

What would happen without PSA testing?

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Eliminating the PSA test to screen for prostate cancer would be taking a big step backwards and would likely result in rising numbers of men with metastatic cancer at the time of diagnosis, predicted a University of Rochester Medical Center analysis published in the journal, *Cancer*.

The URMCM study suggests that the prostate-specific antigen (PSA) test and early detection may prevent up to 17,000 cases of metastatic prostate cancer a year. Data shows, in fact, that if age-specific pre-PSA era incidence rates were to occur in the present day, the number of men whose cancer had already spread at diagnosis would be three times greater.

"Our findings are very important in light of the recent controversy over PSA testing," said Edward M. Messing, M.D., study co-author, chair of Urology at URMCM, and president of the Society of Urologic Oncology. "Yes, there are trade-offs associated with the PSA test and many factors influence the disease outcome. And yet our data are very clear: not doing the PSA test will result in many men presenting with far more advanced prostate cancer. And almost all men with metastasis at diagnosis will die from prostate cancer."

Prostate cancer usually occurs in older men, and is the second leading cause of cancer death in the male population. In 2012 an estimated 241,740 new cases will be diagnosed and 28,000 deaths will occur. Prognosis depends on whether the cancer has spread outside the prostate gland, and the degree to which the cancer cells are abnormal.

In 2011 the U.S. Preventative Services Task Force recommended against PSA screening in all men, prompting criticism from the medical community. The government panel reviewed scientific evidence and concluded that screening has little or no benefit, or that the harms of early detection outweigh the benefits. One major concern, for example, was that doctors are screening for, finding, and treating non-aggressive cancers that might have remained quiet, causing patients to needlessly suffer from serious treatment side effects such as incontinence or erectile dysfunction.

The U.S. Task Force recommendations against screening caused some confusion, and in response, a special panel of experts from the American Society of Clinical Oncology this month issued its own opinion. The ASCO panel decided that for men with a life expectancy of less than 10 years, general screening with the PSA test should be discouraged. For men with a longer life expectancy, though, it is recommended that physicians discuss with patients whether the PSA test is appropriate for them.

Messing's study looked back at the era prior to 1986, when no one was routinely screened for prostate cancer with a PSA test. To analyze the effect of screening on stage of disease at initial diagnosis, Messing and Emelian Scosyrev, Ph.D., assistant professor of Urology, reviewed data from 1983 to 2008 kept by the nation's largest cancer registry, Surveillance, Epidemiology and End-Results or SEER. They compared SEER data from the pre-PSA era (1983 to '85) to the current era of widespread PSA use (2006 to 2008), and adjusted for age, race, and geographic variations in the United States population.

Approximately 8,000 cases of prostate cancer with metastases at initial presentation occurred in the U.S. in 2008. Using a mathematical model to estimate the number of metastatic cases that would be expected to occur in 2008 in the absence of PSA screening, Scosyrev and Messing

predicted the number would be 25,000.

The authors emphasized the study was observational and has some limitations. In particular it is impossible to know if the PSA test and early detection is solely responsible for the fewer cases of metastasis at diagnosis in 2008.

The potential lead-time of screening also should be considered when interpreting the study findings, Scosyrev said. For some people an earlier stage of cancer at diagnosis may not always translate into better survival. This may happen, for example, in cases when the cancer had already metastasized at the time of screening, but the metastasis remained undetected.

In general, however, the study concluded that massive screening and PSA awareness efforts during the 1990s and early 2000s resulted in substantial shifts toward earlier-stage disease and fewer cases of metastases at diagnosis.

In the United States over the most recent 20 years, Messing said, prostate cancer death rates have been reduced by close to 40%. This occurred without substantial changes in how men were treated (via surgery and radiation therapy). Other models published in the scientific literature have suggested that more than 50% of this reduction is due to early detection.

More information: “Prostate-specific antigen screening for prostate cancer and the risk of overt metastatic disease at presentation: analysis of trends over time.” Emil Scosyrev, Guan Wu, Supriya Mohile, and Edward Messing. *CANCER*; Published Online: July 30, 2012 ([DOI: 10.1002/cncr.27503](https://doi.org/10.1002/cncr.27503)).

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