Introduction

Screening for prostate cancer following the introduction of the PSA has brought uncertainty in understanding the balance between the benefits and harm. Though there has been a decline in prostate cancer mortality since significant PSA testing began, some attribute the decline to screening while others question the improvement of cancer treatments as the reason. According to Centers for Disease Control and Prevention (CDC), prostate cancer was the leading cause for new cancer cases in 2015 (183,529 new cases reported). Prostate cancer was the second leading cause for cancer death in males (28,848 deaths). It also topped the chart for the highest 5 year relative survival percentage among cancer types.

To help provide you with a basis for prostate cancer screening and how to take a shared-decision making process approach, the following recommendations have been compiled based on the American Urological Association’s guideline: “Early Detection of Prostate Cancer.” Please note, organized screening is not advised. Instead, screening should strive to find an improved benefit to harm ratio by taking into account such things as the patient’s age, health state and personal preferences.

Guidelines for PSA Testing

The American Urological Association (AUA) recommends against PSA based screening in men under the age of 40 years. Evidence shows likely the same harms of screening as in other groups but with no benefit of screening at this age.

For men 40-54 years of age, those with increased risk such as African Americans or a family history of metastatic or lethal adenocarcinomas (prostate, breast cancer, ovarian, pancreatic) spanning multiple generations, affecting multiple first-degree relatives, and those developed at a younger age should consider PSA based screening. Those in this age group with average risk should not have routine screening.

For men 55-69 years of age, PSA based screening should be considered after weighing the benefits (reducing the rate of metastatic prostate cancer and prevention of prostate cancer death) against the potential harms associated with screening and treatment (risks associated with prostate biopsy, overtreatment of the disease, and psychological impact). To help in the reduction of these harms, a routine screening interval of every 2 years may be preferred over annual though an individualized plan could also be determined based on the baseline PSA level.
The AUA does not recommend routine PSA screening for men **70 years of age or older or a man with less than a 10-15 year life expectancy**. Those in this age group with excellent health may benefit from continued prostate cancer screening, however, and should have further discussion on testing.

### Screening Methods

The American Cancer Society recommends PSA testing can be done with or without a **digital rectal exam (DRE)**. The AUA could not find evidence to support the benefits of a DRE as a primary screening test but a DRE as a secondary test for men referred for an elevated PSA may be useful.

Because of the emphasis placed on **shared decision making between the clinician and patient** when approaching prostate cancer screening, clinicians are encouraged to use various methods to discuss the best option for each patient. Methods could include decision support tools, patient decision aids (available through a number of guideline groups), and handouts to include pictures, text, etc. Resources for such material include the CDC, Mayo Clinic, and American Cancer society websites.

### Discussion Points

Men should know the following before making a decision on prostate cancer screening:

- **The risk of dying** from prostate cancer is, on average, 3% over a lifetime. Though many will be diagnosed, only a minority will progress to advanced disease and fewer will have fatal prostate cancer.
- **There is no perfect screening test.** Some tests will miss early prostate cancer such as a DRE due to the lack of sensitivity while others such as the PSA test will generate a significant number of false positives due to low specificity.
- **PSA values can vary** based on age, race, BMI, and prostate volume. Elevation can be caused by benign prostate hypertrophy, prostatitis, prostate massage and biopsy while some medication, such as finasteride, can decrease levels.
- **Prostate biopsies and treatments carry risks.** Biopsies can lead to mild to severe symptoms including pain, fever, bleeding, infection, or problems urinating, some causing hospitalization following a biopsy. Treatment can result in recurrent cancer that progresses despite treatment, no evidence of recurrence but no benefit from treatment because their cancer was never destined to progress, or no evidence of recurrence because their cancer was cured. Though some men benefit from treatment, all those who undergo treatment are exposed to the complications such as the development of serious cardiovascular events, DVT or PE, erectile dysfunction, incontinence, or death (less than 1% for every 1,000 men screened).

The AUA acknowledges the presence of knowledge gaps related to limited trials, lack of evidence for specific age groups, no ideal screening interval determination, and the absence of direct evidence supporting the benefits of using other methods (digital rectal exam, urinary biomarkers, and PSA derivatives) as primary screening tests. There is a need for further research to assist in the limitations of the information for men regarding the balance of benefits and harm of screening.

Though PSA based prostate cancer screening has led to high rates of over diagnosis and over treatment, the proven benefits for men over time who have used PSA screening for early detection of prostate cancer cannot be overlooked. Talking to the patient about the harms and benefits of screening, understanding his values, and considering his health status are all important steps in approaching the decision of prostate cancer screening to ensure the patient receives more benefit than harm in the screening process.
References


Centers for Disease Control and Prevention at https://gis.cdc.gov/Cancer/USCS/DataViz.html, accessed September 2018

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