

What is the PSA blood test?

PSA stands for Prostate Specific Antigen. PSA is a protein made by the prostate and it's measured by a simple blood test reported as nanograms of PSA per milliliter of blood (ng/ml). Higher levels of PSA could be an early sign of Prostate Cancer (CaP) even without any urinary related symptoms. PSA levels can also be high from urinary tract infections, prostatitis, advancing age, an enlarged prostate (BPH), prostate surgeries, or from other forms of prostate stimulation (ejaculation, extensive bike/motorcycle riding, a rectal examination). PSA levels can also be misleadingly lowered by medications such as Finasteride (Proscar) and Dutasteride (Avodart). Determining what a high PSA means can be complicated. In addition to the PSA, a rectal examination is also done by the physician to check the prostate.

When do I start getting my PSA checked?

A lot of debate surrounds PSA testing and its accuracy, and different medical societies have slightly different recommendations. A general recommendation is to start having your PSA checked between 45-50 years old. If you have strong family history of CaP (brother/father who had CaP) or are African American, you may consider getting the PSA checked at 40-45 years old. Some societies also recommend stopping checking the PSA in the 70-80 year old range; *the exact age is debated*. Because of the various issues and implications of receiving a PSA result, the American Urology Association believes in "shared decision making" between the patient and physician before having the PSA checked. When you have your PSA blood test taken, it is important to refrain from intercourse/masturbation and long bike rides for 48 hours prior.

I heard if the PSA is over 4.0 this could mean Prostate Cancer?

Most labs report that a PSA above 4 ng/ml is abnormal, however there really is no specific cutoff between a normal and abnormal PSA. Many things need to be considered when interpreting a PSA. The older the patient, and the larger the prostate, the higher the PSA can be without it being a sign of prostate cancer. Also, the PSA result does not factor in your age, race, family history, or prostate size, all of which can influence the interpretation of the PSA value. We also look at the PSA trends over time and if it is rising or has been essentially stable over time. Some patient's PSA levels can fluctuate over time as well for unknown reasons.

My PSA is "high" for my age. What next?

The only definitive way to check for prostate cancer is tissue sampling of the prostate tissue so it can be examined under a microscope by a pathologist (this is called a prostate biopsy). Although there are other tests you may have heard of to check for prostate cancer, *nothing takes the place of a biopsy to diagnose prostate cancer and determine the amount and severity of prostate cancer*.

What other tests are there to check for Prostate Cancer?

There is a blood test called a "4K Score" that checks the PSA as well as three other prostate related proteins in the blood and uses a formula to compute a "4K Score". The 4K Score result is a percentage which is interpreted there is as "___ % chance of finding high grade prostate cancer if a prostate biopsy is done". This is done in a special lab (BioReference Labs) and is not offered by labs such as Quest or LabCorp. We have more information about this available. There are also urine tests ("MyProstateScore 2.0", "ExoDx™") that are being developed.

We also can use something called "% Free PSA" which measures the amount of PSA in the blood that is unattached to carrier proteins ("free" as opposed to "bound"). This can be done as part of the regular PSA blood test and a lower % Free PSA is a potential sign of prostate cancer. It is very important to understand that % Free PSA is based on data from over 20 years ago, and is only useful for PSA values between 4 – 10 ng/ml. Other variations on the PSA include "PSA Velocity" (rate of change of PSA over time) and "PSA Density (PSAD)" (PSA value divided by size of prostate in grams. PSAD ≥ 0.15 ng/mL/g is commonly recommended as a threshold for proceeding to biopsy; this cutoff value is also debated and subject to other various factors).

What about a PET scan to check for Prostate Cancer?

Yes, there is a PET scan ("PSMA PET" - Prostate-Specific Membrane Antigen Positron Emission Tomography scan) that can scan the entire body for prostate cancer cells. However, this is used only once Prostate Cancer has been diagnosed (specifically high grade prostate cancer) or if someone has previously been treated for Prostate Cancer in the past and there is concern about recurrent or metastatic disease. PSMA PET scan is not approved or used to screen patients with an elevated PSA for prostate cancer and does not eliminate the need for a prostate tissue biopsy. As mentioned, *nothing takes the place of a prostate biopsy to diagnose prostate cancer and determine the amount and severity of prostate cancer*.

I heard I can get an MRI of the Prostate to check for Prostate Cancer?

There are a few things to know about a Prostate MRI. First, it must be done with IV contrast for it to be useful, and dialysis patients or patients with extremely poor kidney function may not be able to receive the contrast. Questions regarding contrast will be answered by the Radiology facility. Second, because of the technology required to image the prostate, it must be done by a specific MRI machine and cannot be an “Open MRI” or “Standup MRI”. The facility will also review their safety protocols and assess you for any implants that would make it not safe for you to have a MRI.

How is a Prostate MRI reported?

The MRI is not reported as “there is prostate cancer” or “there is not prostate cancer”.

Prostate MRI reports are structured using the “Prostate Imaging Reporting and Data System (PI-RADS)”, which assigns a score from 1 to 5 based on the *probability* of clinically significant prostate cancer. MRI does not provide a definitive diagnosis of cancer EVEN DESPITE HOW THE REPORT IS WORDED —it only indicates probability and guides biopsy decisions, with a biopsy **still required** for diagnosis.

- **PI-RADS 1-2:** Highly unlikely to unlikely for clinically significant cancer
- **PI-RADS 3:** Equivocal for clinically significant cancer
- **PI-RADS 4-5:** Likely to highly likely for clinically significant cancer

Notice that the phrase “clinically significant” is used; this is because there are also some prostate cancers that are NOT “clinically significant” and may not even require treatment. It is also critical to understand that a normal MRI does not definitively *rule out* cancer. Prostate cancer starts microscopically and can be present even if the MRI is completely normal; you still may need a biopsy if you have a normal MRI. And as already mentioned, just because an MRI identifies a suspicious area in the prostate, it is not definitely prostate cancer. A biopsy is still required, but in that instance, we can use the MRI images to guide us where to do additional biopsies of the suspicious areas (called an “MRI Guided” or “MRI Fusion” Biopsy, see below).

What is a Prostate Biopsy?

A prostate biopsy is a 10-minute procedure to take small samples of tissue from the prostate to test it for prostate cancer. This is usually done in the Urologist’s office, with the patient awake. The patient can drive himself home afterwards and does not need to fast. The patient lies on his side, and a thin ultrasound probe is placed 2 inches into the rectum (“transrectal”) to visualize the prostate. Nothing is inserted into the penis. Anesthesia is administered directly into the prostate through the transrectal ultrasound probe. Biopsy samples are then taken from the anesthetized prostate through the ultrasound probe. You will be given antibiotic pills to take the day before the biopsy, the day of the biopsy, and for the day after the biopsy. You will **not** need to do the type of bowel prep that is done before a colonoscopy. The idea of such a procedure can make men nervous and although it sounds painful, it is just brief discomfort and sedatives are not required. You may notice some blood in your urine/semen and there could be some light bleeding from your rectum. The biopsies are sent to a lab for analysis and can take a week for the results; results are not given to the patient over the phone. Specific instructions for the biopsy will be provided.

Can’t I just be asleep for this?

1. One option is to have the prostate biopsy done in the office with Pro-Nox™ Nitrous Oxide gas (“laughing gas”). This additional anesthesia is not covered by insurance, and we have information about this.
2. A prostate biopsy can also be done in a surgicenter with the patient put to sleep like during a colonoscopy. However, you need to be aware that you will incur charges to your insurance from the facility as well as the anesthesiologist. Because you are being put to sleep under anesthesia, you cannot eat or drink after midnight that day, and you must arrange for a ride home from the surgicenter.
3. If your MRI was abnormal and showed a suspicious area, a “MRI Guided” or “MRI Fusion” Biopsy may be required. Contrary to the name, it does *not* mean you are having a biopsy while in an MRI machine. Special computer equipment is used to combine the MRI images with the prostate ultrasound images to target the abnormal areas detected by the MRI you had. Because of the equipment and precision required to this, an MRI Guided Biopsy is done in a surgicenter with the patient asleep (see #2).
4. There is a newer technique to take samples of the prostate through the skin between the scrotum and the anus (“transperineal”) instead of the traditional method through the rectum (“transrectal”). This is being evaluated as an option to possibly decrease the risk of infections. This is not yet standard practice. Because of the equipment required to this, a transperineal biopsy is also done in a surgicenter with the patient asleep (see #2).