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A New Measure in Fertility Testing

Doctors Say Hormone Gauge Gives an Accurate Egg Count; Still Awaiting FDA Clearance

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At 36 and single, Monica Taneja is a New York anesthesiologist who is increasingly anxious about the ticking of her biological clock. So she recently underwent tests to gauge her egg count, one key indicator of fertility. The results brought welcome news: a healthy supply of eggs. "I feel like I have a window," Dr. Taneja says.

When it comes to a woman's biological clock, it's all about the eggs: How many does she have, and are they healthy enough for conception? A hormone test gaining wider use in the U.S. may offer women a more precise way to assess their ovarian inventory, compared with the tests in common use for years.

This test -- one of several used on Dr. Taneja -- measures a chemical produced in the body called anti-mullerian hormone, or AMH, which has been shown to provide an accurate snapshot of a woman's egg count. Over the past few years, the test, which reads AMH levels from a blood sample, has been routinely available in Europe, where much of the research on AMH as an ovarian-reserve marker has been done.

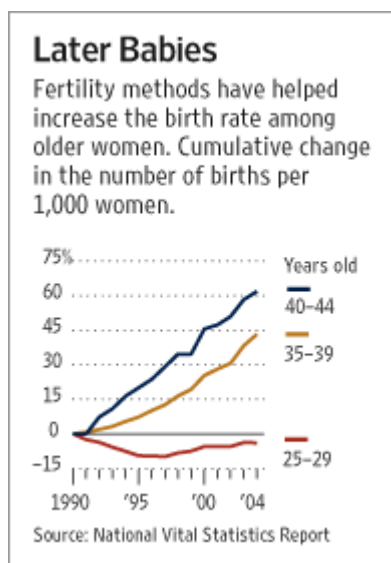
But the lack of uniform measurement standards has slowed its adoption in the U.S., where such tests come under Food and Drug Administration oversight. AMH-detection systems haven't yet satisfied FDA criteria for clinical use. Even though it awaits clearance, there has been no move to restrict use of the test in doctors' offices.

Moreover, doctors aren't quite ready to completely abandon older measures to test

fertility, because they think a robust battery of data can be useful. There is also some debate about whether AMH levels correlate to egg quality. Other factors, too, such as the vitality and mechanics of reproductive organs, affect the ability to get pregnant.

Still, as recent scientific literature has bolstered the predictive credentials of AMH detection, and measures have become more consistent, a growing number of physicians are using the test at their discretion. The cost of the test runs from \$100 to \$400, which is covered by some, but not all, health insurers.

Repromedix Corp., a Woburn, Mass., company, is aiming to market an ovarian reserve test directly to women. Called



PlanAhead, the test measures multiple factors, including ovary-related hormones such as AMH, to gauge a woman's egg supply.

Until it receives FDA clearance, the \$350 test is available only through participating physicians in 24 cities. Women in those areas can also order the test online and have a participating physician draw her blood. The test is sent to Repromedix for processing. Benjamin Leader, the company's chief medical officer, says AMH "plays a significant role" in the test.

The emergence of new egg-assessment technologies comes at a time when women are increasingly pushing the limits of their childbearing years.

According to the 2006 National Vital Statistics Report, the biggest increases in birth rates from 1990 to 2004 occurred among females over age 30. For women 35 to 39, the birth rate jumped 43%, from 31.7 births per 1,000 women to 45.4. For women 40 to 44, it climbed 62%, to 8.9 births per 1,000 women from 5.5. And for those 45 to 49, the rate rose 250%.

TRACKING EGGS

Four hormones that can be measured to help gauge a woman's ovarian reserve:

- **Follicle-Stimulating Hormone (FSH):** Stimulates production of eggs and the hormone estradiol.
- **Anti-Mullerian Hormone (AMH):** Levels correlate to a woman's egg supply.
- **Estradiol:** A form of estrogen that contributes to the growth of reproductive organs.
- **Inhibin B** -- Levels correlate to the number of ovarian follicles.

Source: WSJ reporting, Resolve: The National Infertility Association

Fertility Intervention

The delay in childbearing, fueled in part by the strides women have made in the workplace, has led to more fertility interventions as women age. The number of assisted reproductive procedures grew 12% from 2003 to 2006, according to the Society for Assisted Reproductive Technology. More than 99% of these procedures were in vitro fertilization -- whereby embryos formed outside the womb are implanted into a woman's uterus.

Doctors anticipate that more women will get tested throughout their childbearing years because they want a benchmark of their fertility.

"AMH is an excellent predictor," says Michael Alper, chief medical officer of Boston IVF and associate professor of obstetrics and gynecology at Harvard Medical School.

Boston IVF, one of the largest U.S. fertility clinics, started offering AMH tests a few months ago. "I would predict that we're going to be ordering it on everybody," Dr. Alper says. "It'll be a standard."

The first studies that looked at AMH as a marker for ovarian reserve appeared in 2002 and showed that the hormone, which is produced by egg follicles, declines with age. A paper published last year in the journal *Fertility and Sterility* looked at data from a series of AMH studies and concluded that it is the earliest marker of ovarian reserve and has the least variability during and between a woman's menstrual cycles.

An older, commonly used egg-supply marker known as follicle-stimulating hormone, or FSH, also measured through a blood test, can be taken only on days two, three or four of a menstrual cycle, may be affected by birth-control pills, and has greater variability. By contrast, "AMH tends to be very consistent," which means a reading can be taken at any time, says Arlene Morales, chief medical officer of Fertility Specialists Medical Group in San Diego. Her clinic started offering AMH testing a year ago, and she says it now uses it in a majority of patients.

"AMH is an early marker of ovarian aging, whereas FSH becomes elevated at a later reproductive age," says David Seifer, co-author of the *Fertility and Sterility* paper and a professor of obstetrics, gynecology and reproductive sciences at Mount Sinai School of Medicine in New York. Dr. Seifer practices at Genesis Fertility in Brooklyn, N.Y., which recently started offering AMH testing to patients. "Once a woman's FSH levels are elevated, it's often a signal that she has diminished ovarian reserve and therefore is at a much greater challenge of conceiving."

In other words, by the time her FSH level rises, it may be too late.

Hope at Age 45

Pamela Barbasetti di Prun, 45, a mother of three grown children from her first marriage, wanted to try to have a baby with her second husband. When her FSH levels came back elevated, signaling her fertility was on the wane, her doctor suggested the Staten Island, N.Y., couple consider an egg donor. They balked and, in February, Ms. Barbasetti di Prun's AMH level came back normal. Hopeful that she could have a baby with her own eggs, the couple is moving ahead with in vitro fertilization. Two weeks ago, doctors retrieved 10 eggs -- a better-than-expected number for a woman her age.

"The AMH test was an extremely valuable tool in giving us an accurate number to guide us," Ms. Barbasetti di Prun says. "You're going to do what your heart tells you, but to have some medical substantiation really helps you."

Dr. Seifer, her physician, says that because of her healthy AMH levels, he was "willing to let her try" IVF with her own eggs.