

Preparing for IVF: medications and ovarian stimulation



Why ovarian stimulation is used in IVF

In an unstimulated menstrual cycle, usually one dominant follicle matures and releases one egg. IVF aims to retrieve several mature eggs in one procedure because not every egg will fertilize, not every fertilized egg will develop into a usable embryo, and not every embryo will implant. Ovarian stimulation increases the number of follicles that grow during that cycle, improving the chance of having embryos for transfer, freezing, or genetic testing when indicated.

This approach must be balanced carefully. Too little stimulation may produce few eggs, while excessive response can increase discomfort, cycle cancellation risk, and ovarian hyperstimulation syndrome (OHSS). Your team will consider markers such as anti-Müllerian hormone (AMH), antral follicle count, age, body weight, polycystic ovary syndrome features, prior stimulation history, and the reason for IVF. People with low ovarian reserve may need a different strategy than those at high risk of over-response.

It can be emotionally difficult to hear that a protocol is being adjusted or that follicle numbers are different from expected. A change in dose does not necessarily mean something is wrong; it often reflects the purpose of

monitoring, which is to tailor treatment in real time.

Before stimulation begins: baseline assessment and planning

Many IVF cycles begin with a baseline ultrasound and blood tests early in the menstrual cycle, often around day 2 or 3. The ultrasound checks the ovaries for resting follicles and looks for cysts that might affect the plan. Bloodwork may include estradiol, progesterone, luteinizing hormone (LH), and other tests depending on the clinic. Some protocols use pretreatment with oral contraceptive pills, estrogen, or other medications to coordinate follicle growth or schedule treatment, but this is not universal.

Before the first injection, it is worth asking your clinic for clear instructions in writing. Helpful details include:

- The exact medication name, dose, route, and injection time window
- Which medications require refrigeration or protection from light
- How to mix multidose vials or use injection pens
- What to do if a dose is late, spilled, or missed
- Who to call after hours for urgent medication questions

Because some IVF medications are expensive and time-sensitive, confirm delivery dates, storage instructions, and whether you need extra needles, syringes, alcohol swabs, or sharps disposal. If you take other prescriptions, supplements, antidepressants, steroids, anticoagulants, thyroid medication, or diabetes medication, review them with your fertility clinician before treatment starts.

Gonadotropins: the main stimulation medications

Gonadotropins are injectable hormones that directly stimulate the ovaries. Most stimulation protocols use follicle-stimulating hormone (FSH), sometimes combined with LH activity. FSH supports granulosa cells in ovarian follicles and encourages follicular growth. LH activity may be added for selected patients, such as some with reduced response, older age, or specific endocrine patterns, although the need for LH varies by protocol and clinician preference.

Commonly used medication categories include recombinant FSH, urinary-derived

FSH, human menopausal gonadotropin (hMG, which contains FSH and LH activity), or combinations of these. The practical experience may differ: some products come as prefilled pens, while others require mixing powder with diluent. Your clinic or pharmacy should teach you the injection technique before you begin.

Stimulation commonly lasts about 8 to 14 days, but there is no single correct duration. During this time, follicles are measured by ultrasound, and estradiol may be checked because growing follicles produce estrogen. Dose adjustments are common. A lower dose may be used if estradiol rises quickly or many follicles develop; a higher dose may be considered if the response is slower than expected. These choices should be made only by the treating team.

Typical side effects can include bloating, pelvic heaviness, bruising at injection sites, breast tenderness, mood changes, headache, and fatigue. Severe pain, rapid abdominal swelling, dizziness, shortness of breath, or reduced urination requires prompt medical attention.

Preventing premature ovulation: GnRH antagonists and other protocols

As follicles grow, the body may try to trigger ovulation through a natural LH surge. In IVF, premature ovulation could release eggs before retrieval, so medications are used to prevent this. Many contemporary cycles use a gonadotropin-releasing hormone (GnRH) antagonist, which rapidly suppresses LH release from the pituitary gland. These injections are usually started after several days of stimulation, often when follicles reach a certain size or estradiol reaches a certain level, though timing varies.

Some IVF protocols instead use a GnRH agonist approach. Depending on how it is used, a GnRH agonist can first stimulate and then suppress pituitary hormone release. Long agonist protocols, microdose flare protocols, and antagonist protocols all have different rationales. The best choice depends on ovarian reserve, risk of OHSS, previous cycle outcomes, scheduling needs, and clinician judgment.

It is especially important not to miss antagonist or agonist doses once they are part of the cycle. The timing is designed to protect the developing follicles from an early LH surge. If you think a dose was missed or given incorrectly, contact your clinic rather than trying to compensate on your own.

Monitoring: how clinicians decide when follicles are ready

Monitoring is the safety and decision-making backbone of ovarian stimulation. Transvaginal ultrasound measures follicle size and counts the number of developing follicles. Blood tests, particularly estradiol and sometimes progesterone or LH, help interpret ovarian activity and whether the cycle is progressing appropriately.

Follicles do not guarantee eggs, and egg maturity cannot be confirmed by ultrasound alone. However, follicle size patterns help clinicians estimate when a good proportion of eggs may be mature. If progesterone rises prematurely, or if the response is too high or too low, your team may adjust the plan. In some cases, a cycle may be converted, delayed, frozen-all, or canceled for safety or medical reasons.

Monitoring appointments can be logistically draining. Many patients attend early-morning visits several times in one week and then wait for same-day medication instructions. If possible, plan flexible work coverage, childcare, transportation, and a system for recording instructions. When you receive a call or message from the clinic, write down the dose, time, and medication name exactly; many medications have similar-sounding roles but are not interchangeable.

The trigger injection and egg retrieval preparation

When follicles are judged ready, a trigger medication is given to induce final oocyte maturation. The trigger is one of the most time-sensitive steps in IVF. Egg retrieval is scheduled at a specific interval after the trigger, often around 34 to 36 hours later, before ovulation occurs.

Trigger options may include human chorionic gonadotropin (hCG), a GnRH agonist trigger, or a combination sometimes called a dual trigger. hCG acts similarly to LH at the ovarian receptor and supports final maturation, but it can increase OHSS risk in high responders. A GnRH agonist trigger may be used in antagonist cycles to reduce OHSS risk in selected patients, though luteal support and transfer plans may differ. Your specialist will choose based on your response, protocol, and whether a fresh transfer or freeze-all approach is

planned.

Because the trigger must be given at the exact prescribed time, many patients set multiple alarms and ask a partner or friend to confirm the time. Before trigger day, check that you have the correct medication, dose, needle type, and mixing instructions if applicable. If anything seems unclear, contact your clinic before the scheduled time.

Medications around embryo transfer: estrogen and progesterone support

After egg retrieval, the ovaries and uterine lining need hormonal support, especially if a fresh embryo transfer is planned. Progesterone is commonly used for luteal phase support because ovarian stimulation and egg retrieval can disrupt the body's usual progesterone production pattern. Progesterone may be given as vaginal capsules or gel, intramuscular injections, subcutaneous formulations, or a combination, depending on clinic practice and patient factors.

Estrogen may also be used in some protocols, particularly in frozen embryo transfer cycles or when preparing the endometrium in a programmed cycle. The purpose is to support endometrial development and create a hormonally receptive environment before progesterone exposure and embryo transfer.

Side effects of progesterone can include breast tenderness, sleepiness, bloating, mood changes, vaginal discharge with vaginal preparations, and soreness with intramuscular injections. These symptoms can overlap with early pregnancy symptoms, premenstrual symptoms, or medication effects, which can make the waiting period emotionally challenging. Continue medications exactly as instructed until your clinic tells you to stop or adjust them.

Risks, side effects, and when to seek help

Most people complete ovarian stimulation without severe complications, but the medications are potent and require medical supervision. OHSS is one of the most discussed risks. It occurs when the ovaries become enlarged and fluid shifts into the abdomen or, rarely, other spaces. Mild bloating is common during stimulation, but OHSS can become serious.

Risk may be higher in people with polycystic ovary syndrome, high AMH, high antral follicle count, many developing follicles, rapidly rising estradiol, or prior OHSS. Prevention strategies may include dose adjustment, antagonist protocols, GnRH agonist trigger, dopamine agonist medication in selected cases, freezing all embryos, or cycle cancellation when necessary. These choices require individualized medical judgment.

Call your clinic urgently or seek emergency care if you develop severe or worsening abdominal pain, rapid weight gain, marked abdominal swelling, persistent vomiting, fainting, shortness of breath, chest pain, one-sided leg swelling, or very low urine output. Also contact your team for fever, heavy bleeding, signs of allergic reaction, or concerns after egg retrieval.

Practical and emotional preparation for stimulation

Medication preparation is not only technical; it is emotional. Many people feel anxious before the first injection and more confident after a few days. Others find that the uncertainty of follicle counts, dose changes, and daily waiting is harder than the injections themselves. Both reactions are valid.

Practical strategies can help reduce cognitive load:

Create a medication station with supplies, a sharps container, and the clinic's instruction sheet.

Use a calendar or medication app to track injection times, monitoring visits, and refill needs.

Keep all same-day clinic instructions in one place, including portal messages and phone notes.

Ask your clinic whether exercise, sex, alcohol, travel, or work restrictions apply during stimulation and after retrieval.

Plan emotional support for trigger day, retrieval day, fertilization updates, and the waiting period after transfer.

If you have a history of anxiety, depression, trauma related to medical procedures, needle phobia, or pregnancy loss, tell your care team early. They may be able to offer injection teaching, counseling referrals, anesthesia planning, or additional support. Preparing for IVF is not a test of toughness; it is a medically complex treatment that deserves compassionate care.

