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P.O. Box 1676
Frisco, Texas 75034
Phone: 972.335.1181
Toll Free: 877.781.7067
Fax: 214.722.2313

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It's Time to Start a Family

...

Easy for most,
more difficult for some

by Emily Foshee

We at Frisco STYLE are aware that our readers vary widely in age and interest. We also strive to deliver meaningful content to our readers, and from time to time there are articles that may not be appropriate for readers of all ages. Due to the mature nature of infertility, the causes and treatments, we urge all our adult readers to review the article and exercise personal discretion with regard to younger family members.

TRICIA AND STEVE FRENCH have enjoyed every moment with their newborn daughter, Audrey. Audrey, who looks like her Dad, was born in June 2004.

"Motherhood is much more fulfilling than I thought it would be," says Tricia. It's also much more work! We're tired...really tired! – But we're happier than we've ever been."

To Tricia and Steve, the rewards are worth all of the struggles, heartache and disappointments they experienced on their journey to parenthood.

There was a time, however, when life for Tricia and Steve French wasn't as happy. There were no birth announcements to send. No baby to love. No bottles to prepare or diapers to change. Tricia and Steve had unsuccessfully tried to get pregnant for more than two years, and like so many couples throughout the United States learned, through a diagnosis of infertility, they wouldn't be able to conceive a child without medical assistance.



Tricia, Audrey and Steve French

photo provided by Tricia French

WHAT IS INFERTILITY?

If you and your partner have been trying to conceive for longer than 12 months without success (six months if the woman is over 35), or if you are unable to carry a pregnancy to term, you may be infertile. Contrary to popular belief, men and women contribute almost equally to the difficulties couples experience in achieving conception. Both men and women may have hormonal imbalances that prevent their reproductive systems from functioning normally, and both sexes can have blockages or malformations of their reproductive organs. Men and women alike are vulnerable to sexually transmitted diseases, which can damage or block parts of their reproductive

tracts.

Fertility in both men and women declines with age, but age-related fertility issues are far more common in women. Typically fertility starts to decline in women around age 30. By age 40, 34 percent of women have difficulty conceiving, and by age 45, 87 percent of women are infertile.

As a woman ages, the eggs remaining in her body, which have been there since she was born, may begin to develop abnormalities. Older women are also more likely to experience other health problems that can contribute to infertility, such as endometriosis or uterine fibroids.

In men, decreased fertility is generally due to not producing enough sperm, the sperm may have trouble moving or a sizable proportion of the sperm may be abnormal.

The culture in the United States supports the creation of a lifestyle that contributes to a couple having difficulty conceiving a child. Because many women choose to pursue a career before beginning a family, a primary cause of infertility is the age of the

"I'm not surprised I had trouble conceiving a child," says Tricia. "My husband and I had been trying to get pregnant for several years, and began working with a reproductive endocrinologist in 2001."

Tricia, 32 years old and Steve French, who is 33, chose to pursue in vitro fertilization and began the procedure in January of 2003. Tricia became pregnant on the first try, but miscarried in May when she was 14 weeks along. They took three months off from the procedure before beginning again, and in September of 2003 Tricia became pregnant.

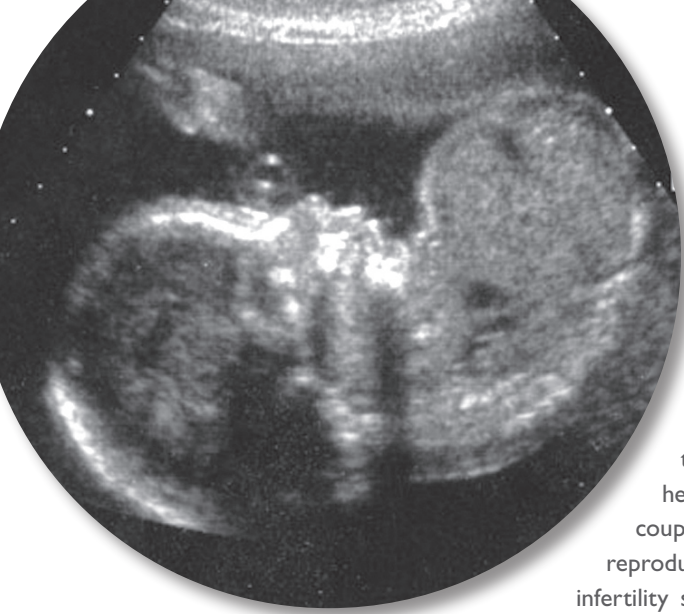
"The emotional stress was terrible," said Tricia. "I wasn't enjoying my life because I was always too worried about getting pregnant. The medications I was taking made me very moody and irritable. And," she concluded, "my husband was just as stressed as I was during this difficult time in our marriage. He hated seeing me so upset, and the financial aspect of undergoing in vitro fertilization is significant. We were very fortunate, because our insurance

covered part of my IVF procedure." In vitro fertilization can cost between \$8,000 and \$12,000.

"Many more couples experience infertility than you might think," stated

"I'm not surprised I had trouble conceiving a child," says Tricia. "My husband and I had been trying to get pregnant for several years."

Dr. Lisa Halvorson director of the Division of Reproductive Endocrinology and Infertility UT Southwestern Medical Center. "More than six million adults within reproductive age, or one in six couples throughout the United States, can't conceive a child without some form of medical intervention."



mother who is attempting conception. Approximately 20 percent of women in the United States have their first child after age 35, thereby creating the need to utilize medical intervention to conceive more than ever.

Occupational and environmental risks may also contribute to infertility. Studies suggest that prolonged exposure to chemicals, radiation or heavy electromagnetic or microwave emissions may reduce fertility in men and women. Additional lifestyle characteristics such as being overweight or underweight, and smoking, which may increase the risk of infertility in women and may reduce sperm count in men, are also common factors in contributing to infertility. In addition, drinking as few as five alcoholic beverages per week may impair conception.

FINDING THE BEST TREATMENT FOR INFERTILITY

Fortunately, couples experiencing infertility have many treatment options available to them. In some cases, timing alone solves the problem. In other cases, medication may be required. Others need surgery to correct problems with their reproductive organs. And yet other couples opt for more high-tech therapies such as in vitro fertilization or intrauterine insemination.

"If a couple fails to conceive a child within one year, then they should seek help from their healthcare provider," said Dr. Halvorson. "If a woman is 35 years

old or older, or if there is a reason to be suspicious of other fertility problems, (such as the woman not having regular menstrual cycles), then the couple should consult their doctor sooner. Depending on the expertise of the initial healthcare provider, many couples will be referred to a reproductive endocrinologist, or infertility specialist, for evaluation and treatment."

The physician will initially ask for the couple's medical history prior to conducting an in depth fertility examination. This exam includes two rounds of blood tests. The first determines if the prospective mom is ovulating appropriately. The second group of tests is designed to confirm there is no risk of disease present, thereby ensuring a healthy pregnancy. Then the uterus and fallopian tubes are examined. This procedure is usually done by injecting dye into the uterus and fallopian tubes. An x-ray evaluation, or

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hysterosalpingogram, is then conducted to determine that the inside of the uterus (the uterine cavity), has a normal shape and size, and that the fallopian tubes are open. Many abnormalities may be surgically corrected. Alternatively, blocked fallopian tubes may be bypassed with in vitro fertilization. Additional

tests may be performed, including:

- Ovarian Reserve Testing: This blood test helps to evaluate whether the female's ovaries are providing viable eggs.
- Ovulation Testing: Several tests may be conducted to determine whether eggs are being released from the woman's ovaries on schedule. Other ovulation assessments the doctor may recommend include luteinizing hormone testing, ultrasound monitoring, mid-luteal progesterone testing, or endometrial biopsy.

The doctor may also perform additional tests, including the post-coital test, cervical mucus penetration test, cervical cultures, immune testing, or a laparoscopy, which is a diagnostic surgical procedure to determine if endometriosis is present.

In order to provide as comprehensive an exam as possible, the reproductive endocrinologist typically will recommend that the husband undergo a semen analysis, where the sperm concentration, sperm motility, and morphology, or shape, of the sperm, will be evaluated.

If the test reveals that abnormal sperm may be contributing to the couple's conception difficulties, treatment will be recommended to correct the issue prior to pursuing additional steps. Depending on the severity of the abnormality, the physician may recommend that the husband consult an urologist prior to pursuing any additional steps.

IDENTIFYING THE PROBLEM TO BE TREATED

Upon completion of these tests, the type of infertility treatment selected will be determined by four conditions:

- Is the female ovulating? – There are treatment options available to help with ovulation difficulties.
- Is the male producing enough healthy sperm? – If not, hormone medications or sperm retrieval may be an avenue to pursue.
- Is the sperm mobile enough to reach the egg and strong enough



pressure and premature delivery.”

AN INCREASED FINANCIAL COMMITMENT

The financial aspect of utilizing these medications must be considered. Clomiphene citrate costs a few hundred dollars per month, while the injectable medications may cost \$2,000 to \$3,000 per month. Blood tests and ultrasound monitoring will also be performed totaling an additional \$500 to \$1,000 per month.

UNDERSTANDING THE RISKS OF TREATMENT

Each treatment option has advantages and disadvantages, and selecting the most appropriate course of action is a highly personal decision that requires a great deal of soul searching. Many treatment plans are complicated and can be potentially fraught with emotional, religious,

to fertilize it? The specific situation of each patient will dictate the wisest treatment choice, which may include surgery or assisted reproductive technologies (ART).

- Can the egg be implanted in the uterus? – If the fertilized egg is unable to develop and attach to the uterine wall, hormone therapy or surgery may be recommended.

“Although we know a great deal about the human reproductive system, there are still situations that occur where an exact cause of infertility cannot be determined,” said Dr. Halvorson. “Five to twenty percent of infertility cases are considered to be unexplained. But that doesn’t necessarily change the treatment options available to a couple, or their potential success rate.”

In the most simplistic terms, the goal of medical intervention is to retrieve more eggs, and get more sperm near the eggs to increase the chance of a pregnancy. “The more intervention a couple pursues, the costlier it becomes,” said Dr. Halvorson, “but, of course, their chance for success also increases.”

Two methods are used to improve the development of mature eggs, a process known as ovulation induction.

Clomiphene citrate, an oral medication, is useful for women who do not have regular menstrual cycles and may also be used in couples who have been diagnosed with unexplained infertility. A woman using clomiphene citrate has approximately a 10 percent chance of getting pregnant per menstrual cycle; the chance for multiple births is approximately 20 percent (the vast majority of these are twins).

Injectable medications, the second method used to capture eggs, contain a purified follicle-stimulating hormone, and are administered by an insulin syringe. The success rate for this treatment is 15 to 20 percent, sometimes escalating to as high as 30 percent per menstrual cycle. Approximately five percent of pregnancies resulting from the injectable treatment result in triplets or quadruplets. “If a couple is concerned about having multiple births,” commented Dr. Halvorson, “then the injectable treatment may not be for them. Another consideration,” she continued, “is the risk of an abnormality in the fetuses that may occur in multiple births...not because of the medication the mother has taken, but simply because of the complications that can occur in these pregnancies, including diabetes or high blood

For a normal fertile couple trying to conceive, the chance of succeeding in any given month is about 20%

57% of couples will conceive within three months



75% of couples will conceive within six months



85% of couples will conceive within one year

psychological, legal and moral issues that must be very carefully considered and resolved on a personal basis by each couple.

Fortunately, there are many treatment options available today that are very effective. Fertility drugs, such as clomiphene citrate and injectable medications, are just one avenue couples have available to assist them in conceiving a child. In addition to



*Jingying Yang, PhD, in the
Reproductive Endocrinology Lab of UT Southwestern Medical Center
photo by Chris Johnson*



Dr. Lisa Halvorson of UT Southwestern Medical Center

photo by Chris Johnson

fertility drugs, the most effective assisted reproductive technology (ART) conception treatments include:

- Intrauterine Insemination (IUI) is the process in which sperm are directly placed in the uterus in an attempt to achieve conception. This procedure is recommended when the male is experiencing mild to moderate male factor infertility.

The mother-to-be is provided medication (either clomiphene citrate, or injectable medications), to develop additional mature eggs. Insemination is then timed to coincide with ovulation. Once a semen specimen is obtained, it is processed in the laboratory to separate the sperm from the other semen components and concentrated in a small volume. This process takes between 20 to 60 minutes. Then, a thin, flexible catheter is inserted through the cervix and the highly motile sperm are placed in the uterus.

Success rates for intrauterine insemination vary considerably and are influenced by many factors, including the age of the woman, type of ovarian stimulation used (if any), duration and cause of infertility, number and quality of mobile sperm in the washed specimen, and other factors. For a couple with a mother 35 years old and

a father with healthy sperm that has tried to get pregnant for two years and is diagnosed with unexplained fertility, achieving conception and delivering using IUI and clomiphene is about five percent per month for up to three cycles. Couples can expect a 15 percent monthly success rate if they combine an injectable medication with IUI.

- In Vitro Fertilization, or IVF, which is accomplished when the woman's egg and the man's sperm are combined in a lab dish, where fertilization occurs. The mom-to-be is prescribed injectable medications to assist in capturing the most mature eggs possible.

At the appropriate time during her menstrual cycle, the mom is sedated, and in an operating room setting, the doctor uses a vaginal probe ultrasound to extract as many healthy eggs as possible. Five to fifteen of the healthiest eggs are then selected, put in separate culture dishes, and mixed with the husband's sperm. They're observed for five days for development. Usually, by day five, fertilization has occurred in several eggs. Upon fertilization, the eggs become embryos. At that point, the doctors select two of the healthiest embryos by performing a pre-implantation genetic diagnosis

(PGD) to screen out potential diseases or abnormal chromosomes. The healthiest embryos are then selected and implanted in the uterus to develop naturally. Typically physicians will not consider gender when evaluating the embryos through microscopic evaluation.

"We usually plant two embryos in the uterus to give the couple the best chance for a live birth," said Dr. Halvorson. "If one of the embryos doesn't survive, then the other one that is still viable will, with luck, result in a live birth." And, by implanting only two embryos, doctors decrease the rate of the mom giving birth to triplets.

In vitro fertilization has been a popular choice for couples for several reasons. Its success rate is fairly high: 30 to 40 percent of women become pregnant per menstrual cycle. And, if a couple desires to have additional children in the future, other healthy embryos resulting from an IVF procedure can be frozen for

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future use.

Couples selecting IVF should expect to pay between \$8,000 and \$12,000. Some health plans cover portions of the procedure, however.

If IVF is not successful by utilizing the traditional method (combining the mother's egg with the father's sperm), it may be implemented in a variety

of other ways, such as egg donation, sperm donation, or Intracytoplasmic sperm injection (ICSI).

Egg Donation has become a mainstay of infertility therapy in the United States. According to the most recent statistics, slightly more than 11 percent of all IVF cycles in this country involved donor eggs or embryos.

MAKING A DIFFICULT INFORMED DECISION

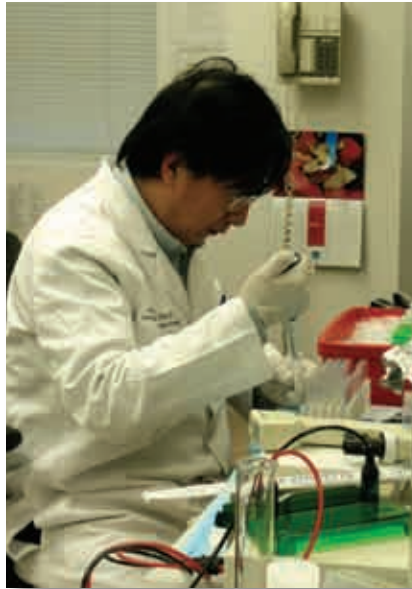
Typically, a couple will have three types of meetings during their decision process: a meeting with their reproductive endocrinologist, their mental health professional and/or the ovum donor coordinator, and a meeting with a financial specialist to discuss the financial aspects of the procedure. The expense will vary, depending on how the egg donor is selected. The American Fertility Society suggests that donors should be paid to compensate for their time and the risk involved in their participation. Typically, egg donors are compensated between \$4,000-\$5,000.

How do you find an egg donor? Approaching a friend or sister who is willing to be a donor has been a successful option for many couples. Other options include advertising in a college newspaper, utilizing fertility organizations, psychologists, and social works are other options. Some fertility programs have their own egg donors.

There are many things to consider when selecting an egg donor. Some couples prefer an anonymous donation, while others want to meet and get to know their donor. No matter what option couples prefer, there are specific guidelines to adhere to during the selection process. First, the donor should be no older than 35 years old. She should match as many of the couple's desired characteristics as possible. Of course she should not have any family history of birth defects or hereditary disease. She should undergo a medical and social history evaluation, a physical exam, psychological screening and laboratory screening for sexually

transmitted diseases.

Once an egg donor is selected, her eggs can be retrieved. On that day, the dad-to-be will supply a semen specimen to fertilize the eggs. At this point, the same IVF procedures are used to monitor the egg's fertilization. Upon fertilization, two or three embryos will be transferred to the mom's uterus to develop naturally.



"If IVF is not successful by utilizing the traditional method (combining the mother's egg with the father's sperm), it may be implemented in a variety of other ways..."

There are numerous advantages for using egg donation: experienced programs report clinical pregnancy rates of 50 percent per egg donation cycle. These success rates are higher than pregnancy rates with IVF cycles, using a woman's own eggs. Even though the egg donor provides half of the genetic makeup of the embryo, the mom-to-be controls the prenatal environment

and prenatal nutrition. And, the mom-to-be is able to experience pregnancy from beginning through childbirth and breast-feeding.

However, after educating themselves on the advantages of egg donation, a couple must thoroughly consider the emotional issues involved, and be prepared to answer a variety of questions, such as:

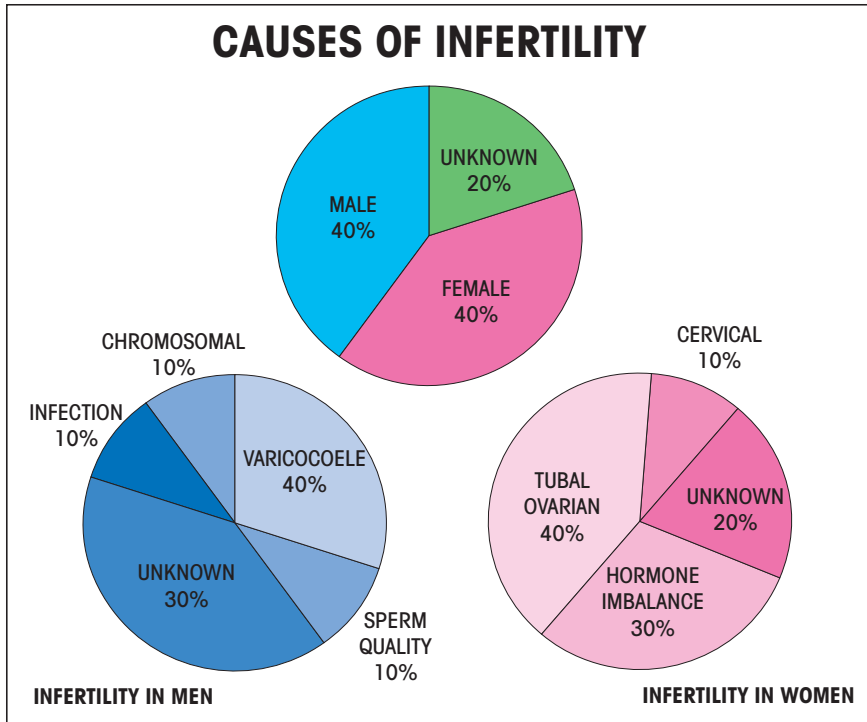
- Will they be comfortable giving birth to a baby conceived with the use of someone else's eggs?
- Will the mom be able to accept the fact that her child will have her husband's physical and emotional traits but not her own?
- Will the parents tell their child about his/her background? If so, when? And how will the child be told?
- Are the parents aware of the legal issues surrounding IVF with donor eggs? How would the couple feel if the donor provided eggs to another couple?

Sperm Donation is another option for couples desiring to become parents. There are approximately 150 sperm banks in the United States. Anonymous donors to sperm banks are chosen by characteristics such as eye and hair color, education level, ethnicity and personality.

Each sperm bank has its own set of requirements, and potential parents must review the qualifications of each sperm bank to select the one that is best for them. However most sperm banks will require:

- An extensive family health history with no indication of major genetically linked disease.
- The donor must have a lifestyle that is low risk for contracting communicable diseases.
- Complete physical exam, and approval by an independent physician.
- Donors are questioned and examined for evidence of sexually transmitted diseases.
- Urinalysis and microscopic exam.

Fertility Chart from
www.couplescompany.com



- Semen Analysis with excellent count, motility, and normal strict morphology study (i.e. normal semen analysis parameters).
- Screening for drug abuse.
- Excellent sperm survival following thaw of a frozen sample.

Potential donors must have a high sperm count and good medical history. Once a donor has been accepted and has provided semen, technologists analyze the samples, rejecting those with any serious genetic flaws or sexually transmitted diseases. Sperm that is accepted is then frozen at -320 degrees and quarantined for six months prior to sale. Vials can cost as much as \$275 each, and vary upon which sperm bank is utilized.

Egg and sperm donation provides a viable option for couples that want either the man's or woman's physical and emotional characteristics passed along to their child. However, there are concerns about this choice that don't exist when pursuing other avenues. Egg and sperm donors donate multiple times, and their egg or sperm are used by couples throughout the world to conceive a child. Even though the odds are miniscule, it is possible that

children conceived in this manner may inadvertently meet and marry a half sibling. It is important, therefore, that these children be informed of how they were conceived, and that they have access to the sperm/egg donor's medical history through the clinic their parents selected to obtain the donated egg/sperm.

Infertility Resources
 ..
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www.arcfertility.com
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Intracytoplasmic sperm injection (ICSI) is a form of IVF used when male infertility is the issue. ICSI is a process that involves the injection of a single sperm directly into a mature egg. Because ICSI is a fairly new procedure, and was first performed in 1992, there is not a large amount of data available regarding the success of the procedure. The results available to date reflect fertilization occurs in 50 to 80 percent of eggs injected through the ICSI procedure. And, approximately

30 percent of all ICSI procedures performed in the U.S. in 1998 resulted in a live birth, which is comparable to the success rates of traditional IVF.

Other methods of fertilization include pre implantation (PGD), a procedure that involves removing a cell from a developing embryo that is still in a culture dish in the laboratory. This cell may then be tested for chromosomal abnormalities such as Trisomy 21 (Downs Syndrome) or other inherited diseases. PGD can also be used for gender selection, although this is usually reserved for couples at risk of transmitting disorders, which affect a single gender (usually males). Not a standard part of the IVF procedure, PGD is only used in selected circumstances.

CURRENT SUCCESS AND ADVANCES FOR THE FUTURE

"Medical science has made tremendous strides in helping couples conceive, and the future looks very bright indeed," says Dr. Halvorson. "In the future, we hope to be better able to evaluate the health of an embryo without harming it. We can successfully freeze embryos and sperm, and are working on improving the process of freezing eggs. This will be very useful to women who are having treatment for serious illnesses such as cancer, or for women who are delaying childbearing for other reasons."

Parenthood is no longer an impossibility for most infertile couples. There are a multitude of ways to have a family, and more possibilities are just around the corner. But whatever avenue moms and dads-to-be decide to take to have a baby, the end result will always be the same: a wonderful, joyful infant that turns their lives into a whirlwind of activity and brings immeasurable happiness into their lives.

Just ask Tricia and Steve French.

Emily Foshee is a freelance writer living in Frisco.