



## A New Blood Test for Ovarian Cancer Uses Mass Spectrometry

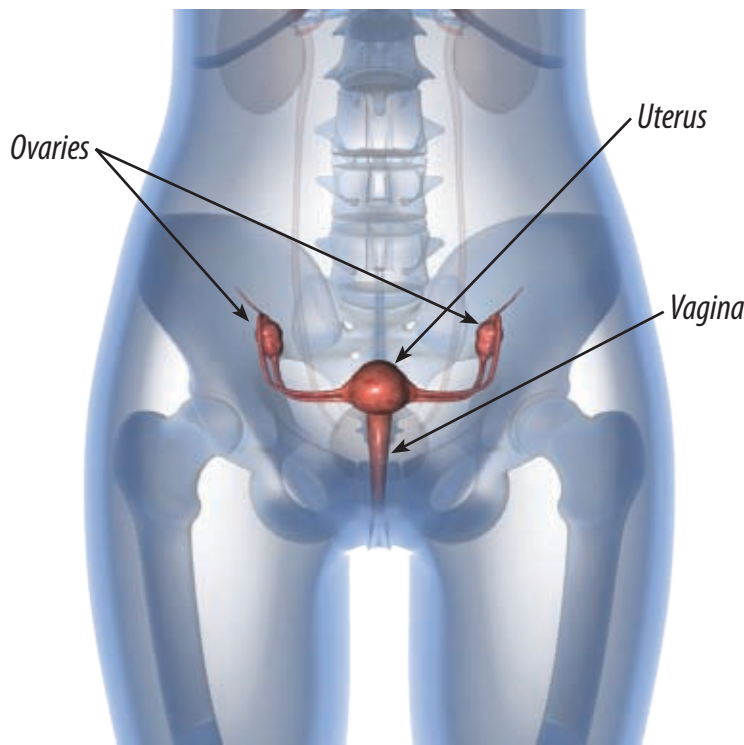
*The test is reportedly 100 percent effective, but larger studies are needed before it's ready for prime time.*

Ovarian cancer is comparatively rare (it's the eighth most common cancer among women, according to the Centers for Disease Control and Prevention) but it's a particularly lethal cancer because it is typically diagnosed at an advanced stage. Detecting it sooner could render it less lethal, but research also suggests that current tests produce many false positives and make little difference to mortality rates.

"There is no noninvasive diagnostic test that can reliably identify ovarian cancer in its earliest stages and has been shown to improve survival," says Kevin Holcomb, MD, a gynecological oncologist at NewYork-Presbyterian Hospital/Weill Cornell Medical College. However, a new test that appears to be 100 percent effective may be a breakthrough.

### Encouraging results

The new test relies on just a single drop of blood, the molecules of



*The ovaries are organs connected to the uterus by fallopian tubes. Due to their size (they are similar to almonds in size and shape) and their location in the abdomen, they are difficult to examine, making it harder to detect the presence of cancer.*

which are vaporized and electrified before being subjected to a high-tech analysis called mass spectrometry. The technique correctly identified patients who had ovarian cancer in 100 percent of

the 94 women tested, according to a study published online August 10, 2010, in *Cancer Epidemiology, Biomarkers, & Prevention Research*. In addition, it registered no false positives or false negatives. "While these results are very encouraging, they need to be validated in larger studies," Dr. Holcomb observes.

"Prior applications of mass spectrometry in ovarian cancer diagnosis had similar results in their initial reports, but were found to be less accurate in subsequent, larger studies."

The test is undergoing further study in a trial involving 500 patients, but until its effectiveness is proven with a larger study, the current gold standard for ovarian cancer screening remains the CA 125 blood test and transvaginal sonogram.

"CA 125 is a protein that is commonly found at elevated levels in the blood of women with ovarian cancer," Dr. Holcomb explains. "Unfortunately, it's limited by a lack of sensitivity, since about half of women with stage 1 ovarian cancer have normal CA 125 levels. Specificity also can be an issue, since many common benign gynecologic conditions also can cause an elevated CA 125 level. These drawbacks have limited the

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use of CA 125 as a screening tool, so it is used primarily to monitor the progress of women with ovarian cancer during treatment.”

### Difficult to detect

Ovarian cancer is one of the hardest cancers to detect for a combination of reasons. “The ovaries aren’t as accessible as other areas—for example, the breasts—when it comes to examinations,” Dr. Holcomb explains. “Also, the symptoms are nonspecific and easily mistaken for signs of a less serious problem, such as irritable bowel syndrome. However, what is remarkable about the symptoms is that they tend to occur at a higher level and in combination compared to those seen in benign conditions.” Symptoms include bloating, pain or pressure in the pelvis, low back pain, and/or changes in bladder or bowel function that persist for longer than one month.

If ovarian cancer is detected early (when it’s still confined to the ovaries), about 94 percent of women will live at least five years, says the American Cancer Society. “But symptoms typically don’t become marked until the tumor has already spread to the upper abdomen or other distant sites,” Dr. Holcomb says. Nearly 80 percent of cases are found at an advanced stage, and if ovarian cancer is diagnosed after it has spread, only about 20 to 30 percent of women survive five years.

Screening for ovarian cancer is only recommended in women who have a strong family history of ovarian cancer or a known breast or ovarian cancer gene mutation. In the absence of routine screening, Dr. Holcomb recommends that you take steps to address controllable risk factors, which include obesity and long-term (10 years or more) use of hormone replacement therapy (HRT). 🍌

### WHAT YOU CAN DO

- **Be alert to the symptoms of ovarian cancer**—persistent bloating, pain or pressure in the pelvis, low back pain, and/or changes in bladder or bowel function.
- **Avoid obesity**—studies show a higher rate of death among obese women who have ovarian cancer than among normal-weight women.
- **Cut back on your intake of saturated fats**—studies suggest that a low-fat diet may decrease risk.
- **If you are taking HRT**, ask your doctor about your cancer risk and alternative therapies that may relieve the symptoms of menopause.