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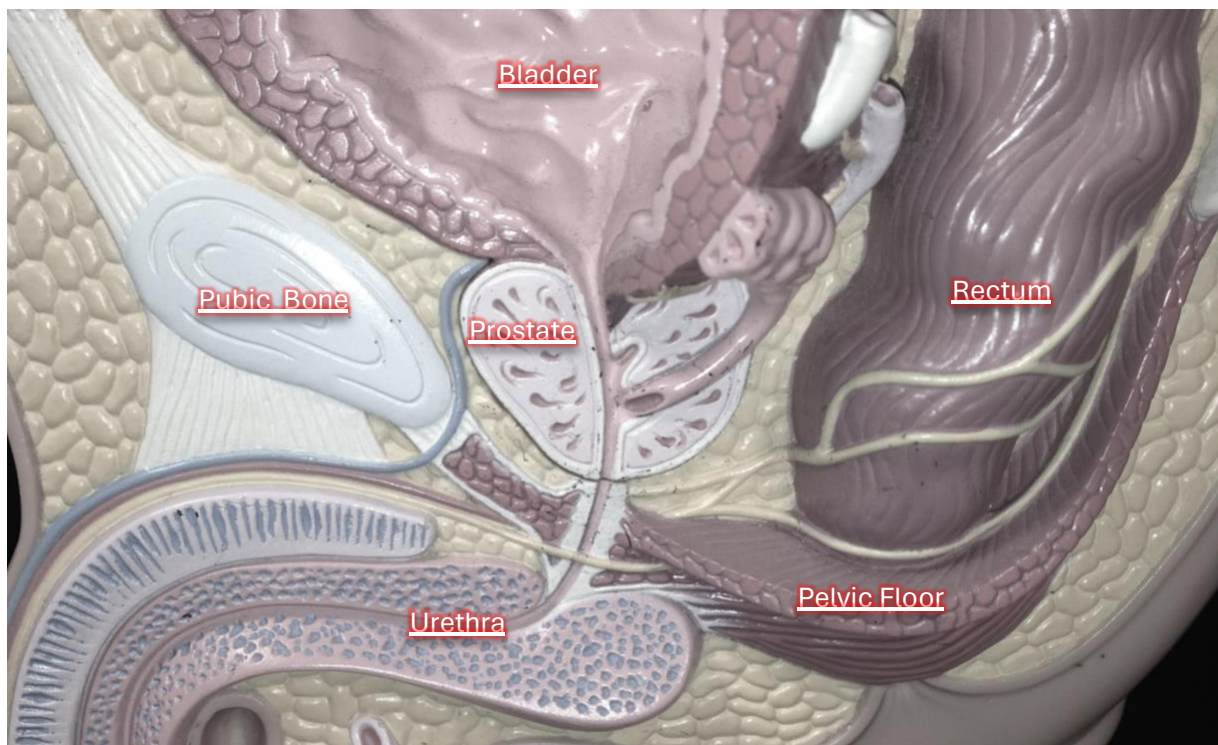
Prostate Cancer Introduction

You are not alone.

Prostate cancer is the most common non skin cancer in men. One in eight American men will have prostate cancer during his lifetime. The American Cancer Society estimates that 280,000 men will be diagnosed with prostate cancer this year.

The good news is the five-year survival rate for all prostate cancer diagnoses is 97%. More than 3 million men are living with a prostate cancer diagnosis in the United States today.

What is the Prostate?



The prostate is a gland that is located below the bladder and above the pelvic floor. The urethra travels through the middle of the prostate.

We like to say that the prostate is a small, walnut-sized gland, but the prostate comes in many sizes. The prostate grows very large in some men as they hit middle age, often restricting urine flow. As far as we know the size of a man's prostate does not correlate with cancer risk.

The prostate gland is responsible for producing seminal fluid, which nourishes and transports sperm.

When we talk about the prostate we should also talk about the seminal vesicles, connected to the prostate, which act to store semen and nourish the sperm.

During ejaculation, the fluids from the seminal vesicles combine with sperm from the testicles, as well as fluids from other glands such as the prostate gland and bulbourethral glands, to form semen. Semen is then expelled from the body through the urethra during sexual intercourse.

What is Prostate Cancer?

We refer to cancers according to the organs where they start. In terms of prostate cancer, it's a type of cancer that develops in the prostate, from the prostate cells themselves. It looks different under a microscope and behaves different in the body as compared with other kinds of cancer, e.g. colon or lung cancer.

Prostate cancers occur when the cells or a single cell in the prostate gland replicates uncontrollably due to abnormal changes in the DNA instructions. As the cells multiply, they eventually form a tumor. As a tumor grows in the body, eventually it will spread to other parts of the body.

Each man's prostate cancer will grow at different rates of speed. Some are very slow growing while other cancers grow quickly. All cancers behave a little differently, but the single characteristic of *all* prostate cancers is that they will grow and spread if given enough time.

Who gets prostate cancer?

Here is something I hear often in the office. Doc, is it true that all men will get prostate cancer if they live long enough? The answer is...maybe.

It is true that the major risk factor for prostate cancer is age, with the incidence increasing significantly as we get older. The average age at diagnosis of prostate cancer is 65/66 years. As men become 75 years or older the incidence increases to an incidence of 1 out of every 2 to 3 men.

Other risk factors for developing prostate cancer include family history of the disease, inherited genetic mutations, being African American, and being a U.S. Veteran. Additionally, lifestyle factors such as a diet high in red meat and fat, obesity, and lack of exercise may also contribute to the risk, although those are softer connections.

How do you know if you have prostate Cancer?

Early-stage prostate cancer often does not cause noticeable symptoms. Most men will not know they have or are at risk for prostate cancer unless they are screened for prostate cancer on routine examination of the prostate and routine blood tests, specifically the PSA blood test.

You are probably reading this because you have been identified as someone with an elevated PSA test. Alternatively, an abnormal prostate, either on exam or other imaging studies such as an MRI and/or a CT scan may have prompted your regular physician to suggest you see a urologist.

Men usually begin prostate cancer screening in their 50s, but if you are an individual at higher risk, such as those with a family history of prostate cancer or you are African American, you should consider beginning screening earlier.

Neither the PSA test nor the rectal exam is perfect for picking up prostate cancer. The PSA test can indicate you may be at risk for prostate cancer but can be falsely positive, make you think you have cancer when you don't. The PSA test can be elevated in cases of enlarged prostate, infection of the bladder or prostate, and other causes of inflammation of the prostate or prostatitis. Here is an important thing to know about prostate cancer screening. Many men have PSA elevations who never have prostate cancer.

The PSA and prostate exam can also be falsely negative, make you think you are cancer-free when in fact you have cancer.

Although most men with prostate cancer are not symptomatic as prostate cancer progresses, men may experience symptoms such as frequent urination, difficulty starting or stopping urination, weak urine flow, blood in the urine or semen, and pain or discomfort in the pelvic area. Don't assume these are just natural changes related to aging and enlargement of the prostate. If you are experiencing these symptoms, you should be checked for prostate cancer.

How is cancer diagnosed?

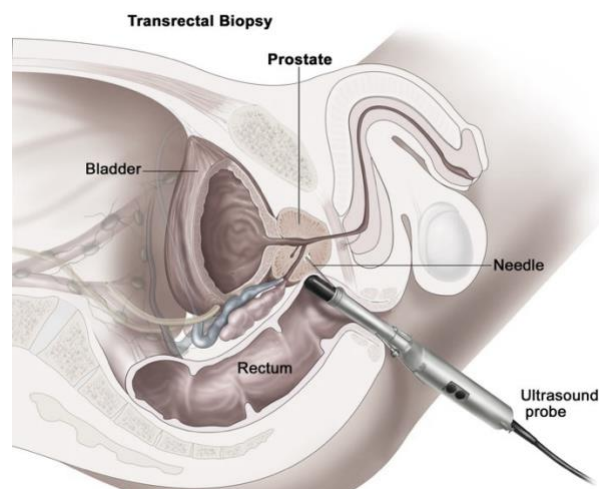
If you have either an elevated PSA or an abnormal prostate exam you will be advised to consider a prostate biopsy. A biopsy of the prostate is the only way to determine if there is prostate cancer, it cannot be diagnosed by blood tests, prostate exam, or by imaging studies such as an MRI.

If you have an elevated PSA your physician may advise you to consider other blood or urine tests prior to a biopsy to make sure you are making the right decision. More and more of these come to the market or are being developed as years go by. Examples of these tests are the free PSA, the isoPSA, the 4K or PHI score and urine tests such as the exodx.

Prior to a biopsy, an MRI of the prostate has quickly become a standard of care in many medical communities. Not only can the MRI help to locate areas of concern within the prostate but also can help with local staging to check areas around the prostate for cancer.

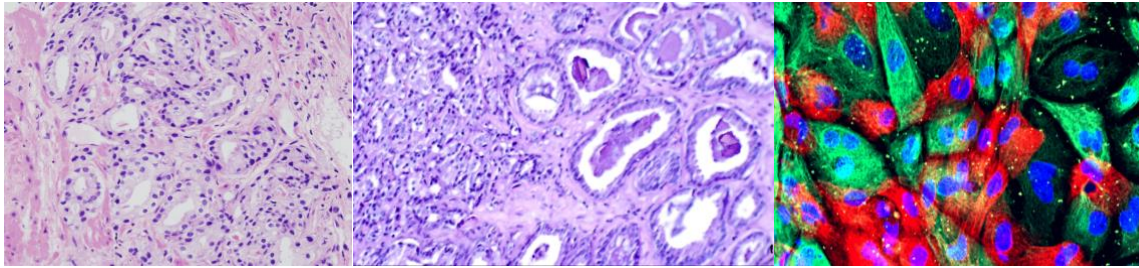
Ultimately you will need to decide, along with advice from your physician about whether to do a prostate biopsy and how to do it. There are options for doing a biopsy, including a standard biopsy or a fusion/targeted biopsy and a choice of biopsy approach, transrectal vs perineal. Your physician will help guide you.

Cancer is diagnosed pathologically, with a visual view by a trained eye. The point of a biopsy is to get tissue for a pathologist to look at under a microscope.



Grading Prostate Cancer

Prostate cancer looks like this. Or this. Or this.

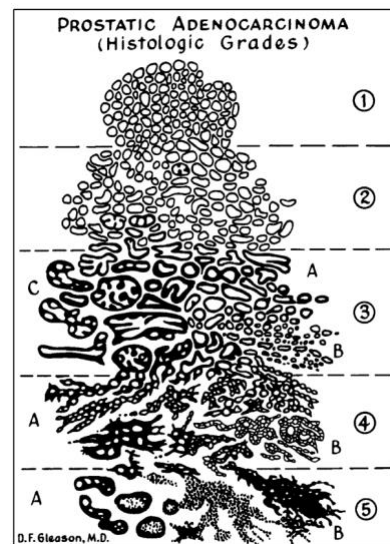


Prostate cancer comes in different varieties. Some cancers are fast growing while others are slow growing. Differentiating the fast-growing cancers from the slow growing cancers is called *grading* of prostate cancer.

Prostate cancer grading is challenging because of the many patterns of growth that a prostate cancer can have.

Donald Gleason, a pathologist, solved this problem in 1965 with a way of accounting for the varieties of cancer growth using a unique way of grading by giving an individual grade 1-5 to the two most common patterns of growth within a cancer and adding the numbers together to create a score. This is called the Gleason scoring system.

But the Gleason system is not perfect and through the years much has been learned about prostate cancer grading using the Gleason system and some of the limitations of that system. Rather than modifying the Gleason system, in 2014 the WHO and International Society of Urological Pathology adopted what is called the Grade Grouping system. The Grade Grouping system is currently the standard of care in prostate cancer grading.



The Grade Groups are 1 through 5. 1 is slow. 5 is fast.

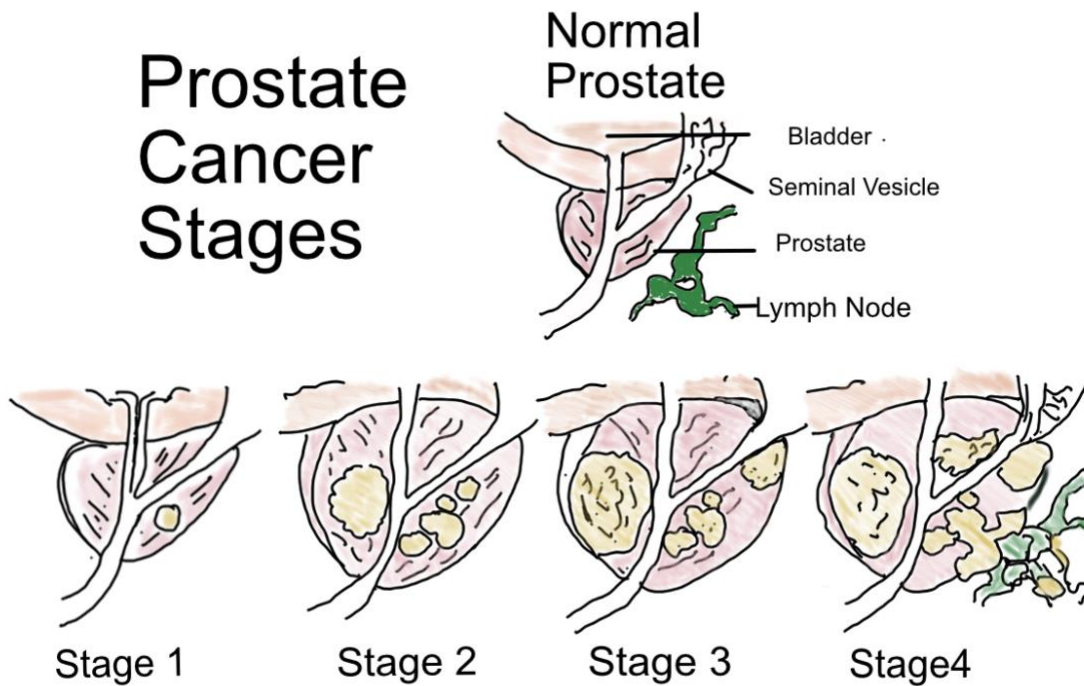
Roughly, Grade Groups correlate to the Gleason score in the following way.

Grade Group 1: Gleason score 6 or lower (3+3 or below). Grade Group 2: Gleason score 3+4=7. Grade Group 3: Gleason score 4+3=7. Grade Group 4: Gleason score 8. Grade Group 5: Gleason scores 9-10.

It's important to note that the Gleason score and Grade Groups help guide treatment decisions and provide prognostic information, but they are not the only factors considered. Other factors such as the prostate-specific antigen (PSA) level, tumor stage, and overall health of the patient are also considered when determining the most appropriate treatment approach for prostate cancer.

What is Tumor Stage?

Prostate Cancer Stages



Essentially Prostate cancer staging should be thought of in terms of three possibilities.

1. The cancer is totally confined to the prostate.
2. The cancer has advanced locally to areas around the prostate.
3. The cancer has spread widely to areas beyond the prostate.

Cancers confined to the prostate are candidates for definitive treatments such as surgery or radiation.

Cancers that are locally advanced may still be candidates for surgery or radiation, but this will need to be individualized for each man depending on the circumstances of his cancer.

Prostate cancers that have spread widely to lymph nodes, bone, and other organs will need systemic treatments.

Briefly, what are treatment options?

The treatment options for prostate cancer depend on various factors,

1. the stage and grade of the cancer,
2. the overall health of the patient, and
3. patient preferences.

Some men will have the option of monitoring their cancers using a surveillance protocol. This is appropriate for men with slow growing and small cancers or for men of advanced age or poor health.

For men with a life expectancy of greater than 5 years with faster growing cancers treatment options for prostate cancer are many, and beyond the scope of this video. Options for treatment prostate cancer may surgery to remove the prostate gland (prostatectomy), radiation therapy, high intensity, cryotherapy, and other advancing technology.

For men with known advanced prostate cancer hormone therapy, chemotherapy, immunotherapy, and targeted therapy are needed to treat the disease.

What can I expect?

The long-term prognosis for men with prostate cancer varies depending on the stage and grade of the cancer, as well as the individual's overall health. Early detection and treatment can significantly improve the chances of a successful outcome. Regular screenings and discussions with a healthcare professional can help in the early detection and management of prostate cancer and I would encourage you to get screened.

Good Luck on your journey,

Dr Brandt