

IVF: 7 steps to getting pregnant

Been trying to conceive and have decided to take the IVF route? Here's what to expect on your journey...

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If things don't seem to be happening after several years of trying to conceive, a couple will very likely see a fertility specialist to figure out what's going on. This should be done sooner rather than later, doctors say, as a woman's age plays a crucial role in fertility.

If she is younger than 35, a couple should see a doctor after a year of regular, unprotected sex. If she is 35 and above, they should do so after six months. This is because a woman's fertility starts to decline more rapidly after her mid-30s because her egg quality is reduced. At 35, a woman has a 15 to 20 per cent chance of getting pregnant naturally per month.

Hormonal issues, ovulatory disorders such as polycystic ovary syndrome, endometriosis and fibroids can also stand in a woman's way of conceiving. As can diabetes and low sperm motility and motility in a man.

The good news is that assisted reproductive technology has improved by leaps and bounds as compared to 30 years ago when procedures like in vitro fertilisation (IVF) as well as fertility medication were still in their infancy.

Risks aside, each year, millions of people around the world — who might not have been able to conceive otherwise — are able to realise their dreams of parenthood, thanks to this phenomenal procedure.

"In Singapore, women under the age of 40 are eligible to undergo 10 cycles of IVF," says Dr Kelly Loi, a gynaecologist and fertility specialist at Health & Fertility Centre for Women. "Those over 40 are allowed five cycles." Government assistance is applicable to those under 40 only. "For women over the age of 45, IVF is not allowed in Singapore and a special request must be made and permission granted from the Ministry of Health," she adds.

With as many as one in seven couples in Singapore facing infertility, you may know of someone or even be that person who is about to go down the IVF route. And while many have heard of IVF, only a handful actually know what the procedure is like. If you are clueless about this process and what it entails, here's what it looks like from start to finish.

STEP 1: Initial tests

Once you've made up your mind about IVF, you will first be sent for a series of blood tests to check for infections like hepatitis B and C, HIV, syphilis and rubella. Your hormone levels will also be assessed and an ultrasound scan of your pelvis done to determine the health of your uterus and ovaries. Men will also go through a similar infection screening, plus they will have to produce a semen sample that will undergo a quality check.

The couple will also be required to attend counselling as the IVF journey will likely take a toll on their physical, mental and emotional health. Since the average success rate is only between 40 per cent and 60 per cent per cycle, therapy helps to manage the couple's expectations and gives them tools to handle disappointment.

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STEP 2: Woman starts on fertility drugs

Once you've been given the all clear, the woman will go through a two-week downregulation "long Lupron" protocol — this is administered as an injection under the skin in her thigh or abdomen area. The main purpose of this drug is shut down your body's natural ovulation process and stop the egg from being released.

After this, she will go on a 10-12 day course of hormone shots. Carried out after her last menstrual cycle, this stimulation phase (also known as stims) will require her to inject herself twice a day with hCG (human chorionic gonadotropin) hormones to stimulate her ovaries and boost egg production.

As with any kind of hormonal therapy, you may experience some common mild side effects such as bloating and fatigue. There's also a risk of Ovarian Hyperstimulation Syndrome (OHSS), where too many eggs are produced as a result of the injections.

"This in turn leads to abdominal pain, nausea and vomiting, and dehydration," notes Dr Loi. "In 1 per cent of cases, it can be severe and require hospitalisation."

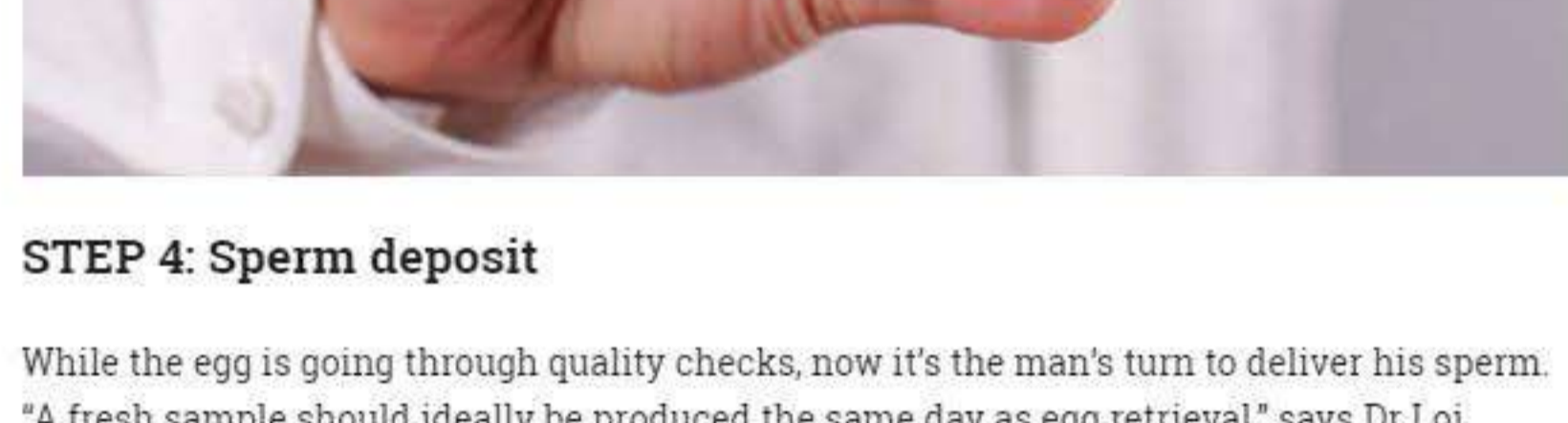
Severe OHSS can affect kidney and liver function, and also cause fluid to build up in the abdomen and lungs. Fortunately, these days, patients identified as being at high risk of OHSS can be given specific hormone injections and medication to prevent the condition from occurring.

STEP 3: Egg retrieval

After the 10 to 12 days of hormone shots, scans are done to confirm if the egg follicles are sufficiently large in size and ready for collection. The woman is then sedated in order that her eggs may be retrieved during a 15- to 20-minute-long procedure.

"A transvaginal ultrasound probe with a fine needle attached will be used to retrieve all the eggs from the ovaries," Dr Loi notes. "Occasionally, some abdominal cramps may be felt after and the woman may suffer some giddiness and nausea from the anaesthetic used." A specially-trained embryologist will then inspect the eggs to determine their quality and if they can be used for fertilisation.

Now that the eggs are ready, what happens next? Read on to find out!



STEP 4: Sperm deposit

While the egg is going through quality checks, now it's the man's turn to deliver his sperm. "A fresh sample should ideally be produced the same day as egg retrieval," says Dr Loi. "There should also be a frozen sample as 'back up', in case a fresh sample cannot be produced that day."

The sperm sample is usually produced by masturbation. Under certain medical circumstances such as Azoospermia — when there's a lack of or zero sperm in the man's semen due to blocked sperm ducts — surgical extraction be necessary. A semen analysis is then performed to assess the sperm count, concentration, motility and morphology (study of shape of the sperm collected).

STEP 5: Fertilisation

Once all the healthy eggs and sperm are collected, it's time to fertilise them! This can either be done the traditional way — where the sperm and egg are placed in a petri dish and allowed to meet by themselves — or through Intracytoplasmic Sperm Injection (ICSI) where the sperm is directly injected into the egg.

"Typically, ICSI is used. However if there are a large number of eggs available, traditional fertilisation may also be used," notes Dr Loi.

With traditional fertilisation, around 60,000 motile sperm are placed in a petri dish together with an egg. Everything is kept in special incubators and cultured. Fertilisation is evaluated 16 to 18 hours later. The embryologist will use a microscope to check if fertilisation has taken place. Some fertility centres also use time-lapse video monitoring to assess how the embryos are developing.

The embryos are given time to grow over several days — up to five or six days — before they are used for transfer (fresh transfer), or frozen for future use (frozen embryo transfer).

"Culturing embryos for five days allows a good assessment of quality. Five-day-old embryos are called blastocysts and good quality blastocysts give a higher pregnancy rate," adds Dr Loi.

If your doctor doesn't think your body is ready for the transfer after assessing your health or emotions, the embryos and blastocysts can also be frozen and thawed for transfer later. If you are one of the lucky ones to have multiple blastocysts, you can also freeze them for potential future pregnancies.

With current freezing techniques involving vitrification [a fast cryopreservation method with high survival rates] or rapid cooling, the success rates may be even better for frozen embryos compared to fresh embryos, says Dr Loi.

"As per Ministry of Health guidelines, embryos may be frozen for five years. After five years, approval for extension is required — embryos can be frozen for up to 10 years," she adds.

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STEP 6: Egg transfer

Once the embryos are ready, a catheter will be used to transfer the embryos back into the uterus. The procedure is similar to that of a Pap smear for women, so there shouldn't be any pain or sedatives, nor would you need pain-relief meds.

If your egg is of very high quality, your doctor might recommend doing just one egg transfer. If you have several mid-quality eggs, he might recommend two egg transfers. In Singapore, you can't do more than two egg transfers, so as to prevent multiple births, which are considered a high-risk pregnancy.

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When the catheter is loaded with the embryos, it's passed through the cervix. Once it reaches the endometrial lining, the embryos are released from the catheter. The doctor will use ultrasound to observe the entire transfer, so as to make sure that it's carried out correctly.

STEP 7: The two-week wait

The next two weeks (also known as the dreaded two-week wait in most IVF circles), are really crucial. It's important for the woman to take it easy — she needs to rest and eat well — to ensure successful implantation.

You can take a blood test as early as 10 days after the transfer to check your human chorionic gonadotropin (HCG) level. If you are pregnant, your HCG levels will rise and continue rising.

If the news is good, you might get hormone support jabs and other medication to help bolster your pregnancy. "This will be continued and gradually tapered off in accordance with the doctor's advice," adds Dr Loi.

However, if it's negative, a consultation will be arranged to review the problems encountered. You'll also meet your fertility specialist to plan as to how to prepare for the next cycle, as well as how to improve your chances of success in the next cycle.