amilis
EGG FREEZING PLATFORM

Egg freezing explained simply.



Your guide to knowing everything about egg freezing in the UK. Written by fertility specialists.

Egg Freezing can be pretty daunting.



With tons of information online, it can easily become overwhelming to understand how it works. But, the process can be simpler than you think.

The Amilis team have developed this guide with the help of fertility specialists, to explain the process of egg freezing in depth. We talk about what your patient journey could look like, what to expect from clinics and a realistic cost breakdown of egg freezing in the UK.



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An overview of egg freezing in the UK.

What is egg freezing?

Egg freezing is a fertility preservation method that can allow a woman to store her eggs, to **increase her chances** of having a baby in the future. The method works by collecting eggs from a woman, and then “fast freezing” them (also known as ‘**vitrification**’). These eggs are stored and later thawed when a woman feels she is ready to use them.

As of 2022, eggs, sperm and embryos can be stored for up to **55 years** in the UK. Furthermore, egg freezing is regulated by only one governing body known as the Human Fertilisation & Embryology Authority (HFEA). It is their job to monitor the standard of fertility clinic practises in the UK.

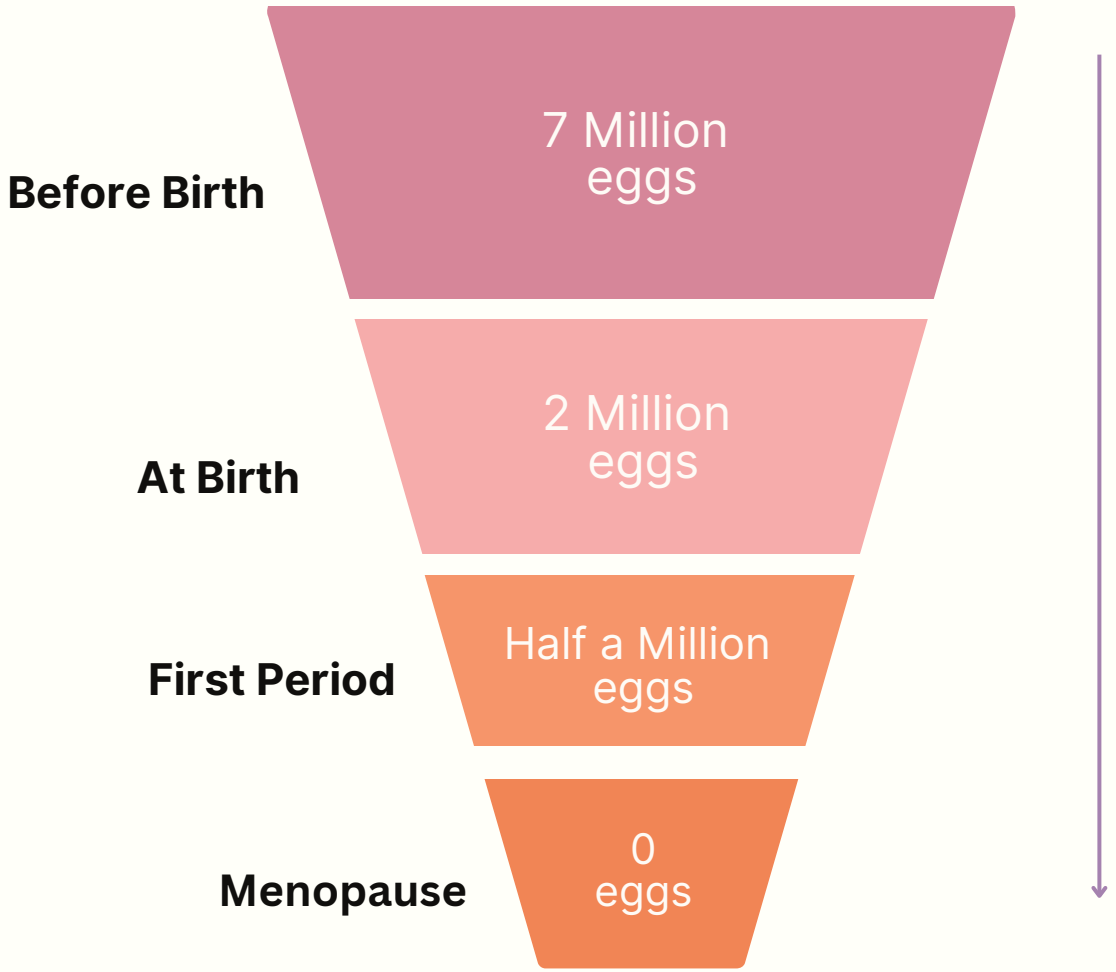
How might this 'preserve' fertility?

Some women might want to ‘preserve’ their fertility because, with increasing age, it becomes increasingly difficult to get pregnant naturally. This phenomenon is known as 'age-related fertility decline', and occurs in men too but to a lesser degree. In fact, it remains to be a much-researched subject in reproductive medicine. However, in women, a decline in fertility mainly comes down to two things: **Egg quantity** and **Egg quality.**

Egg Quantity

A woman is born with roughly a million eggs which progressively decrease over her lifetime. At puberty, there may be around 300,000 – 500,000 eggs, whereas, at 37, only 25,000 eggs could remain. Around the age of 50, it is estimated that there are less than 1000 eggs.

The loss of egg number over time is referred to as the decrease in '**ovarian reserve'.**



There are changes in hormones which influence the growth/maturation of eggs, such as the '**Anti-Müllerian Hormone (AMH)**', '**Follicle Stimulating Hormone (FSH)** and **Luteinizing hormone (LH)**. The result of these overall imbalances downregulates the production of antral follicles.

Consequently, this leads to a diminished ovarian reserve, with age.

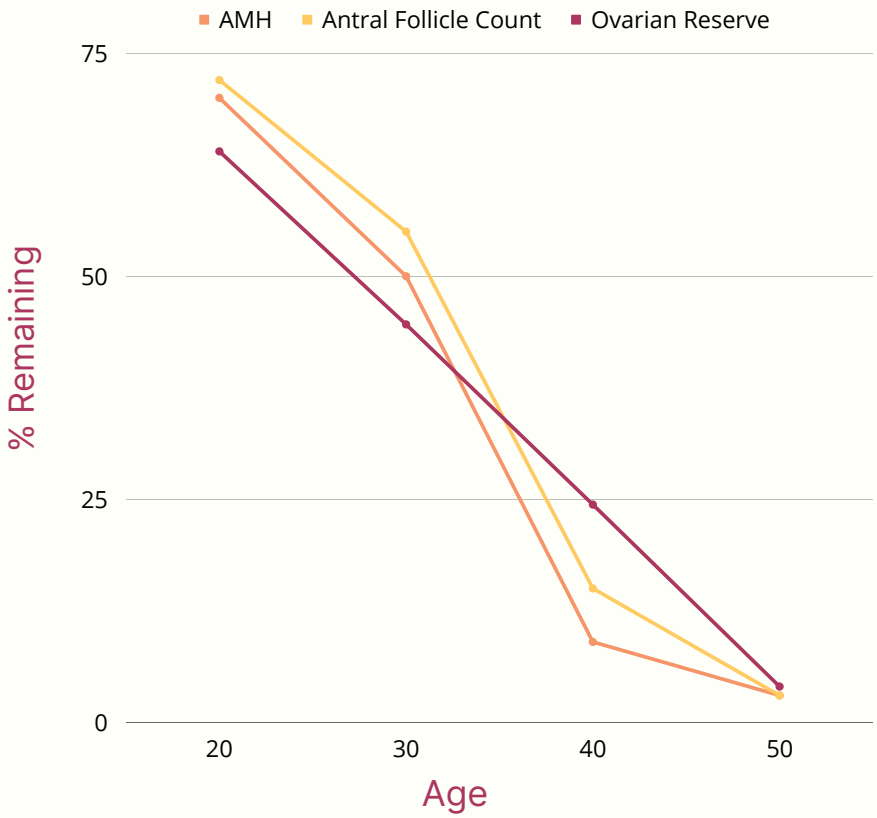


Figure 1. In women, the ovarian reserve decreases with age, whilst the percentage of remaining Anti-Müllerian Hormone (AMH) levels, and antral follicle count also decreases .

1. Hansen, K., Knowlton, N., Thyer, A., Charleston, J., Soules, M. and Klein, N., 2008. A new model of reproductive ageing: the decline in ovarian non-growing follicle number from birth to menopause. Human Reproduction, 23(3), pp.699-708.

Egg Quality

Eggs are exposed to more **DNA damage,** with age. Eggs will also find it harder to repair the DNA damage. So, it's likely that eggs will have **genetic abnormalities,** which reduces the chances of pregnancy. It can also lead to miscarriages or babies with genetic disorders.

In both men and women, the risk of general disorders increases with age, and this adversely can affect fertility. Therefore, egg freezing could mitigate this, by keeping a woman's eggs at a much higher quality if the procedure is done at a younger age.

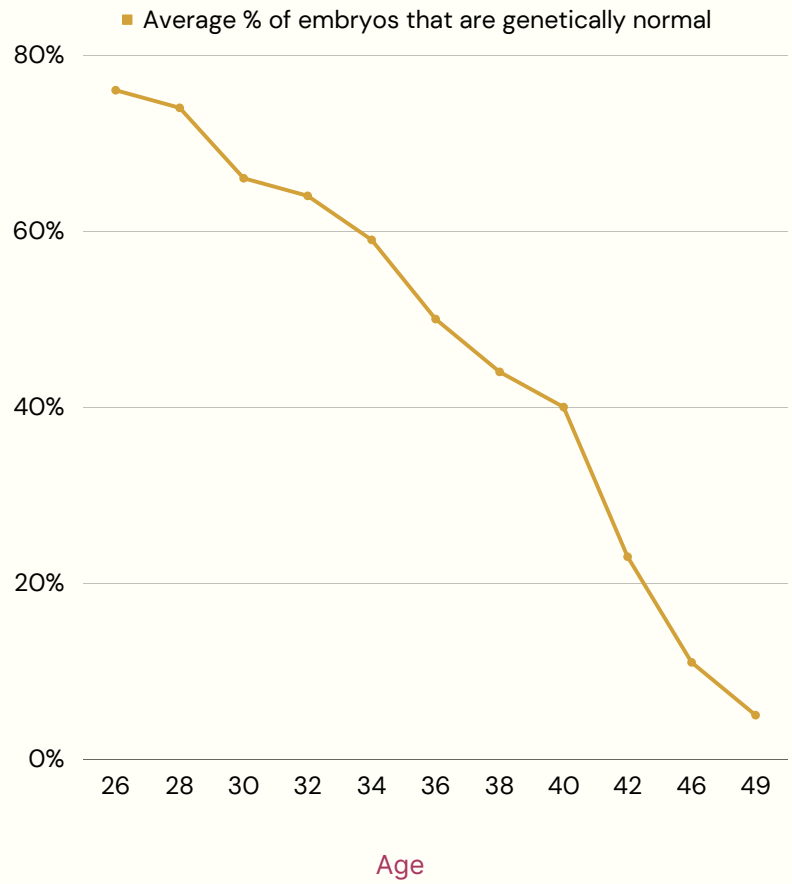


Figure 2. In women, the percentage of embryos without genetic abnormalities decreases as the age increases.

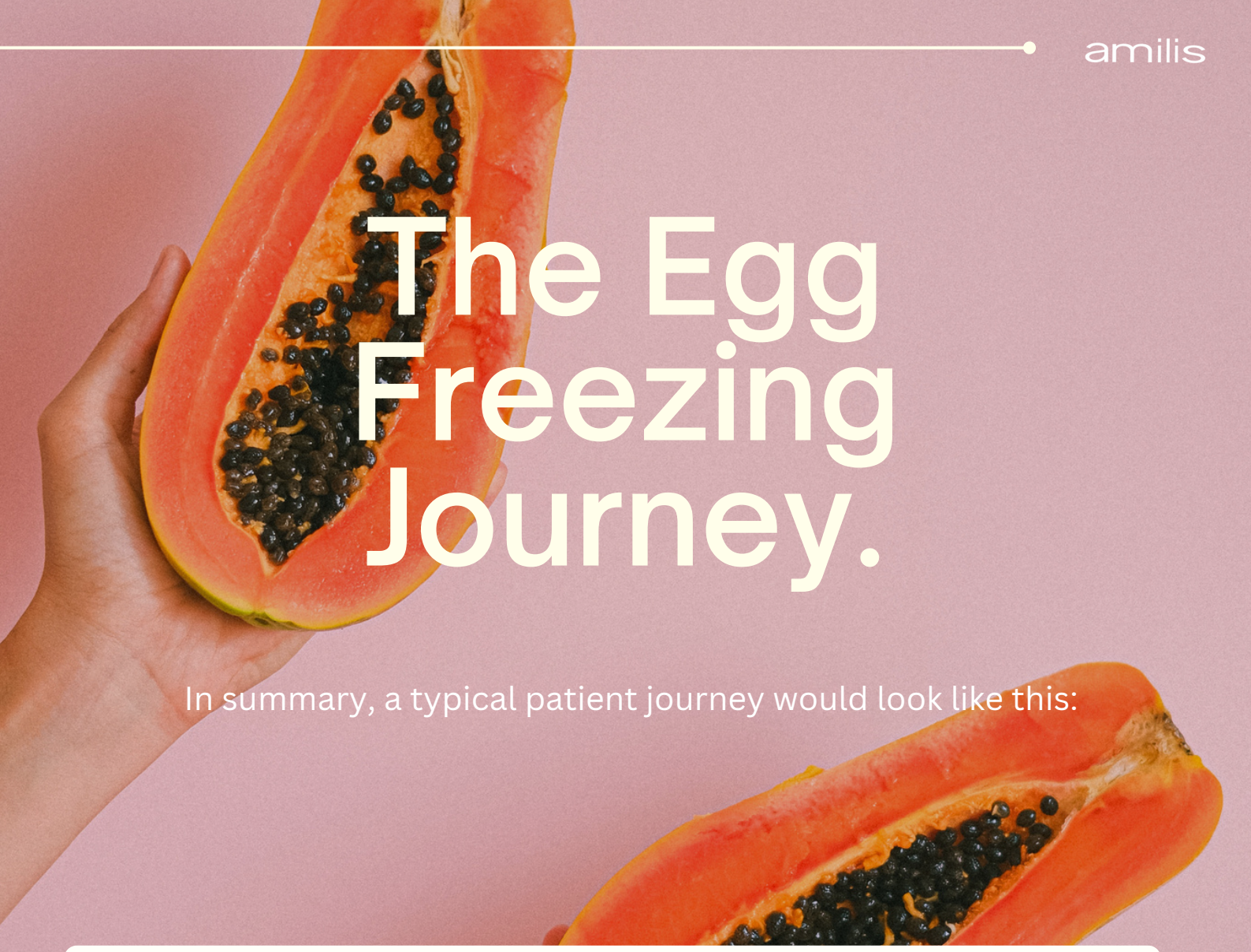
2. Broekmans, F., Soules, M. and Fauser, B., 2009. Ovarian Aging: Mechanisms and Clinical Consequences. Endocrine Reviews, 30(5), pp.465-493.



Is egg freezing suitable for me?

There are many reasons why someone would want to freeze their eggs. You might want to consider egg freezing if:

- You have **a medical condition** that can hinder your fertility. This could include conditions such as sickle cell anaemia, or inflammatory rheumatic diseases.
- You require **treatment for cancer or other medical conditions**, where the treatment itself (such as radiography or chemotherapy) can affect your fertility. In cases involving cancer, the NHS could provide funding for egg freezing based on where you live.
- You're concerned about your **fertility levels declining** and are not ready for children or don't have the right partner yet. This refers to 'elective egg freezing' and is also known as 'social egg freezing'.
- You're at **risk of severe injury/death** (for instance, you're a part of the armed forces and are being deployed into a war zone or working in a high-risk environment).
- You're **undergoing IVF treatment** and prefer not to have any possible remaining embryos due to ethical or religious reasons.
- You're **transitioning from female to male**, and plan on taking hormone therapy and/or reconstructive surgery. These treatments can diminish your fertility either partially or totally, so egg freezing could allow you to have biological children in the future



The Egg Freezing Journey.

In summary, a typical patient journey would look like this:

01 INITIAL CONSULTATION
Know if egg freezing is right for you.

02 FERTILITY INVESTIGATIONS
Assess what your fertility is currently like.

03 FOLLOW-UP CONSULTATION
Confirm that egg freezing is right for you.

04 OVARIAN STIMULATION
Undergo treatment for 10-14 days

05 CYCLE MONITORING
Regular check-ups to see how the ovaries are responding

06 EGG RETRIEVAL
Eggs are collected in a 5-10 minute surgery

07 STORAGE
Eggs are stored using vitrification method

08 EGG THAW & USE
When eggs are ready to use, they are thawed, and fertilised.

1 Initial Consultation

Prior to starting egg freezing, you need to have an initial consultation with a doctor who specialises in egg freezing treatment.

There are a number of reasons for this:



This gives a chance for you to see if egg freezing is the best option for you, with respect to your medical history



You can get a better feel of their clinic environment to see if this is the right space for you.



You can gain an even more in-depth understanding at how a clinic carries out the treatment and learn about any related egg-freezing programmes such as egg sharing.



It allows you to meet with potential doctors who are going to monitor your journey, and judge whether they would be ideal for you (for example, you may have a language preference).



You can learn about the support available either from nurses/doctors, or if there are already any established networks within the clinic (side note: Amilis is always here to support you!)

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To help you decide if egg freezing is right for you we offer **free initial consultations** (*which usually cost around £250*) with our partner clinics so that you can chat with as many specialists as you want. This way, you can always have a better feel for your doctor, healthcare team and clinic before beginning treatment. You can quickly browse our new clinic platform here if you're interested.

2 Fertility Investigations.

After your initial consultation, your doctor will investigate your fertility levels. This includes some blood tests and pelvic ultrasound scans to look for any potential underlying gynaecological conditions as well as your ovarian reserve. Doctors may look at:



Anti-müllerian hormone (AMH)

AMH is a hormone made by cells in the ovaries and regulates the growth of primary/early-stage **follicles** (small, fluid-filled sacs that have the potential to grow an egg). By primary follicle, we mean follicles that are in their most immature state. So, AMH levels or 'serum AMH' help indicate if **primary follicles are growing.**

This is assessed using a blood test.

Antral Follicle Count (AFC)

Antral follicles are fluid-filled sacs that are still maturing, but not completely mature yet. The **Antral Follicle Count (AFC)** is defined as follicles that measure 2-10mm in diameter.

This is assessed using a pelvic/transvaginal ultrasound scan.

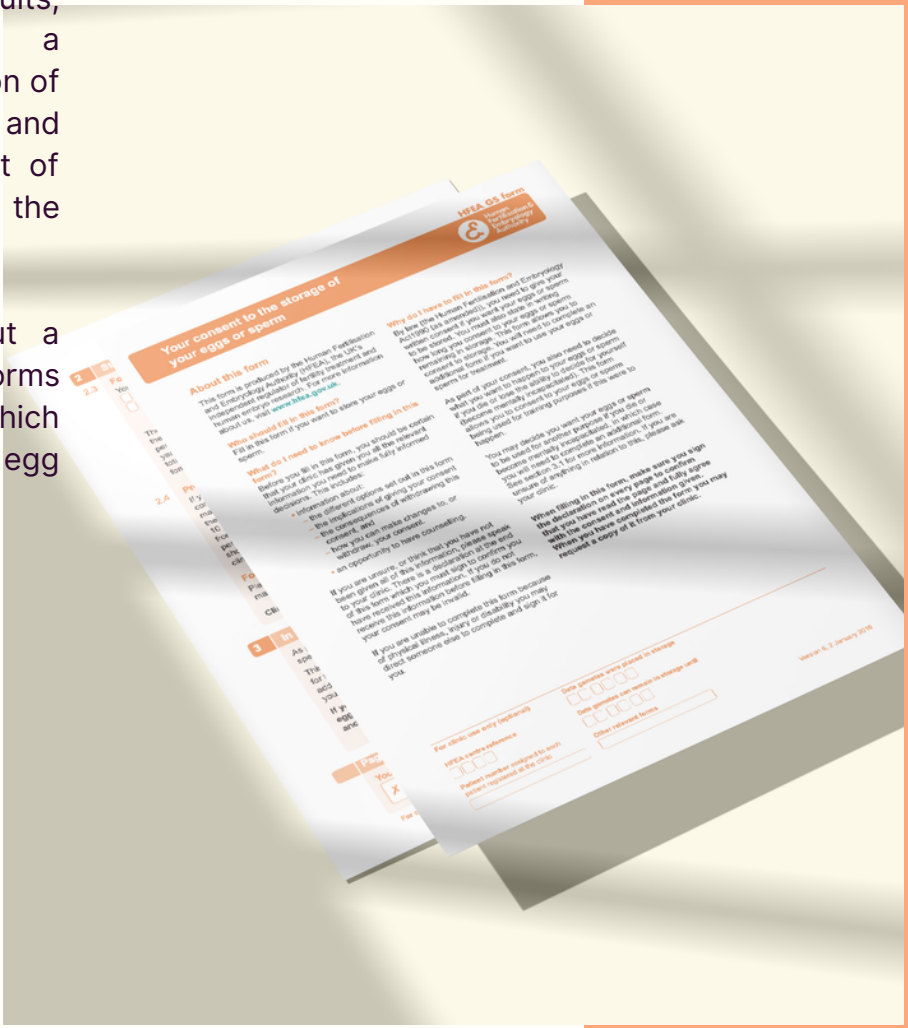


There are additional ways to test your fertility levels – either by external health companies or clinics that provide a fertility testing kit to be used at home. Some women may already know their AMH levels and can discuss this during the initial consultations, however, you may still be advised to have a complete fertility check at your clinic.

3 Follow up Consultation.

After assessing your fertility with your doctor, you can decide if you want to go forward with egg freezing. Based on your results, your doctor can outline a treatment plan, a consideration of the fertility drugs to be used, and the estimated costs. As part of this guide, we have outlined the average costs of one cycle.

At this stage, you'll fill out a variety of consent forms authorised by the HFEA which cover the legal aspects of egg freezing.



These forms will ask how long you intend to store the eggs, and what should happen to the eggs in the event of death or incapacity to use them. Throughout your treatment you can amend these forms at any time.

4 Ovarian stimulation.

This is where the *actual* egg freezing process begins. On the second or third day of your period, you begin self- administering injections. This process lasts around 2 weeks.

We know the idea of injecting yourself might seem scary or daunting, which is why you'll be **taught in detail** how the medications are used and how to safely administer them at home, by your doctor/nurse.



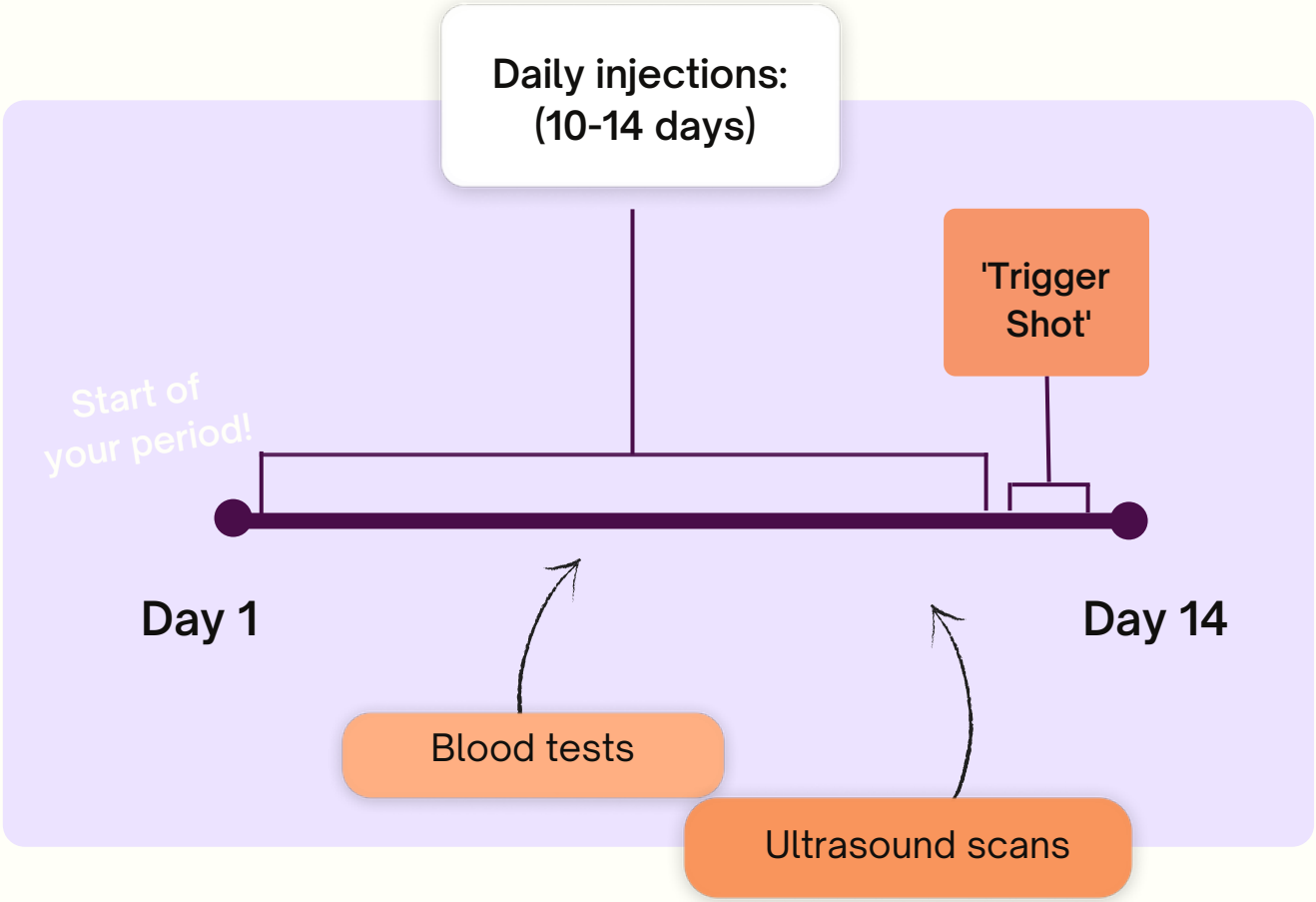
If you are taking hormonal birth control, you would have to stop before your egg freezing treatment, and then choose to resume after the treatment is finished. Some women may take a break from the pill 3 months before the treatment, as sometimes the pill can suppress the ovarian reserve.

Now for the science-y part,

There are **three main injections** in an egg freezing cycle.

The purpose of the whole treatment is to **stimulate the growth of eggs** and then simultaneously **prevent them from being released** prematurely. At the end, you take a **trigger shot** that releases the mature eggs, so that they are ready for retrieval.

These injections are taken daily - on some days you might need 1 shot, whereas on other days you'll need to administer a second shot in the same day. Your doctor will explain this to you in full depth and will be carefully monitoring your progress the whole time. The timeline of self-medication typically looks like this.



Some of the medications you might hear.

Here is a table showing the type of drugs used, what their main function is, and a list of medications which you could end up using. This is so that you can feel familiar with some of the names and get a better feel for their purpose. Your doctor will decide the best treatment plan for you in this step and may introduce other brands of medication not mentioned here.

Type of Drug	Function	Common Brands
1. *Gonadotropins ***Limited to:*** • **Follicle Stimulating hormone (FSH)** • **Luteinising hormone (LH)**	Stimulate the ovaries to produce eggs, by making the antral follicles grow. • These drugs either contain FSH, or a combination of FSH & LH.	• Gonal F • Menopur • Merional
2. Antagonist	Prevent ovulation from taking place. • These drugs inhibit the processes behind the release of stimulating hormones like LH.	• Cetrotide • Fyremadel (ganirelix acetate)
3. Trigger	Release the eggs. • These drugs act like stimulating hormones.	• Suprecur • Gonasi • Ovitrelle

*Gonadotropins: These are a family of hormones that regulate ovarian function, and testicular function in men. They are produced by a part in the brain called the 'pituitary gland'.

You start off with stimulation injections (such as Menopur) and then integrate the second type of injection (so, Cetrotide or Fyremadel), around the 5th or 6th day of your cycle. This is repeated until you take the trigger injection (for example, Ovitrelle).

5 Cycle Monitoring

The response to these drugs can differ a lot among patients. Therefore, in order to monitor the cycle, you'll have scheduled visits to your clinic across the 2 weeks.



Doctors can take blood tests and can assess the growth of eggs by taking a look at the size of follicles in your ovaries, via ultrasound scans. They may wait until a follicle is large enough (i.e., roughly **18-20mm** in length) before advising you when to take the trigger shot. Doctors will also aim to collect a threshold level of eggs depending on your age/ovarian reserve (for example, 20 eggs) to maximise your chances of success.

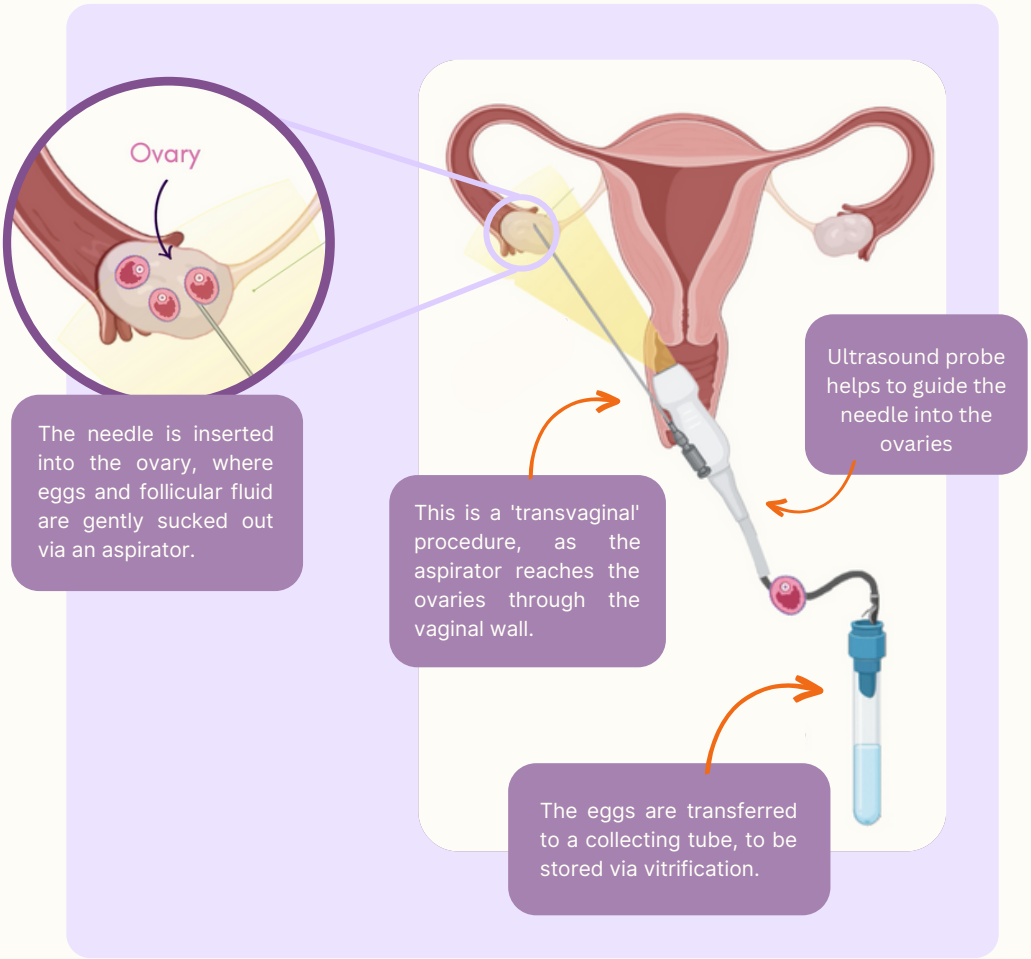
However, during ovarian stimulation, whilst follicles may grow this does not guarantee an egg. There is no exact way to tell if the follicles contain eggs until the egg retrieval phase, where embryologists can examine the follicle contents itself after they're drained.

It should be known that sometimes ovaries (regardless of whether they have a good ovarian reserve) may not respond correctly to a high/low dose of drugs given. As a result, you may be advised to have multiple cycles to collect a better number of eggs.

6 Egg Retrieval.

Egg retrieval takes place around 35 hours after taking the trigger shot. This is a quick surgery that can take 5-10 minutes, whilst you're under anaesthesia so you won't feel a thing! The recovery is quite quick, and most people can even return to work the following day or two.

Prior to the surgery, you would have an anaesthetic review as a standard pre-operative assessment, and you'll be seen by your doctor/nurses. Below is a schematic of what the surgery can look like:





Side Effects & Risks

What are some side effects of ovarian stimulation?

During ovarian stimulation, you might experience side effects similar to pre-menstrual symptoms such as:

- Bloating,
- Headaches,
- Muscular aches
- Nausea
- Slight bruising at injection site

And what about risks?

There are also some risks associated with egg retrieval surgery, for example, the risk of bleeding or infection, or injuries in the pelvic region (like the bladder or bowel). However, this risk is estimated to be 1 in 1000 cases.



Storage of eggs

How are eggs frozen?

Nowadays, eggs are frozen through a process called “vitrification”, or otherwise known as “fast-freezing”. Vitrification involves cooling the eggs ultra-rapidly in liquid nitrogen which transforms them into a glass-like frozen state. As eggs have high-water content, it’s super important that they are frozen quickly so that no ice crystals form and damage the egg. Vitrification is now the preferred method to freeze eggs and it has a survival rate of up to 85% per egg after thawing!

Where are eggs stored?

The eggs are stored in a liquid nitrogen tank which sits at a cosy temperature of -196 degrees. They’ll remain in a secure storage room at the fertility clinic where the tanks are monitored continuously to ensure they are safe and sound at the right temperature. Clinics charge an annual storage fee between £300 - £350 per year, depending on the clinic.

How long can I store them for?

The UK government recently updated the law and as of July 2022, you can now store frozen eggs for up to 55 years. You will however have to renew your consent to storage every 10 years and your clinic will contact you to do this. If you don’t renew your consent or if the clinic was unable to contact you, your eggs will be disposed of.

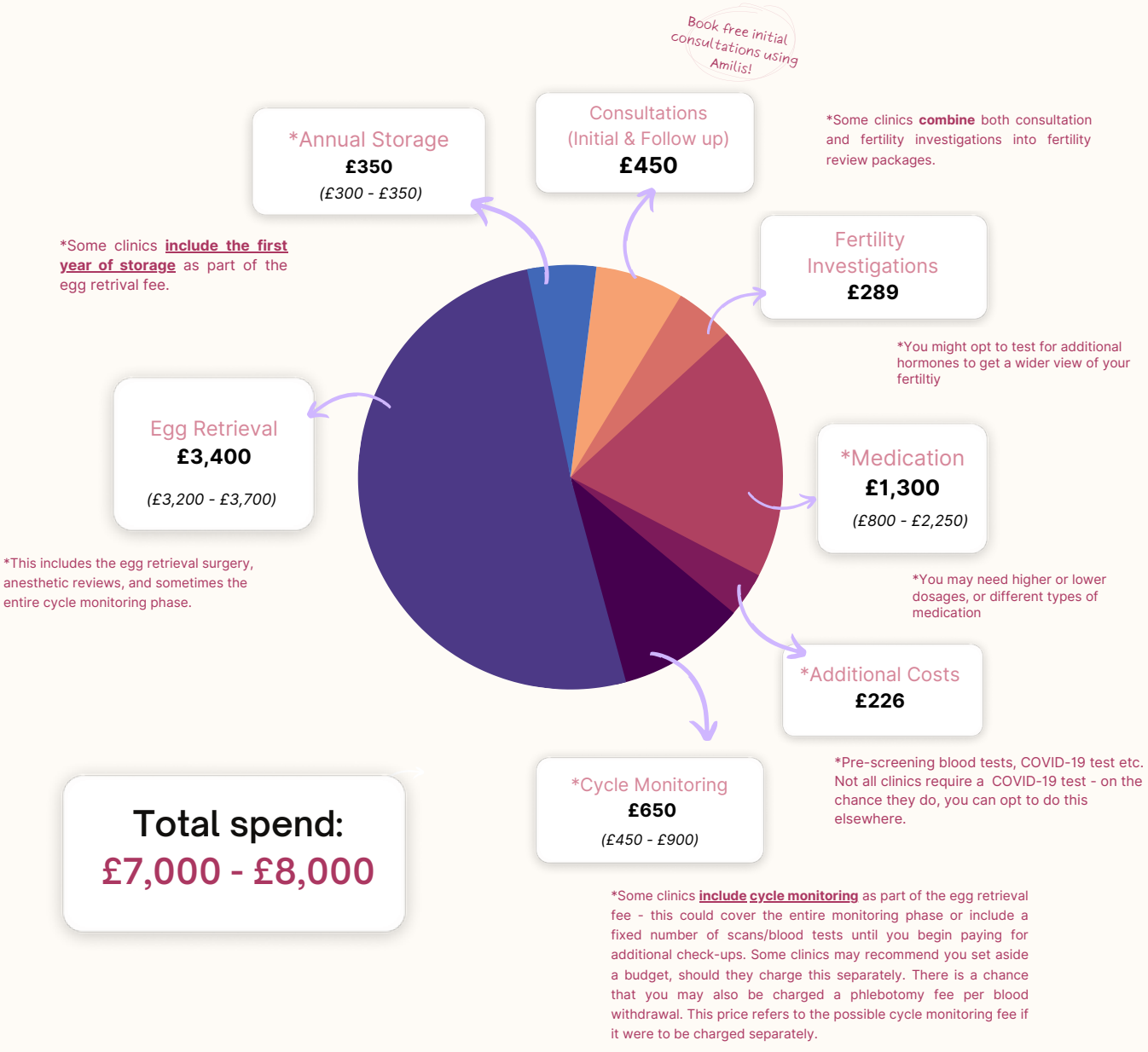


How much does egg freezing cost?

With the total cost averging around £7,000 - £8,000 for one cycle of egg freezing, we explore how the price is broken down.

Average Cost breakdown of one cycle.

The price of egg freezing can vary a lot depending on the person's health and fertility levels, and how many cycles they end up doing. Throughout the treatment, there are some phases where cost can vary more than others, and is usually based on how you may react to the ovarian stimulation. For example, during the cycle monitoring period, you may find that you need a higher or lower dosage, or you may need additional scans etc. Below, we have shown the average cost breakdown of just one cycle of egg freezing.



Conclusion

Before egg freezing, it's important to consider a few things:

- Remember that egg freezing is not an insurance, but rather increases the chances of having a baby in the future
- It's more optimal to freeze your eggs at a younger age, as you're more likely to retrieve a higher number of good quality eggs
- Think about how long you intend to keep the eggs stored for and to budget accordingly
- How many children would you ideally like to have? This can help determine how many cycles you could need
- Some clinics may discuss using donor eggs and donor sperm instead of egg freezing, depending on your fertility levels.

We hope you've found our guide to egg freezing useful.

If you have further questions, or would like to see if egg freezing is something you might consider, then head over to our new egg freezing platform to explore resources and clinics in London.



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Image sources: Pexel