

Study raises concern about ability of tests to predict fertility

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Time to Conceive study to follow 750 women for up to 12 months. Image source: National Institutes of Health

The method used to assess infertility in at-home tests might not be the best for identifying which women will have trouble getting pregnant, according to new research from the University of North Carolina at Chapel Hill School of Medicine.

The study found that the cutoffs used by such infertility tests, which measure levels of a molecule called follicle stimulating [hormone](#) or FSH, label many [women](#) as infertile who actually go on to have children naturally.

It also suggests that another hormone, called antimullerian hormone or AMH, could prove to be a much better harbinger of infertility.

"That is not to say that these tests are useless, but they certainly warrant further investigation," said lead study author Anne Z. Steiner, MD, MPH, assistant professor of obstetrics and gynecology at UNC. "Our findings may mean that we need to go back to the drawing board and change the potential cutoff for infertility in the current tests, or perhaps we need to explore other tests altogether."

Steiner presented her research on Oct. 26, 2010 at the annual meeting of the American Society for Reproductive Medicine in Denver, Colorado. Steiner is also a member of the North Carolina Translational and Clinical Sciences (NC TraCS) Institute, the academic home of the Clinical and Translational Science Awards (CTSA) at UNC.

Many women have been waiting until later in life to start a family, driving up the demand for a simple pee stick or blood draw that can predict how many reproductive years they have left. Since a major cause of reproductive aging is the aging of the [ovary](#), most of the focus has been on looking at markers of ovarian aging -- such as FSH or AMH - as a potential fertility test.

Levels of FSH have been proven to predict the timing of menopause and the probability of conceiving following assisted reproductive technology, but it is not clear if they can also predict natural fertility (or infertility) in the general population.

Through the pilot phase of a project called Time to Conceive, Steiner and her colleagues looked at 100 women who were at risk of reproductive aging, defined as being between the ages of 30 and 45. As soon as these women came off birth control, the researchers began to measure levels of the hormones estrogen, FSH, and AMH. They then used statistical modeling to adjust for intercourse patterns and see if the hormone levels correlated with how long it took to get pregnant. The premise was relatively simple: people who take longer to get pregnant

are less fertile than people who get pregnant very quickly.

In recreating the conditions used in the current fertility tests, they found that a quarter of the women had abnormal FSH levels and would be deemed infertile. But when the researchers followed these women for six months, they found that they did not have more difficulty getting pregnant than the others in the study. However, when they raised the threshold of these tests to a higher value of the hormone, they did find an association with infertility.

"So it may be that this test can pinpoint infertility, but we need to uniquely define where that cutoff is going to be," said Steiner.

The researchers also found that AMH, FSH's sister hormone, was vastly superior at predicting fertility. Unfortunately, AMH can only be measured in the blood and not the urine, and even the blood test has not been approved for clinical use. But Steiner says with further study the use of this other hormone may provide a more accurate infertility test.

Steiner continues to enroll women in the Time to Conceive study, which will eventually follow a total of 750 women for up to twelve months.

"Hopefully we can find a better way of predicting [infertility](#) so we can provide women with more reproductive control," said Steiner.

Provided by University of North Carolina School of Medicine

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