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DR. SHERMAN SILBER**

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The Journey Through Infertility

COUPLES TURN TO ASSISTED REPRODUCTIVE TECHNOLOGIES TO CONCEIVE

by Tanya J. Tyler

An estimated one out of every five American couples is infertile. Infertility is defined almost randomly, said Dr. Sherman J. Silber of The Infertility Center of St. Louis, one of the country's leading fertility clinics.

"The standard arbitrary definition of infertility that almost everybody accepts is unprotected intercourse for a year without getting pregnant," said Silber, who is considered to be the world's leading authority on several methods of assisted reproductive technology. He is also the author of *How to Get Pregnant*.

Infertility is epidemic in this country, Silber said. "The reason for the huge increase in infertility that we're seeing is related to the age at which couples try to start having kids," he said. "The incidences of infertility are always related to the age of the female partner. In teenagers it's about 0.2 percent. But by the time you're in your early 20s, it's up to 2 percent. Two percent is a very low figure for infertility, but on the other hand, it's a tenfold decline from when you were a teenager." By the time a woman reaches her early 30s, the infertility rate goes up to 20 percent – a hundredfold decline.

The man's sperm count is often a contributing factor to a couple's infertility.

"It's true that in about 50 percent of infertility cases, the husband's sperm count is low, but that is not the only problem," Silber said.

Raising a man's sperm count with hormones and other treatments is useless, he maintains. "The man's sperm production rate is constant and it's controlled by his genes," Silber said. "It's a waste of time to try to raise his sperm count."

A peculiar condition known as polycystic ovary syndrome also affects fertility.

"Some women are born with gigantic numbers of eggs," Silber explained. "And that's beautiful in the sense that they've got this heavy endowment of eggs. But all those eggs suppress the early follicle-stimulating hormone rise that's supposed to occur when you have day one of your menstrual cycle, and so by suppressing your pituitary gland, they prevent ovulation."

The most important factor for overcoming infertility is how frequently a couple has sexual intercourse.

"Maybe they're having sex once a month or twice a month, but they're not very likely to connect if their sexual history isn't that frequent," Sil-

ber said. "Normally you should be having sex two or three times a week if you're trying to get pregnant."

Couples these days often have hectic lifestyles and demanding jobs that make it difficult for them to schedule time for intercourse. Quite often they're too tired or too stressed. But if you want to have a baby, you have to make time for sex.

"When the wife ovulates, that egg is only alive for eight to 12 hours, so you always want sperm in the genital tract," Silber said. "The sperm will live for two or three days. So if you have sex two or three times a week, that's adequate. But if you're not having an adequate sexual history, that's a big problem."

Some couples turn to assisted reproductive technology to help them conceive. Since the birth of Louise Brown, the first "test tube" baby, in 1978 – conceived through in vitro fertilization (IVF) – these technologies have evolved and improved, giving couples a wide array of options in their quest to become parents.

Besides IVF, other assisted reproductive technologies include intracytoplasmic sperm injection (ICSI); transvaginal ovum retrieval (OCR); zygote intrafallopian transfer (ZIFT); and gamete intrafallopian transfer (GIFT).

In IVF, the woman's eggs are fertilized with the man's sperm outside her body in a test tube or a culture dish, and the resulting embryos are returned to her. IVF was originally used in cases where damaged fallopian tubes prevented natural pregnancy, but now it is the go-to option for virtually all types of infertility. In order to retrieve multiple eggs for IVF, the woman must receive injections with hormones and carefully monitor her ovaries by ultrasound and her hormone levels by blood tests every day or every other day until she is ready for the egg retrieval.

With ICSI, a single sperm is injected directly into an egg. This procedure is recommended for women whose partners have low sperm counts.

"We couldn't do that before 1992," Silber said. "When we studied it, we found that even if the sperm count isn't low, you get a higher fertilization rate and more embryos by directly injecting the sperm. We do no harm to the egg in the process."

With OCR, a small needle inserted through the back of the vagina is guided via ultrasound into the ovarian follicles to collect the fluid that contains the eggs. In ZIFT, egg cells are removed from the woman's



ovaries and fertilized in the laboratory. The resulting zygote is then placed into the fallopian tube. With GIFT, eggs are also retrieved from a woman's ovaries and fertilized in the laboratory, but the resulting healthy embryos are returned to the woman's uterus instead of the fallopian tube. Advances with IVF have made GIFT less in demand.

When a couple comes to The Infertility Center for an evaluation, the first thing Silber does is a three-dimensional ultrasound and follicle count on the woman. The man is tested to make sure he is producing sperm. Even men who have had a vasectomy can have their fertility restored. Silber performed the first microscopic vasectomy reversal procedure in 1975.

"Our results are spectacular," Silber said. "Ninety-five percent of the men [we treat] completely regain normal fertility. Everybody thought [vasectomy reversal] was impossible because the tubes are so tiny, but my experience as a microsurgeon and my laboratory research showed me that we could certainly do it."

With some Japanese colleagues, Silber also developed the minimal-stimulation IVF, a unique approach that reduces much of the complexity associated with standard IVF but retains comparable success rates. Mini-IVF is beneficial for older women and women with low ovarian reserve. It does not require the daily hormone and progesterone injections a woman has to endure for several months with standard IVF. Mini-IVF is designed to recruit only a few good eggs, thus avoiding the risks of hyperstimulation and reducing the number of injections needed. And it costs less than regular IVF.

"The mini-IVF procedure costs about one-third of what you'd expect it would cost," Silber said. "We get fewer eggs [than conventional IVF], but those eggs are really high quality, so we get two good embryos out of it and then we freeze those embryos." A month later, the woman comes back and more embryos are harvested and frozen.

The cryogenic procedure does not harm the embryos. In fact, Silber recommends women take the time to freeze their eggs for future use. He realizes women are pursuing degrees and careers and might not find "Mr. Right" right away.

"If I were king and I could issue edicts, I would tell every 23-year-old girl they should have their eggs frozen," he said. "Then they don't have



to worry about their biological clock and they can get pregnant whenever they want. So many young women today say, 'I don't really want to have kids. They're too much trouble. I'm just not that maternal.' But by the time they're 40 or 45, they all want babies."

The Infertility Center never destroys embryos. "Many patients are concerned – they don't want the embryos discarded or being researched on," Silber said. "We reassure them we are a right-to-life program and we will not discard an embryo and we won't do embryo research. People wonder: 'What's going to happen to my embryos?' Nothing's going to happen to your embryos. We store them here."

So how much do the different procedures cost? "Most clinics do \$10,000 worth of tests ahead of time that are worthless, so the couple is already \$10,000 in the hole and their IVF on average will cost \$15,000 to \$16,000," Silber said. "The drugs are very expensive."

This is one reason Silber recommends the mini-IVF. "Instead of \$5,000 worth of drugs, it's \$500 worth of drugs, and the whole cost is about \$9,500," he said.

Insurance does not usually cover infertility treatments. Silber said there are a few states, including Massachusetts and Maryland, where insurance will cover the procedures, but you must live and work in these states; you can't just go there for infertility treatments and then return to your home state.

Silber makes sure his patients understand the emotional aspects of undergoing the procedures. "The one thing I make clear to them is this is a very intimidating experience to go through," he said. "It's very emotional. It's easier to take care of cancer patients who are in danger of dying than infertility patients. The emotions are incredible."

The reward for Silber comes at Christmas. "We have more than 10,000 Christmas cards from happy people with pictures of their baby," he said.

Any couple considering utilizing assisted reproductive technology needs to do their homework and investigate all the possibilities available to them.