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Change in PSA levels over time can help predict aggressive prostate cancer

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Measurements taken over time of prostate specific antigen, the most commonly used screening test for prostate cancer in men, improve the accuracy of aggressive prostate cancer detection when compared to a single measurement of PSA, according to a Kaiser Permanente study published today in the *British Journal of Urology International*.

The retrospective study examined the electronic health records of nearly 220,000 men ages 45 and older over a 10-year period who had at least one PSA measurement and no previous diagnosis of prostate cancer. The study found that annual percent changes in PSA more accurately predicted the presence of aggressive prostate cancer when compared to single measurements of PSA alone, but only marginally improved the prediction of prostate cancer overall.

"The use of a single, elevated PSA level to screen for prostate cancer is considered controversial given the questionable benefits of PSA screening on prostate cancer mortality. The screening may also result in unnecessary prostate biopsies and subsequent treatments for localized prostate cancer, as it does not distinguish well between slow-growing and aggressive disease," said Lauren P. Wallner, PhD, MPH, study lead author and post-doctoral research fellow at Kaiser Permanente Southern California's Department of Research & Evaluation. "Our study demonstrates that repeated measurements of PSA over time could provide a more accurate – and much needed – detection strategy for aggressive forms of prostate cancer."

Men in the study were also found to experience a 2.9 percent change in PSA levels per year on average and that the rate of change in PSA increased modestly with age.

"The results of this study could provide clinicians with a better prostate cancer preventive strategy that could help differentiate between men with an aggressive form of the disease and those who have slow-growing, indolent cancer that may not necessarily merit treatment," said Wallner. "While we do not suggest that patients proactively seek out additional PSA measurements, men who already have had multiple PSAs may consider discussing the change in their PSA levels with their clinician when determining future treatment strategies."

The PSA test measures the level of prostate specific antigen, a substance made by the prostate, in a man's blood. It is one of the most commonly used tests to screen for prostate cancer, according to the Centers for Disease Control and Prevention. As a rule, the higher the PSA level in the blood, the more likely a prostate problem is present. But many factors, such as age, race, and non-cancerous conditions can affect PSA levels. The CDC and other federal agencies follow the prostate cancer screening recommendations set forth by the U.S. Preventive Services Task Force, which recommends against PSA-based screening for men who do not have symptoms. Kaiser Permanente guidelines include a recommendation that men age 40 and older should discuss the PSA test and rectal exam with their physician.

Aside from non-melanoma skin cancer, prostate cancer is the most common cancer among men in the United States, according to the CDC. In 2008 (the most recent year numbers are available), nearly 215,000 men in the United States were diagnosed with prostate cancer and more than 28,000 men died from the disease. Prostate cancer is the second most common cause of death from cancer among white, African American, American Indian/Alaska Native and Hispanic men, and is

more common in African-American men than white men, according to the CDC.

Provided by Kaiser Permanente