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Medical Encyclopedia: PSA

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Alternative names

Prostate-specific antigen; Prostate cancer screening test

Definition

The PSA test measures the amount of PSA (prostate-specific antigen) in the blood.

How the test is performed

Blood is drawn from a vein, usually from the inside of the elbow or the back of the hand. The puncture site is cleaned with antiseptic. An elastic band is placed around the upper arm to apply pressure and cause the vein to swell with blood.

A needle is inserted into the vein, and the blood is collected in an air-tight vial or a syringe. During the procedure, the band is removed to restore circulation. Once the blood has been collected, the needle is removed, and the puncture site is covered to stop any bleeding.

How to prepare for the test

No special preparation is usually necessary. It is not necessary to fast (refrain from eating) prior to the test. Falsely elevated results can be due to a recent urinary tract infection, enlarged prostate gland, prostatitis, or recent placement of a urinary catheter or surgery on the urinary tract.

Discuss with your doctor or health care provider whether a PSA test is appropriate for you, because it is not appropriate for all men.

How the test will feel

When the needle is inserted to draw blood, some people feel moderate pain while others feel only a prick or stinging sensation. Afterward, there may be some throbbing or a bruise.

Why the test is performed

This test is performed to detect the presence of PSA in the blood. High PSA level has been linked to an increased chance of having, but does not mean that the person definitely has, prostate cancer. Several conditions besides cancer can cause the PSA level to rise. These include urinary tract infection, benign prostatic hypertrophy (BPH -- an enlarged prostate), and prostatitis.

PSA is a glycoprotein (a protein with a sugar attached) found in prostate cells. It can be detected at a low level in the blood of all adult men.

Normal Values

Normal values vary with age. Older men typically have slightly higher PSA measurements than younger men. African-Americans normally have slightly higher values than white men.

A PSA of 4 ng/ml is abnormally high for most men and may indicate the need for further evaluation with a prostate biopsy. Keep in mind that although PSA testing is an important tool for detecting prostate cancer, it is not foolproof.

Also, a high PSA level does not confirm the presence of cancer. It only identifies patients at higher risk of having prostate cancer. These patients at higher risk may require further diagnostic testing such as a prostate biopsy.

Note: ng/ml = nanograms per milliliter

What abnormal results mean

Greater-than-normal levels may indicate:

- Benign prostatic hypertrophy
- Prostate cancer
- Prostatitis
- Prostate infarction
- Urinary tract infection
- Recent urinary catheterization
- Recent urinary tract operation

What the risks are

- Fainting or feeling light-headed
- Hematoma (blood accumulating under the skin)
- Infection (a slight risk any time the skin is broken)
- Multiple punctures to locate veins

Special considerations

The American Urologic Association, the American Cancer Society, and the National Comprehensive Cancer Network suggest that all men have annual PSA tests beginning at age 50. If you are African-American, or you have a father or brother who has been diagnosed with prostate cancer, it is suggested that you begin testing at age 40 or 45. These guidelines are not universal, however. Many health organizations do not recommend routine PSA testing.

You should discuss the benefits and risks of testing with your doctor. Potential benefits include early diagnosis of cancer with better chance of cure. Potential risks include increased health care costs, unnecessary invasive testing (biopsy), and unnecessary treatment. Each patient must weigh these factors to determine if routine screening is right for them.

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