

# Increase in PSA after prostate cancer surgery may not lead to metastasis in some men's lifetimes

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Some prostate cancer patients whose prostate-specific antigen (PSA) levels increase after a radical prostatectomy may die of causes unrelated to prostate cancer before they are diagnosed with a prostate cancer metastasis, and therefore treating them for recurrence may not be beneficial, according to a study published in *Clinical Cancer Research*, a journal of the American Association for Cancer Research.

"Previous studies have indicated that the interval from PSA recurrence to metastasis is quite long, with a median of more than eight years, even in the absence of any treatment for the recurrence," said Ruth Etzioni, PhD, full member of the Public Health Sciences Division at Fred Hutchinson Cancer Research Center in Seattle, Washington. "Given that the majority of prostate cancer patients are older, we expect that many would die of other causes before reaching the point of metastasis.

"Much like the issues with PSA screening and overdiagnosis of prostate cancer, overdiagnosis of recurrence after primary treatment poses some concerns as well. We have attempted to quantify the risk associated with overdiagnosis of recurrence," said Etzioni.

Using prostate cancer patients' data from different sources, the authors created a simulation model and found that at least 9.1 percent and 15.6 percent of prostate cancer patients whose PSA levels increase after five years and 10 years of initial treatment, respectively, may not have a metastatic disease in their lifetime, and therefore are overdiagnosed for recurrence. Among those older than 70 with a PSA recurrence within 10 years of first diagnosis, the model projected that at least 31.4 percent were overdiagnosed.

"Salvage therapy for prostate cancer patients

includes radiation therapy, which has side effects such as bowel problems and urinary symptoms, and hormone therapy, which can cause hot flashes, fatigue, loss of libido, and in the long run, has been linked with osteoporosis, heart disease, and even diabetes," said Etzioni. "Our findings are in line with treatment studies showing that immediate salvage therapy following detection of rising PSA levels is not the right thing for everyone. We need to develop ways to determine who needs salvage therapy and when to give it."

Etzioni and colleagues used data from three sources: data from 441 [prostate cancer](#) patients treated at Johns Hopkins University, data from 4,455 patients from the Cancer of the Prostate Strategic Urologic Research Endeavor database, and data from the Surveillance, Epidemiology, and End Results (SEER) registry.

Using this information, they created 1 million virtual patients with different age and disease characteristics and computed the fraction of patients with PSA recurrence for whom the time from PSA recurrence to another cause of death was less than the time from PSA [recurrence](#) to metastasis in the absence of salvage therapy.

**More information:** "Overdiagnosis of Recurrence after Radical Prostatectomy: Estimates Based on Patient and Tumor Characteristics." *Clin Cancer Res*, October 15, 2014 20; 5302. [DOI: 10.1158/1078-0432.CCR-13-3366](#)

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