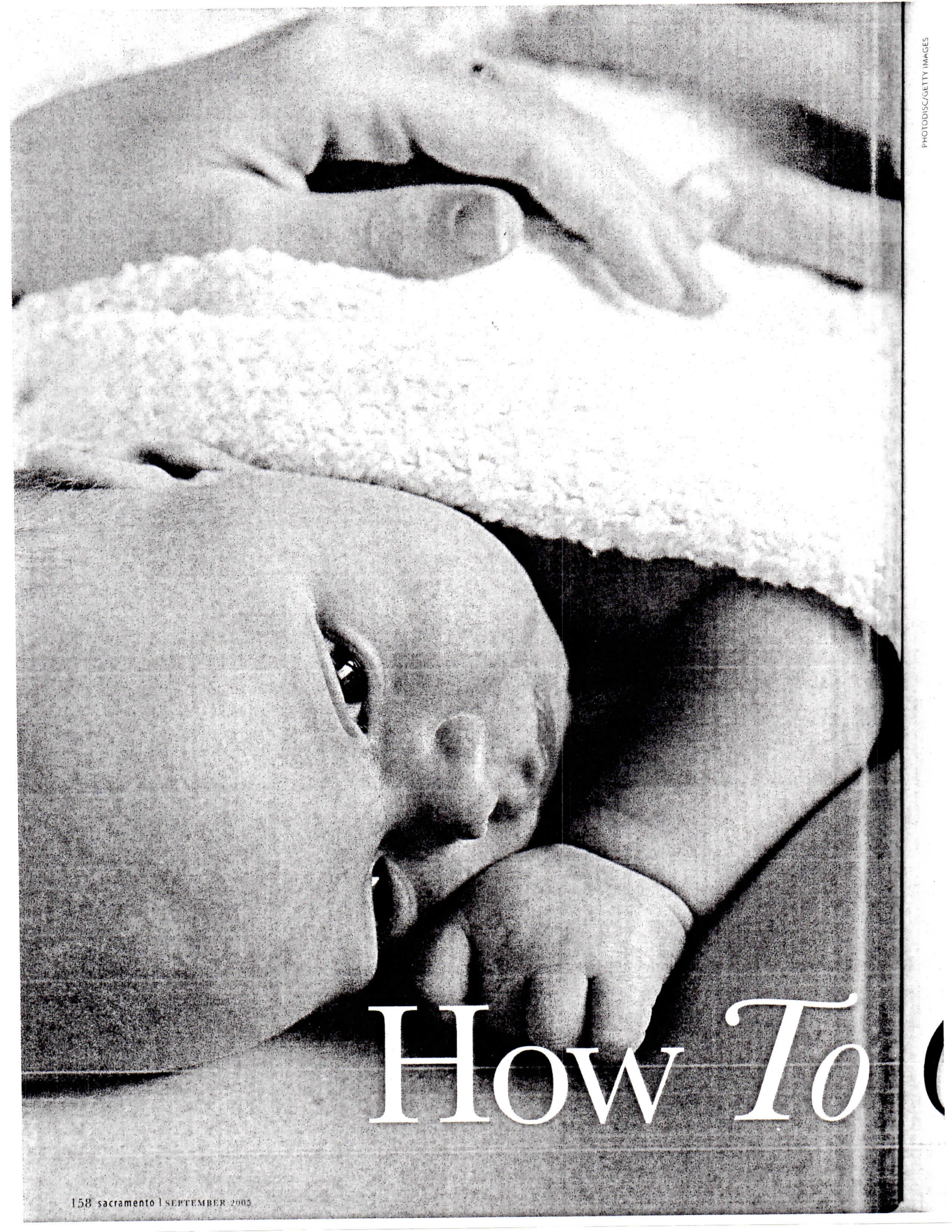
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How To

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When sperm fails to meet egg, technology often can help.

By Thea Marie Rood

There comes a time in many women's lives—men's, too—when you dream babies. Blond babies, bald babies, babies with that wild troll hair. While you're in this state, babies are everywhere you go—even when you're not actively looking for them—secured snugly in the back of the Volvo station wagon beside you at the traffic light; waving from a backpack up ahead when you're walking the bike trail; grinning toothlessly in the front of every grocery cart. Like a love-struck adolescent, you lose track of conversations if an infant passes by, spend hours admiring nurseries in Pottery Barn catalogs, find yourself doodling baby names on your memos at work.

In a perfect world, this baby dream eventually produces a reality: a squalling, red-faced tyrant you would lay down your life for. But what happens if you throw out the birth control, give yourself up to nature—and nature fails to cooperate?

It's estimated between 10 and 20 percent of couples are unable to conceive after 12 months of active trying (the clinical definition of infertility), and eventually turn to doctors for help. On the one hand, it's nothing short of a modern miracle that help exists—up until fairly recently, unless couples could adopt, they remained heartbreakingly childless. On the other hand, we've all heard the negative stories about fertility treatments: exorbitant cost, emotional upheavals, unreliable outcomes. There also have been disturbing health rumors for both mother and baby.

So what's the reality? Are there risks? And are they worth it? This month we talk to some local experts—and two couples—to find out.

Get Pregnant

First off, it's important to realize you don't necessarily have to wait 12 months after you start trying to conceive to see a fertility specialist. Statistics show 50 percent of pregnancies happen in the first three months, and 85 percent happen in the first six months. "Ovulation predictors [like Clear Blue Easy] are very inexpensive—$18 at Target or Wal-Mart," says Curt Klooster, M.D., acting chair of the fertility medicine department for Kaiser Permanente. "Not only does it help patients with timing, but if it's not turning positive, you know you're not ovulating [and] you're not going to get pregnant. And you should come in right away."

Secondly, a referral to a fertility specialist doesn't automatically mean you're facing complicated, high-tech, expensive procedures. Only a small number of couples require the most sophisticated (and costly) fertility treatment: in vitro fertilization, wherein an egg is fertilized outside the body and then transferred to the woman's uterus.

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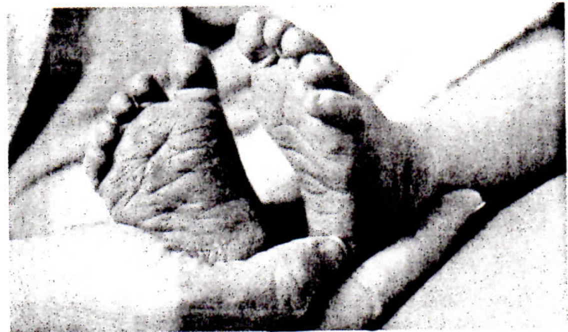
Causes—and Their Solutions

"About 25 to 30 percent of women we see are not ovulating," says Carlos E. Soto-Albors, M.D., director of the Northern California Fertility Medical Center. "In patients for whom this is the sole problem—their tubes are open, their partner's sperm count is OK—we can get 80 to 90 percent of them to ovulate by giving them [an oral] tablet of clomiphene citrate. And half of them will get pregnant."

For the other half, there is still another relatively simple solution before turning to IVF. "The next step is injectable [fertility] medications," says Soto-Albors, adding that although these drugs cost more than oral tablets, they are highly successful, especially when combined with artificial insemination. "Patients can proceed with the injectables alone," he says, "but even if the husband has a normal sperm count, there is a better pregnancy rate when used in combination with intrauterine insemination." About half of these patients also will get pregnant.

The second most common female fertility problem involves the fallopian tubes, which may be either totally or partially blocked, often from pelvic adhesions or scar tissue. Although this condition can be caused by endometriosis, by far the most common cause is a totally preventable one, say experts: sexually transmitted disease. "It used to be gonorrhea, but we don't, of course, see that as much anymore," says Soto-Albors. "And the thing about gonorrhea is it carried a high fever and intense pelvic pain, so it drew women into the clinics. Now the most common disease is chlamydia, which has much milder symptoms that women often attribute to something else. By the time they find out they were exposed, often the damage is done."

Physicians used to turn first to surgery, hoping that by unblocking the tubes, a normal pregnancy



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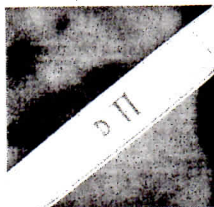


Protecting Your Fertility

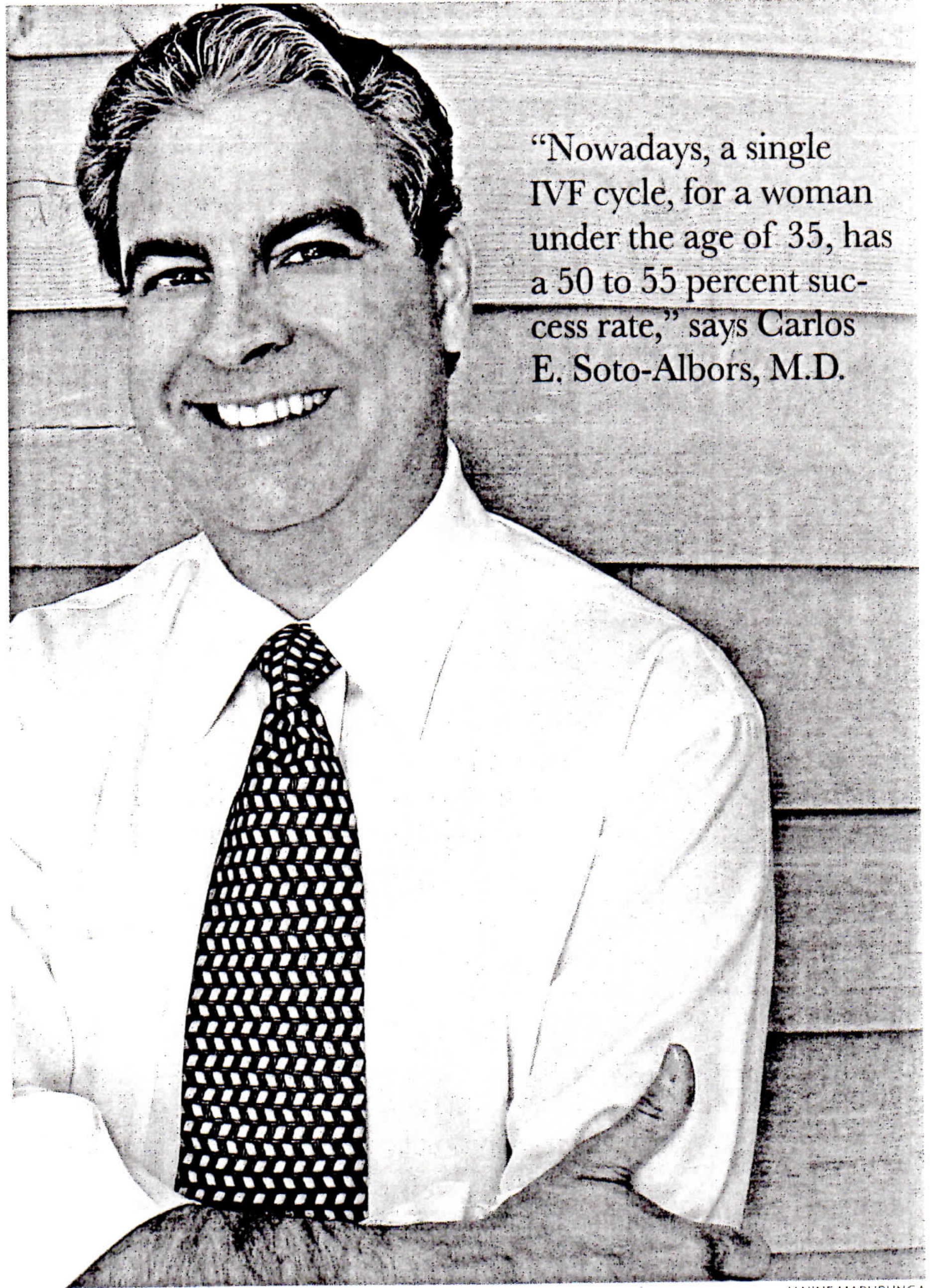
Charming and brilliant as fertility specialists are, most of us don't want to actually have to meet one—professionally—nor turn over our home equity. So how do you keep your fertility intact?

- Use a condom during intercourse unless you are trying to conceive. Birth control pills protect you from pregnancy, but they don't protect you from sexually transmitted diseases such as chlamydia, a relatively symptom-free disease that can quietly block a woman's fallopian tubes before she knows she's been exposed.
- Ask your physician to test you for STDs at every exam—and see her regularly.
- Think about personal habits such as chronic marijuana-smoking, which can significantly reduce a man's sperm motility, rendering him infertile until or unless he stops smoking.
- Know as much about getting pregnant as you do about avoiding pregnancy. Experts are often shocked and dismayed at how little people know about their own reproductive systems. Find out important facts, like: A woman's fertility peaks in her 20s. A recent European study suggests even by the age of 28, many women are already experiencing a decline, and a woman older than 35 has less than half the fertility rate of those younger than 27. Similarly, statistics from the American Society for Reproductive Medicine show a woman younger than 30 has a 20 percent pregnancy rate each month, but a woman older than 40 is estimated to have a 5 percent chance of conceiving.

could result. "This type of surgery is still often a covered benefit," says Klooster, who does some of this surgery at Kaiser. But many clinics now refer most patients with tubal problems straight to IVF. "Ten or 15 years ago, we would have considered operating to open up the tubes, but unfortunately, the [resulting] pregnancy rate is only 20 percent," says Soto-Albors. "Nowadays, a single IVF cycle, for a woman under the age of 35, has a 50 to 55 percent success rate."

Less common female fertility issues include poor cervical mucous—often solved with the use of clomafene and insemination—or sperm antibodies. "With these women, you can sometimes use insemination, but the tubal fluid may have the same antibodies," says Soto-Albors. So they, too, are often excellent candidates for IVF. "When the egg is fertilized outside the body, then placed back in the uterus, the antibodies no longer cause a problem," he says.

Lastly, there is the issue of age. "The largest percentage of patients I see are over the age of 38," says Klooster. For these women, fertility drugs and IVF success rates drop dramatically. By the time women are 45, their success rates approach zero. They still are not without hope, however, if they are willing to undergo IVF with donor eggs. "The good news is this procedure carries the highest success rate of any we do: 63 percent, regardless of age," says Soto-Albors. (He adds this is the secret many middle-aged Hollywood stars aren't telling the press when they pose with their newborns on the front pages of magazines.)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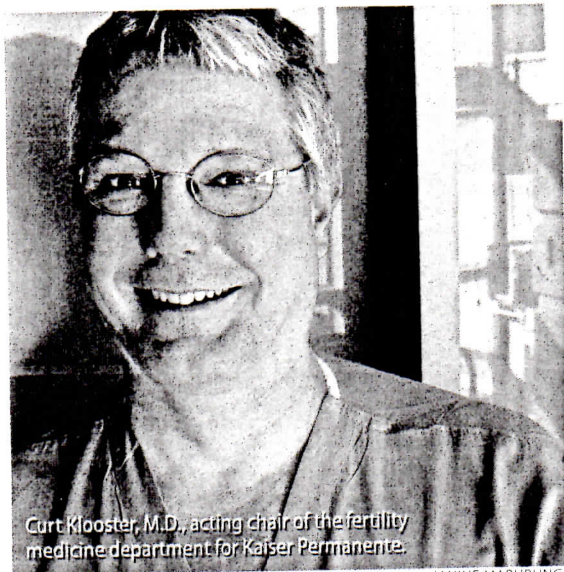
But infertility is not just a woman's health problem: It takes, of course, two to tango. According to statistics, female infertility accounts for 40 to 50 percent of cases, but the other 40 to 50 percent are male problems, usually involving low sperm count or motility (the sperms' ability to move spontaneously). "The first thing we do is send male patients to a urologist well-versed in fertility therapy," says Soto-Albors. In some cases, minor surgical procedures can improve a physical condition—such as varicose-type veins in a man's penis or scrotum that can impede sperm delivery. Vasectomies also can be reversed using microsurgical techniques and, in rare cases, drug therapy can correct a hormonal imbalance. It can even be a simple case of reviewing a potential father's lifestyle. "Chronic daily use of marijuana reduces male fertility by reducing sperm motility," says Soto-Albors. "It's usually reversible, once the smoking stops." Age is not the factor it is for women, although general pregnancy success rates are highest for couples in which both partners are younger than 30.

If no real cause for a man's infertility can be found—as is often the case—the couple returns to the fertility clinic. "You get some interesting situations now, where a woman undergoes IVF—all the medical treatment—even though there is nothing physically wrong with *her*," says Soto-Albors. "About half our IVF cases are because of male infertility." Other options include using donor sperm via ar-



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tificial insemination or adopting, but he says most couples' first choice is to use their own genetic pool.

Aiding IVF attempts where male infertility is the problem: intracytoplasmic sperm injection (also known as ICSI). Using this technique—in which a single sperm is injected into a mature egg—can often mitigate low sperm count or motility. Sperm can even be retrieved directly from an incision in the scrotum, before being injected into the egg.

The Risk Factors

OK, so there's the good news—many conditions can be successfully overcome. But what about the risks of fertility treatments?

First is the risk it won't work—and all your hopes, dreams and hard-earned cash are for nothing. (At best, your insurance company *might* pay for half the cost of doctor visits, medication and simpler procedures, but many plans don't pay anything. And virtually no plan covers IVF, a single cycle of which can cost $10,000 to $15,000.) According to national statistics, of couples who seek help conceiving a child, about 50 to 60 percent ultimately will be successful, and another 15 to 20 percent will eventually get pregnant on their own. But that still leaves a significant portion who won't. This is especially true, say experts, for older patients. "People postpone childbearing so long," says Klooster. "I have [female] patients who come in at 45, 48, and say, 'But I feel so young.' They never expected to have trouble getting pregnant. And fertility patients are absolutely driven, obsessed with getting pregnant." When they can't, it is a huge emotional blow, a heartbreaking realization.

The second biggest risk, according to experts, is multiple births, such as twins or triplets. In terms of IVF, this risk has decreased throughout the years—mainly because laboratory technology has advanced to the point where it is now common procedure to transfer only two embryos during an IVF cycle, in the hope one will succeed. "You always have the choice of transferring a single [embryo]," says Soto-Albors, citing as an example a returning IVF patient who had twins the first time and doesn't want another multiple birth. "But in most cases, you have no insurance coverage, you're spending money, and you're wanting to get pregnant. By transferring two, your success rates are higher." Klooster warns, however, that the number of embryos used in IVF cycles isn't regulated, and so some clinics might still do four or more. "People don't realize how dangerous this is," he says. "They think they'll have their 'whole family at once.' But multiple births are always high risk. Look at the McCaughey [septuplets]—[two] of the kids have cerebral palsy."

There also has been intense focus on an alarming issue raised in the early '90s by a researcher at Stanford University who suggested women who undergo treatments with ovulation-stimulating medications may be at higher risk for developing ovarian cancer. Soto-Albors suggests, however, that recent stud-

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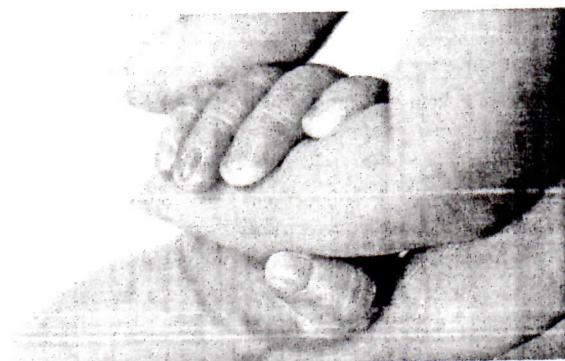
ies are more reassuring. "These studies have been better—following bigger groups of women for a longer time," he says. "The most recent, published in February '05, said there is no conclusive evidence of links between ovulation induction and cancer." Klooster, on the other hand, says it only makes sense increasing ovulation increases a woman's risk for ovarian cancer. Yet he doesn't see the risk as a significant one. "It's not enough to stop taking the drugs," he says. "It's not enough to remove a woman's ovaries once she's done having children."

Among women who have taken ovulation-stimulation drugs there also appears to be a slight increase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Personal Story: Pregnancy Success

"We're complete now," says Michelle Lazark, 40, who lives in Carmichael with her husband, Tim Pogson, and their long-awaited 2-year-old son, Vincent. "We're a very close-knit family."

They also are a growing one—Lazark is pregnant with twins, due early next year. "We tell Vincent there are babies in my tummy, and he brings them little toys," she says fondly. "We are just so blessed."

Both Vincent and the twins are the result of IVF, fairly easy procedures for Lazark. "I got pregnant the first time after one cycle of IVF using a single egg," she says. "Then when Vincent was about 18 months old, we decided to try again. That time, they transferred three of the best eggs, and we were worried about triplets. But I was also still in the Army Reserve, and there were a lot of rumors we were going to be deployed [to Iraq]. So I was very stressed at that time—and the pregnancy was unsuccessful."

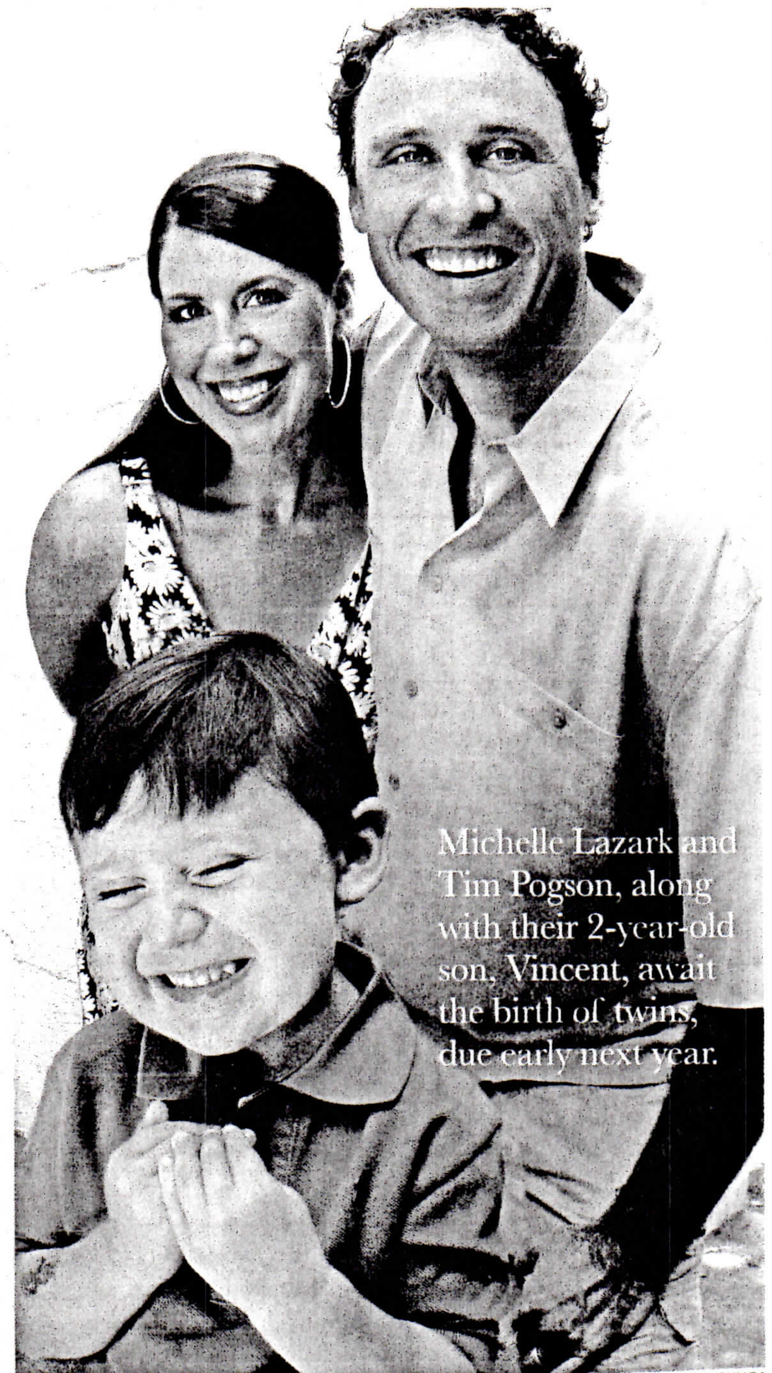
Lazark retired from the service after 20 years in May, however, and again had a cycle of IVF. This time, it took. "I knew I was going to retire as early as February, so my stress level was reduced tenfold," she says. "I think that had a lot to do with it." Within 10 weeks, she knew she was pregnant with identical twins.

But their luck has not always been this good. The couple married when Lazark was 32 and Pogson was 34, and never dreamed having a baby would be a struggle. After trying unsuccessfully for more than a year to conceive, they sought medical help when Lazark was 35. No specific cause for their problem was identified—even after extensive testing—but doctors pinpointed her age as a major factor. "I had no idea [a woman's fertility peaks in her 20s]," she says. "Had I known, I would have gotten the ball rolling much earlier." She also says her own mother got pregnant while using birth control. "She was a Fertile Myrtle," she laughs, "and so was my aunt. I figured I was, too. It didn't strike me I couldn't get pregnant."

Initially, Lazark was put on several cycles of Clomid (clomiphene citrate), then injectable fertility drugs, but they didn't work. "It was very disappointing," she recalls. "You get your hopes so high. You think, 'I'm using modern medicine now, I have a better chance.' You even start having symptoms and think you must be pregnant. Then you find out you're not. In 30 seconds, you go from high to low—over and over again. It's like a roller coaster ride. And it's also expensive. You feel like you have all your chips riding on this."

Her advice to others in similar circumstances? "If you're over 35, and you haven't been successful in one year, be aggressive," she says. "Because the longer you wait, the more your fertility chances decrease. It really is a time clock—a biological time clock." In her and Pogson's case, they eventually turned to IVF, which they paid for out-of-pocket, an issue she has strong feelings about. "The insurance companies should really step up," she says. "This is a medical problem that isn't curable on its own—you need medical treatment. Lord knows it's not an easy process—no one would choose to get pregnant this way if they didn't have to. They should at least pay half." Lazark says she and her husband had to sell a car to help finance the procedure, and continue to live in a small two-bedroom house.

Money aside, however, she is extremely grateful for the medical advances that make this possible for infertile couples. "Thank God this technology exists," she says. "If we hadn't lived in this day and age, we'd have been childless." She also feels the clinical nature of the pregnancies in no way reduces the magic. "People sometimes say IVF is like playing God," she says. "But there's still something divine about it all. The doctors told me when they implant the eggs, they glow—and no one can explain why. They just glow."



Michelle Lazark and Tim Pogson, along with their 2-year-old son, Vincent, await the birth of twins, due early next year.

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in borderline ovarian tumors, which are neither completely benign nor clear-cut malignancies. While the incidence of these tumors is not statistically significant, nor as serious a health risk as typical ovarian cancer, Soto-Albors believes women who've undergone fertility treatments—and their OB-GYNs—should be alerted to this condition. "This means continued, regular ultrasound of the ovaries," he says. "Patients deserve that kind of follow-up care."

Lastly, there are occasional suggestions that fertility-treatment babies may later develop serious health conditions. A particularly scary rumor is one

"We'd been so focused on becoming pregnant," Stacey Hay says, "and finally, we realized what we wanted was to become a family."

involving autism. "We've had one couple with twins and one twin has autism and the other doesn't," says Soto-Albors. "That's the only case we've had in 20 years." He says more unusual conditions, however, are currently being studied. "There are some reports about a retinal blastoma, which is a very rare condition," says Soto-Albors. "So the question is, 'Why are we seeing this?' There is also a slight sex chromosome anomaly that's been reported, especially with ICSI. What that means is these things are out there that need to be looked at, and for patients, we encourage amniocentesis, and of course put all this in the consent forms. People need to know these things. But what they usually say is, 'We either take this extremely small chance, or we don't attempt this at all and don't have a family.' Nothing in medicine comes without some risk."

Personal Story: When Treatment Fails

Stacey Hay, and her husband, Tom, who live in Rocklin, married when she was 28 and he was 34. Eager for a family, they started trying right away, and she got pregnant almost immediately. But it wasn't the happy ending both had blithely expected. "I had an ectopic pregnancy six months after our wedding," she says, "and that threw us right away into the infertility program at Kaiser." She had her damaged fallopian tube surgically repaired, and then sought help to get pregnant again. She did several courses of Clomid and when that failed, she began using injectable fertility drugs. "When I started those, Tom had to inject me—and that was quite a stretch for him," she says.

For several years, the couple followed the monthly regimen: injectable drugs, ultrasounds to check her ovulation, regular artificial insemination attempts. "In all that time, I never conceived," she says. "But every time I went in, I'd be so excited—I'd think, 'This time, it's going to work,'" and every time, it didn't. You're taking all these hormones anyway, and I was very emotional all the time. I'd look at pregnant people and just cry." Her husband grieved with her, and they eventually joined an infertility support group. "That was invaluable," she says. "There were people like us—people who knew how hard it was."

The cause of their infertility was never pinpointed, although both carry sperm antibodies. Hay also says she never considered her age to be a problem. "I remember hearing a talk show once where someone mentioned the age of 27 (as a time when a woman's fertility starts to decline)," she says, "but I figured, 'Big deal.' It didn't occur to me that was my problem."

With fertility drugs not working, however, the couple decided to move to IVF when Hay was 32, and during the next three years, Hay went through five IVF cycles. "Everything is so time-sensitive—you have to have this shot at this time and this shot at that time," she says. "I called it 'my second job.'" Although she was adamantly optimistic before every attempt, the failure to get pregnant wore on her. "I was often in the depths of despair," she says. "I kept thinking, 'When is it going to happen to me? It's working for these other people.'" This, in part, kept them clinging to their hopes. "You know, you go into these clinics, and they tell you all their successes," she says. "I'm sure they tell you the negative, too, but you're just not listening."

During their last two cycles of IVF, however, the couple was simultaneously pursing private adoption through a local attorney. "We'd been so focused on becoming pregnant," Hay says, "and finally, we realized what we wanted was to become a family." Exactly nine months after walking through the adoption attorney's door, Hay recalls, they received their first baby, a little girl they named Macie, who is now 6. Less than a year later, she was followed by Thomas, now 5, and three years later, by Julia, now 2.

"These are the children we were meant to have," says Hay, "and we were meant for them. And here's one thing I learned through an adoption support group: You hear all these percentages when you're going through infertility. Well, adoption is 100 percent."

Did you know...? Historians theorize that because George Washington and his wife, Martha, had no children together, the founding fathers were more open to the idea of a democracy—with an elected president—than a monarchy. The fact Washington had no male heir made him unattractive as a king.

Glossary

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Clomiphene Citrate: Often referred to by its most common brand names—Clomid or Serophene—this is a medication taken orally that stimulates ovulation. It is an inexpensive drug with a high success rate.

Injectable Fertility Medications: These medications can be used on their own to regulate or stimulate ovulation, or to prepare for an IVF cycle. Common drugs include human chorionic gonadotropin (hCG), follicle stimulating hormone (FSH), gonadotropin releasing hormone agonist (GnRH agonist) and gonadotropin releasing hormone antagonist (GnRH antagonist).

Intrauterine Insemination: At the time of ovulation, sperm (from either a woman's partner or a donor) is retrieved via masturbation and inserted through the cervix directly into the uterus. This procedure is often used in conjunction with fertility medications.

In Vitro Fertilization (IVF): This is the most expensive fertility treatment, but also one that can mitigate a variety of both male and female infertility issues. It can be done with either a woman's own eggs or donor eggs, her partner's sperm or donor sperm. When using her own eggs, a woman must first take a nasal or injected medication for 10 days that shuts down her ovaries, so that unpredictable ovulation won't occur. Then for two weeks, she takes ovary-stimulating hormone injections, during which time she is monitored via transvaginal ultrasound and blood tests to see whether the eggs are maturing. The mature eggs are collected 34 to 36 hours later by needle aspiration guided by ultrasound. At the same time, sperm is collected by masturbation or through a small incision in the scrotum, and the eggs and sperm are placed in a glass dish. About two to five days after fertilization, the best embryos are selected, and are placed in the uterus using a catheter inserted through the cervix. Remaining embryos may be frozen (cryopreserved) for future attempts.

Gamete Intrafallopian Transfer (GIFT) and **Zygote Intrafallopian Transfer (ZIFT):** These IVF techniques attempt to mimic natural conception more closely than traditional IVF. In GIFT, for example, the egg and sperm are mixed together, then immediately placed in the fallopian tube, where it is hoped fertilization will take place. ZIFT, similarly, places a fertilized egg in the fallopian tube 24 hours after fertilization. In recent years, however, use of these techniques has fallen dramatically—and today account for only 2 percent of IVF treatments in the United States. The major disadvantage is that a surgical procedure is necessary to transfer eggs to the fallopian tube rather than the uterus.

Intracytoplasmic Sperm Injection (ICSI): ICSI can be used during an IVF attempt and is designed to treat sperm-related infertility problems by injecting a single sperm directly into a mature egg. This relatively new procedure has raised some ethical concerns: Doctors in some countries, for example, refuse to do it—arguing that in traditional IVF, nature still selects the sperm that will fertilize the egg. It is used in the United States, however, and has a high success rate, although there is some suggestion a genetic flaw may be passed from father to son, so that male offspring may also need to use ICSI to reproduce as adults.

Local Resources

Big news in the Kaiser world: The large Sacramento HMO will open its first In Vitro Fertilization Center at its Point West Medical Offices in early 2006. Headed by an IVF expert from Hawaii, it will be fee-for-service, and eventually serve both members and nonmembers. Although Kaiser currently offers infertility treatments—drug therapy, artificial insemination, surgery—it now will be able to keep patients in-house for IVF as well, rather than referring them elsewhere.

Other existing local fertility clinics include:

- Northern California Fertility Medical Center, 1130 Conroy Lane, Suite 100, Roseville, (916) 773-2229
- UC Davis Fertility Center, 2521 Stockton Blvd., Suite 4200, Sacramento, (916) 734-6106.