Ontario Network of Experts in Fertility
life through knowledge
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THINGS YOU SHOULD KNOW ABOUT IVF WITH FROZEN EGGS

In vitro fertilization (IVF) has captured the attention of the public since its groundbreaking introduction in 1978. In 1986, the first human birth from a frozen egg was reported. In 2013 the American Society of Reproductive Medicine announced that egg freezing should no longer be considered experimental. This exciting area of science evolves each day with new research and developments that are continually underway. Success rates have significantly improved over the years. Our goal is to educate you about your treatment plan so that you are fully aware of what to expect from this treatment.

Reasons to Cancel a Cycle:

- Endometrial lining not thick enough
- Fluid in uterus cavity
- Hormonal levels not appropriate
- Other

If your cycle needs to be cancelled, we will explain to you in detail why it needs to be cancelled and you will need to see your doctor at a follow up appointment to review your cycle and plan for next steps.

Freezing all Embryos

For most patients the plan is to transfer the embryo(s) the same cycle they were created. If this is your plan you must know that sometimes (as described above) our medical recommendation is not to transfer any embryo(s) during the cycle in which they were created but to freeze them and transfer them at a later date. If the team is telling you that we can't transfer the embryos the same cycle they were created the reasoning for that will be clearly explained to you. At time the doctor may recommend creating the embryos first and then planning for a frozen embryo transfer.

Egg Thaw Day

These procedures are done in the morning. A partner or donor sperm sample is required at this time.

When applicable, the sperm providers will produce the sample the morning of the egg thaw either in our facility or at home. In some cases, we use a previously frozen sample. At times we surgically retrieve sperm the day of the egg thaw. If you are using a donor sperm sample, it must be in our clinic well in advance.

There is a possibility that not all eggs will survive the thaw. Only the eggs that survive have a chance of fertilization.

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Fertilization of Eggs

There are two ways to fertilize eggs in our lab:

1. Standard IVF involves putting sperm and egg together in a dish.
2. Intra-Cytoplasmic Sperm Injection ("ICSI") involves selecting a single sperm and injecting it directly into the center of an egg to try to improve fertilization

There is a risk **of failed fertilization (or no fertilization)** with both methods although this risk is slightly higher with the standard IVF method. Your doctor will develop a plan as to which method of attempting fertilization would benefit you.

Embryo Development Updates

After your egg thaw you will be called daily (except day 2 and 4) with updates from the lab.

There is a risk that embryos may arrest/stop developing or develop abnormally.

Our plan is to transfer (and/or freeze) the embryo(s) when they reach the blastocyst stage (day 5 or 6 post egg thaw). Reaching the blastocyst stage is a necessary step before implantation**. Embryos that can't achieve this stage can't result in pregnancy.**

Transferring a single blastocyst embryo minimizes the risk of multiple pregnancy. There is still a very slight risk of identical twinning. Not all of your embryos are expected to survive. We generally see a reduction in the number of embryos by about 50% between day 3 and blastocyst development so that usually half of the embryos have arrested by day 5.

You may have embryos that have not reached the blastocyst stage by day 5. These embryos will be cultured in the lab until day 6. All embryos that become blastocysts on day 6 will be frozen.

Some embryos can start to divide abnormally but can later become blastocyst embryos. We refer to these embryos as PNBs (polynucleated blastomeres). It is our practice to watch the development of these embryos to see if they become blastocysts. There are documented cases of these embryos resulting in healthy live births. If you have a blastocyst embryo(s) that resulted from a PNB embryo, your doctor will have a discussion with you, and you will decided if you want to use the embryo(s).

Assisted Hatching

Assisted Hatching (AH) is the technique of thinning the shell or outer covering of an embryo. In some cases, helping the embryo hatch out of its shell can allow for a better chance of pregnancy. This procedure is generally recommended for use with frozen embryos but in some cases may be recommended for use with newly created embryos. Your physician will decide whether this procedure is in your best interest and if so, you will be asked to consent to this procedure. We have a list of criteria that determines if you are a good candidate for this procedure.

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Embryo Transfer

These procedures are generally done in the late morning and there is no sedation or medication given prior to the procedure.

The embryo placement occurs under ultrasound guidance and a full bladder is required for this procedure.

After the transfer you can drive and go on with your day. You do not need to be on bed rest but should avoid heavy lifting and heat exposure to the abdomen. You should schedule a pregnancy blood test as instructed by the doctor (12-14 days after the embryo transfer). Please remember to be scent free the day of your transfer.

Embryo Cryopreservation Program (Freezing Embryos)

As part of your consent, you may have agreed to freeze embryos. If your treatment plan included a 'fresh' transfer, you might have extra embryos resulting from the process that will be frozen for future use. Your doctor will create a treatment plan to prepare for their use when the time comes.

There is also the possibility that the embryos may not survive the freezing and thawing procedure, although the occurrence of this is rare.

Embryos can be stored indefinitely.

The pregnancy rates when comparing fresh vs frozen transfer of embryos are about the same.

Possible Outcomes of IVF

1. No pregnancy
2. Chemical pregnancy – when a pregnancy is detected through blood/urine tests only but does not develop into a baby
3. Nonviable intrauterine pregnancy - when the pregnancy is in the uterus but there is no fetus or no heartbeat
4. Ectopic pregnancy – when implantation occurs outside the uterus. This can be dangerous and requires medical or surgical intervention.
5. Clinical pregnancy that turns into a miscarriage
6. Clinical pregnancy that results in a live birth
7. Multiple pregnancy

Our team is experienced in managing all of the above outcomes.

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Risks of Pregnancy

Getting pregnant does put extra demands on your body and can put your health at risk. Some of the common conditions associated with pregnancy include high blood pressure in pregnancy or gestational diabetes.

The more babies you are carrying, the higher the risks to you and the babies. Some of those risks include such things as cerebral palsy, deafness, blindness and even death of the babies. Babies from a multiple pregnancy are generally smaller at birth and require longer admission to the neonatal intensive care unit. Mothers with a multiple pregnancy are more likely to require hospitalization during pregnancy. These are just some of the many risks associated with multiple pregnancy. Our goal is to help you achieve the family that you desire, one baby at a time!

Risks of Adverse Outcome for the baby conceived with IVF

It is important to note that IVF pregnancies are at increased risk however those risks seem to be related to many other things associated with the patient population requiring IVF rather than the IVF process. It is not clear whether the IVF process itself increases these risks.

We are reassured that the great majority of babies conceived through IVF are healthy.

Long-term follow-up studies on children born following IVF treatment from frozen eggs are ongoing.