Ovarian tissue freezing

Information for patients

This sheet answers common questions about our ovarian tissue freezing and transplant service and what ovarian tissue freezing treatment involves. If you would like further information, or have any particular worries, please do not hesitate to ask your doctor.

In all cases, a doctor will explain the treatment to you and answer any questions you may have.

In most cases it will be possible for a friend or relative to accompany you for all or part of the procedure. Please ask your nurse or doctor.

Why might you consider ovarian tissue freezing?

This treatment is for women or girls who are due to have surgery, drug treatment, chemotherapy or radiation therapy to treat a medical condition or cancer, which is likely to damage their ovaries and may lead to an early menopause and infertility. Although not all surgery, drug treatment, chemotherapy or radiation treatments affect fertility (the ability to become pregnant), the treatments you will receive are expected to affect your ovarian function and are likely to cause you to become sterile (unable to become pregnant) after therapy is finished.

IVF (test tube baby treatment) before starting the drugs or radiotherapy can only be used to treat women who have a partner (or who would use sperm from a donor to fertilise their eggs). For women with no partner, it is possible to freeze some of her eggs but this has a lower pregnancy rate. IVF and egg freezing cannot be used in women with certain types of cancer or in young girls before puberty.

Ovarian tissue freezing is another way to help women and girls keep their fertility so they can have a baby after their condition is cured.

It is sometimes possible to preserve fertility in this situation if we surgically remove one ovary and keep it frozen until the cancer or condition has been cured. The ovarian tissue can then be thawed and re-implanted to restore fertility. It would not normally be recommended for women who are suitable for IVF but it is the only way to preserve fertility in girls who have not gone through puberty.

Worldwide, more than 80 births have been reported using this procedure. We are closely following the method used in the University Hospital of Copenhagen which has achieved more births with ovarian freezing than any other unit worldwide. Among 32 women treated in that clinic who wished to become pregnant, 10 had a child/children (14 children in total); this included 1 woman who had not yet delivered. In addition, two women had pregnancy terminations and one had a miscarriage. So there were 24 pregnancies in the 32 women.
With your agreement, we would use a small portion (10%) of your ovarian tissue for our research to make further advances in ovarian freezing to help others in the future; the remaining 90% will be frozen for your procedure. This donation of some tissue is entirely voluntary. You may refuse and your care will not be affected in any way. There is no guarantee that donating a small piece of tissue for research will directly benefit you.

**Who is this treatment for?**
This treatment is for women and girls who are due to have surgery, drug treatment, chemotherapy or radiation therapy to treat a medical condition or cancer, which is likely to damage their ovaries and may lead to an early menopause and infertility.

**What happens next?**
If you have cancer or another medical condition, your specialist will have already explained the possible effect of treatments for this on your future fertility. If you have not already met with a gynaecologist, we will arrange an appointment so he/she can explain what is involved if you decide to go ahead with ovarian tissue freezing.

You will need to have a pre-operative assessment appointment before coming in for the procedure. We will assess your general health and will need to take a blood sample (about 6 teaspoons) from you at this appointment. This will be used to measure FSH, estradiol and AMH, hormones in your blood, which give us an indication of whether your ovaries still contain a large number of healthy eggs. If this blood test indicates that you may not have eggs remaining in your ovaries, you will not be eligible for the procedure. The blood will also be used to test for infectious disease markers.

You may also be seen by an anaesthetist. If in their view you would experience any additional risk of anaesthesia because of your disease or your general state of health, you will not be eligible for this procedure.

Following your appointment, you will be given a date and time for the operation.

**What does the procedure involve?**
You will have an operation called a laparoscopy under general anaesthesia (you will be asleep) to remove one of your ovaries. The technique for the removal of ovarian tissue by means of laparoscopy is a well-established surgical technique with a very high likelihood of success.

In your case, the laparoscopy is being done to obtain ovarian tissue so this can be frozen and stored. The operation is not required for the treatment of your cancer.

A laparoscope (a small tube that has a light source and a camera, which relays images of the inside of the abdomen and pelvis to a television monitor) will be inserted into your abdominal cavity through a small (about half an inch) incision just below your navel. Two or three other small incisions may be made to permit the introduction of other instruments into your abdomen to allow the removal of your ovary.
Your surgery will be performed as a day case procedure and we do not expect that you will stay in hospital overnight. It will take between 45 to 60 minutes; however you can expect to spend about half a day in hospital.

For more information about having a general anaesthetic, please visit our website: www.royalfree.nhs.uk/services/services-a-z/anaesthetics/useful-resources-anaesthetics/

**Giving your consent (permission)**
We want to involve you in decisions about your care and treatment. Before carrying out any procedure, we will explain the procedure to you, along with the associated risks, benefits and alternatives. If you have any questions about your care, or any concerns, please do not hesitate to ask for more information.

If you decide to go ahead, you will be asked to sign a consent form. This states that you agree to have the treatment and you understand what it involves.

**When will I be able to return to a normal level of activity?**
You will not be able to drive immediately following the procedure. The recovery time needed to either resume normal activities or start chemotherapy or radiation therapy is expected to be two to three days.

**What will happen to the ovary after it is removed?**
After surgery, a 0.5cm piece of the removed ovary will be sent to the pathology department and examined under a microscope. You will receive a copy of this report.

A report that states that the tissue appears to be healthy is not a guarantee that the tissue is free of cancer cells, which could grow if the tissue were re-implanted in the future. However, if the pathology team finds an abnormality in this sample that appears to be cancer, they may request that all of the tissue obtained during your surgery be returned to them for a more detailed examination. If this occurs, there may be no tissue remaining for fertility preservation purposes.

The remaining ovarian tissue will be frozen and stored in a number of separate vials. If you agree to participate in a research study, a portion of the tissue (never more than 10% of the total tissue and any eggs that it may contain) will be used for research. This research tissue may be used either before or after it is frozen. The research portion of the tissue will not be used for any studies that involve fertilization of the oocytes (eggs) it contains. You will not be able to use the 10% of the tissue donated for research.

**What are some of the risks and discomforts for people who decide to freeze ovarian tissue?**
All surgery carries risks, but as this operation is undertaken to try to preserve your fertility, you may decide that the risks are worth taking. You can discuss all the possible complications and risks with your consultant and please ask all the questions you need to.

- **Laparoscopy**: Risks of a laparoscopy include infection, damage to your internal organs or bleeding problems as a result of the insertion or manipulation of the laparoscopic instruments.
The chance of you requiring hospitalisation or more extensive surgery for the management of complications is about 1 in 1,000. Such complication(s) may require a delay in further chemotherapy or radiation therapy treatments for your disease. Your chance of dying as a result of such complication(s) is less than 1 in 10,000. Minor complications, such as temporary pain or bruising at the incision sites are common.

- **General anaesthetic**: Your chance of dying from the anaesthesia is less than 1 in 10,000. Minor complications, such as sore throat or short-term nausea, are quite common.

- **Elective (by choice) removal of one ovary**: You have been invited to have this procedure because we expect that the treatment or surgery that you will undergo to treat your medical condition or cancer will significantly impair your future fertility. You should also know that it is possible to experience decreased fertility due to the removal of an ovary and/or to experience an early menopause caused by the loss of hormones produced by ovaries. Although we do not expect it, you may regain spontaneous ovarian function in spite of your medical treatments. In addition, it is possible that the surgery itself could cause scar tissue or damage to the remaining ovarian tissue, further decreasing your chances of spontaneous pregnancy. These circumstances are very unlikely, and much less likely than your chance of losing ovarian function as a consequence of your cancer or medical treatment. You are also potentially at risk for the psychological consequences, including emotional upset, of having one ovary removed.

- **Ovarian freezing**
  a) Although every care will be taken, damage to your removed ovarian tissues may occur during any part of the cryopreservation (freezing), shipping and storage process. The effects of cryopreservation and storage on human ovarian tissues are not known. The risk of birth defect(s) and/or genetic damage to any child who may be born following such a procedure is also unknown. There are many medications whose effects on the ovary or egg quality are not yet known or have not yet been determined. However, thousands of children have been born following freezing of oocytes (eggs) and embryos and those freezing procedures have not resulted in an increased risk of birth defects.

  b) The ovarian tissue removed may not have or produce usable eggs, or pregnancy may not result when the eggs or tissue are ultimately used.

  c) Some patients may have particular risks associated with their underlying disease. If a cancer or other disease has already affected the ovarian tissue, then it may never be possible to use the tissue in the future. This may not be known until after you are healthy and wish to use your ovarian tissue.

  d) Tissue could be lost or made unusable due to equipment failure, or unforeseeable natural disasters beyond the control of this program.

- **Infectious disease testing**: Infectious disease testing and screening performed around the time of your surgery may be inadequate to allow safe use of your tissue
after the long term storage of the tissue. While a sample of your blood plasma will be stored to minimise this risk, the tests required in the future may require a sample other than plasma, the plasma sample may be inadequate or it may be lost or damaged in the cryopreservation or shipping process. Infectious disease tests will include but not be limited to testing for HIV (the virus that produces HIV infection and may lead to AIDS) and hepatitis B and C. This testing may reveal an infection or disease which you weren’t previously aware of and may require treatment.

- **Emotional risks**: Having this procedure may have an additional emotional impact on you. Please always talk to your nurse or doctor if you are concerned about any aspect of your care.

- **Tissue may be unavailable for freezing**: Although you may sign this consent, it is possible that there may be no tissue available for freezing. At the time of your surgery, if your surgeon or the pathologist (the physician who examines your tissue through the microscope) determines that all of your tissue is needed to diagnose your disease, then no tissue may be available for freezing. If that occurs you will not have any tissue frozen for your future use.

### More information
For more information about the ovarian tissue freezing and transplantation service at the Royal Free London, please visit our website:
[www.royalfree.nhs.uk/services/services-a-z/gynaecology/ovarian-tissue-freezing-and-transplantation-service](http://www.royalfree.nhs.uk/services/services-a-z/gynaecology/ovarian-tissue-freezing-and-transplantation-service)

### Your feedback
If you have any feedback on this leaflet or for a list of references for it, please email: rf.communications@nhs.net

### Alternative formats
This leaflet is also available in large print. If you need this leaflet in another format – for example Braille, a language other than English or audio – please speak to a member of staff.

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