PSA Test Result Affected by Various Factors

Diet, age and race can all affect the results of a prostate cancer test, according to a study. Prostate specific antigen (PSA) testing is often done to screen men for prostate cancer and to monitor response to treatment. However, the test is not perfect – sometimes a high level does not mean cancer, while a low level does not necessarily rule cancer out.

Doctors at the Fred Hutchinson Cancer Research Center Seattle, have been looking into some of the factors, other than the presence of prostate cancer, which can affect the results of PSA tests. They measured PSA levels in a single test and also PSA velocity, which is the rate of change of PSA over time. The doctors list these general findings, PSA velocity decreases as men age, and increases with calorie intake. African-American men tend to have higher PSA velocities than white men. Gaining weight led to a decrease in PSA velocity while losing it increased this measure. Single PSA determinations tended to increase with age and decrease with obesity, but the changes were not felt to be significant.

After doing some of my own research, I found the following additional information on false-positive elevations. False-positive elevations in the PSA are increases in the PSA that are caused by conditions other than prostate cancer. For example, benign prostatic hyperplasia (BPH) and infection or inflammation of the prostate (prostatitis) from whatever cause can elevate the PSA. Also note that even a rectal examination or an ejaculation within the prior 48 hours can sometimes elevate the PSA. False-positive elevations are usually in the 4 to 10 range, but they can go as high as 25 or 30. At these higher levels, however, caution in the interpretation of the test is warranted because a prostate cancer may well be present. Medications, foods, smoking, and alcohol do not cause
false-positive elevations of the PSA test.

A couple of facts about the PSA test. First, the ability of the PSA test to detect prostate cancer (called the sensitivity of the test) is high. The reason for this is that most patients, although not all, with prostate cancer have a borderline or an abnormally elevated PSA. Second, the ability of the PSA test to exclude other diagnoses (called the specificity of the test), however, is lower because of the other conditions that can cause false-positive elevations of the PSA.

The PSA is a great tool to start the information gathering process. You need several PSA tests, a digital rectal exam and a MRI or CT scan of the prostate to establish the need for further tests like a biopsy. Remember information is power and leads to patient empowerment through knowledge

David Sochacki
PAACT Representative