

Introduction

Fertility preservation is the process of storing eggs so that they may be used in the future. You might not know if you even want children in the future and thinking about it may be the last thing that you want to do right now. However, we really need you to think through all of these issues now, because understanding your options will help you make the right choice for you.

Reasons you may wish to freeze your eggs

Conditions that can affect your fertility

Cancer

Cancer treatment including chemotherapy, radiotherapy and some kinds of surgery can affect how well your ovaries work to produce eggs and your chances of getting pregnant in the future. The potential for your ovaries to be affected depends on your age and the type of treatment you will be having. It's important to talk to your cancer team about the likely effects of your treatment.

If you think you would like children at some point and you haven't started cancer treatment, you may wish to preserve your fertility by having your eggs frozen and stored for later use in fertility treatment.

Gender reassignment treatment

Gender affirming hormones and some gender related surgeries could make you infertile. This depends on the type of treatment that you have. Hormone therapy (blockers or testosterone) suppresses your fertility and over time may lead to a complete loss of fertility. Mostly, fertility will recover if you stop hormone treatment, although sometimes it might not. Generally, the longer you are having hormone therapy the more your fertility is likely to be permanently affected.

Surgery to remove ovaries is irreversible and will definitely make you infertile. Surgery to remove the womb means you are unable to carry a pregnancy.

If you think you would like children at some point, you may wish to preserve your fertility by having your eggs frozen and stored for later use in fertility treatment. Often this is best done before starting hormone treatment, but if you decide on this later after starting treatment, it may mean you need to reduce or stop your hormone treatment for a few months.

Other conditions that mean you might have an early menopause

Some medical conditions (such as Turners syndrome and galactosaemia) can make young people more likely to run out of eggs at a young age, causing an early menopause. Other medical conditions may require the use of treatments which are damaging to fertility or that it is not safe to try for a baby whilst using them. You may wish to consider fertility preservation in these circumstances. If you have been diagnosed with one of these conditions but have not run out of eggs yet, and you think you would like children at some point, you may wish to discuss this with your specialist who can refer you for fertility preservation if appropriate.

Elective (social) egg freeze

You may choose to freeze your eggs so you can use these in the future when you feel ready to have children. However, freezing your eggs is not guaranteed to lead to a successful pregnancy when you do choose to use them in the future. This treatment is only available on a self-funded basis and you must meet the following eligibility criteria:

- you should be less than 40 years of age (to ensure a realistic chance of success)
- your Body Mass Index (BMI) must be less than 32

Freezing Options

Egg freezing

The most established way to preserve eggs for future use is egg freezing. This involves giving you hormone injections to get you to grow multiple mature eggs at once. Your eggs would then be collected by a surgical procedure under sedation, involving passing a needle through the top of the vagina into the ovary, to collect the eggs so they can be frozen and stored. Going through this process will take 2-3 weeks, you will need to complete consent forms and have blood tests taken. This process can be done in any assisted conception unit.

If you are in a relationship and you are sure that you would only want to use your eggs with your current partner, we can create embryos using your partner's sperm and freeze these instead. These options will be discussed by your fertility specialist so please bring along your partner to the appointment if this is applicable.

Ovarian tissue freezing

The other way to store eggs is to remove and freeze pieces of your ovary. This is known as ovarian tissue freezing. This involves keyhole surgery to remove some of one ovary which is frozen and stored. At present, to use this tissue, it needs to be replaced into your body by doing a second operation and then we hope that it starts to work again naturally. It is possible that in the future we may be able to grow mature eggs out of the tissue outside of your body, but we cannot do this yet.

This treatment is relatively new and not widely available. It is not suitable for all patients, and this would be discussed by your fertility specialist at your appointment if appropriate. This treatment is not offered on a self-funded basis.

How successful is freezing my eggs?

There is no guarantee that frozen eggs will survive the freezing process or that a pregnancy will result from eggs that have been frozen. The number of treatments carried out so far is too low to give a reliable pregnancy rate but we estimate the chance of creating a baby is somewhere around 5% per egg stored.

In 2016 around one in five IVF treatment cycles using a patient's own frozen eggs were successful (data from the HFEA website). Patients older than 38 years have a lower chance of a pregnancy and live birth.

Because freezing may harden the outside shell of the egg, the ICSI (intracytoplasmic sperm injection) procedure is required for fertilisation and better embryo development. It is expected that about half to two thirds of the eggs will fertilise.

As of the end of 2022, we have performed 24 cycles involving thawed eggs (including donor cycles). The survival rate of eggs is 75%, the fertilisation rate is 70% and the ongoing clinical pregnancy rate is 47% (9 cases where a foetal heartbeat is detected from 19 embryo transfers).

Other things to consider about freezing your eggs

There is currently limited long-term information available on whether these babies will have a normal development following birth.

You should be aware that there is a very small risk of a failure of the storage tank. In these cases, samples may thaw and become unfit for use. Although this is a very rare occurrence, to minimise risks your eggs may be stored in two separate storage vessels.

There may be a charge for storage fees of your eggs, if you do not meet NHS funding criteria.

What if I don't want to undergo fertility preservation?

Your ovaries may recover following your treatment; however, they may work less effectively or your ovaries could stop working permanently. If it was not possible, or you did not wish to, store eggs before treatment and your ovaries no longer work properly, then you may wish to consider treatment using donated eggs or adoption. If you do not have a womb and so cannot carry a pregnancy it is possible to get someone else to carry a pregnancy for you, this is known as surrogacy.

Will my cancer treatment have to be postponed if I choose to have fertility preservation?

Fertility preservation treatment is likely to take two to three weeks. If your treatment can be delayed for this amount of time then your specialist can refer you to discuss fertility preservation treatment. However, if your cancer treatment needs to be started more urgently then there may not be time to do this.

Is fertility preservation available on the NHS?

In Scotland to be eligible for NHS funded fertility preservation you must meet the following criteria:

- You must be living in Lothian or the Borders
- you must be less than 41 years of age
- your Body Mass Index (BMI) must be less than 35
- you must not have existing biological children/ not the legal parent
- you (and your partner if storing embryos) should not have been sterilised

Please be aware that there are additional criteria that need to be met to be eligible for NHS funded treatment to use your stored eggs to create a pregnancy in the future. These are:

- Age <42 years (if 40-42 years, must not have had any previous IVF treatment)
- Stable relationship (must have been cohabiting for minimum of 2 years)
- No biological child (one partner has no biological child)
- BMI >18.5 and <30
- Non-smokers
- No alcohol or illegal drugs
- No previous sterilisation

What will happen when I see the fertility specialist?

The doctor will ask you routine medical questions and explain the process, procedures and risks of the treatment to you. The doctor will perform an ultrasound scan and some blood tests.

We routinely perform ultrasound scans through the vagina as this allows us to get close to the womb and the ovaries and allows us to see them clearly. If you are not able to tolerate an internal scan we can try to perform some of your scans over the abdomen instead.

The doctor will discuss options with you for preserving your fertility and talk you through the relevant treatment options. If you wish to go ahead you will need to complete consent forms for the treatment and storage of your eggs and you will need to have blood tests taken (to assess your ovarian reserve and for infection screening). If you want to store embryos your partner will need to have a sperm test performed and will also need to have blood tests taken. If storing your eggs is not urgent you will be added to a waiting list for future treatment.

Legal implications of storing eggs?

In the UK the use and storage of eggs, sperm and embryos are licensed by the Human Fertilisation and Embryology Authority (HFEA). Under the terms of the Human Fertilisation and Embryology Act (1990) you need to give written consent to the following:

- Storage of your eggs
- The length of time they can be stored for
- The purposes that your eggs can be used for
- Your wishes about any eggs stored
- What should be done with your eggs stored in the event of your death, or if you become incapable of changing or cancelling your consent.

If you have stored eggs, in the future when you are ready to use them, you (and your partner if applicable) will need to complete new consent forms to give permission for those eggs to be used to create embryos for you to use to try and achieve a pregnancy. Depending on your personal situation you will be guided by the clinic as to what consent forms you should complete now. It is important to inform us if you potentially wish a partner to be able to use your eggs in the event of your death or mental incapacity to ensure the correct consent forms are in place. If your relationship status changes after your eggs have been frozen it is essential that you inform us.

Your eggs may be kept in storage for many years. It is essential that you inform the Unit of any changes of address or GP during this time. If we cannot contact you we will be obliged to allow the frozen eggs to perish at expiry date.

All patients with eggs in storage are required to verify their identity when they return to use their eggs.

Fertility Counselling

Before treatment you will have opportunity to meet one of our fertility counsellors. The counsellor will talk to you about your options and explore your thoughts and feelings around freezing your eggs. Please be assured that counselling is not part of the assessment process and does not affect your treatment. Further counselling appointments are available to you if you should wish for additional support before, during or after your treatment.

Can I change my mind?

Yes of course. You are likely to feel nervous about the whole process and speaking to a counsellor or fertility doctor can be very useful but does not mean you have to go ahead. You can change your mind at any point but if you have uncertainties it is best to let us know this prior to starting any medications.

Who can help me to decide what to do?

The doctors/ nurses looking after you can also help to guide you. Your specialist can refer you to the fertility clinic to talk about this in more detail, so you can decide if it's the right choice for you. Being seen in the clinic does not mean that you have to go ahead but will give you the opportunity to talk about it in detail with an expert.

It is also important to use your normal support network to help you to come to the right decision for you. This may be your family or your friends.

If you would like to speak to someone who is not directly involved in your care to help you make your decision or for additional support, please ask to speak to the counsellor at your fertility clinic.

You can also get more information by looking at these websites:

For people with cancer: <https://cancerfertilityandme.org.uk/>

For trans men <https://www.hfea.gov.uk/treatments/fertility-preservation/information-for-trans-and-non-binary-people-seeking-fertility-treatment/>

For all: <https://www.hfea.gov.uk/treatments/fertility-preservation/>