

New study discovers possible early detection method for elusive ovarian cancer

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A study led by researchers at the University of Minnesota Medical School found a way to detect the presence of ovarian cancer in patients using Pap test samples, normally used to detect cervical cancer. Currently, no early warning system exists for ovarian cancer, which in 2021, is estimated to kill more than 13,700 women, according to the American Cancer Society.

"It is known as a 'silent killer' since [women](#) with early stages of [ovarian cancer](#) have symptoms that can often be confused with other ailments. Women are typically diagnosed when the cancer has progressed so far that other organs are involved, requiring [major surgery](#) and chemotherapy," said Amy Skubitz, Ph.D., senior author of the study and professor in the Department of Laboratory Medicine and Pathology. She is also the director of the Ovarian Cancer Early Detection Program at the U of M Medical School. "We set out to identify the proteins present in Pap test samples and cervical swabs to determine whether or not the same proteins are present in ovarian cancer tumor tissues."

This study, published in the journal *Clinical Proteomics*, found that:

- The Pap test and swab samples contained proteins that were also found in the primary tumor of a woman with high-grade serous ovarian cancer;
- More than 2,000 proteins were detected in all three sample types collected, suggesting potential biomarker candidates;
- Pap test samples, which are already used to detect [cervical cancer](#), may eventually be used to detect ovarian cancer.

"This study is proof of concept that these biospecimens, the Pap test and a swab of the cervix, could be developed for use in the detection of ovarian cancer biomarkers prior to surgery, but it does warrant further investigation," said Skubitz, who is also a member of the Masonic Cancer Center. "Our next step will be to use quantitative mass spectrometry to determine if these proteins or peptides are detected at higher levels in ovarian cancer Pap tests or swabs compared to controls. Their presence alone is not sufficient for diagnosis."

Skubitz also sees an opportunity for this method to be translated into a self-administered, at-home test, where swabs could be collected by women at home and sent to a central laboratory for analysis of proteins

that would diagnose ovarian cancer.

More information: Kristin L. M. Boylan et al. Evaluation of the potential of Pap test fluid and cervical swabs to serve as clinical diagnostic biospecimens for the detection of ovarian cancer by mass spectrometry-based proteomics, *Clinical Proteomics* (2021). [DOI: 10.1186/s12014-020-09309-3](https://doi.org/10.1186/s12014-020-09309-3)

Provided by University of Minnesota Medical School

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