

Hormone test predicts ovarian function after chemotherapy for breast cancer

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A test that shows how many eggs a woman has in her ovaries may help young women with breast cancer know what their reproductive function will be after chemotherapy, a new study finds. The results will be presented Sunday at The Endocrine Society's 93rd Annual Meeting in Boston.

Called the anti-Mullerian hormone (AMH) test, this blood test measures levels of an ovarian hormone that reflects the size of the [ovarian reserve](#), or remaining egg supply. Currently, doctors use it to quantify a woman's ovarian reserve before in [vitro fertilization](#) treatments. Now researchers from Scotland have found that measurement of AMH indicates how likely it will be for a woman to still have eggs in her ovaries after chemotherapy, which can often damage a woman's eggs and cause infertility.

"Future reproductive function is a concern for many young women with cancer," said lead investigator Richard Anderson, MD, PhD, professor of clinical reproductive science at the University of Edinburgh. "This test will be of benefit to women with newly diagnosed cancer to help decide whether they need to take steps to preserve their fertility."

In the U.S. alone, [breast cancer](#) is diagnosed in more than 25,000 women younger than 45 each year, according to the [American Cancer Society](#).

For this study, Anderson and his colleagues recruited 50 [premenopausal women](#), ages 29 to 51, who had just received a diagnosis of early breast

cancer. All women had normal [menstrual cycles](#) and were asked to keep a daily record of their menstrual cycle, as an index of ovarian activity, during the two years of the study. Before the women started chemotherapy, they gave blood samples for AMH testing. They again had AMH tests one and two years after starting treatment.

Before chemotherapy the median AMH level was 0.4 [nanograms](#) per milliliter (ng/mL). After cancer treatment the AMH level fell rapidly, becoming undetectable (below 0.16 ng/mL) in 68 percent of the women after one cycle of chemotherapy, the authors reported. By one-year follow-up, 11 women withdrew from the study, mostly because of cancer recurrence, Anderson said. Menstrual records were available for 39 women at one year and for 29 women at two years.

A low AMH measurement before treatment correlated well with amenorrhea, or absence of menstruation, after treatment. Women whose AMH before treatment was low (below 0.4 ng/mL) were 16 times likelier to have stopped menstruating after chemotherapy than women with a high pretreatment AMH value, Anderson said. The odds of losing ovarian function remained higher even after statistical analysis controlled for increasing age, which tends to lower AMH levels. Women whose AMH before chemotherapy exceeded 0.92 ng/mL were reportedly almost five times more likely to continue menstruating after treatment.

"Our data suggest that the AMH test, taken before [cancer treatment](#), can help individualize a woman's infertility risk after chemotherapy for breast cancer," Anderson said.

He added that results of this study, which was funded by the U.K. Medical Research Council, are likely to apply to other types of cancer as well.

Provided by The Endocrine Society

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