy may be used to help relieve pain.

Radiation therapy uses high-energy rays to kill cancer cells. It affects cells only in the part of the body that is treated.

Doctors use two types of radiation therapy to treat prostate cancer. Some men receive both types:

- **Machine outside the body:** The radiation comes from a large machine outside the body. This is called **external radiation therapy**. Computers may be used to more closely target the prostate cancer. For example, **intensity-modulated radiation therapy**, **proton radiation therapy**, and **3-dimensional conformal radiation therapy** are types of radiation therapy that use computers to lessen damage to healthy tissue. You'll go to a hospital or clinic for treatment. Treatments are usually 5 days a week for 8 to 9 weeks. Each treatment session lasts only a few minutes.

- **Radioactive material inside the body (brachytherapy)**: Two methods are used for men with prostate cancer. One method places dozens of radioactive seeds inside needles, and the needles are inserted into the prostate. When the needles are removed, the seeds are left behind. The seeds give off radiation for a few weeks or months. They don't need to be removed once the radiation is gone. You won't need to stay in the hospital for treatment.

Another method involves inserting several tubes into the prostate. Radioactive material is loaded into the tubes. The treatment session lasts for a few minutes, and the radioactive material is removed. This treatment may be repeated as many as five times. You'll stay in the hospital for 1 or 2 days, and then the tubes will be removed. When you leave the hospital, no radioactivity remains in your body.

Side effects depend mainly on the type of radiation therapy and how much radiation is given.

Both types of radiation therapy can cause diarrhea or rectal pain. You may feel that you need to empty your bladder more often. You may feel pain or burning when you empty your bladder. These side effects usually go away.

You're likely to become tired during external radiation therapy, especially in the later weeks of treatment. Although getting enough rest is important, most people say they feel better when they exercise every day. Try to go for a short walk, do gentle stretches, or do yoga.

Radiation therapy can also harm the skin. During external radiation therapy, it's common for the skin in the treated area to become red, dry, and tender. The skin near the anus is especially sensitive. Check with your doctor before using lotion or cream on the treated area. You may lose hair in that area, and it may not grow back. Brachytherapy may make the area look swollen and bruised. After treatment is over, the skin will slowly heal.

You may wish to discuss with your doctor the possible long-term effects of radiation therapy for prostate cancer. Radiation may harm the penis, rectum, and bladder, and side effects may develop 6 months or more after treatment ends.

For example, both types of radiation therapy may cause erectile dysfunction, bleeding from the rectum, diarrhea, or rectal discharge. Other possible problems include finding blood in your urine, feeling an urgent need to empty your bladder, or needing to empty your bladder more often than you used to. If any of these problems occur, your doctor can tell you how to manage them.

The NCI booklet *Radiation Therapy and You* has helpful ideas for coping with radiation therapy side effects.

Questions you may want to ask your doctor about radiation therapy

- Which type of radiation therapy can I consider? Are both types an option for me?
- When will treatment start? When will it end? How often will I have treatments?
- How will I feel during treatment? Will I need to stay in the hospital? Will I be able to drive myself to and from treatment?
- What can I do to take care of myself before, during, and after treatment?
- How will we know the treatment is working?
- How will I feel after radiation therapy?
- What side effects should I tell you about?
- Are there any lasting effects?

Hormone Therapy

Men with advanced prostate cancer usually receive hormone therapy. In addition, a man with early-stage prostate cancer may have hormone therapy before, during, and after radiation therapy. Hormone therapy may also be used after surgery.

Hormone therapy keeps prostate cancer cells from getting male **hormones** (**androgens** such as **testosterone**). Male hormones can cause prostate cancers to grow.

Types of hormone therapy include…

- A drug that can prevent the **testicles** from making testosterone (**LH-RH agonist**)
- A drug that can block the action of male hormones (**antiandrogen**)
- Surgery to remove the testicles, which are the body's main source of testosterone
- A drug that can prevent the **adrenal glands** from making testosterone

Your doctor can help you decide which type of hormone therapy or which combination is best for you.

The side effects of hormone therapy depend on the type used. The most common side effects are erectile dysfunction, hot flashes, and loss of sexual desire. Other possible side effects include breast growth, an increase in body fat around the waist, and an increase in sugar level in your blood.

Also, hormone therapy can weaken your bones. Your doctor can suggest medicines that may reduce your risk of breaking a bone.

An LH-RH agonist may make pain and other symptoms worse at first. This temporary problem is called a flare. To prevent a flare, your doctor may give you an antiandrogen for a few weeks along with the LH-RH agonist.

Although the side effects of hormone therapy may be upsetting, your health care team can suggest ways to manage them.

Questions you may want to ask your doctor about hormone therapy

- What kind of hormone therapy can I consider? Would you suggest drugs or surgery? Why?
- If I have drugs, when will treatment start? How often will I have treatments? When will treatment end?
- If I have surgery, how long will I need to stay in the hospital?
- How will I feel during treatment?
- What can I do to take care of myself during treatment?
- How will we know the treatment is working?
- Which side effects should I tell you about?
- Will there be long-term side effects?

Chemotherapy

Chemotherapy may be used for men with advanced prostate cancer.

Chemotherapy uses drugs to kill cancer cells. The drugs for prostate cancer are usually given directly into a vein (**intravenously**) through a thin needle.

You may receive chemotherapy in a clinic, at the doctor's office, or at home. Men rarely need to stay in the hospital during treatment.

The side effects depend mainly on which drugs are given and how much. Chemotherapy kills fast-growing cancer cells, but the drugs can also harm normal cells that divide rapidly:

- **Blood cells:** When drugs lower the levels of healthy blood cells, you're more likely to get infections, bruise or bleed easily, and feel very weak and tired. Your health care team will check for low levels of blood cells. If your levels are low, your health care team may stop the chemotherapy for a while or reduce the dose of the drug. There are also medicines that can help your body make new blood cells.
- **Cells in hair roots:** Chemotherapy may cause hair loss. If you lose your hair, it will grow back after treatment, but the color and texture may be changed.
- **Cells that line the digestive tract:** Chemotherapy can cause a poor appetite, nausea and vomiting, diarrhea, or mouth and lip sores. Your health care team can give you medicines and suggest other ways to help with these problems.

Other side effects include shortness of breath and a problem with your body holding extra water. Your health care team can give you medicine to protect against too much water building up in the body.

Your health care team can suggest ways to control many of these problems. Most go away when treatment ends.

The NCI booklet *Chemotherapy and You* has helpful ideas for coping with side effects.

Immunotherapy

Immunotherapy may be used for men with advanced prostate cancer who are not helped by hormone therapy. Immunotherapy stimulates the **immune system** to kill cancer cells.

For immunotherapy for prostate cancer, a treatment is made from some of your own blood cells. You'll receive a total of three injections of treatment. The injections are given one at a time, usually 2 weeks apart.

The most common side effects are headache, backache, feeling very tired, and having a fever and chills. These effects usually go away.

This type of immunotherapy is also known as a treatment **vaccine**. For more information, you may want to read the NCI fact sheet *Cancer Vaccines*.

Questions you may want to ask your doctor about chemotherapy or immunotherapy

- Which drug or therapy do you suggest for me? What will it do?
- What is the expected benefit of treatment?
- What are the possible side effects? What can we do about them?
- Which side effects should I tell you about?
- When will treatment start? When will it end? How often will I have treatments?
- How will we know the treatment is working?
- Will there be lasting side effects?

Nutrition

Eating well is important before, during, and after cancer treatment. You need the right amount of calories to maintain a good weight. You also need enough protein to keep up your strength. Eating well may help you feel better and have more energy.

Sometimes, especially during or soon after treatment, you may not feel like eating. You may be uncomfortable or tired. You may find that foods don't taste as good as they used to. In addition, poor appetite, nausea, vomiting, mouth blisters, and other side effects of treatment can make it hard for you to eat.

Eating well may help you feel better.

Your doctor, a registered dietitian, or another health care provider can suggest ways to help you meet your nutrition needs. Also, the NCI booklet *Eating Hints* has many useful recipes and lists of foods that can help with side effects.

Follow-up Care

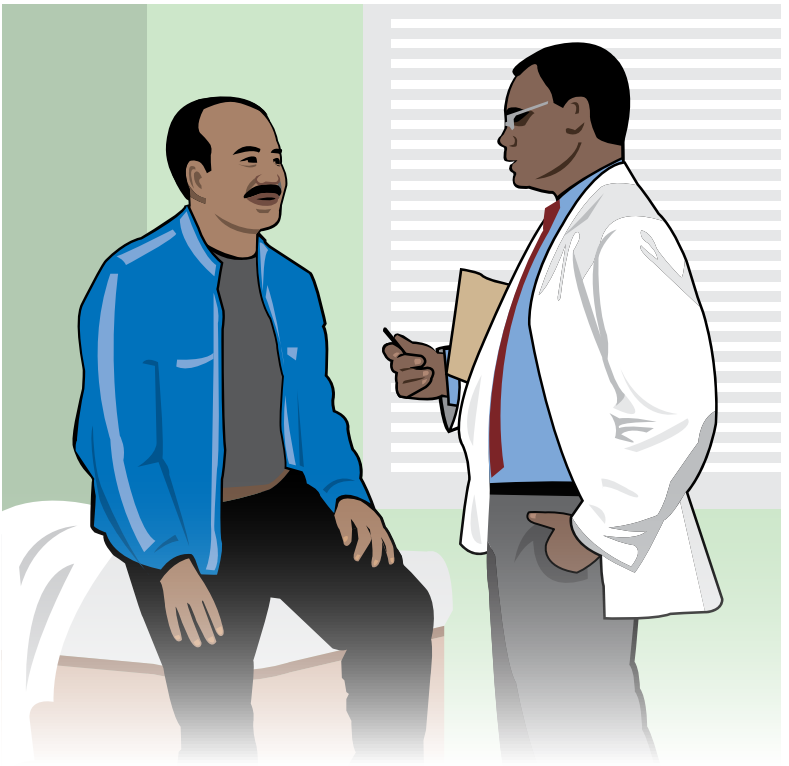
You'll need regular checkups (such as every 6 months) after treatment for prostate cancer. Checkups help ensure that any changes in your health are noted and treated if needed. If you have any health problems between checkups, contact your doctor.

Prostate cancer may come back after treatment. Your doctor will check for the return of cancer.

Checkups also help detect health problems that can result from cancer treatment.

Checkups may include a digital rectal exam and a PSA test. A rise in PSA level can mean that cancer has returned after treatment. Your doctor may also order a biopsy, a bone scan, CT scans, an MRI, or other tests.

You may find it helpful to read the NCI booklet *Facing Forward: Life After Cancer Treatment*. You may also want to read the NCI fact sheet *Follow-up Care After Cancer Treatment*.



Ask your doctor how often you'll need checkups.

Sources of Support

Learning that you have prostate cancer can change your life and the lives of those close to you. These changes can be hard to handle. It's normal for you, your family, and your friends to need help coping with the feelings that a diagnosis of cancer can bring.

Concerns about treatments and managing side effects, hospital stays, and medical bills are common. You may also worry about caring for your family, keeping your job, or continuing daily activities.

Here's where you can go for support:

- Doctors, nurses, and other members of your health care team can answer questions about treatment, working, or other activities.
- Social workers, counselors, or members of the clergy can be helpful if you want to talk about your feelings or concerns. Often, social workers can suggest resources for financial aid, transportation, home care, or emotional support.
- Support groups can also help. In these groups, men with prostate cancer or their family members meet with other patients or their families to share what they have learned about coping with the disease and the effects of treatment. Groups may offer support in person, over the telephone, or on the Internet. You may want to talk with a member of your health care team about finding a support group.

- NCI's Cancer Information Service can help you locate programs, services, and NCI publications. Call **1-800-4-CANCER (1-800-422-6237)**. Or, chat using **LiveHelp (https://livehelp.cancer.gov)**, NCI's instant messaging service.

- Your doctor or a sex counselor may be helpful if you and your partner are concerned about the effects of prostate cancer on your sex life. Ask your doctor about possible treatment of side effects and whether these side effects are likely to last. Whatever the outlook, you and your partner may find it helps to discuss your concerns.

For tips on coping, you may want to read the NCI booklet *Taking Time: Support for People With Cancer*.

Cancer Treatment Research

Cancer research has led to real progress in prostate cancer detection, treatment, and supportive care. Because of research, men with prostate cancer can look forward to a better quality of life and less chance of dying from the disease. Continuing research offers hope that, in the future, even more men with this disease will be treated successfully.

Doctors continue to search for new and better ways to treat prostate cancer. All over the world, doctors are conducting many types of cancer treatment research studies (clinical trials).

NCI is sponsoring many studies with men who have prostate cancer, such as studies of chemotherapy, hormone therapy, radiation therapy, and their combinations.

Even if a man who takes part in a clinical trial doesn't benefit directly from the treatment under study, he may still make an important contribution by helping doctors learn more about prostate cancer and how to control it. Although clinical trials may pose some risks, researchers do all they can to protect their patients.

If you're interested in being part of a clinical trial, talk with your doctor. You may want to read the NCI booklet *Taking Part in Cancer Treatment Research Studies*. It describes how treatment studies are carried out and explains their possible benefits and risks.

NCI's website has a section on research studies at **http://www.cancer.gov/clinicaltrials**. It has general information about clinical trials as well as detailed information about specific ongoing studies of prostate cancer.

NCI's Cancer Information Service can answer your questions and provide information about clinical trials. Contact CIS at **1-800-4-CANCER (1-800-422-6237)** or at **LiveHelp (https://livehelp.cancer.gov)**.

Words To Know

Definitions of thousands of terms are on NCI's website in NCI's Dictionary of Cancer Terms. You can access it at **http://www.cancer.gov/dictionary.**

3-Dimensional conformal radiation therapy: A procedure that uses a computer to create a 3-dimensional picture of the tumor. This allows doctors to give the highest possible dose of radiation to the tumor, while sparing the normal tissue as much as possible. Also called 3-dimensional radiation therapy and 3D-CRT.

Adrenal gland (uh-DREE-nul): A small gland that makes steroid hormones, adrenaline, and noradrenaline. These hormones help control heart rate, blood pressure, and other important body functions. There are two adrenal glands, one on top of each kidney.

Advanced cancer: Cancer that has spread to other places in the body and usually cannot be cured or controlled with treatment.

Androgen (AN-droh-jen): A type of hormone that promotes the development and maintenance of male sex characteristics.

Antiandrogen (AN-tee-AN-droh-jen): A substance that prevents cells from making or using androgens (hormones that play a role in the formation of male sex characteristics). Antiandrogens may stop some cancer cells from growing. Some antiandrogens are used to treat prostate cancer, and others are being studied for this use.

Anus (AY-nus): The opening of the rectum to the outside of the body.

Benign (beh-NINE): Not cancer. Benign tumors may grow larger but do not spread to other parts of the body.

Benign prostatic hypertrophy (beh-NINE prah-STA-tik hy-PER-troh-fee): A benign (not cancer) condition in which an overgrowth of prostate tissue pushes against the urethra and the bladder, blocking the flow of urine. Also called benign prostatic hyperplasia and BPH.

Biopsy (BY-op-see): The removal of cells or tissues for examination by a pathologist. The pathologist may study the tissue under a microscope or perform other tests on the cells or tissue.

Blood vessel: A tube through which the blood circulates in the body. Blood vessels include a network of arteries, arterioles, capillaries, venules, and veins.

Brachytherapy (BRAY-kee-THAYR-uh-pee): A type of radiation therapy in which radioactive material sealed in needles, seeds, wires, or catheters is placed directly into or near a tumor. Also called implant radiation therapy, internal radiation therapy, and radiation brachytherapy.

Cell: The individual unit that makes up the tissues of the body. All living things are made up of one or more cells.

Chemotherapy (KEE-moh-THAYR-uh-pee): Treatment with drugs that kill cancer cells.

Clinical trial: A type of research study that tests how well new medical approaches work in people. These studies test new methods of screening, prevention, diagnosis, or treatment of a disease.

Contrast material: A dye or other substance that helps show abnormal areas inside the body. It is given by injection into a vein, by enema, or by mouth. Contrast material may be used with x-rays, CT scans, MRI, or other imaging tests.

Cryosurgery (KRY-oh-SER-juh-ree): A procedure in which tissue is frozen to destroy abnormal cells. Liquid nitrogen or liquid carbon dioxide is used to freeze the tissue. Also called cryoablation and cryosurgical ablation.

CT scan: A series of detailed pictures of areas inside the body taken from different angles. The pictures are created by a computer linked to an x-ray machine. Also called CAT scan, computed tomography scan, computerized axial tomography scan, and computerized tomography.

Early-stage cancer: A term used to describe cancer that is early in its growth, and may not have spread to other parts of the body. What is called early stage may differ between cancer types.

Erectile dysfunction (eh-REK-tile dis-FUNK-shun): An inability to have an erection of the penis adequate for sexual intercourse. Also called impotence.

External radiation therapy (RAY-dee-AY-shun THAYR-uh-pee): A type of radiation therapy that uses a machine to aim high-energy rays at the cancer from outside of the body. Also called external-beam radiation therapy.

Gland: An organ that makes one or more substances, such as hormones, digestive juices, sweat, tears, saliva, or milk. Endocrine glands release the substances directly into the bloodstream. Exocrine glands release the substances into a duct or opening to the inside or outside of the body.

High-intensity focused ultrasound therapy (UL-truh-SOWND THAYR-uh-pee): A procedure in which high-energy sound waves are aimed directly at an area of abnormal cells or tissue in the body. The waves create heat that kills the cells. This procedure is being studied in the treatment of prostate cancer and some other types of cancer and other diseases. Also called HIFU.

Hormone: One of many chemicals made by glands in the body. Hormones circulate in the bloodstream and control the actions of certain cells or organs. Some hormones can also be made in the laboratory.

Hormone therapy (THAYR-uh-pee): Treatment that adds, blocks, or removes hormones. For certain conditions (such as diabetes or menopause), hormones are given to adjust low hormone levels. To slow or stop the growth of certain cancers (such as prostate and breast cancer), synthetic hormones or other drugs may be given to block the body's natural hormones. Sometimes surgery is needed to remove the gland that makes a certain hormone. Also called endocrine therapy, hormonal therapy, and hormone treatment.

Immune system: The complex group of organs and cells that defends the body against infections and other diseases.

Immunotherapy (IH-myoo-noh-THAYR-uh-pee): Treatment to boost or restore the ability of the immune system to fight cancer, infections, and other diseases. Also used to lessen certain side effects that may be caused by some cancer treatments. Agents used in immunotherapy include monoclonal antibodies, growth factors, and vaccines. These agents may also have a direct antitumor effect. Also called biological response modifier therapy, biological therapy, biotherapy, and BRM therapy.

Incision (in-SIH-zhun): A cut made in the body to perform surgery.

Intensity-modulated radiation therapy: A type of 3-dimensional radiation therapy that uses computer-generated images to show the size and shape of the tumor. Thin beams of radiation of different intensities are aimed at the tumor from many angles. This type of radiation therapy reduces the damage to healthy tissue near the tumor. Also called IMRT.

Intravenous (IN-truh-VEE-nus): Into or within a vein. Intravenous usually refers to a way of giving a drug or other substance through a needle or tube inserted into a vein. Also called IV.

Laparoscope (LA-puh-ruh-SKOPE): A thin, tube-like instrument used to look at tissues and organs inside the abdomen. A laparoscope has a light and a lens for viewing and may have a tool to remove tissue.

Laparoscopic prostatectomy (LA-puh-ruh-SKAH-pik PROS-tuh-TEK-toh-mee): Surgery to remove all or part of the prostate with the aid of a laparoscope. A laparoscope is a thin, tube-like instrument with a light and a lens for viewing. It may also have a tool to remove tissue to be checked under a microscope for signs of disease.

LH-RH agonist (A-guh-nist): A drug that inhibits the secretion of sex hormones. In men, LH-RH agonist causes testosterone levels to fall. In women, LH-RH agonist causes the levels of estrogen and other sex hormones to fall. Also called luteinizing hormone-releasing hormone agonist.

Lymph node (limf): A rounded mass of lymphatic tissue that is surrounded by a capsule of connective tissue. Lymph nodes filter lymph (lymphatic fluid), and they store lymphocytes (white blood cells). They are located along lymphatic vessels. Also called lymph gland.

Lymph vessel (limf): A thin tube that carries lymph (lymphatic fluid) and white blood cells through the lymphatic system. Also called lymphatic vessel.

Malignant (muh-LIG-nunt): Cancerous. Malignant tumors can invade and destroy nearby tissue and spread to other parts of the body.

Medical oncologist (MEH-dih-kul on-KAH-loh-jist): A doctor who specializes in diagnosing and treating cancer using chemotherapy, targeted therapy, hormonal therapy, and biological therapy. A medical oncologist often is the main health care provider for someone who has cancer. A medical oncologist also gives supportive care and may coordinate treatment given by other specialists.

Metastatic (meh-tuh-STA-tik): Having to do with metastasis, which is the spread of cancer from one part of the body to another.

MRI: A procedure in which radio waves and a powerful magnet linked to a computer are used to create detailed pictures of areas inside the body. These pictures can show the difference between normal and diseased tissue. MRI makes better images of organs and soft tissue than other scanning techniques, such as computed tomography (CT) or x-ray. MRI is especially useful for imaging the brain, the spine, the soft tissue of joints, and the inside of bones. Also called magnetic resonance imaging.

Oncology nurse (on-KAH-loh-jee): A nurse who specializes in treating and caring for people who have cancer.

Open prostatectomy (PROS-tuh-TEK-toh-mee): Surgery to remove part or all of the prostate gland through an incision in the lower abdomen or perineum (the area between the anus and scrotum). An open prostatectomy may be done to remove an enlarged prostate gland in benign prostatic hyperplasia (BPH) or as a treatment for prostate cancer.

Pathologist (puh-THAH-loh-jist): A doctor who identifies diseases by studying cells and tissues under a microscope.

Prostate cancer: Cancer that forms in tissues of the prostate (a gland in the male reproductive system found below the bladder and in front of the rectum). Prostate cancer usually occurs in older men.

Proton radiation therapy (PROH-ton RAY-dee-AY-shun THAYR-uh-pee): A type of radiation therapy that uses streams of protons (tiny particles with a positive charge) that come from a special machine. It is used to treat cancers in the head and neck and in organs such as the brain, eye, lung, spine, and prostate. Proton beam radiation is different from x-ray radiation.

PSA: A protein made by the prostate gland and found in the blood. PSA blood levels may be higher than normal in men who have prostate cancer, benign prostatic hyperplasia (BPH), or infection or inflammation of the prostate gland. Also called prostate-specific antigen.

Radiation oncologist (RAY-dee-AY-shun on-KAH-loh-jist): A doctor who specializes in using radiation to treat cancer.

Radiation therapy (RAY-dee-AY-shun THAYR-uh-pee): The use of high-energy radiation from x-rays, gamma rays, neutrons, protons, and other sources to kill cancer cells and shrink tumors. Radiation may come from a machine outside the body (external-beam radiation therapy), or it may come from radioactive material placed in the body near cancer cells (internal radiation therapy). Also called irradiation and radiotherapy.

Radical perineal prostatectomy (RA-dih-kul PAYR-ih-NEE-ul PROS-tuh-TEK-toh-mee): Surgery to remove all of the prostate through an incision between the scrotum and the anus. Nearby lymph nodes are sometimes removed through a separate incision in the wall of the abdomen.

Radical retropubic prostatectomy (RA-dih-kul reh-troh-PYOO-bik PROS-tuh-TEK-toh-mee): Surgery to remove all of the prostate and nearby lymph nodes through an incision in the wall of the abdomen.

Radioactive (RAY-dee-oh-AK-tiv): Giving off radiation.

Rectum: The last several inches of the large intestine closest to the anus.

Registered dietitian (dy-eh-TIH-shun): A health professional with special training in the use of diet and nutrition to keep the body healthy. A registered dietitian may help the medical team improve the nutritional health of a patient.

Reproductive system (REE-proh-DUK-tiv SIS-tem): The organs involved in producing offspring. In women, this system includes the ovaries, the fallopian tubes, the uterus, the cervix, and the vagina. In men, it includes the prostate, the testes, and the penis.

Scrotum (SKROH-tum): In males, the external sac that contains the testicles.

Semen (SEE-men): The fluid that is released through the penis during orgasm. Semen is made up of sperm from the testicles and fluid from the prostate and other sex glands.

Seminal fluid (SEH-mih-nul): Fluid from the prostate and other sex glands that helps transport sperm out of the man's body during orgasm.

Seminal vesicle (SEH-mih-nul VEH-sih-kul): A gland that helps produce semen.

Side effect: A problem that occurs when treatment affects healthy tissues or organs. Some common side effects of cancer treatment are fatigue, pain, nausea, vomiting, decreased blood cell counts, hair loss, and mouth sores.

Social worker: A professional trained to talk with people and their families about emotional or physical needs, and to find them support services.

Sperm: The male reproductive cell, formed in the testicle. A sperm unites with an egg to form an embryo.

Sperm banking: Freezing sperm for use in the future. This procedure can allow men to father children after loss of fertility.

Testicle (TES-tih-kul): One of two egg-shaped glands inside the scrotum that produce sperm and male hormones. Also called testis.

Testosterone (tes-TOS-teh-rone): A hormone made mainly in the testes (part of the male reproductive system). It is needed to develop and maintain male sex characteristics, such as facial hair, deep voice, and muscle growth. Testosterone may also be made in the laboratory and is used to treat certain medical conditions.

Tumor (TOO-mer): An abnormal mass of tissue that results when cells divide more than they should or do not die when they should. Tumors may be benign (not cancer), or malignant (cancer). Also called neoplasm.

Transurethral resection of the prostate (TRANZ-yoo-REE-thrul ree-SEK-shun PROS-tayt): Surgery to remove tissue from the prostate using an instrument inserted through the urethra. Also called TURP.

Urethra (yoo-REE-thruh): The tube through which urine leaves the body. It empties urine from the bladder.

Urinary incontinence (YOOR-ih-NAYR-ee in-KON-tih-nents): Inability to hold urine in the bladder.

Urologic oncologist (YOOR-uh-LAH-jik on-KAH-loh-jist): A doctor who specializes in treating cancers of the male and female urinary tract and the male reproductive organs.

Urologist (yoo-RAH-loh-jist): A doctor who specializes in diseases of the urinary organs in females and the urinary and sex organs in males.

Vaccine (vak-SEEN): A substance or group of substances meant to cause the immune system to respond to a tumor or to microorganisms, such as bacteria or viruses. A vaccine can help the body recognize and destroy cancer cells or microorganisms.

X-ray: A type of high-energy radiation. In low doses, x-rays are used to diagnose diseases by making pictures of the inside of the body. In high doses, x-rays are used to treat cancer.

For the Latest Information About Prostate Cancer

Visit NCI's website at **http://www.cancer.gov/cancertopics/types/prostate**.

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