



What is Advanced Prostate Cancer?

Symptoms

What are the Symptoms of Advanced Prostate Cancer?

Men with advanced prostate cancer often have no symptoms. Advanced prostate cancer can be found by x-rays or tests done for other medical reasons. When there are symptoms, they depend on the size of the new growth and where the cancer has spread. For example, when prostate cancer has spread to the pelvic bones, you may feel lower back or hip pain. You may have no symptoms from cancer in the prostate. Or you may have problems urinating or see blood in your urine. When men do have symptoms, they often feel tired or weak, have lost weight, feel pain or have shortness of breath.

How can advanced cancer affect your life?

Cancer that has spread far from the prostate cannot be cured. Treatment slows the cancer's growth and controls symptoms. This can help you feel good, extend your life and enjoy life for as long as possible.

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Causes

What Causes Advanced Prostate Cancer?

Prostate cancer spreads when cancer cells break free from the prostate. These cells enter the blood stream or lymph nodes. Most cancer cells that break free from the prostate die. But sometimes they spread to other organs and start new tumors. Advanced prostate cancer often moves into the bones before spreading to other organs. Sometimes it spreads to the lungs or liver. It can also spread to the brain.

Diagnosis

How is Advanced Prostate Cancer Diagnosed?

To diagnose advanced cancer, your health care provider looks for cancer outside the prostate. Blood and imaging tests may show where the cancer has spread. Your health care provider will want to know how much cancer there is and how it is affecting you. That way they can offer treatment that is best for you.

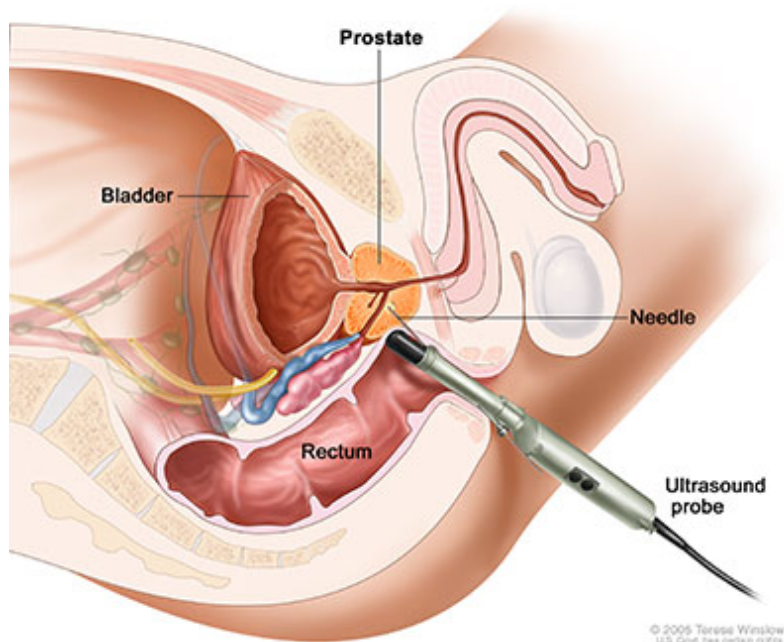
Advanced cancer may be found before, at the same time, or later than the main tumor. Most men diagnosed with advanced prostate cancer have had biopsy and treatment in the past. When a new tumor is found in someone who has been treated for cancer in the past, it is usually cancer that has spread. Rarely, tests done for other reasons may reveal prostate cancer cells.

If you need a prostate biopsy

Men diagnosed with advanced prostate cancer from the beginning may start with a **prostate biopsy**. This is a tissue sample taken from your prostate. The biopsy removes small pieces of prostate tissue to look for cancer.

Prostate biopsy is usually done using an ultrasound probe to guide the biopsy. Before the biopsy, you may be instructed to use an enema to clean out your bowels and take an antibiotic. During the biopsy, you lie on your side and the probe goes into the rectum.

First, your health care provider takes a picture of the prostate using ultrasound. The prostate gland size, shape and any abnormalities are noted. Shadows are a common abnormality. Shadows might be prostate cancer. But not all shadows are cancer. Not all cancers can be seen.



Prostate biopsy

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The prostate gland is then numbed through the probe. Then samples of prostate tissue are removed using a biopsy device. The number of samples depends on the size of the prostate gland, PSA test results, and past biopsies.

The biopsy may take 10 to 20 minutes. A pathologist (a doctor who identifies diseases by looking at them under a microscope) looks at the prostate tissue to see if cancer is there. If cancer is seen, the pathologist will also "grade" the tumor.

After a biopsy, you may have blood in your ejaculate and urine. This stops within a few days for urine and a few weeks for semen. A small number of men develop a high fever after biopsy and should call their doctor immediately if this happens. Some men are instructed to take antibiotics after a biopsy.

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Grading and Staging

How is Advanced Prostate Cancer Staged?

Grading

If the biopsy finds cancer, the pathologist gives it a grade. The most common grading system is called the Gleason grading system. With this system, each tissue piece is given a grade between three (3) and five (5). In the past, we assigned scores of one (1) and two (2). A grade of less than three (3) means the tissue is close to normal. A grade of three (3) suggests a slow growing tumor. A high grade of five (5) indicates a highly aggressive, high-risk form of prostate cancer.

The Gleason system then develops a "score" by combing the two most common grades found in biopsy samples. For example, a score of grades 3 + 3=6 suggests a slow growing cancer. The highest score of grades 5+5=10 means that cancer is present and extremely aggressive.

The Gleason score will help your doctor understand if the cancer is as a low-, intermediate- or high-risk disease. Generally, Gleason scores of 6 are treated as low risk cancers. Gleason scores of around 7 are treated as intermediate/mid-level cancers. There are two types of these scores. A 4+3 tumor is more aggressive than a 3+4 tumor. That's because more of the higher aggressive grade tumor was found. Gleason scores of 8 and above are treated as high-risk cancers. Gleason 8, 9 and 10 tumors are the most aggressive. Some of these high-risk tumors may have already spread by the time they are found. Talk to your health care provider about your Gleason score.

Staging

Tumor stage shows the size and spread of the cancer. Cancer in only a small part of the prostate is more treatable than cancer that has spread all through it. Tumors found only in the prostate are more successfully treated than those that have **metastasized** (spread) outside the prostate. Tumors that have spread to places far from the prostate like lymph nodes or bone are the most difficult to manage and have the poorest results.

Tumor, Nodes and Metastasis (TNM) is the system used for tumor staging.

TNM	Stage	Description
Tumor (T)	TX	Tumor cannot be assessed
	T0	No evidence of tumor
	T1	Clinically unapparent tumor not detected by physical exam (DRE) or visible by imaging
	T1a	Tumor found incidentally in tissue removed from prostate for other reasons, histologic finding in <5% of tissue resected
	T1b	Tumor found incidentally in tissue removed from prostate for other reasons, histologic finding in >5% of tissue resected
	T1c	Tumor identified by needle biopsy because of elevated PSA
	T2	Tumor confined within the prostate
	T2a	Tumor involves 50% of one lobe or less
	T2b	Tumor involves >50% of one lobe but not both lobes
	T2c	Tumor involves both lobes
	T3	Tumor extends outside the prostate capsule
	T3a	Extracapsular extension (unilateral or bilateral)
	T3b	Tumor invades the seminal vesicles
	T4	Tumor invades nearby structures other than the seminal vesicles, such as the bladder or rectum
Regional Lymph Nodes (N)	NX	Regional lymph nodes were not assessed
	N0	No spread to nearby lymph nodes
	N1	Metastasis in nearby lymph node(s)
Distant Metastasis (M)	MX	Distant metastasis cannot be assessed (not evaluated)
	M0	No distant metastasis
	M1	Distant Metastasis
	M1a	Lymph node(s) outside of nearby area
	M1b	Bone(s)
	M1c	Other site(s) with or without bone disease
Histopathologic Grade (G)	GX	Grade cannot be assessed
	G1	Gleason 2-4
	G2	Gleason 5-6
	G3-4	Gleason 7-10

Using the "T" part of the system, prostate cancer is staged as:

- T1: Health care provider cannot feel the tumor
- T1a: Cancer present in less than 5% of the tissue removed and low grade (Gleason < 6)
- T1b: Cancer present in more than 5% of the tissue removed or is of a higher grade (Gleason > 6)
- T1c: Cancer found by needle biopsy done because of a high PSA
- T2: Health care provider can feel the tumor with a DRE but the tumor is confined to prostate
- T2a: Cancer found in one half or less of one side (left or right) of the prostate
- T2b: Cancer found in more than half of one side (left or right) of the prostate
- T2c: Cancer found in both sides of the prostate
- T3: Cancer has begun to spread outside the prostate and may involve the seminal vesicles
- T3a: Cancer extends outside the prostate but not to the seminal vesicles
- T3b: Cancer has spread to the seminal vesicles
- T4: Cancer has spread to nearby organs such as the urethral sphincter, rectum, bladder, or pelvis wall
- N0 stage, there is no sign of the cancer moving to the lymph nodes in the area of the prostate.
- M0 stage, there is no sign of tumor metastasis.
- If the cancer is spreading to the lymph node or if the tumor has spread to other parts of the body, the stage is changed. It becomes either N1, for node, and/or M1, for metastasis.

Prostate Cancer Stage Groupings

Stage I	T1a, N0, M0, G1
Stage II	T1a, N0, M0, G2-4
	T1b, N0, M0, any G
	T1, N0, M0, any G
	T2, N0, M0, any G
Stage III	T3, N0, M0, any G
Stage IV	T4, N0, M0, any G
	Any T, N1, M0, any G
	Any T, any N, M1, any G

Imaging Tests

Prostate cancer usually spreads from the prostate into nearby tissues. Then it can spread to the seminal vesicles, lymph nodes, bones, lungs, and other organs. Your doctor may want imaging tests to see how far your cancer has spread. These include a pelvic CT, MRI or a bone scan.

Hope for advanced prostate cancer?

There is no cure for advanced prostate cancer. 29,430 deaths from prostate cancer are predicted in the U.S. this year. But advances in science mean cancer growth can be slowed. Treatment can also reduce cancer-related symptoms so you feel better. New therapies are improving survival and quality of life, especially for men with no cancer-related pain.

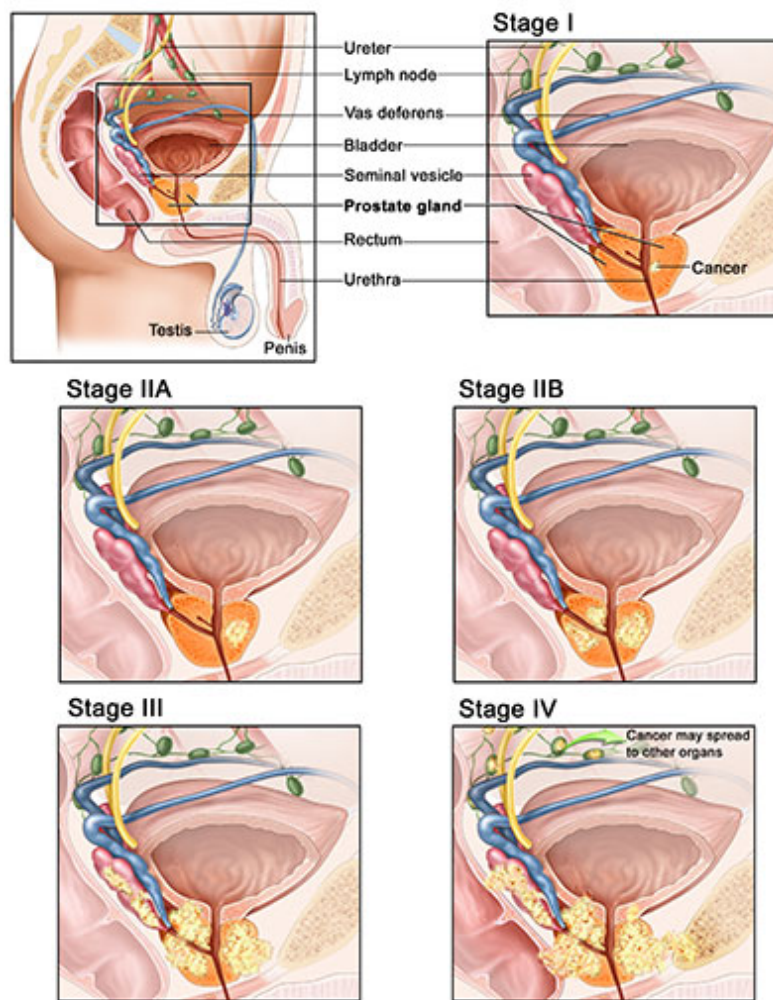
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Treatment

What are the Treatments for Advanced Prostate Cancer?

The goal of treatment depends on how far the cancer has spread. With advanced cancer, the goal is to relieve symptoms and help you live longer. The most common types of therapy are:

- **Hormone therapy**
 - Therapies for advanced prostate cancer that has not spread far from the prostate (metastasized)
 - Surgery to remove the testicles (Orchiectomy)
 - LHRH or GnRH agonists
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 - CAB/anti-androgens
 - Estrogen therapy
 - New therapies for advanced prostate cancer that has metastasized
- **Immunotherapy**
- **Bone targeted therapy**
- **Chemotherapy**



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Prostate cancer staging

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- **Radiation therapy**

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More Information

More Information

Frequently Asked Questions

How accurate is the PSA test when it comes to remission? Can I trust that a low PSA values means I am disease-free?

Your PSA level may lower after treatment. But a low PSA level does not mean the cancer is cured. If PSA is undetectable (after surgery) or low and stable (after radiation), it may mean the cancer has stopped growing. If your PSA is rising, it may mean the cancer is progressing. Or it may not. PSA is produced by all prostate cells, not just prostate cancer cells.

So PSA is not really a marker for the cancer's progress. It is a marker for prostate cell activity. Doctors don't usually look at only one PSA reading. They see how the numbers progress. After surgical removal of the prostate, the PSA level should be undetectable. And after radiation therapy, the PSA should be low, less than 1.0 ng/ml.

The PSA may mean the cancer has come back if the rise is:

- Above 0.2 after surgery to remove the prostate
- 2.0 above the lowest level achieved after radiation therapy

In other words, if a man's PSA fell to 0.2 after radiation therapy, then rose to 0.7, 1.1, 1.4, 1.6, and 1.9, he would still be classified as not having prostate cancer even though his PSA is rising. To be classified as having cancer again, the PSA would need to be at 2.2.

The reason doctors use many tests after radiation is that the PSA can "bounce" or "jump up" after radiation therapy. Then it will come back down to its normal level. If doctors rely on one high PSA, they may test during a bounce. The results would be misleading. The PSA bounce usually happens between 12 months and 2 years after the end of therapy.

If the PSA is rising, the doctor might want to start therapy anyway. PSA is only one of many things to consider. The original clinical stage of disease, the Gleason score of the tumor, the PSA before diagnosis, the overall health, and general life expectancy are key factors in the decision. So be prepared to talk about treatment choices even if you don't fit the classical categories for PSA rise after the first treatment.

On the other hand, if your PSA is rising and you do fit the categories above, that doesn't necessarily mean a return of cancer. Researchers have found that PSA cut-offs might not be enough for truly understanding how prostate cancer grows.

What are bones and skeletal related events (SREs)?

Prostate cancer is usually a disease of the aging male. Older men with prostate cancer are at risk for bone and mineral loss. This can lead to bone weakening (osteopenia) and bone loss (osteoporosis). Low testosterone and castration makes this worse. If you have prostate cancer you should take calcium and vitamin D and do weight bearing exercises.

Men with prostate cancer spread to the bones are at risk for "skeletal-related events (SREs)." These include bone fractures and need for surgery to prevent fracture. Two approved medications reduce SREs. Zoledronic Acid helps reduce bone turnover. It has been shown to reduce SRE's in men with CRPC. It is given by IV every three to four weeks. Side effects include low calcium, worsening kidney function and, rarely, destruction of the jaw bone. So, you are monitored closely. You should have a dental exam before starting the drugs.

A second approved drug for SREs is Denosumab. It reduces bone turnover. It is approved for men on hormone therapy and men with CRPC. Doses depend on the disease state. The drug is given under the skin.

In a study comparing denosumab to Zoledronic Acid, Denosumab was slightly better in delaying SRE's. Denosumab also results in low calcium and can, rarely, destroy the jaw, so a dental check before and calcium monitoring after treatment are advised.

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