

Elective Egg Freezing Protecting your future family plans

WHY FREEZE EGGS?

Elective Fertility Preservation involves the process of egg freezing. This decision is made by someone aiming to future-proof themselves against naturally occurring, age-related decline in fertility. Peak fertility occurs in a person's 20s, and by the time they reach 35 years old, the number of normal eggs has reduced by half. People are born with all the eggs they need in a lifetime. Approximately 400 eggs will be ovulated from the ovaries during reproductive years, while thousands of remaining eggs never reach full maturity without stimulation from fertility medications.

HOW ARE THE EGGS RETRIEVED AND STORED?

Egg freezing treatment involves 3 steps, which are similar to the beginning part of an IVF cycle^a:

- 1) Hormone medications are self-injected under the skin for approximately the first 10 days of the menstrual cycle, encouraging multiple eggs to mature.
- 2) During this time, blood tests and ultrasound scans are done to help track the growth of the egg-containing follicles. When the follicles are considered to be of a satisfactory size, a trigger injection is administered to induce the egg maturation process, and the eggs are collected from the ovaries 34-36 hours later.
- 3) The egg collection procedure takes approximately 30 minutes and is carried out under light sedation, requiring a day off work.

FREEZING AND STORAGE

Freezing involves a process called Vitrification, whereby the egg is moved through a series of solutions that protect the egg during the cooling

phase. The egg is then placed in a storage device and stored in liquid nitrogen at minus 197°C.

At this temperature the eggs are technically able to be stored indefinitely without any deterioration, but legally the limit is 10 years. An application to an ethics committee is required, should a person request to extend this 10 year storage period.

HOW MANY EGGS DO YOU NEED TO FREEZE TO ACHIEVE A BABY?

Here, there are several important aspects that need to be taken into consideration. These will provide a guideline for how many rounds of egg freezing will be required. Elective Egg Freezing has been practiced at Repromed since 2014, therefore very few thaw procedures have been carried out as most still require storage and have yet to return for a thaw cycle. Thaw success data from larger international clinics^b is therefore presented on the next page to give you a prediction of how many cycles you will need to give you a chance of achieving one or more babies.

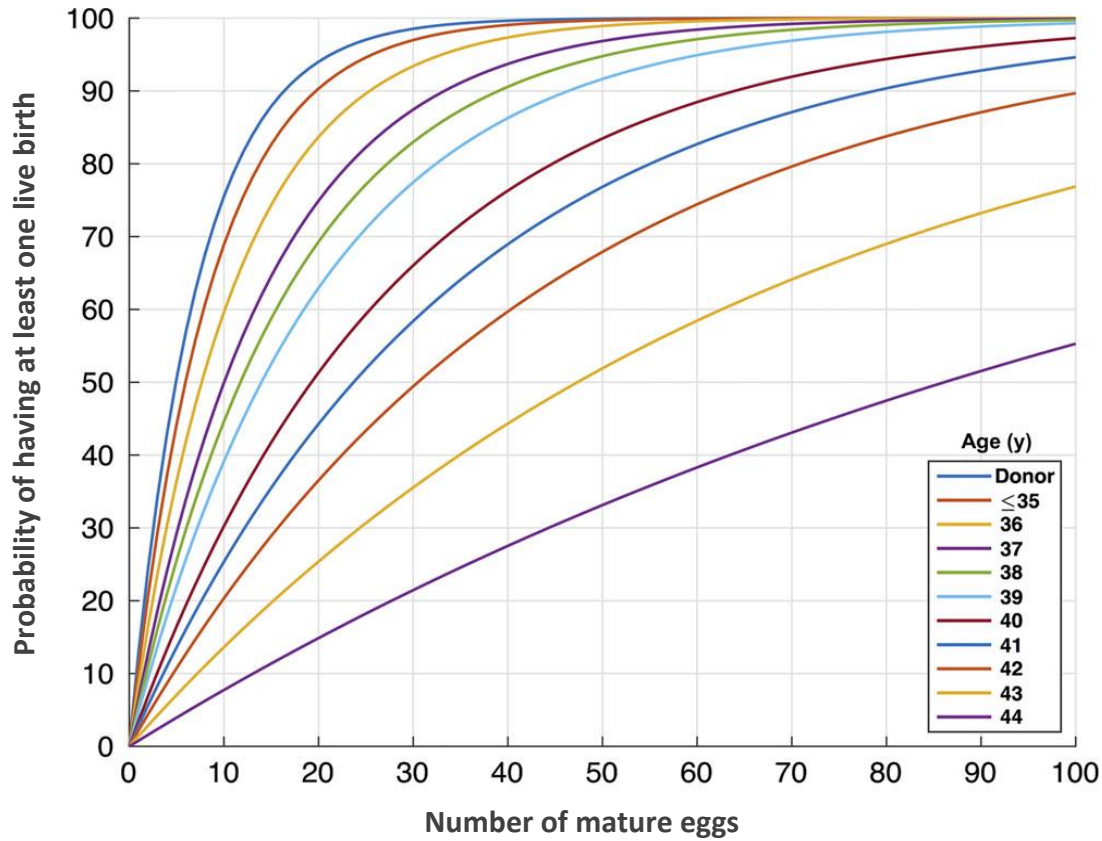
First ask yourself:

1. How many children do I wish to have?
2. How old will I be at the time of egg freezing? *Your age has an impact on the number of eggs that will have a normal number of chromosomes.*
3. How many eggs am I likely to have collected based on my AMH level? *Refer to the AMH ReproFact sheet for more information. Your Repromed doctor will use your AMH level to calculate the dose of ovarian stimulation medication to administer.*

a) See IVF Journey Planner for specific details

b) Adapted from Goldman et al 2017 HR 32:4 p853

PREDICTING YOUR CHANCE OF HAVING A BABY BASED ON AGE AND NUMBER OF EGGS COLLECTED



Each curve in this figure shows the percentage likelihood that a person (of a given age), will have at least one baby following a future thawing of their eggs. Based on this table, for a 75% chance of having a baby you will need at least:

Eggs	At Age
12	34 years
20	37 years
40	40 years

WHAT IS INVOLVED IN USING THE EGGS TO CREATE EMBRYOS?

An egg thaw cycle is carried out in what is called a “manufactured” cycle, where the uterus is primed with hormone pills to mimic a natural cycle. Five days after ovulation (or manufacture), the embryologists will thaw a number of eggs (usually 8). Sperm from the partner or sperm donor is prepared for microinjection (ICSI) where a single selected sperm is injected into the centre of the egg.

The fertilised eggs are grown in an incubator for a further five days until they reach the blastocyst stage. Here, a blastocyst can be either transferred into the uterus, or refrozen for future embryo transfer attempts.

WHAT ARE THE RISKS OF EGG FREEZING?

Like any invasive procedure, egg freezing does come with associated risks. Vitrification, the process of snap freezing, has been used for embryos for a longer period of time than for eggs. Egg freezing is a relatively new procedure and currently there is not a large number of studies to address long term implications of the process.



Eggs themselves are naturally at a very fragile phase when they are vitrified, in comparison with their embryo counterparts, and hence the survival rate of eggs is lower than what is expected for embryos.

Pregnancy and miscarriage rates are influenced by the age of the egg, but there are other pregnancy complications, such as pre-eclampsia and a person's age at the time of pregnancy. These factors can also impact the outcome and freezing eggs does not eliminate these risks.

WHAT OTHER THINGS NEED TO BE CONSIDERED?

There are no guarantees on:

- The response to the ovarian stimulation medications, and therefore the number of mature eggs available for harvesting
- The survival rate of the eggs post thaw - expected to be between 80-90%
- The fertilisation rate of the thawed eggs. Note that the sperm quality of the future partner is something that is not possible to predict, and may impact on the outcome of your thaw cycles
- The number of embryos that will develop. It is possible that embryo development could be low, resulting in no embryos for transfer into the uterus
- The likelihood of taking home a baby

HOW MUCH DOES IT COST?

The total cost of egg freezing will depend on how many treatment cycles are required to obtain the optimal number of eggs, based on the clinical counselling in the sections outlined above.

Be mindful that there are two parts to egg freezing: 1) the immediate egg collection; 2) the future thawing, insemination with sperm microinjection (ICSI), and embryo transfer to the uterus. Each phase of the process has separate associated costs. Please refer to the Repromed Cost Schedule Sheet on our website for up to date costings.

WHAT SUPPORT IS AVAILABLE?

Counselling is included in the cost of your cycle and, while it's not compulsory, we do highly recommend it. Meeting with a counsellor provides an opportunity to:

- Review your decision and what you have found out about your ovarian reserve
- Discuss any concerns you may have, and explore the support you have for your decision
- Address hopes for treatment timing and outcomes, and answer any questions about the donor sperm programme

Counselling is confidential and is done here at Repromed. We are happy to try and fit in with other appointments you may be having.

The Repromed team are here to help. Please talk to your nurse about any queries you may have about egg freezing.

Ask your Repromed doctor if elective egg freezing is recommended for you.

