FUTuRE FERTILITY
Fertility Understanding Through Registry and Evaluation

Oocyte and Embryo Cryopreservation Fact Sheet

Some cancer treatments can affect a women's ability to have a child (her fertility). Collecting and storing oocytes (eggs) and embryo's before or after cancer treatment begins allows women the chance to still have children in the future if they want to.

This fact sheet answers some common questions about oocyte and embryo cryopreservation, what it is, who needs it, how it works and where to go to do it. It also suggests questions to ask your doctor. We aim to help you make an informed decision about your future ability to have children.

This information does not replace talking to your doctors or nurses. It aims to act as a tool to help you prepare questions you can ask your healthcare team.

What is involved in oocyte and embryo cryopreservation?

Initial Consultation

Before your fertility treatment starts you will have an outpatient appointment with a fertility specialist. They will discuss with you different options for fertility preservation and arrange a treatment plan that takes into consideration your cancer diagnosis and your general health (see information sheet on female fertility preservation).

Your doctor will take a medical history, which will include details about your general health, cancer diagnosis and planned treatment. They will also organise investigations such as hormone blood tests and a pelvic ultrasound.

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Pelvic Ultrasound Scans

A pelvic ultrasound scan is a method of getting images of your ovaries and uterus lining by using high-frequency sound waves. It does not use any radiation and is very safe. A pelvic ultrasound scan can be performed in two ways, which are outlined below.

Trans-Vaginal (TV) Scan

This scan involves using a small probe, which is inserted into the vagina and gives good detail of the ovaries and uterus. Although this scan gives us the best images of the ovaries and uterus it is only used in women who are sexually active. Some women may be anxious the first time this scan is done. They may feel embarrassed and worry about it hurting. Whilst the scan may feel slightly uncomfortable it should not be painful. The doctors and nurses who perform the scans are very experienced and professional, so please discuss any concerns you have with them.

Trans-Abdominal Scan

This scan uses a small probe covered with a cold gel against the skin of the lower part of your abdomen (your pelvis). It also views the ovaries and uterus but is used in women who are not sexually active. You need a full bladder for this scan so you will be asked to drink a litre of water 30 to 60 minutes before your scan. You will not be able to pass urine until after the scan. This scan is not painful but the gel is cold and sticky.

Making a Plan

You and your doctor will together decide what is the best plan for protection and preservation of your future fertility after the initial consultation and review of your investigations.

Sometimes this involves just monitoring and a plan for further assessment after completion of cancer treatment. Sometimes a medicine will be suggested to try and protect the ovaries and the eggs from the chemotherapy drugs. It may also be appropriate to consider preserving some eggs (or embryos if you are in a long term stable relationship) or to freeze a part of one ovary before cancer treatment starts.

Ovarian Stimulation for Oocyte and Embryo Cryopreservation

You will then be given an appointment with a fertility nurse who will explain what the treatment involves including information about:

- the possible treatment cycles available
- the drugs used to stimulate ovulation and egg production
- possible side effects of the drugs
- surgery (the egg collection stage)

The nurse will also be able to answer any questions you may have. There are various IVF treatment cycles available, however the most likely form of treatment you may have is called an antagonist cycle, also known as the short cycle. It is called a short cycle because you may only need to be stimulated for approximately two weeks.

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What treatment is involved?

The cycle of treatment comprises of three drugs. Each drug is given as an injection just under the skin into the fatty tissue of the stomach (subcutaneously). You will need to give these injections to yourself. Or a family member can do it. Giving yourself an injection may make you anxious but the fertility nurses will be very patient and supportive when showing you how it is done. The needle is very small and although it's uncomfortable it will not be painful.

The first injection starts on Day 2 of the menstrual cycle and the drug given is called FSH (follicle stimulating hormone). This hormone is the drug that stimulates the ovaries to grow follicles that carry the fluid containing an egg. The aim is to stimulate both ovaries and grow between 6-8 follicles on each ovary. Your doctor may increase or decrease the dose of your FSH depending on your individual response to a prescribed dose.

The next drug is called the antagonist. This drug prevents ovulation and ensures the eggs are not prematurely released before egg collection. When you are ready to start this drug, you will be instructed to give your injections at the same time as the FSH. You will remain on these two drugs until your doctor advises you to take the final drug called a trigger injection. To avoid over- stimulation you will need to be monitored every two to three days with blood tests and ultrasounds. These appointments will happen at a fertility clinic. Your fertility specialist will ask a nurse to contact you with your results on the same day.

When your doctor feels the follicles have grown big enough they will ask you to take the final injection called a lucrin trigger. This drug will start to release the eggs and give the eggs final maturation. Exactly 36 hours after your trigger injection you will be scheduled for your egg collection.

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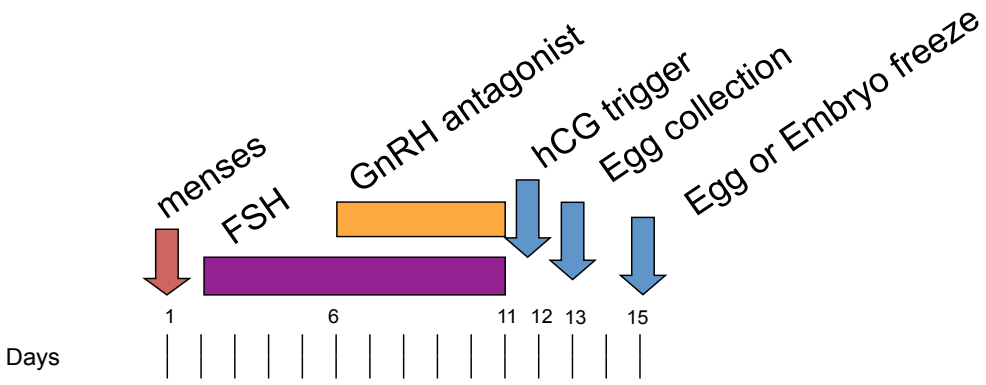
A standard GnRH antagonist IVF cycle



For those women who are mid cycle at the start of a cancer diagnosis your fertility doctor may start a random start stimulation protocol which will allow you to start treatment as soon as possible.

Those women with a hormone sensitive tumour such as breast cancer will start a stimulation protocol which will limit the hormones they receive.

How are the eggs collected?

The egg collection surgery is usually done at a day surgery unit in either a private clinic or a hospital. You will be given a light general anaesthetic for the procedure. Milder forms of sedation can be discussed with your fertility specialist. A trans-vaginal ultrasound probe will be used to guide your doctor to the stimulated ovaries to identify the follicles. Your fertility doctor will use a needle to draw out the fluid from each follicle. This fluid will be immediately examined under a microscope by a scientist where they will look for the egg/s.

What happens to the eggs after collection?

Your eggs will be taken to the laboratory for freezing and safe storage. For women who choose to fertilise their eggs with sperm to create embryos, this procedure will be carried out on the same day as the surgery.

The eggs are fertilised using In Vitro Fertilisation (IVF). This may be done using the standard IVF process, where the egg is put in a dish with the sperm and left to naturally fertilise the egg. Or a newer, more specialised method of IVF called Intracytoplasmic Sperm Injection (ICSI). This method involves the injection of a single sperm directly into a mature egg. It is usually used for men who have fertility problems. Both processes are carried out by a scientist called an embryologist. The embryologist will monitor the growth and development of your embryo until Day 5 when they will freeze any embryos that have developed well.

How do women feel about oocyte and embryo cryopreservation?

Understandably most women feel some level of anxiety about having to have eggs collected before starting cancer treatment. Having to go for repeated visits to the fertility clinic to have injections, scans and a general anaesthetic is a lot to cope with. The staff involved in your care will be very

aware of how stressful this may be for you. They will support you and make the process as easy as possible. Trained fertility counsellors are available to all patients undergoing treatment. They can provide extra support to those who need it.

How long can I store my oocytes and embryos?

Frozen oocyte and embryos can be stored for many years. There is no scientific reason to limit how long you can store them. Damage to the oocyte and embryos can happen during the freezing or thawing process, but the length of time it stays frozen does not alter the success rate for being able to create a child. Your doctor or fertility specialist will discuss with you how long you want your oocyte and embryos stored for.

How much does it cost to store oocytes and embryos?

This will vary depending on where you live and the facility you use. Generally though, there will be a one off freezing fee and then a yearly fee to store the oocytes and/or embryos. Medicare or private health insurance will not cover

these costs. The fertility centre storing your oocytes and/or embryos will contact you each year to find out whether or not you want to continue storing your oocytes or embryo's. If you move be sure to let the facility know your new address.

How successful is oocyte or embryo cryopreservation in having a baby?

Oocyte or embryo cryopreservation success rate depends on a couple of factors including:

- the quality of the oocytes or embryos and the number of oocytes or embryos that have been collected and frozen (freezing and thawing can damage oocytes or embryos)
- the number of oocytes or embryos that have been collected and frozen
- the age of the woman undergoing IVF treatment after cancer treatment (women under 35 have the best chance of producing a child).

There is no guarantee that oocyte or embryo cryopreservation will enable a woman to have a child after cancer treatment but it will give them their best chance.

Questions for your doctor

Before you start your cancer treatment it is important to ask your doctor about oocytes or embryo cryopreservation. You may like to ask:

- How likely is it that my treatment will affect my fertility?
- How soon after my treatment is finished will I know if my fertility has been affected?
- Can I have oocytes or embryo cryopreservation?
- When should I have oocytes or embryos collected?
- Where do I go to have oocytes or embryo cryopreservation?
- How much does oocytes or embryo cryopreservation cost (collection and storage)?
- Will Medicare or my private health care cover the costs of oocytes or embryo cryopreservation?

- How successful is oocytes or embryo cryopreservation in producing a child in my individual situation?

Where do I go for further support?

- Other fact sheets from the Future Fertility website www.futurefertility.com.au or www.futurefertility.com.nz
- Fertility and cancer A guide for people with cancer, their friends and family. Booklet produced by Cancer Council Australia 2014 (http://www.cancervic.org.au/downloads/resources/booklets/Fertility-and-Cancer.pdf)
- CanTeen (www.canteen.org.au) Information and support for young people with cancer.
- Fertile Hope (www.fertilehope.org) Help and support for planning a family after cancer treatment.

You may also like to call a Cancer Helpline service:

- Australia 13 11 20
- New Zealand call 0800 226 237

Both these helplines will allow you to speak with an experienced cancer nurse who can guide you to further information about sperm banking.