Fertility preservation for female cancer patients.

Barry Witt, MD, Medical Director
Anate Aelion Brauer, MD
Laura Meyer, MD

Greenwich Fertility
Where Hope Comes Alive

Affiliated with the New York University Fertility Center and Greenwich Hospital
Fertility preservation at Greenwich Fertility

Greenwich Fertility is proud to be affiliated with NYU Fertility Center, a world-renowned innovator in the field of fertility preservation. We offer egg and embryo freezing to patients in our conveniently-located embryology lab in Greenwich, CT. The purpose of egg or embryo freezing is simple — to preserve your fertility. Women undergoing treatment for cancer or other serious illnesses may be at risk of impairing or eliminating their ability to bear children in the future. Freezing eggs or embryos allows a woman to preserve her fertility in order to increase her chances of being able to start a family in the future.

Impact of cancer treatment on fertility

Certain types of cancer treatments, such as radiation and chemotherapy, can cause damage to the reproductive organs in addition to destroying cancer cells. Teenagers and women of childbearing age should speak with their oncologist about the fertility risks of their particular treatment regimen, and about whether they are an appropriate candidate for fertility preservation. After cancer treatment, some women will become infertile, or even go through menopause. The American Society for Clinical Oncology recommends that patients with a desire for future fertility be referred to a reproductive specialist as early as possible, ideally prior to beginning treatment. Our caring and professional staff is committed to supporting and helping cancer patients through what is often a challenging and overwhelming time.

Impact of gynecologic surgery on fertility

Certain types of gynecologic problems can sometimes result in the surgical removal of one or both ovaries. Women who may require surgery to resect an ovary are at risk for decreased fertility in the future if a significant amount of ovarian tissue is lost.

Fertility preservation in cancer patients

Advances in reproductive technology have allowed teenage girls and women to freeze eggs (for those without a partner) or embryos (for those with a partner) for future use. The entire process can often be completed within a few weeks, without delaying the start of cancer treatment. For women undergoing surgery prior to starting chemotherapy or radiation, a fertility preservation cycle is often scheduled in the time period between surgical treatment and the onset of medical therapy.
Women are born with all the eggs they will ever have. There is a significant decrease in the quality and quantity of a woman’s eggs over the course of her life. This effect becomes more dramatic in the late thirties and beyond, which is why older women often have more difficulty becoming pregnant and are also more prone to miscarriage. Cancer treatment can accelerate the typical age-related fertility decline. The advantage to having frozen eggs or embryos is that they will retain the genetic quality of the age at which they were frozen, and can later be used to achieve pregnancy after the completion of cancer treatment. Both embryos and eggs can be frozen and stored indefinitely.

**Egg and embryo freezing, a historical perspective**

The process of freezing is not new to reproductive medicine. The technique of freezing sperm has been utilized for over 50 years. The freezing of embryos and their transfer to a woman’s uterus as an infertility treatment option has been performed with success since 1983 and is now considered a routine procedure throughout the world. The first baby born from a frozen egg occurred in 1986. In the past, a slow freezing technique was used. While this process was adequate for sperm and embryos, eggs were found to be sensitive to this method of freezing.

Over the past several years a new freezing method has been developed, called vitrification. The vitrification process involves very rapidly freezing eggs or embryos over just minutes. When this technique is used, the survival rate after thawing is 90%. Vitrification has revolutionized the process of egg and embryo freezing, and we are proud to offer this cutting edge technique to our patients.

**What type of work-up is required prior to a fertility preservation cycle?**

A set of blood tests, physical exam and ultrasound are performed in the office prior to starting a fertility preservation cycle. Ovarian reserve can be assessed by measuring the levels of follicle stimulating hormone (FSH) and anti-mullerian hormone (AMH). In addition, a vaginal ultrasound is performed to evaluate the reproductive organs and count the number of baseline follicles in the ovaries.

**What are the steps in the egg or embryo freezing procedure?**

To begin an egg or embryo freezing cycle, daily follicle stimulating hormone (FSH) injections are begun. This medication is a synthetic version of the natural hormone that the body makes to stimulate follicular development within the ovaries. Patients are individually taught by our nurses to self-administer these
daily injections with a small needle. For a period of 10-12 days, the response to medication is monitored with blood tests and ultrasound exams to follow the growth of the follicles. All monitoring takes place at our Greenwich or Tuckahoe locations.

When the follicles are ready, the egg retrieval is scheduled. This brief procedure takes place at Greenwich Hospital under sedation provided by an anesthesiologist. Under vaginal ultrasound guidance, a needle is inserted through the vaginal wall and into the follicles of the ovary, and the fluid inside them is removed. Our embryologists examine the fluid to identify the eggs under the microscope. Patients undergoing egg freezing have their eggs frozen later that day using the vitrification technique, and then stored in liquid nitrogen tanks. Those who opt for embryo freezing will have their eggs fertilized by sperm, and the resulting embryos will be grown in the lab for 5 days prior to freezing by vitrification. Eggs and embryos may be stored for an indefinite period of time without any apparent damage as a result of long term storage.

**What happens when I wish to thaw my frozen eggs or embryos?**

Estrogen and progesterone supplements are used to prepare your uterus to receive the embryos. The eggs or embryos are then thawed. Embryos are transferred into the uterus during a simple procedure in which no anesthesia is required. Thawed eggs require the extra step of insemination, using a technique called ICSI, in which a single sperm is injected into each egg. The resulting embryos are then transferred. Any remaining good quality embryos can be frozen for future use.

**What do I need to do to get started?**

If you are interested in learning more about egg or embryo freezing, you should make an appointment with one of our physicians at the Greenwich Fertility and IVF Center. We have two convenient office locations in Greenwich, CT (203-863-2990) and Tuckahoe, NY (914-793-2990). Let us know that you are making an appointment for fertility preservation prior to cancer treatment or gynecologic surgery and we will accommodate you with an appointment within the next 2 business days. We are aware that this can be a financially stressful time, and we are committed to providing you with affordable care.

**Consideration**

It should be understood that freezing eggs or embryos does not guarantee a future pregnancy. The eggs or embryos that are frozen might never be used if a woman has no difficulty in successfully conceiving on her own in the future.