

Study shows high blood calcium levels may indicate ovarian cancer

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A new study from Wake Forest Baptist Medical Center is the first to report that high blood calcium levels might predict of ovarian cancer, the most fatal of the gynecologic cancers.

Lead author Gary G. Schwartz, Ph.D., a cancer [epidemiologist](#) at Wake Forest Baptist, and colleague, Halcyon G. Skinner, Ph.D., of the University of Wisconsin Carbone [Cancer Center](#), examined associations between blood calcium and [ovarian cancer](#) in two national population-based groups. They found that women who were later diagnosed with ovarian cancer and women who later died of ovarian cancer had higher levels of calcium in blood than women who did not before their [cancer diagnosis](#).

Schwartz, who is well-known for his epidemiologic research in prostate cancer, said the idea for this study came about because of published research from his group which showed that men whose calcium levels were higher than normal have an increased risk of fatal [prostate cancer](#). That led him to wonder if a similar relationship were true of ovarian cancer.

"One approach to cancer biomarker discovery is to identify a factor that is differentially expressed in individuals with and without cancer and to examine that factor's ability to detect cancer in an independent sample of individuals," Schwartz said. "Everyone's got calcium and the body regulates it very tightly," Skinner added. "We know that some rare forms of ovarian cancer are associated with very high calcium, so it's worth

considering whether more common ovarian cancers are associated with moderately high calcium."

The idea is plausible, Schwartz explained, because many ovarian cancers express increased levels of a protein, parathyroid hormone-related protein (PTHrP), which is known to raise calcium levels in blood in many other cancers.

Ovarian cancer has a high [fatality rate](#) because it is hard to detect and by the time symptoms arise, the cancer is usually advanced. Schwartz said early diagnosis might be accomplished through the use of a calcium biomarker, but cautions that more research is needed to confirm these results. "We found the link between serum calcium and ovarian cancer; we confirmed it, and even though the study is small, we're reporting it because it's a very simple thing in theory to test."

More information: The study is published online this month in the journal *Gynecologic Oncology*.

Provided by Wake Forest University Baptist Medical Center

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