Baseline PSA Testing for Men in Their 40s: Currently Available Evidence Strongly Supports Baseline PSA Measurements in This Age Group

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The benefit-to-risk trade-offs associated with PSA screening are highly sensitive to patient preference, underscoring the importance of ensuring that men have the opportunity to decide for themselves whether they wish to have their individual risk for suffering and death from prostate cancer assessed through PSA screening.

In the United States, during the prostate-specific antigen (PSA) screening era, there has been an 80% decrease in the proportion of prostate cancer (PCa) patients presenting with metastases at diagnosis and a 45% decrease in the prostate cancer–specific mortality rate.[1] Furthermore, two randomized clinical trials (with still incomplete follow-up) have reported PCa-specific mortality reductions of 21% and 44%, respectively.[2,3] Nevertheless, PCa remains a leading cause of cancer death, and there is concern about the increasing number of patients who are developing incurable castrate-resistant disease.

The optimal use of PSA screening remains controversial because of the possibility of diagnosis and treatment of indolent cancers that would never cause symptoms if left undetected. Many professional organizations have reviewed the same body of evidence on PSA screening and have issued widely varying recommendations, ranging from abandoning PSA screening altogether, to shared decision-making, the offering of baseline testing to men in their 40s, and not denying screening to any man with a 10-year life expectancy.

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Randomized clinical trials of PSA screening have not evaluated men in their 40s; however, there is compelling evidence from other studies that baseline testing of men in their 40s identifies many men at increased risk for PCa metastases and death (reviewed in Loeb et al[4]). Also, younger men have less benign prostatic hyperplasia that can confound PSA results. Thus, the PSA level and its derivatives should have better performance characteristics as a marker for PCa in young men.

The rationale for baseline PSA testing of men in their 40s is based on four principles:

1. Studies of PSA increases over time have shown that a sudden increase in men in their 40s or early 50s often correlates with aggressive disease.[5]
2. PSA measurements in early mid-life identify many men destined to develop metastases and die of PCa up to 30 years later. The supporting evidence includes a study in which 44% of all PCa deaths occurred in men with a PSA level in the top 10th percentile for their age bracket at age 45 to 55 years.[6]
3. PSA velocity (PSAV) measurements can further identify men at high risk for aggressive PCa. The supporting evidence includes an aging study in which there was a 50% higher risk for aggressive disease when the PSAV exceeded 0.4 ng/mL/year in two or more consecutive years (ie, a PSAV “risk count” > 1); a screening study showing a PSAV risk count of > 2 was associated with a > 5-fold increased risk of Gleason 8–10 disease; and a study showing an association between PSAV and PCa-specific mortality after surgery (reviewed in Loeb et al[7]).
4. Early diagnosis and treatment of aggressive prostate cancer is associated with a lower prostate cancer mortality rate, as demonstrated in randomized trials[2,3] and by epidemiologic evidence from
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Currently, few men in their 40s undergo PSA testing, and the United States Preventive Services Task Force (USPSTF)[8] and the American Urological Association (AUA)[9] do not recommend PSA screening for average-risk men younger than 55 years old. These controversial recommendations were largely based on randomized trials that did not include men under 55 years old. These studies had imperfect methodology and a median follow-up of only about 10 years. However, baseline PSA measurements in men in their 40s are actually more robust predictors of aggressive disease than race or family history, and it is not possible to fully assess which men are at high risk without measuring their baseline PSA levels in their 40s.[4] In contrast to the USPSTF and AUA, the current National Comprehensive Cancer Network guidelines recommend offering PSA screening at age 40,[10] and the 2013 European Association of Urology guidelines[11] and the Melbourne Consensus Conference of international prostate cancer experts[12] also recently recommended baseline PSA testing in men in their 40s. Accordingly, although level 1 evidence may be lacking, currently available evidence strongly supports the use of baseline PSA measurements in men in their 40s to identify men who are more likely to develop life-threatening PCa.

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References:
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