



PROCESS OF FREEZING EGGS

In this article, you will learn about the process of freezing eggs, it's meaning, Why do we keep eggs frozen? What are the risks of egg freezing?, Procedure, Is it uncomfortable to freeze eggs? many more.

What is Egg Freezing?

Egg freezing is a method of preserving a woman's reproductive potential. Oocyte cryopreservation is another name for egg freezing. The woman's eggs are taken from the ovaries, frozen when unfertilized, and preserved for eventual use in this procedure. In vitro fertilization is also paired with egg freezing. After that, the fertilized egg is inserted into the uterus of the woman.

- The process of freezing eggs can be costly.
- The doctor assists in providing the woman with detailed information about the Egg freezing technique, including the benefits and hazards, and determining whether the operation is appropriate for her.

Why do we keep eggs frozen?

Egg freezing is a safe and beneficial technique for women who are not currently planning a pregnancy but want to be sure of their capacity to conceive or have a biological child in the future. Because the eggs that are frozen are unfertilized before being frozen, egg freezing does not require a male partner or even a sperm donor, as it does with embryo cryopreservation (freezing of fertilized eggs). However, similar to embryo freezing, the mother will need to use fertility medicines to promote ovulation. This aids in the production of a large number of eggs at the time of egg retrieval.

In the following situations, a woman might contemplate Egg freezing:

- If she is diagnosed with cancer and must undergo cancer treatment. This is because some cancer therapies, such as chemotherapy or radiotherapy, might impact a woman's fertility.
- If a woman is having in vitro fertilization and her male partner does not generate enough sperm, she recovers her eggs; Egg freezing is the best alternative.

Although the egg freezing procedure appears to be an excellent choice for women concerned about age-related infertility, doctors do not recommend it for the reasons stated above because it may involve some dangers, more expenditures, and a lower chance of success.

What are the risks of egg freezing?

As mentioned below, there are some risks associated with egg freezing.



- Ovarian Hyperstimulation Syndrome - In rare situations, injectable fertility medicines such as HCG (Human Chorionic Gonadotropin), which promote ovulation, can cause ovarian hyperstimulation syndrome. The ovaries become sore and enlarged after retrieving the eggs or ovulation in this disease. Other indications and symptoms of the illness may include those listed.
- Diarrhea
- Nausea
- Vomiting
- Pains in the abdomen
- Bloating
- Egg retrieval complications — In scarce circumstances, retrieving eggs with a tiny aspirating needle might result in bleeding, intestinal injury, infections, or damage to the blood vessels or urinary bladder.
- Emotional hazards - The egg freezing technique might sometimes give a woman false hope. The combination of egg freezing and in vitro fertilization may result in a low success rate. If a woman uses the egg freezing process to become pregnant or bear a biological child, there is a risk of miscarriage, which is determined by the woman's age when the eggs are retrieved.

Some patients may experience the following issues after waking up from the effects of general anaesthesia:

- Nausea
- Vomiting
- Uneasiness
- Dizziness
- A momentary state of perplexity
- Shivering or a feeling of being cold

How do you get ready for the procedure?

Before egg freezing, the lady must undergo a necessary screening that includes the following:

- **Ovarian reserve testing** - This test determines the quality and quantity of the woman's eggs. The doctor uses the AFC test to determine the AMG level. The findings of this test can be used to detect and anticipate how the ovaries will react to fertility medications.
- **Infectious disease screening** - The lady gets tested for various infectious diseases, including HIV 122, Hepatitis B, and Hepatitis C. The eggs that are susceptible to infection are kept isolated from the remainder of the eggs.

The freezing of eggs is a multi-step process, as detailed below.

Induction of ovulation

- When the menstrual cycle begins, gonadotropin hormones are administered to stimulate the ovaries to generate several eggs, in addition to the solitary egg that forms monthly. The various medications that are required are listed below.



- Ovarian stimulation medicines – Follicle-stimulating hormone (FSH) or human menopausal gonadotropin are pharmaceuticals that stimulate the ovaries to generate more eggs.
- Gonadotropin-releasing hormone agonist or antagonist injections to prevent premature ovulation — To avoid premature ovulation, the woman may be given a gonadotropin-releasing hormone agonist or antagonist injection.
- Blood tests are also used to establish how well the medicines used to stimulate the ovaries are working. With the growth of the follicles, oestrogen levels rise, while progesterone levels remain low until ovulation is complete.
- HCG injections are given to help with the final maturation and ovulation of eggs after the follicles are ready for the eggs to be extracted, which takes about 9 to 12 days.

Retrieval of the eggs

- The retrieval of the eggs is performed under anaesthetic. Typically, doctors will use a transvaginal ultrasound aspiration. A tiny ultrasound probe is inserted into the vaginal canal to detect the follicles during this operation. The doctor will then insert a small needle into the vaginal canal and the strands. The eggs are delicately extracted from the strands using a suction device connected to the hand. In 20 to 30 minutes, this method can retrieve a large number of eggs.
- Following the retrieval of the eggs, the lady may suffer cramps, a sense of fullness, or pressure. Because the ovaries may remain swollen for a few weeks, especially in individuals with ovarian hyperstimulation, this may continue for a few weeks.
- If the doctor cannot access the ovaries using transvaginal ultrasonography, the needle will be placed using the laparoscopic procedure.

Freezing

- After the unfertilized eggs are harvested, they are frozen to a sub-zero temperature (-196 degrees). This is done to halt all biological activity in the egg. The eggs are then stored to be used later.

For egg freezing, the doctor employs a variety of techniques, as detailed below:

- **Use of cryoprotectants** - When an egg is stored in deep freezing, cryoprotectants prevent an intracellular damaging ice crystal from developing.
- **Slow-freezing approach** — This method uses programmable freezers to freeze the eggs, preventing intracellular ice crystals progressively. The eggs are protected from the harmful chemicals found in cryoprotectants using this method. The cryoprotectants are utilized initially in a low concentration in this slow-freezing approach. The high concentration of cryoprotectants is only employed when the eggs' temperature and metabolic rates gradually decrease.
- **Verification** - In this procedure, a more significant concentration of cryoprotectants are utilized at first, together with fast cooling, to ensure that intracellular ice crystals do not develop (currently used & popular technique).

Following the procedure:



The lady can resume regular activities within a week of the egg retrieval procedure, and she is encouraged to have protected intercourse to avoid unexpected pregnancy.

- If the lady notices any of the following, she should contact her doctor right away:
- Urinary incontinence
- A fever of higher than 38.6°C (101°F).
- Severe vaginal bleeding, defined as the filling of more than two pads per hour.
- Consistent abdominal pain
- Gaining more than 0.9 kg in less than 24 hours.

Result

The doctor might suggest ICSI (in vitro fertilization) (intracytoplasmic sperm injection). Healthy single sperm is inserted into a developed egg using this method. Even after freezing and thawing, 75 to 80 per cent of the eggs remain undamaged. The chances of becoming pregnant after the implantation procedure are around 30 to 40%, and the woman's age mainly determines this at the time of egg freezing. The older the lady, the worse the quality of her eggs, resulting in a lower possibility of live birth when frozen-thawed eggs are used.

FAQS

Q1. How long does it take to recover completely after an egg retrieval procedure?

A1. Most doctors recommend that you rest for the entire day following the egg collection procedure. The doctor may prescribe drugs if the patient feels cramping, pain, or soreness, although this usually goes away after a week. In addition, after a week, the patient can return to work.

Q2. How long can a woman keep her eggs after they've been frozen?

A2. Women can keep eggs for as long as she desires. Many babies may be born from eggs that have been preserved for 5 to 10 years. Even after 14 years, reports of successful thawing show a high success rate. As a result, there is no indication of a decrease in the efficiency of frozen eggs over time, as long as the freezing circumstances are adequate and the egg quality is good at the time of freezing.

Q3. Is it uncomfortable to freeze eggs?

A3. During ovarian stimulation, some women develop bloating and pain (similar to PMS symptoms). The egg retrieval procedure is painless and is performed under minimal anaesthesia.

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