

Information about in vitro fertilization treatment

This guide is written for couples whose treatment plan includes in vitro fertilization treatment. The goal of in vitro fertilization is to grow follicles which are collected to be fertilized in a laboratory. The embryos are cultivated for 2 to 6 days, after which one embryo is transferred into the uterus. Other good quality embryos are frozen. One treatment cycle includes the in vitro fertilization and fresh embryo transfer as well as possible frozen embryo transfers.

Treatment planning appointment

Each in vitro fertilization treatment is **planned individually**. The decision regarding treatment method is based on certain tests and examinations (hormone panel and ultrasound examination, semen analysis), and earlier treatments. A preliminary treatment schedule, meaning **when you can sign up for treatment**, is agreed on during the appointment. You will also receive prescriptions for required medications and written instructions on the planned treatment. We hope that **your partner comes to the treatment planning appointment with you**.

Treatment schedule

Signing up for the in vitro fertilization treatment happens according to the planned schedule through the My Path -channel after you have been registered as a user. During the treatment, the ovarian response is followed through 1 to 3 ultrasound examinations. If needed, the medicine doses can be adjusted. The ultrasound examination appointments happen usually in the mornings, and you will find out your appointment time when you sign up for treatment. The ultrasound examinations determine the date when the ovum pick-up takes place. The schedule is determined by the response to treatment, meaning the amount and size of the follicles. The embryo transfer takes place usually 3 to 5 days after the ovum pick up procedure.

The success of the in vitro fertilization treatment requires precise timing and following instructions. Taking this into account when planning the schedule for the treatment week and making other plans. Hormone treatment usually involves bloating and feeling uncomfortable even before the ovum pick-up procedure. When the treatment is carried out you should prepare to avoid sports for a couple of weeks. We do not recommend booking a holiday trip to the week following the treatment.

Fertilization

The ovum are fertilized on the day of the pick-up procedure. This requires sperm. The fertilization can be carried out using two different methods. The traditional **in vitro fertilization (IVF)** is used when there is a good amount of good quality sperm and there is no reason to doubt that the ovum are fertilized. The **intracytoplasmic sperm injection (ICSI)** method is used if the semen is considered to have significantly low fertility or if the fertilization outcomes of the ovum have been poor during earlier treatment, and always when the sperm have been collected using testicular sperm extraction. If there are plenty of collected ovum, they can be divided between different fertilization methods.

In IVF treatment the egg and the sperm are placed together into a culture dish containing culture media. The dishes are put into an incubator, where the actual fertilization takes place. In **ICSI treatment** the egg is fertilized by placing a single sperm into the egg by using a microscopic needle. The incubation and development of the embryos happens in the same manner as in the IVF treatment.

Embryo division and freezing

The **fertilization of the eggs** in the incubator is confirmed **the morning after the fertilization procedure**. An embryo is formed when a fertilized egg goes through cell division. The Fertility Laboratory will follow up on the cell division and development of the embryos for 2 to 6 days. **The most promising embryo is usually chosen for the fresh embryo transfer**. Other good quality embryos can be frozen for future use. If embryos are frozen, an agreement of embryo storage will be signed.

Possible problems

Progression of treatment, abnormal response

The treatment can have to be halted if the response to the medication is still poor despite increased doses. The treatment can also be halted because fertilization does not take place or if the embryo quality is poor. If the ovary response is strong, the decision not to proceed with an embryo transfer can be made to ensure the patient's safety and prevent the development of ovarian hyperstimulation syndrome (OHSS). In this case, the embryos are frozen and they can be transferred later (frozen embryo transfer).

Ovarian hyperstimulation syndrome (OHSS)

OHSS is the most significant complication of in vitro fertilization treatment. Women who have been diagnosed with polycystic ovary syndrome (PCOS) are especially susceptible. The risk group also includes young women and especially women with low body weight. Mild symptoms, bloating and feeling of pressure are quite common. Very early pregnancy can make the symptoms worse. Adequate hydration, in addition to the right treatment method, is very important for the prevention of OHSS. The risk of developing OHSS has significantly decreased after the introduction of new treatment methods. The risk of severe OHSS that requires

hospitalization is about 2 per cent in patients undergoing in vitro fertilization treatment. At its worst, OHSS can cause blood clots and kidney injury, as well as predispose you to ovarian torsion.

Typical OHSS symptoms include abdominal bloating, abdominal pain, weight gain, nausea and difficulty breathing. The symptoms are caused by the collection of fluid into the abdominal and/or chest cavity.

If you are experiencing **significant OHSS symptoms**, such as **significant abdominal bloating and pain, difficulty breathing and decreased urination**, you should contact the Gynaecological Outpatient Clinic or the Gynaecological emergency clinic.

Infection

A small risk of infection is always present in vaginal procedures. However, infections that require antibiotics are rare. If the risk is considered to be higher than normal (for example due to endometriosis), preventative antibiotics can be administered during the procedure.

Multiple pregnancies

Multiple pregnancies carry a significantly higher risk of pregnancy and fetal complications. To avoid multiple pregnancies, only single embryo transfers are primarily carried out in Finland.

Miscarriage and ectopic pregnancy

Pregnancies conceived with fertility treatments have a slightly elevated risk of miscarriage and ectopic pregnancy. Problems in early pregnancy are treated according to the same principles as in spontaneous pregnancies.

Fetal abnormalities and chromosomal abnormalities

Studies suggest that fertility treatments do not significantly increase the risk of fetal abnormalities. Decreased fertility has been linked to a slightly higher risk of abnormalities, but fertility treatments have not been implicated as the cause. Severe male infertility is hereditary in some instances, and this can pass on from father to son through fertility treatments. The actual risk of fetal abnormalities associated with fertility treatments is very low.

Risk of breast and ovarian cancer

The risk of developing ovarian or breast cancer is slightly elevated in women who have not had children compared with the general population. It is difficult to reliably evaluate the impact of hormone treatments on cancer risk, but according to current research, hormone treatments do not increase the risk of developing ovarian or breast cancer in the long term. We recommend normal and regular gynaecological exams every one to two years and examining the breast at your local health center after the treatments have ended.

For more information about decreased fertility and IVF-treatment, visit www.terveyskylä.fi (Healthvillage.fi)/naistalo/Lisääntymisterveys (only available in Finnish and Swedish).