The prostate-specific antigen (PSA) test is a blood test to detect abnormal conditions of the prostate gland. This screening test measures the amount of PSA in the blood. PSA is a protein produced by the prostate gland. For many years, scientists have known there is a relationship between an enlarged prostate gland and the amount of PSA in the blood. The PSA test has been approved to help doctors detect early prostate problems, such as inflammation, enlargement of the prostate gland, or prostate cancer. An increase in PSA in the blood does not, by itself, indicate the presence of cancer; it does help the doctor determine that a problem exists and that it may be serious; it does signal that further testing may be necessary to rule out prostate cancer. Recently, scientists have been studying ways to make the PSA test more helpful in determining the type of prostate disease this test might identify, as well as how serious the condition might be.

A High PSA Score May Call for Additional Testing

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A high PSA level does not always indicate the presence of prostate cancer, but it may signal the need for additional tests.

The prostate-specific antigen (PSA) blood test is a screening tool that helps doctors detect an abnormal condition of the prostate gland. Although the PSA test alone cannot determine if the condition is serious or requires treatment, the PSA level shown in the test can help the doctor decide whether to order further tests as screens for prostate cancer. A normal PSA level is usually less than 4 nanograms per milliliter (ng/mL). A PSA between 4 and 10 ng/mL signals a 25% chance of prostate cancer, and a PSA above 10 ng/mL signals an even higher chance of prostate cancer. A high PSA level can also mean a noncancerous condition is present, such as an enlargement of the prostate gland (benign prostatic hypertrophy, or BPH), an inflammation of the prostate gland (prostatitis), or an infection.

Age and Prostate Cancer: According to the American Cancer Society, a healthy man can take an annual test for prostate problems beginning at age 50. Those at higher risk for prostate cancer can begin testing at age 45. The most common factor that increases the risk of prostate cancer is advancing age, since almost all prostate cancers occur in men older than 55. African-American men and men with a family history of prostate cancer have a higher risk and can begin testing at an earlier age. Testing for prostate cancer includes both an annual PSA blood test and a digital rectal exam (DRE). A DRE can help doctors detect cancer of the prostate in men with normal PSA levels. In up to one half of patients with an enlarged prostate, the PSA level is above normal. If the PSA level is above normal and other findings are present, such as symptoms of urinary tract problems, blood in the urine, or a lump that is found during the DRE, the doctor may order further testing or a biopsy.

A Controversial Test: The recommendation for annual PSA and DRE tests is somewhat controversial, however, since PSA testing has some risk associated with it, and it is not known whether PSA screening saves lives. The risk is not in the blood test itself but with the biopsy that may be done as a result of a high PSA level, which carries a small risk of bleeding and infection. A sample of prostate gland tissue is taken through a tiny needle guided by ultrasound, and these cells are examined by the pathologist to look for cancer. The results of the PSA and biopsy together are used to “score” the cancer, which helps the doctor determine the best treatment in each case. However, in the majority of cases, men with increased PSA levels do not have cancer, and these men suffer a great deal of anxiety and financial cost as a result of unnecessary biopsies. The reverse is also true. Low PSA levels do not necessarily indicate absence of cancer. In addition to its use as a screening test for prostate cancer, the PSA test can be used to monitor a patient with prostate cancer and determine how well the treatment is controlling the disease.

Research on PSA Test: Research is under way to make the PSA test a more useful screening test for prostate cancer. Ways to determine if an increase in PSA levels signals a cancerous or noncancerous condition and what type of cancer may be present (fast- or slow-growing) are being studied. Among the areas scientists are looking at are how the PSA level is related to the size of the prostate gland and how quickly the PSA level increases over time.

Pharmacists can advise persons who have high risk factors, such as a family history of prostate cancer, to consult their doctor about the merits of having a PSA test.