Midland Fertility Services

Emergency Egg Freezing

‘Building futures,
transforming lives’

What is emergency egg freezing?

Emergency egg (oocyte) freezing is a form of fertility preservation available to any young woman diagnosed with cancer, or other serious medical condition, that requires treatment such as chemotherapy or radiotherapy which may also harm her ovaries and damage her future fertility. IVF techniques are used to stimulate the ovaries and then retrieve, freeze and store eggs for possible future attempts to conceive, if the woman's fertility and the quality of her eggs are reduced as a result of cancer therapy.

Egg freezing is a method of preserving a woman's eggs in liquid nitrogen 'deep freeze' for possibly many years until she is ready to use them to try to conceive. This technique is known as cryopreservation. Freezing may be achieved using either a 'slow-freeze' method of cooling and preservation or by a 'flash-freezing' process, known as vitrification. The 'slow freeze' method has been used by MFS since 2000 and has resulted in successful pregnancies and live births following thawing and fertilisation. The newer vitrification technique may improve overall pregnancy rates by increasing the survival rates of the eggs after thawing, from 65% to 95%.

The NICE recommendation regarding fertility preservation for female cancer patients is: 'Women preparing for medical treatment that is likely to make them infertile should be offered oocyte (egg) or embryo cryostorage, as appropriate, if they are well enough to undergo ovarian stimulation and egg collection, provided that this will not worsen their condition and that sufficient time is available.'

MFS has held a license for egg freezing from the Human Fertilisation and Embryology Authority (HFEA), the government body that regulates fertility treatment in the UK, since 2000. Almost half of all egg freezers at MFS are young cancer patients.

Eggs are the largest single cell in the human body and until recently, freezing and thawing them without damage was a scientific challenge. Now, with the birth of hundreds of healthy 'frozen egg' babies around the world, new techniques to successfully freeze and thaw eggs gives the chance of genetic motherhood to some women which was previously not available.

This leaflet details the emergency egg freezing service at MFS. More information about all MFS fertility investigation, treatment and preservation services, and success rates is available via www.midlandfertility.com.

Who may benefit from emergency egg freezing?

Any young single woman aged at least 18 years, recently diagnosed with cancer, and before her chemotherapy or radiotherapy begins, may benefit from egg freezing. The procedure is suitable for patients with most types of cancers but an individual assessment will be made by the MFS clinical team together with the patient's oncologist, before her chemotherapy or radiotherapy begins.

A young woman diagnosed with cancer in a long-term relationship with a male partner may be asked to consider creating and freezing embryos as an alternative to egg freezing, or a combination of both.

Reassurance of ownership

Freezing eggs before chemotherapy or radiotherapy begins, offers a single young woman the chance of future genetic motherhood while avoiding the ethical ownership issues which may result if embryos are created and the couple subsequently separates (where, the man whose sperm was used to fertilise the eggs shares the same rights as the woman over storage or use of the embryos).

How are eggs collected and frozen?

Egg freezing at MFS is handled by a dedicated team who can deliver a rapid-response service to maximise access to the service and minimise delay to the start of cancer therapy. MFS is usually also able to secure funding from the patient's PCT for the cost of the treatment. Working closely with the patient's oncologist, an assessment for the viability of egg freezing may be made at a single consultation and the patient placed on a short protocol of follicle stimulating drugs, as follows:

- gonadotrophin drugs given by daily injections stimulate the ovaries to produce more eggs than occur in a natural cycle. The dose of stimulating drugs each patient needs is carefully calculated to optimise the number of follicles and mature eggs
- the patient attends the clinic for ultrasound scans during the stimulation phase to monitor the number and size of the growing follicles. When the follicles have grown sufficiently she will be advised of the day of her egg collection (usually about two weeks after she first starts taking the fertility drugs)
- egg collection is performed with ultrasound guidance under conscious sedation and local anaesthetic. A nurse is with the patient constantly throughout the procedure and a member of her family, a friend or a partner may also be present
- the collected eggs are washed and place in labelled dishes before being put into an incubator where the environment mimics the inside of the body
- the eggs are prepared for freezing using either the slow-freeze or vitrification processes, or a combination of both, as agreed with the laboratory team:
  - using the slow-freeze method: the embryologist puts the eggs through a series of solutions to remove and replace their water content with a cryoprotectant to help preserve the delicate cell structures and avoid crystallisation during the freezing and thawing processes. They are then loaded into labelled plastic straws and put into liquid nitrogen where they will remain at -196°C for possible future use
  - using vitrification: the embryologist places the egg on a film-like 'leaf' within a tiny droplet of cryoprotectant and then quickly inserts it into liquid nitrogen to rapidly cool the eggs at a rate of -20,000°C per minute. The flash-freezing technique changes the liquid cryoprotectant to a glass-like solid in which the egg is preserved and then immediately stored in liquid nitrogen at -196°C for possible future use
- the patient may begin her chemotherapy or radiotherapy within a few days following her egg collection procedure under the guidance of her oncologist

For how long can eggs be stored?

Eggs may be stored until the patient wishes to try to conceive with them. Currently eggs may be stored for a maximum of 10 years,

although this period may be extended if the woman is rendered prematurely infertile, in which case they can be stored for 55 years from the date they were frozen.

How are the eggs used to try to conceive?

If the woman's fertility is permanently reduced as a result of the cancer treatment, she may try to conceive using her frozen eggs. At that time an MFS embryologist will take them from the liquid nitrogen, remove the cryoprotectant, warm the eggs and then fertilise them with donor or partner sperm using the ICSI technique. Using this method, a single sperm is injected into the centre of the egg using a glass needle 1/10th the width of a human hair. (Worldwide, fertilisation rates are currently the same as those for 'fresh' eggs at 60%-80%.) One or two of the resulting embryos may be transferred back to her uterus three to six days after the ICSI procedure and any surplus, good quality embryos may be frozen for future use. She will know if she is pregnant within 14 days.

The ICSI for thawed frozen eggs and embryo transfer procedure is not guaranteed as part of the emergency egg freezing treatment and is subject to the usual pre-treatment assessments, including Welfare of the Child. Should it go ahead, this treatment incurs an additional cost.

How successful is egg freezing?

Egg freezing, using either the slow-freeze method or vitrification, is a comparatively recent development in fertility treatment and fertility preservation. Hundreds of babies have been born worldwide using both methods of egg freezing but as with all fertility treatments, no clinic can guarantee that the procedure will result in a successful pregnancy or livebirth. Centres experienced in egg freezing report similar success rates with frozen eggs as with frozen embryos (approximately 20-60% per embryo transfer). Current research suggests that the chance of conceiving with ICSI using vitrified frozen eggs may be comparable with 'fresh' eggs although, as with conventional ICSI, the age of the woman when the eggs are retrieved is the biggest determinant of a successful outcome.

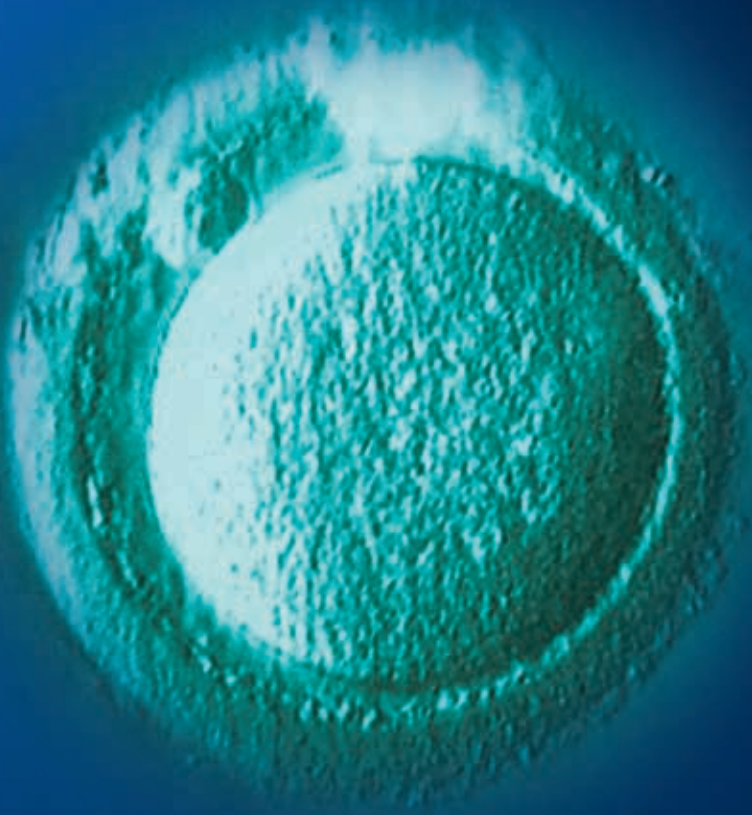
What are the risks?

As with any medical procedure, egg freezing treatment carries some risks which will be explained fully during a consultation. The egg collection procedure is carried out without general anaesthetic and so is classed as a low-risk procedure. However, egg freezing treatment requires a woman to use the ovary stimulation drugs used in standard IVF treatment, which carry a small risk of developing ovarian hyperstimulation syndrome (OHSS). There is also a very small risk that none of the eggs will survive the freeze/thaw process, although published survival rates range from 65% for the slow-freeze method to 95% for vitrification.

Hundreds of healthy babies have been born safely after egg freezing, but this is an emerging technology and the long-term outcomes of the technique are still under review. Research to date suggests that the risk of miscarriage, fetal abnormality or birth defect is no higher than in conventional IVF or ICSI. All risks may be explored further at the initial consultation.

Getting more information

Call MFS on 01922 455911 to speak to one of the egg freezing team or email eggfreezing@midlandfertility.com.



Services at MFS

- Fertility Investigation Package
- Ovarian Reserve Testing
- Recurrent Miscarriage Monitoring
- Sperm Analysis
- Intrauterine Insemination (IUI)
- In Vitro Fertilisation (IVF)
- Intra Cytoplasmic Sperm Injection (ICSI)
- Surgical Sperm Retrieval
- Egg Sharing
- Egg/Embryo Donation
- Surrogacy
- Sperm Freezing
- Vasectomy Reversal Back-Up Plan
- Egg Freezing (including Vitrification)
- Embryo Freezing
- Blastocyst Culture and Transfer
- Assisted Hatching
- Genetic Screening

How to get to Midland Fertility Services

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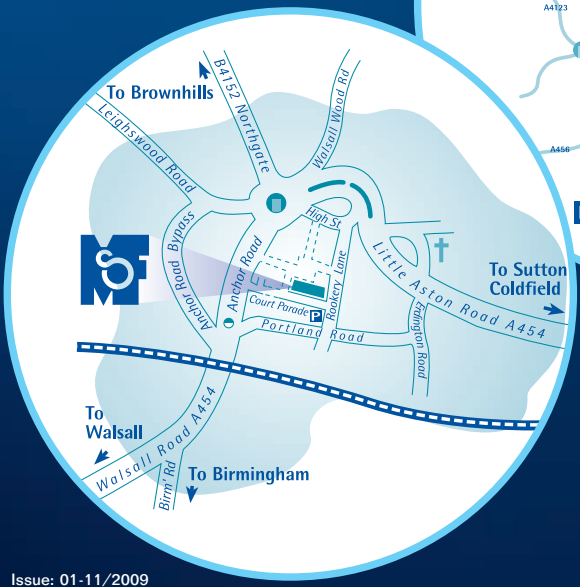
West Midlands WS9 8LT

t: 01922 455911
f: 01922 459020
e: mfs@midlandfertility.com
w: www.midlandfertility.com



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