

### Information for patients wishing to freeze eggs or embryos for fertility preservation

The treatment you are going to be having for cancer or another medical condition might reduce the chance of you getting pregnant and having a baby in the future.

This leaflet is to help you decide if you should have fertility preservation treatment before this treatment begins to give you the best chance of having a child or extending your family in the future. This leaflet explains what is involved, the risks and the benefits of potential treatment.

### What is fertility preservation?

Advances in cancer treatment mean more women recover from cancer, but some cancer treatments including chemotherapy, radiotherapy or 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 may be possible for you to have fertility preservation treatment before starting chemotherapy or radiotherapy, to give you the opportunity to try for a pregnancy when you have fully recovered. Sometimes these treatments are used for medical conditions other than cancer. 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.

### Effects of cancer treatment on female fertility

#### Chemotherapy

Oocytes (eggs) are very sensitive to the effects of chemotherapy, so there can be a risk of damage to eggs and the ovaries may not work as well after treatment. The risks of this are higher with some types of chemotherapy, if higher doses are given or when treatment goes on for longer. Although some women's ovaries may work normally again after chemotherapy, some women will unfortunately suffer premature ovarian failure, which is when the ovaries stop working early. The risk of this is greater for women who already have reduced ovarian function, particularly older women. Women who lose all their eggs as a result of treatment may need to consider fertility treatment using donated eggs if they want a pregnancy in the future.

#### Radiotherapy

Most radiotherapy treatments are directed at a specific part of the body, so the effects of the treatment are limited to the area treated. Radiotherapy to the pelvic area causes damage to eggs and is likely to significantly reduce how well the ovaries work. Damage may also be caused to the uterus (womb), reducing the chances of the woman carrying a pregnancy successfully in the future. Women who have had pelvic radiotherapy may need to consider using donated eggs and possibly a surrogate to carry a pregnancy to have a child in the future.

#### Surgery

Gynaecological surgery can affect future fertility, depending on the surgery performed, women may need to use donated eggs and / or a surrogate to achieve a pregnancy. It is important to discuss with your surgeon your plans for a future family, so that when possible, surgery which might help retain your fertility can be offered.

### 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.

### What are the options for fertility preservation?

#### In vitro fertilisation (IVF) and embryo freezing

This option is suitable for women in a stable relationship who would like to try for a family with their partner in the future. This involves stimulating the ovaries with daily hormone injections to produce multiple follicles containing eggs, these eggs are collected by passing a needle through the top of the vagina. The eggs are then mixed with the partner's sperm and all suitable embryos created can then be frozen for use in the future. Not every egg collected will fertilise and develop into a good quality embryo suitable for freezing. After cancer treatment is completed and you are ready to try for a pregnancy, embryos can be thawed and placed into your uterus as part of a frozen embryo treatment cycle.

It is very important to recognise that any embryos are the joint property of the woman and her partner. He will need to give permission for the embryos to be used in the future. If the relationship is not continuing, he may not allow for the embryos to be used.

#### Freezing of oocytes (unfertilised eggs)

This treatment is suitable for women not in a stable relationship or girls who have reached sexual maturity. The ovaries are stimulated and eggs are collected in the same way as for IVF, but the eggs are frozen without being fertilised. In future when you are ready to try for a pregnancy your eggs will be thawed and fertilised with sperm. Although the techniques used for freezing eggs are improving, the success rate for treatment using frozen eggs is not as good as with frozen embryos. It also depends on your age, and is less successful in women over the age of 35. Your local fertility centre will be able to advise you on their success rates using frozen eggs and embryos.

#### Ovarian tissue preservation

This involves surgery under a general anaesthetic, the surgeon removes a small piece of ovary which is then frozen. After you have finished your cancer treatment and are ready to try for a pregnancy this tissue can be transplanted back into your body to hopefully start your ovaries working again. This may be a suitable option when there is not time to stimulate the ovaries or for girls who have not yet reached sexual maturity and their ovaries are immature.

This treatment is relatively new and not widely available. In Scotland this is only offered in Edinburgh, if you live elsewhere in Scotland your doctor can refer you to Edinburgh if this is an appropriate treatment option for you.

#### Hormone therapy

There is some evidence that in women with breast cancer the ovaries could be partially protected from potential harm caused by chemotherapy by temporarily switching them off during cancer treatment. This can be done by giving you an injection every four weeks. During this time your periods are likely to stop and you may experience some menopausal symptoms, such as hot flushes and night sweats. There is not yet enough evidence to show that this would definitely protect the ovaries, but you can discuss this with your oncologist to find out if this would be a suitable option for you.

### What will happen when I see the fertility specialist?

Before starting treatment for your cancer you can be referred to see a fertility specialist, this may not be at your local hospital. The doctor will discuss options with you for preserving your fertility. If there is time to complete fertility treatment before starting your cancer treatment then the doctor will talk you through the relevant treatment options and if you wish to go ahead you (and your partner if you are storing embryos) will need to complete consent forms for the treatment and storage of your eggs or embryos, you will also both need to have blood test

taken for blood borne viruses. You may also have a blood test to assess your ovarian function before starting treatment or an ultrasound scan to assess your ovaries and uterus, if you are ready to start treatment that day you may be given injections to take to stimulate your ovaries and instructions on how to use them.

#### Blood borne virus screening

All Assisted Conception Units in the UK screen everyone freezing eggs, embryos or sperm for the blood borne viruses (HIV, Hepatitis B and Hepatitis C). This is needed for treatment and is designed to prevent the contamination of samples stored in the clinic. If you had a positive result for any of these viruses you would be informed in confidence and offered an appointment with a doctor or nurse to talk about the results. A positive result may mean that your eggs or embryos need to be stored at a different fertility centre. You would also be offered a counselling appointment.

#### Legal implications of storing eggs or embryos

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

If you are having treatment to create and store embryos your partner will also have to complete similar consent forms. Nursing staff will be able to assist you to complete these forms.

If you store embryos it is important to remember that in the future both partners involved in creating the embryos must give written consent for embryos to be thawed and placed into the uterus. Without your partner's consent, the embryos cannot be used.

If you have stored eggs, in the future when you are ready to use them, you (and your partner) 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 to achieve a pregnancy.

#### Fertility counselling

All assisted conception units in Scotland offer fertility counselling. Counsellors are members of the British Infertility Counselling Association (BICA) and follow BICA ethics and guidelines. BICA states the importance of acceptance and respect for each individual attending counselling so that they can be confident that they will not be judged and that a relationship based on trust is able to develop. Please let your fertility centre know if you would like a fertility counselling appointment to be arranged at any time before, during or after your treatment.

**Is fertility preservation treatment available on the NHS?**

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

- you must be less than 38 years of age
- your Body Mass Index (BMI) must be less than 35
- you must not have children
- neither you nor your partner should have been sterilised
- There may be other criteria that apply when you come to use your stored eggs or embryos, such as being a non-smoker.

The unit you have been referred to will be able to confirm if your treatment to freeze eggs or embryos, ongoing storage and the future transfer of embryos will be NHS funded. If not they will be able to confirm if you could pay for your own treatment and tell you the cost of this.

If you are eligible, the NHS will provide storage for 5 years in the first instance. After that time, storage will continue if you still meet the eligibility criteria. You may not, for example if you have had a child in the meantime: in this case, you may need to pay if you want your eggs or embryos to remain in storage.

**What happens if I cannot have fertility treatment before my cancer treatment begins?**

Your ovaries may recover following your cancer treatment, however they may work less effectively or your ovaries could stop working permanently. If it was not possible to store eggs or embryos before treatment and your ovaries were no longer working properly after your cancer treatment then you may wish to consider treatment using donated eggs. This involves donated eggs being fertilised with the sperm of your partner to create embryos that could be placed into your uterus to create a pregnancy.

**How will I know if my ovaries have recovered their function?**

It may take many months or even years to see how well your ovaries have recovered following chemotherapy or radiotherapy. You will have the option to be seen at the fertility clinic for a follow up appointment to assess whether your ovarian function has returned. Older women may find that their cancer treatment has greater effect on their fertility.

For some women the ovaries may never recover, for women below the age of 40, this is known as premature ovarian failure and may result in menopausal symptoms such as hot flushes, night sweats and sleep disturbance. Depending on the type of cancer you had, it may be possible to treat these symptoms with hormone replacement therapy.

The diagnosis of cancer and coping with treatment can be stressful and cause a strain in physical and emotional relationships. Following premature ovarian failure or radiation to the pelvis, women may find that their sex drive is reduced or that intercourse is uncomfortable. You may feel different about yourself or concerned about how your partner feels about you. We understand it can be difficult to share these concerns with your partner or others, but please do talk to the fertility nurse or doctor or ask to see the fertility counsellor, if you do experience these types of feelings as help and support is available.

Further information is available from the HFEA website:  
<https://www.hfea.gov.uk/treatments/fertility-preservation/>

And from the website Cancer, Fertility and Me: <https://cfm.makingsense.co.uk/>