

Having babies after breast cancer

New treatment and technologies offer hope for future fertility

BY DONNA MITZBERG

Eighteen-month-old twins Rachel and Sophie Tadelis are beautiful children. "They are so cute and good and delicious and troublemakers and everything they should be," crows their proud mom, Amy Mines Tadelis, a 31-year-old technology project manager from Forest Hills. They're also mom's little miracles, as Tadelis is a breast cancer survivor. The twins' embryos were frozen two years before birth – just before Tadelis started her chemotherapy treatments. Adding to the miracle, her loving sister-in-law volunteered to carry the pregnancy so that Tadelis would not jeopardize her recovered health.

Breast cancer is the most common cancer in reproductive-aged women. About a quarter of the 200,000 women diagnosed with breast cancer each year are under 50. But even now, having a baby after breast cancer is a rare occurrence. The types of breast cancer that affect younger women tend to be the most deadly.

Until recently, so few young women survived that the question of whether survivors could have children wasn't often discussed. For those few women who did survive, most couldn't conceive anyway because chemotherapy damages a woman's eggs. Complicating matters is the fact that many breast cancers are sensitive to estrogen, a hormone that regulates reproduction, so doctors worry that fertility treatments and even pregnancy could cause a relapse in cancer.

Much is changing however. To date, several thousand babies have been born to breast cancer survivors. And the future looks even more promising.

Young women are surviving breast cancer longer. Tadelis, for example, had a two centimeter tumor that was classified as stage two when she was only 28 years old. This meant that with treatment, which included a double mastectomy and a course of chemotherapy, she was given more than a 95% chance for long-term survival. "Once I learned that there was going to be life after cancer, I wanted to

make sure that it would include children," she says.

At the same time, advances in fertility science have given breast cancer survivors who want children new options. Just last month, for instance, Ouarda Tourirat, a (Hodgkin's Disease) cancer survivor, became the first woman ever to give birth after an ovarian tissue transplant. And while fertility treatments are definitely not cheap – ovarian tissue transplant, for example, can cost between \$10,000 and \$12,000 – a new program was launched last month which promises some financial relief. Called "Sharing Hope" and sponsored by the group "Fertile Hope," this program offers deep discounts on fertility treatments to cancer patients with modest incomes at 15 renowned centers throughout the country (for more information, check out the Web site www.fertilehope.org).

FERTILITY AND ONCOLOGY

The best way for breast cancer survivors to increase their odds of having children, is to think about fertility options as soon as the cancer is diagnosed. In general, there are three things that determine whether a woman will still be fertile after chemotherapy: a woman's age, the type of chemicals used in chemotherapy, and the total amount of chemotherapy received. But, it is also impossible to accurately predict which women will be fertile after treatment. Therefore, all breast cancer patients who are interested in having future children, should find a fertility specialist and an oncologist who is open to working with that specialist before treatment begins.

"When talking about any medical treatment, a doctor should talk about major complications and side effects," says Dr. Kutluk Oktay, a doctor at the Center for Reproductive Medicine at Weill Medical College of Cornell University and a pioneer in many of the newer fertility options for cancer survivors. As fertility loss is a side effect of most breast cancer regimens, "this should be part of that discussion. Fertility is an important issue for many reproduction age breast



Rachel and Sophie Tadelis, along with mom Amy Mines Tadelis, are living proof that there is new life after breast cancer.

cancer patients."

To be sure, not all women who undergo breast cancer treatments are going to be rendered immediately sterile. In fact, women who are treated with only surgery and/or radiation will be fine. This is because these treatments are usually localized in the chest and do not affect a woman's reproductive tract.

It's the women treated with chemotherapy who have an issue. Chemotherapy involves the injection of cancer killing chemicals throughout the body. Unfortunately, they kill more than just cancer. They also wreak havoc on other types of cells, and permanently damage structures whose cells do not readily regenerate, like a woman's ovaries and eggs, which are actually cells.

Baby girls are born with about 200,000 immature eggs. These are all the eggs a woman will ever have. Once girls go through puberty and start to get their periods, a portion of these eggs "wake up" each month and develop into mature eggs. From then until a woman hits menopause, she will lose eggs every month this way. In addition, many more

become damaged and unusable over time through normal aging processes.

"Aging can be thought of as biochemical damage to a cell," explains Dr. Michael Slowey, a reproductive endocrinologist at Englewood's branch of the Reproductive Medicine Associates of New Jersey practice, who has helped many local breast cancer survivors have babies. "And damaged cells don't function properly. Ultimately their DNA and chromosomes are affected."

Chemotherapy speeds up the impact of aging on a woman's eggs. The chemicals used to kill breast cancer cells work by "inserting themselves into the DNA of the cancer cells, and they disrupt functions," says Slowey. This is also how they affect other cells in the body, like eggs.

Another obstacle to fertility is that many breast cancer survivors need to take the drug tamoxifen for five years after initial treatments end. Tamoxifen can cause birth defects if used during a pregnancy, which means a woman should not get pregnant while taking it as a cancer therapy. This adds five years to the time that

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many cancer survivors need to wait before getting pregnant. That is a devastating delay for breast cancer survivors whose biological clocks have already skipped a few years into the future due to chemotherapy treatments.

Some women – especially younger women who have a lot of eggs available before treatment – will still have their period after chemotherapy, and a few may even be able to have a baby without extra help. But for these women, a big question is whether or not the pregnancy could cause their cancer to recur. This is a particular worry for those women whose form of breast cancer was aggravated by estrogen – the very hormone that accompanies pregnancy.

Still, while this has worried many doctors treating breast cancer survivors who want to get pregnant, there is evidence that it's not as much of a problem as once thought. Studies looking at hundreds of women who have become pregnant after surviving breast cancers show that "pregnancy doesn't appear to worsen outcome at all," according to Dr. Hope Rugo from the UCSF Comprehensive Cancer Center in a conference about "Fertility and the Safety of Pregnancy after Breast Cancer" held last October by the Living Beyond Breast Cancer organization. She does not

though that these conclusions were all reached "retrospectively" or after the fact. That is, they compare survival rates of women who became pregnant with those who did not. It is possible that a third factor has skewed the data. For example, the group of women who were able to get pregnant might have had, on average, less deadly cancers than those who didn't get pregnant.

Nonetheless, Slowey says that the results are encouraging. "They're good enough for me to say that we're not, say, cutting longevity in half" by getting pregnant.

For all these reasons, conceiving a baby naturally is still challenging for even the youngest breast cancer survivors. Fortunately, there is an increasing range of alternative fertility treatments for breast cancer survivors.

Many of these techniques are experimental and a few haven't resulted in many – or even any – babies yet. But researchers are cautiously optimistic, and the picture is getting brighter all the time. Most of these techniques try to save fertility by removing parts of the baby-making equation from a woman's body before chemotherapy begins.

IN VITRO FERTILIZATION/ EMBRYO FREEZING

Probably the most tried and true way to have a baby after breast cancer is by

having in vitro fertilization (IVF) before chemotherapy. Eggs are removed before cancer treatment begins and then fertilized in the laboratory. The embryos are frozen until cancer treatments are completed, and then implanted when a woman is ready to get pregnant.

There are two major hurdles for breast cancer survivors thinking of this treatment. In order to harvest enough eggs to increase the odds of success, a woman is usually given a dose of estrogen to help stimulate her ovaries to produce extra eggs. But because estrogen can cause some cancers to grow, "in theory it can stimulate breast cancer," says Slowey.

He adds there is no hard evidence to show that this actually happens. But many oncologists don't want to leave this to chance. In some cases, women elect to go through IVF without ovarian stimulation, and then cross their fingers that the one or possibly two eggs harvested will fertilize.

But Oktay has developed a solution to this problem. He pioneered the use of tamoxifen to stimulate ovulation, which works almost as well as estrogen in his center. In theory, tamoxifen should not stimulate cancer growth, as it is frequently used to lower the rate of breast cancer recurrence. Oktay says he has had about 40 patients undergo this procedure over the past three or four years and it has proven to be very safe.

The second big obstacle is time. It takes

between two and six weeks to properly stimulate, mature, and then harvest a woman's eggs for laboratory fertilization. Not all women have this much time before chemotherapy, especially when they have aggressive cancers.

In order to even consider IVF then, a patient must get busy very early in the game. It is extremely important to consult a fertility specialist very soon after diagnosis. Oktay says you really should ask your surgeon for a referral to a fertility specialist on your first visit. This is the best way to buy enough time for this procedure.

EGG RETRIEVAL/EGG FREEZING

This procedure is useful for women who do not have a partner and who do not want to have an anonymous sperm donor fathering their children.

In this treatment, a woman's eggs are removed from her body – but not fertilized – and instead are frozen for later use. She will still need to grapple with the twin issues of what hormone, if any, to use to stimulate ovulation (so you can harvest many eggs and increase the chances of pregnancy), and you still need a window of two to six weeks before chemotherapy.

The catch is that eggs are much harder to freeze successfully than embryos. The success rate for egg freezing is only a fifth as high as that of embryo freezing, although the success rate is ever improv-

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ing. According to Slowey, the problem here is that egg cells are big. They are the biggest cells in the body, and much larger than those found in a frozen embryo. The larger the cell, the more water in the cell, and the more possibility of ice damage.

OVARIAN TISSUE EXTRACTION/ FREEZING AND SUBSEQUENT IMPLANTATION

This is the procedure that Hodgkin's survivor Ouarda Touirat had which enabled her to give birth to a beautiful baby girl last month. It was designed for women who don't have time to harvest eggs before starting chemotherapy. Basically it involves removing a woman's ovaries before chemotherapy, freezing tiny bits of them – tiny because that's the only way they will freeze successfully – and then implanting little strips of thawed ovaries in the hopes that they will start working again and regularly produce mature eggs.

Different laboratories use different implantation techniques. Touirat's tissue was reconnected to her fallopian tubes and she became pregnant naturally. In Oktay's practice, however, the strips are implanted just under the skin, either in the abdomen or the forearm. This makes it easier to surgically retrieve the eggs when they mature each month, and to monitor how things are going. Oktay says that patients can actually feel the maturing egg

as a little growing bump under the skin. Once the egg is out, it's fertilized in the lab and then re-implanted in the uterus.

This is an experimental technique developed by Oktay which is promising but hasn't yet been proven. So far, only five women have had this done, and there are no babies to date. But several embryos have been created, and one woman is currently pregnant. Oktay has high hopes for success in the very near future.

HORMONES THAT SUPPRESS OVARIAN FUNCTION DURING TREATMENTS

A completely different approach to preserving fertility is to try to protect a woman's eggs by causing a temporary drug-induced menopause during chemotherapy. The theory behind this is that cancer drugs are most harmful to the most active cells in the body, such as cancer cells which divide at a phenomenal rate. If the ovaries are "put to sleep" with a type of chemical (called GnRH Agonists), then – according to the theory – they should be less susceptible to chemotherapy damage. Women who don't have much time before chemotherapy are candidates for this approach, although there is controversy about whether it works. Oktay, for one, does not recommend this method, saying it is based on a "huge misunderstanding."

For all breast-cancer patients who

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RESOURCES

LIVING BEYOND BREAST CANCER

An educational and support organization for breast cancer survivors dealing with post treatment issues, including fertility; 10 East Athens Avenue, Suite 204, Ardmore, PA 19003; www.lbbc.org; Phone: 610/645-4567; Fax: 610/645-4573; helpline: 888/753-5222; mail@lbbc.org.

LBBC is sponsoring the following events:

- October 30, 8 a.m. - 3 p.m.: "Stacy Goldstein Symposium on Breast Cancer." Dr. Kutluk Oktay will lead one of seven workshops: "Understanding Your Fertility and Pregnancy Options". Other speakers include Dr. Susan Love and Dr. Raymond Chang. Doubletree Hotel & Executive Meeting Center; Somerset, NJ; \$35 fee.

- December 1, 7 - 8:30 p.m.: "Fertility and Pregnancy After Breast Cancer" teleconference; with Dr. Elizabeth Ginsburg and Dr. Ann H. Partridge, free.

- February 19-20: 5th Annual Conference for Young Women Affected by Breast Cancer, will include workshops on fertility and pregnancy; Pennsylvania Convention Center; Philadelphia, PA. More information at: www.youngsurvivorsconference.org.

FERTILE HOPE

An organization dedicated to helping cancer patients deal with infertility. Publishes a free directory of fertility resources, sponsors many conferences, and has a great Web site with lots of information and a message board. 42 W. 24th Street, New York, NY 10012; PO Box 624, New York, NY 10014; www.fertilehope.org; 888/994-HOPE.

RESOLVE

The National Infertility Association. with a great Web site, helpline, medical call-in hour, physician referral service, member to member contact system and magazine; www.resolve.org, 888/623-0744.

SHARSHERET

National organization of Jewish breast cancer survivors offering both peer support and educational services. The Web site has some interesting information about fertility and breast cancer. Sharsheret sponsors many conferences and symposiums; www.sharsheret.org; PO Box 3245, Teaneck, NJ 07666; 866/474-2774.

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hope to have children later, figuring out which of these options suits them requires research and asking the right questions. Sometimes getting second and third opinions is necessary. It is very important for young women who want children to find both a good reproductive endocrinologist, and an oncologist who is open to working with them.

Women who are already thinking about starting a family, like Amy Mines Tadelis, have no problem doing this. "I had fertility on my brain," Tadelis says, "When I was in the surgeon's office I even said, 'what about children?'" Tadelis' surgeon recommended an oncologist whom he knew to have worked with other patient's fertility specialists, and that is why she has two beautiful children today.

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says that it helps to have a spouse or partner who can think clearly and assist in the decision making process.

Rochelle Shoretz, a 31-year-old breast cancer survivor from Teaneck, who is the founder and Executive Director of a National peer support group for Jewish women with breast cancer, concurs. "Many women are swept up in the flurry of decision-making post-diagnosis, which are particularly rushed for young women whose cancers are often more aggressive," she says.

And, of course, you do need to be realistic about your situation. One doctor told me, quietly, about the heartbreak of talk-

ing about fertility," she says. "I thought she was sympathetic to my concerns but there was never a very serious discussion about fertility preservation, and there probably should have been. She was just very anxious to get me on to chemotherapy as soon as possible. Hidden in there was the assumption that because I already had two children I should just be grateful. And I certainly am."

"In retrospect, I feel I did everything I could. I raised the right questions and unfortunately for me there wasn't anything else I could do," she adds. When Shoretz finishes up her regimen of tamoxifen in a few years, she plans to reconsider the question of increasing her family. At that point, her options will depend upon

But for other women, having a baby is the last thing on their minds after diagnosis. Many do not have long-term partners and were undecided about children before the cancer diagnosis. In addition, the stress of finding out about breast cancer can be so overwhelming, that thinking about anything but trying to survive seems impossible.

"Women are terrified of breast cancer," says Linda Klempner, a licensed Clinical Psychologist with a private practice in Teaneck called Women's Health Counseling and Psychotherapy, "the first thing that happens is shock and disbelief... When you are in crisis it's real hard to see very far ahead of you. Especially when an oncologist is going to say, 'lets do this right away,' and it may take a couple of years to decide if you want to get pregnant." Klempner

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ing about fertility options with young women whose cancers have spread and who have very poor prognoses. But even when medical issues as serious as survival are unclear, it usually helps to keep your options open. The cure rate is ever improving and, at the very least, an optimistic outlook can be therapeutic.

Shoretz, herself, was in a very difficult situation. Diagnosed at the age of 28, she already had two little boys and was hoping for more children. But because her tumor was large and had already begun to spread, her oncologist was not encouraging when she asked about fertility preservation.

"So much of the first week was a haze, but I do remember asking my oncologist

how many eggs have survived the chemotherapy. They run the gamut from natural pregnancy to IVF; to IVF using a donor egg, and adoption.

The biggest fear, of course, is not living long enough to see the children to adulthood. That's the goal of motherhood, says Klempner, "to help your children survive until they can sustain themselves." Klempner says that survivors and their spouses need to sit down and discuss the consequence of a recurrence after a child is born. It's also important to work out how a husband would take on the extra responsibility of parenting if his wife dies.

Donna Nitzberg is a New Jersey writer and mother of three.