NCCN GUIDELINES FOR PATIENTS®

2025

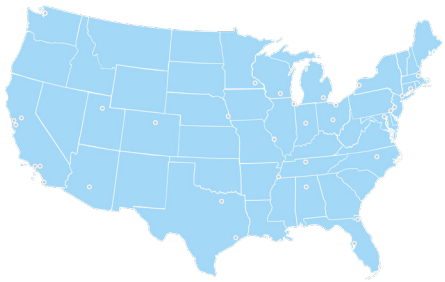
Early-Stage Prostate Cancer

Presented with support from NCCN FOUNDATION® Guiding Treatment. Changing Lives.

Available online at NCCN.org/patientguidelines

About the NCCN Guidelines for Patients®

National Comprehensive Cancer Network®



Did you know that top cancer centers across the United States work together to improve cancer care? This alliance of leading cancer centers is called the National Comprehensive Cancer Network® (NCCN®).

Cancer care is always changing. NCCN develops evidence-based cancer care recommendations used by health care providers worldwide. These frequently updated recommendations are the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®). The NCCN Guidelines for Patients plainly explain these expert recommendations for people with cancer and caregivers.

These NCCN Guidelines for Patients are based on the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Prostate Cancer, Version 2.2025 — April 16, 2025.

Learn how the NCCN Guidelines for Patients are developed
NCCN.org/patient-guidelines-process

View the NCCN Guidelines for Patients free online
NCCN.org/patientguidelines

Find an NCCN Cancer Center near you
NCCN.org/cancercenters

Connect with us

Supporters

NCCN Guidelines for Patients are supported by funding from the NCCN Foundation®

NCCN Foundation gratefully acknowledges the following corporate supporters for helping to make available these NCCN Guidelines for Patients: AstraZeneca; Ferring Pharmaceuticals; Janssen Biotech, Inc.; Novartis Pharmaceuticals Corporation; and Pfizer Inc.

NCCN independently adapts, updates, and hosts the NCCN Guidelines for Patients. Our corporate supporters do not participate in the development of the NCCN Guidelines for Patients and are not responsible for the content and recommendations contained therein.

To make a gift or learn more, visit online or email

NCCNFoundation.org/donate

PatientGuidelines@NCCN.org

Contents

NCCN Foundation seeks to support the millions of patients and their families affected by a cancer diagnosis by funding and distributing NCCN Guidelines for Patients. NCCN Foundation is also committed to advancing cancer treatment by funding the nation's promising doctors at the center of innovation in cancer research. For more details and the full library of patient and caregiver resources, visit NCCN.org/patients.

National Comprehensive Cancer Network (NCCN) and NCCN Foundation
3025 Chemical Road, Suite 100, Plymouth Meeting, PA 19462 USA

1

About early-stage prostate cancer

The prostate is a gland located deep inside the pelvis. Everyone with a prostate has a chance of getting prostate cancer. It's usually not fatal, particularly early-stage prostate cancer. This chapter gives an overview of this common cancer.

What is prostate cancer?

Prostate cancer is a disease where cells in the prostate gland multiply and grow out of control.

The prostate is a gland located just below the bladder in the pelvis, deep inside the area of your body between your hip bones.

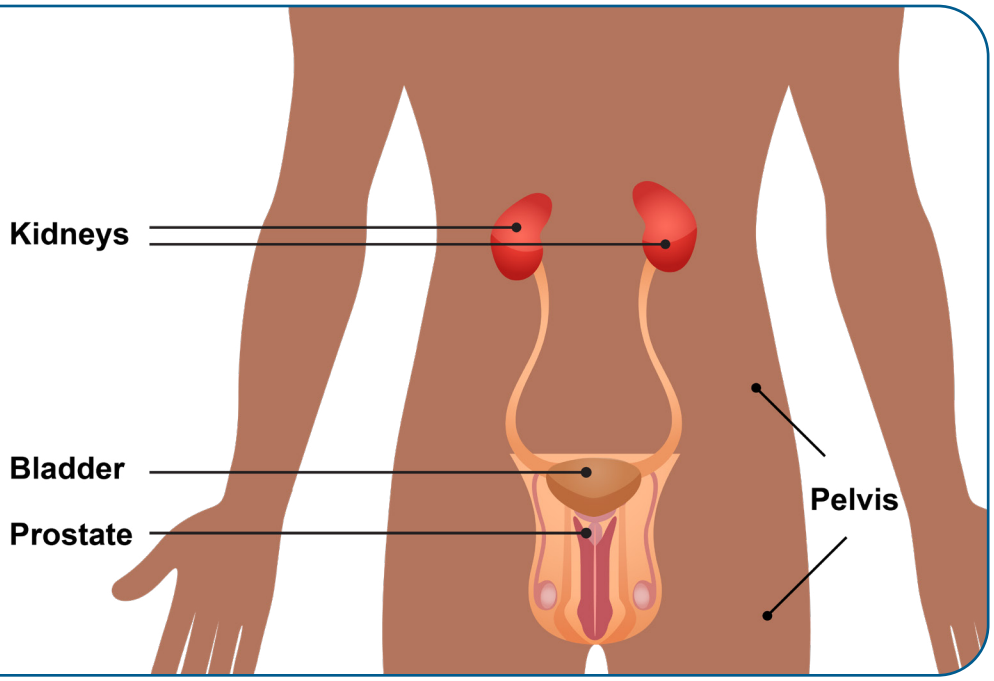
The prostate is about the size of a ping pong ball and is an important part of the male reproductive system. This system also includes the penis, seminal vesicles, and testicles.

Prostate cancer is one of the most common types of cancer. Cancer is what happens when something goes wrong with the natural cell process causing some cells to multiply and spread.

Cancer cells don't behave like normal cells. Cancer cells develop genetic changes (mutations) that allow them to multiply and make many more cancer cells. The cancer cells crowd out and overwhelm normal cells. This can end up harming the body.

Cancer cells survive much longer than normal cells do. They can replace many normal cells and cause organs to stop working well. Cancer cells can also spread outside the prostate to other areas of the body.

The prostate gland is an important part of the male reproductive system. It's located in the pelvis just below the bladder and is about the size of a ping pong ball.



Prostate cancer is described as either early-stage cancer or advanced-stage cancer.

Early stage

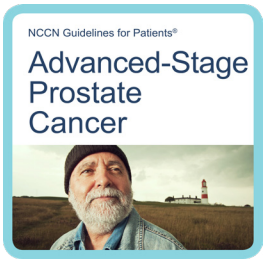
Early-stage prostate cancer has not spread beyond the prostate. The cancer usually grows slowly and stays inside the prostate gland. Cancer that is contained entirely within the prostate is called localized prostate cancer.

This book is all about early-stage (localized) prostate cancer.

Advanced stage

Advanced stage means that cancer cells have spread outside the prostate to other areas in the body. This spreading is called metastasis or metastatic cancer. Metastatic prostate cancer typically spreads to areas like the lymph nodes, bones, liver, lungs, or other organs.

More information on advanced-stage prostate cancer is available at NCCN.org/patientguidelines and on the NCCN Patient Guides for Cancer app.



Can prostate cancer be cured?

Early-stage prostate cancer is highly treatable and often curable. The earlier that prostate cancer is diagnosed and treated, the more likely that a patient will live without cancer.

However, many with early-stage prostate cancer don't need to be treated immediately. What's more, most people with early-stage disease live without cancer for many years and, in the end, usually die from something else.

Scientists have learned a great deal about prostate cancer in recent years. As a result, today's detection methods and treatments work better than those in the past. There are also more treatment choices now than ever before.

Recommended treatments for early-stage prostate cancer include surgery, radiation therapy, and sometimes hormone therapy. But the majority of patients with early-stage prostate cancer can have their cancer managed initially with active surveillance.

During active surveillance, you'll have regular tests to keep an eye on your cancer. But you won't have treatment unless the cancer grows or changes in a way that requires treatment.

The goal of active surveillance is to avoid the potential side effects of treatment, with the option for treatment in the future if you need it. Some patients on active surveillance may never have to be treated.

What can you do to get the best care?

Advocate for yourself. You have an important role to play in your care. In fact, you're more likely to get the care you want by asking questions and making shared decisions with your care team.

The NCCN Guidelines for Patients will help you understand cancer care. With better understanding, you'll be more prepared to discuss your care with your team and share your concerns. Many people feel more satisfied when they play an active role in their care.

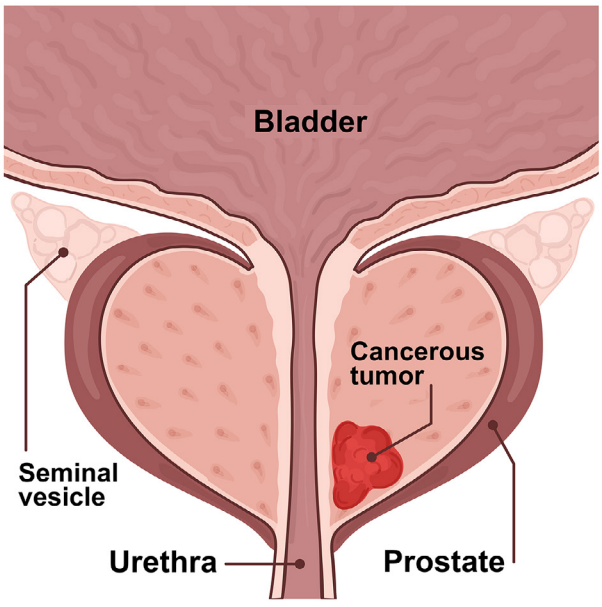
You may not know what to ask your care team. That's common. Each chapter in this book ends with an important section called *Questions to ask*. These suggested questions will help you get more information on all aspects of your care.

"Now more than ever, those living with cancer are living better, longer lives thanks to the power of research and advancements in treatment."

Take the next step and keep reading to learn what is the best care for you!

What early-stage prostate cancer looks like

Early-stage prostate cancer has not visibly spread beyond the prostate gland. It usually grows slowly and stays within the prostate. This is also called localized prostate cancer.



What's in this book?

This chapter provides only a brief overview of early-stage prostate cancer. Other chapters in this book explain:

- How your risk factors may apply to your prostate cancer
- Why getting the right diagnosis is so important
- How to make sense of your particular prostate cancer risk
- How treatment can be customized for your prostate cancer
- The safety of delaying treatment and the reasons for it
- What you can do if cancer comes back
- Care that goes beyond cancer treatment

Why you should read this book

Making decisions about cancer care can be stressful. You may need to make tough decisions under pressure about complex choices.

The NCCN Guidelines for Patients are trusted by patients and providers. They clearly explain current care recommendations made by respected experts in the field. Recommendations are based on the latest research and practices at leading cancer centers.

Cancer care is not the same for everyone. By following expert recommendations for your situation, you are more likely to improve your care and have better outcomes as a result. Use this book as your guide to find the information you need to make important decisions.

2

Symptoms and risk factors for prostate cancer

People with prostate cancer often wonder why they developed it. Cancer researchers don't know exactly what causes prostate cells to become cancerous, but certain factors can increase your risk. People with prostate cancer usually have one or more of these risk factors.

Prostate cancer is the second most common cancer in American males, and has one of the highest survival rates of any cancer when found early.

What are the symptoms of prostate cancer?

Prostate cancer often grows slowly and shows no symptoms for a long time. In fact, most people who are diagnosed with early prostate cancer have no symptoms.

Symptoms are more common for those with advanced prostate cancer.

Symptoms, if they occur, may include:

- Difficulty urinating or emptying the bladder
- Urinating too frequently
- Blood in the urine or semen
- Burning or pain while urinating
- Bone, hip, or back pain
- Unexplained weight loss

It's important to know that prostate cancer has many of the same symptoms as a condition called enlarged prostate (also called benign prostatic hyperplasia, or BPH).

An enlarged prostate can push against the bladder and compress the urethra. This slows the flow of urine and can cause a feeling that you haven't fully emptied your bladder.

BPH is much more common than prostate cancer. It's difficult to tell the difference between the two conditions based on symptoms alone. But if you do have any symptoms, be sure to tell your health care providers.

Some symptoms of BPH include having trouble urinating or difficulty holding in urine, pain or other sensation in your groin or pelvis, erectile dysfunction (difficulty getting an erection), and painful ejaculation.

Where does the prostate fit in?

The prostate is located deep inside the lower body. It makes semen and is important for sexual reproduction.

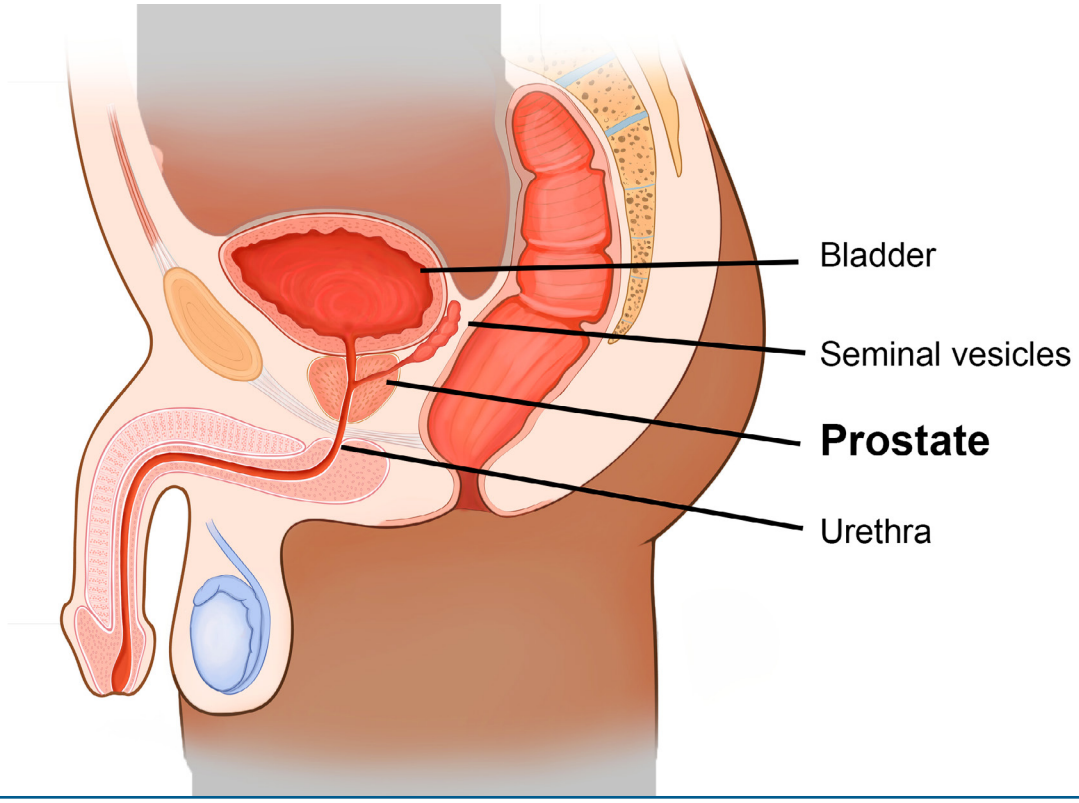
Prostate: A gland in the male reproductive system. A gland is an organ that makes fluids or chemicals the body needs. The prostate gland makes a protein (prostate-specific antigen, or PSA) that nourishes and helps transmit semen. The prostate also contains muscles that help propel semen through the urethra during ejaculation.

Semen: A fluid made up of liquids from the prostate and the seminal vesicles as well as sperm from the testicles. During ejaculation, semen is released from the body through the urethra and out through the penis.

Urethra: A tube that carries urine from the bladder and out of the body. The prostate wraps around the urethra just beneath the bladder.

Seminal vesicles: Two glands that make another part of the fluid that becomes semen. The seminal vesicles are located above the prostate and behind the bladder.

Bladder: An organ that holds urine.



How did I get prostate cancer?

Many people who develop prostate cancer wonder where it came from and how they got it. Cancer researchers don't know what causes prostate cells to grow out of control (become cancerous). The fact is, everyone with a prostate has a risk of getting prostate cancer.

Several factors are linked to a higher risk of prostate cancer. These are called risk factors. A risk factor is anything that increases your chance of getting cancer. Risk factors don't necessarily cause prostate cancer, but people with prostate cancer usually have one or more of these risk factors:

Age

The biggest risk factor for prostate cancer is age. Prostate cancer is diagnosed most often in those aged 65 years and above. Your chances of getting prostate cancer increase as you become older.

Family history

Your family health history is information about the diseases and health conditions that have occurred in your family. A family history reflects a pattern of certain diseases among family members. Having a close family member with prostate cancer (a sibling or parent) means you have a greater chance of getting it yourself.

People with a family history of certain cancers (breast, ovarian, colon, pancreatic, and others) may also be at a higher risk for prostate cancer.

What does aggressive mean?

When health care professionals describe cancer as aggressive, they mean the cancer is likely to grow or spread more rapidly than average.

Aggressive is also used to describe therapy that's stronger or more intense than other treatment options.

Genetic factors

When cancer "runs in the family," genetic testing can be done to find specific genetic changes known to be linked with prostate cancer or other cancers. For instance, having an inherited genetic change in the *BRCA2* gene increases the risk of getting prostate cancer.

Race

In the United States, Black males are more likely than white males to develop prostate cancer. Prostate cancer in Black males is more likely to occur at an earlier age and be more aggressive and more advanced when diagnosed. Black males are also twice as likely to die from prostate cancer compared with white males.

Prostate cancer is diagnosed less often in Hispanic and Asian males than in Black and white males.

Several things contribute to these differences, such as barriers to accessing health care (including early detection screening), biological and genetic factors, and other causes. Specialists are researching each of these areas.

In light of these issues, Black males are encouraged to talk with their health care providers about getting screening tests earlier and perhaps more often than what's recommended for those at average risk.

Diet and lifestyle

No diet has been found to cause prostate cancer or to prevent it. However, eating food that's high in fat, such as meat and dairy products, has been linked with an increased risk of prostate cancer. Smoking and obesity also increase the risks of developing and dying from prostate cancer.

On the other hand, those who eat more fruits and vegetables have a lower risk of developing prostate cancer. Maintaining a healthy body weight through diet and exercise may slow the growth of prostate cancer and lower your risk of dying from it.

Key points

- Everyone with a prostate is at risk for prostate cancer.
- For most people, prostate cancer usually grows slowly and stays within the prostate.
- Most people with early-stage prostate cancer don't have symptoms. And not everyone diagnosed with prostate cancer needs treatment.
- Age is the leading risk factor for prostate cancer. As you age, your chances of developing prostate cancer increase.
- People with a family history of certain other cancers may also be at a higher risk for prostate cancer.

Questions to ask

- What are the chances that the cancer has spread outside of my prostate gland?
- If I don't have any symptoms, do I need any treatment?
- Is my prostate cancer hereditary?

3

Tests for prostate cancer

Testing is needed to diagnose prostate cancer and to learn whether it's early- or advanced-stage cancer. The results of testing help your providers plan the best treatment for you.

About testing

Health care providers use a variety of tests to find prostate cancer and to determine how advanced the cancer is.

Tests are used to plan treatment, check how well treatment is working, and monitor your health after treatment ends.

"Be your own advocate. Talk to someone who has gone through the same thing as you. Ask a lot of questions, even the ones you are afraid to ask. You have to protect yourself and ensure you make the best decisions for you, and get the best care for your particular situation."

This chapter will help you know what tests you might have and what to expect during testing. Not every person with prostate cancer will receive every test listed here.

When you go for testing, bring someone with you to listen, ask questions, and write down the answers.

Common prostate tests

Common prostate cancer tests are used to detect the possibility of prostate cancer in someone who's undiagnosed. They're also used to check and monitor prostate cancer in patients who have been diagnosed.

Two common tests that look for prostate cancer are the prostate-specific antigen (PSA) test and digital rectal exam.

PSA test

This is a blood test that measures the amount of PSA in your bloodstream. PSA is a protein made inside the prostate gland. Its job is to help semen transport sperm. All prostate cells, both normal cells and cancer cells, make PSA.

If there's something wrong with the prostate—like prostate cancer—the prostate may make more PSA. While most PSA goes into semen, a little bit ends up in the bloodstream, too. An unusually high amount of PSA in the blood may be a sign of prostate cancer. Likewise, an increase in PSA after treatment may indicate that the treatment is losing effectiveness.

However, age and other factors—such as an enlarged prostate or a urinary tract infection—can also cause high levels of PSA. This means that a PSA test by itself can't provide a diagnosis of prostate cancer. That's why a PSA test is often paired with imaging or a digital rectal exam, or both, to decide whether you need a biopsy.

PSA level (also called total PSA) is measured in nanograms of PSA per milliliter (ng/mL) of blood.

PSA testing

Prostate-specific antigen (PSA) is a protein made inside the prostate gland. If there's something wrong with the prostate, the prostate may make more PSA. An unusually high amount of PSA in the blood may be a sign of prostate cancer.

But a high PSA level doesn't automatically mean you have prostate cancer. Rather, it's a warning sign that you may need further testing.

Digital rectal exam

Don't be fooled by the name—no high-tech electronics are used in a digital rectal exam. For this test, the word "digital" means "finger." The doctor will insert a finger into your rectum to feel your prostate for any signs of cancer. The doctor will wear gloves and use a lubricant to make it easier.

A digital rectal exam (also called a prostate exam) may be an awkward and unpleasant form of testing. But it's the simplest and most direct way to check the size and texture of your prostate. An irregular or hardened part of the prostate could be a sign of a tumor.

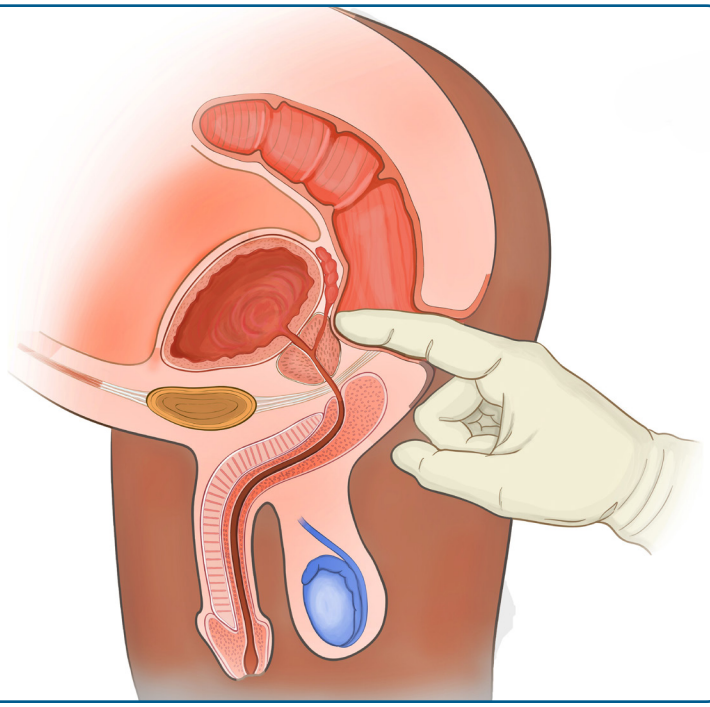
Not all parts of the prostate can be felt during a digital rectal exam, though. So it's usually paired with a PSA test and other factors—your age, race, family history, and more—to determine whether you need further testing.

Don't fear the digital rectal exam

A digital rectal exam is the simplest and most direct way to check the size and texture of your prostate. Although it can be uncomfortable, it's over in less than a minute.

Digital rectal exam

A digital rectal exam is a procedure in which your doctor inserts a finger into your rectum to feel your prostate. An irregular or hardened part of the prostate could be a sign of a tumor. Not all parts of the prostate can be felt during this exam, though. So other tests, like PSA level and imaging, are used to get a more complete picture of your prostate health.



General health tests

Health history

Your care team needs to have all your health information. They'll ask you about any health problems and treatments you've had in your life. Be prepared to talk about any illness or injury you've had and when it happened. Also tell your care team about any symptoms you have.

Bring a list of old and new medicines and any over-the-counter medicines, herbals, or supplements you take. Some of these (such as Propecia for hair loss, saw palmetto, or St. John's wort) can cause changes in your PSA level, so your health care provider needs to know if you're taking them.

Family history

Some cancers and other diseases can run in families. Your care team will ask about the health history of family members who are blood relatives. This information is called a family history.

It's important to ask members from both sides of your family about all cancers, not just prostate cancer. Ask family members if any relatives had cancer, at what age they were diagnosed, and if they died from it.

Also ask family members about other health issues like heart disease, stroke, and diabetes. Share this information and any changes to your family history with your care team.

Who's on your care team?

Treating prostate cancer takes a team approach. Some members of your care team will be with you throughout your treatment, while others will be there for parts of it.

Your team should communicate and work together to bring the best knowledge from each specialty.

Lead members of your team should include prostate cancer specialists such as a urologist, radiation oncologist, and medical oncologist.

Other common team members include your primary care doctor, nurse, physical therapist, physician assistant, mental health care provider, nutritionist or dietitian, genetic counselor, pharmacist, patient navigator, social worker, sex therapist, and others.

“

It’s OK to have bad days, but don’t let yourself stay there. A positive attitude goes a long way.”

Symptoms and quality of life

Your doctor or another member of your care team will ask you a series of questions about what symptoms you may have (such as peeing frequently, difficulty peeing or pooping, or sexual problems). You’ll also be asked how these symptoms affect your quality of life.

Quality of life refers to your overall satisfaction with your well-being and your ability to participate in regular activities. It’s important to answer all these questions honestly and completely so your care team has a full and up-to-date assessment of how you’re doing.

Blood and urine tests

For a blood test, a needle is inserted into a vein in your arm to remove a sample of blood. The sample is examined in a lab where cells, proteins, and other components in the blood are tested for signs of disease or other conditions.

If you have a higher PSA level, you may have additional blood or urine testing.

Diagnostic tests

If the PSA test, digital rectal exam, blood or urine tests, or other factors (like family history, race, or age) suggest you may have prostate cancer, you’ll be offered diagnostic testing.

Talk with your providers about whether a biopsy or imaging should be the next test you take.

Imaging tests

An imaging test takes pictures (images) of the insides of your body. The images can reveal cancer, including its size, location, and other features such as the size of the prostate itself. The images may show where the cancer started (primary tumor) and whether the cancer has spread (metastasized).

Imaging is also used after cancer treatment to see how well it worked and to check if the cancer comes back.

After your scan, your images will be studied by a radiologist. A radiologist is an expert at reading imaging tests. The radiologist will send the results to your provider, who will discuss the results with you. Be sure to ask any questions you may have.

Imaging may not be needed for early-stage prostate cancer. If your PSA, digital rectal exam, and prostate biopsy results indicate that your risk is low for the cancer to metastasize (spread beyond the prostate), then you may not need imaging tests at this time.

Imaging methods for detecting prostate cancer include MRI, CT, PET, ultrasound, bone scan, or a combination of these:

MRI scan

A magnetic resonance imaging (MRI) scan uses radio waves and powerful magnets to provide a detailed view of the cancer within the prostate. It's also used to see if cancer has spread to nearby lymph nodes or to the bones in your pelvis.

MRI is frequently used before a biopsy to locate any suspicious areas in the prostate for the biopsy to target.

More commonly, it's used after diagnosis to learn whether the cancer has advanced outside the prostate or into the lymph nodes. It can help to plan treatment or to decide whether active surveillance is appropriate. MRI can also be used after treatment to check if the cancer has come back (recurrence).

An MRI scanner is a large machine with a tunnel in the middle. An MRI machine makes a lot of noise, but you can wear headphones or earplugs and listen to music.

You may also be given a contrast agent (sometimes called contrast dye) before the scan. Contrast is used to make blood vessels, organs, and other tissues stand out more clearly in the images. The contrast agent is injected into the bloodstream and flushed out in urine.

Because an MRI uses magnets, don't bring any metal objects (such as a phone, jewelry, wristwatch, or belt with metal buckle) into the imaging room.

CT scan

If MRI is unavailable or not recommended for you, you might have a computed tomography (CT or CAT) scan instead. A CT scan takes many x-rays of your body from different angles. A computer combines all the x-ray pictures to make a series of cross-sectional images.

A CT scan is most often used after diagnosis to determine the extent of cancer in your body (your cancer stage).

PET imaging

A positron emission tomography (PET) scan highlights cells in your body that may be cancerous. A PET scan is used after you've been diagnosed to determine the extent of your cancer or to see if it has metastasized. PET imaging can also show how well treatment is working.

PET scan

A positron emission tomography (PET) scan highlights cells in your body that may be cancerous. A PET scan is used after you've been diagnosed to determine the extent of your cancer or to see if it has metastasized. PET imaging can also show how well treatment is working.

A PET scan requires injecting a radioactive substance called a tracer into your bloodstream. The tracer targets your cancer cells, which show up as bright spots on the scan.

Because PET uses a different imaging method, it's often combined with other types of imaging, such as CT or MRI, to provide an even more detailed image. These combined methods are called PET/CT and PET/MRI scans.

Bone scan

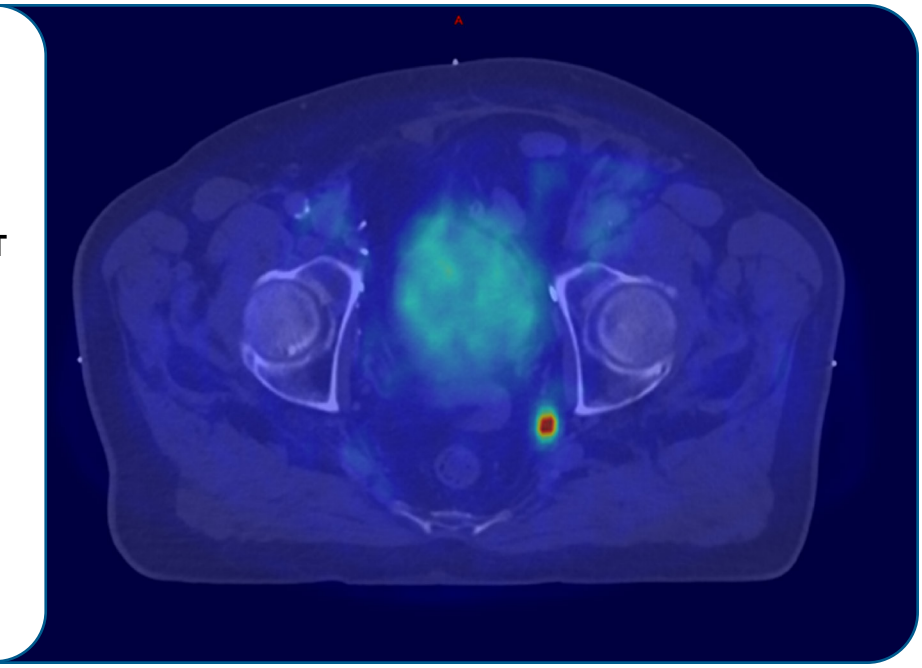
A bone scan can detect whether cancer has spread to your bones. A bone scan may be used if you have bone pain, have a high risk for bone metastasis, or have changes in certain test results. Bone scans may also be used to monitor how well treatment is working.

A bone scan uses a radioactive tracer to make pictures of the inside of bones. Before the pictures are taken, the tracer is injected into your bloodstream.

A special camera will take pictures of the tracer in your bones. Areas of bone damage absorb more tracer than healthy bone. These damaged areas show up as bright spots in the pictures. Bone damage can be caused by cancer, cancer treatment, or other health problems.

PET/CT scan of prostate cancer

This image combines PET and CT scans to show a cross-section of a patient's pelvis. The greenish circle in the center of the image identifies cancer in the prostate, while the intense red dot indicates cancer that has spread to a pelvic lymph node.



Biopsy

Although a high PSA level and an abnormal digital rectal exam are signs of possible prostate cancer, the only way to confirm cancer is to have a biopsy. A biopsy is a procedure in which a sample of cells or tissue is removed from your body and tested for cancer. You and your doctors will decide when, or if, you need a biopsy.

For this procedure, you'll lie on your side with your knees curled up or you'll lie on your back with your legs raised. You'll be given anesthesia to numb the pain or to put you to sleep. Your provider will insert a lubricated probe into your rectum. The probe provides images that allow your treatment team to see your prostate inside your body.

A hollow needle is then inserted either through the rectum or through the perineum (the skin between the anus and scrotum) and into the prostate gland.

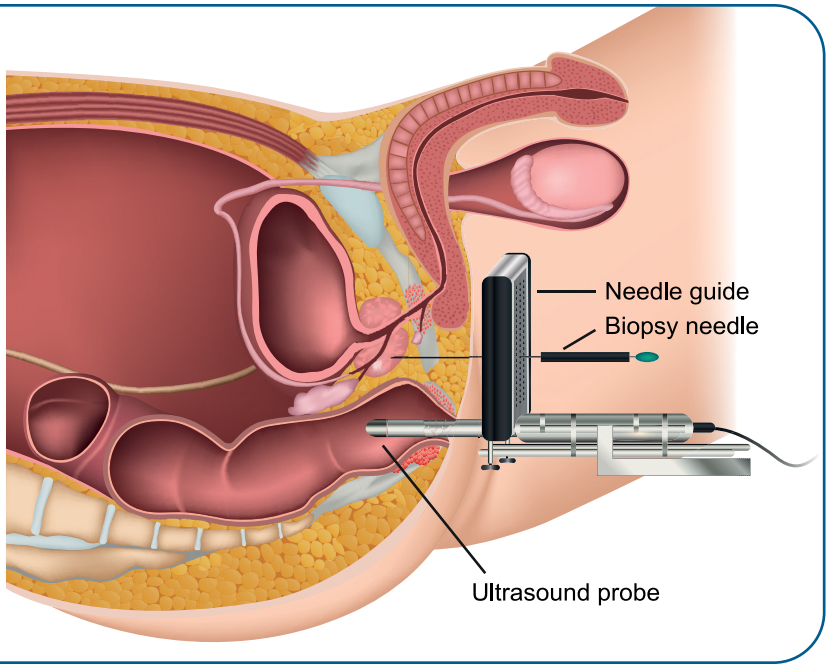
When the needle is removed, it will pull out a small sample of prostate tissue called a core. A core sample is only 1 to 2 millimeters wide (about the width of a toothpick) and about 12 to 20 millimeters long (about the length of a raisin).

Your doctor will typically take at least 12 random core samples from different parts of the prostate as well as several targeted samples from suspicious areas of the prostate identified on the MRI. Checking different areas provides a more complete evaluation of cancer throughout the gland.

After the biopsy samples are removed, a specialist called a pathologist will examine the samples under a microscope and test them for cancer cells. The pathologist will find out how many of the core samples contain cancer and will also measure the percentage of cancer in each core.

Biopsy of the prostate

A biopsy removes a sample of tissue that is tested for cancer. Shown here is a transperineal biopsy, in which a needle is inserted through the perineum and into the prostate. An ultrasound probe, which goes into the rectum, helps the doctor guide the needle into the prostate. MRI scans of your prostate may be combined with the ultrasound image to provide a highly accurate picture of the cancer.



With this information, the pathologist can estimate the amount of cancer in the prostate and how aggressive it may be. Also, by knowing where each core sample was taken, the pathologist can tell if the cancer is concentrated in a certain section of the prostate.

The pathologist will put these results into a report. Ask your doctor or another member of your care team to review the pathology report with you.

It's common to have more than one biopsy if you're on active surveillance. You'll have one biopsy to determine your diagnosis and another biopsy within a year (called a confirmatory biopsy) to see if any changes have happened over time.

Having a biopsy may cause complications. A complication is an unwanted and unplanned result from a procedure. Complications may include infection, bleeding from the rectum, or blood in the urine, stool, or semen. These usually go away after a few days or, with semen, after a few weeks. It's also important to know that a biopsy won't cause prostate cancer to spread or worsen.

Biomarker testing

A biomarker is something found in your body that can be measured to assess your health. In cancer care, a biomarker can be used to target cancer. Certain mutations (changes) in the tumor's DNA are biomarkers.

Biomarker testing looks for such changes. When possible, biomarker testing is performed on a piece of tumor tissue removed during a biopsy or surgery. If this isn't an option, a sample of your blood can be tested instead.

Importantly, biomarker testing can help guide treatment. It can find out whether someone's cancer has a mutation that can be treated with therapy that targets that specific mutation.

Biomarker testing can also identify whether the cancer is at a lower or higher risk of growing and spreading. If the cancer is low risk, you may be able to put off treatment, which also avoids treatment-related complications and side effects. If the cancer is high risk, your provider may recommend starting treatment soon.

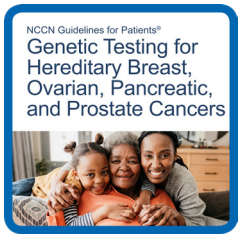
Biomarker testing is different from genetic testing. Biomarker testing looks for somatic mutations. Somatic (or acquired) mutations happened in your lifetime and can't be passed down in families. Genetic testing is used to find germline (inherited) mutations, which are passed from parents to children.

Genetic testing for inherited risk

Most prostate cancers aren't hereditary. But if you have a family history of certain cancers, your provider might suggest genetic testing to find out if you have a germline (inherited) cancer risk.

Your provider can talk to you about testing or refer you to a genetic counselor. A genetic counselor is an expert who has special training in genetic diseases. A genetic counselor can help you decide whether you're a good candidate for genetic testing, including whether your risk is high enough to make genetic testing worthwhile. A genetic counselor can also interpret the results of these tests for you.

For information on genetic testing for hereditary prostate cancer, see *NCCN Guidelines for Patients: Genetic Testing for Hereditary Breast, Ovarian, Pancreatic, and Prostate Cancers* available at NCCN.org/patientguidelines and on the NCCN Patient Guides for Cancer app.



What's next?

You've had numerous tests to find out if you have prostate cancer. Next, your care team will use your test results to figure out whether the cancer is lower risk or higher risk.

Once your level of risk has been identified, your team will assess whether you need treatment and, if so, what your treatment plan will be.

Key points

- An unusually high amount of PSA in the bloodstream may be a sign of prostate cancer.
- A digital rectal exam is the simplest way to check the size and texture of your prostate.
- A biopsy is used to confirm (diagnose) prostate cancer. It's a procedure that removes samples of cells or tissue to find cancer.
- Imaging tests may be used to see if the cancer has spread beyond the prostate.
- A genetic test is used to find out if you have an inherited risk for cancer.
- Biomarker testing looks for specific changes that can be used to identify characteristics of cancer. Some of these biomarkers may be targeted for treatment.

Questions to ask

- What tests will I have? How do I prepare for testing?
- Do the tests have any risks?
- Will any of the tests hurt?
- How often are these tests wrong?
- How soon will I know the results and who will explain them to me?

4

Assessing your risk

It's important to know the risk of your cancer getting worse. Your care team will look at key features of the cancer to assess this risk. This chapter explains each of these characteristics.

After being told you have cancer, your next thought may be, "How soon should I start treatment to get rid of it?"

The fact is, a lot of patients with early-stage prostate cancer don't need treatment right away. Many never need treatment.

To determine when you should start treatment, your provider will conduct a risk assessment. This involves determining how likely the cancer is to remain within the prostate or to spread to outside the prostate.

A risk assessment also considers whether the cancer may come back after treatment (recurrence) and, if so, whether it can be controlled with a different type of treatment.

To assess risk, your care providers use these tools: **Risk groups, Life expectancy, Nomograms,** and **Specialized risk tests**.

Let's look at each of these assessment tools in turn:

Risk groups

Why do you need to know your risk group? Because your risk group is the basis for your prognosis.

A prognosis predicts the likely course and outcome of a disease. Your prognosis guides your treatment options. For example, patients with lower risk generally get minimal treatment or no treatment at all. Patients with higher risk usually get more aggressive treatment.

To classify your disease into one of six different risk groups, from very low risk to very high risk, your care team will look at the clinical features of your cancer: PSA level, Grade Group, tumor stage, and biopsy results.

PSA level

A simple blood test will tell you how much prostate-specific antigen (PSA) is in your bloodstream. A high PSA level may indicate a risk for prostate cancer. However, high PSA levels can vary by age, race, and other factors:

- **Age** – PSA level tends to increase with age. For people in their 40s, a PSA level above 2.5 ng/mL is very suspicious for disease. For those in their 60s, 4.5 ng/mL or higher is suspicious. A PSA level of 10 ng/mL or higher is a danger sign at any age.
- **Race** – Normal PSA levels tend to be higher in Black males than in white males—about 1 point higher on average among males of the same age. Researchers don't know the reason for this difference, but they're investigating it.

- **Enlarged prostate** – The larger the prostate, the more PSA it can make. Other health issues besides cancer can also cause an enlarged prostate.
- **Sex and exercise** – PSA may increase after ejaculation or vigorous exercise. Your doctor may recommend avoiding sex and exercise for about 7 days before a PSA test. This short break allows PSA to return to its usual level.
- **Drugs and supplements** – Some medicines, herbals, and supplements can also affect PSA level.
- **Biopsy** – PSA level rises temporarily after a biopsy of the prostate.

PSA level doesn't tell the whole story, though. There are other ways that PSA can be interpreted, such as PSA density.

PSA density

If you have a larger prostate, you're also likely to have a higher PSA level. But that doesn't mean you have a greater risk for prostate cancer. Likewise, those with small or very small prostates and low PSA levels aren't necessarily at lower risk.

To adjust for this, your care team can calculate PSA density.

PSA density is the amount of PSA compared to the size of the prostate. A higher PSA density indicates a greater likelihood of cancer.

Although your chances of getting prostate cancer increase as you grow older, anyone who has a prostate is at risk for prostate cancer.

Grade Group

If cancer cells are found in your biopsy samples, further testing can identify your cancer risk. Results from these tests may indicate that the cancer will grow and spread quickly, for example. Or the results may suggest that the cancer will grow very slowly and not spread outside of the prostate at all. This information helps plan the best treatment for your type of cancer.

By looking at your biopsy samples, the pathologist will identify certain cancer cell patterns (called Gleason patterns), which are used to calculate your Gleason score, which translates to your Grade Group.

Gleason patterns

↓

Gleason score

↓

Grade Group

Your Grade Group is combined with other factors to determine your risk group.

This can be confusing at first, but it's not all that complicated in the end. Read on.

Gleason patterns

After studying your biopsy sample under a microscope, the pathologist will assign a number based on the "pattern" of cancer cells (Gleason pattern) in the sample.

A pattern that looks more like normal and healthy cells is given a lower number. A pattern that looks more abnormal is assigned a higher number.

Gleason patterns range from 1 to 5. However, patterns 1 and 2 are not considered cancer and are no longer used. So the lowest is pattern 3, which looks the closest to normal cells.

Gleason score

If prostate tumors contained only one pattern of cancer cells, estimating risk would be much easier. But prostate biopsies often contain more than one pattern of cells.

To account for this, the two most common Gleason patterns found in the biopsy sample are combined into a single Gleason score. The pattern of cancer cells that takes up the largest area in the sample is assigned the first number. The pattern that accounts for the second largest area is given the second number.

Add these two numbers together and you get a Gleason score. For example:

pattern 3 + pattern 4 =

Gleason score of 7

A Gleason score represents how much your biopsy sample looks like normal prostate tissue. It also estimates how aggressive your prostate cancer is—how quickly it might grow and whether it will spread. A higher Gleason score means the cancer is more likely to grow and spread quickly than a cancer with a lower Gleason score.

Gleason scores range from 6 to 10, where 6 is the lowest score. A Gleason score of 7 is intermediate-grade, and 8 to 10 is high-grade. This can be confusing because 6 seems like it would be a medium score, not a low score. So to make Gleason scores simpler to use, they can be organized into Grade Groups.

Grade Groups

A Grade Group is a way to interpret a Gleason score. There are five Grade Groups, numbered 1 to 5. The higher the Grade Group, the more aggressive the cancer. So cancer with a Gleason score of 6, the lowest score, is equal to Grade Group 1. Likewise, cancer with a Gleason score of 9 or 10 becomes Grade Group 5, the highest score.

Guide 1
How to find your risk from your Gleason score

Gleason patterns	Gleason score	Grade Group	Prognosis
3+3	6	1	**Low-grade cancer** is less aggressive and is likely to grow and spread very slowly. If the cancer is small, many years may pass before it becomes a problem. Low-grade cancer may never need treatment.
3+4	7	2	**Intermediate-grade cancer** is moderately aggressive and likely to grow and spread at a modest pace. If the cancer is small, several years may pass before it becomes a problem. To prevent problems, treatment may be needed.
4+3	7	3	
4+4 3+5 5+3	8	4	**High-grade cancer** is very aggressive and likely to grow and spread quickly. If the cancer is small, a few years may pass before the cancer becomes a life-threatening problem. To prevent problems, treatment is needed now.
4+5 5+4 5+5	9 or 10	5	

Importantly, this system also takes into account that Grade Groups 2 and 3 each have a Gleason score of 7. The difference is the cancer in Grade Group 3 is more serious. Why? Because the first number of the Gleason score in Grade Group 3 (4+3) is higher than the first number in Grade Group 2 (3+4). Remember, the first number is given to the cancer pattern that makes up the largest area of the biopsy sample.

Grade Group 1 indicates low risk. Grade Groups 2 and 3 correspond to intermediate risk. Grade Groups 4 and 5 predict high risk and very high risk. **See Guide 1.**

Tumor stage

The next characteristic that contributes to your overall risk group is the tumor stage.

Staging is a way to describe the severity of the cancer in your body and how far it has spread. Knowing your stage is important for predicting the course of your disease and for making a treatment plan.

The tumor, node, metastasis (TNM) system is used to stage prostate cancer. In this system, the letters T, N, and M stand for different areas of cancer growth:

- **T (tumor)** – Describes the size of the main (primary) tumor and if it has grown outside the prostate
- **N (node)** – Identifies whether cancer has spread to lymph nodes
- **M (metastasis)** – Indicates if cancer has spread to distant parts of the body (metastasized)

Your providers will assign a number to each letter, based on test results. For example, the number after T ranges from 0 through 4 based on the tumor's size and growth. The higher the number, the larger the tumor or the more the cancer has spread.

The T, N, and M scores are combined to assign a stage to the cancer.

Let's say your prostate cancer is given a TNM score of T2, N0, M0. This score means that the tumor is big enough to be felt during a digital rectal exam (T2). But the numbers after N and M are zeros because early-stage cancer hasn't spread outside the prostate gland to lymph nodes (N0) or to distant parts of the body (M0).

A letter may also be included after the tumor stage (T2a, for example) to give more information based on the digital rectal exam or an examination of prostate tissue. The letter stands for the extent of cancer and/or its location in the prostate. **See Guide 2.**

Cancer staging is often done twice. The first time is before any treatment. The second time is during or after treatment to see how well the treatment has worked.

Biopsy results

Results from your core needle biopsy also help to determine your overall risk group. One finding is the number of core samples that contain cancer (for example, 5 out of 12 in each core). Using this information, the pathologist can estimate the amount of cancer in the entire prostate.

Biopsy results can also show whether the cancer is concentrated in a certain section (or sections) of the prostate.

What's your risk group?

Based on the results of these tests and calculations—PSA level, Grade Group, tumor stage, and biopsy results—you'll be placed into an initial risk group. **See Guide 3.**

Your risk group helps determine which treatment options may be best for you. Using these tests together to create risk groups is more reliable than using any test by itself to choose treatment options.

Guide 2
Tumor details for T stage

T1 – The tumor can't be felt by a digital rectal exam, but a biopsy found cancer cells.	**T1a**	The tumor is found unexpectedly during another procedure. Only a small part (5 percent [5%] or less) of the removed tissue is cancer.
	T1b	The tumor is found unexpectedly during another procedure. More than a small part (more than 5 percent [5%]) of the removed tissue is cancer.
	T1c	A high PSA level called for a biopsy of the prostate.
T2 – The tumor can be felt by a digital rectal exam. It hasn't spread outside the prostate.	**T2a**	Cancer is found in half or less than half of one side of the prostate.
	T2b	Cancer is found in more than half of one side of the prostate, but it isn't in both sides.
	T2c	Cancer has grown into both sides of the prostate.
T3 – The tumor has spread outside the prostate to nearby tissues, but no farther.	**T3a**	Cancer has grown outside the prostate, but not into the seminal vesicle(s).
	T3b	Cancer has grown outside the prostate and into the seminal vesicle(s).
T4 – The tumor has spread outside the prostate to nearby tissues and also to other areas	**T4**	Cancer has grown outside the prostate and spread to nearby tissues or organs such as the bladder, rectum, pelvic wall, and/or pelvic muscles

Guide 3
Characteristics that make up your risk group

Risk group	PSA level	Grade Group	Tumor stage	Biopsy results
Very Low Risk	Must have **all** of these characteristics			
	Less than 10 ng/mL	1	T1c	Cancer found in 1 or 2 biopsy cores **and** no more than half of each core shows cancer
Low Risk	Must have **all** of these characteristics			
	Less than 10 ng/mL	1	T1 to T2a	
Favorable Intermediate Risk	**Only 1** of these characteristics needed			**And** cancer found in fewer than half of all biopsy cores
	10 to 20 ng/mL	2	T2b or T2c	
Unfavorable Intermediate Risk	Must have **2 or 3** of these characteristics			**Or at least 1** of these characteristics **and** cancer found in more than half of all biopsy cores
	10 to 20 ng/mL	2 or 3	T2b or T2c	
High Risk	Must have **at least 1** of these characteristics			
	More than 20 ng/mL	4 or 5	T3a to T4	
Very High Risk	Must have **at least 2** of these characteristics			
	More than 40 ng/mL	4 or 5	T3 to T4	

But risk groups aren't the only risk assessment tool. There's also life expectancy, nomograms, and specialized risk tests.

Life expectancy

Life expectancy is the average lifespan of a person. It's measured in years. An estimate of your life expectancy is a key factor in deciding which tests and treatments you'll need.

It's important to know that life expectancy—when used for cancer care—is an estimate based on large numbers of people. That means life expectancy can be applied to a certain population or age range, but it's not as easy to make a precise estimate of the lifespan of an individual person.

So why estimate your life expectancy? Sometimes, patients in certain risk groups should wait until symptoms appear before having tests or starting treatment. There may be no benefit to having additional tests or undergoing treatment if you don't have any symptoms or if you have other more life-threatening health conditions.

If you don't have any symptoms and have very-low-risk, low-risk, or intermediate-risk prostate cancer, and a life expectancy of 5 to 10 years, then observation is usually recommended. This is different than active surveillance, which usually involves routine imaging and biopsies.

We'll talk more about life expectancy and how it impacts treatment options in *Chapter 5: Prostate cancer treatments.*

Nomograms

A nomogram predicts your prognosis, which is the likely course your cancer will take. A nomogram uses math to compare you and your prostate cancer to hundreds or thousands of other patients who have been treated for prostate cancer.

Your doctor can use a nomogram to predict how likely your cancer is to grow or spread, based on your test results.

Risk groups and nomograms both provide information that is specific to you, but nomograms can give somewhat more accurate estimates of cancer risk. Both are used, along with other risk assessment tools, to plan treatment.

Specialized risk tests

Your doctor or health care provider can order tests to help better understand how aggressive your cancer is.

One of these tests is called Decipher Prostate. It looks at the molecular characteristics and gene expression (which genes are turned on) in a sample of your tumor.

Another test is called ArteraAI Prostate. It looks at a digital image of your cancer biopsy and uses artificial intelligence to predict potential treatment.

Depending on your situation, results from these tests may help identify the right treatment for you and avoid under-treatment or over-treatment.

These tests don't replace standard measures such as PSA, Gleason score, Grade Group, and imaging. They're used in addition to them.

If you have any questions about why you're having a test or what it means, ask your care team.

What's next?

This chapter explained how your care providers figure out your risk for your prostate cancer to grow and spread. Your risk level determines which treatment options are available to you. In many cases, early-stage cancer grows very slowly and may not spread (metastasize) to other parts of the body. So you may not need treatment right away.

Still, it's important to know about all the types of therapies available, if and when you do need treatment. The next chapter describes each of the treatment options for early prostate cancer. After that chapter, you'll read about which treatments may be best for you depending on your level of risk.

We want your feedback!

Our goal is to provide helpful and easy-to-understand information on cancer. Take our survey to let us know what we got right and what we could do better.
NCCN.org/patients/feedback

Key points

- A risk assessment identifies potential problems and then considers what would happen if those problems occurred.
- Patients with lower risk generally get minimal or no treatment. Patients with higher risk usually get more aggressive treatment.
- Cancer staging describes how much cancer is in the body and where it's located.
- Life expectancy is an estimate of the number of years you will likely live. It's based on large numbers of people and is not an exact prediction. But it can help choose the best treatment for you.
- A nomogram predicts the course your cancer will likely take (prognosis).
- Specialized risk tests may help identify the right treatment for you and avoid under-treatment or over-treatment.

Questions to ask

- What's the risk for my cancer to grow and spread outside of the prostate gland?
- Can you explain how estimated life expectancy is different from how long I might actually live?
- How do my age, race, overall health, and other factors affect my options?
- Will I need PSA tests, digital rectal exams, and biopsies for the rest of my life?

5
Prostate cancer treatments

There's more than one treatment for prostate cancer. This chapter describes all the treatment options. Talk with your care team about which treatment might be best for you.

Prostate cancer is usually a slow-growing disease. It's also a complex disease with many treatment options. Common treatments for early-stage prostate cancer include surgery and radiation therapy, which are sometimes combined with hormone therapy.

Then again, your treatment plan may include no direct therapy but instead involve active surveillance or observation.

Active surveillance

Active surveillance is a plan that closely watches your condition, with treatment at the ready if needed.

Because a small tumor can grow very slowly, it's possible to wait to treat prostate cancer until the tumor grows larger. During this time, you'll have tests and biopsies on a regular basis to look for changes in tumor growth.

Although your providers may ask you to have tests more or less frequently based on your risk, regular testing during active surveillance may follow a schedule like this:

- PSA once or twice a year
- Digital rectal exam once a year
- MRI every 1 to 2 years
- Prostate biopsy every 2 to 5 years

You won't receive any cancer treatment during active surveillance. But treatment will begin if your cancer grows or spreads.

Why wait to be treated? Mainly because surgery and other forms of treatment have side effects. If you can delay treatment without harm—or avoid it altogether—then you can also delay or entirely avoid the side effects of treatment. Side effects of surgery and other treatments can take a toll on your quality of life.

In general, active surveillance is the preferred strategy for patients with lower-risk prostate cancer and a longer life expectancy. About half of these patients are able to avoid treatment for 10 years or more.

To see if you're a good candidate for active surveillance, you may need a confirmatory MRI with or without a confirmatory prostate biopsy. These confirmatory tests are usually performed within a year of your diagnosis to see if any changes have happened during that time.

Other factors to consider for active surveillance:

- Your life expectancy
- Your overall health
- Features or unique qualities of your tumor
- Possible side effects of treatment
- Your wishes about treatment

A common question about active surveillance: When do you know to switch from surveillance to treatment? The most common reason is that your Grade Group went up after a recent biopsy.

Other reasons for starting treatment may include an increase in the size of the tumor or a rise in prostate-specific antigen (PSA) level.

Observation

Observation involves monitoring your prostate cancer and watching for symptoms. (You may hear it called watch-and-wait or watchful waiting.) If symptoms develop, treatment is often focused on palliative care or symptom relief instead of trying to cure the cancer.

Palliative care treats the symptoms of cancer and the side effects of cancer treatment. This allows patients to maintain a good quality of life without the burden of unnecessary treatment.

Observation often applies to patients who are older or frail with intermediate-risk prostate cancer and shorter life expectancies (5 to 10 years). It's also recommended for patients with lower risk prostate cancer and short life expectancy (5 years or less). These patients often have other health conditions that are more severe than their prostate cancer.

Observation is different from active surveillance. Observation is a less aggressive way to monitor prostate cancer. It doesn't require regular biopsies—just a visit for a physical once or twice a year.

By comparison, active surveillance involves frequent testing to see whether the cancer is progressing in order to treat it before it can get worse.

Surgery

Surgery is a procedure to remove cancer from the body. The tumor is removed along with some normal-looking prostate tissue around its edge called the surgical margin.

- **A positive margin** is when cancer cells are found along the edge of the tissue that the surgeon removes.
- **A negative margin** is when no cancer cells are found around the edge of the tissue that the surgeon removes.

A negative margin is the better result because it means that all the tumor in that area has likely been removed. On the other hand, a positive margin doesn't always mean that you'll have a recurrence.

Surgery can be used as the main (primary) treatment. Or surgery may be only part of your treatment plan. The type of surgery you receive depends on the size and location of the tumor. It also depends on whether cancer is found in any surrounding organs or tissues.

Radical prostatectomy

Prostatectomy means removing the prostate gland through surgery. A **radical** prostatectomy removes not only the entire prostate but also the surrounding tissue, seminal vesicles, and sometimes the nearby lymph nodes.

Radical prostatectomy is often used when:

- The tumor is found only in the prostate.
- The tumor can be removed completely with surgery.
- You have a life expectancy of 10 years or more.
- You have no other serious health conditions.

A radical prostatectomy is complex and requires a great deal of skill. Surgeons who are experienced in this type of surgery often have better results.

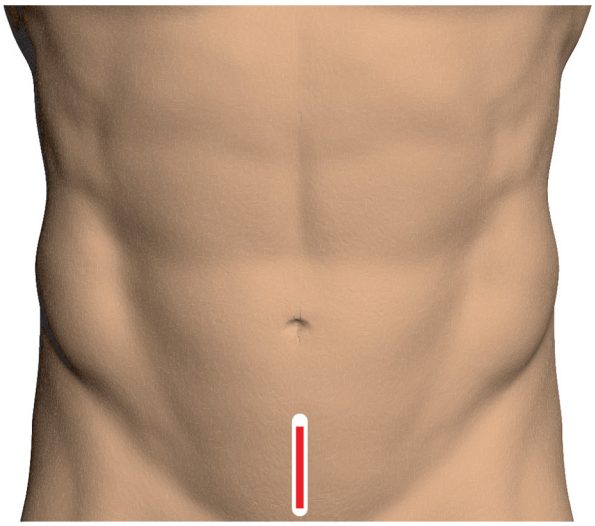
There are two surgical methods for radical prostatectomy:

- **Open surgery** removes the prostate through a single cut or incision. The incision is long enough to let your doctor directly view and access the tumor to remove it.
- **Minimally invasive surgery** uses several small incisions or holes instead of one larger cut. The surgeon inserts small tools through each incision to perform the surgery. In most centers, the surgeon uses a robot to guide the tools more precisely.

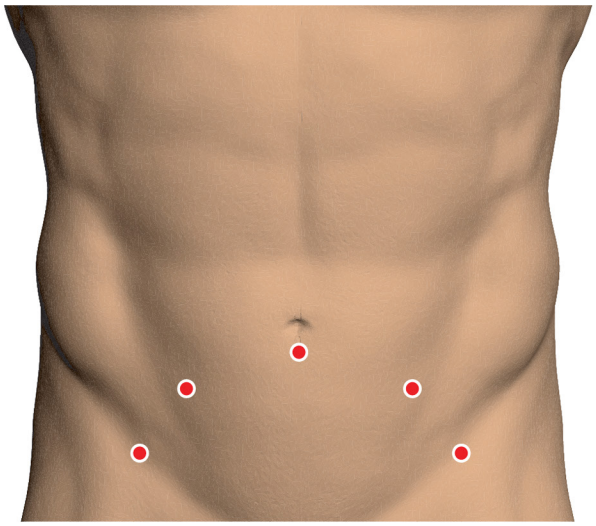
Minimally invasive surgery has become more common than open surgery. Patients who

Open vs. minimally invasive prostatectomy

A prostatectomy is an operation that removes the whole prostate. Open surgery removes the prostate through a single cut or incision. Minimally invasive surgery uses several small incisions or holes instead of one larger cut.



Open



Minimally invasive

receive minimally invasive surgery may have shorter hospital stays, less blood loss, fewer surgical complications, or faster recovery time. The major side effects from minimally invasive radical prostatectomy—incontinence and erectile dysfunction—occur about as often as they do with open surgery.

Side effects of prostate surgery

Radical prostatectomy frequently causes two side effects:

Urinary incontinence. After a radical prostatectomy, most people temporarily lose the ability to control when they pee. This is called urinary incontinence, and it can be a major problem.

Right after the procedure, a catheter will be inserted into your urethra to allow you to empty your bladder and for your urethra to heal. The catheter will stay in place for 1 to 2 weeks after surgery. You'll be shown how to care for it while at home. If the catheter is removed too early, you may lose control of your bladder or be unable to urinate due to scar tissue.

After the catheter is removed, you may need to use absorbent pads or incontinence underwear for several weeks or months.

You can also do exercises that strengthen the pelvic floor muscle. (If you haven't had prostate surgery yet, consider starting pelvic floor exercises beforehand to help to reduce urinary incontinence afterward.)

In addition, certain prescription medications can reduce the need to pee so often.

Most patients gradually recover most of the control of their bladder within a year, though many continue to use pads for minor leaks. If incontinence continues to be a major problem, you can have a surgical procedure to control urination.

Erectile dysfunction. Erectile dysfunction means having difficulty or being unable to have an erection of the penis. It's a common problem after prostate surgery. But it often—although not always—improves over time.

There's a higher risk for erectile dysfunction if:

- You are older
- You have erectile problems before surgery
- Your cavernous nerves are damaged or removed during surgery

The cavernous nerves control the ability to have erections. These nerves run alongside the prostate. Surgeons do their best to avoid these nerves when performing a prostatectomy, but damage to the nerves during surgery is sometimes unavoidable.

Removing your prostate and seminal vesicles will cause you to have dry orgasms. This means there will be no semen, which would prevent you from having children. You may want to look into sperm banking before the surgery if you're thinking of having children.

The recovery of erectile function is often frustratingly slow. It may take several months to 2 years to restore the erectile function you had before the prostatectomy. However, you may never regain the same erectile function you once had.

Treatment options for erectile dysfunction include pills (like Viagra and Cialis), injections of medication into the penis, vacuum constriction devices (“penis pump”), and surgical implants that produce an erection.

It’s also common to have psychological as well as relationship problems with erectile dysfunction. It’s a leading cause of depression in patients with prostate cancer. Many find it helpful to speak with a counselor or sex therapist after surgery.

Ask your doctor or someone else on your care team about therapy or counseling if you’re having problems due to erectile dysfunction or symptoms of depression.

While it may be uncomfortable to talk about these problems, keep in mind that these side effects are common and help is readily available. You're not alone—emotional support is part of good cancer care.

Radiation therapy

Radiation therapy uses high-energy radiation, like x-rays, to kill cancer cells and shrink tumors. Radiation therapy is given in regular doses over a certain period of time.

Radiation therapy is used in several ways to treat prostate cancer. It’s used as primary therapy for prostate cancer, similar to surgery. It’s also used after prostate surgery to kill any cancer cells that have been left behind.

Additionally, radiation therapy is used to treat metastatic areas to curb the growth of the cancer or to provide pain relief.

There are two main types of radiation treatment for prostate cancer: radiation from outside the body (external beam radiation therapy) and radiation from inside the body (brachytherapy).

External beam radiation therapy

External beam radiation therapy (EBRT) uses a machine that precisely aims radiation at cancer inside the body. The radiation beam focuses on the cancer while avoiding healthy tissue. This allows for safer delivery of higher doses of radiation, sometimes with fewer treatments.

EBRT

External beam radiation therapy (EBRT) uses a large machine to deliver radiation from outside the body to a precise area inside the body. The radiation is focused directly on the cancer, while trying to avoid healthy tissue.

Radiation therapy requires careful planning. Before treatment, you may have tiny metal markers, each about the size of a grain of rice, implanted in your prostate.

These markers make sure the radiation beams can be accurately aligned with your prostate in the same way for every treatment, which improves the safety and effectiveness of the therapy.

You may also be given an injection of biodegradable gel placed in between your prostate and rectum. The gel temporarily widens the area, which creates a space that helps protect the rectum from unwanted radiation during treatment.

Next, you may have a radiation simulation or mapping scan about a week or two before you begin therapy. This scan is used to design your personalized treatment plan. You'll lie on the treatment table and get into the best position for receiving the radiation. But you won't receive any actual radiation during the simulation. Sometimes a custom mold is made of your body to help you lie in the exact same position on the treatment table each day.

During the treatment itself, the machine may rotate around the treatment table to deliver radiation from several different angles. You won't be able to see or feel the radiation when it's delivered.

The total number of treatments varies from 5 to as many as 40. They're typically given in daily doses for 5 days a week, Monday through Friday, over a period of weeks. A very precise, high-dose radiation treatment called stereotactic body radiation therapy (SBRT) is commonly given every other day for 5 treatments.

Brachytherapy

Brachytherapy is an internal form of radiation therapy. You might hear it called brachy (said "bray-key") for short. In this treatment, radiation is delivered inside the body by placing a radioactive object into or next to the tumor. This can be invasive and is often done under general anesthesia like a surgical procedure.

Brachytherapy may be used alone or combined with EBRT, hormone therapy, or both. Patients with high-risk cancers aren't usually considered for brachytherapy alone.

High dose-rate brachytherapy involves a procedure where 10 to 20 very narrow tubes are inserted through the perineum and into your prostate. Thin wires with radioactive tips slide through the tubes and are held within the prostate for several minutes.

During this time, the tips deliver a high dose of radiation to the prostate. The wires are then retracted and the needles are removed, leaving no radioactive material behind.

Low dose-rate brachytherapy is delivered by as many as 50 tiny metal "seeds" that are permanently implanted in your prostate. The seeds gradually release a continuous low dose of radiation over months.

Side effects of radiation therapy

Side effects that occur during or after treatment, called acute side effects, are more common but often temporary. Side effects that occur months to years later, called late side effects, are less common.

Some of the common side effects of radiation therapy are urinary and bowel problems, erectile dysfunction, and fatigue.

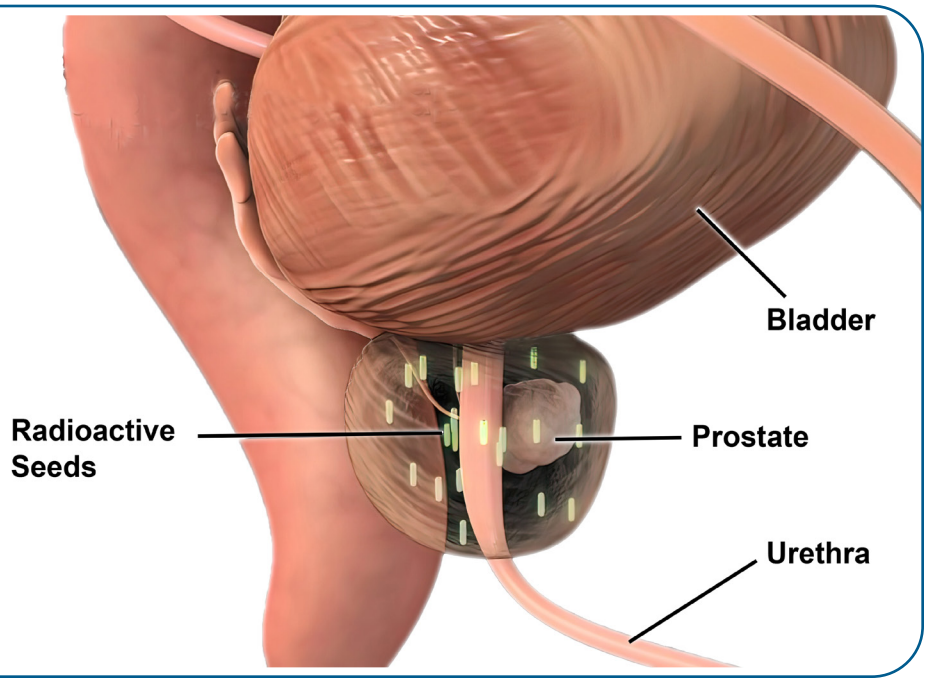
Urinary and bowel problems. Urinary problems include having to go more often, having to go suddenly, a burning sensation when you go, and, rarely, blood in the urine. Bowel problems are much less common with modern forms of radiation but can include diarrhea, pooping frequently, being unable to hold it in and, rarely, bleeding from the rectum. Urinary and bowel problems usually lessen or go away after several weeks for most people but may last longer for others.

Erectile dysfunction. Radiation therapy is less likely than surgery to cause erectile dysfunction. But radiation can damage the vessels and nerves that control erections. Erectile dysfunction doesn't happen right away after radiation. It usually occurs gradually, starting and then worsening between 1 to 3 years after radiation treatment. Having hormone therapy in addition to radiation therapy can make this side effect more likely. (For more, see "Erectile dysfunction" in the earlier section in this chapter *Side effects of prostate surgery*, page 40.)

Fatigue. Feeling tired for a few weeks to months after radiation treatment is also common. However, regular physical activity and exercise can help relieve mild fatigue.

Brachytherapy radiation

Low dose-rate brachytherapy uses tiny radioactive metal "seeds" that are implanted into your prostate. Each seed is about the size of a grain of rice. They'll stay in your prostate permanently and provide a low dose of radiation continuously for several months.



Hormone therapy

Hormone therapy for prostate cancer is a treatment that blocks or removes hormones. A hormone is a natural chemical made by a gland in the body. Its job is to activate cells or organs.

Male hormones are called androgens. The main androgen is testosterone. Most of the testosterone in the body is made by the testicles. Testosterone helps produce sperm, among other functions.

But testosterone also helps prostate cancer grow. A type of hormone therapy called androgen deprivation therapy (ADT) can stop your body from making testosterone or block cancer cells from using testosterone. This can shrink the tumor or slow tumor growth for a while.

Hormone therapies for prostate cancer include luteinizing hormone-releasing hormone (LHRH) agonists and LHRH antagonists, both of which cause the testicles to stop making testosterone.

Most LHRH agonists and LHRH antagonists are injections. These may be given monthly or 2, 3, or 4 times a year. Relugolix (Orgovyx) is an LHRH antagonist that comes as a tablet taken once a day. Anti-androgens and androgen synthesis inhibitors are also available as pills and taken 1 to 3 times a day, depending on the medication. **See Guide 4.**

Hormone therapy isn't recommended to be used by itself for the treatment of early-stage prostate cancer. When hormone therapy is used (generally for patients with higher risk), it's usually given with radiation therapy, which increases radiation's effectiveness. Hormone therapy may be given before, during, or after radiation therapy.

"When you are deciding on your treatment options, remember that even though some decisions need to be made fast, don't rush. Think through your options and get second, or even third opinions. Have people you can trust to talk through your options, so you feel comfortable in your decisions."

You might hear the term "castration" used when describing prostate cancer or its treatment. This term describes a drastic reduction of testosterone. Castration can be a short-term reversible treatment using drugs or it can be permanent surgical removal of one or both testicles (orchiectomy).

Although orchiectomy is a surgical procedure, it's still considered hormone therapy because it removes the primary source of testosterone: the testicles. Unlike drug hormone therapy, orchiectomy can't be reversed.

Surgical removal of the testicles is much less common today because drug therapy is often just as effective at blocking testosterone. Orchiectomy is now used only for advanced metastatic prostate cancer.

Side effects of hormone therapy

Hormone therapy has significant side effects. Many factors affect your risk for side effects including your age, your health before treatment, how long or often you have treatment, and other things.

In general, the longer you're on hormone therapy, the greater your risk of thinning and weakening of your bones (osteoporosis), bone fractures, weight gain, loss of muscle mass, diabetes, and heart disease. You may need an x-ray scan (DEXA scan) to check your bone density before starting hormone therapy.

Other side effects of hormone therapy include tiredness (fatigue), mood changes, weight gain, and growth and tenderness of your breasts.

Hormone therapy increases the risk for diabetes and cardiovascular disease. If you already have either of these conditions, hormone therapy can cause them to get worse. Hormone therapy may increase the risk of death from heart issues. Be sure to talk to your care team about your personal risk. Also let your primary care physician know you're being treated with ADT. Ask about monitoring your blood pressure and cholesterol levels.

In addition, the sexual side effects of hormone therapy are a significant cause of stress. Hormone therapy may lower your desire for sex, cause erectile dysfunction, and reduce the size of the penis and testicles.

Erectile dysfunction medicines (such as Viagra and Cialis) aren't usually effective for those on hormone therapy, but other injected medicines may be helpful. These drugs don't restore the loss of sexual desire caused by lower androgen levels, though.

It may take a year or more to regain your testosterone level and libido (sex drive). Many patients never fully regain the same levels of testosterone and libido that they had before

Guide 4
Hormone therapy drugs for early-stage prostate cancer

LHRH agonists	Eligard (leuprolide), Lupron Depot (leuprolide), Trelstar (triptorelin), Zoladex (goserelin)
LHRH antagonists	Firmagon (degarelix), Orgovyx (relugolix)
Anti-androgens	Casodex (bicalutamide), Eulexin (flutamide), Nilandron (nilutamide)
Androgen synthesis inhibitors*	Zytiga (abiraterone)

** Only for patients with very-high-risk prostate cancer*

hormone therapy. Some patients never regain full ability to have an erection.

Talk to your care team about how to manage the side effects of hormone therapy. They have ways to lessen or soothe most of these difficulties. Bones can be strengthened with medicine as well as with physical activity. Exercise and eating a healthy diet can also help with fatigue, mood, and weight gain.

Loss of sex drive, erectile dysfunction, and other sexual side effects usually go away after you stop hormone therapy.

In the meantime, consider talking to your partner and/or a therapist to help you deal with any challenges you're having. You're not alone—emotional support is an important part of cancer care.

What is shared decision-making?

Some people with cancer want their doctors and treatment team to just tell them which treatment to have. Doctors, nurses, and other providers are the experts, right? While it's true that your treatment team has lots of experience and knowledge, you're also an expert—you're the expert on you.

It's a good idea for your team to share the responsibility of your treatment with you. And it's a good idea for you to fully participate in making decisions about your care. In shared decision-making, you and your care team share information, discuss the options, and agree on a treatment plan.

Here's what your treatment team should share with you:

- An explanation of the likely benefits and potential harms of each treatment option.
- The likelihood of cure, recurrence, progression, and possible mortality with each treatment option.
- The side effects of each treatment option along with its impact on quality of life, including sexual, urinary, and bowel function.

And here's what you should share with your treatment team:

- Your preferences and feelings about treatment, side effects, risks, and quality of life. These should be key parts of your treatment plan.

If the provider who's leading your treatment team doesn't have a talk with you about shared decision-making, feel free to speak up and ask about it.

Clinical trials

Another way to receive treatment is by joining a clinical trial.

A clinical trial is a type of medical research study. After being developed and tested in a lab, potential new ways of fighting cancer need to be studied in people. If found to be safe and effective in a clinical trial, a drug, device, or treatment approach may be approved by the U.S. Food and Drug Administration (FDA).

Everyone with cancer should carefully consider all of the treatment options available for their cancer type, including standard treatments and clinical trials. Talk to your doctor about whether a clinical trial may make sense for you.

Phases

Most cancer clinical trials focus on treatment and are done in phases.

- **Phase 1** trials study the safety and side effects of an investigational drug or treatment approach.
- **Phase 2** trials study how well the drug or approach works against a specific type of cancer.
- **Phase 3** trials test the drug or approach against a standard treatment. If the results are good, it may be approved by the FDA.
- **Phase 4** trials study the safety and benefit of an FDA-approved treatment.

Who can enroll?

It depends on the clinical trial's rules, called eligibility criteria. The rules may be about age, cancer type and stage, treatment history, or general health. They ensure that participants are alike in specific ways and that the trial is as safe as possible for the participants.

Finding a clinical trial

In the United States

NCCN Cancer Centers
NCCN.org/cancercenters

The National Cancer Institute (NCI)
cancer.gov/about-cancer/treatment/clinical-trials/search

Worldwide

The U.S. National Library of Medicine (NLM)
clinicaltrials.gov/

Need help finding a clinical trial?

NCI's Cancer Information Service (CIS)
1.800.4.CANCER (1.800.422.6237)
cancer.gov/contact

Informed consent

Clinical trials are managed by a research team. This group of experts will review the study with you in detail, including its purpose and the risks and benefits of joining. All of this information is also provided in an informed consent form. Read the form carefully and ask questions before signing it. Take time to

discuss it with people you trust. Keep in mind that you can leave and seek treatment outside of the clinical trial at any time.

Will I get a placebo?

Placebos (inactive versions of real medicines) are almost never used alone in cancer clinical trials. It is common to receive either a placebo with a standard treatment, or a new drug with a standard treatment. You will be informed, verbally and in writing, if a placebo is part of a clinical trial before you enroll.

Are clinical trials free?

There is no fee to enroll in a clinical trial. The study sponsor pays for research-related costs, including the study drug. But you may need to pay for other services, like transportation or childcare, due to extra appointments. During the trial, you will continue to receive standard cancer care. This care is often covered by insurance.

> **“Without clinical trials, our treatment wouldn’t change. It would always remain the same. Some people refer to clinical trials as receiving tomorrow’s best treatment today.”**

Supportive care

Supportive care aims to improve your quality of life during and after cancer treatment. Supportive care (also called palliative care) is health care that relieves the symptoms caused by cancer and the side effects caused by its treatment, like pain and cancer-related fatigue.

Supportive care can also help with:

- Making treatment decisions
- Coordinating your care
- Paying for care
- Planning for advanced care and end of life

Supportive care is available to everyone with cancer and their families, not just those at the end of life. In fact, people who start supportive care when they begin treatment tend to have improved outcomes and better quality of life.

Supportive care involves the whole person, not just their cancer. If you’re having a problem that’s interfering with your treatment or affecting your quality of life, ask what supportive care resources may be available to help you.

Support groups

Many people diagnosed with cancer find support groups to be helpful. Support groups often include people at different stages of treatment. Some people may be newly diagnosed, while others may be finished with treatment.

If your hospital or community doesn’t have support groups for people with prostate cancer, check out the websites listed on page 70 of this book.

Key points

- Active surveillance is the preferred strategy for most patients who have lower-risk prostate cancer and a longer life expectancy.
- Prostate surgery, also known as radical prostatectomy, removes the whole prostate, the surrounding tissue, the seminal vesicles, and sometimes the nearby lymph nodes in the pelvis.
- Radiation therapy precisely targets prostate cancer to kill cancer cells and stop new cancer cells from being made.
- Hormone therapy treats prostate cancer by stopping testosterone from being made or by blocking cancer cells from using testosterone. It's sometimes used in combination with radiation therapy for early-stage prostate cancer.
- Castration describes a drastic reduction of testosterone. This is most often done with drugs.
- Supportive care is important at any stage of cancer, not just at the end of life.

Questions to ask

- Do I have a choice of when to begin treatment?
- Does this hospital or cancer center offer the best treatment for me?
- Does any option offer a cure or long-term cancer control?
- Which side effects are most common and how long do they usually last?
- What supportive care and services are available to me and my caregivers?

NCCN experts are concerned about overtreatment of early-stage prostate cancer. For many people, observation or active surveillance are better options.

6

Initial treatment for your risk group

You've had a lot of tests to determine your risk group. Now, you and your care team will use your risk assessment to decide your initial treatment options.

Has your doctor or care team told you which risk group you're in? If you know your risk group, look for it in the following pages to learn about your initial therapy options.

Very low risk

Patients included in the very-low-risk group have **all** of the following traits:

- Stage T1c tumor
- Grade Group 1
- PSA less than 10 ng/mL
- Cancer found in 1 to 2 biopsy cores with no more than half of each core showing cancer
- PSA density less than 0.15 ng/mL

NCCN experts are concerned about overtreatment of early-stage prostate cancer. One result of overtreatment is that the treatment might cause more problems than the disease itself. For many patients, especially those with lower risk prostate cancer, active surveillance or observation can be better options than direct treatment.

Treatment options, based on life expectancy estimates, are described next. Also **see Guide 5.**

Life expectancy: 10 years or more

If you have very-low-risk prostate cancer and your estimated life expectancy is 10 years or more, your care team will want to check in with you periodically. This is called active surveillance.

Active surveillance

Active surveillance means that your care team will watch your condition closely, and will be ready to start treatment if needed. Tests during active surveillance include prostate-specific antigen (PSA), digital rectal exam, MRI scan, and biopsies. These tests are done on a regular basis so that treatment can be started when and if needed. **See Guide 6.**

Guide 5
Very-low-risk group: Initial therapy options

Life expectancy	Initial therapy
10 years or more	Active surveillance
Less than 10 years	Observation

To see if you're a good candidate for active surveillance, you may need a confirmatory MRI (if you haven't received an MRI already) with or without a confirmatory prostate biopsy. All patients should have a confirmatory prostate biopsy 1 to 2 years after their initial biopsy to see if any changes have happened over time.

Life expectancy: Less than 10 years

If you have very-low-risk prostate cancer and your estimated life expectancy is less than 10 years, observation is often recommended.

Observation

Observation is for those who have other more serious health problems and whose slow-growing prostate cancer isn't causing any symptoms.

Observation involves occasional check-ups with your care team, but no invasive tests or biopsies. Any symptoms that occur can be treated with palliative therapy.

"It's important to understand what you're going through. If your doctor says something you don't understand, don't just nod like you do. Let them know "I don't understand what that means" or "I don't fully understand what you just said. Can you please explain it in simpler terms?"

Guide 6
Tests during active surveillance

Test	Frequency
PSA test	Once or twice a year, or as needed
Digital rectal exam	Once a year, or as needed
MRI scan	Every 1 to 2 years, or as needed
Prostate biopsy	Every 2 to 5 years, or as needed

Low risk

The low-risk group includes patients who have all of the following traits:

- Stage T1 to T2a tumor
- Grade Group 1
- PSA of less than 10 ng/mL

Treatment options are based on life expectancy. The initial treatment options for low-risk disease are described next and shown in **Guide 7.**

Life expectancy: 10 years or more

If you have low-risk prostate cancer and your estimated life expectancy is 10 years or more, initial treatment options are:

Active surveillance

Active surveillance is the preferred option if you have slow-growing disease and you have a longer life expectancy. **See Guide 6.**

To see if you're a good candidate for active surveillance, you may need a confirmatory MRI (if you haven't received an MRI already). The confirmatory MRI can be done with or without a confirmatory prostate biopsy and/or biomarker testing.

All patients should have a confirmatory prostate biopsy 1 to 2 years after their initial biopsy to see if any changes have happened over time.

Guide 7
Low-risk group: Initial therapy options

Life expectancy	Initial therapy	Followed by
10 years or more	Active surveillance (preferred)	
	Radiation therapy	Tests for PSA recurrence
	Prostate surgery*	Tests for PSA persistence and recurrence
Less than 10 years	Observation	

** See Guide 8 for adverse features*

Radiation therapy

If you're likely to live more than 10 years, you may decide you want treatment now instead of active surveillance. Low-risk cancers can be treated with radiation therapy, either external beam radiation therapy (EBRT) or brachytherapy.

Prostate surgery

Prostate surgery (radical prostatectomy) removes the whole prostate. It's not a common treatment option for people with low-risk prostate cancer.

After the prostate is removed, the pathologist will look for signs of disease called adverse (or high-risk) features. **See Guide 8**. Having any adverse features suggests that not all of the cancer was removed during surgery.

Even if you have any adverse features, the preferred strategy for low-risk prostate cancer is monitoring. Monitoring involves periodic PSA tests and sometimes digital rectal exams. If your PSA level rises during monitoring, you'll have further tests to see if the cancer has returned.

If test results don't show adverse features, then you'll be monitored for cancer recurrence.

Life expectancy: Less than 10 years

If you have low-risk prostate cancer and your life expectancy is less than 10 years, observation is often recommended.

Observation

Observation is for those whose prostate cancer isn't causing any symptoms and who have other, more serious health conditions.

Observation involves occasional PSA tests and watching for symptoms, which can be treated with palliative therapy.

Guide 8
Adverse features

If tests show any of these high-risk features after prostate surgery, you may need additional therapy:	• Cancer in the normal-looking tissue removed with the tumor (surgical margin) • Cancer outside the layer surrounding the prostate • Cancer in the seminal vesicle(s) • A detectable level of PSA

About intermediate risk groups

Intermediate risk prostate cancer hasn't grown outside of the prostate itself. It doesn't have high-risk or very-high-risk features, but it does have **1 or more** of the following intermediate risk factors:

- Stage T2b or T2c tumor
- Grade Group 2 or 3
- PSA 10 to 20 ng/mL

The intermediate-risk group is further divided into favorable and unfavorable subgroups.

Treatment is based on whether your prostate cancer has **favorable** intermediate risk or **unfavorable** intermediate risk:

Favorable intermediate risk

The favorable intermediate-risk subgroup is for those who have only 1 of the following traits:

- Stage T2b or T2c tumor
- Grade Group 2
- PSA 10 to 20 ng/mL

In addition to having 1 of these traits, another indication of having favorable intermediate risk is that less than half of the cores removed during your biopsy show cancer.

Treatment options for people with favorable intermediate-risk cancer are shown in **Guide 9.** Treatment options are based on life expectancy estimates.

Guide 9
Favorable intermediate-risk group: Initial therapy options

Life expectancy	Initial therapy	Followed by
10 years or more	Active surveillance	
	Radiation therapy	Tests for PSA recurrence
	Prostate surgery*	Tests for PSA persistence and recurrence
5 to 10 years	Observation (preferred)	
	Radiation therapy	Tests for PSA recurrence

** See Guide 8 for adverse features*

Life expectancy: 10 years or more

If you have favorable intermediate-risk prostate cancer and your estimated life expectancy is 10 years or more, there are 3 initial treatment options:

Active surveillance

Active surveillance consists of testing on a regular basis so that treatment can be started when needed.

To see if you're a good candidate for active surveillance, you may need a confirmatory MRI (if you haven't received an MRI already) with or without a confirmatory prostate biopsy and/or biomarker testing. Confirmatory testing is a way to check that your prostate cancer isn't worse than it appears.

Patients in the favorable intermediate-risk group who have a low percentage of Gleason pattern 4 cancer, low tumor volume, low PSA density, and/or low genomic risk are particularly good candidates for active surveillance.

Active surveillance is not recommended for patients in the favorable intermediate risk group whose cancer cells under the microscope indicate a higher risk for aggressive or recurrent cancer.

For favorable intermediate-risk disease, you should be watched closely for any changes. **See Guide 9.**

Radiation therapy

Radiation therapy is a treatment option for some patients with favorable-intermediate risk cancer. Whether it's an option for you may depend on several factors, including the size of the tumor or the results of a specialized risk test. Radiation treatments include either EBRT or brachytherapy.

Prostate surgery

If you're expected to live 10 years or more, surgery to remove your prostate (radical prostatectomy) may be an option.

Although it's not common in favorable intermediate risk cancer, it's possible that your pelvic lymph nodes may also be removed if there's a small risk for cancer to spread to them. (Your provider can determine this risk using a nomogram.) A surgical procedure called a pelvic lymph node dissection is performed to remove the nodes and check them for cancer.

In certain circumstances, you might need additional treatment after prostate surgery if the pathologist finds high-risk (adverse) features in the removed prostate tissue. **See Guide 8.** Having any adverse features suggests that not all of the cancer was removed during surgery.

But even if any adverse features are found, the preferred option is to be monitored rather than have additional treatment right away. Additional treatment, if needed, is typically a combination of radiation and hormone therapy.

If test results don't find high-risk features, then your treatment team will simply monitor you for any sign of the cancer coming back (recurrence). Monitoring involves periodic PSA tests and sometimes digital rectal exams. If your PSA level rises during monitoring, you'll have further tests to see if the cancer has returned.

Life expectancy: Between 5 and 10 years

If you have favorable intermediate-risk prostate cancer and your estimated life expectancy is between 5 and 10 years, there are two options:

Observation

Observation is the preferred option for people in this situation. Observation involves occasional PSA tests and watching for symptoms, which can be treated with palliative therapy.

Radiation therapy

Radiation therapy is a treatment option for some people whose favorable-intermediate risk cancer may grow or develop symptoms in their lifetime. Radiation treatments include either EBRT or brachytherapy.

Unfavorable intermediate risk

The unfavorable intermediate-risk subgroup describes prostate cancer that has **2 or 3** of the following traits:

- Stage T2b or T2c tumor
- Grade Group 2 or 3
- PSA 10 to 20 ng/mL

Or at least 1 of these traits **and** more than half of the core samples from the biopsy show cancer.

Treatment options for unfavorable intermediate-risk prostate cancer are shown in **Guide 10**. Treatment options are based on life expectancy.

Guide 10
Unfavorable intermediate-risk group: Initial therapy options

Life expectancy	Initial therapy	Followed by
10 years or more	Prostate surgery with or without pelvic lymph node removal*	Tests for PSA persistence and recurrence
	Radiation therapy and hormone therapy	Tests for PSA recurrence
5 to 10 years	Observation	
	Radiation therapy and hormone therapy	Tests for PSA recurrence

** See Guide 8 for adverse features*

Life expectancy: 10 years or more

If you have unfavorable intermediate-risk prostate cancer and your estimated life expectancy is 10 years or more, your initial treatment options include radical prostatectomy or radiation with hormone therapy.

Prostate surgery

Surgically removing the prostate (radical prostatectomy) is a recommended option for people in this risk group.

Your pelvic lymph nodes may also be removed if there's a small risk for the cancer to spread to them. (Your provider will determine this risk using a nomogram.) A surgical procedure called a pelvic lymph node dissection is performed to remove the nodes and check them for cancer.

It's possible that you might have additional treatment after prostate surgery if the pathologist finds high-risk features in the removed prostate tissue (**see Guide 8**) or if cancer has spread to the lymph nodes.

Having adverse features suggests that not all the cancer was removed during prostate surgery. Even if you have any adverse features, the preferred option is to be monitored rather than have additional treatment.

If test results don't find high-risk features after prostate surgery, then your treatment team will monitor you for any sign of the cancer coming back (recurrence). Monitoring involves periodic PSA tests and sometimes digital rectal exams. If your PSA level rises during monitoring, you'll have further tests to see if the cancer has returned.

Radiation and hormone therapy

Radiation therapy with hormone therapy is also an initial treatment option for those with unfavorable intermediate-risk cancer and life expectancy of 10 years or more.

Radiation therapy options include EBRT or brachytherapy. Which type of radiation therapy you'll receive depends on several factors, including the extent of the cancer.

Hormone therapy is 4 to 6 months of androgen deprivation therapy (ADT), preferably done during and after radiation therapy.

Life expectancy: Between 5 and 10 years

If you have unfavorable intermediate-risk prostate cancer and your life expectancy is 5 to 10 years, your treatment options include:

Observation

Because the cancer may progress too slowly to cause problems within 5 to 10 years, active surveillance is not recommended for patients in this risk group. Observation is the recommended option instead. Observation involves occasional PSA tests and watching for symptoms, which can be treated with palliative therapy.

Radiation and hormone therapy

Radiation therapy plus hormone therapy is also a treatment option for those in the unfavorable-intermediate risk group with an estimated life expectancy between 5 and 10 years. Treatment involves EBRT or brachytherapy, plus 4 to 6 months of hormone therapy. Hormone therapy should preferably occur during and after radiation therapy, rather than before it.

High risk or very high risk

The **high-risk group** includes people whose cancer has **at least 1** of the following characteristics:

- Stage T3 to T4 tumor
- Grade Group 4 or 5
- PSA more than 20 ng/mL

The **very-high-risk group** includes those whose cancer has **at least 2** of these characteristics:

- Stage T3 to T4 tumor
- Grade Group 4 or 5
- PSA more than 40 ng/mL

Treatment is more aggressive for high-risk and very-high-risk prostate cancer. Treatment options are based on life expectancy and whether or not you have symptoms. **See Guide 11.**

Guide 11
High-risk and very-high-risk groups: Initial therapy options

Life expectancy	Initial therapy	Followed by
More than 5 years or you have symptoms	Radiation therapy and hormone therapy	Tests for PSA recurrence
	Radiation therapy, hormone therapy, and Zytiga (abiraterone) (very-high-risk cancer only)	Tests for PSA recurrence
	Prostate surgery*	Tests for PSA persistence and recurrence
5 years or less and you have no symptoms	Observation	
	Radiation therapy and hormone therapy	Tests for PSA recurrence
	Hormone therapy	Tests for PSA recurrence
	Radiation therapy	Tests for PSA recurrence

** See Guide 8 for adverse features*

Life expectancy: More than 5 years or you have symptoms

If your life expectancy is more than 5 years or you have symptoms, there are several options for initial therapy:

Radiation and hormone therapy

Radiation therapy combined with long-term hormone therapy can be an effective initial treatment for patients at high risk or very high risk. For this option, hormone therapy is given before, during, and after EBRT for 18 months to 3 years.

Another radiation therapy option, if available, is EBRT combined with brachytherapy and long-term hormone therapy (1 to 3 years). Combining EBRT and brachytherapy allows for more careful control of the radiation dose. When hormone therapy is added to this combination, patient outcomes tend to improve. A shorter course of hormone therapy (1 year) may be possible for some people receiving this treatment combination.

There's also a treatment option only for certain patients with very-high-risk prostate cancer: Zytiga (abiraterone) can be combined with radiation therapy and 2 years of hormone therapy.

Prostate surgery

If you're expected to live more than 5 years, a radical prostatectomy is an option for patients in the high-risk group and certain patients in the very-high-risk group. Your age and overall health will be factors in deciding if this is a good option for you.

After the surgery, the removed prostate tissue will be tested. You might need to have additional treatment if adverse (high risk) features are found (**see Guide 8**) or if cancer has spread to the lymph nodes:

- **No adverse features found** – If test results find no adverse features in the prostate tissue, no additional treatment is needed. Your cancer will be monitored. Monitoring involves periodic PSA tests and sometimes digital rectal exams. If your PSA level begins to rise during monitoring, you may need treatment for PSA recurrence.
- **Adverse features found** – If test results find adverse features but no cancer in the lymph nodes after surgery, the preferred option is being monitored for cancer recurrence. Additional treatment, typically with a combination of radiation and hormone therapy, is also an option.
- **Cancer found in lymph nodes** – If your prostate surgery shows that cancer has spread to your lymph nodes, but there are no other adverse features, then additional treatment with radiation and hormone therapy may be your next option. Monitoring is also a reasonable option if your PSA level is undetectable. However, if your PSA level begins to rise during monitoring, you may need treatment for PSA recurrence.

Additional treatment and PSA recurrence are discussed in *Chapter 7: PSA persistence and recurrence*.

Supportive care

In addition to these treatments, you may also receive supportive care (palliative care). Supportive care is for relieving the symptoms caused by cancer and the side effects caused by its treatment.

Life expectancy: 5 years or less and no symptoms

Those who have high-risk or very-high-risk cancer and are expected to live an estimated 5 years or less should undergo bone imaging to see if the cancer has spread to any bones. You might also have imaging of your abdomen and pelvis to look for cancer in the lymph nodes and areas near the prostate. Finding cancer in these areas will affect what treatment you receive.

But if the cancer **has not** spread to any bones, lymph nodes, or organs, then 4 possible options are available:

Observation

For people with higher risk and shorter life expectancy, the best treatment may be no treatment. Observation mainly involves occasional PSA tests and watching for symptoms, which can be treated with palliative therapy. **See Guide 11.**

Radiation and hormone therapy

Radiation therapy combined with long-term hormone therapy can be an effective primary treatment for high-risk or very-high-risk cancer. Hormone therapy is given before, during, and after EBRT for 18 months to 3 years.

Hormone therapy

ADT alone may be an option for certain patients who have a life expectancy of 5 years or less, whether they have symptoms or not.

Radiation therapy

EBRT by itself is an option for some people with high-risk and very-high-risk prostate cancer. However, brachytherapy alone isn't an option for those with high-risk and very-high-risk cancer.

Supportive care

In addition to these treatments, you may also receive supportive care (palliative care). Supportive care is for relieving the symptoms caused by cancer and the side effects caused by its treatment.

After treatment

After your initial treatment, you'll be monitored for any increase in PSA or cancer recurrence. Monitoring involves these follow-up tests:

- PSA test every 6 to 12 months for 5 years, then once a year after that
- Digital rectal exam, if your provider suspects cancer recurrence

PSA testing may be done more often in those with high-risk and very-high-risk disease.

If your PSA level (or digital rectal exam, if performed) indicates the cancer has returned, then you might need imaging, biopsy, or additional (or different) treatment. *See Chapter 7: PSA persistence and recurrence.*

Key points

- All patients choosing active surveillance should have a confirmatory prostate biopsy 1 to 2 years after their initial biopsy.
- If there's a risk that cancer has spread or will spread to lymph nodes in the pelvis, you can have a procedure to remove the lymph nodes and check them for cancer.
- Having any adverse features after a radical prostatectomy indicates that you may need additional treatment.
- If your PSA level begins to rise after initial treatment, you may need treatment for PSA recurrence.

Questions to ask

- How long will treatment last?
- Will my insurance cover the treatment you're recommending?
- Are you suggesting options other than what NCCN recommends? If yes, why?
- How will you know if the treatment is working?
- What are the chances of the cancer worsening or returning?

Radiation therapy combined with long-term hormone therapy can be an effective initial treatment for patients at high risk or very high risk.

7

PSA persistence and recurrence

Even after treatment with prostate surgery or radiation therapy, your PSA level may not go down low enough. Or your PSA level may drop but, at some point, begin to rise again. These are usually signs that you'll need further treatment.

If you've had a radical prostatectomy, all the cells that make prostate-specific antigen (PSA) should have been removed by surgery. So your PSA level should become undetectable. If you had radiation therapy, your PSA level should fall steadily and remain at a low level.

But in about 1 in 3 people treated for localized prostate cancer, their PSA level either doesn't drop low enough (called PSA persistence) or it drops to near zero but eventually starts to rise again (called PSA recurrence).

PSA is considered persistent if it hasn't dropped low enough by the time you have your first PSA test after surgery.

PSA recurrence may not develop for several years after initial treatment.

PSA persistence and PSA recurrence may be signs that the cancer hasn't fully gone away or that it has come back in another part of the body. For these reasons, treatment for PSA persistence and PSA recurrence often includes both local and systemic (whole-body) therapies. The local therapy is usually radiation, while systemic therapy involves hormone treatment.

A rising PSA isn't necessarily a cause for panic. There's usually time to decide on the right treatment. Sometimes no therapy is needed, and you can continue to be monitored.

If life expectancy is 5 years or less

Note that the treatment options listed in this chapter are for those with a life expectancy of more than 5 years.

For those with an estimated life expectancy of 5 years or less, observation and supportive care (palliative therapy) may be more reasonable options than undergoing treatment and dealing with the side effects.

Testing for persistence or recurrence

Before deciding on any treatment, you'll have some more tests to find out how aggressive the cancer may be.

The first thing your provider will do is re-evaluate your risk. Many factors, not just your PSA level, are taken into consideration to figure out your current level of risk.

These factors include your age, your overall health, the type of initial therapy you had and how long ago you had it, whether there were any adverse factors or cancer in your lymph nodes, how fast your PSA is rising, among other things.

If necessary, additional testing may include biopsies or whole-body imaging.

Treatment for persistence or recurrence

If your life expectancy is more than 5 years, treatment is primarily based on whether your initial treatment was radical prostatectomy or radiation therapy. **See Guide 12.**

After prostate surgery

If you have PSA persistence or PSA recurrence and your initial therapy was radical prostatectomy, your next treatment depends on your surgical test results:

No other cancer found

If your PSA level is up but tests don't find cancer in lymph nodes in the pelvis or anywhere else in the body, the preferred treatment is radiation therapy with or without hormone therapy. Monitoring is an option for certain patients.

Cancer in the pelvis

If tests find cancer in lymph nodes in the pelvis, then you may be given radiation therapy, possibly combined with hormone therapy. Additional hormone therapy with abiraterone may also be included.

Cancer in another area of the body

If tests find that cancer has spread to another area of the body, it means the cancer has metastasized and needs more advanced treatment. See *NCCN Guidelines for Patients: Advanced-Stage Prostate Cancer.*

After radiation therapy

If you have PSA recurrence and your initial treatment was radiation therapy, your next treatment depends on your latest test results:

No other cancer found

If your PSA level is up but tests don't find cancer in pelvic lymph nodes or anywhere else in the body, you may have another biopsy or simply be monitored with regular testing.

Cancer in the prostate

If tests find cancer in the prostate only, then you'll have a discussion with your care team about having a radical prostatectomy with removal of the pelvic lymph nodes or having re-treatment. Re-treatment includes nonsurgical options such as more radiation therapy (called reirradiation), cryotherapy, or possibly high-intensity focused ultrasound.

Cryotherapy and high-intensity focused ultrasound are used only in certain cases.

- **Cryotherapy** – Also known as cryosurgery or cryoablation, cryotherapy destroys cancer cells by freezing them.
- **High-intensity focused ultrasound** – Called HIFU for short, this treatment destroys prostate tissue with heat generated by high-energy ultrasound waves.

Cancer in the pelvis

If tests show cancer in lymph nodes in the pelvis, your options include monitoring or treatment with hormone therapy (ADT) and radiation or re-irradiation therapy. Other treatment options include removal or radiation of the pelvic lymph nodes, either with or without hormone therapy.

Guide 12
Treatment for PSA persistence or PSA recurrence

Initial therapy	Test results	Treatment options for persistence or recurrence
Radical prostatectomy	Raised PSA, but no other signs of cancer	• Radiation therapy with or without hormone therapy (preferred) • Monitoring
	Cancer in pelvic lymph nodes	• Radiation and hormone therapy • Radiation and hormone therapy + abiraterone
	Cancer has spread to another area of the body (metastasized)	• Advanced treatment required
Radiation therapy	Raised PSA or abnormal digital rectal exam, but no other signs of cancer or Cancer only in the prostate	• Biopsy • Monitoring • Hormone therapy • Radical prostatectomy and removal of pelvic lymph nodes • Cryotherapy • High-intensity focused ultrasound • Re-irradiation
	Cancer in pelvic lymph nodes	• Biopsy • Monitoring • Hormone therapy with or without abiraterone • Radiation of pelvic lymph nodes with or without hormone therapy • Re-irradiation of pelvic lymph nodes with or without hormone therapy • Removal of pelvic lymph nodes with or without hormone therapy
	Cancer has spread to another area of the body (metastasized)	• Advanced treatment required

Cancer in another area of the body

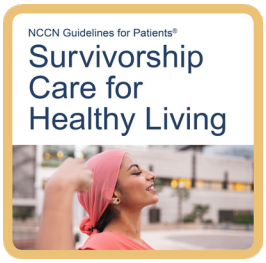
If tests find that cancer has spread to another area of the body, that means the cancer has metastasized and needs more advanced treatment. See *NCCN Guidelines for Patients: Advanced-Stage Prostate Cancer.*

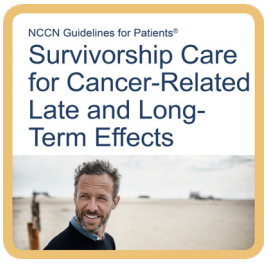
Survivorship

Survivorship focuses on the health and well-being of a person with cancer, from diagnosis until the end of life. This includes the physical, mental, emotional, social, and financial effects that begin at diagnosis, continue through treatment, and arise afterward.

Survivorship also includes concerns about follow-up care, late effects of treatment, cancer recurrence, and quality of life. Support from family members, friends, and caregivers is also an important part of survivorship.

Read more about survivorship in the *NCCN Guidelines for Patients: Survivorship Care for Healthy Living* and *Survivorship Care for Cancer-Related Late and Long-Term Effects,* available at NCCN.org/patientguidelines and on the NCCN Patient Guides for Cancer app.





What's next?

After you've been treated for PSA persistence or PSA recurrence, you'll continue to have tests and visits to treat your existing cancer or to watch out for cancer to return.

Surveillance is a key part of your follow-up plan. Be sure to continue to go to follow-up visits and stay in touch with your treatment team.

If the cancer comes back again but doesn't spread beyond the pelvis, you can continue to have treatment for persistence/recurrence.

If the cancer comes back again but spreads to another area of the body, you'll need more advanced treatment. See *NCCN Guidelines for Patients: Advanced-Stage Prostate Cancer*. As always, you can ask to join a clinical trial.

It's common to feel frustration, anger, regret, despair, and uncertainty—even all at the same time. Know that you can have prostate cancer and still enjoy living after diagnosis and treatment.

Try to take as much pleasure in life as possible. Talk with family or friends. Join a support group to learn how other patients are dealing with their cancer. Or talk to your doctor or another member of your care team. They can point you to professionals who can help you deal with these feelings and guide you toward your next steps.

Key points

- After treatment for prostate cancer, some people have PSA persistence (PSA level doesn't drop low enough) or PSA recurrence (PSA level drops buts starts to rise again).
- PSA persistence and PSA recurrence may be signs that cancer hasn't fully gone away or that it may come back in other parts of the body.
- For those with PSA persistence or recurrence and a life expectancy of 5 years or less, observation may be a more reasonable option than undergoing treatment.
- If tests find that cancer has spread to another area of the body, that means the cancer has metastasized and needs more advanced treatment.
- You can have prostate cancer and still enjoy life after diagnosis and treatment.

Questions to ask

- Why did my cancer come back?
- Why am I having only one new therapy? Why not try several at the same time?
- Should I also see a medical oncologist or a radiation oncologist, depending on the next treatment I have?
- If radiation therapy didn't stop the cancer the first time, why should I have it again?
- What are the benefits and risks of adding hormone therapy to radiation therapy?

It's common to feel frustration, anger, regret, despair, and uncertainty—even all at the same time. Know that you can have prostate cancer and still enjoy your life after diagnosis and treatment.

8

Other resources

Want to learn more? Here's how you can get additional help.

What else to know

This book can help you improve your cancer care. It plainly explains expert recommendations and suggests questions to ask your care team. But it's not the only resource that you have.

You're welcome to receive as much information and help as you need. Many people are interested in learning more about:

- Help with choosing the right treatment
- Risks of urinary incontinence and sexual side effects
- Getting a second opinion on your test results or treatment plan
- Dealing with fears, anxiety, or hopelessness
- Talking with others who have prostate cancer

What else to do

Your health care center can help you with next steps. They often have on-site resources to help meet your needs and find answers to your questions. Health care centers can also inform you of resources in your community.

In addition to help from your providers, the resources listed in the next section provide support for many people like yourself. Look through the list and visit the provided websites to learn more about these organizations.

Where to get help

AnCan Foundation
ancan.org

Bag It
bagitcancer.org

Cancare, Inc.
cancare.org

Cancer*Care*
Cancercare.org

Cancer Hope Network
cancerhopenetwork.org

Cancer Survivor Care
cancersurvivorcare.org

FORCE: Facing Our Risk of Cancer Empowered
facingourrisk.org

Imerman Angels
imermanangels.org

Malecare
malecare.org

My Faulty Gene
myfaultygene.org

National Alliance of State Prostate Cancer Coalitions (NASPCC)
naspcc.org

National Coalition for Cancer Survivorship
canceradvocacy.org

National Prostate Cancer Awareness Foundation, Inc. (PCaAware)
pcaaware.org

Prostate Conditions Education Council (PCEC)
prostateconditions.org

Prostate Health Education Network (PHEN)
prostatehealthed.org

Triage Cancer
triagecancer.org

ZERO Prostate Cancer
zerocancer.org

Let us know what you think!

Please take a moment to complete an online survey about the NCCN Guidelines for Patients.
NCCN.org/patients/response

Questions to ask

- Who can I talk to about help with housing, food, and other basic needs?
- What assistance is available for transportation, childcare, and home care?
- Who can tell me what my options for health insurance are and assist me with applying for insurance coverage?
- How much will I have to pay for my treatment? What help is available to pay for medicines and other treatment?
- How can I connect with others and build a support system?

Words to know

active surveillance
Frequent and ongoing testing to watch for changes in cancer status so treatment can be started if needed.

androgen deprivation therapy (ADT)
Hormone therapy that stops the body from making testosterone or blocks cancer cells from using testosterone. ADT can be given through drugs or surgery.

anti-androgen
A drug that stops the action of the hormone testosterone.

biopsy
A procedure that removes fluid or tissue samples to be tested for disease.

brachytherapy
A treatment with radiation from an object placed near or in the tumor. Also called internal radiation.

castration
Surgery that removes the testicles, or drugs that suppress the function of the testicles, to keep testosterone levels low or close to zero.

computed tomography (CT)
An imaging test that uses x-rays from many angles to make cross-sectional images of the inside of the body.

digital rectal exam
An exam of the prostate by feeling it through the wall of the rectum.

enlarged prostate
An overgrowth of tissue in the prostate that isn't caused by cancer. Also sometimes called benign prostatic hyperplasia.

erectile dysfunction
A lack of blood flow to the penis that limits getting or staying erect.

external beam radiation therapy (EBRT)
A treatment in which a machine outside the body aims radiation precisely at cancer inside the body.

genetic abnormality
An abnormal change in the cell's instructions for making and controlling cells. Also called a mutation.

Gleason score
A rating of how much prostate cancer cells look like normal cells under the microscope.

Grade Group
Like a Gleason score, a Grade Group is a rating of how much prostate cancer cells look like normal cells under the microscope. Grade Groups are meant to be easier to use than Gleason scores.

hormone therapy
A cancer treatment that stops the making or action of hormones. Also called androgen deprivation therapy.

life expectancy
The number of years a person is likely to live based on statistics of other people in similar circumstances.

luteinizing hormone-releasing hormone (LHRH) agonist
A drug that acts in the brain to stop the testicles from making testosterone.

magnetic resonance imaging (MRI)
A test that uses radio waves and powerful magnets to make pictures of the insides of the body.

metastasis
The spread of cancer from the site where it started to a new site.

nerve-sparing radical prostatectomy
An operation that removes the prostate and one or neither cavernous nerve bundle.

nomogram
A mathematical tool that uses health information to predict an outcome.

observation
A period of watching for cancer growth or occurrence while not receiving treatment.

orchiectomy
An operation to reduce testosterone in the body by removing one or both testicles.

palliative therapy
Health care for the symptoms of cancer or the side effects of cancer treatment. Palliative therapy is an important part of supportive care.

pathologist
A doctor who specializes in testing cells and tissue to find disease.

pelvic lymph node dissection
An operation that removes lymph nodes in the pelvis.

perineum
The body region between the scrotum and anus.

positron emission tomography (PET)
A test that uses radioactive material to see the shape and function of body parts.

prostate-specific antigen (PSA)
A protein made by the prostate that helps semen transport sperm. PSA is measured in nanograms per milliliter of blood (ng/mL).

PSA density
The level of PSA—a prostate-made protein—in relation to the size of the prostate.

PSA persistence
When PSA level is still detectable after prostate cancer treatment.

PSA recurrence
When PSA level drops after prostate cancer treatment but then rises again.

radiation therapy
Treatment that uses high-energy rays (radiation) to kill cancer cells.

radical prostatectomy
An operation that removes the entire prostate as well as surrounding tissue, seminal vesicles, and sometimes lymph nodes.

recurrence
The return of cancer after a disease-free period.

risk factor
Something that increases the chance of getting a disease.

seminal vesicles
Two male glands that make fluid used by sperm for energy.

staging
The process of rating the extent of cancer in the body.

supportive care
Health care other than curative treatment that supports the physical, emotional, social, and spiritual needs of patients, families, and caregivers. Also called palliative care.

surgical margin
The normal-looking tissue around a tumor that is removed during an operation.

testosterone
A hormone that helps male sexual organs to work.

ultrasound
A type of imaging that uses sound waves to take pictures of the inside of the body.

urethra
A tube that carries urine from the bladder to outside the body through the penis. It also expels semen.

urinary incontinence
A condition in which the release of urine can’t be controlled.

NCCN Contributors

This patient guide is based on the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Prostate Cancer, Version 2.2025. It was adapted, reviewed, and published with help from the following people:

Dorothy A. Shead, MS
Senior Director
Patient Information Operations

John Murphy
Senior Medical Writer

Susan Kidney
Senior Graphic Design Specialist

The NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Prostate Cancer, Version 2.2025 were developed by the following NCCN Panel Members:

*Daniel E. Spratt, MD/Chair
Case Comprehensive Cancer Center/ University Hospitals Seidman Cancer Center and Cleveland Clinic Taussig Cancer Institute

Sandy Srinivas, MD/Vice-Chair
Stanford Cancer Institute

Nabil Adra, MD, MSc
Indiana University Melvin and Bren Simon Comprehensive Cancer Center

*Bilawal Ahmed, MD
The University of Tennessee Health Science Center

Yi An, MD
Yale Cancer Center/Smilow Cancer Hospital

Rhonda L. Bitting, MD
Duke Cancer Institute

Brian Chapin, MD
The University of Texas MD Anderson Cancer Center

Heather H. Cheng, MD, PhD
Fred Hutchinson Cancer Center

Steve Y. Cho, MD
University of Wisconsin Carbone Cancer Center

*Anthony V. D'Amico, MD, PhD
Dana-Farber/Brigham and Women's Cancer Center | Mass General Cancer Center

Neil Desai, MD, MHS
UT Southwestern Simmons Comprehensive Cancer Center

Tanya Dorff, MD
City of Hope National Cancer Center

James A. Eastham, MD
Memorial Sloan Kettering Cancer Center

Thomas A. Farrington, BSEE
Prostate Health Education Network (PHEN)

Xin Gao, MD
Dana-Farber/Brigham and Women's Cancer Center | Mass General Cancer Center

Shilpa Gupta, MD
Case Comprehensive Cancer Center/ University Hospitals Seidman Cancer Center and Cleveland Clinic Taussig Cancer Institute

Joseph E. Ippolito, MD, PhD
Siteman Cancer Center at Barnes-Jewish Hospital and Washington University School of Medicine

R. Jeffrey Karnes, MD
Mayo Clinic Comprehensive Cancer Center

Amar Kishan, MD
UCLA Jonsson Comprehensive Cancer Center

Michael R. Kuettel, MD, PhD, MBA
Roswell Park Comprehensive Cancer Center

Joshua M. Lang, MD, MS
University of Wisconsin Carbone Cancer Center

Daniel Lee, MD, MS
Abramson Cancer Center at the University of Pennsylvania

Tamara Lotan, MD
Johns Hopkins Kimmel Cancer Center

Todd M. Morgan, MD
University of Michigan Rogel Cancer Center

Rodrigo Pessoa, MD, PhD
Moffitt Cancer Center

Soroush Rais-Bahrami, MD, MBA
O'Neal Comprehensive Cancer Center at UAB

*Mack Roach III, MD
UCSF Helen Diller Family Comprehensive Cancer Center

Tyler P. Robin, MD, PhD
University of Colorado Cancer Center

*Stan Rosenfeld
University of California San Francisco Patient Services Committee Chair

Kristen R. Scarpato, MD, MPH
Vanderbilt-Ingram Cancer Center

Ahmad Shabsigh, MD
The Ohio State University Comprehensive Cancer Center - James Cancer Hospital and Solove Research Institute

Russell Z. Szmulewitz, MD
The UChicago Medicine Comprehensive Cancer Center

Benjamin A. Teply, MD
Fred & Pamela Buffett Cancer Center

Jonathan Tward, MD, PhD
Huntsman Cancer Institute at the University of Utah

Richard K. Valicenti, MD
UC Davis Comprehensive Cancer Center

David VanderWeele, MD, PhD
Robert H. Lurie Comprehensive Cancer Center of Northwestern University

Jessica Karen Wong, MD
Fox Chase Cancer Center

NCCN

Deborah Freedman-Cass, PhD
Senior Manager, Guidelines Processes

Emily Kovach
Guidelines Layout Specialist

* Reviewed this patient guide. For disclosures, visit NCCN.org/disclosures.

NCCN Cancer Centers

Abramson Cancer Center
at the University of Pennsylvania
Philadelphia, Pennsylvania
800.789.7366 • pennmedicine.org/cancer

Case Comprehensive Cancer Center/
University Hospitals Seidman Cancer Center and
Cleveland Clinic Taussig Cancer Institute
Cleveland, Ohio
UH Seidman Cancer Center
800.641.2422 • uhhospitals.org/services/cancer-services
CC Taussig Cancer Institute
866.223.8100 • my.clevelandclinic.org/departments/cancer
Case CCC
216.844.8797 • case.edu/cancer

City of Hope National Medical Center
Duarte, California
800.826.4673 • cityofhope.org

Dana-Farber/Brigham and Women's Cancer Center |
Mass General Cancer Center
Boston, Massachusetts
877.442.3324 • youhaveus.org
617.726.5130 • massgeneral.org/cancer-center

Duke Cancer Institute
Durham, North Carolina
888.275.3853 • dukecancerinstitute.org

Fox Chase Cancer Center
Philadelphia, Pennsylvania
888.369.2427 • foxchase.org

Fred & Pamela Buffett Cancer Center
Omaha, Nebraska
402.559.5600 • unmc.edu/cancercenter

Fred Hutchinson Cancer Center
Seattle, Washington
206.667.5000 • fredhutch.org

Huntsman Cancer Institute at the University of Utah
Salt Lake City, Utah
800.824.2073 • healthcare.utah.edu/huntsmancancerinstitute

Indiana University Melvin and Bren Simon
Comprehensive Cancer Center
Indianapolis, Indiana
888.600.4822 • www.cancer.iu.edu

Johns Hopkins Kimmel Cancer Center
Baltimore, Maryland
410.955.8964
www.hopkinskimmelcancercenter.org

Mayo Clinic Comprehensive Cancer Center
Phoenix/Scottsdale, Arizona
Jacksonville, Florida
Rochester, Minnesota
480.301.8000 • Arizona
904.953.0853 • Florida
507.538.3270 • Minnesota
mayoclinic.org/cancercenter

Memorial Sloan Kettering Cancer Center
New York, New York
800.525.2225 • mskcc.org

Moffitt Cancer Center
Tampa, Florida
888.663.3488 • moffitt.org

O'Neal Comprehensive Cancer Center at UAB
Birmingham, Alabama
800.822.0933 • uab.edu/onealcancercenter

Robert H. Lurie Comprehensive Cancer Center
of Northwestern University
Chicago, Illinois
866.587.4322 • cancer.northwestern.edu

Roswell Park Comprehensive Cancer Center
Buffalo, New York
877.275.7724 • roswellpark.org

Siteman Cancer Center at Barnes-Jewish Hospital
and Washington University School of Medicine
St. Louis, Missouri
800.600.3606 • siteman.wustl.edu

St. Jude Children's Research Hospital/
The University of Tennessee Health Science Center
Memphis, Tennessee
866.278.5833 • stjude.org
901.448.5500 • uthsc.edu

Stanford Cancer Institute
Stanford, California
877.668.7535 • cancer.stanford.edu

The Ohio State University Comprehensive Cancer Center -
James Cancer Hospital and Solove Research Institute
Columbus, Ohio
800.293.5066 • cancer.osu.edu

The UChicago Medicine Comprehensive Cancer Center
Chicago, Illinois
773.702.1000 • uchicagomedicine.org/cancer

The University of Texas MD Anderson Cancer Center
Houston, Texas
844.269.5922 • mdanderson.org

UC Davis Comprehensive Cancer Center
Sacramento, California
916.734.5959 • 800.770.9261
health.ucdavis.edu/cancer

UC San Diego Moores Cancer Center
La Jolla, California
858.822.6100 • cancer.ucsd.edu

UCLA Jonsson Comprehensive Cancer Center
Los Angeles, California
310.825.5268 • uclahealth.org/cancer

UCSF Helen Diller Family Comprehensive Cancer Center
San Francisco, California
800.689.8273 • cancer.ucsf.edu

University of Colorado Cancer Center
Aurora, Colorado
720.848.0300 • coloradocancercenter.org

University of Michigan Rogel Cancer Center
Ann Arbor, Michigan
800.865.1125 • rogelcancercenter.org

University of Wisconsin Carbone Cancer Center
Madison, Wisconsin
608.265.1700 • uwhealth.org/cancer

UT Southwestern Simmons Comprehensive Cancer Center
Dallas, Texas
214.648.3111 • utsouthwestern.edu/simmons

Vanderbilt-Ingram Cancer Center
Nashville, Tennessee
877.936.8422 • vicc.org

Yale Cancer Center/Smilow Cancer Hospital
New Haven, Connecticut
855.4.SMILOW • yalecancercenter.org

Take our survey and help make the NCCN Guidelines for Patients better for everyone!

NCCN.org/patients/comments

Notes

Index

NCCN GUIDELINES FOR PATIENTS®

Early-Stage Prostate Cancer

2025

To support the NCCN Guidelines for Patients, visit

NCCNFoundation.org/Donate

National Comprehensive Cancer Network®

3025 Chemical Road, Suite 100
Plymouth Meeting, PA 19462
215.690.0300

NCCN.org/patients – For Patients | NCCN.org – For Clinicians

PAT-N-1861-0625