

## Stop Time

**It's the ultimate New York careerist dream: Work (and play) now, conceive later. Has science finally made it possible? The promises and pitfalls of putting your eggs on ice.**

By Sarah Wildman



(Prop and wardrobe styling by Marie Blomquist; hair and makeup by Michiko Boorberg; manicure by Claudine Duchamp.) (Photo credit: Phillip Toledano)

**N**ette remembers when the baby anxiety began. “Three years ago, I started—I don’t know how else to put it—I started feeling on edge,” she says. “I had planned to be married and have a family by now.”

Nette is 37 years old, a petite black woman with large golden eyes and pin-straight long brown hair. As we sit down for a late lunch at the French Roast Cafe on West 11th Street, it strikes me that she looks like she could still be in her twenties. Those days are long over, she tells me. Nette, who asked to be referred to by her childhood nickname, spent most of that decade working in one of the most coveted jobs in the music industry: artists and repertoire. “It was completely sexy,” she says. “The sexiest job I’ll probably ever have.” She worked with Vanessa Williams and Brian McKnight; she gave Lil’ Kim a gig before she was a star. “I did a lot of wining and dining, negotiating and schmoozing,” she says. She traveled constantly—South Africa, Bali, Beijing, Jamaica—not to mention “every hood in every major city, looking for a band.” There were expense accounts and lavish parties and plenty of men—she tried to stay away from the musicians and dated mostly producer types. “It was a blast,” she says, eyeing the nuzzling young couple at the next table, “but not very serious.”

In her thirties, Nette started thinking about settling down. She took a less glamorous, and less demanding, marketing job with another music company, bought a two-bedroom apartment in Park Slope, and started looking for “Mr. Right, Mr. Wrong, whoever was out there.” But dating began to feel anything but romantic. Instead, it seemed like a desperate series of co-parent interviews. The men could feel it, too; when guys sense a thirty-plus woman who wants to have children, “they start to twitch,” she says. “Finding someone who is ready for a commitment when you’re ready is very tough.”

Even if Nette did miraculously fall in love tomorrow, she wouldn’t be able to have a baby right away. Last year, she decided that she wanted to be general counsel for a record label, and for that she had to go to law school at night, pushing off motherhood for at least another three years.

Nette realized that her fertility was waning—she had married friends in their mid-thirties who were struggling to get pregnant through in vitro fertilization, and single ones who were as panicked as she was—but there was nothing she could do about it. She began to think that if she had chosen to live somewhere besides New York, her life might have been different—more like her cousin, who got married right after college and had two kids by the time she was 30. Even her neighborhood seemed to taunt her: “In the Slope in the last few years, you are literally dodging baby carriages,” she says with a hollow laugh. “I mean, all those families?”

Then one day last spring, she was complaining to an older friend about her situation when the friend mentioned a new technology she had just read about that allows a woman to freeze her eggs while they are fertile and then thaw them out when she is ready. Nette got excited. Could this be real? She could get her law degree at 40, meet the man she wanted to marry, and conceive a child—her own biological child—sometime, *anytime*, after that. Egg freezing would be like putting her body on hold until her life could catch up. Nette thought about it for a couple days, then called New York University’s fertility clinic and made an appointment.

**D**espite all the choices that have opened up to women in the last few decades, there remains one immutable fact: The biological clock waits for no one. The difficult truth is that a woman in her forties who aspires to have her own biological child will most likely be disappointed.

In vitro fertilization has given older women some hope, but even IVF runs up against a physiological limitation: aging eggs. No one understands exactly what happens to eggs after several decades of wear and tear in the body, but doctors are convinced that old eggs are the key to age-related infertility. “When you are 21, 90 percent of your eggs are normal,” says Dr. Alan Copperman, the director of the division of reproductive endocrinology at Mount Sinai Medical Center. “When you are 41, 90 percent of your eggs are abnormal.”

In recent years, another alternative has presented itself: egg donation—when a younger woman’s eggs are implanted in an older woman’s body. But this frustrates many who yearn to share DNA with their child. Often, older women who get pregnant this way keep secret the fact that their child was conceived with someone else’s egg.

But what if it were possible to prevent eggs from aging, to keep them in suspended animation until a woman was ready to use them? A 47-year-old woman could be her own egg donor—a gift from her 30-year-old self. She could preserve her ability to have a child with her own genetic material—and her future husband’s. By freezing eggs instead of embryos, a woman eliminates the need to have a partner, or at least a sperm donor, before taking action. And once frozen, an egg can theoretically last forever.

The trouble is that eggs are more difficult to freeze than sperm or embryos. Because they are large cells filled with water, eggs are particularly vulnerable to the formation of ice crystals. Researchers have tinkered with the formula for decades: varying the concentration of cryoprotectant, the length of time an egg is exposed to it, the speed at which the egg is frozen and thawed. There were some successes, but none that could be duplicated consistently. Over the past twenty years, there have been only about 150 births from frozen eggs worldwide.

That number, however, might be about to explode. In June, pioneering Italian endocrinologist Eleanora Porcu announced a dramatic success in the largest egg-freezing study to date. With a slow-freezing method that takes the temperature of the egg down a couple of degrees a second and a new recipe for cryoprotectant solution that included just the right amount of sugar, Porcu achieved 85 pregnancies (and 70 births) out of 500 IVF cycles. It may sound like a low number, but a 17 percent pregnancy rate is actually close to the success rate with frozen embryos, a much more mainstream practice. Porcu’s method has the potential to change the fertility world.

Here in New York, one doctor was watching Porcu’s study closely. Nicole Noyes, director of reproductive surgery at New York University, had traveled to Porcu’s lab in Bologna last year to see the process for herself. Noyes returned to NYU, and with her colleague Dr. Jamie Grifo, she began a small clinical trial of her own. Seven infertility patients allowed NYU to freeze their eggs, and then thaw, fertilize, and implant them a month later. Four of the women got pregnant, though one miscarried twice. “We brought it back, and it worked immediately,” says Noyes. “If you follow every step perfectly, it’s beautiful.” On July 4, NYU announced the birth of a seven-pound-thirteen-ounce baby girl—and the birth of its Egg Freezing Program, one of the first two clinics in Manhattan to offer the procedure to the general public.

“After what I saw in the small number of cases who are infertility patients to boot?” says Noyes. “I’m a total believer.”

But not every fertility specialist shares the faith. Despite the recent successes in Italy, the American Society for Reproductive Medicine has labeled egg freezing “experimental” and strongly recommended that it be reserved for cancer patients whose fertility is in immediate jeopardy, not offered commercially to healthy women. Speaking to a standing-room-only crowd on Capitol Hill in June, infertility guru Zev Rosenwaks, director of the Center for Reproductive Medicine and Infertility at Cornell, called the promise of egg freezing “misleading” and said, “The chance for success with this procedure is exceedingly low.”

“What gets difficult in medical ethics,” says Dr. Mark Sauer, chief of the division of reproductive endocrinology at Columbia Presbyterian, “is, what do you charge women for a promise?”

Egg freezing is currently a very expensive promise—or, more accurately, a bet. It costs \$10,000 to \$15,000 to harvest and freeze one batch, then about \$500 annually for storage. And those costs are before spending thousands on an in vitro fertilization cycle to use the eggs down the road. Of course, many women would be

willing to pay tens of thousands of dollars if it meant that they were guaranteed to be able to have their own biological children in their forties or later. But NYU stops far short of a guarantee.

"The biggest risk is counting on this working and having it not," cautions Grifo, co-director of the NYU program with Noyes. "People can look at it as a little bit of an insurance policy, but if they see it as 'the Answer,' and the way to avoid meeting Mr. Right or deciding when to have kids, they could be disappointed in the end."

**E**gg freezing is decidedly a luxury product. The women who are beginning to line up for the new procedure are the overachievers, the aspiring law-firm partners, the ambitious actresses, the medical-school residents. These are women who are acutely aware of feminism's cruel catch: the narrow fertility window that's been narrowed even further through years of schooling, serial dating, and career advancement. They are boxed in by mixed messages: *40 is the new 30! But be sure to have your children before you turn 35 . . .*

And they are, disproportionately, New Yorkers. Extend Fertility, a national egg-storage company that works with Reproductive Medical Associates at Mount Sinai, has received more than half its inquiries from New York. Of 120 Extend patients across the country who have frozen their eggs, 44 are in the metro area. This is a new sisterhood of women who are acknowledging that although they are putting off kids, they don't want to sacrifice their chance at biological motherhood.

"I think a lot of decisions women make will change because of egg freezing," says Nette.

"I could forget the whole thing"—kids, love—"and just be a high-powered exec. But for what? I'd like to have my own child," says Sofia, also 37 and another patient of Noyes's. Sofia is in sales at a Fortune 500 company, owns real estate, and has plenty of purchasing power (she calls the freezing fee "a year's cost" in handbags, shoes, and hair). "My life is pretty good," she says. "What's the next thing to do? Replicate yourself. Have mini-me's."

She doesn't want to do it alone; she wants to have children with a man she loves. "To me, the joy will not be 100 percent if I'm not with someone."

But last winter, she lived through a brutal breakup. When she had fibroid surgery, her boyfriend dutifully dropped her off at the hospital—and then went snowboarding. Not long after, Sofia told him that she wanted to have a baby. And he told her he didn't love her.

"He told me his true feelings," she says. "So it helps me make a decision. Freeze eggs and move on."

Nadine, a 37-year-old business-development executive for an Asia-based company, decided to freeze her eggs after she realized the true reason for the chest pains that came every month along with her period. "My mom is a psychiatrist, and she said, 'I hate to do this, but do you realize that a period is a frustrated pregnancy? Maybe deep inside you are concerned about being older and not being pregnant.'"

Nadine didn't see any other way to relieve her anxiety. "It's just tough when you have a job that is time-consuming," she says. "I'm trying to date, but when you travel a lot, you can't have a lot—outside of the Internet, and my success at being fixed up with people is near zero."

Putting her eggs on ice, she says, removes the "Oh, my God, I'm 37!" factor. "I don't have to worry now about the stupid eggs getting older." And she hasn't had any chest pains since the procedure.

For Megan, a 33-year-old private-investment-fund manager, it's more a matter of career timing than love life. She wants to wait to have kids until the hard, dues-paying years are past. "It's the complexity of life in New York," she says. "I look at the way my parents had us, and they didn't necessarily have x dollars in the bank, they didn't have it all figured out. But in New York, we feel we have to be so hard-charging and try to control so much."

One of the factors these women are trying to control is their choice of husband. They don't want to settle. "What do you do if you don't have the partner you are going to have? There is still the quandary of, I know

I'm going to meet this great guy and already have embryos with a sperm donor—versus taking my chances freezing eggs and possibly having children with my partner. That's a huge distinction."

Megan knows. She's been faced with exactly this problem. Diagnosed with Hodgkin's disease at 24, she was told that the only way to preserve her fertility was to freeze embryos before her cancer treatment. So she and her then-boyfriend, an investment banker, went through two cycles of IVF together. Megan now has 22 embryos frozen at Cornell. Her boyfriend? He's now married to another woman. "He's the most wonderful guy, but ultimately we weren't right for each other," she says. She doesn't want to use the embryos now. "I just can't stop thinking about my ex-boyfriend's wife," she says. "He'd probably say yes. She'd probably say yes. But is it even fair to ask the question?" And what about the man she eventually ends up marrying? "How would a guy feel if it were your ex-boyfriend's sperm? What if the children look exactly like your ex and not like you?"

Luckily, as far as Megan's doctors can tell, she is still fertile, despite having gone through chemotherapy. But she's not quite ready to get pregnant. "I'm 33, but I don't feel like I'm in a rush," she says. "When someone says you don't have many years left, it's like, *I'm me! I'm having a great time!* I love my life, I don't feel like that"—marriage, kids—"is where I'm supposed to be right now." She's thinking of doing another round of freezing. But while she's in a relationship, and he might be "the one," she's not going to make the same mistake twice. This time she's going to freeze eggs instead of embryos.

Recently, Megan invited Extend Fertility—the egg-banking company launched last summer by Christy Jones, who developed the business plan as part of her Harvard M.B.A.—to present an egg-freezing explainer session for "85 Broads," an elite network of women who hold M.B.A.'s from top programs. On the night of the program, there was a torrential downpour, the kind that cancels flights across the metro area and floods the subways. Megan assumed no one would show up, but the Cornell Club was packed with women—some in their twenties, some pushing 40, some married, some single, all panicked.

"When we turned it over for questions," says a nurse who spoke at the session, "25 hands shot up immediately. 'I'm 34. How much time do I have left?' . . . 'I'm 32, and I'm on a partner track. What can I do?'"

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Nadine, who was in the crowd, says that the worst moment was when an Extend Fertility doctor started throwing out statistics about how swiftly fertility plummets as women approach 40. "Everyone gasped," she says. "Your normal gynecologist will say you are young and healthy and take care of yourself. But it doesn't matter how healthy you are—those eggs are 35!"

"I think for successful women this is the piece that doesn't fit into the equation," says Megan. "It comes time for us to have kids and you're looking around saying, 'But I'm still working so hard! This doesn't fit in.' " Or worse, you look around and realize that you can't have kids anymore. "This is a topic that really gets people emotional," she says. "These issues play on women's fears. The idea that there is this option is just huge."

**E**gg extraction is far from a Penthouse-and-a-plastic-cup experience, so every candidate for freezing must attend a self-medication seminar run by a nurse. A few weeks after our first meeting, I join Nette at NYU for her training day.

She's in good spirits. Her hair is in a glammy twist, but her casual Friday flip-flops and army-green Capris make it look like she'll cut out to the beach when this is done. She's brought a pregnant friend along for moral support, and we three are brought into a boardroom with a movie screen. Nette is handed a complex four-page consent form to sign. In bold letters on page one, it says, "I understand that there is no guarantee my eggs will survive the freezing and/or thawing processes."

The nurse explains that because egg freezing is so new, we'll be seeing the standard IVF PowerPoint presentation; she'll just tell us what to ignore. The process is very similar: There are two weeks of self-administered gonadotropins—hormone shots—which are used to stimulate the ovaries and prompt the maturation of multiple egg-laden follicles in a cycle, rather than the one or two women normally produce each month. The eggs are then sucked out through the vaginal wall with a needle while the patient is under anesthesia.

The nurse casually mentions that the drugs can cost several thousand dollars—beyond the other costs of extraction and storage. Nette looks a little green. "I thought it would be a couple hundred dollars," she says, looking across the table at her friend. The nurse plunges on, reminding her that she is required to come in daily for ultrasounds and blood work to monitor progress and watch for "hyperstimulation syndrome," a condition in which too many eggs are released, making the woman very ill. She explains that the daily shots Nette will be giving herself must be mixed carefully and taken at exactly the right time. Otherwise, she could screw up her cycle.

Nette is asked to pick which brand of hormones she wants to take. It's not clear, other than cost, how she is supposed to choose. Nette picks Gonal-F, a syringe-and-vial kit, based on the fact that she will only have to stick herself once a day. The nurse mimes mixing and administering the drugs using empty bottles, real syringes, and a rubber abdomen. "I have a gut," says the nurse, cheerfully grabbing her own stomach, "but I prefer to give it in the leg." The final shot must be delivered intramuscularly, in the patient's backside, with a needle that's several inches long. Nette looks nauseated. Her BlackBerry whirs beneath the table, unchecked.

At the end of the two-and-a-half-hour session, Nette is led to a billing cubby where she learns that payment is due—in full—at the start of treatment. "It's just overwhelming," she says in a small voice, before hailing a cab.

A week later, she calls with bad news. She's not stimulating well. "They only found five follicles," she says, trying to sound upbeat, "and I'm in the seventh day of the fourteen-day cycle." She should have had more by now, she says, and she might have to cancel and start again, perhaps with a higher hormone dosage, rather than go through with the expensive extraction with so few eggs. According to NYU, she needs ten, at least, by the end of the cycle. The outlook is grim.

**M**any people in the fertility field believe that women like Nette are setting themselves up for disappointment. "Especially in our field, sometimes the technology gets ahead of the findings," says Kutluk Oktay, Rosenwaks's colleague at Cornell and one of the doctors who helped shape the ASRM's cautious position on egg freezing. "Egg storage does not equal pregnancy."

Oktay acknowledges that egg freezing has potential, but he argues that it shouldn't be made commercially available until there are broad-based multicenter trials, uniform methodologies, and solid success rates. "When we sell a product, we have to have some kind of safety profile and some kind of standard of error for what we stand to get," he says. "You're not putting a car on the road if you don't know how safe it performs after 10,000 miles."

There are some safety issues with egg freezing, primarily hyperstimulation, which affected one woman in the NYU trial, causing her to produce 55 eggs and become very sick. But Oktay is more worried about psychological complications. The fear is that 30-year-old women will bank a batch of eggs, figure they're set for life, and come back at 42 only to discover theirs was a bad batch. Or they didn't save enough. Or the thawing process didn't work properly. Or they have other health problems. "The end point cannot just be the *hope* of preserving fertility," he says. "When someone banks her eggs, we need a certain range of numbers that we can give these women so they can make an informed decision."

And those numbers are difficult to come by. "You read some papers that say, 'Oh, of the fertilized eggs, we had this many babies,' and you get the wrong impression," says Oktay's colleague at Cornell, Dr. Lucinda Veeck-Gosden. The question women should be asking, she says, is, "If I walk through the door, what are my chances of taking home a baby?" Veeck-Gosden estimates that chance to be less than 5 percent per frozen egg. (Noyes concedes this is close to the per-egg success rate she's had at NYU.) This is because not all the eggs harvested will survive the freezing process, not all the survivors will be successfully fertilized, and not all the fertilized eggs will turn into good embryos. If a woman goes through one IVF cycle and manages

to freeze ten mature eggs, has she really given herself a good chance at future pregnancy? The Cornell doctors say no. Complicating matters further is that the debate over egg freezing has gotten personal. Grifo and Noyes both trained at Cornell before being wooed away to NYU in the mid-nineties. "They treat us like we moved to India when we moved down the street," says Noyes. "It's been strained since we left. Some of what you're getting is politics, unfortunately." Grifo agrees. "I think the reason Cornell is so negative is that they aren't doing it," he muses, "and they have a vested interest in having something else be a better alternative." Namely, ovarian-tissue freezing, an experimental—and, Oktay notes, not commercially available—attempt to preserve fertility that would most likely apply to cancer patients.

"You wait," says Noyes. "In another year, they will all be doing it." She sees this as a moment akin to the controversial launch of IVF 27 years ago. "I think we're going to change history."

In the meantime, Noyes is advising women not to see egg freezing as "a complete safety blanket," because, she admits, it's still unclear how many eggs need to be frozen to ensure a pregnancy. Although Noyes advises her patients that they need to have a minimum of ten eggs frozen, she agrees that twenty eggs would be safer—but that's a number that would send most women in for two rounds of hormones and extraction. Noyes also suggests that a 30-year-old who freezes today should come back by 37 or 38, in hopes of implanting her eggs before she turns 40. That way, if there are problems, she might still have a chance of conceiving with the older eggs in her body. But what do you say to a 37-year-old? If a 37-year-old saves a bad batch and comes back at 42, she may have irrevocably ruined her chance of having biological children.

Still, in all likelihood, the technology will eventually get there. Even detractors see egg freezing as becoming standard practice in the next five years. Someday, one endocrinologist told me, girls will get braces on their teeth when they turn 12, freeze their eggs when they graduate from college, and get pregnant whenever they want.

Which, of course, raises another question: *Should* egg freezing be the next big thing? Are we looking at a not-so-distant future in which 50-year-olds regularly give birth to their first children and companies forgo barely begun family-friendly policies, expecting that female employees will extend their workaholicism indefinitely?

"I'm not sure I'm positive that it's a great thing," says Veeck-Gosden. "People don't think about the long term. Are they going to be around to see grandchildren? It changes what we see as the makeup of families." Not to mention the fact that "you don't feel the same at 45 as you do at 35," she says. And it's not just energy: Endometriosis increases, uterus and tubal function are compromised, everything suffers with age. "Delaying reproduction just for social reasons," says Veeck-Gosden, "I think we will probably learn some lessons over the next couple of decades about that."

**F**or Nette, the two weeks of shots and ultrasounds and blood work are crawling by. The hormones themselves aren't too bad—she's headachy, but more than anything anxious. She's into the second week, and still they've found only eight follicles, which is riding a low margin; not every follicle has an egg.

Three days later, she has twelve, and she decides to go through with the extraction. She spends \$100 on a nurse to administer the final shot—an intramuscular HCG (human chorionic gonadotropin) injection to facilitate the release of the eggs from the follicles—at eleven o'clock at night. Thirty-six hours later, Noyes comes in from Quogue to perform the procedure.

When Nette arrives at NYU at nine o'clock that Saturday morning, she is quickly ushered into the operating room. She's a little overwhelmed by the overhead lights and the nurses rushing around in scrubs, but she's relieved to see Noyes behind one of the masks. One of the last things Nette remembers before the anesthesia takes effect is the doctor saying, in her usual wry way, "I came in from the Hamptons for you."

When Nette wakes in the recovery room half an hour later, she is groggy and crampy. But the whole team, and her sister who has accompanied her, is excited. She has produced eleven eggs. A "stylin' number," she says, happy. After some juice and crackers and Tylenol, she and her sister get into a cab, and suddenly

Nette realizes she's finished. She can look ahead to the trip to the French West Indies that she booked halfway through this process—a gift to herself for getting through all this.

But in the back of her mind, there's still a nagging question: How many of her eggs will be worth saving? Noyes has to examine each one under a special microscope to grade its maturity and evaluate its spindle, the critical component of egg machinery where all the chromosomes line up.

Two days later, Nette is at home, achy and sore and taking it very easy. Her ovaries are so heavy with blood they might twist if she overexerts. Again she downplays the physical: It was the emotional toll that was hardest—not knowing if she would produce enough eggs to make this process worth it. But she's got good news: Of the eleven eggs extracted, eight were mature enough to freeze.

Whether that's enough to get her pregnant when the time comes is anybody's guess. When Nette decides she wants to have a baby, Noyes will thaw and fertilize all eight eggs, then implant the best two embryos and hope one takes. Unless Nette produces more than two quality embryos, this will be her only shot at IVF. Noyes says the success rate with implanting embryos from frozen eggs is somewhere between 30 and 40 percent.

This is the gamble of egg freezing, of betting your baby years on new technology. If you get lucky, you get the life you want right now, and a biological child that comes at the moment you're ready to turn your home office into a nursery. If you're unlucky, you've squandered your childbearing years, and there's no getting them back.

Nette is feeling lucky. "At least by doing this, I have a certain comfort level," she says. "I have money in the bank. My mother always said, 'Keep a little money in the bank.'"