



## A guide to Egg Freezing



## Introducing Fertility Plus

Fertility Plus is a leading fertility clinic based in Harley Street, dedicated to offering couples and individuals the best chance of conception in a supportive, caring and confidential environment. We believe your care is paramount and we ensure that each of our patients receive personalised care and personalised plans with fixed pricing and no hidden costs.

## What is Egg Freezing?

Egg freezing is one of the most promising treatment options in fertility preservation. In the last 25 years technology for the long term preservation of human eggs has improved greatly, specifically the “fast freezing” technique of vitrification which has changed the way eggs are frozen. Vitrification has improved survival rates of the freeze-thaw process making egg freezing a viable option for those wishing to preserve chances of motherhood.

No longer experimental, reports suggest that pregnancy rates with frozen eggs are extremely good, though it's important to realise it egg freezing is not a guarantee of achieving a pregnancy in the future.



## Why Should I Freeze My Eggs?

Egg freezing was initially used to help women undergoing cancer treatment that potentially destroyed fertility, however more recently healthy women are also thinking of preserving their fertility although this time for social reasons.

The social egg freezing trend is slowly increasing, as many women delay having a baby until much later in life to pursue other options first. Data from OECD suggests that approximately 20% of 40-44yr olds were childless in 2010 compared to 14% in 1995 and this trend is expected to continue.

This delay in starting for a family coupled with the natural decline in fertility where the greatest decline occurs after 35 years and intensifies after 39 has meant that egg freezing provides women with a choice to delay their fertility for the future.

It's important to be aware that egg freezing does not guarantee a baby, therefore all patients must balance the decision of trying to preserve their fertility by freezing their eggs or trying for a family in the near future.

## Egg Freezing Treatment Stages

Egg freezing treatment at Fertility Plus is divided into the following stages:

- Investigation, assessment and consent
- Ovarian stimulation
- Egg collection
- Egg preparation and freezing

### Investigation, assessment and consent

The assessment is an initial consultation with your consultant and a series of tests that include an ovarian reserve blood test and an ultrasound scan.

Following the results of these tests an egg freezing treatment plan is given alongside the consideration of the fertility drugs that will be used and the associated fixed price package.

There is a selection of consent forms which explain in detail the legal aspect of egg freezing from the regulatory body, HFEA. In particular these detail how long you wish the eggs to be stored for and details about their usage including what should happen in the event of your death or incapacity. These consent forms can be amended at any time.

## Treatment Protocols

Start of treatment is either planned with the period or with certain adjustments to the period with the addition of tablets which are called pre-treatments. A clear plan will be given that is tailored to the individual.

The protocols used are:

1. The antagonist protocol, which allows for a shorter cycle with the addition of a drug to block ovulation. This is our preferred protocol.
2. The long protocol is where the small central gland in the brain is desensitised and stimulation of the ovaries commence. This is used less frequently in our practice.

## Fertility Drugs

Drugs play a key role in ensuring the success of egg freezing, the main drugs that we use in our egg freezing cycles at Fertility Plus are:

1. Gonadotropins (FSH/LH): these are known as stimulation injections as they stimulate the ovary and push the antral follicles to start growing. There are different preparations called Merional, Meriofert, Gonal F, Bemfola and Fostimon, all of which contain approximately the same primary drug called follicle stimulating hormone (FSH) and have to be taken daily as advised by your consultant.
2. Antagonist (Cetrotide/Frymadel): this is a drug that is given to block ovulation. It is usually given from day 5, 6 or 7 of stimulation or in some cases later. The success rate of this drug is approximately 99.5% with failure (early release of eggs) in very few cases.
3. Trigger injections (Gonasi/Ovitrelle/Suprecur): these are given to trigger the release of the egg to get the ovary ready for egg collection. This injection is always taken at night at a specific time. The failure rate (where no eggs are obtained) of all triggers is approximately 2-3%.

## Ovarian Stimulation

Once we have agreed your plan we will either commence treatment with the start of your period or after a short period of pre-treatment. Stimulation injections are self-administered, taken daily at approximately the same time and are usually required between 10-14 days. The injections are administered just under the skin, in the tummy or thigh. The response to the FSH injection is monitored through regular scans and blood tests.

During ovarian stimulation Cetrotide/Frymadel (an antagonist) is given to block the LH surge and ovulation from occurring prematurely. This is usually given on day 5 or 6 of the ovarian stimulation cycle (FSH injections) and is continued until the day of the trigger.

During stimulation the follicles (fluid filled sacs) which may contain an egg, are scanned and their size is measured, an oestrogen blood test may also be performed. Depending on the progress of the follicles, the dose of the medication may be adjusted.

### Can the size of the follicle or the oestrogen test indicate that the follicle may have an egg?

During ovarian stimulation many follicles may grow though some may not give an egg. Neither the scan nor oestrogen test can give an indication if there are eggs inside the follicles. Eggs can only be studied when a needle is inserted inside the follicle and the contents of the follicle are drained and examined.

### How do the follicles grow?

The response of the follicles in the ovary differ between patients. The aim of stimulation is to get a reasonable number of follicles growing in order to achieve a good egg count. The stimulation and treatment plan is made following a review of the results of all the tests taken. Even with low or maximum doses the ovaries can sometimes fail to elicit the response we expect. Some ovaries with a good reserve may also give a relatively lower response and there is no way of knowing the quality or quantity of the eggs in the follicles.

### When are the eggs collected?

When the follicles are large enough, the egg collection procedure is planned. The egg collection injection (or trigger injection) is usually given 35-35½ hours before the egg collection process, therefore always done late at night. This has to be done at the most specific time and either of the two injections may be prescribed, or sometimes a combination of both. It is very important that the trigger injection be taken at the prescribed time.

### Which triggers are used?

1. Suprecur is a hormone that makes your pituitary gland release the LH hormone, thus mimicking nature. This significantly reduces the risk of ovarian hyperstimulation syndrome and is usually used in our egg freezing cycles.

2. HCG injection is a pregnancy hormone which mimics the LH hormone. This is a more traditional trigger that has been used for many years, but it increases the risk of ovarian hyperstimulation syndrome. We may use this trigger if the ovarian response is lower or it is medically indicated. This injection must be taken at night.

Both triggers have to be taken at the specific time at night.

The triggers have a small failure rate of approximately 2-3.5% but unfortunately this can't be known until the egg collection procedure is completed. In some cases we may ask you to repeat hormonal tests 10-12 hours after the Suprecur trigger to evaluate its action.

Important notes about ovarian stimulation:

- The hormones must be injected daily around the same time. This may continue from 10 to 11 through to 14 days.
- Cetrotide/Frymadel may be started around day 5 or 6, usually in the morning.
- Barrier contraception should be used throughout the procedure to avoid the chance of a pregnancy.
- If the period start is irregular a pregnancy test is advised.
- Ensure that you have at least 2-3 days of medications stock left.

## Egg Collection

Egg collection is where follicles in the ovary are aspirated and the eggs are obtained. It is a day case procedure scheduled in the morning. All procedures are performed at the London Women's Clinic by Fertility Plus consultants.

You arrive at the London Women's Clinic, 113 Harley Street between 7.30-8am where you will be seen by the nurses followed by your consultant. The anaesthetist will reassess you, checking your name and date of birth along with the embryologist. This is also checked on the dishes by electronic witnessing which is carried out by the laboratory.

A small cannula will be placed on your hand and sedation is given through your vein. This is not a general anaesthetic hence the recovery is much quicker and you will not feel the procedure.

The procedure is performed trans-vaginally, a fine needle is attached to a scan probe which is passed through the ovary. The fluid in the follicle is aspirated and sent to the embryologist to be checked for an egg. If an egg is not found the follicle may be flushed with sterile fluid to see if that detaches the follicle. This process may be repeated a couple of times.

Every follicle may not contain an egg and the egg to follicle ratio, the number of eggs which may come from each follicle may vary. In some cases the follicles may not yield any eggs or may provide abnormal ones. After the egg collection we are told how many eggs are obtained. There is no way of predicting the number of eggs or their quality until the egg collection.

Important notes about egg collection:

- By the evening we will be able to tell you how many mature eggs have been frozen.
- 8 hours of fasting, food and water, is required. We request nil by mouth from midnight.
- You may take a shower in the morning. Avoid wearing any make-up, nail varnish or jewellery and leave any valuables at home.
- It is essential that a friend or relative takes you home afterwards.
- You may feel drowsy on the day and we suggest that somebody is at home with you for 24 hours following the procedure.

## Post egg collection

Serious complications are rare but it's important watch for signs of severe pain, bloated feelings and dizziness where you would need to contact the emergency number as soon as possible. You may have some vaginal discharge which will become lighter.

We may restart the Cetrotide/Frymadel and a drug known as Cabergoline to reduce the chance of ovarian hyperstimulation syndrome.

## Egg Freezing Complications

Egg collections through ultrasound and ovarian stimulation have been carried out for almost 25-30 years and during this period the risks have decreased significantly. The risks of egg freezing are few but significant when they occur.

The most common post-operative symptoms are pain, abdominal distension, feeling nauseous and tired. These may take 3-4 days to subside and the recovery may vary from person to person.

## Ovarian hyperstimulation syndrome

This is one of the most serious complications of egg freezing and it increases when more than 10 to 15 follicles may be growing with high oestrogen levels. It tends to occur more commonly with polycystic ovaries and in some cases where the response is extremely high we may decide to abandon the egg freezing cycle.

Fortunately, the use of the analogue trigger, Suprecur, almost eliminates any moderate or severe ovarian hyperstimulation syndrome, though in rare cases we may still see some moderate hyperstimulation syndrome. The symptoms include abdominal pain, swelling, vomiting and shortness of breath. Mild ovarian hyperstimulation syndrome tends to occur in cases of polycystic ovaries, although with the analogue trigger it may be milder. We give Cetrotide and Cabergoline to reduce the symptoms. In a small number of cases you may need to be admitted to hospital.

## Ovarian torsion

There is a very small possibility of the ovary twisting (torsion) and may require hospital admission and surgery. This a rare complication of ovarian stimulation.

## Pelvic infection

Pelvic infection is extremely rare and unlikely to occur unless there is very bad scarring in the pelvis due to past surgery. We always use clean aseptic techniques and administer a single dose of antibiotic before the procedure.

## Injury to bowel, bladder and bleeding

These are extremely rare complications where either the bowel or bladder is punctured or very rarely there may be excessive bleeding. With punctures to ovaries some of these may bleed and may present as complications. In these occasions you would have extreme pain, shortness of breath, feeling feverish, nausea and may need to be admitted to A&E urgently.

## Adverse effects, eggs and embryos

There is a possibility of some eggs not being mature enough or a large number of eggs being immature. Immature eggs are not frozen and will be discarded. In approximately 1% of cases eggs may not be obtained and approximately 10% of cases fewer eggs than expected are obtained.

## Adverse effects of medications

The most common side effects of the FSH injections (Merional, Meriofert, Fostimon, Menopur, Gonal F and Cetrotide) are a local reaction, occasionally fever or flu-like symptoms, some amount of muscular skeletal pain and dizziness. You may feel very bloated and may have mood swing and hot flushes. In the case of an antagonist, there is likely to be more of a reaction at the injection site, whereas in the case of the long protocol there may be dizziness, a slight increase of blood pressure or vaginal dryness and hot flushes and mood swings.

## FAQs

### Do all follicles contain eggs?

Follicles are fluid filled sacs that may contain an egg. A follicle is lined by granulosa cells and an egg is attached to it. On giving a trigger, the detachment of the eggs start from the compacted cells. In some cases, eggs cannot be detached or the follicles are empty (cyst), while in others there is a variation of the maturity of eggs. It is impossible to predict how many follicles would give an egg, but each follicle has no more than one egg.

### What are mature and immature eggs?

The ultrasound scan can only see follicles and cannot see eggs. Follicles contain numerous cells and when the egg is obtained it can be obtained as a mature egg (M2), immature egg (M1) and germinal vesicle (GV).

Maturity indicates that the segregation of chromosomes has occurred and the eggs can be fertilised, though it does not confirm the type of segregation of chromosomes (thus mature eggs may be genetically abnormal).

Immature eggs have to double the number of chromosomes and cannot be fertilised, hence are discarded along with the germinal vesicles.

The proportion of mature and immature eggs varies; older women and those with polycystic ovaries tend to have a higher proportion of immature eggs compared to the others. Only mature eggs are frozen and an appointment is made after a week or two to discuss the process.

There is no way of predicting how many eggs can be frozen. Very rarely, there may be no eggs or all the eggs may be immature and hence cannot be frozen.

### How many eggs will I be able to freeze?

The number of eggs varies and depend on age, ovarian egg count (ovarian reserve) and response to medications. Some follicles (rarely all follicles) may not contain eggs or may have a larger majority of immature eggs. There is no way of predicting the number of mature eggs that will be obtained until the follicles are aspirated and each cycle may differ from the previous one.

### How are eggs stored?

Mature eggs are frozen by a process called vitrification (fast freezing) and are stored at the London Women's Clinic.

### How much control do I have over what happens to my eggs?

Before commencing the egg freezing process there are a number of consent forms to be completed, these forms allow you to specify:

- The time period for storage (10 years maximum by law).
- What should happen to your eggs in the event of your death or become unable to make decisions for yourself.
- Whether the eggs are to be used only for yourself or if they can be donated to someone else or used in research and training.
- Any other conditions you may have for the use of your eggs.
- All consent forms can be amended or withdrawn at any time.

### How long can my eggs be stored for?

The standard storage term is 10 years by law.

It's important to remain in touch and inform us if you change address so you can be contacted when the storage period is coming to an end, otherwise the eggs may be allowed to perish.

### What happens when I want to use my eggs? How many will survive?

ICSI (injecting the sperm into the egg) will be needed to fertilise the eggs, IVF (mixing the sperm and the egg) cannot be achieved since the eggs are frozen without their surrounding cells and hence cannot be fertilised through the natural route. The eggs are thawed (warmed) and then fertilised with sperm (ICSI).

With the new technology called vitrification around 80-90% of eggs survive the freezing procedure although this varies with age and ovarian reserve; older women and women with lower reserve have lower egg survival.

It is possible, although rare, that very few eggs survive the freezing process or none survive the freezing/thawing process. As In IVF, the success rate is related to the number of embryos eggs can create after fertilisation. If the fertilised eggs can reach a blastocyst (day 5 embryo) stage, the chances of pregnancy come closer to the age related success rates. It is possible that after thawing and fertilizing the eggs there may not be any blastocysts. Usually under the age of 38 years, approximately 25-30% of eggs fertilized may become blastocyst. The ratio decreases as with the increasing age of the female at the time of egg freezing.

## What are the risks of freezing eggs?

The risks associated with egg freezing relate to the fertility drugs involved, as previously stated, and the risk of the eggs not surviving the freeze-thaw process or not becoming fertilised.

The best method of testing fertility is by trying for a pregnancy, egg freezing offers an option but may not be the best insurance policy for the future.

The success rate of achieving a pregnancy with frozen eggs is not greater than 50% and this relates to eggs frozen before the age of 35 (provided 3 embryo transfers at blastocyst stage are done).

Frozen eggs are not as good as fresh eggs and pregnancy rates will be lower than fresh eggs at the age they are frozen.

It is important that you take into consideration the risks of this procedure and the likelihood of your eggs surviving the process when deciding whether to store your eggs for future use. Ultimately there is a decision to be made between trying for a pregnancy in the near future or using this technique to delay fertility.

## What is my chance of having a baby with frozen eggs?

The use of frozen eggs in fertility treatment is a relatively new development. In the United States more than 2000 babies have been born using frozen eggs but in the UK where the egg freezing concept is newer and fewer women are freezing eggs, the success rate of thawed eggs is less at the present time.

Pregnancy rates vary due to age, ovarian reserve and genetic quality of eggs, which cannot be studied, however the chances of pregnancy will not exceed those achieved with fresh eggs through IVF at that specific age (e.g. 50%\* for eggs frozen before 35 years of age) with 3 embryo transfers. Thus it is important to realise that egg freezing is not a guarantee of a future pregnancy.

## How much does egg freezing cost?

At Fertility Plus we offer fixed price packages with no hidden charges, all costs relating to egg freezing can be found on our website; [www.fertilityplus.org.uk](http://www.fertilityplus.org.uk) Our prices are fully inclusive of consultations, medications, ultrasound scan, blood tests and the freezing. Yearly storage fees are charged directly by the London Women's Clinic.

Egg freezing comes in either a single or 3 cycle package. Our packages are all inclusive and include the initial appointment, tests, fertility drugs and egg freezing.

The 3 cycle package must be completed within 12 months of commencing and includes stimulation which is aimed at achieving 10-20 eggs (final count may vary) over the 3 cycle period using the normal levels of medication.

Both options (single package or 3 cycle package) are fully pre-paid and signing up to the completion is a requirement.

\* This success rate is dependent on achieving blastocysts (day 5 embryos).



To book a consultation with Mr Amit Shah or Mr Anil Gudi to discuss your personal requirements, please contact:

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For further information please visit:

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