Jessopfertility
Bringing hope to life

In Vitro Fertilisation

Sheffield Teaching Hospitals NHS
NHS Foundation Trust

Please let us know if you need this leaflet translated into another language. Free interpreters are available for your appointments if English is not your first language.

This booklet is a general guide to your upcoming In Vitro Fertilisation (IVF) treatment cycle. It explains what to expect during treatment. You will discuss the details at your consultations, and staff are always available to answer any questions.

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What is In Vitro Fertilisation?

“In vitro fertilisation” (IVF) means fertilisation outside the body. It has helped many people have babies since it was first successfully used in 1978. All treatment centres are licensed and monitored by the Human Fertilisation and Embryology Authority (HFEA).

During a treatment cycle, the ovaries are stimulated with fertility hormones to produce several eggs. The eggs are mixed with sperm in a laboratory to create fertilised eggs, which develop into embryos. The embryos grow for up to five days. One embryo is then placed into the uterus; in some cases, two embryos are transferred.

Embryologists choose the best quality embryo(s) to give the best chance of pregnancy. Sometimes there are extra embryos that can be frozen, but this depends on their quality.

Why has IVF been suggested to me?

IVF is one of the most commonly used fertility treatments. It is suitable for people with a wide range of fertility issues, fertility preservation, LGBTQ+ people and single people. IVF may be appropriate if:

- Those with blocked fallopian tubes or endometriosis
- Those with reduced sperm quality
- LGBTQ+ people or couples
- For Single people
- Unexplained infertility
- Those requiring a surrogate to carry their pregnancy

Why might IVF help?

IVF was first developed to help people whose infertility was caused by damaged Fallopian tubes, as IVF bypasses the tubes. Today, IVF is used for many different fertility conditions.

IVF can also be used by LGBTQ+ people and couples who wish to become pregnant, and by those using a surrogate.

IVF can help with sperm problems. Placing many healthy, moving sperm around each egg can improve fertilisation. For very severe sperm problems, a single sperm can be injected directly into an egg. This is called ICSI (Intracytoplasmic Sperm Injection).

IVF can also help people with unexplained infertility. Producing more eggs and embryos allows doctors to select the best embryo(s), which can improve the chance of pregnancy. In some cases, IVF may help identify the cause of infertility by revealing problems with the eggs, sperm, or embryos.

Is treatment available on the NHS?

NHS funded treatment is available. However, the amount of funding and criteria varies between local Integrated Care Boards (ICBs). Funding will be discussed with you at the time of referral.

To qualify for NHS funding, the female partner must have a Body Mass Index (BMI) between 19 and 29.9. Your BMI will be checked and recorded during your consultation before treatment begins. Maintaining a healthy weight can improve your chances of pregnancy and is safer during pregnancy. You can collect a pre-conception advice leaflet from reception, and the nurses and counsellors are available for support and advice.

Another requirement for most NHS funding is that both partners must be non-smokers. When you first attend, and at random times during treatment (including frozen embryo cycles), you will be asked to blow into a carbon monoxide monitor to check for smoking. If the result suggests that you smoke, you will be referred back to your GP for help to stop smoking before you can continue with NHS-funded treatment. If you are self-funding, we will also check your smoking status so we can offer support if needed.

What is the cost of treatment?

If you are not eligible for NHS treatment, you may choose to self-fund. The costs are detailed in our "Treatment Charges" leaflet. If a cycle is cancelled before the insemination day, you will be charged for the monitoring and medications already used.

Payment is required before you start your treatment cycle.

What happens before we start treatment?

1) ***Investigations:***

   All fertility tests are usually done in the infertility clinic before referral. These typically include hormone tests during your cycle to confirm egg production, tests to check the fallopian tubes are open, and a semen analysis for your partner. Additional tests may be needed and will be fully discussed with you.

   If appropriate, a semen analysis may be done to help us to decide which treatment is most appropriate for you (IVF or ICSI).

2) ***First appointment:***

   At this visit, we will review your history and test results to confirm that SIUI is suitable for you. We will also explain the treatment process, your chances of success, and any potential risks.

Photographic ID is required for you, and your partner (if relevant) to confirm your identity. This can be provided in the form of a passport or driving license. Treatment cannot commence without this evidence as it is a requirement of the HFEA.

In some cases and where relevant, we may also ask for a copy of your marriage/civil partnership certificate (for couples who are married or in a civil partnership who are using donor sperm).

The following will be discussed with you during your first appointment:

a) Confidentiality:

Under the terms of the Human Fertilisation and Embryology (HFEA) Act we cannot discuss details of your treatment with anyone outside of our unit, including your GP or referring doctor.

We can only share your information if you provide written “consent to disclosure.” We will discuss this with you at your first appointment and confirm whether you are happy to share any details and with whom. This usually includes your GP, referring doctor, and others involved in your care.

During your treatment, we are legally required to collect certain information and send it to the HFEA. This includes personal details such as names, dates of birth, and some medical information, including the cause of fertility problems (if relevant). We also record details of treatments and outcomes, such as pregnancies and births.The HFEA keeps this information because it must inform adults, if they ask in the future, whether they were born through licensed treatment (IVF or treatment with donor sperm, eggs, or embryos).

With your consent, this data may also be used for approved medical and non-medical research to help study the health and wellbeing of parents and children after treatment. All research must be approved by the HFEA before the data can be used.

b) Consent:

Before treatment begins, we must get your written “informed” consent. This means you have been given information about the procedures, had the chance to receive counselling, and had time to consider your decision. You can change or withdraw your consent at any time.

If you are providing sperm for IUI, you will be asked if you want to consent to storing sperm for your partner’s future treatment. If you choose to store, you may also want to complete additional consent forms for the sperm to be used for other treatments, such as IVF. We will discuss these options with you during your appointment with the nurse.

c) *"Welfare of the Child"*

We are required by law to consider the "Welfare of the Child" before offering treatment. Further information about this can be found in our leaflet titled *"Welfare of the Child – Information for Patients".*

d) *Screening for HIV, HTLV and Hepatitis B and C*

You, and your partner (if applicable), will have blood tests to check for HIV, Hepatitis B, Hepatitis C, and HTLV I and II. Since 2001, the HFEA has required these tests for anyone freezing sperm or embryos. This is to prevent the very small risk of infection during storage. If treatment involves two partners, both must be tested.

Our clinic tests all patients before treatment so results are available before any eggs, sperm, or embryos are frozen.

If any test result is positive, we will offer counselling and refer you to a specialist for further advice and care.

e) *Booking treatment*

If you want to proceed with IVF, we will agree on a month for your treatment. Your period date will be predicted, and your treatment will start on the first day of your period. If you need to change your treatment date, it is very important to tell us by calling reception on 0114 2268050. IVF slots are in high demand, and someone else could take your place if you delay. NHS patients may need a new referral from their GP if the date is changed without a medical reason.

3) *Nurse consultation:*

You will have an appointment with a nurse to make sure you feel confident and prepared for your IVF treatment. You will also receive written information and guidance to helpful websites. The nurse will help you complete all consent forms, show you how to give the injections, and let you practice. You will also receive a self-injection kit to take home.

How many treatment cycles will I have?

There is no recommended number of treatments. We will offer you a follow-up appointment after each cycle to review how the treatment progressed and to offer recommendations for future treatment.

What types of treatment are there?

There are a number of different drug regimes for ovarian stimulation. We will ensure that you receive the most appropriate one for your circumstances. This will depend on a number of factors, such as your age, cycle length and baseline hormone levels.

What happens in a treatment cycle?

The following section describes the stages in an IVF treatment cycle.

1) Stimulation of the ovaries

The first step in IVF involves hormone stimulation of the ovaries in order to produce several eggs. The hormone used is the same as that produced naturally by the body and is called Follicle Stimulating Hormone (FSH). The eggs are formed in small fluid-filled sacs within the ovary called follicles. These follicles reach about 16 to 20mm in size before the egg becomes mature and they are easily visible on ultrasound scan. The growth of the follicles is monitored with regular vaginal ultrasound scans and blood tests to measure the levels of hormone (oestrogen) produced by the follicles.

2) Fertility drugs

There are different types of FSH medications, such as Gonal-F and Merional, which are given by a small injection under the skin.

There are three main methods of stimulation. We will explain which regime is most suitable for you or, if you are to have a different drug regime, we will discuss this with you.

a) Antagonist

Day 1: Please ring to notify ACU of the start of your cycle - first day of period
Day 3: Attend ACU for blood test and ultrasound scan
Day 3: Start injections of FSH to stimulate the ovaries
Day 7: Start injections to prevent early ovulation
Day 9 or 10: Return to ACU for assessment
Day 12 to 16: Late night HCG trigger (injection), then return to ACU for egg collection 2 days later
2 to 5 days after egg collection: return to ACU for embryo transfer

b) Long Protocol

Day 1: Please ring to notify ACU of the start of your cycle - first day of period
Day 3 (or Day 21): start injections to suppress natural cycle
2 weeks after “suppression” return to ACU for assessment
When suppressed, start FSH stimulation

Plan is then similar to Antagonist (above), starting FSH stimulation after suppression instead of on Day 3 of cycle

c) Short Protocol

Day 1: Please ring to notify ACU of the start of your cycle - first day of period
Day 3: Attend ACU for blood test, ultrasound scan and first injection

The first injection in the Short Protocol is a stimulant which causes a release of hormones to provide a stronger overall stimulation. This protocol is used if the woman is older or when the ovaries do not respond well to standard doses of FSH.

Plan is then similar to Antagonist (above), starting FSH stimulation from day 3

3) Monitoring the cycle

Your response to treatment is carefully monitored with regular vaginal scans and blood tests. The first scan and blood test are on Day 3 of your cycle to provide a baseline. If you are on a long protocol, another scan is done after the first two weeks to check that you are "suppressed."

Once you start FSH injections, you will have a scan about a week later, and then scans every 1–3 days depending on follicle size and hormone levels. This helps us track your response to the injections.

If your response is not ideal, the cycle may need to be paused or modified. For example:

- Too few follicles or low oestrogen may lead to cancelling the cycle.
- Too many follicles or high oestrogen may also lead to cancelling the cycle to reduce the risk of Ovarian Hyper-stimulation Syndrome (OHSS). See the end of this leaflet for more information about OHSS.

Triggering ovulation

When the scans and hormone tests show enough follicles of the right size (usually after 9–12 days), a final hormone injection is given to complete egg maturation. This injection triggers the follicles to release the eggs and is timed 36 hours before egg collection, so the eggs are mature but still in the ovary.

4) Sperm collection and preparation

a) Patient's own sperm

On the day of treatment, the male partner should attend the unit in the morning at the agreed time to provide a sperm sample by masturbation. For best results, we recommend avoiding sex for two days before producing the sample.

If you have sperm in storage, then this can also be used and will be thawed on the day of egg collection.

Sometimes the sperm quality may be poorer on the treatment day than previous samples and it may be necessary to change your treatment plan. For example, from IVF to ICSI. An embryologist would explain this to you and you would both need to complete a consent form.

On the very rare occasions no suitable sperm are found in the sample we may have to either freeze the eggs or attempt to retrieve sperm surgically (PESA/TESA). The doctor will discuss this with you in full at the time.

b) Donor sperm

Usually, the donor sperm selected in advance is thawed once at least one egg has been collected. The sperm is prepared so it mostly contains healthy, swimming sperm. If the sample does not meet the required quality after thawing, another sample will be thawed if one is available.

5) Egg collection

On the morning of egg collection, do not eat or drink anything (some water is allowed) unless the nurse tells you otherwise.

If you have a partner, family member, or friend with you, you may be able to have them in the theatre. You can also bring a Bluetooth device to play music to help you relax. The procedure usually takes 10–30 minutes and is done using ultrasound, the same type of scan you've had during your monitoring appointments.

a) Sedation

Egg collection is done under mild sedation using IV Fentanyl and Entonox to keep you comfortable. The sedation is given directly into your veins, acting quickly to help you relax, but you will stay awake during the procedure. You may feel drowsy, dizzy, have a headache, dry mouth, itchy skin, or nausea. Anti-sickness medicine can be given if needed.

While sedated, you can respond normally and your breathing is not affected. Sometimes you may feel more drowsy than expected, but you will still be awake and able to communicate with the nurse. Possible side effects include feeling heavy or sluggish, forgetting parts of the procedure, slow reflexes, or low blood pressure.

Following the procedure you must not: drive a vehicle, go to work, be responsible for any children or other people in your care, cook or operate any machinery, or drink any alcohol. Someone must be present with you for 24 hours following the procedure.

We will keep you with us here in the Assisted Conception Unit for at least 1 hour after you have had the procedure. Should you feel unwell once discharged you can contact us during opening hours on **0114 2268050**.

If you need urgent medical advice out of hours, a member of the nursing or medical staff are always available by calling the Royal Hallamshire switch board: **Tel: 0114 2711900.**

b) Egg collection procedure

A needle on the vaginal scan probe is used to collect the eggs from the ovary, one at a time. You will be told how many eggs were collected at the end. Afterwards, you will rest in the unit for a short time and can then go home. Although the procedure is quick, your total stay is usually 3–4 hours.

6) Fertilisation and embryo culture

The eggs are placed in a labelled dish with special culture fluid and incubated. After 3–6 hours, sperm are added—this is called IVF insemination. If ICSI is needed, it is done instead of IVF insemination.

The next day, the eggs are checked under a microscope to see if they have fertilised. Fertilised eggs develop into embryos, which are cultured so the embryologists can choose the best ones for transfer. Most of the time, time-lapse incubation (Embryoscope®) is used to monitor embryo growth.

The embryologist will usually contact you on days 1, 3, and 5 with updates on fertilisation and embryo development. All lab procedures follow strict HFEA protocols.

7) Blastocyst culture:

After fertilisation, the egg goes through several stages before it can implant in the uterus and develop into a pregnancy. In the first two days, the embryo divides into two cells. With modern techniques, we can now keep embryos in the lab for a few more days until they reach the blastocyst stage (day 5 or 6).

To grow to this stage, embryos are placed in a special culture fluid that nourishes and protects them. This fluid is similar to the natural fluids in the fallopian tubes and uterus, which support early embryo development. Normally, embryos stay in the fallopian tubes for a few days before moving to the uterus at the blastocyst stage. Keeping embryos in the lab until this stage mimics natural development more closely.

What are the advantages of growing embryos to the blastocyst stage?

Whether naturally or in the lab, only about half of embryos reach the blastocyst stage. This is natural selection, which allows only the healthiest embryos to implant and develop into a pregnancy. Poorer quality embryos usually stop developing in the first few days.

Early on, it's hard to know which embryos will continue to grow, so more than one may be replaced. By letting embryos develop to the blastocyst stage, we can better select the strongest one, which may improve the chance of pregnancy when only one embryo is transferred.

What are the disadvantages of blastocyst transfer?

There is a very small risk that none of your embryos will reach the blastocyst stage. If this happens, there may be no embryos to transfer and no chance of pregnancy. Evidence suggests these embryos would not have developed even if transferred earlier. Usually, blastocyst transfer is only offered if you have at least 2 excellent embryos on day 3 (3 days after egg collection).

While this can be disappointing, we will have learned more about your embryos, which can help guide future treatment options.

Blastocyst transfer is not suitable for everyone. The embryologists will call you often after egg collection and advise the best plan for your individual situation.

8) Embryo transfer

a) The technique

Embryo transfer is a quick, simple, and usually painless procedure. The embryo(s) are gently placed into the uterus using a soft, thin tube called a catheter. Ultrasound is usually used to guide the transfer, and you will need a full bladder for the procedure.

b) The number of embryos to transfer and risks of multiple pregnancy

Deciding how many embryos to transfer is important. In many cases, we recommend transferring just one, especially if the embryos are good quality and at the morula or blastocyst stage (day 4 or 5). HFEA rules allow a maximum of two embryos for patients under 40, and up to three for those over 40 in exceptional cases with the Consultant's approval.

The greatest risk to IVF birth parents and babies is a multiple birth: twins have much higher risks of ill health and death compared to singletons.

- Around half of all twins are born prematurely or with low birth weight (around 90% when there are triplets)

- Risk of death in the first week of life is 5 times higher for twins and 9 times higher for triplets than for single babies
- Twins have a 4 times higher cerebral palsy risk than singletons (around 8 in 1000 twins will be affected)

There are also risks associated with being pregnant with more than one baby that may involve a long stay in hospital.

- Risk of death is small, but doubled for those carrying twins
- Increased risk of pre-eclampsia and diabetes
- Increased risk of miscarriage, operative delivery and haemorrhage

Our policy may change over time and, if your circumstances change, for example if you change to using donor eggs, then our advice to you about the number of embryos to transfer might also change.

The HFEA provides information about multiple pregnancy, the number of embryos to transfer and the risks involved: www.hfea.gov.uk/about-us/our-campaign-to-reduce-multiple-births/

There may be situations where we recommend two embryos are replaced as other factors also affect implantation and success rates, e.g. age, embryo quality, endometriosis, tubal disease or the number of previous pregnancies with IVF. The number of embryos to be replaced will be discussed with you at your medical consultation. However, the final decision may be influenced by the quality and number of embryos that you have at the time of your embryos transfer. At this time you will sign a consent form indicating that you agree to the number of embryos to be transferred.

You may also want to consider the possible practical, financial and emotional impact of multiple pregnancy on you and your family.

9) Embryos remaining after embryo transfer

If there are good quality embryos left after transfer, they can be frozen (cryopreserved) for future use. An embryologist will explain the quality of the embryos and whether they can be frozen. Embryos are usually frozen on day 5 or 6.

Alternatively, embryos can be donated for training or allowed to perish. More information about embryo storage is at the end of this leaflet.

If you are self-funding, freezing embryos may cost extra. For most NHS patients, freezing is included in the treatment cost.

10) Hormone support

In the second half of your cycle, the uterus lining (endometrium) needs support with progesterone to help the embryo implant. This is called luteal phase support. We will prescribe progesterone after egg collection, and sometimes HCG injections are used instead. You will receive full instructions.

We will give lifestyle advice while you wait for your pregnancy test. Usually, you can continue normal activities and sexual intercourse.

If you are unsure about anything, please ask us for advice.

11) Pregnancy test

We will arrange a blood test 14 days after egg collection to check for pregnancy. This test measures a hormone called human chorionic gonadotrophin (HCG). This test is still needed even if you have started bleeding, as it is still possible to be pregnant.

Results will be given to you by telephone later the same day.

If you live a large distance away from the clinic then you may do a urine test at home instead. We will advise you at the time what you need to do if this is the case.

What happens if I have a positive result?

1) Further pregnancy tests:

If the test is positive further pregnancy tests are not usually required. If your result is lower than expected, you may need to return for a further blood test to ensure that the hormone level is progressing.

2) Pregnancy scan:

You may be asked to attend for a scan 4–5 weeks after insemination (around 6–7 weeks of pregnancy). This scan checks that the pregnancy is in the correct place, is developing normally, and whether it is a single or multiple pregnancy.

At this stage, the pregnancy should be visible in the uterus as a small fluid-filled sac with a tiny fetus, and a heartbeat should usually be seen. If any concerns are found, we will discuss them with you and arrange further checks if needed.

We will show you the scan on the screen and give you a photo. You will also receive a summary form to take to your GP so you can book your antenatal care. It is important to register with your GP or midwife by 9 weeks of pregnancy so that early screening tests can be planned.

3) Pregnancy outcome:

The pregnancy outcome form you receive after your first scan must be returned to us so we can record the result. This helps us keep accurate statistics and is required by law, as we must report all outcomes to the HFEA. Please return the form within 4 weeks of delivery.

If you have a miscarriage, please still return the form. We understand that not all pregnancies end as hoped, but we need to know the outcome in every case.

We appreciate that a negative outcome can cause considerable emotional distress, so our nurses and counsellors are on hand to offer emotional support both during and after treatment. Please ring us on 0114 2268050 to make an appointment.

What happens if I have a negative result?

A negative result on day 14 means that pregnancy has not occurred. We will discuss your result on the telephone and make plans for a follow up appointment.

Can I try again if the treatment did not work?

If treatment was unsuccessful, it will usually be possible to have further treatment after a follow up appointment with one of our team. If problems have been identified during treatment, we will discuss whether it is advisable to try again or if the treatment needs to be modified for your individual circumstances.

Issues to consider with IVF

There are a number of issues that you may need to consider before starting treatment.

1. General issues of legal parenthood and parental responsibility

Being a legal parent does not always mean you have parental responsibility. Legal parenthood gives a lifelong connection to the child and affects things like nationality, inheritance, and financial responsibility. Parental responsibility allows a person to make decisions about the child's care, including medical treatment and education.

The person who gives birth automatically has parental responsibility. A partner's status depends on factors such as marriage, the birth certificate, or a family court order.
For opposite-sex couples using the spouse or civil partner's sperm, both parents automatically have legal parenthood. We will get written consent from you both to confirm you are being treated together.

When a child is born, following treatment with donor sperm, to parents who are not married or in a civil partnership, current laws state that the partner who does not give birth will not automatically be the legal parent. We will complete consent forms with you to ensure you will both will be recognised as the child's legal parents, if this is your wish. Without these forms in place an application will need to be made to the court. More information on how to do this can be found here: https://www.gov.uk/parental-rights-responsibilities/who-has-parental-responsibility

What is the chance of achieving a pregnancy?

Our success rates are available on the HFEA website www.hfea.gov.uk and on our own website www.jessopfertility.org.uk

There are many factors that influence the chance of having a live birth. Important factors include the following:

1) ***The age of the person providing the eggs***

   Successful pregnancy after IVF significantly decreases after the age of 37 and decreases further after the age of 40. Other pregnancy complications such as high blood pressure and diabetes also occur more frequently in older birth parents.

2) ***Previous pregnancies***

   People who have been pregnant before, particularly those who have had a previous IVF birth, have a higher chance of conceiving with IVF treatment than those who have not.

3) ***The duration of infertility***

   The live birth rate is lower the longer an individual, and/or a couple, has been trying for a pregnancy

Is there an increased risk of multiple pregnancy compared to natural conception?

We will try to reduce the risk of having a multiple pregnancy by transferring only one embryo in those who stand a good chance of success. Rarely an embryo can split after embryo transfer to form identical twins. This means that a single embryo transfer can result in twins and a double embryo transfer could result in triplets.

Multiple births can be risky for the babies and can also place a heavy burden on parents, including financial strain, emotional and physical exhaustion. If you are pregnant with more than one baby, you are more likely to need a longer hospital stay. These challenges can reduce the joy of parenthood. For more information, www.oneatatime.org.uk

For this reason, we monitor your cycle closely and will not proceed if it puts you at risk. If too many follicles develop, we will discuss whether to cancel the cycle. In the very rare

event of a pregnancy with three or more babies, we may discuss fetal reduction. This is a very serious and distressing procedure and is only considered in exceptional cases.

Are there any other risks of an IVF pregnancy?

All pregnancies carry some risk, and assisted conception treatments have a slightly higher chance of miscarriage. There is also a risk of pregnancy occurring in the fallopian tube (ectopic), which is why early scans are important to confirm the location and heartbeat.

There is a very small chance of a pregnancy developing in both the uterus and the fallopian tube at the same time, called a heterotopic pregnancy. This is rare in natural pregnancies (about 1 in 10,000) but slightly more common with IVF. If you are pregnant and experience pain or bleeding early on, contact us even if a scan has shown a pregnancy in the uterus.

We would therefore recommend you do not plan holidays for the first few weeks after your embryo transfer.

There is a small risk (about 2%) of a baby having an abnormality, and IVF does not reduce this risk. However, the chance is no higher than with natural conception.

Does IVF have any risks?

Egg collection is a surgical procedure and, as such, carries risk of complications from sedation, bleeding and introduction of infection. However, these risks are small and significant problems occur in fewer than 1 in 2000 patients.

Very occasionally there may be an infection in the dish that embryos are being cultured (grown) in usually arising from the patient during egg collection. It is often caused by bacteria that are commonly found in the body but are resistant to the antibiotics present in the fluid that we use to grow the embryos in (media). On the rare occasion that an infection arises we will advise freezing all suitable embryos until we can get more information about the type and source of the infection.

The processes of cleaning the eggs, freezing and thawing etc may very occasionally result in an egg or embryo being damaged or lost. For example, embryos that are in the process of hatching out of the outer shell (the zona) are very “sticky” and are sometimes difficult to move from one dish to another and, therefore, may be more at risk. Please rest assured that these issues are rare.

Ovarian Hyper-stimulation Syndrome (OHSS)

What is OHSS?

The hormone injections used to stimulate the ovaries can sometimes cause the ovaries to overreact, leading to a condition called ovarian hyperstimulation syndrome (OHSS). Severe OHSS affects less than 1% of women undergoing treatment, but it can be serious and, if untreated, can be life-threatening.

The ovaries become enlarged and cystic, and fluid can leak into the abdomen, causing swelling and discomfort. This fluid loss can lead to dehydration, which may increase the risk of blood clots and affect the kidneys and other organs. Most cases are mild to moderate, but a few can become severe if not treated. If a patient with OHSS becomes pregnant, pregnancy hormones can temporarily worsen the condition.

Once your treatment cycle begins, it is important to know the symptoms of OHSS and how to contact the medical team if needed.

Why does OHSS occur?

The condition occurs when there are high levels of oestrogen and the ovaries produce too many follicles. Careful monitoring can predict some of these women and allow treatment cycle s to be modified or cancelled to prevent the condition occurring.

Who is at risk of OHSS?

Any woman undergoing ovarian stimulation is at risk, but some are more susceptible than others including younger women and those with polycystic ovaries. We tend to use lower doses of medication in these women to minimise the risk.

When does OHSS occur?

The condition only occurs **after** the injection of HCG (late night injection).

What are the symptoms of OHSS?

Mild form:	**Moderate form:**	**Severe form:**
• Abdominal swelling • Lower abdominal pain • Feeling sick	• Diarrhoea • Vomiting • Dark strong urine	• Persistent vomiting - unable to tolerate any fluid orally • Gross abdominal swelling resulting in shortness of breath

You will not necessarily develop all the symptoms at the same time

What should I do if I think I have OHSS?

You are advised to contact us if you develop **any** of the above symptoms or feel unwell.

It is important to drink plenty of fluids to avoid becoming dehydrated. Dark strong urine is an indication of dehydration. You can take Paracetamol (maximum 8 tablets in 24 hours) for pain relief. Mild hyper-stimulation may be relieved by these simple measures, but you should contact us for advice.

Who should I contact?

Since OHSS is uncommon, your GP or local hospital may not be used to dealing with this condition. Therefore, you are advised to contact us directly.

Out-of-hours you can be put through to a nurse from the unit from the main hospital switchboard (0114 271 1900).

Other risks of treatment

The HFEA have advised that patients should be aware of a theoretical risk that the stimulation drugs used in IVF could increase the chance of developing ovarian cancer later in life. However, a number of very large follow up studies have been reassuring and shown no actual increase, but further research is ongoing.

Information for patients requiring ICSI (Intracytoplasmic Sperm Injection)

You may have been advised that your IVF treatment needs to be combined with another process called ICSI which injects a single sperm directly into the egg.

What does ICSI involve?

ICSI is similar to IVF in that eggs and sperm are collected from each partner (or donor). A single sperm is then injected directly into an egg using a fine needle. The eggs are incubated and examined the following day for fertilisation. Embryos may then be transferred back into the uterus of the woman like IVF.

When is ICSI used?

ICSI is used when sperm are unable to fertilise the egg naturally. ICSI may be used in the following cases:

- Low Sperm Count
- Poor Sperm motility (movement)
- High rates of sperm abnormality
- Sperm retrieved through the epididymis (PESA) or the testicles (TESE), or from the urine (retrograde ejaculation)
- Sperm contains high levels of antibodies
- Low or absent fertilisation rates in previous IVF cycle(s)

Are there any risks with ICSI treatment?

ICSI may use sperm that would not otherwise be able to fertilise an egg, raising concerns about the potential risks to children. Several follow-up studies have now been published, but the first children conceived using ICSI are just reaching adulthood. Consequently, these follow-up studies involve relatively small numbers of children and do not include effects that may only be seen in older children or in the subsequent generations. More studies are needed to confirm the longer term safety of this procedure.

The use of ICSI has been potentially linked with certain genetic defects as explained below:

1) ***Possible inheritance of genetic and chromosomal abnormalities:***

   a) **Inheritance of cystic fibrosis gene mutations**

   b) **Sex chromosome defects and the inheritance of sub-fertility.**

You will be offered the opportunity for genetic testing if it is appropriate.

Embryo Freezing and Storage

What is embryo storage?

If good quality embryos remain following your embryo transfer, these can be frozen for subsequent use. The embryologist will only recommend that good quality embryos at the correct stage of development be frozen. In rare circumstances it may be suggested that you freeze all your embryos before transfer if you are at risk of OHSS or if other issues are identified during your treatment.

Embryos are frozen at very low temperatures and stored in tanks of liquid nitrogen. The embryos are stored in sealed, double labelled straws in alarmed storage containers. Not all embryos survive the freezing and thawing process, although our survival rates are close to 100%.

Should any remaining embryos not be required for further treatment, they can be donated for the treatment of others, training or be allowed to perish. You, and your partner if appropriate, must both provide consent as to the use of these embryos. Your consents must agree before any embryos can be used or donated for treatment or training. You will be provided with a leaflet about this at the time, but please ask to speak to an embryologist in the meantime if you would like more information.

How long can embryos be stored?

The law allows you to keep your sperm, eggs or embryos in storage for up to 55 years,. However, you must fill in a “renewal” consent form every 10 years if you would like your sperm, eggs or embryos to remain in storage for your own use.

What consent do I have to give?

You can only store your embryos if you have completed the relevant HFEA consent forms. A nurse will explain these forms at your consultation and help you fill them in.

If at any point during the storage period either the egg or sperm provider removes their consent, a 12 month 'cooling off' period is started. Embryos will be kept for 12 months. We will write to patients offering an appointment with a counsellor. Embryos will then be thawed and allowed to perish 12 months after the withdrawal of consent. If the expiry date is reached before the 12 months cooling off period is reached, the embryos will be thawed and allowed to perish on this date.

Both partners, where relevant, need to give consent before any embryos are thawed for treatment.

What happens if I die or lose mental capacity while I have sperm, eggs or embryos in storage?

Before you have treatment, you will complete a consent form that tells us what your wishes are if this happens. You will have the option to allow your partner to use them in treatment, or not. If you have provided the sperm for treatment, you will also have the option of being named as the legal parent of any children born if you die before your sperm, or embryos created from your sperm, are successfully used in treatment.

If a surrogate would be needed for your partner to have treatment if you die, then there are further consent forms and screening that would need to be done for this to legally be carried out.

On these consent forms you are also able to tell us what your wishes would be if you were to lose your mental capacity whilst you have sperm, eggs or embryos in storage. You are able to keep them in storage for up to 10 years from the time that you lose capacity, for use when and if you regain that capacity. Alternatively, you may decide that your partner can use them whilst you have lost capacity, or you may prefer for them to be removed from storage.

It is important that you consider what you would like to put on your consent form. Even after it has been filled in, you can change or withdraw your consent at any time by contacting us on 0114 2268050 and letting us know.

How are embryos replaced?

Embryos may be replaced in either a natural or hormone replacement cycle.

In a natural cycle we use blood tests and ultrasound scans to time when ovulation occurs. This allows us to calculate when the endometrium will allow implantation of the embryo.

In a hormone replacement cycle we use ultrasound scans to ensure the lining of the womb, the endometrium is at a stage ready to allow implantation of the embryo when we transfer it.

The embryo(s) can then be thawed and embryo transfer performed as in a fresh IVF cycle.

Are there any risks to freezing embryos?

Studies have demonstrated that children born as a result of treatment using frozen embryos appear to be as healthy as those children born as a result of fresh embryo replacement cycles.

What costs are involved?

Some costs may be included in your NHS funding. If not, the cost for embryo freezing and subsequent replacement cycles can be found in the treatment charges leaflet. The cost for initial freezing also includes the first year of storage.

What if I have a complaint about the way I have been treated?

If you have a complaint about your treatment, please tell us and we will do our best to fix the matter.

You may complain verbally, by phoning 0114 2268050 and telling us about it.

You can complain in writing to:

sth.jessopfertilityadministration@nhs.net

If you would prefer to speak with someone outside of our clinic then please contact the Trust Patient Advice and Liaison Service (PALS) on 0114 271 2400 or email sth.pals@nhs.net

Where can we get further information?

We hope that this information leaflet has given you all the information that you require before your treatment. Please do not hesitate to contact us if you need further information or if you do not understand anything. We welcome any suggestions you may have on improving our leaflets.

The staff of the clinic are always available should you require any further information, and this includes 24 hour out-of-hours cover should you have a more serious problem or query about your treatment cycle.

A list of national and local infertility support groups is available in the ACU. We keep a small library of books which you are welcome to borrow. We can also provide you with a list of other books or internet websites that you might find useful.

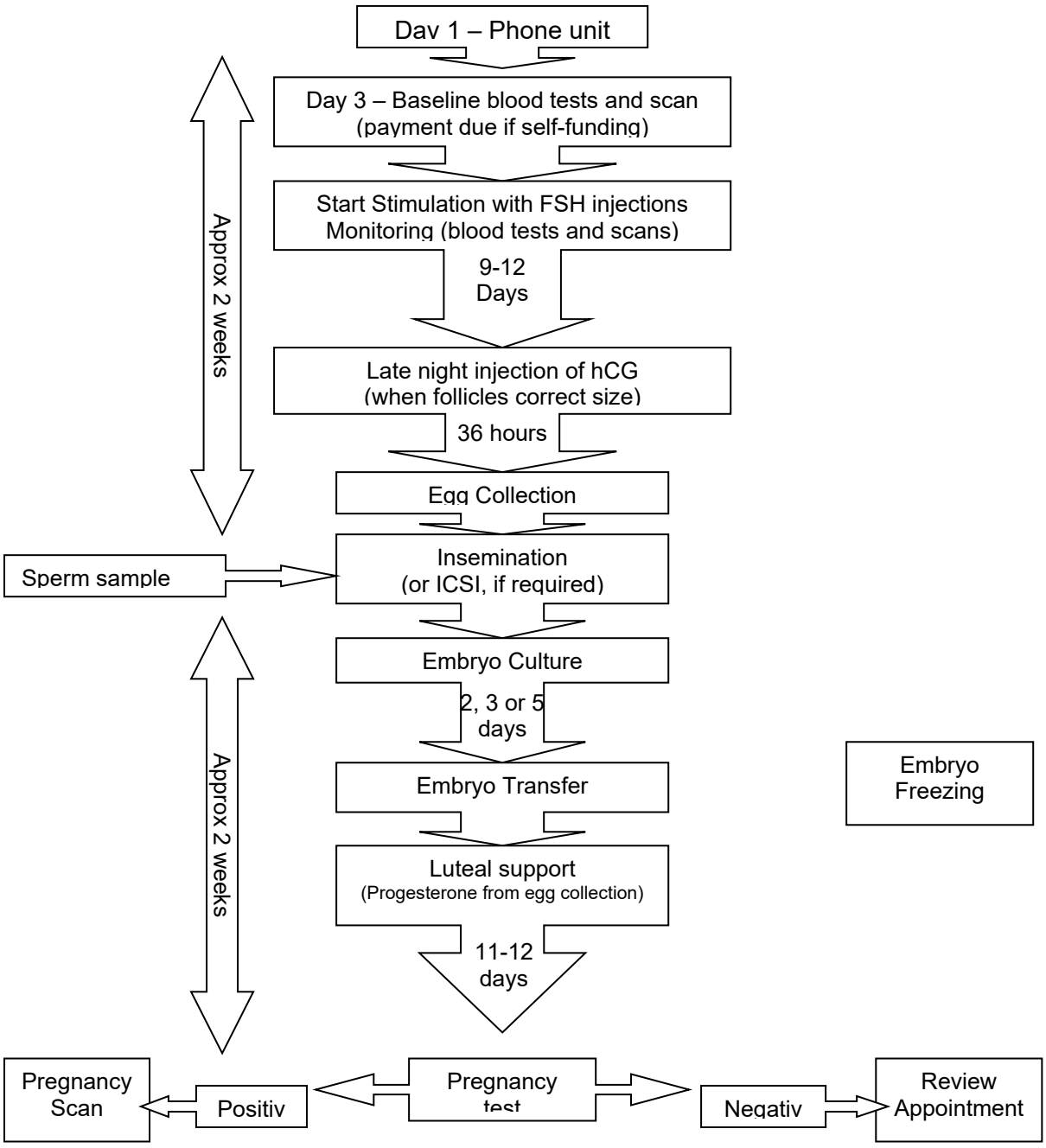
Further information can be also obtained from the Human Fertilisation & Embryology Authority (HFEA): www.hfea.gov.uk

Jessopfertility
Bringing hope to life

In Vitro Fertilisation

Sheffield Teaching Hospitals NHS
NHS Foundation Trust

Treatment Cycle



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Who to call in an emergency

ACU Patients	**Thornbury / Claremont (joint care patients)**
Outside our opening hours telephone calls will be forwarded to voicemail. You may leave a message which will be answered the next working day. Emergency cover is provided for patients 24 hours a day, 365 days a year. If you need urgent medical advice out of hours, a member of the nursing or medical staff are **always** available by calling the Royal Hallamshire switch board **Tel: 0114 2711900** **and ask for the ACU nurse on call**	Please contact **your consultant** out of hours via the contact number they have provided you with in the first instance. If you unable to contact your consultant and you need urgent medical advice out of hours then a member of the ACU nursing or medical staff are **always** available by calling the Royal Hallamshire switch board using the number under the ACU patient box

Jessop Fertility
Sheffield Teaching Hospitals NHS Foundation Trust
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