**Diagnosis and treatment of infertility in women**
Infertility means not getting pregnant after a year of sexual intercourse without using prevention methods. About 20 percent of couples suffer from infertility. Infertility can be due to a male or female problem or a combination of problems for both people. Also, in some couples, the cause of infertility is not recognizable. In this article, you will learn more about the causes, symptoms and treatment of infertility in women

**Reasons for Women Infertility**
Women with a certain number of eggs are born. The number and quality of eggs decreases with age. After the age of 30, the chance to have a baby decreases by 3 to 5 percent every year, and after 40 years, fertility continues to decline more strongly. In addition to age, infertility in women may be due to:
**Damage to the uterine tubes:** Uterine or fallopian tubes carry oocytes from the ovary to the uterus and any problems in these tubes can prevent the egg and sperm from reaching. Pelvic infections, endometriosis and surgery can lead to tissue formation or scarring in the uterine tubes, which can be closed or damaged.
**Hormonal changes**: Disturbances of reproductive hormones in women can lead to ovulation problems. These hormones play a role in oocyte release and ovulation and thickening of the inner lining of the uterus or endometrium to prepare the uterus for the implantation of the fertile egg. In the event of a hormonal disorder in women, the process of ovulation, fertilization and implantation may be difficult. Hormonal disorders usually lead to a change in the women's habitual habit.
**Cervical Problems**: Cervical problems can prevent the sperm from reaching the egg. The abnormality of the uterine discharge or the history of cervical surgery may cause this problem. Although this is a common problem in infertile women, it can be treated with intrauterine insemination (IUI).
**Uterine problems:** abnormal uterine anatomy, such as when there is polyp or fibroids in the uterus.
Infertility with unknown cause: The cause of infertility is not detectable in a large percentage of couples with current methods.



**Identify the cause of infertility**
To diagnose infertility, a sperm analysis may first be required to evaluate the quality and quantity of sperm in men. If there is no problem in male sperm, then it will be done to examine the infertility problems of the woman. To investigate the problem of infertility in women, blood tests are usually first required to monitor the level of various hormones. Also, for further examination, the endometrium or uterine wall may be screened to check for any problems in the uterus. Vaginal sonography or colorectal imaging of the uterus or hysterosalpingography may also be used to check the health of the uterine tubes and to accurately diagnose uterine problems. Hysterosalpingography involves performing ultrasound or x-rays of the reproductive organs. By injecting a color or salt solution with air into the uterus and entering into the uterine tubes, open or blocked uterine tubes are identified during ultrasound or imaging. If the problem is not detected by the above methods, the doctor may use laparoscopic surgery to check the uterus, ovaries and tubes more accurately. In this practice, the physician examines the circumference of the uterus, ovaries, and uterine tubes by creating a small incision near the umbilical cord and inserting a narrow tube fitted with a crotch into the abdomen, and the presence of abnormal tissue such as endometriosis may be reported. Meanwhile, the physician can examine the openness or obstruction of the uterine tubes with greater care.

**Ways to Treat Women Infertility**
Infertility treatment is done in different ways due to the cause of this problem in women. In cases where some chronic patients, such as diabetes or thyroid, have an infertility problem, the physician first tries to treat the disease, while simultaneously improving fertility. Below are some common ways to treat infertility:
**Drug treatment:** This treatment is usually for people who have ovarian or ovarian problems or drugs that do not have an infertility problem. In this method, the doctor stimulates the ovulation process by prescribing drugs such as clomiphenicitate, letrozole or gonadotropin. Usually, after prescribing the drug, the doctor asks men and women to re-apply naturally to become pregnant. These drugs increase the number of released oocytes by stimulating the ovary, which increases the chances of female fertility. In the process of drug therapy, the physician may prescribe the number of follicles and released eggs by vaginal ultrasonography to investigate the effect of drug therapy.

**IUI Sperm Intrauterine Injection:** In cases where the doctor considers the cause of infertility to be a problem in the uterus or the arrival of sperm in the uterine tube, it may be performed by intrauterine insemination. In this method, on the day of ovulation, the doctor discharges the sperm from the male and the sperm to the sperm through the narrow, uterine catheter to the uterus. Your doctor may use medication to stimulate ovulation before increasing your chances of getting pregnant.
**Extra fertilization or IVF**: In cases where the cause of infertility is unclear, the doctor usually uses the IVF method to become pregnant. In this method, the eggs are transferred to the womb after being fertilized by sperm in the laboratory. The doctor initially releases a large number of eggs by administering a period of ovulation stimulant such as gonadotrophin. After maturation of the oocyte, the doctor removes the eggs from the vaginal pancreas with ultrasound. After collecting sperm from the man and washing them, sperms are added to the egg for fertilization in the laboratory. A few days later, after fertilization and cell division, one or more fertilized eggs are transferred to a mother's womb using an instrument. The doctor may, at the request of the couple, freeze the embryos for future reference**ا**

**ICSI microinjection:** This method is used if the number of healthy male sperm is low. The microinjection method is quite similar to IVF, except that healthy sperm are injected precisely into the egg. In this case, the chance of fertilization of the egg is greatly increased. In this method, like IVF, after oocyte fertilization, they are transmitted to the mother's womb. Nowadays, in the IVF method in Iran, microinjection is used to fertilize the fertility rate and the chance for fertility.
After laparoscopy and genital problems, the doctor may need to consider the IVF method for pregnancy. In practice, laparoscopy, the surgeon can open the tissue of the wound or the ovarian cysts, endometriosis or block the uterus through the insertion of several tubes into the abdominal tube.

**Hysteroscopy**: In this method of treating uterine problems such as polyps and fibroids or removing the problems of the uterine tubes, the doctor examines the problems by inserting the hysteroscope through the vagina into the uterus and, if necessary, removes extra tissues or wounds. Or open the blocked uterus.
**GIFT and ZIFT methods:** In these two methods, like the IVF method, the egg is extracted from the ovary, transferred to the uterus in an experimental medium with sperm and returned to the uterus. In the ZIFT method, fertilized eggs or zygotes are transferred to the uterine tubes within 24 hours after fertilization, and in the GIFT method, the sperm and egg are mixed together and placed directly into the uterus. The chances of fertility are similar to that of IVF, and the doctor usually uses IVF for treatment. However, in cases where the woman is not pregnant with IVF, the doctor may recommend this method because the two fertilization methods are very close to their normal state. However, these two methods are not common in the treatment of infertility.

**Donating an ovum:** Women over 40 years old who have ovarian failure, and whose ovaries do not work properly or have insufficient oocytes, but whose uterus is normal, can be transmitted through the donation of an oocyte. In this method, after taking fertility drugs and stimulating ovulation in the donor, several oocytes are extracted from the ovary, then the oocytes are combined with the recipient's sperm and the fertilization is carried out in the laboratory, then the fertilized eggs are transferred to the recipient's mother's womb.
**Alternative uterus:** Women who have uterine problems and can not get pregnant but have ovaries and healthy eggs can use an alternative womb. In this method, the egg and sperm are combined with the husband and wife outside the lab and the fertilized egg is transferred to the uterus of the donor's surrogate uterus and the fetus develops in another woman's womb and is

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