



Treating Infertility

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What is infertility?

Infertility is defined as not having become pregnant after 1 year of having regular **sexual intercourse** without the use of birth control (see the FAQ [Evaluating Infertility](#)). Infertility can be caused by a number of factors. Both male and female factors can contribute to infertility.

What treatment options are available for infertility?

Treatment options depend on the cause of your infertility. Lifestyle changes, medication, surgery, or **assisted reproductive technology (ART)** may be recommended. Several different treatments may be combined to improve results. Infertility often can be successfully treated even if no cause is found.

What lifestyle changes may help improve my chances for pregnancy?

If lifestyle factors are identified, you may need to lose or gain weight or do more or less exercise. You or your male partner may need to reduce your intake of alcohol, quit smoking, or stop using illegal drugs.

How is surgery used to treat infertility in women?

In women, surgery may be able to repair blocked or damaged **fallopian tubes**. Surgery is used to treat **endometriosis**, which is commonly associated with infertility (see the FAQ [Endometriosis](#)).

How is surgery used to treat infertility in men?

In men, surgery can be used to treat some infertility problems. A common problem that leads to male infertility, **varicocele**, sometimes can be treated with surgery.

How are hormonal problems treated in women?

Abnormal levels of **hormones** can cause irregular **ovulation** or lack of ovulation. For example, **polycystic ovary syndrome** is a condition in which the levels of certain hormones are abnormal and menstrual periods are irregular or absent. It is a common cause of infertility. This condition often is treated with lifestyle changes or medication. **Progesterone** may be used to treat some ovulation problems. Other hormonal conditions that affect fertility in women, such as thyroid disease, should be ruled out.

What is ovulation induction?

Ovulation induction is the use of drugs to induce a woman's **ovaries** to release an **egg**. This treatment is used when ovulation is irregular or does not occur at all and other causes have been ruled out.

How is ovulation induction done?

The drug most commonly used for ovulation induction is clomiphene citrate. About 40% of women achieve pregnancy with the use of this drug within six menstrual cycles. Side effects usually are mild and include hot flashes, breast tenderness, nausea, and mood swings.

What drugs other than clomiphene citrate are used for ovulation induction?

If clomiphene citrate is not successful, drugs called gonadotropins may be tried to induce ovulation. Gonadotropins also are used when many eggs are needed for ART or other infertility treatments. This is called super ovulation.

How are gonadotropins used?

Gonadotropins are given in a series of shots early in the menstrual cycle. Blood tests and **ultrasound** exams are used to track the maturation of the **follicles** (small sacs in which eggs develop). When test results show that the follicles have reached a certain size, another drug called **human chorionic gonadotropin (hCG)** may be given. This drug triggers ovulation.

What risks are associated with ovulation induction?

Twins occur in about 10% of women treated with clomiphene citrate. Triplets or more are rare. The risk of **multiple pregnancy** is higher when gonadotropins are used. Up to 30% of pregnancies conceived with gonadotropins are multiple. About two thirds of these pregnancies are twins and one third are triplets or more.

Ovulation induction can lead to **ovarian hyperstimulation syndrome**. Most cases of this condition are mild. In severe cases, hospitalization may be needed.

What is intrauterine insemination?

In intrauterine insemination, a large amount of healthy **sperm** is placed in the **uterus** as close to the time of ovulation as possible. It often is used with ovulation induction or super ovulation. The woman's partner or a donor may provide the sperm. Sperm that has been retrieved earlier and frozen also can be used.

What are the risks of intrauterine insemination?

If ovulation drugs are used with intrauterine insemination, multiple pregnancy can occur. If too many eggs are developing at the time of insemination, the insemination may be canceled.

What is assisted reproductive technology (ART)?

ART includes all fertility treatments in which both eggs and sperm are handled. ART usually involves **in vitro fertilization (IVF)**. In IVF, sperm is combined with the egg in a lab, and the **embryo** is transferred to the uterus. IVF is done for the following causes of infertility:

- Damaged or blocked fallopian tubes that cannot be treated with surgery
- Some male infertility factors
- Severe endometriosis
- **Premature ovarian failure**
- Unexplained infertility

How can I find out ART success rates?

The Centers for Disease Control and Prevention reports this information on its web site (www.cdc.gov/reproductivehealth/index.htm). Success rates also are listed on the web site of the Society for Assisted Reproductive Technology (SART) (www.sart.org).

How is in vitro fertilization (IVF) done?

IVF is done in cycles. It can take more than one cycle to succeed. The sperm may come from your partner or from a donor. Sperm can be retrieved and then frozen for later use in IVF. Ovulation usually is induced with gonadotropins so that many eggs are produced. The egg also may come from a donor.

Eggs are removed from the ovaries when they are mature. Healthy sperm then are added to the eggs in the lab. The eggs are checked the following day to see if they have been fertilized. A few days later, one or more embryos are placed in your uterus. The embryo may come from a donor. Healthy embryos that are not transferred can be frozen and stored for later use.

What is intracytoplasmic sperm injection (ICSI)?

Sometimes, a single sperm may be injected into each egg. This is called ICSI. ICSI may be recommended if there is a problem with your partner's sperm. In ICSI, only a single healthy sperm is needed for each egg. A few days later, one or more embryos are placed in the uterus through the vagina.

What are the risks associated with IVF?

There is an increased risk of multiple pregnancy with IVF. IVF also has been linked to an increased risk of birth defects. These defects include cleft palate, heart problems, and problems with the digestive tract. Overall, however, the increase in risk of birth defects is small.

What steps can be taken to help prevent multiple pregnancy with IVF?

Several things can be done to help prevent multiple pregnancy. If test results suggest that too many eggs are developing, the hCG shot that triggers ovulation may be delayed or not given. Your doctor also may limit the number of embryos transferred to your uterus.

Glossary

Assisted Reproductive Technology (ART): A group of infertility treatments in which an egg is

fertilized with a sperm outside the body; the fertilized egg then is transferred to the uterus.

Egg: The female reproductive cell produced in and released from the ovaries; also called the ovum. **Embryo:** The developing fertilized egg from fertilization up to 8 completed weeks of pregnancy.

Endometriosis: A condition in which tissue similar to that normally lining the uterus is found outside of the uterus, usually on the ovaries, fallopian tubes, and other pelvic structures.

Fallopian Tubes: Tubes through which an egg travels from the ovary to the uterus.

Follicles: The sac-like structures in which eggs develop inside the ovary.

Hormone: Substances produced by the body to control the functions of various organs.

Human Chorionic Gonadotropin (hCG): A hormone produced during pregnancy; its detection is the basis for most pregnancy tests.

In Vitro Fertilization (IVF): A procedure in which an egg is removed from a woman's ovary, fertilized in a dish in a lab with the man's sperm, and then reintroduced into the woman's uterus to achieve a pregnancy.

Multiple Pregnancy: A pregnancy in which there are two or more fetuses.

Ovarian Hyperstimulation Syndrome: A condition caused by overstimulation of the ovaries that may cause painful swelling of the ovaries and fluid in the abdomen and lungs.

Ovaries: Two glands, located on either side of the uterus, that contain the eggs released at ovulation and that produce hormones.

Ovulation: The release of an egg from one of the ovaries. **Polycystic Ovary Syndrome:** A condition characterized by two of the following three features: the presence of growths called cysts on the ovaries, irregular menstrual periods, and an increase in the levels of certain hormones.

Premature Ovarian Failure: A condition in which ovulation and the menstrual cycle stop before age 35 years.

Progesterone: A female hormone that is produced in the ovaries and that prepares the lining of the uterus for pregnancy.

Sexual Intercourse: The act of the penis of the male entering the vagina of the female (also called "having sex" or "making love").

Sperm: A male cell that is produced in the testes and can fertilize a female egg.

Ultrasound: A test in which sound waves are used to examine internal structures.

Uterus: A muscular organ located in the female pelvis that contains and nourishes the developing fetus during pregnancy.

Varicocele: Varicose veins in the scrotum.

If you have further questions, contact your obstetrician–gynecologist.

Designed as an aid to patients, this document sets forth current information and opinions related to women's health. The information does not dictate an exclusive course of treatment or procedure to be followed and should not be construed as excluding other acceptable methods of practice. Variations, taking into account the needs of the individual patient, resources, and limitations unique to the institution or type of practice, may be appropriate.