

The Fertility Maze

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Less than 30 years after the world's first IVF baby was born, millions of children have been created with the help of the petri dish. And the technology that so astounded the world in the late 1970s now almost seems ho-hum. That's not just because so many women have undergone in vitro fertilization, but also because fertility clinics keep adding eye-popping technology to their menus. There's now a technique, for example, known as intracytoplasmic sperm injection, in which sperm is injected directly into waiting eggs. There's also pre-implantation genetic diagnosis, which tests three-day-old fertilized eggs for genetic problems. And more and more women in their 30s, 40s, and even 50s are getting pregnant by using donor eggs from younger, more fertile women.

But as Liza Mundy, a *Washington Post Magazine* staff writer (and a writer for **Slate**), points out in her new book, *Everything Conceivable: How Assisted Reproduction Is Changing Men, Women, and the World*, there's often a rub to these treatments. The fertility industry has been far better at inventing awe-inspiring technology—and selling it to the public—than it has been at counseling patients about the risks of procedures and how these technologies will shape families, sometimes in ways they didn't anticipate. One of the clearest examples is the twins and triplets that now populate our day cares, elementary schools, and also, unfortunately, our newborn intensive care units. Some European countries limit the number of embryos a doctor can transfer during IVF; Great Britain, for instance, allows only two embryos, or three if a woman is over 40. The United States, by contrast, has no federal regulations on embryo limits. So, while a conservative doctor may opt for one or two, a cowboy physician—hoping to increase his clinic's pregnancy rates and thereby draw more patients—may implant four or five or more.

The result is an "epidemic" of twins in this country, according to some doctors. Twins (and, even more so, triplets and quadruplets) are more vulnerable to premature birth and the health problems that can accompany it. Indeed, as Mundy notes, human evolution designed women's bodies to carry one child at a time, which provides plenty of room for babies' brain development, cuts down on the risk of mothers dying in childbirth, and offers greater odds of full-term pregnancies. So, contrary to IVF's image of advancing medicine, Mundy writes: "The rise in multiple births is one way in which IVF is arguably setting us back," "creating babies who are—some of them—at a disadvantage."

Mundy, however, is not a doom-and-gloom sensationalist. She steers away from overly hyped fertility outcroppings, like cloning, egg freezing, and designer babies. She also reminds us that assisted reproduction has helped create many much-desired babies, most of whom are healthy. Still, her book offers an important chronicle not only of the existing technology, but also of the unanswered questions about the short- and long-term implications of reproductive medicine. Why, for example, do IVF babies—not just twins, but singletons, as well—tend to be born prematurely and smaller compared to non-IVF children? Why, too, are there higher rates of birth defects, including bowel and genital deformations, as well as a form of eye cancer, among IVF children? Mundy notes that parents who have trouble conceiving may somehow differ genetically from their fertile counterparts. Or the problems may be related to some aspect of fertility treatment. We don't have the answers yet, but patients should at least know about the question marks.

Along those same lines, Mundy focuses on growing questions about ICSI, the procedure in which sperm is injected into eggs. The Food and Drug Administration doesn't regulate ICSI, nor are there industrywide guidelines on counseling patients about it. Understandably, patients may believe it's best to sign on for any technology that boosts their pregnancy odds. But Mundy shows why it's more complicated. She cites research demonstrating that some men are infertile because of a deletion on the Y chromosome. Normally, these men don't pass along this chromosomal glitch because their sperm isn't capable of fertilizing eggs. But when they use ICSI, that all changes. The result: Through ICSI, these infertile men are passing along the chromosomal problem to their offspring, creating infertile sons. Whether or not patients learn about this risk depends on the clinic. Meanwhile, the procedure has become so widespread that some doctors use it for all patients—even if there is no indicated need.

IVF cycles typically cost about \$12,000, and only a handful of states mandate insurance coverage. So, when a doctor asks a patient, 10 minutes before the embryo transfer, whether she wants to implant two or three or four embryos—and she's recently taken out a second mortgage to fund her pregnancy attempts—it's pretty tempting to choose the greatest number of embryos, thereby upping the odds of pregnancy, but also the risk of twins, triplets, and quadruplets.

Undoubtedly, patients bear some responsibility to do the research and weigh their desire for an immediate pregnancy against the potential long-term risks of a multiple-birth pregnancy. But they shouldn't be left to figure it all out alone, and Mundy rightly argues for a greater role for the government in this business that, so far, has done little to regulate itself. An obvious starting point for regulation is to limit the number of embryos doctors can implant. That would go a long way toward curbing what has become a public health problem: premature and sick babies—some of whom will suffer lifelong problems. Now that we are three decades into making babies in labs, it's past time to ensure that reproductive technology isn't just concerned with making babies, but with making the healthiest babies possible.