

In Vitro Fertilization

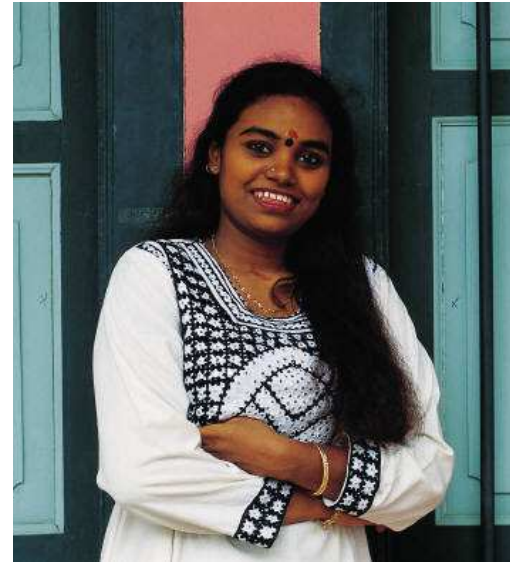
How to prepare and what to expect

This handout tells how to prepare for and what to expect when you go through a cycle of in vitro fertilization. It includes risks, benefits, and other options. This handout is in addition to the talks you have with your IVF team. It is important that you fully understand this information. Read this handout carefully and ask questions before you sign the consent form.

What happens during *in vitro* fertilization?

In vitro fertilization (IVF) is a process that involves many steps:

- **Ovarian hyperstimulation:** First, you will receive medicines that usually cause more than one egg to grow and mature in your ovaries.
- **Monitoring:** Blood and *ultrasound* tests will be done during your cycle. They will show us how your body is responding to the medicines. The *ultrasound* tests measure how the *follicles* (egg sacs) are growing. The blood tests show how much your hormone levels are rising.
- **Triggering ovulation:** Another medicine is then injected to help your follicles mature and release eggs.
- **Egg retrieval:** During the egg retrieval, *ultrasound* is used to guide a needle into your ovary to retrieve your eggs. You will have deep *sedation* (medicine to make you relax and sleep) for this process. This medicine will be given directly into a vein in your arm through an *intravenous* (IV) line.
- **Egg fertilization:** Your retrieved eggs will be fertilized in the lab. We will use the sperm from your partner or a donor.



We are here to support you during all steps of your IVF process.

- **Assisted hatching:** Assisted hatching is a way to create a small hole in the shell covering the embryo. It may be used:
 - Before preimplantation genetic testing
 - Or, to help with implantation by helping an embryo escape from its shell
- **Embryo transfer:** *Embryos* are fertilized eggs that are starting to grow but are still very tiny. We will transfer into your body either an embryo or embryos that resulted from the fertilization process and are rated “excellent to fair.”

For embryo transfer, a *catheter* (thin tube) is placed through your *cervix* (uterine, or womb opening) and into your *uterus* (womb). The embryos are transferred through this catheter.

- **After-transfer management:** You may receive medicines to help the embryos attach to the wall of your uterus. This step is called *implantation*. The medicines will also support the growth of the embryo during early pregnancy.

Ovarian Hyperstimulation

Many different medicines may be used to help your follicles grow and mature. Your University Reproductive Care (URC) doctor will talk with you about these medicines. They will be injected either into your muscle (*intramuscular*) or under your skin (*subcutaneous*).

Monitoring

While you are receiving medicines to stimulate your ovaries, you will be closely monitored by your IVF team. This may be as often as every day. We will also stay in close contact with you after you have finished ovarian stimulation.

Monitoring includes:

- *Venipuncture* (blood draw)
- *Transvaginal* ultrasound exams

In a transvaginal ultrasound, an ultrasound probe (*transducer*) is placed in your vagina. The probe produces sound waves, which create pictures of the inside of your body. These images appear on a screen for your provider to see.

The ovarian hyperstimulation may be stopped if these tests show that:

- Your body is having too little response to the medicine. If this occurs, we will talk with you about other ways to manage your treatment.

- Your body is having too much response to the medicines (*ovarian hyperstimulation syndrome*). If this occurs, the cycle will be cancelled to protect your body from the effect of high hormones.

Triggering Ovulation

During monitoring, your doctor will tell you when your follicles are ready for the final steps of maturation. In this step, you will self-inject a medicine called the *ovulation trigger*. Your egg retrieval procedure will be done 34 to 36 hours after this injection.

Egg Retrieval

The egg retrieval is an *outpatient* procedure. You will not stay overnight in the hospital.

The procedure is done using a transvaginal ultrasound (see page 2) to *aspirate* (draw liquid up from) the follicles (the location of the growing egg). You will have deep sedation for this procedure.

Sometimes, the IVF team must cancel the egg retrieval shortly before it is set to take place. This may happen if you ovulate too soon, your hormones drop, or for other medical reasons.

Anesthesia Risks

In rare cases, anesthesia may cause problems. Your body position while you are under anesthesia may cause short-term or permanent nerve damage. To lessen these risks:

- Your legs will be positioned while you are awake.
- The anesthesia team will watch you closely during your egg retrieval.

If your IVF team believes you should not have anesthesia for any reason, other medicines may be used.

The Procedure

Guided by ultrasound, your doctor will insert a needle through your vaginal wall and into your ovary. The fluid inside your follicles will be drawn out through the needle. Your doctor will draw the fluid from as many follicles as possible. This fluid will be taken to the lab, where an *embryologist* will look for eggs. An embryologist has special training in handling eggs and sperm and the growth and development of embryos.

Cryopreservation

You may choose to have some eggs frozen (*cryopreserved*). Freezing eggs allows you to have IVF at a later date. This may be important if you have cancer or a chronic disease, or are preserving your fertility because you are not ready to have children.

Some eggs that are frozen may not survive after being thawed. And, some eggs that are thawed may not accept sperm (cannot be fertilized).

Sperm Collection

Sperm is collected from your male partner at the time of the egg retrieval. If you are using donor sperm, it is thawed at this time. This sperm is used to fertilize your retrieved eggs.

Sperm may also be collected before the day of egg retrieval to use in case your partner cannot provide a sample on the day of the egg retrieval. This sperm will be frozen until it is needed. Sometimes, sperm do not survive a thaw, but this is very rare.

Egg Fertilization

After your egg retrieval, the embryologist will check your eggs and prepare them for fertilization.

Fertilization may be tried in 1 of 2 ways:

- With *insemination*, each egg is placed in a dish in the lab. Sperm are specially washed and prepared for insemination. The sperm are then added to the dish. The sperm must then enter the egg on their own.
- In *intra-cytoplasmic sperm injection (ICSI)*, a single sperm is injected into each egg. ICSI is more complex than insemination and may cost more. It may be used when the chances of fertilization by insemination seem low or when preimplantation genetic testing is done.

Your IVF team will decide whether you need insemination or ICSI, based on:

- Your infertility diagnosis
- How fertility treatments have worked for you in the past
- Your sperm and egg quantity or quality

Be sure to ask your provider if you have any questions about this decision.

Selective Assisted Hatching

Your IVF team will check your embryos to see if *assisted hatching* should be done with your embryos. This procedure is sometimes done to prepare an embryo for implantation. The decision to do this procedure is based on how each embryo looks under a microscope, as well as your age and medical history.

We often suggest assisted hatching when a woman has not achieved pregnancy after an IVF cycle or when the shell is noted to be thick. Assisted hatching is also done on an embryo that is genetically tested before implantation.

We will give you the handout “Assisted Hatching.” Ask your IVF doctor any questions you have.

Embryo Transfer

Embryo transfer is done 3 or 5 days after egg retrieval. During the transfer, one or more of the embryos that grew will be placed into your womb. A thin tube (*catheter*) is passed through your cervix for this process. There is no guarantee that any of the embryos will result in a live birth.

Mock Transfer

We may advise you to have a “mock transfer” before your IVF cycle begins. In a mock transfer, your doctor will insert a soft catheter into your uterus to mimic the actual embryo transfer. This helps us address any problems that might arise during transfer, before we transfer the actual embryos.

Embryos Used in Transfer

Your IVF team will decide how many embryos to transfer, based on your age, embryo quality, and other medical factors. The number they choose will allow for both the best chance of pregnancy and the lowest chance of *multiple gestation* (being pregnant with more than 1 baby at the same time).

We will give you a handout called “Guidelines on Number of Embryos Transferred,” written by the American Society for Reproductive Medicine. Your IVF doctor will also talk with you about this decision.

Some embryos may be frozen for possible use in a later frozen embryo transfer cycle. We use embryos that are 5 to 6 days old (*blastocysts*) for freezing.

There are extra steps and costs involved in freezing embryos. If you are thinking about doing this, we will give you a handout on cryopreservation. Your IVF team will also talk with you about it.

After-Transfer Management

To increase the chances of successful implantation, you will take the hormone progesterone, either by intramuscular injection or placed into your vagina. Progesterone is usually given until pregnancy is confirmed or until the 10th week of pregnancy. During that time, you may need to have blood tests to check your hormone levels. Your IVF team will tell you if this is needed.

Unused Materials

After your IVF treatment, there may be unused material (tissue). This can include extra sperm, immature or unfertilized eggs, and abnormal or *arrested* pre-embryos (embryos that have stopped developing).

These unused materials will be either discarded, used for training purposes, or used in medical research.

If the materials are used for training or research:

- No new embryos or pregnancies will be created.
- To protect your privacy, all information that links you and your partner or donor to the material will be removed before it is used.

What happens to extra embryos created from IVF?

If your IVF procedure results in more embryos than you need for transfer, the extra ones may be cryopreserved, depending on their quality. You and your partner will sign a separate consent form titled “Embryo Disposition” that tells us how you would like the unused embryos to be handled.

You will be given the handout “Embryo Cryopreservation” about this process. Your IVF team will also talk with you about it.

What are the benefits of IVF?

You might receive these benefits from IVF:

- Pregnancy
- Extra embryos that can be cryopreserved for your future family-building

URC doctors and staff **cannot** guarantee that:

- Any of the steps in the process will succeed
- IVF will result in a live birth
- A pregnancy will result in delivery of a healthy full-term newborn

We will provide information to help you make your decision, but only you can decide if the possible benefits of having IVF are worth the risks.

What risks and problems are involved in IVF?

Ovarian Stimulation Risks

- If you receive your ovarian stimulation medicines by intramuscular or subcutaneous injection, you may have bruising and discomfort at the injection site.

- IVF medicines can have these side effects:
 - *Lupron*: Fatigue, muscle and joint pain, and short-term menopause-like symptoms such as headaches, hot flashes, mood swings, sweats, and insomnia.
 - *Clomiphene citrate*: Hot flashes, abdominal distention, bloating, headache, and changes in vision, such as seeing spots. If you have vision changes when taking this medicine, stop taking it **right away** and call the URC health team.

Clomiphene can also overstimulate your ovaries. This is called *ovarian hyperstimulation syndrome* (OHSS). OHSS causes the ovaries to become enlarged and can make you sick. You will be given the handout “Ovarian Hyperstimulation Syndrome,” and your IVF team will talk with you about OHSS.
 - *Letrozole*: Hot flashes, dizziness, headaches, mild fluid retention, nausea, changes in bowel habits, joint and muscle pain (rarely), and fatigue. Using this medicine for ovulation induction is called “off-label use.” This means this drug was not originally approved for this purpose, but it is legal to prescribe it for this use.
 - *Gonadotropins* (Menpour, Gonal-f, Follistim, and Bravelle): Headache, breast pain, nausea, changes in bowel habits, abdominal pain, and injection site reactions. These medicines can cause OHSS.
 - *Human chorionic gonadotropin* such as Novarel and Ovidrel: Injection site reactions. This medicine can make OHSS worse.
 - *Progesterone*: Injection site reactions, breast pain, nausea, bloating, and constipation.
 - *Antibiotics*: Vaginal yeast infections, nausea, or abdominal pain.
 - *Oral steroids*: With only short-term use (as for IVF), we expect very few side effects.
- Some studies suggest that fertility medicines may increase the risk of ovarian cancer.
- While you are receiving your ovarian stimulation medicines, you may need to have blood drawn as often as every day. There is a risk of mild discomfort and bruising at the puncture site. Transvaginal ultrasound exams also may cause some discomfort, but there is no known medical risk from these.

Egg Retrieval Risks

Risks related to the egg retrieval procedure include:

- Infection: If you develop an infection, you may need to be admitted to the hospital to receive IV antibiotics.

- Rarely, injury to other abdominal and pelvic organs: In rare cases, if the bleeding is internal (in your ovary, uterus, or a blood vessel in your pelvis), or if your doctor suspects other organs have been injured, you may need to be admitted to the hospital. In the hospital, you will be monitored and may need a blood transfusion, and/or a *laparoscopy* or *laparotomy* (abdominal surgery) to stop the bleeding and repair the injury.

Embryo Transfer Risks

- The embryo transfer procedure may cause some cramping, discomfort, and a small amount of bleeding.
- Rarely, infection occurs where the catheter was inserted. If you get an infection, you may need antibiotics.
- You are more likely to have success with IVF if more embryos are transferred to your womb. But, placing more embryos increases your risk of *multiple gestation* (being pregnant with more than 1 baby at the same time).

Risks of multiple gestation include:

- Preterm labor.
- Premature babies and need for intensive care. Children may also have long-term problems from being born too early, or they may not survive.
- Preterm labor and delivery may place you at greater risk for Cesarean section, bleeding, and infection
- Problems may occur for the mother during pregnancy. One of these is *pre eclampsia*, a serious condition that includes a sudden rise in blood pressure.

Please talk with your IVF team if you have any questions or concerns about these risks.

Questions?

Your questions are important. Call your doctor or other UWMC healthcare provider if you have questions or concerns.

University Reproductive Care: 206.598.4225 weekdays between 8 a.m. and 5 p.m.

After hours and on weekends or holidays, call 206.598.6190 and ask for the URC provider on call to be paged.

Website:
<http://depts.washington.edu/obgyn/URC>