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MANY HAPPY TOMORROWS

# Understanding IVF

The Process, Treatment, Risks, and  
Success rates in India





## About IVF

In vitro fertilization (IVF) is a procedure that fertilizes eggs with sperm to create embryos in the laboratory. The embryos are then transferred to the uterus, where they implant and grow into a foetus.

IVF is performed when conception is not possible or difficult normally due to certain medical-surgical or hormonal conditions. The steps involved during a cycle of IVF include monitoring ovulation, injecting the sperm into the egg and waiting for a positive pregnancy test. It takes at least 3 weeks to complete the cycle. Sometimes, there are some risks involved, like multiple pregnancies, premature delivery and ectopic pregnancy.

If you are looking for a resource that can help you understand the IVF process and treatment in India, its success rates, risks, side effects and other aspects, you have come to the right place. Here is a step-by-step guide that talks about all these points in detail.

# DO YOU NEED IVF AND WHEN IS AN IVF OPTION AVAILABLE?



1

OVULATION  
DISORDERS

2

ENDOMETRIOSIS

3

UTERINE  
FIBROIDS

4

PREVIOUS TUBAL  
STERILIZATION  
OR REMOVAL

5

IMPAIRED  
SPERM  
PRODUCTION OR  
FUNCTION

6

UNEXPLAINED  
INFERTILITY

7

FERTILITY  
PRESERVATION  
FOR CANCER OR  
OTHER HEALTH  
CONDITIONS



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# Why is an IVF performed?

Doctors suggest IVF to a couple when they are unable to conceive with other methods or for a long time or if they are above the age of 36. Some of the other major reasons why an IVF is performed includes the following:

- **Fallopian tube damage or blockage**

Damage to the fallopian tubes can prevent the sperm from reaching the egg and fertilizing it, or it can keep a fertilized egg from implanting into the uterus.

- **Ovulation disorders**

Ovulation disorders may prevent a woman from regularly producing eggs and ovulating eggs during her monthly cycle.





- **Endometriosis**

This occurs when endometrial tissue from inside your uterus grows outside your uterus on other organs, such as your ovaries, intestines or the urinary bladder. This tissue may cause scarring and adhesions (bands of scar tissue) that prevent pregnancy.

- **Uterine fibroids**

Uterine fibroids are benign tumours that grow on or within your uterus. They can interfere with conception because large fibroids may distort the uterus and decrease existing space in the uterus for fetal growth.

- **Previous tubal sterilization or tubectomy or salpingectomy.**

This prevents the egg and the sperm from meeting.



- **Male Factor Infertility**

If the male partner has a low sperm count or poor sperm quality (or other issues related to sperm production),

- **Unexplained infertility**

If neither partner has any known fertility problems but conception has been unsuccessful for at least one year.

- **Depletion of sperm or oocytes due to chemotherapy**

Some chemotherapeutic agents can destroy eggs and sperm.

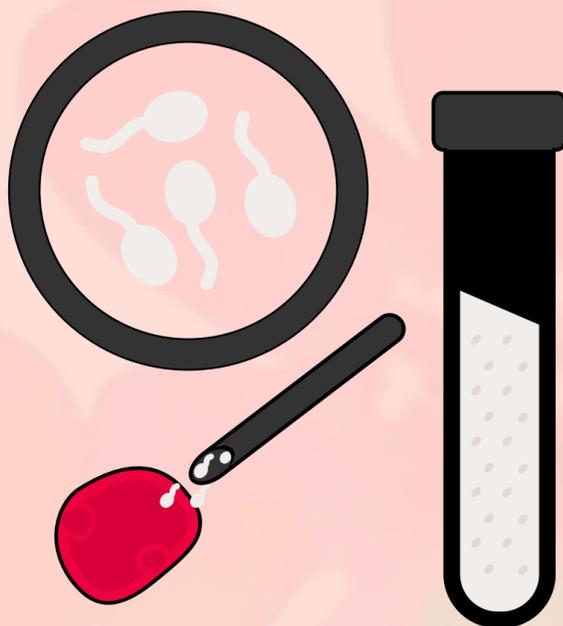


# The IVF Procedure

The process starts with ovarian stimulation to produce multiple eggs, followed by egg retrieval, collection of semen, fertilisation, and finally, embryo transfer. Each step takes several days or weeks, depending on the individual woman. If necessary, more than one cycle of IVF can be performed. Read about the step-by-step IVF process below:

## 1. Ovarian stimulation and monitoring

Ovarian stimulation is a process that stimulates the ovaries to produce multiple eggs in a controlled manner. The treatment involves taking hormones like FSH and LH to stimulate the ovaries to produce more than one egg. The medication may be given by injection, as a pill or in, or using an intranasal spray.





Ovarian stimulation is called controlled ovarian hyperstimulation (COH). In COH, you take fertility drugs that cause your ovaries to release several eggs at one time instead of just one but in a way so as not to cause hyperstimulation.

Follicle-stimulating hormone (FSH), luteinizing hormone (LH), or a combination of the two may be injected into your body to stimulate your ovaries.

**Q. How long do you take your medications?**

**Ans.** The medication is usually taken for 8 to 14 days.

**Q. How many daily injections do you take, and what does it depend on?**

**Ans.** Daily a single injection or a combination of 2 injections is administered. The medication depends on the ovarian picture on ultrasound, the antral follicle count and the AMH.

**Q. Is there any test done to determine which medication to use?**

**Ans.** The AMH levels can give a good idea about which medication to use.



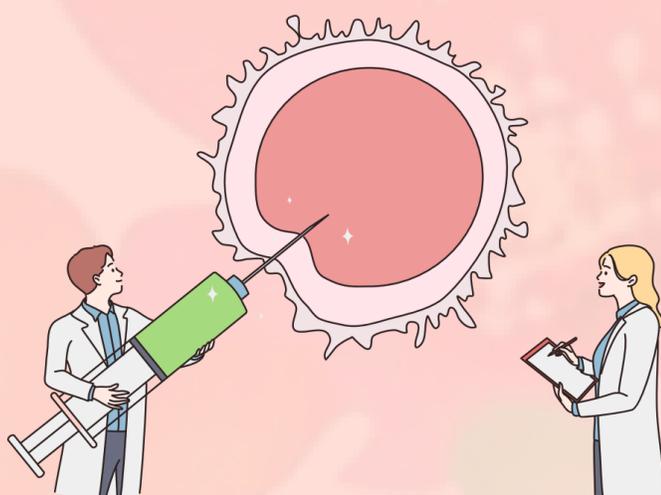
**Q. When is the IVF cycle cancelled before the egg retrieval process?**

**Ans.** The IVF cycle may be cancelled if the ovarian response is inappropriate, with either few follicles developing or too many.

## 2. Egg Retrieval

The egg retrieval step of the IVF process is a crucial one. It is when the doctor collects the eggs from a woman's ovaries. This procedure is performed under mild anaesthesia.

Using ultrasound guidance, the vaginal probe to which a fine needle is attached is gently introduced into the vagina to locate your ovaries and guide the needle into the mature follicles in each ovary. The egg is found in the follicular fluid, which is gently aspirated with mild suction. The fluid is handed over to the embryologist, who will look out for the eggs under a microscope.





Once the procedure is completed, you will recover in the privacy of your room and will be ready for discharge in a few hours. If your doctor thinks you're at risk of infection or complications from the anaesthesia, they may ask you to stay overnight for observation.

### 3. Sperm Retrieval

Your partner will be asked to produce a semen sample by masturbation. The semen is collected in a sterile container. A quiet room with privacy will be provided. Sometimes, in the condition of very low sperm count or absence of sperm in the ejaculate, the doctor may surgically remove sperm from the testes.





## 4. Fertilization

Fertilization is the step in the IVF process where an egg and sperm are combined to create an embryo. Doctors use two different procedures for fertilization: ICSI and conventional insemination.

The embryologist will use a microscope to identify healthy-looking sperm cells and separate them from dead or non-motile ones. In the procedure of ICSI, a single sperm is injected into the egg's cytoplasm using joysticks and needles that are thinner than human hair. This is a delicate procedure done on the heated stage of a microscope.

In ICSI, a single sperm is injected into an egg to fertilize it. This procedure is usually used when there are too few healthy sperm or if the sperm do not move well enough to reach the egg. It can also be used if there is no sperm or if there are genetic problems with the DNA in the sperm.



Some other procedures your doctor might advise you to go through before embryo transfer, i.e., Assisted hatching and Preimplantation genetic testing.

## 5. Embryo Transfer

The Embryo Transfer is the last step in the IVF process. It is performed 2 to 5 days after egg retrieval. The embryos created during the preceding steps are transferred to your uterus through a thin tube called a catheter. During this procedure, your doctor will insert the catheter through your vagina and cervix and advance it to place the embryo into your uterus.





## 6. After the procedure: When to start normal activities

After your procedure, you'll be able to leave the hospital or outpatient surgery clinic within a few hours of completing your embryo transfer.

## 7. Results

Your doctor will test your blood 12 to 14 days after egg retrieval to see if you are pregnant.

**After a successful pregnancy**, the doctor may refer you to an obstetrician or another pregnancy specialist.

**If you aren't pregnant**, the progesterone support will be stopped. In case your periods do not start within 5 days of stopping the medication, please call your doctor.

# How do you prepare for IVF treatment?

Here are some screening tests your doctor will ask you to go through before the IVF cycle.

- **Ovarian reserve testing**

Measures the number of eggs in a woman's ovaries. This is done by counting the number of tiny follicles less than 10 mm in the ovaries. This can help predict whether you will conceive easily or face a problem because of fewer eggs. A test for Anti Mullerian Hormone (AMH) levels will also help determine your ovarian reserve.





- **Semen analysis**

Measures sperm count, motility and morphology. An advanced test called the Sperm DNA fragmentation Index may also be asked for.

- **Infectious disease screening**

It is mandatory before any surgical procedure. The tests include screening for HIV, Hep B, Hep C and VDRL.

You might also need a uterine exam before you start IVF to examine the inside lining of the uterus. This can be done by a 3D sonography or by Hysteroscopy.





## **Additional questions to know the answers of:**

**Q. How many embryos will be transferred?**

**Ans.** Usually, a single good-quality blastocyst-stage embryo is transferred.

**Q. What will you do with any extra embryos?**

**Ans.** The extra embryos are frozen.

**Q. How will you handle multiple pregnancies?**

**Ans.** Multiple pregnancies need a lot of observation and intervention because of the risks of prematurity, birth defects, high blood pressure and high blood sugar developing in the mother.

# Risks and Common Side effects of IVF



Multiple births 1

Ovarian hyper-stimulation syndrome 2

Ectopic pregnancy 3

Premature delivery and low birth weight 4

Congenital disabilities 5

Stress 6

Bleeding, infection and blood clots 7





## Risks and Common Side effects

Here are some of the possible risks and common side effects of IVF:

- **Multiple births**

Multiple pregnancies are more likely to have complications such as high blood pressure during pregnancy and gestational diabetes. You will also need to undergo a caesarean section when giving birth because giving birth naturally is much more difficult with multiple pregnancies. Multiple pregnancies may also result in premature delivery.

- **Ovarian Hyperstimulation Syndrome**

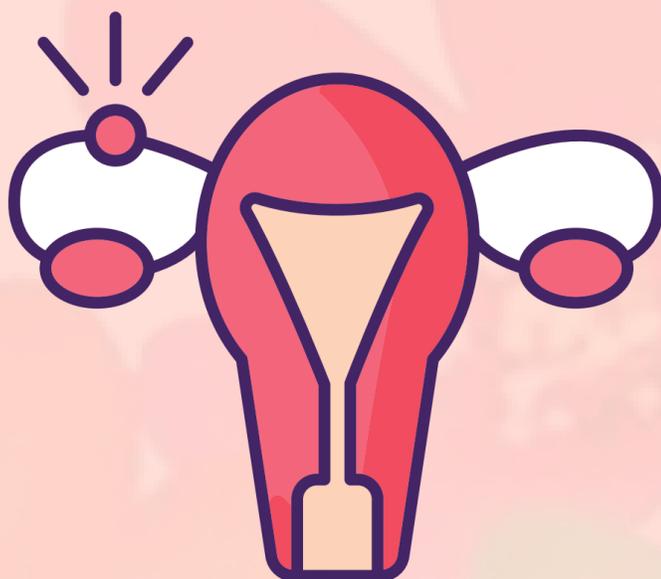
This condition can occur if you are given injectable fertility drugs, such as human chorionic gonadotropin (HCG) to help your ovaries release eggs.

These can turn into fluid-filled cysts that may cause pain as well as other symptoms like nausea and vomiting. OHSS is more likely in women with high AMH and PCOS.

OHSS can lead to abdominal swelling and fluid retention, but it usually goes away after your treatment has ended and can be treated with fluids, albumin injections, pain medication, GnRH agonists and antagonists until it passes away after approximately 10 to 12 days.

- **Ectopic pregnancy**

An ectopic pregnancy is when a fertilised egg implants outside the uterus. The most common site for an embryo to implant is in one of the fallopian tubes, but it can also occur in the cervix or ovary and rarely in the abdominal cavity. It occurs in 0.3–2.1 % of patients undergoing IVF treatment.





If you have an ectopic pregnancy, there's a risk that the placenta will grow into your fallopian tube and begin to damage it. The excessive blood supply to the fallopian tube can result in bleeding of the vessels on the fallopian tube. This could cause severe internal bleeding. It's important to seek medical treatment straight away if you're worried about this happening during your pregnancy because left untreated, it could lead to major complications like haemorrhage, shock or even death.

- **Premature delivery and low birth weight**

Premature birth (before 37 weeks), Low birth weight (less than 5 lbs 8 oz), and Neonatal death, happen in 1 out of 100 live births after IVF.





These risks are due to some factors, including the woman's age, her eggs and egg reserve, and any health conditions and co-morbidities that she may have.

- **Congenital abnormalities**

The risk is higher if the mother is over 36 years of age.

- **Stress**

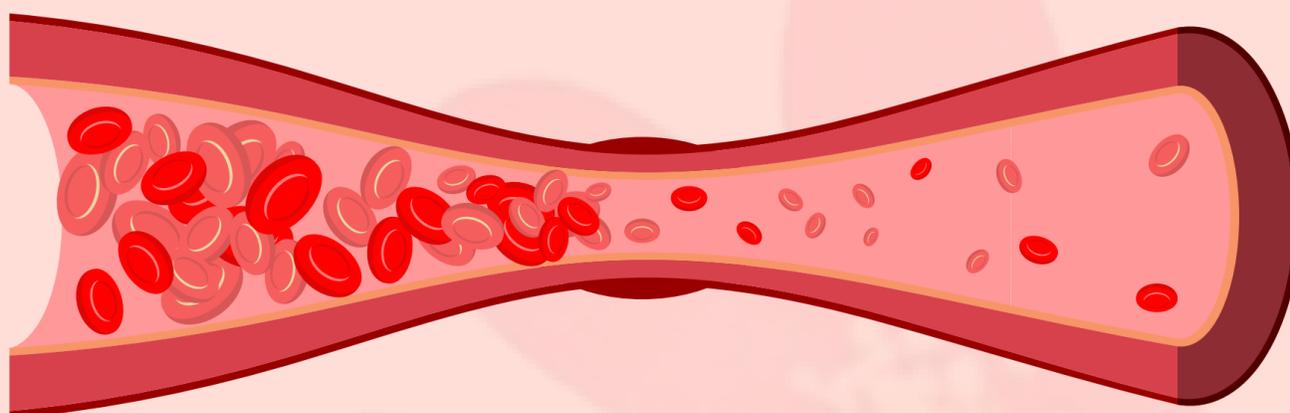
Stress can be a contributor to IVF failure. Stress leads to increased levels of stress hormones, which in turn may decrease the chances of conception. If you're struggling with infertility, it is important to learn stress-management techniques and take steps toward reducing your negative emotions.





- **Bleeding, infection and blood clots**

An embolism is a blood clot that travels from the womb to the lung, cutting off the oxygen supply to the respiratory system. Embolism following IVF is extremely rare but can occur in women who tend to have blood thickening, those with APLA positive and those with Leiden Factor V mutation. Rarely can there be bleeding from blood vessels of the ovaries, uterus and vagina which can be managed conservatively and very rarely, a laparoscopy would be required. Infection is rare and can occur if the bacteria ascend upwards from the vagina punctured by a needle during egg retrieval.



# Common Side effects



Here are the side effects that can occur during the process of IVF.

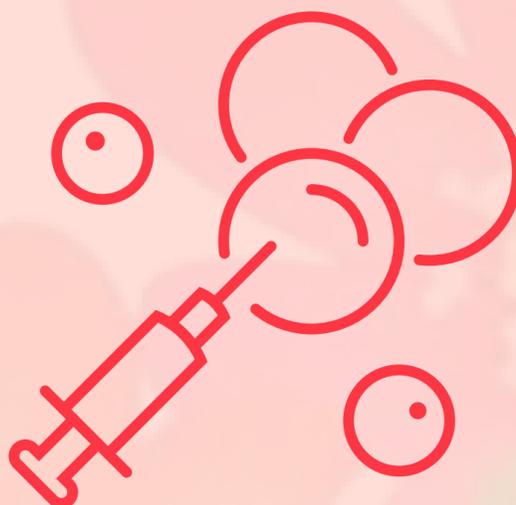
## 1. During and After Ovarian Stimulation

The side effects of ovarian stimulation can include:

- Fatigue
- Headaches
- Nausea
- Bloating
- Sore breasts
- Loss of appetite
- Mood swings

## 2. During the embryo transfer stage

You will also experience some emotional symptoms like anxiety and depression. You may have trouble sleeping, focusing on work, or relaxing.





These symptoms usually resolve with mindfulness and being with friends and family. It is important to remember that every woman's experience with IVF will be different, as each person will have a different tolerance level for discomfort during treatment. It is essential to take care of yourself throughout this process by eating well-balanced meals, getting plenty of rest, exercising regularly and maintaining a healthy mental state through counselling or support groups if necessary. Our team, your partner, family and friends will help you through this difficult time.



# Recovery and Outlook



Take a look at some of the facts and data related to commonly asked questions by couples undergoing IVF.

## **Q. How successful is IVf treatment?**

Ans. The success of IVF depends on many factors such as the woman's age, the male factor, the quality of the eggs, the uterus and the endometrial lining, the presence of hormone disorders like thyroid dysfunction, diabetes, autoimmunity, endometriosis and female genital tuberculosis to name a few.





## **Q. How soon after a failed IVF procedure can you try again?**

**Ans.** Following a negative pregnancy test, your doctor will decide whether you should take a break from treatment or continue the treatment next month.

## **Q. How long does it take to know you are pregnant after IVF?**

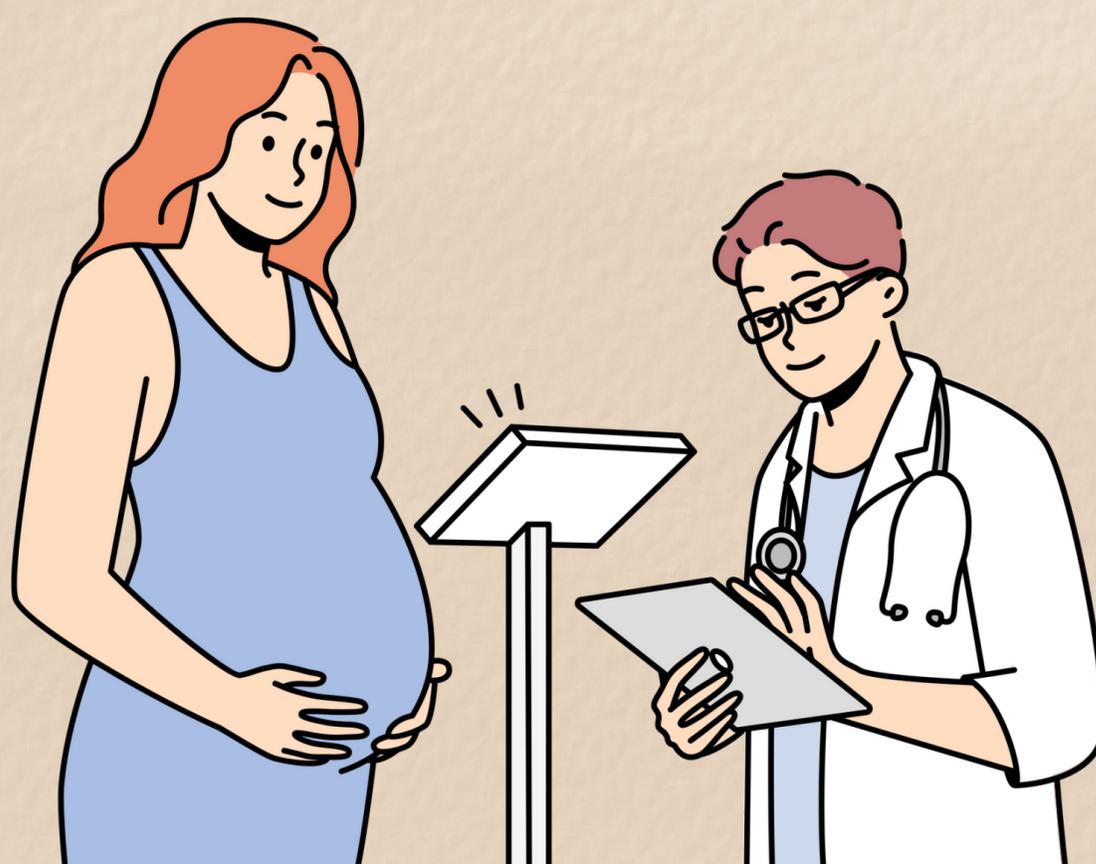
**Ans.** After the embryo transfer, a blood pregnancy test can be taken after 12 to 14 days to know if the treatment has worked successfully.





# IVF PREPARATION CHECKLIST

- Stop smoking and alcohol consumption**
- Stay away from the hot tub and sauna**
- Identify the over-the-counter medications you take**
- Track your ovulation cycle**
- Get all the information your fertility specialist needs**
- Wellness habits before IVF can impact how well it goes**



# IVF Preparation Checklist



It's essential that you take steps before starting treatment so that you can give yourself the best chance at getting pregnant. Here are some things you can do before starting IVF:

## **1. Stop smoking and consume less alcohol**

Many men are unaware that smoking and drinking can affect sperm count, motility and libido. Smoking may also increase the risk of birth defects, so cutting back on your consumption before trying to conceive is vital. Smoking has been linked with an increased risk of miscarriage. If you need help quitting, talk to your doctor about ways to quit or ask them for a referral to a counsellor or support group that can help you stay off cigarettes in the long term.



## **2. Stay away from the hot tub and sauna.**

It is advised to avoid hot tubs, saunas and baths. This can increase the scrotal temperature, which has been shown to reduce sperm count and motility.

## **3. Be aware of the over-the-counter medication.**

Many patients use the internet to self-medicate to improve their chances of conception. Some examples of this are DHEAS which claims to increase the egg quantity. Another thing that patients take is Ayurvedic medicines without a prescription. It is strongly suggested not to self-medicate and listen to claims of wonderdrugs.

Do not stop taking any medication without consulting your doctor first.



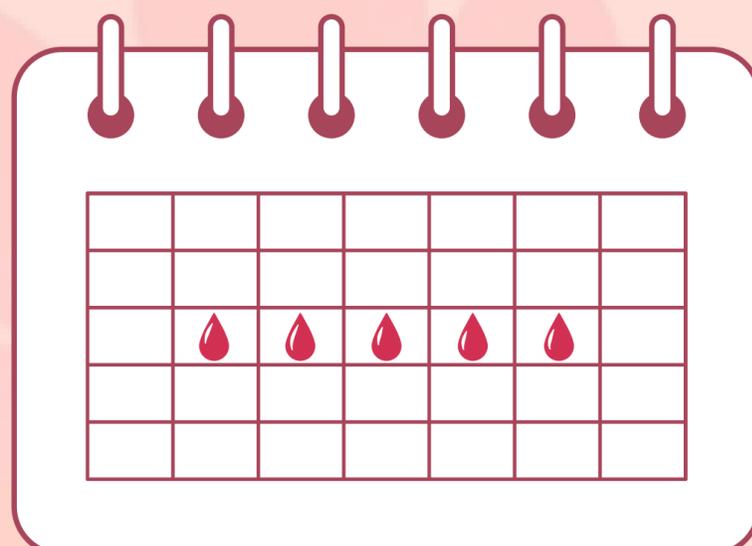


It's important to let your physician know about all the medication you are taking before undergoing IVF so that he or she can ensure your safety during treatment and pregnancy. Some medications may have unexpected effects on egg quality as well as increase the risk of birth defects if used during pregnancy (i.e., blood pressure medication).

## 4. Track your ovulation cycle.

Tracking your ovulation will give you a sense of when you will be at peak fertility each month and help you pinpoint the right time to start trying. There are several ways that women track their ovulation cycles, each with its benefits and drawbacks.

The options include :





- **Fertility monitoring apps:** These apps let users track when they ovulate by information inputs about their cycle into an app. These apps are easy to use, provide clear visualizations (which makes tracking easier), and can be used on any device (including smartphones). However, many of these apps are not reliable, and one should not solely depend on these Apps.
- **Calendar Apps:** many calendar apps are available which can guide you to the ovulation timing
- **Ovulation Kits:** These look at the LH surge. Ovulation usually occurs after 34 to 40 hours of the LH surge. The urine dipstick turns a purple or pink colour when the LH hormone reaches its peak. This is an easy and reliable way of tracking ovulation.



- **Sonographic monitoring** of ovulation is very reliable and can easily pinpoint the time of ovulation.

## **5. Make sure your Fertility specialist has all the Information he or she needs**

The first step to preparing yourself for IVF is giving your fertility specialist as much information as possible. Your doctor will want to know everything from your medical history and family health history to a list of medications that you are taking or have stopped taking recently and even whether or not you have been exposed to chemicals like pesticides in the past.

Your fertility specialist may also recommend that you get some blood work done in order to understand the level of your reproductive hormones so that the correct dose of hormone injections is administered to you for





controlled ovarian hyperstimulation, Once this has been confirmed, it's time for the next step.

## **6. Wellness habits before IVF can impact how well your cycle goes.**

Eat a healthy diet rich in fruits and vegetables; include plenty of whole grains like oats and quinoa; eat lean proteins such as chicken breast or fish; use healthy fats such as olive oil instead of butter or margarine; avoid processed foods filled with preservatives that are bad for reproductive health—and drink plenty of water.

Avoid plastic containers, bottles and storage vessels. Do not cook in nonstick pans. Use ceramic, stainless steel and glass utensils and crockery.



# Frequently Asked Questions



**Q. When should I contact my healthcare provider during my IVF treatment? Mention all the points**

**Ans.** You can reach out to your IVF doctor during your IVF treatment if you are facing these issues:

- High fever of more than 100 degrees Fahrenheit or 38.05 Celsius
- Presence of blood in the urine
- Heavy bleeding from your vagina
- Strong Pelvic Pain
- Excessive bloating

**Q. What questions should I ask the fertility clinic?**

**Ans.** When you're looking for a fertility clinic, you want to make sure they're going to be the best match for your needs. Here are some of the questions we recommend asking:

- Do they have an experienced team?
- How much do they charge per cycle?
- What is their success rate?
- What kinds of advanced technology do they use for treatment?
- Are there any risks associated with treatment?



- How long does it take to get results from a test or procedure?

### **Q. Can you select the gender during IVF?**

**Ans.** No, gender selection is not permitted in India.

### **Q. Is there anything I can do to increase my chances of pregnancy with IVF?**

**Ans.** You can also do some things to increase your odds of getting pregnant. Here are some tips:

- Eat a balanced diet with lots of fresh fruits and vegetables.
- Avoid alcohol and smoking cigarettes during pregnancy (it's never too late to quit!).
- Exercise regularly—but don't overdo it. Check with your doctor before beginning an exercise program.
- Make sure you're getting enough sleep at night to have energy throughout the day.



## **Q. What is the success rate of IVF by age?**

**Ans.** As you should know the age of the mother has a direct relation with the success of IVF. In USA, the CDC report is looked upon as an authentic report.

## **Q. Why does IVF treatment fail?**

**Ans.** IVF treatment can fail for several reasons. These may be related to the egg, sperm or embryo quality. Poor implantation ability due to a nonreceptive uterus and genetic abnormalities in the embryos. Other reasons are systemic diseases and autoimmunity.

## **Q. Can IVF cause birth defects?**

**Ans.** IVF can cause birth defects when problems arise with the embryo that was created or implanted. Some of the most common birth defects that can happen as a result of IVF include:

- Heart defects
- Malformations of the urogenital tract
- Gastrointestinal abnormalities
- Imprinting defects due to genetic defects during embryo formation



## **Q. What is the best age to get IVF?**

**Ans.** Women between the ages of 24 and 35 are the best candidates for IVF. The chances of having a healthy pregnancy and giving birth to a living child decrease as one ages, even with the help of Assisted Reproductive Technology.

## **Q. Are there alternatives to IVF?**

**Ans.** For those, regular ovulation is not a problem; one of the alternatives is Intrauterine Insemination (IUI) and also planned intercourse with ovulation induction.

## **Q. Should you freeze embryos during IVF treatment?**

**Ans.** Yes, extra embryos should be frozen for later use. Most IVF clinics now have a freeze-all policy which entails freezing all the embryos that are formed and transferring one embryo in a frozen thaw hormone replacement cycle.

# We can help you become a parent

*Fertility doctors at Fertiltree are here to help you achieve your dream of having a healthy child.*

*We understand that it's not just about biology; it's about emotions and fears. It's about feeling like your body has failed you and struggling to find someone to help you navigate your way through it. It's about forming a bond with your doctor and putting faith in her treatment.*

*Our fertility doctors will work with you closely to ensure your treatment plan is tailored specifically to your needs, so you can feel confident that we will give it our all to help you succeed.*

*We understand that having a child is one of the most important landmarks in life, and we want to make it happen for everyone who comes through our doors. Our mission is simple: We want our patients to be happy parents with healthy children. If there is anything else we can do for you, please don't hesitate to ask!*