Detection and Diagnosis of Prostate Cancer

Who should get a PSA screening? How often should I get a PSA Screening? How do I prepare for a PSA Screening?

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Screening for Prostate Cancer

- PSA Screening – A simple blood test, the PSA screening measures the bloodstream concentration of prostate-specific antigen (PSA), a protein produced only by the prostate gland.

- Test Results – While there is a correlation between elevated PSA and prostate cancer, the number itself is not a certain indicator of the presence or absence of prostate cancer. Medical studies have indicated that as many as 75% or more of men with an elevated PSA (a bar often pegged at 4.0 ng/ml and higher) do not have prostate cancer. And while they make up a relatively small number of the total annual diagnoses, men with PSA values less than 4.0 ng/ml have been diagnosed with prostate cancer.

  It is worth nothing that in addition to screenings, PSA is also measured in follow-up testing after radical prostatectomy surgery and radiation treatments. Used in this phase of prostate cancer, the test is among the most reliable in all of medicine in detecting recurrences of disease.

- Mitigating Factors – Bicycle riding or ejaculation the day before a PSA test have been shown to raise PSA levels. Anecdotally, we hear that this information is rarely shared with men in advance of a PSA test or before their annual physical exams that require a blood draw.

There are also variances among testing laboratories (see Velocity).

- Velocity – A compelling reason to initiate discussions about prostate cancer with a physician and set up a PSA testing schedule with the doctor is that it allows a man's medical team to track PSA values over time. For instance, a score that goes from 1.2 to 2.4 in a 6-12-month period would be of more concern clinically that one that remained constant at 4.0 over the course of a year or more.

- Next Steps – Should a PSA score or combination of scores indicated that further testing needs to be conducted, doctors traditionally perform a biopsy, often preceded by a digital rectal exam and/or an MRI scan to confirm both the need for a biopsy and to better focus the biopsy on the exact location of the tumors.

There are, however, less invasive options that can be employed following irregular results of a PSA exam and/or digital rectal exam. One is OPKO's 4Kscore, a blood test that measures four different proteins and incorporates AI technology in predicting aggressive prostate cancer. 4Kscore also claims high rate of success at identifying diagnosed cases that are Gleason 6, those that can benefit most from an initial treatment plan of active surveillance.

Another non-invasive pre-biopsy step following an abnormal PSA test could be miR Scientific's liquid biopsy, a urine test scheduled to come to market in late 2021 or 2022.

While a biopsy is not typically as traumatic and physically demanding as prostate removal surgery, the procedure does cause discomfort, provoke anxiety, and carries the possibility of side effects. Prostate cancer approaches employing MRI, with both targeted and standard biopsies, have been shown to limit the detection of clinically insignificant cancers and reduce the number of unnecessary biopsies.

Who should get a PSA screening?

The American Cancer Society recommends the following PSA screening guidelines:

- Men between the ages of 50 and 69 who are at average risk for the disease
- African-American men who are 45 years of age or older
- Men who are 40 years of age or older with at least one first-degree relative (father, brother, or son) who has been diagnosed with prostate cancer. The risk is estimated to be 2-3x higher than

the average risk, increasing even further with the number of relatives diagnosed with prostate cancer.

Note: Screening recommendations for prostate cancer vary among physicians and healthcare organizations. Please consult with your physician.

How often should I get a PSA Screening?

Recommended testing intervals can vary among physicians and healthcare institutions, as well as being dictated by a patient's risk factors. But we do advocate that men be screened according to American Cancer Society guidelines (above) and adhere to their follow-up testing schedules, given that a continuous rise in PSA level may be a sign of prostate cancer, even at levels lower than the 4.0 ng/mL level often used as the threshold for "elevated."

Again, please consult with your physician regarding frequency and type of testing best suited for you or your family member/friend.

How do I prepare for a PSA Screening?

- There is no fasting required in preparation for the blood test used for a PSA screening.
- There is near-unanimous agreement within the healthcare community that all men consenting to PSA testing should first be informed in detail about the number of false-positive and false-negative test results, as well as the PSA level variance from test to test for reasons unrelated to prostate cancer. Also, men should be made aware of the medical community's (and the government's) concern about serious side effects that have resulted from the aggressive treatment of cancers that are slow-moving, non-symptomatic, and non-life threatening.

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