



A new fertility test is changing women's lives

Levels of the hormone AMH correspond to the number of eggs a woman has left in her ovarian reserve

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Photograph by Simon Hayter

A woman's biological clock is actually more like an hourglass that's turned over when she's born. Each grain of sand is one egg, and eventually they all run out. Rina Clarke had run through most of her eggs by last summer, when she was just 32. Sitting inside her fertility specialist's office, Clarke learned that a new test indicated she had a "low ovarian reserve" for her age. For a while, Clarke couldn't comprehend the doctor's message. But it was simple: fewer eggs equals fewer chances for babies. "I felt cheated—like, how is this possible? I'm a [young] woman, what do you mean I have this reserve issue?" she recalls. "You wind up in a position where you are disappointed and [asking], 'Why didn't anybody tell me this sooner?'"

That test, which measures how much “anti-müllerian hormone” a woman produces in her ovarian follicles, is fast becoming the pre-eminent tool for fertility specialists in North America and Europe to determine the chances of their patients getting pregnant. “I [am] screamingly in favour of this test,” says Dr. Tom Hannam of the Hannam Fertility Centre in Toronto, who has offered AMH testing for two years. “It’s changed women’s lives. It has absolutely changed my practice.”

Until now, any woman who ever wondered about how many more years she could wait to have children—how many more dates she could go on before finding her ideal mate, how many more promotions she could attain, how many more professional letters she could add after her last name—had two choices: start trying and find out soon, or don’t start trying yet and find out later. AMH testing promises to pinpoint her chances of getting pregnant today, how that might change, and whether there is anything to be done about it.

“It’s a very good test because it tells people something about their biological clock that we really didn’t have a widely available, accessible and reliable test for before” explains Dr. Beth Taylor, co-director of Genesis Fertility Centre in Vancouver and a professor at the University of British Columbia. “Information is very empowering. As a woman, I would want to know where I am on that fertility scale.”

For \$225 or less, a woman can find out by getting a blood test at any point during her menstrual cycle from a private clinic or lab. It reveals her level of AMH, which corresponds to the number of eggs she has left, or her “ovarian reserve.” That declines with age, but not every woman is born with the same number of eggs or loses them at the same rate. Genetics, exposure to chemotherapy and radiation and some medical conditions can influence ovarian reserve.

As such, a woman as young as Clarke might have as few eggs as a woman much older than her. But she’d never know it unless she was tested after being unable to conceive for more than a year. By then, heartache and headaches have long set in. “The number one thing we can do to help women plan for themselves and their families and set expectations is check their ovarian reserve. It defines everything,” says Hannam. “If you have a good ovarian reserve, you are all but certain to get pregnant. And if you don’t, then it’s extraordinarily unlikely that you will.”

Until now, a woman's ovarian reserve was checked using methods that have been around for decades. Follicular-stimulating hormone must be measured using a blood test on day three of a woman's menstrual cycle, but it can fluctuate from month to month, unlike AMH. Antral follicle count is done using vaginal ultrasound, but it is highly dependent on equipment quality and the precision of the technician. Both tests are, however, covered by provincial health care plans and common. AMH, on the other hand, is not yet familiar to all family doctors and gynecologists, who would need to refer a woman to a fertility specialist for the test.

That explains a paper entitled, "Is there a place for AMH testing in Canada?" that was published last June in the *Journal of Obstetrics and Gynaecology Canada*, noting, "AMH has emerged as an important and novel marker" and concluding that "as more Canadians become aware of the potential usefulness of AMH measurements, the medical community must begin to discuss and investigate what role [this test] can play in the management of health and fertility issues in Canadian women."

This is all the more important as growing numbers of women delay having children. Canadian researchers are increasingly alerting women and the doctors who see them about how their chances of getting pregnant are actually much lower than they believe. Last November, the "Advanced reproductive age and fertility" guideline was published in the JOGC, which warned that women should be made aware "of the realities of the biological clock" and "have realistic expectations if they choose to delay child-bearing." How little time they can wait may surprise them. "Ovarian aging will have begun before women notice any changes to their menstrual cycles," the experts noted, so "they are often unaware that they may be at greater risk of infertility."

For Dr. Allison Case, a primary author of the guideline and medical director of the assisted reproductive fertility centre at the University of Saskatchewan in Saskatoon, that misconception among women is becoming alarmingly familiar. "What strikes us is how women don't appreciate the true effect that age has on their fertility. If you talk to women, they say, 'Yeah, I know it's harder to get pregnant,' but I don't think they really appreciate just how hard. It's as if they're in denial or thinking, 'I'm going to be fine,' because of whatever reason they use to justify" waiting to have children, says Case. The fact is that "fertility starts to drop off after age 30."

And yet, many women are waiting until at least then. Between 1991 and 2009, the number of first-time mothers in their 30s or 40s climbed nearly every year, from 23 per cent to 37 per cent, reports Statistics Canada. Meanwhile the number of women in their late teens and 20s having their first children steadily dropped, from 76 per cent to 62 per cent. Most stunning of all, the number of babies born to women aged 35 to 39 doubled over those 18 years—and tripled among women aged 40 to 44. Among those 45 to 49, the increase was more than sixfold.

What the data doesn't indicate, however, is how much more trouble these women might have experienced. Suzanne Tough, a community health professor at the University of Calgary and scholar for the Alberta Heritage Foundation for Medical Research, published a paper in the January issue of the JOGC, indicating the many risks women face when they delay child-bearing—and highlighting how few actually realize it. “They're not very aware that they're more likely to have a preterm birth or to miscarry. They're more likely to have problems conceiving and carrying. And they're more likely to have multiple births even if they aren't using fertility treatments,” says Tough.

All the more reason a test such as AMH could prove useful in educating women about their personal fertility status earlier than has historically been done. Like Hannam and Taylor and Case, Dr. Ken Cadesky uses AMH mostly on women in their 30s who've had difficulty conceiving. But they all agree that, in theory, any woman could choose to have their level measured to help them plan their future. “Sometimes it's a wake-up call for women that if they're going to be doing something they should probably speed it up,” says Cadesky, director of the LifeQuest Centre for Reproductive Medicine in Toronto. “I wouldn't say it's the one concrete test that a woman should change her life as a result of, but it's a valuable piece of information.”

And if the information isn't what a woman is hoping to hear? “It's better to know the results and live in the reality,” says Clarke, who is pursuing in vitro fertilization with her husband, because “once you know your limits, then you're open to additional possibilities” too.