

By Anne Marie O'Connor

very year, it seems like the outer limits of reproduction are being expanded. In 2017, Janet Jackson had son Eissa at age 50 (the notoriously private Miss Jackson did not disclose if she had any assistance). And in 2018, actress Brigitte Nielsen gave birth at age 54 after more than 10 years of undergoing in vitro fertilization (IVF) treatments, using eggs she had frozen when she was 40. In 2016, a 70-yearold Indian woman-the oldest ever to give birth—had a baby who had been conceived via IVF with donated eggs. (She and her husband said they had been trying the old-fashioned way for 46 years, but couldn't afford fertility treatments until then.)

And everyone knows a story of a non-celeb who had a surprise pregnancy that defied the odds, like my friend Kate, who got pregnant with her first child after a fling with an old college boyfriend...at age 44. Or my cousin, who had her seventh child at 47.

With all these stories of "extreme" maternity circulating, it may feel like you're the only one who's having problems conceiving. Though the more extraordinary stories of people who give birth at advanced ages garner the headlines, many, many more people—even couples who are still in their 20s—quietly struggle with infertility. About 12 percent of women aged 15 to 44 have difficulty getting pregnant or carrying a baby to term, according to statistics from

8 Centennial Health | *Infertility*

the Centers for Disease Control and Prevention (CDC).

SHATTERING THE MOM CEILING

As you probably already know, one major reason is that women are waiting longer to have children. "Fertility has always been a significant issue in women's health, but as the glass ceiling continues to shatter, new technology is being invented and women have the opportunity to treat their infertility," says Janelle Luk, MD, co-founder of Generation Next Fertility in NYC.

In fact, about 20 percent of women in the United States now have their first child after age 35 (which is called—not very flatteringly— "advanced maternal age"). And in 2016, for the first time ever, there were more women giving birth between the ages of 30 and 34 than between the ages of 25 and 28, CDC stats reveal.

"As a woman ages, her ability to produce healthy eggs declines," Luk explains. The statistics reflect this: About one-third of couples in which the woman is older than 35 have fertility problems. But it's definitely not just a "woman's problem": In one-third of cases, the male partner is the cause.

WE'VE COME A LONG WAY, BABY

But the good news is that there are more options to help you conceive than ever before—and there are even more developments on the horizon.

"The increased treatment of fertility is partially due to the revolutionary artificial reproductive treatments that have already helped many women become pregnant," says Luk. "Every woman's journey with fertility is

different, but I like to encourage my patients to take the fertility process one step at a time," she says. "The conventional fertility treatment will not work for every patient. I want to really know and educate all of my patients so that we can create the best individualized treatment to be able to best tackle her infertility step by step together." (For tips on how to find a

step-by-step, everything you need to know about the causes of infertility; the many types of treatments available; how to increase your odds of success, and how to maintain your sanity while going through the whole stressful process.

DEFINING IT Infertility is the inability to get pregnant after one year or longer of unprotected sex, according to the CDC.

doctor who's in sync with your needs, see page 22.) In this magazine, we'll explain,

THE HISTORY OF ASSISTED REPRODUCTION

THINGS HAVE GOTTEN A LOT MORE SCIENTIFIC OVER THE CENTURIES. WHICH IS A GOOD THING.



Artificial insemination is not as new as you might think: A paper in the journal Facts, Views &

Vision in ObGyn reported that the first documented case happened in London in the late 1700s, the brainchild of a Scottish surgeon named John Hunter. He advised a patient with a malformed penis to collect his semen in a warmed syringe and inject it into his wife's vagina. (Romance has never been a priority in assisted reproduction.)

Things got even more cringe-worthy with the first known case of artificial insemination using donated sperm. According to a report in the journal Fertility and Sterility, in the 1880s, a Philadelphia-area doctor named William Pancoast impregnated a woman whose husband was sterile with the semen of one of his medical students (he was selected because he was the handsomest guy in the class). Pancoast later told the husband, but the wife was never informed. The story would be lost to history except that the medical student spilled the beans many years later.

The field of assisted reproduction took a monumental leap forward in 1979, when Louise Brown, dubbed the first test-tube baby, was born via in vitro fertilization. Brown's mother had blocked fallopian tubes, explains Tomer Singer, MD, the vice chairman of education, reproductive endocrinology and infertility at Lenox Hill Hospital. "She was given medication to recruit

several follicles—each one contains an egg. Then they did a laparoscopy, which involved putting a camera and a syringe through the belly button, and draining all the [egg] follicles. The partner's sperm was introduced into the eggs: 100,000 sperm into each egg. The next day they saw there was an embryo, and three days later they transferred the embryo through the cervix into the uterus."

That first IVF involved "surgery, medication, retrieval, anesthesia, then putting the sperm around the egg and hoping it would make its way into the egg and fertilize an embryo," Singer notes, making it unrealistic for widespread use.

"The thing that really revolutionized IVF was when egg retrieval [began to be] done transvaginally, with a probe that goes into the vagina" rather than through an incision in the abdomen, he continues. "There were minimal complications and minimal pain."

Says Singer, "The next change was around 1993; we'd pick one sperm

that looked good under a microscope and inject it into an egg. Instead of just leaving 100,000 sperm around the egg and waiting 24 hours to see if one of the sperm had managed to penetrate, we actually imposed fertilization. That helped patients with severe male-factor infertility. This significantly changed the way we did things."

He continues: "The next revolution was the genetic screening of embryos." This procedure is now called preimplantation genetic testing and is in widespread use. "Instead of transferring the embryo five days after the egg retrieval, we do a small biopsy, removing three, four or five cells, then freezing the embryo and sending the cells for genetic analysis. Between 24 hours to seven days later we get the chromosomal makeup of the embryo," which is only implanted if it's healthy.

Since Louise Brown's birth, it is estimated that over 8 million babies have been born from IVF around the world, according to a 2018 report by the International Committee Monitoring Assisted Reproductive Technologies.

