

Assisted Reproductive Technology

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If you're old enough, you may remember all the hoopla about "test-tube babies" when the first child was conceived outside a woman's body in 1978. That original experimental procedure, called in vitro fertilization (IVF), is now just one of several fertility treatments available.

IVF has since been joined by a host of additional procedures which together are known as assisted reproductive technology (ART). With the discovery of new techniques, success rates for fertility treatments have increased. According to the Centers for Disease Control and Prevention (CDC), slightly more than 1 percent of all babies born in the United States in 2007 were conceived through ART, or a total of 57,569 babies. This is more than two and a half times the 20,840 born in 1996.

Success rates for these procedures vary, but in 2007, U.S. fertility clinics reported that 34 percent of all treatment cycles using nondonor eggs or embryos resulted in live-birth deliveries. Of course, success rates will vary depending on the age of the parents and other factors. Here is a rundown of the various procedures included under the umbrella of ART:

IVF

The grandmother of all other procedures, IVF refers to fertilization that takes place outside the womb. In preparation for the procedure, you will take hormones and other medications so that you produce multiple eggs each month instead of just one. Using ultrasound to locate the eggs, your doctor will remove them using a hollow needle, then mix them with your partner's sperm, provided the same day. The retrieval process can be uncomfortable, so it is customary to have mild sedation or anesthesia while it is carried out.

The fertilized eggs, now called embryos, are kept for several days while your doctor makes sure they are developing. Then one or more embryos are transferred into your uterus. The number of embryos transferred depends on your age and your particular circumstances. In 2008, the American Society for Reproductive Medicine updated its guidelines on the number of embryos that should be transferred in an effort to reduce the number of higher order multiple pregnancies. Their new recommendations range from no more than two for women under 35 to no more than five for women over 40.

Intracytoplasmic sperm injection (ICSI)

This procedure was developed to help men with low sperm count or sperm motility problems. One sperm is injected directly into an egg in a laboratory. Once fertilization occurs, one or more of the resulting embryos is placed in your uterus just as in conventional IVF.

Gamete intrafallopian transfer (GIFT)

A variation on IVF, this technique promotes fertilization in your fallopian tubes, rather than in the laboratory. Laparoscopy -- a type of surgery in which a surgeon works with a light-bearing laparoscope and other instruments through a small incision in the abdominal wall -- is used to transfer the sperm and eggs into the tubes. Some couples choose GIFT for religious reasons, because the eggs are not fertilized outside the body, but the procedure has become very rare, making up only about .1 percent of ART procedures.

Zygote intrafallopian transfer (ZIFT)

ZIFT is similar to GIFT except the eggs and sperm are combined in the lab, then inserted into the fallopian tubes at the "zygote" stage (hence the name). This procedure, which also requires laparoscopy, is rarely performed due to the increasing success rates of IVF, which eliminates the need for laparoscopy.

Donor egg or embryo

If you're unlikely or unable to conceive using your own eggs, you can use eggs donated by another woman. The downside is that the child will not be genetically related to you, but the upside is that using donated eggs can greatly increase your chances of pregnancy. (The average live-birth rate for egg donation with a fresh embryo in 2007 was 55 percent.) The donated eggs are combined with your partner's sperm, and then the embryo is implanted in your uterus. Procedures using donor eggs represented about 12 percent of all ART cycles in 2007. This can also be done with both donated sperm and eggs. Some couples also use frozen embryos donated by couples who have them left over from their own infertility treatments. Success rates are lower (32 percent) with frozen embryos.

Surrogacy (or use of a gestational carrier)

You may choose to have another woman carry your embryo to term if your body is not capable of sustaining a pregnancy. If the same person who donated eggs carries the baby, she is called your surrogate. If you use your own eggs or embryo, then the woman who bears the child is called a gestational carrier.

Surrogacy is one of the most expensive ART procedures. Generally, assisted reproductive technologies can range from several thousand dollars to tens of thousands of dollars for a gestational carrier using your frozen embryos. Before you get too deep into your decision-making about how far you'd go to have a baby, it would be best to check with your insurance carrier about how much of the cost of these methods is covered.

<http://consumer.healthday.com/encyclopedia/fertility-19/infertility-news-412/assisted-reproductive-technology-646159.html>