



# Baby One More Time

## Egg Freezing - Extending Your Fertility Timeline

Egg freezing or oocyte cryopreservation refers to the process where a woman's eggs are extracted, frozen and stored as a means to preserve the fertility of a woman who wants to conceive at a later time. This allows women to avoid the problem of dwindling egg quality as they grow older.

In Singapore, starting from 1 July 2023, women aged between 21-37, regardless of marital status, will be able to legally freeze their eggs through elective egg freezing, which is carried out for non-medical reasons. This takes effect with the introduction of the Assisted Reproduction Services Regulations under the Healthcare Services Act.

Prior to the recent changes, egg freezing was only allowed for medical reasons. This shift to allow women to opt for elective egg freezing takes into consideration the fact that there may be women who want to preserve their fertility due to their personal life plans, besides the factor of medical needs. It is also in line with the country's overall push to increase fertility rates.

However, it should be noted that only legally married couples will be allowed to use the woman's frozen eggs to try for a baby through in-vitro fertilisation (IVF).

### REASONS FOR EGG FREEZING

So, why do some women opt for egg freezing? There are a couple of possible reasons for this.

First and foremost, women may choose to freeze their eggs for medical reasons or conditions that may reduce their fertility or affect their reproductive organs. For example, a woman undergoing cancer treatment, such as chemotherapy or radiotherapy, may opt for egg freezing as such treatments may be "gonadotoxic" and could be harmful to the eggs in the ovaries. Women with autoimmune conditions like lupus, Crohn's disease, diabetes or rheumatoid arthritis may also opt for egg freezing as they have a higher chance of premature ovarian failure and infertility.

Other medical conditions that may lead a woman to choose egg freezing include endometriosis and premature ovarian insufficiency. Endometriosis is a common cause of infertility and in severe cases, a cystectomy may be needed. This refers to the removal of cysts from the ovaries. Endometriosis tends to recur over time and can affect the underlying ovarian reserve. On the other hand, premature ovarian insufficiency occurs when a woman's ovaries stop working normally before the age of 40. Some women may opt for egg freezing in order to preserve their prime fertility potential for future family building.

Some women may also decide to freeze their eggs due to elective reasons. They may not be ready to have a baby and start a family during their prime reproductive years as they may want to focus on their education, career or other priorities. Egg

freezing allows them to increase their chances of conceiving in the future when they are ready to start a family.

### BEST TIME TO FREEZE EGGS

In general, women in their 20s to early 30s should still be relatively fertile with good numbers of healthy eggs. As women get older, their egg numbers and egg quality will decline resulting in lower success rates when the eggs are thawed for fertilisation in the future. Hence, the younger the woman is when she freezes her eggs, the better the success rate later when the eggs are used.

With the new regulation starting on 1 July 2023, women aged between 21-37, regardless of marital status, will be able to legally freeze their eggs through elective egg freezing (non-medical reasons). You may wonder why the age limit in Singapore is set at 37 instead of 35 as originally intended, but this is actually backed by scientific evidence which shows that the success rates from egg freezing and the following usage of these eggs are relatively stable for women up to the age of 37.

### PROCESS OF EGG FREEZING

Though it differs between individuals, the egg freezing process typically takes two weeks to complete. The stimulation of ovaries to produce eggs is done in sync with the woman's menstrual cycle for optimal results. However, before egg freezing takes place, pre-procedural testing is done. The following tests may be administered.

- **Ovarian Reserve Testing:** In order to determine the quantity and quality of eggs, the doctor may test the anti-Müllerian hormone level in the woman's blood. This allows the doctor to determine the dosage and type of hormonal injections needed for optimal results. An ultrasound may also be ordered.
- **Reproductive Hormone Tests:** Follicle-stimulating hormone, luteinising hormone and estradiol hormone tests will be ordered to allow doctors to pick the treatment plan and dosages of fertility medication during ovarian stimulation that is best suited for the woman.
- **Infectious Disease Screening:** The woman will be screened for infectious diseases like HIV, hepatitis B and C, syphilis and rubella.

### STEPS

Once the woman clears the pre-procedural testing, the process of egg freezing will take place. These are the typical steps that occur during this process.

1. The woman is given a series of hormone injections to self-administer for around two weeks. These injections contain medications that stimulate the ovaries to produce multiple mature eggs, instead of the usual single egg in a natural menstrual cycle.
2. She is observed with regular ultrasound scans and blood tests in order to measure the development of the ovarian follicles and hormone levels; both of which will help to determine when egg retrieval can take place.

3. When the follicles have reached a sufficient size, she will be administered a final injection which triggers the final maturation of the eggs as well as their release from the ovarian follicles.

4. The eggs will then be retrieved under anaesthesia in a procedure known as transvaginal oocyte retrieval. The doctor utilises a transvaginal ultrasound probe with a thin needle attached to retrieve the eggs.

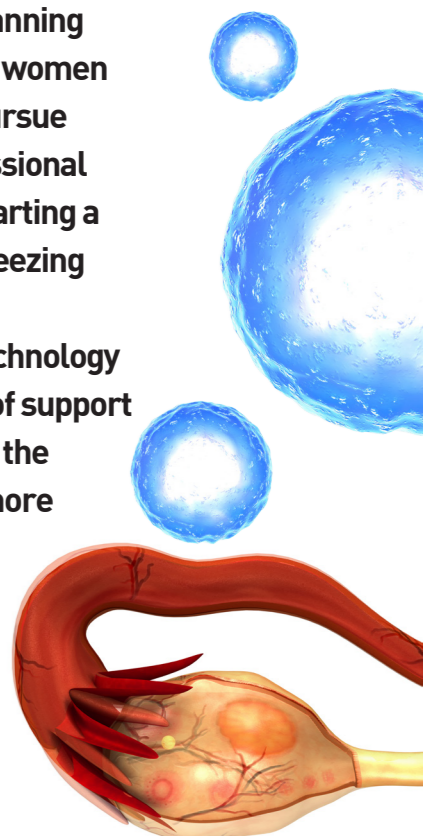
5. After the eggs have been retrieved, they are examined for their maturity and quality, and frozen via a flash-freezing process (vitrification) in order to preserve their quality and viability as they are securely stored, until they are ready to be thawed and used in the future.

### POSSIBLE SIDE-EFFECTS AND RISKS

While the procedure is not without risk, they can be minimised to the lowest level by an experienced gynaecologist. Some possible side-effects and risks include:

- **Mild Bruising at the Injection Site:** This can be attributed to the needle causing minor trauma to the blood vessels or capillaries during the injection process.
- **Nausea:** This can be attributed to a lingering effect of fertility medication which results in hormonal changes.

Egg freezing offers women in Singapore the opportunity to preserve their fertility and exercise control over their reproductive timeline. It allows for family planning flexibility, providing women with the option to pursue personal and professional goals first before starting a family. While egg freezing is not without risks, advancements in technology and the availability of support services have made the process safer and more accessible than ever before.



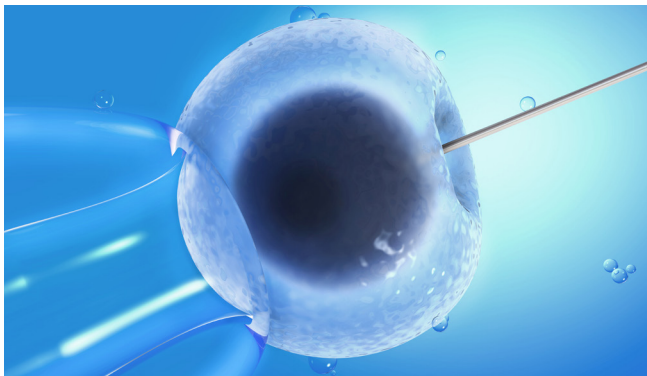
- **Mood Swings and Fatigue:** This typically occurs due to hormonal fluctuations caused by the medications.
- **Constipation:** This results from elevated levels of progesterone which occurs after ovulation and after egg retrieval.
- **Ovarian Hyperstimulation Syndrome (OHSS):** This occurs when the medications taken to stimulate the ovaries to make eggs result in abnormally high hormone levels. This leads to swelling of ovaries, fluid leaking into the abdomen and electrolyte abnormalities. However, under careful monitoring of hormone levels by a trusted and accredited medical professional, the risk of experiencing OHSS is low.

## CONSIDERATIONS

When it comes to making a choice on whether one should opt for egg freezing, there are three major considerations to make. They are mental health impact, success rates and financial considerations. Let us take a closer look at each individual factor.

- **Mental Health Impact**

Egg freezing can be a stressful and emotional process. The toll on one's daily life due to adjusting one's schedules around doctor appointments, self-administering injections, coupled with the increase in hormone levels leading to increased fatigue and becoming more emotional can be temporarily hard on some people. The decision to freeze eggs can be emotionally challenging for some women. The process may evoke feelings of uncertainty, anxiety or sadness. Counselling and support services are often available to help individuals navigate these emotions.



- **Success Rates**

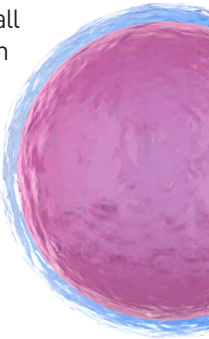
The process of egg freezing has evolved over the years. Its success depends on diverse factors, such as the age of the patient at the time of freezing, the total number of oocytes frozen, and the method of cryopreservation. Women should be aware of the realistic success rates of the procedure resulting in a baby being born (live birth rate), which significantly depends on the number of mature eggs retrieved, maternal age, and the woman's overall health. Let us more closely examine the various factors affecting the results of egg freezing:

- ▶ **Age:** Age at freezing is a critical factor for success. Egg quality decreases as a woman ages and thus, the chances

of developing a healthy embryo also decreases. The younger the woman, the better the chances of success.

- ▶ **Number of Eggs Retrieved:** A higher number of eggs retrieved will correlate to higher success rates.
- ▶ **General and Reproductive Health:** Poor health can often result in decreased egg quality.
- ▶ **Lifestyle Habits:** Excessive drinking or smoking may cause a decrease in egg quality and the success rate of egg freezing.

Depending on a woman's age, ovarian reserve and overall health, one egg retrieval cycle would result in the collection of 10-15 eggs on average. Of these, 90% will survive the freeze-thaw process, and around 50-70% will fertilise successfully with sperm, of which around 40-50% will develop into good quality embryos. Around 50% of these good quality embryos will result in a pregnancy. As you may deduce from the percentages, more than one egg retrieval cycle may be needed to yield a good chance for one pregnancy.



- **Financial Costs**

Egg freezing can be costly. It is important to evaluate the cost of the procedure, including consultations, medications and storage fees; and see if one is able to comfortably afford it. The costs of egg freezing will include:

- ▶ Doctor's consultations and scans
- ▶ Hormone medication
- ▶ Laboratory procedures for egg retrieval, freezing and storage

It is best to contact the clinic directly for the most up-to-date costs relevant to your circumstances.

## PRESERVE FERTILITY AND CONTROL REPRODUCTIVE TIMELINE

In conclusion, egg freezing offers women in Singapore the opportunity to preserve their fertility and exercise control over their reproductive timeline. It allows for family planning flexibility, providing women with the option to pursue personal and professional goals first before starting a family. While egg freezing is not without risks, advancements in technology and the availability of support services have made the process safer and more accessible than ever before. **PRIME**

**Dr Kelly Loi** is an experienced MOH-accredited Assisted Reproduction Practitioner and the Medical Director of the Health & Fertility Centre for Women at Mount Elizabeth. Her decades of expertise in fertility treatment, in-vitro fertilisation (IVF) and reproductive medicine ensures her patients are in trusted hands. Dr Loi formerly served as a consultant in the Department of Reproductive Medicine at KK Hospital and was awarded an overseas fellowship in Belgium in the field of fertility preservation for cancer patients.

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