Welcome,

The InviMed Clinic was established in 2002. Since then we have been helping our Patients become parents. We offer diagnosis and treatment of infertility. Our team, with its knowledge, competence and commitment, is at your disposal.

We want to be close to you. Responding to the trust that our patients have placed in us and wanting to facilitate access to our services, we are not only present in Warsaw but have also opened new clinics in Poznan and Wroclaw. In each of these places, you will find a highly-qualified team of doctors and specialists, state-of-the-art laboratory equipment and efficient and friendly personnel. We work with top gynaecologists, andrologists and embriologists from Poland and abroad.

Research confirms that every fifth couple has problems in conceiving a child. We can speak of an infertility problem if after a year of regular sexual intercourse without contraception a woman does not become pregnant. That is when the couple should contact a doctor. There may be many different reasons for infertility. They relate equally to the woman and the man.

We would like to help you help you overcome any uncertainty and embarrassment by presenting you with some basic information that may be helpful before a first visit.

Thank you for your confidence and trust.

The InviMed Team

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Your first appointment

When preparing for your first visit to our clinic, please remember to bring with you the results of any medical tests already carried out.

During your first visit you will be seen by one of our doctors who will give you extensive information based on his expertise. He will look at your test results and will ask you some questions (e.g. about your medical history, any treatments you may have had). Your answers will help us to set the direction of further tests to find the cause of the infertility and to select the method of treatment. Please do not hesitate to ask further questions. What is obvious to the doctor is new information for you. You are entitled to the best possible understanding of the causes of the problem and of how it can be treated.

You will probably be asked by the doctor to undergo some more necessary tests. The basic tests are general ones (assessing the overall state of health of the partners), semen analysis and comprehensive hormone tests. The standard tests also include tests for the presence of the HIV and hepatitis viruses. An intrinsic part of each visit to the clinic is having an ultrasound scan.

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These basic tests are, however, not always enough to determine the cause of infertility. If they are not the doctor may additionally ask you undergo more specialist tests. These include:

- monitoring of ovulation,
- PCT Test (post-intercourse test),
- tests of the patency (openness) of the fallopian tubes,
- endoscopic diagnostic tests: hysteroscopy and laparoscopy.

In some cases there may be a need for other tests such as bacteriological analysis (bacteriological culture), immunological tests, karyotype assessment (genetic testing of the partners) as well as other rare specialist tests.

The method of treatment depends on the test results. On their basis the doctor tries to establish the cause of infertility and suggests the appropriate treatment. The most frequently suggested methods are hormonal stimulation, intrauterine insemination (IUI) and an in vitro fertilisation cycle (IVF). Sometimes simply monitoring the natural ovulation cycle and identifying the best days for sexual intercourse turns out to be a fully effective method.

We want to stress the great importance of close co-operation between the patients and the specialist providing the treatment. Any deviations or changes in the treatment process, ceasing to use medication or modifying its dosage can take place only after consultation with the doctor in charge.

The causes and conditions of infertility are different in each case. Being influenced by other people's experience and modifying the doctor's recommendations may impede or frustrate the treatment process.

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The most common methods of treatment

Hormonal regulation of the menstrual cycle

JOne of the most common reasons for problems in becoming pregnant are ovulation disorders. A method that treats such disorders is hormonal regulation of the menstrual cycle or hormonal stimulation of ovulation. The patient receives medication that stimulates ovulation, usually antiestrogens (Clostilbegyt) or gonadotrophins (by injection). The doctor will select the medication depending on the hormonal profile of the patient, consultation with her, the patient's age and the reaction to earlier treatment.

The doctor may also suggest supplementary treatment like medicines that lower the level of prolactins in the body, control body weight or, if the need arises, hypoglycaemic medication which controls glycaemia (the presence of glucose in the blood).

Stimulation of ovulation requires repeated monitoring of the ultrasound and hormonal cycle. Hormonal stimulation is connected with an increased risk of multiple pregnancy. Like other methods of assisted reproduction, i.e. IUI (insemination) and IVF (*in vitro*), IVF with ICSI (micromanipulation – Intracytoplasmic Sperm Injection), it does not increase the risk of foetal defects.

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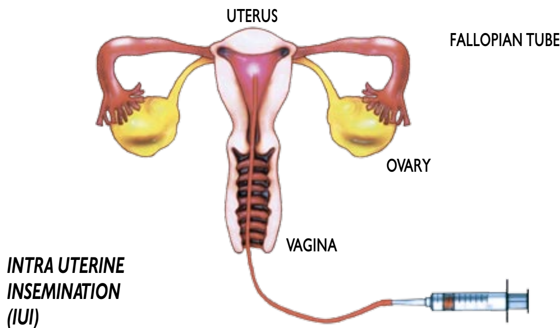
Intrauterine insemination

Intrauterine Insemination (IUI) is a relatively simple treatment consisting of a suspension of selected sperm being artificially placed in the uterus. The insemination treatment is performed close to ovulation which in practise means within +/– 24 hours of the moment of release of a mature ovum.



If the doctor recommends that you should prepare for the treatment you will be asked to undergo some necessary medical tests: cytology, bacteriological culture of material from the uterine cervical canal, examination and bacteriological culture of semen and serological tests aimed at diagnosis of contagious diseases such as Hepatitis B and C, HIV and venereal diseases.

If the tests results are good then the woman has an ultrasound scan between the 10th and 12th days of the natural cycle. The test result expected is confirmation of the presence of a pre-ovulation follicle that is 16-18 mm in diameter. In the next few days the patient attends for determination of the level of Luteinising Hormone. If an LH pre-ovulation peak is established, insemination takes place within 24-48 hours. A second possibility is independent performance of an ovulation test (e.g. Clearplan). If a positive result is obtained (two bars) you are requested to contact your doctor (in person or by leaving information with reception).

Your doctor conducts the monitoring process in the case of induced menstruation cycles and sets the day and the hour for insemination.

The male partner comes to the clinic to provide semen 90 minutes before the treatment in order after abstaining from sexual intercourse for at least four days. The couple may, by prior agreement with InviMed personnel, deliver semen collected at home (the semen collection method will be explained by your doctor).

The patient is asked to have a full bladder before the IUI as this makes insemination painless and barely felt by the patient. After the insemination, the patient remains lying down for 10-15 minutes and is then free to leave the clinic.

According to worldwide data, the success rate of insemination treatment amounts to 5% to 20%. Before the insemination procedure, we encourage all patients to undergo hysterosalphingography (HSG) – particularly those patients who have had infections of the uterine appendages, had operations in the lesser pelvis, used intrauterine devices, have or are suspected of having endometriosis or have frequently recurring stomach pains without any evident cause. The HSG test establishes the patency of the fallopian tubes but does not answer the question as to whether the fallopian tubes are functional, i.e. if they are capable of transporting sperm and the embryo.

After insemination, in the second phase of the cycle, we sometimes administer small doses of progesterone starting from the second or the third day after insemination (orally or intravaginally). An increase in the level of the HCG pregnancy hormone (Human Chorionic Gonadotropin) can be detected about 10 days after fertilisation. On the 14th day the expected level amounts to 50-100 HCG units. In some patients who are pregnant urine tests may still not confirm conception at this time.

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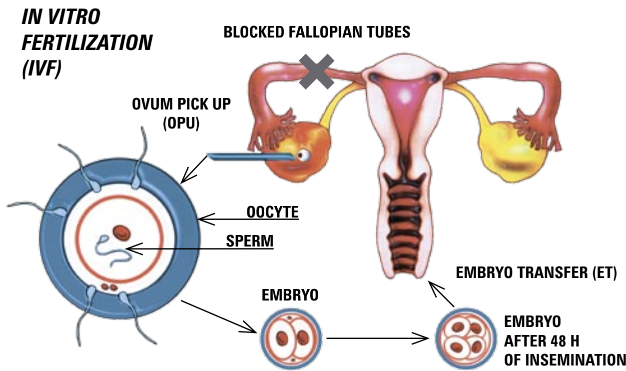


Extracorporal fertilisation *(in vitro)*

Extracorporal fertilisation, commonly known as *in vitro* fertilisation (IVF), signifies the fertilisation of a woman's egg cells outside of her body. Indications for IVF may be reduced semen quality regardless of the cause, incapacity to stimulate ovulation, blocked fallopian tubes, the failure of other methods of assisted reproduction or unknown causes of infertility.

Prior to commencement with the *in vitro* fertilisation cycle we ask patients to undergo a series of laboratory tests. Just like in every other clinic, a couple wanting to undergo IVF treatment at InviMed give their written consent for the full IVF procedure to be carried out.

The *in vitro* cycle usually starts with **hormonal stimulation**. In a small number of cases we decide to start the IVF treatment in the natural cycle.

Controlled hyperstimulation of the ovaries is intended to encourage the growth and simultaneous maturing of a large number of ovarian follicles, which increases the number of potentially mature egg cells. In the natural cycle usually only one egg cell matures.

The method of stimulation is always established individually. When the doctor finds the appropriate growth of ovarian follicles (by ultrasound scan) and the right level of hormones in the organism (by laboratory tests) we

end stimulation and prepare the patient for the collection of egg cells.

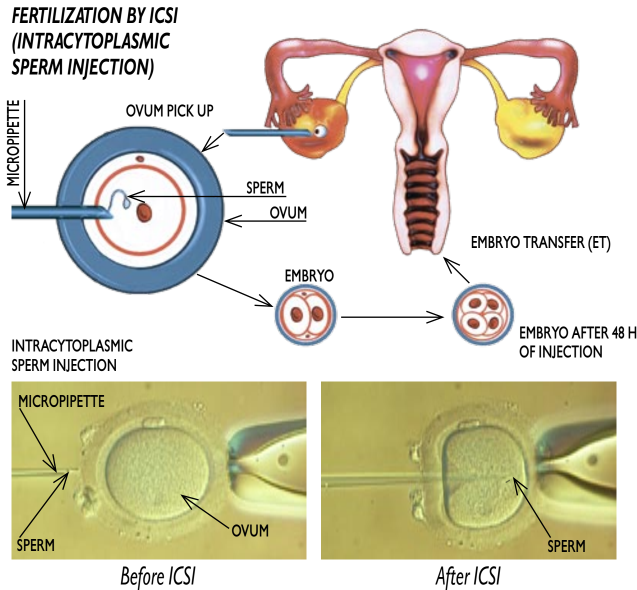
So far as is possible we make every effort for tests connected with monitoring the course of the stimulation to be performed in non-working hours. We encourage you to take your medication independently at home. This is not a complicated procedure and you will be taught how to do so by one of our nurses.

In the last four to six days of stimulation it is recommended that you refrain from having sexual intercourse until the moment of donation of semen for fertilisation by your partner.

The collection of egg cells takes place 34-36 hours after the last injection completing the stimulation. This injection is intended to prepare the egg cells for collection. Many women are afraid of this procedure but such fears are unnecessary. It is a short process lasting just a few minutes that is conducted through the vagina and consists of a needle puncture (under control of an ultrasound scan) of all the visible ovarian follicles in both ovaries in order to collect the follicular fluid that contains egg cells. An embryologist isolates them during the procedure.

The treatment, after consultation with an anaesthetist, is conducted under a brief intravenous general anaesthesia. Thanks to this the patient does not feel any physical discomfort. Collection of egg cells usually takes place in the morning. We request that the patient attends for the collection with an empty stomach (having spent a minimum of six hours without food and drink). The time necessary for recovery after the procedure does not exceed one hour and the duration of the stay at the clinic ranges from two to three hours. We recommend that patients take leave from work and refrain from driving vehicles on the day of the puncture (the patient can be issued with a sick note by the doctor).

Semen collection. The semen is donated by the partner after several days of abstinence from sexual inter-



Before ICSI *After ICSI*

course and may be donated immediately before the puncture or at home. Sometimes it may be necessary to obtain the sperm by way of puncture of the testicles or epididymis.

Cell fertilisation. The collected mature egg cells and the partner's appropriately prepared sperm are transferred to an incubator for fertilisation to take place. During the next 24 hours, an embryologist will assess the number of fertilised egg cells. After 48 hours, the development of the embryos is assessed.

In certain cases, the egg cells are not left to be fertilised on their own and **ICSI (Intracytoplasmic Sperm Injection) micromanipulation** is performed. This involves the placing of a sperm in the cytoplasm of an egg cell. This is recommended if the results of semen tests are poor and there is little chance of fertilisation even under *in vitro* conditions. This technique is also used if previous attempts at extracorporal fertilisation have failed.

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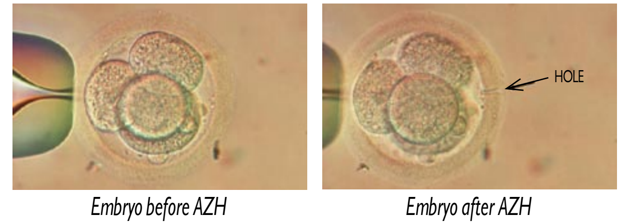

Embryo before AZH *Embryo after AZH*

Embryo transfer. Usually most, but not all, the collected egg cells are fertilised. The fertilised egg cell undergoes further division. When in the second day after the puncture the embryos reach the stage of 4 to 8 cells, they are transferred to the uterine cavity. In certain cases, the embryologist and the doctor decide to transfer the embryos during the next few days. The doctor in agreement with the patients decides how many embryos are transferred to the uterus. Remaining embryos that meet appropriate criteria are frozen and set aside for future use by the couple.

In some cases, prior to implanting the embryo, an incision is made in the external membrane of the embryo. The Clinic possesses a high class laser to perform this procedure, which is known as AZH (Assisted Zona Hatching).

The procedure for transfer of the embryos into the uterine cavity is painless and is performed with a thin catheter. After the procedure, the patient may go home after a short rest. The period following the puncture of the ovaries requires medication to be administered that increases the chance of the embryos implanting. The choice of medicine and the dosage are decided on an individual basis by the doctor. We recommend that you spend the period after the embryos have been transferred in a relaxed manner, undertaking limited physical activity, and that you refrain from having sexual intercourse until you take pregnancy tests. About 12 days after the embryos' transfer, we establish the level of pregnancy hormones (HCG), which provides information on the effectiveness of the treatment.

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The most difficult period both for you and for our team is that of waiting for the treatment's results. We are well aware of how great expectations are after undergoing IVF and how great disappointments can be. Please try to spend this period as calmly and happily as possible because everything that could have been done in this cycle has already been done. It is worth planning some pleasant and relaxing activities for this period and waiting calmly for the results of the treatment. The long period of pregnancy and waiting for the birth of the child also require patience and perseverance.

IVM – *in vitro* maturation

This innovative method of extracorporal fertilisation is recommended above all for those patients who have "extreme" PCO syndrome (polycystic ovarian syndrome). IVM makes it possible for egg cells to mature outside of a woman's organism. The IVM cycle may be performed both in patients that have amennorrhoea (absence of menstrual cycle) as well as those who have a menstrual cycle. The best results are obtained in women with amenorrhoea whose ovaries contain a large number of small follicles (up to several dozen!). In such patients, it is usually possible to obtain a few or as many as 20 immature egg cells, which mature in laboratory conditions before being fertilised, with the resulting embryos being transferred to the uterus. The first part of the cycle is conducted without medication or with just a short, usually three-day, period of hormonal stimulation. The embryological part is longer by one day in which the collected egg cells reach maturity. From then on, the further stages of the cycle are identical to those of a traditional *in vitro* cycle.

Complications after *in vitro* treatment

For the vast majority of our patients, the treatment provided in our clinic will be completely safe. However, we are aware that there may be side effects of the treatment such as:

- hyperstimulation syndrome (1–2% of cases) – connected with an excessive and usually unforeseeable response of the organism to hormonal treatment. It usually occurs in a mild form and relates to the enlargement of the ovarian follicles to the size of a cyst. In severe cases, which occur infrequently, hospital treatment may be needed. The symptoms of hyperstimulation may arise up to 20 days after the transfer of embryos and are usually an indication of the early stages of pregnancy.
- bleeding, infection – this is usually connected with puncture of the ovaries. Appropriate preparation of the patient means that these complications occur exceptionally rarely.
- multiple pregnancies – in order to reduce the risk of multiple pregnancy and, related to this, premature birth, the team of doctors at the InviMed Clinic recommends the transfer of no more than one or two embryos

Psychological support

In our clinics, we do our best to ensure that the administered treatment is fully effective for our patients. One problem that is encountered - and seriously disrupts the treatment process - is stress and the accompanying psychosomatic symptoms.

Many couples cannot cope with the fact that they cannot create a full family. Some cannot cope with an ongoing period of waiting, successive unpleasant procedures and growing tension. Against this background, many unnecessary conflicts, mutual accusations, and psychological complexes arise, sometimes leading to an escalating aggression which is heightened by the excess interest the couple are receiving from third persons.

During the treatment process the couple may experience difficult times in which they do not know how to behave. Various very strong but contradictory emotions may arise. They lead to additional anxiety that impedes the whole process of treating infertility.

You have to remember that emotions are psychophysiological phenomena. They are not abstract and unrelated to our physical side. They have a direct effect on the nervous and hormonal system which constitutes the basis of a person's fertility.

It is for this reason that in every InviMed Clinic a psychologist who specialises in the field of the psychology of infertility is at your disposal. The psychologist gives lectures and conducts workshops on how to cope with stress and how to improve your mental wellbeing. The workshops are intended for women but may also be directed at couples. They help patients learn about and apply new methods of coping in difficult situations as well as with your own and other people's emotions. They can help you achieve greater inner peace distance and harmony in your everyday life.

Individual meetings are designed for discussions about specific personal difficulties. They do not involve deep analysis of your past or your subconsciousness but are rather geared towards finding the best solutions to a problem. This is a short-term and goal-oriented method.

For many people going to a psychologist is difficult and requires courage. At the same time, our experience shows that many patients need real support during treatment. Often just a conversation and the feeling that somebody understands our problem is enough to help.

People who have benefited from the psychologist's support have been pleased with the help provided. The effect was a greater sense of wellbeing and the patients' better functioning as a couple in this difficult time. We would like you to treat conversation with the psychologist as an integral part of the process of treatment. It is for this reason that the first three visits to our psychologist are free of charge for our patients.

Dear Patients,

The period of waiting for a child is long and difficult. It is accompanied by great emotional, physical and financial effort. As an experienced team of professionals specialising in infertility problems, we are well aware of this. What we have to offer is the best possible medical care and assistance. Good relationships between the couple and the health care professionals are equally important, however, and here we count on your help. We will do our best to alleviate all the discomforts connected with the numerous visits, tests and procedures so that they are the least possible burden on you. We look forward to the success of treatment as much as you do and we hope to share with you the joy of making your family larger.

Glossary

ART – Assisted Reproductive Technologies

AZH – Assisted Zona Hatching – a laboratory procedure where a small break is created in the zona pallucida membrane of the embryo, which assists the release of the embryo from the membrane and facilitates implantation. This procedure is performed using a laser

HSG – Hysterosalpingography – radiological assessment of the patency (openness) of the fallopian tubes

HCG – (Human Chorionic Gonadotropin) pregnancy hormone appearing in the blood from the moment of implantation of the pregnancy

ICSI – Intracytoplasmic Sperm Injection (micromanipulation – the microscopic injection of a single sperm into the cytoplasm of the egg cell)

IUI – Intrauterine Insemination

IVF – *In Vitro* Fertilisation – extracorporal fertilisation

IVF/ET – *In Vitro* Fertilisation/Embryo Transfer

IVM – *In Vitro* Maturation – the maturation of egg cells outside of a woman's organism

HYSTEROSCOPY – an endoscopic procedure enabling the assessment of condition of the insides of the uterine cavity. The camera and light source are inserted through the cervix. Hysteroscopy enables the uterine cavity to be observed and even highly complex surgical procedures to be performed in the region. A safe and minimally invasive procedure.

LAPAROSCOPY – This is both a diagnostic tool and a method of operating. By means of an inserted camera and light source it makes it possible to assess the condition of the abdominal cavity without opening the abdominal membrane. A laparoscopy allows the internal organs of the abdominal cavity to be observed and, if need be, a surgical procedure to be performed on those organs. A laparoscopy is performed under general anaesthesia. A safe and minimally invasive procedure.

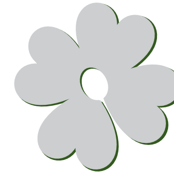
OVULATION MONITORING – monitoring by ultrasound examination of the menstrual cycle allowing assessment of the growth of the dominant ovarian follicle and establishment of the days when ovulation takes place.

OVULATION STIMULATION – pharmacological induction of ovulation

PCT Test – This is one of the most basic tests in diagnosis of the causes of infertility. It consists of taking a sample of the cervical mucus during ovulation nine to 15 hours after sexual intercourse. Intercourse does not take place in the clinic. The sexual intercourse after which the cervical mucus is taken must be preceded by three to four days of sexual abstinence. The purpose of taking the cervical mucus is assessment of the qualities of the sperm. This test serves to diagnose "cervical mucus hostility"

PGD – (Preimplantation Genetic Diagnosis) is a method that allows genetic analysis of embryos prior to their transfer to the uterus. The cell test consists of a biopsy of the blastomere (of a cell taken from a developing embryo) and its further genetic analysis. There is no risk of damage to the embryo during the biopsy. The PGD test may be performed in couples who are having tests for aneuploidy in the embryo, that is to say for an incorrect number of chromosomes. PGD is usually recommended as a test for aneuploidy because of the age of the woman (or the couple) or because of family genetic history. Another group for which this test is recommended is people who have been diagnosed as carrying genetic diseases.

FURTHER INFORMATION IS AVAILABLE FROM OUR CLINICS



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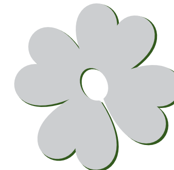

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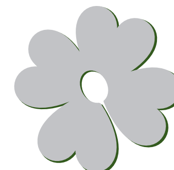

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