



What is IVF?

IVF, or in vitro fertilisation is a common treatment for fertility issues. It involves sperm being combined with an egg in the laboratory rather than in the human body. If fertilisation happens the egg begins to grow into an embryo. This is then put back into the womb (uterus). IVF is widely used when people are having difficulty getting pregnant or need to use donated eggs, sperm or embryos.

Who can have IVF?

IVF was developed to help when the tubes which lead from the ovaries to the womb were blocked or damaged, stopping the egg getting to the womb. It is now used for many different fertility problems such as endometriosis, blocked or damaged fallopian tubes or male fertility issues. It may be recommended when there is no clear reason someone can't get pregnant (unexplained infertility). IVF can also be used to help people who risk passing on inherited conditions and for those who want to freeze eggs or embryos for the future. It can also be used by single and same-sex parents.

What happens during an IVF cycle?

IVF involves several stages which take place over a few weeks. There are different ways of doing IVF. The exact process will be designed to suit you by your clinic.

Suppressing the ovaries

Sometimes an IVF cycle may start with medication to shut down your natural cycle. This is known as the long protocol and will take more time. A quicker process without this shut-down, the short protocol, is now more common.

Stimulating the ovaries

Injections of hormones are used to encourage the ovaries to produce eggs. Naturally, it is usually just one egg that matures during a menstrual cycle. During IVF, the hormone injections get the ovaries to work harder to try to produce more eggs.

People sometimes worry about having to do the injections at home before they start. They often find it isn't as difficult as they expected. For those having treatment with a partner, it can be helpful to consider whether they could do the injections.

Ultrasound scans and blood tests

The team at the clinic will want to check how well the hormone injections are working. They do this with ultrasound scans to check what is happening in the ovaries. An ultrasound probe is put into the vagina, so it is close to the ovaries. This sends out sound

waves which give a picture of the ovaries. You may also have blood tests to check hormone levels.

The eggs develop inside little sacs called follicles. The follicles are measured during the scans. They are more likely to contain a mature egg if they reach a certain size, and the team will be checking their growth. The team usually like some of the follicles to reach 16-22mm to be ready for egg collection. If they are much smaller, they are less likely to contain mature eggs. If they are much bigger, the eggs may be too mature.

Trigger injection

A special injection, known as a trigger, shot, is needed once the follicles reach the right size. This injection is to encourage the eggs to mature and to get ready to break out of the follicles. The timing of this injection is important. The clinic will advise exactly when to do this injection. It is usually about 36 hours before your egg collection.

Egg Collection

Once the follicles are the right size, and the trigger injection has been taken, it is time to collect the eggs. This is done in an operating theatre under sedation or anaesthetic. A special needle attached to the ultrasound probe is put through the walls of the vagina into the ovary. Ultrasound is used to see the ovaries. The liquid inside the follicles is sucked or flushed out into a test tube. This is taken to the laboratory where the embryologists take over. They check to see if there are eggs in the fluid. The egg collection usually takes 20-30 minutes.

Some follicles may not contain eggs, so the number of eggs collected is usually lower than the number of follicles seen during your scans. Female age and hormone levels can affect the number of eggs, as well as other medical conditions. Sometimes it may be necessary to cancel a cycle if no viable eggs are collected, or at a later point if none of the eggs fertilise or develop.

If you are working, you are likely to need the day off work to recover from the sedation or anaesthesia.

Sperm Collection

A sperm sample is taken on the same day as the egg collection unless there are problems producing this. It is usually produced by masturbation but sometimes it is collected during an operation if the sperm count is very low or there are no sperm in the semen. Sometimes, the sample will be frozen so has to be thawed. This may happen if donor sperm is being used, or in other cases where the sample was given in advance.

The sperm is prepared in the lab by the embryologist to make sure the best sperm in the sample are chosen.

Once the eggs and sperm have been collected and you have been checked by the fertility nurse, you will be allowed to go home.

Fertilisation

The eggs are put into a dish with the sperm to allow fertilisation to take place. If the embryologists think the sperm is unlikely to be able to fertilise an egg, they may inject a single sperm right into each mature egg. This is called ICSI (Intracytoplasmic Sperm Injection).

If an egg is fertilised, it begins to divide and grow. It becomes an embryo. Not all the eggs will be mature, and immature eggs will not fertilise.

Embryo Culture

The embryos are looked after in the lab by the embryologists for at least three days before they are ready to be transferred. They may stay in the lab for five days to develop into the next stage of development, known as a blastocyst. The team will discuss what is best in each individual case.

Some fertilized eggs do not reach the blastocyst stage. This can be due to poor egg or sperm quality or chromosomal abnormalities. This is completely normal and the number of blastocyst you will have at the end of this process can vary from person to person.

Embryos can also be tested for inherited conditions at this stage, by taking some cells and checking them. This is known as PGT, or preimplantation genetic testing. Sometimes this method is used to decide which embryos may be most likely to develop. This is not recommended for most patients by the [Human Fertilisation and Embryology Authority](#) (HFEA), which regulates fertility clinics in the UK.

Additional treatments

There are a whole range of extra tests and treatments which clinics may offer to try to improve outcomes from IVF treatment. These can be very expensive, and there is a lack of scientific evidence as to whether they actually make any difference. If you want to know more about these treatments, the HFEA website gives the latest information.

Embryo Transfer

Once the embryos are ready, one is chosen to be put into the womb. This usually only takes around 10 to 15 minutes. There is no need for sedation or pain relief. If there are more embryos which are suitable, they can be frozen and kept at the clinic so they can be used in the future. Sometimes more than one embryo at a time is put back, depending on the age of the person and embryo quality.

The embryo is put into a small tube, which goes right into the womb. Ultrasound is used to see inside the womb and make sure the embryo is put in the best place. You will usually be asked to have a relatively full bladder for the transfer so the ultrasound can give a clear view.

Once the embryo has been put back, you can leave the clinic and carry on with normal activities.

Frozen embryo transfer

If using an embryo that has been frozen, this will be thawed before it is put back. The clinic may need to thaw more than one embryo as sometimes embryos don't survive the freezing and thawing process.

This follows the same process as outlined above.

How long does IVF take?

An IVF cycle usually takes between four and six weeks. With a short protocol, there are 10-14 days of injections to stimulate the ovaries, then a trigger injection with egg collection the following day. The eggs will be in the laboratory for 3-5 days and then you will have embryo transfer.

The long protocol includes an extra two weeks at the start to suppress hormones. The exact timeline can vary for each person.

The two week wait

This is often the most difficult part of an IVF cycle. People can worry about what they should and shouldn't do. There is a lot of advice online, but most of it isn't based on any evidence.

What is important is to try to eat healthily, not to smoke, drink alcohol or have too much caffeine. Bed rest is not recommended, and people can carry on with life as usual.

Sometimes people are concerned about some activities such as exercising or carrying heavy shopping. If something is going to cause worry, it is best to avoid it during the two week wait even if it is unlikely to make any difference. This is just to make sure people don't blame themselves if the treatment doesn't work.

Pregnancy Test

The clinic will advise when to carry out a pregnancy test. It is often tempting to test earlier. Remember it is possible the result won't be accurate if the test is done too early.

Success Rates

IVF success rates vary depending on age, any fertility issues and the quality of the eggs, sperm, and embryos. Success rates are typically higher for younger women, with a decline after the age of 35. The average success rates by age are listed on the HFEA website. These will vary depending on the diagnosis and lifestyle factors such as smoking or obesity.

Risks of IVF

- Multiple Pregnancy is the biggest risk of IVF. Getting pregnant with more than one baby brings risks for mother and babies including premature birth, low birth weight, and pregnancy complications. Usually, your clinic will recommend only transferring one embryo at a time to reduce this risk. If they recommend transferring more than one embryo, they will explain the reasons why and the risks involved.
- Ovarian Hyperstimulation Syndrome (OHSS). This happens when the ovaries get too stimulated by the hormone medications. It can lead to swollen, painful ovaries and fluid

can be retained in the body. Most often OHSS is said to be mild but can still be very uncomfortable. In some cases, OHSS can lead to very serious complications, so it is important to be aware of the symptoms and to talk to a clinic or doctor if there are any signs of OHSS.

Emotional Support and Counselling

The emotions of IVF can be hard to cope with as there are often a lot of highs and lows. It is stressful and can make people feel anxious. Counselling can be really helpful, and every clinic should provide access to a specialist fertility counsellor although this may have an additional cost.

BICA, the British Infertility Counselling Association, have a list of trained specialist counsellors on their website. Our online fertility groups can be very helpful. They give an opportunity to meet others going through similar experiences and to share a sense of community in a safe and welcoming space.

After treatment

IVF is not always successful, and this often feels devastating after going through so much. We are here at The Fertility Alliance for anyone who has had an unsuccessful treatment cycle and can offer support and information. It may take some time to decide on next steps and whether to try again.

A successful outcome can bring different challenges. This is something we understand at The Fertility Alliance, and we can always offer a listening ear.