

Laboratory Guide

Herts & Essex
Fertility Centre



Think positive, we do

Excellent success rates

**34+ year
history**

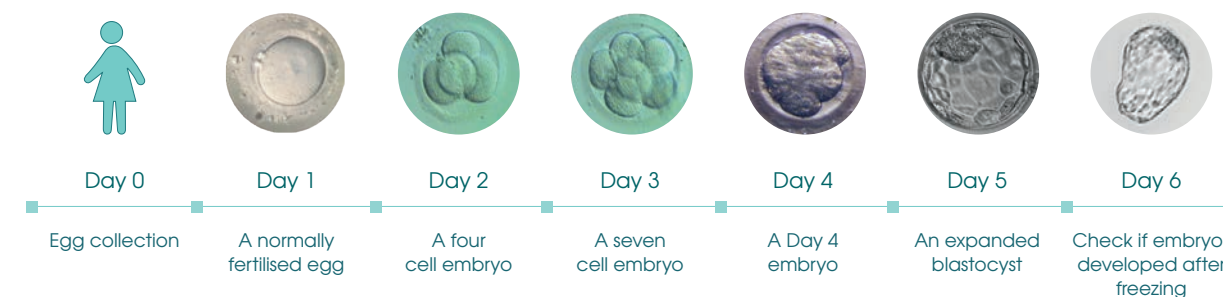
We have helped
to deliver over
7,000 babies

Our laboratory guide for you and your embryos

We hope this guide will give you a better understanding of the journey you and your embryos will take through our laboratory. We are with you every step of the way.

Each day is described in detail, starting with the day of egg collection.

Six day timeline



Day 0

Day of egg collection / thaw insemination

On this day, your eggs will be collected and the semen specimen will be prepared for insemination.

Based upon the quality of the semen sample and your reproductive history, one of three treatment options for the insemination of your eggs will be used:

- 1. In-vitro fertilisation (IVF)
- 2. Intra-cytoplasmic sperm injection (ICSI)
- 3. Physiological intra-cytoplasmic sperm injection (PICSi)

After insemination we will confirm with you the number of eggs collected, the quality of the semen prepared, and the chosen method of insemination.



On average we expect
60-70% of collected eggs
to fertilise normally

1. In-vitro fertilisation (IVF)

Your semen sample is prepared for insemination by washing, removing unwanted cells and debris.

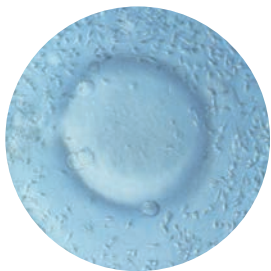
We will inseminate eggs by the IVF method if the parameters of the sample we assess ahead of treatment, and the sample on the day of insemination, are appropriate.

In IVF, a set concentration of prepared sperm is added to your collected eggs, which are then left overnight in the incubator to allow time for the sperm to fertilise them.

On average, we expect 60-70% of eggs collected to fertilise normally.

Please do not be concerned if the semen sample provided on the day of egg collection is poorer than your previous analysis, as under such circumstances we can convert the treatment to that of ICSI instead.

If these circumstances present, we will discuss the situation fully, guide you and answer any questions you may have.



IVF insemination (IVF)



2. Intra-cytoplasmic sperm injection (ICSI)

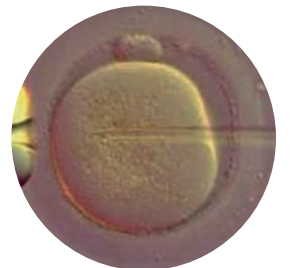
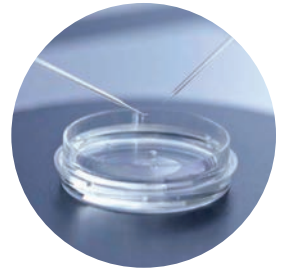
If you are using frozen eggs or surgically retrieved sperm for your current treatment, then either ICSI or PICSI will be necessary for your treatment, depending on sperm parameters.

If you require ICSI you will normally be advised of this treatment option at the time of initial consultation based on your past history and/or semen analysis with us. Please note that we may need to recommend ICSI if the semen sample you provide on the day of egg collection is poorer than that of previous samples.

ICSI is a method by which a single sperm is selected and injected into a single egg under microscopic control. This method assists sperm which may otherwise struggle to fertilise the eggs when using conventional IVF.

Only mature eggs with the capacity to be fertilised by sperm are able to be injected using ICSI. It is completely normal for some eggs to be immature but these cannot be injected as they won't fertilise. Following the injection procedure, the eggs are stored in the incubator overnight, and we check for signs of fertilisation the following morning.

On average, as with IVF, we expect 60-70% of injected eggs to fertilise normally. This average may be slightly lower when using sperm recovered by surgical sperm retrieval or for frozen-thawed samples.



**Intra-cytoplasmic
sperm injection
(ICSI)**

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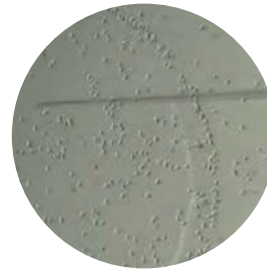
3. Physiological intra-cytoplasmic sperm injection (PICSi)

PICSi will be discussed as a treatment option at the time of initial consultation based on the findings of the semen analysis and associated HBA analysis.

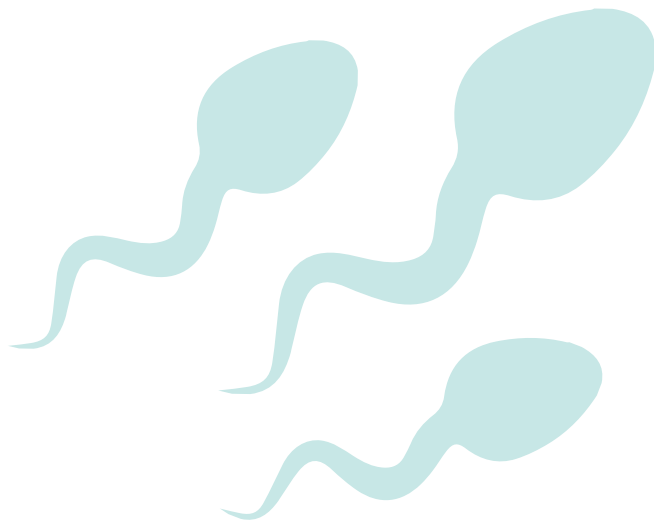
PICSi is a variation of ICSI, which uses a method of sperm selection to distinguish between those sperm which are mature, from those which are immature. A special coated dish binds the mature sperm, which can be isolated and injected into a mature egg under microscopic control, as with ICSI. This method assists patients with increased proportions of immature sperm in their ejaculate, ensuring only mature sperm are selected.

Only mature eggs with the capacity to be fertilised by sperm are able to be injected using PICSi. It is completely normal for some eggs to be immature, but these cannot be injected as they will not fertilise.

Following the injection procedure, the eggs are stored in the incubator overnight. On average, as with IVF and ICSI, we would anticipate 60-70% of injected eggs to fertilise normally.



Physiological
intra-cytoplasmic
sperm injection
(PICSi)



Day 1

One day after insemination

Regardless of the method of insemination carried out on the day of egg collection, all eggs are checked for signs of fertilisation.

Signs of normal fertilisation

We look for the presence of two small circular structures (see picture top right) called pronuclei (PN) inside each inseminated egg. We do not expect all eggs to fertilise and some may fertilise abnormally. This is completely normal to see.

From this stage onwards, only eggs with normal signs of fertilisation are kept. All unfertilised/abnormally fertilised eggs (e.g. too few or too many PNs, see picture bottom right) are discarded.

We will call you with the fertilisation news as soon as we have checked the eggs in the morning.

Planning for embryo transfer

During your fertilisation update call, the embryologist will discuss our recommendations of when to plan your embryo transfer. This can differ between cycles. This recommendation is based in part on the number of embryos which we intend to transfer.



A normally fertilised egg



An abnormally fertilised egg with too many PNs

Day 2

Two days after insemination

If you are scheduled for a Day 3 or Day 5 transfer or freeze all embryos (FAE), your embryos will remain undisturbed in the culture system and there will be no update on this day. However, if you have been booked in for a cleavage stage transfer, this may fall on Day 2.

Two days after collection we expect that your fertilised eggs (embryos) will have started to develop and divide, to have between two to five cells.

Ideally, we like embryos to be at the top end of the quality range, but we do not expect all embryos to be of good or equal quality. Pregnancies can be obtained over a range of embryo qualities, including more average and also poorer grade embryos.

The most important factor is that your embryos have started to grow.

If you are having a transfer on this day you will receive an update on your embryos when you arrive in clinic. If you are not having a transfer then there will be no update on this day.



A four cell embryo

Cleavage stage embryo transfers

Cleavage stage transfers will routinely take place for patients who intend to transfer all of the available embryos, and so do not require any selection of which embryo(s) to transfer. This will be discussed during your fertilisation update call on Day 1.

We base this decision on many years of experience to give you the best chance of a positive outcome.

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Day 3

Three days after insemination

If you are scheduled for a Day 5 transfer or freeze all embryos (FAE), your embryos will remain undisturbed in the culture system and there will be no update on this day. However, if you have been booked in for a cleavage stage transfer, this may fall on Day 3.

Three days after collection we expect that your fertilised eggs (embryos) will have started to develop and divide, to have between six to eight cells.

Ideally, we like embryos to be at the top end of the quality range, but we do not expect all embryos to be of good or equal quality. Pregnancies can be obtained over a range of embryo qualities, including more average and also poorer grade embryos.

The most important factor is that your embryos have started to grow.

If you are having a transfer on this day you will receive an update on your embryos when you arrive in clinic. If you are not having a transfer then there will be no update on this day.



Day 3 we would expect the embryos to have divided further, ideally between six and eight cells

Cleavage stage embryo transfers

Cleavage stage transfers will routinely take place for patients who intend to transfer all of the available embryos, and so do not require any selection of which embryo(s) to transfer. This will be discussed during your fertilisation update call on Day 1.

We base this decision on many years of experience to give you the best chance of a positive outcome.

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Day 4

Four days after insemination

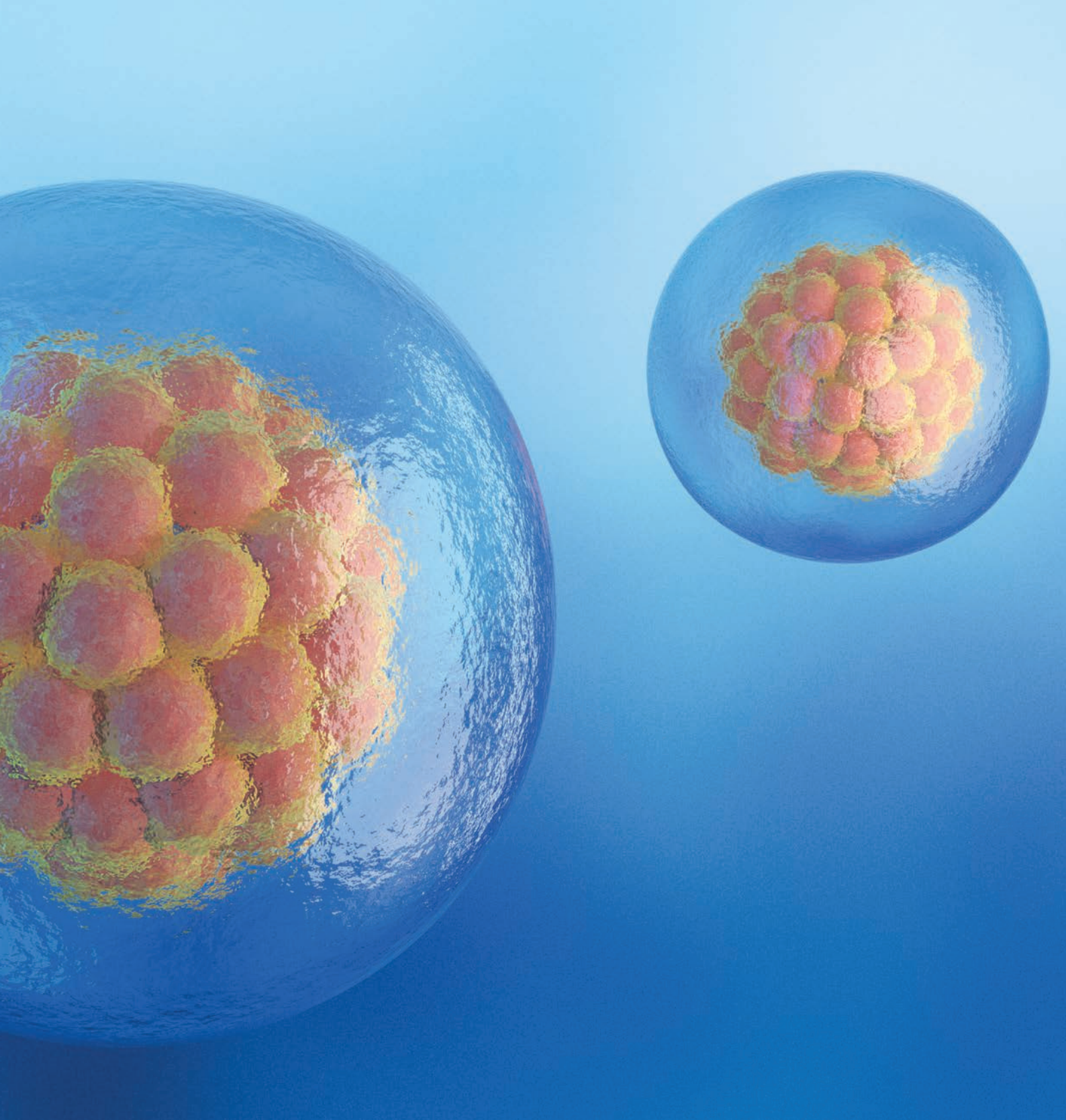
Embryos which remain in culture at this point, will not be checked on this day.

You will not receive a call today to update you on the progress of your embryos. They should be undergoing an important transition called Compaction.



A Day 4 embryo





Day 5

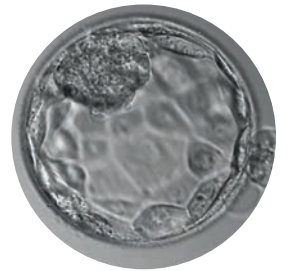
Five days after insemination

By Day 5 we would expect the majority of embryos to have developed into blastocysts, which look very different to the earlier cleavage stage embryos.

Embryos at this stage will have reached the stage of development where it is preparing to hatch and implant in the lining of the womb. The cells will have begun to specialise into two clear structures: a group of cells called the inner cell mass which will form the foetus, and the cells lining the periphery (the trophectoderm cells) which develop into the placenta.

As blastocysts are more advanced embryos than cleavage stage embryos, we know their potential to implant is higher. Due to this, for those patients under 38 years of age who are most at risk of a multiple pregnancy, it is our recommendation to replace one good quality blastocyst. This will both maximise the chances of delivering a healthy baby and minimise the risks to both mother and baby which are increased in multiple pregnancy. We will calculate your risk based on your treatment history and the quality of your blastocyst.

If you are having a transfer on this day you will not receive a call from us on this day. However, you will receive a full update when you arrive for the appointment.



An expanded blastocyst

Blastocyst freezing (Vitrification)

After providing your consent to freezing, good quality blastocysts may be frozen or 'vitrified' on Day 5 or Day 6, if these embryos remain in culture after an embryo transfer, or if you are having a Freeze All Embryos (FAE) cycle.

We only freeze good quality blastocysts that have the potential to produce a pregnancy, in order to maximise your chances of success in a later frozen embryo replacement cycle.

Visit our page:

Blastocyst culture and transfer

[hertsandessexfertility.com/
treatments/blastocyst-culture-and-transfer/](https://hertsandessexfertility.com/treatments/blastocyst-culture-and-transfer/)

Single embryo transfer (SET)

The aim of undergoing fertility treatment is the birth of a healthy baby with minimal risks during pregnancy.

To achieve this, in many cases the transfer of only one embryo is required. Twins or triplets can appear to be the ideal outcome when having fertility treatment, but multiple pregnancy is the biggest health risk for IVF babies.

It is important to us that you are fully informed in the decision making process, and that you know we are making the right choice for you based on the information at hand.

We are pioneers in blastocyst culture and transfer. Thanks to our well-established and extremely successful blastocyst programme, we are able to reduce the number of embryos transferred to just one in a select group of patients. These are the patients we have identified most at risk of a multiple pregnancy.

The transfer of one blastocyst in these patients will not compromise the excellent chances of success but will act to safeguard both mother and baby from the risks of multiple pregnancy outlined below:

Increased risks to babies from multiple pregnancy:	Increased risks to mothers from multiple pregnancy:	Currently our recommendation is to transfer just one top quality blastocyst for the following groups of patients having a blastocyst transfer:
<ul style="list-style-type: none">• Premature birth• Perinatal mortality• Neonatal care• Respiratory distress• Cerebral palsy• Delay in language acquisition• Disability• Congenital malformations	<ul style="list-style-type: none">• Miscarriage• Hypertension• Pre-eclampsia• Gestational diabetes	<ul style="list-style-type: none">• Patients under 38 years old on their first, second and third attempts• Egg donors• Egg recipients• Patients at risk of ovarian hyperstimulation (OHSS)

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Many patients mistakenly believe that replacing just one blastocyst instead of two will dramatically lower their chances of falling pregnant in the first instance.

Actually, adding a second blastocyst does not greatly enhance your chances of becoming pregnant, but it will significantly increase the risk of having a multiple pregnancy, and with it the associated risks.

Day 6

Six days after insemination

If embryos are still in the laboratory after transfer, and/or Day 5 freezing we will check them on Day 6 to see if any are suitable for freezing. Again, only good quality embryos will be frozen to maximise chances of success at a later stage.

Day 6 will be the last day you receive an update from the Embryologists, although we are only a phone call away should you need us for anything at all.



Frozen Embryo Replacement (FER)

If embryos are suitable to be frozen after they have been created in the laboratory, it is possible to store, thaw and then transfer them at a later date in an FER cycle.

If you are undertaking an FER cycle, the laboratory will contact you in the days before your transfer to confirm the thaw plan with you.

If you have blastocysts frozen then we will thaw the embryos on the day of your embryo transfer appointment. While embryos that were stored at an earlier stage are thawed ahead of time depending on their developmental stage. Once thawed, the majority of embryos survive the process with no problems, however there are rare occasions where this is sadly not the case. If an embryo does not successfully thaw out, we would call you to discuss the next steps with you.

Once embryos have been thawed they remain in our culture system until they are ready to be prepared for the embryo transfer. Blastocysts can be very dynamic at this point and often contract and expand, meaning that they may look quite different to a fresh embryo. But this is not any cause for concern, the embryologist will still be able to assess the embryo and be confident that it is suitable for the transfer procedure. When you arrive for the transfer itself, an embryologist will be able to discuss the progress of your embryo(s) with you.

“Our experience was filled with care and attention, and during every appointment and procedure, we both felt well informed, comfortable and in extremely capable hands”.



Advice following embryo transfer

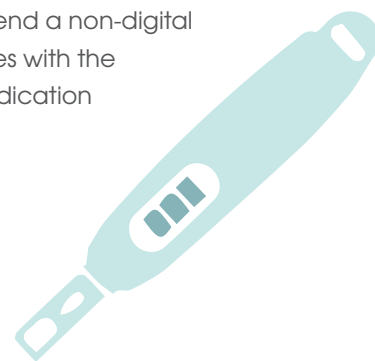
Following the embryo transfer it is vital that you continue your medication as instructed and prescribed, until the date of your pregnancy test. The pessaries and/or injection taken each day from the egg collection, act to thicken and maintain the lining of the womb in preparation for embryo implantation. The pessaries can be taken either vaginally or rectally.

The pessaries and/or injection taken, will act to maintain the lining of the womb, and for this reason it is unlikely that you will bleed heavily prior to the pregnancy test. Some spotting may occur during the few days following embryo transfer and before the pregnancy test, and some period-type pain can be experienced. This is quite normal. If sanitary protection is needed please use sanitary pads and not tampons during this time. For any discomfort, paracetamol may be taken, following the dosage instructions on the packet. Should you have a heavy period-like bleed please contact the nurses for advice; you will need to continue your pessaries until the date of your pregnancy test, and you should still carry out a pregnancy test regardless of any bleeding experienced.

The pregnancy test is 16 days from egg collection, and the first morning urine sample must be used to ensure an accurate result is given. Please do not be tempted to test early, as the hormone present in the late night trigger injection to ripen the eggs interferes with the pregnancy test and may give a false positive reading. By waiting the 16 days we can ensure the result is due to a pregnancy, as the drug will be out of your system by this time.

Please purchase a pregnancy test kit from a local pharmacist. We recommend a non-digital test kit be used for your pregnancy test. Please ensure you contact the nurses with the result of your pregnancy test, who can advise and prescribe any further medication where indicated.

There may be circumstances where a blood test is necessary or indicated and we will advise you accordingly if you require a blood test on the date of your pregnancy test.



Other recommendations:

- You should continue to take folic acid tablets daily.
- The pessaries can cause bloatedness and constipation; please ensure your diet contains plenty of fruit and fibre to help prevent this, and keep hydrated.
- The antibiotics taken from the day after egg collection can sometimes upset your stomach and cause nausea and vomiting. For this reason you should take the antibiotics with food. If you have repeated problems caused by the antibiotics these may be stopped prior to completing the full course after speaking to a nurse. The antibiotics act to prevent any risk of infection following egg collection, which is a very minimal risk.
- You should not smoke or consume alcohol.
- You should avoid eating foods containing uncooked eggs, soft pâté and blue-vein cheese.
- You should avoid any heavy lifting or strenuous activities. Gentle exercise can be continued, and this will promote blood flow which is important. Wherever possible we recommend you continue with your normal daily activities.
- We do not recommend women to have their hair dyed; the chemicals are absorbed straight into the bloodstream.
- We do not recommend swimming due to the possible risk of infection.
- Try to avoid activities which will significantly raise your body temperature, e.g. extremely hot baths / saunas / steam rooms.
- For those patients at risk of hyperstimulation, who have had numerous follicles and /or large numbers of eggs collected, please refer to the information provided when you were placed for egg collection, 'Instructions for trigger injection' for reference purposes and advice.

In case of emergencies

Should you experience any problems following the embryo transfer, please speak to one of the nurses for advice. Please note the on-call nurses mobile is **07940 314 684** and is for **emergencies only**.

Mon – Fri: 7am – 8am & 5pm – Midnight

Sat – Sun: 7am – Midnight

All other calls should be made during normal opening hours.

Please note this service is for phone calls only and not for text messages.



Get in touch

Monday to Friday 8am-5pm

01992 78 50 60

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FertilityUnit



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