

IVF treatment

You have been offered IVF treatment because of involuntary childlessness/infertility.

IVF stands for In Vitro Fertilization. The treatment is also known as assisted reproductive techniques (ART). The treatment consists of oocytes being fertilized by sperm cells in a glass dish (in vitro) in a laboratory. After fertilization the egg/embryo is transferred through the cervical canal into the uterus where it is placed on the uterine lining, the endometrium. If the embryo implants, it will develop into a pregnancy.

Guidelines for treatment

You will be offered up to 6 treatment cycles for your first child and 3 treatment cycles for the second. A treatment is considered to be completed when the result is at least 1 fertilized egg/embryo being transferred into the uterus. In addition, we can transfer embryos that have been cryopreserved/frozen following previous treatment cycles (please see the section 'Cryopreservation of embryos').

If we start a treatment ending in no transfer of an embryo, this treatment does not count as 1 of the offered treatments.

If a treatment cycle results in pregnancy but ends in miscarriage or stillbirth, the cycle counts as not completed, and an additional cycle may be offered. If 1 or more embryos are cryopreserved in relation to treatment these embryos must be used for transfer before a new hormonal stimulation and oocyte pick-up may be performed.

In some women the ovaries do not respond adequately to hormonal stimulation. In such cases we may stop treatment after some attempts.

What is the chance of having a baby?

If we transfer 1 fertilized egg/embryo into the uterus, which we do in most treatment cycles, the chance of a positive pregnancy test is approximately 50 %, and the chance of a live birth is approximately 35 % per transfer.

Success very much depends on the woman's age, since oocyte quality declines with age. If the woman is more than 40 years old, the chance of pregnancy is considerably lower. The chance of live birth is also lower, mainly due to increased risk of miscarriage.

The course of treatment

At the first consultation about IVF a nurse will go through the course of treatment and ensure that all paperwork and documents are in order. She will also instruct you on how to take the hormonal injections. For couples, it is important that both of you participate.

The phases of a treatment cycle:

- Initial hormonal treatment with hormone injections. There are two ways of performing hormone treatment. We mostly use a short protocol, but there may be specific reasons for choosing a long protocol.
- Ultrasound scans that will guide us to the right timing of oocyte pick-up.
- Oocyte pick-up – on this day the woman will have to be fasting before the procedure.
 - If the male partners sperm is to be used, he must produce and deliver a sperm sample on the day of oocyte pick-up.
 - The oocytes are fertilized in a laboratory.
 - The best embryo is transferred into the uterus.
 - Supporting hormonal treatment.
 - Pregnancy test.

Hormonal treatment and ultrasound scan

The woman receives an initial hormonal treatment to ensure that the ovaries – if possible – develops more oocytes than the one, which usually develops spontaneously.

Short protocol

We start the treatment with an ultrasound scan on cycle day 2-3. If everything looks fine, the hormonal treatment is initiated. After 5 days another type of hormonal injection is added to prevent ovulation.

On day 8-10 in the cycle, we perform an ultrasound scan to visualize and measure the number and size of the follicles. Follicles are small, fluid-filled sacs in the ovaries that contain an egg. You cannot see the egg, which is only 0.1 millimeter in diameter. The number may vary, but on average there may be 3-5 follicles in each ovary. The largest follicles must reach a size of 17-18 millimeters before the eggs are sufficiently mature to be picked up.

If the follicles are not large enough at the first control scan the hormonal treatment will continue, and we will schedule a new ultrasound scan.

When the ultrasound scan shows that the follicles are sufficiently large, the eggs must be picked up 2-3 days later. Before oocyte pick-up the eggs must be fully matured with the hormone hCG. This is another type of injection, and it is very important that it is taken within 10 minutes of the scheduled time. This will usually be 36 hours before oocyte pick-up.

Long protocol

There may be specific reasons for choosing a long rather than a short protocol.

You sign up for treatment on the first day of your period. Subsequently,

- On cycle day 21 you start pre-treatment with a nasal spray or injections.
- After 14 days of pre-treatment, we perform an ultrasound scan with a view to initiating hormonal treatment. During that fortnight you will have a new menstruation.
- If everything looks fine, the hormonal treatment is initiated, and you continue with the nasal spray or injections.
- After 9 days of hormonal treatment, we perform an ultrasound scan. When the ultrasound scan shows that the follicles are sufficiently large, the eggs must be picked up 2-3 days later. Before oocyte pick-up the eggs must be finally matured with the hormone hCG. This requires a further injection, and it is imperative that it is taken within 10 minutes of the scheduled time. This will usually be 36 hours before oocyte pick-up.

Side effects from the hormonal treatment

The daily injections with hormone (FSH) may occasionally cause irritation and soreness, as well as rashes and bruises at the injection site. It is not uncommon to experience headaches, nausea, pelvic pain, bloating, breast tenderness, obstipation or diarrhea.

Nasal spray or injections used for the long protocol may cause discomfort such as hot flashes, nausea, dizziness, tiredness, headaches and mood swings.

Do contact us if you experience severe side effects.

Overstimulation of the ovaries is occasionally seen. Some women react unexpectedly strongly to the hormonal stimulation, and a lot of eggs are matured. This may cause a potentially serious condition called hyperstimulation, and the symptoms may worsen if you get pregnant in the same cycle. Therefore, we recommend that all useable embryos are frozen for later use instead of transferring an embryo a few days after oocyte pick-up.

The symptoms of hyperstimulation usually present approximately one week after embryo transfer, e.g. abdominal pain, nausea, vomiting, or diarrhea, and in rare cases breathlessness.

If many follicles were emptied at the oocyte pick-up, you must call us if you experience any of the above symptoms. Usually, we have already discussed this possibility at the oocyte pick-up and embryo transfer.

Oocyte pick-up

You will have an appointment in the morning, and you should expect to be at the clinic for 1-2 hours.

You must be fasting on the day of the oocyte pick-up. The stomach must be completely empty. Please follow these instructions:

- Do not eat solid food 6 hours before your scheduled appointment.
- 2 hours before the oocyte pick-up we recommend that you drink 1 glass of juice.
- You should not drink anything within 2 hours of the scheduled appointment.

- If you need to take any tablets, you may use water. Use as little water as possible.

Pain killers and sedative medication should be taken 1 hour before the oocyte pick-up. Immediately before the oocyte pick-up you must empty your bladder. Then we will place an intra-venous catheter in your hand or arm to be used for additional pain killers.

We prepare the vagina for the oocyte pick-up by wiping the cervix and vaginal wall and applying local anesthesia in the top of the vaginal wall. The aspiration of oocytes from the ovaries is carried out by inserting a needle through the vaginal wall into each of the ovaries using ultrasound. The follicular fluid is emptied into a tube, and the fluid is subsequently checked under microscope to see if there is an egg.

Some follicles may not contain an egg, but approximately 80 % will contain one. The number and position of the follicles determine how many times we need to insert the needle. Often 1 insertion on either side is enough. Via a screen you may follow the oocyte aspiration which usually lasts approximately 10-15 minutes.

Risks in relation to oocyte aspiration

Inserting a needle through the vaginal wall carries a very low risk of infection, and a risk of very little blood loss.

After the oocyte aspiration you need to rest. If you are using your partner's sperm, you will need to stay in the Fertility Unit until we have the result of the sperm sample delivered. If you have taken or been given sedatives or pain killers, you cannot drive a vehicle for the rest of the day. We recommend that you rest throughout the day, and you should not be alone the following night. You should expect a small amount of bleeding from the vagina and some pain from the pelvis.

Use of your partner's sperm or donor sperm

- **Use of your partner's sperm:** If you use your partner's sperm, he needs to hand in a sperm sample at 8.15 AM on the day of the oocyte pick-up. The sperm sample should be as fresh as possible. You may bring the sample from home if the travel time to the clinic is less than 1 hour. Avoid ejaculation within 2 days before handing in the sperm sample.
- **Use of donor sperm:** See information about donor sperm here: <https://aalborguh.RN.dk/fertilitet-godt-at-vide>
- **If there are too few sperm cells in a sample to expect fertilization,** we may use micro insemination. Microinsemination (ICSI – Intra Cytoplasmatic Sperm Injection) is a technique where we inject one sperm cell into each mature oocyte. This method has been used with great success for many years. Thousands of children have been born using this technique, and there is no excess risk of malformations. The method does not increase the risk of new mutations in the chromosomes. However, men with poor sperm quality have a slightly increased risk of chromosomal and genetic disorders which is of no consequence to themselves but may affect the fertilization process.
We do not perform micro insemination without your consent.

Incubation of the oocytes

We place the oocytes in a small dish with growth media which is then placed in an incubator. Then we await fertilization, as would have occurred in a natural setting (unless ICSI is performed). After 2 days we can see if fertilization occurred as planned, and how many oocytes proceed with correct cell division. If no oocytes have been fertilized, or cell division has not occurred, we will let you know on this day. The phone call will be made before 9.00 AM.

After 5 days we can assess the quality of the embryos (fertilized eggs) and decide if 1 is suitable for transfer. If not, we will call you by phone before 9.00 AM on this day, and the embryo transfer will be cancelled.

Embryo transfer into the uterus

One embryo (blastocyst) will be transferred into the uterus. The embryo is transferred using a thin, soft plastic tube, inserted through the cervical canal. There is usually no or very little discomfort during this procedure. The embryo transfer is performed 5 days after the oocyte pick-up. If surplus nicely developed embryos are available these embryos may be cryopreserved. Other oocytes or embryos will be discarded.

Hormonal treatment with vaginal gel/tablets

Two days after oocyte pick-up the treatment with progesterone is initiated. This treatment provides the embryo with the best conditions for implantation in the uterus. The treatment consists of gel or tablets that are placed inside the vagina. The treatment lasts until the pregnancy test is performed.

Pregnancy test

Two weeks after the oocyte pick-up a pregnancy blood test is performed. The blood test can be performed at the hospital or at your general practitioner. If the blood test is performed at Aalborg University Hospital or the Regional Hospital North Jutland in Hjørring, we will provide the test result by phone the next day. If the test is performed at your GP, the test result will be given 2 days later. You may check the result yourselves on <https://sundhed.dk> in the evening (for interpretation, please see below). It is important that the test is performed even if you have bleeding similar to menstruation. You may bleed and still carry a normal pregnancy.

If the pregnancy test is positive, you will receive an appointment for an ultrasound control scan to be performed 3 weeks later.

If the test is negative, you must wait 1 month before starting a new treatment.

Interpretation of blood pregnancy test (se-hCG)

HCG > 70: You are pregnant and will receive an appointment for an ultrasound scan.

HCG < 10: You are not pregnant.

HCG 10 – 70: We will repeat the blood test to see if the hormone level rises optimally.

How to prepare

Send an e-mail on menstrual cycle day 1

Once we have agreed that you are ready to start treatment at the clinic you must send us an e-mail on your menstrual cycle day 1 using the e-mail link at this website:

<https://aalborguh.rm.dk/fertilitetsbehandling>

Menstrual cycle day 1 is the day where you bleed in the morning (before noon). You may choose to postpone treatment because of e.g. exams, holiday, work or other issues. If you decide to postpone treatment, do not send an e-mail until you are ready to start. Occasionally we may postpone the treatment. This may occur if more people sign up for treatment than our capacity allows. We guarantee that this may only happen twice in a row.

If you achieve pregnancy

If you achieve a pregnancy following IVF there is no increased risk of malformations or chromosomal disorders because of the treatment. As previously mentioned, when using ICSI hidden chromosomal or genetic disorders not giving rise to problems for the father may be passed on to the child.

There is always a small risk that the pregnancy may implant outside of the uterus. An extra-uterine pregnancy is not viable and will need close monitoring and sometimes an operation.

If treatment is not successful

If the treatment is not successful within the number of treatments offered, we offer you an appointment where we provide guidance and advise with respect to potential future treatment. We will go through the treatment cycles we have performed and advise if future treatment in a private clinic is relevant and advisable, and we may discuss other options.

Cryopreservation of embryos

Cryopreservation of embryos with the potential to transfer into the uterus at a later point in time has been successfully used for many years. Thousands of children have been born using this method, and no increased risk of miscarriage, malformations or chromosomal or genetic disorders have been observed.

According to Danish legislation:

- the cryopreserved embryos can only be used for treatment of the woman/couple to whom they belong.

- the embryos may be cryopreserved until the woman turns 46 years. After this time, they will be destroyed. This also applies if a couple splits up.
- you must provide written consent that the embryos may be cryopreserved under the current legal terms and conditions.
- the embryos can only be thawed and used after the woman/the couple has provided written consent.

We provide everyone undergoing IVF-treatment the option of cryopreservation, but only around 50 % will have embryo(s) for preservation.

The transfer of cryopreserved embryos is to be seen as an additional chance and does not count as one of the 6/3 treatment cycles mentioned on page 1.

Transfer of cryopreserved embryos

If you have a regular menstrual cycle, a cryopreserved embryo can be transferred in your own, natural cycle, i.e. without hormonal treatment. Women with irregular menstrual cycles or cycles longer than 35 days on average will need treatment with tablets or occasionally injections.

Signing up for treatment with cryopreserved embryos is the same, i.e. on menstrual cycle day 1.

Embryo transfer in a regular cycle

If you have a regular menstrual cycle, you will get an appointment for an ultrasound scan on cycle day 10-12. We will ask you to take an ovulation test the evening before and in the morning of the day of the scan. At the ultrasound scan we measure the endometrial thickness and the size of the largest follicle. In case the follicle has not reached the right size we will perform a new scan a few days later.

When the follicle has reached the right size, we will tell you to take an Ovitrelle injection in the evening, and the embryo transfer will be planned one week later. The time for embryo transfer is usually between 13.00 and 14.00.

After the embryo transfer you need vaginal progesterone, and you will continue this treatment until the pregnancy test, which is performed approximately 16 days after the Ovitrelle injection.

Embryo transfer in an irregular cycle

If you do not have a regular cycle, you will need hormonal stimulation. This may be either 5 days of treatment with 2 Letrozol tablets from 3rd to 7th cycle day or – less often – 3 Estradiol tablets from cycle day 2.

After approximately 10-14 days you will get an appointment for an ultrasound scan to measure the endometrial thickness and the largest follicle. In case the follicle has not reached the right size, or the endometrium is not sufficiently thick, we will perform a new scan a few days later.

In case of stimulation with Letrozol, if the endometrium is sufficiently thick and the follicle has reached the right size, we will tell you to take an Ovitrelle injection in the evening, and the embryo transfer will be planned one week later. After the embryo transfer you need vaginal progesterone, and you will continue this treatment until the pregnancy test, which is performed approximately 16 days after the Ovitrelle injection.

In case of stimulation with Estradiol, if the endometrium is sufficiently thick you will take vaginal progesterone for 5 days, with embryo transfer on day 6. You will continue with Estradiol and progesterone after the transfer.

Pregnancy test

If the pregnancy test is positive, you will receive an appointment for an ultrasound control scan to be performed 3 weeks later. If the pregnancy test is negative, all hormonal supplements are stopped, and you will experience a bleeding.

Contact and further information

If you have any questions regarding the treatment, please contact us.



The Fertility Unit

Secretary

Tel. 97 66 32 03

Please call: Monday – Friday 8.00 – 10.00 AM and 1.00 – 2.00 PM

Children born after transfer of cryopreserved embryos

The success rate after transfer of cryopreserved embryos is good. Approximately 95% of all cryopreserved embryos will be transferable. The chance of a positive pregnancy test is approximately 45%, and the chance of a live birth is approximately 30%.