generation fertility
WATERLOO

435 The Boardwalk, Suite 508
Waterloo, ON N2T 0C2
P: 519-570-0090
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Elective Egg Freezing

Elective ("social") egg freezing is a form of fertility preservation where eggs are cryopreserved to maintain fertility potential if the patient does not anticipate starting a family in the near future.

Oocytes (eggs) are removed from the ovaries, assessed for suitability, and subsequently frozen in the laboratory. These eggs can then be used in a future IVF cycle when the patient is ready to achieve a pregnancy.

FEES

All cycle fees (except medication) are due on Cycle Day 3 of your egg freezing cycle. These fees are to be paid at reception. The Clinic does not offer a payment plan or installments. We are a no-cash facility; fees can be paid by debit, credit, or certified cheque.

An elective egg freezing cycle is not covered under the Ontario Fertility Program (OFP). Fees will also be applicable for the subsequent IVF cycle to use the eggs.

Any questions regarding fees can be discussed with the nursing team or the Clinic Manager.

CYCLE MONITORING AND ULTRASOUNDS

During your cycle, you will be scheduled for ultrasounds in Suite 503 and then proceed to Suite 508 for blood testing and administration of your drugs. Close monitoring during your cycle is required to prevent excessive numbers of follicles and to avoid early maturation and release of eggs. You will be required to attend the clinic beginning Cycle Day 3 (range from Day 2 – 4), then 7 to 15 for ultrasound, blood testing, and injections.

On the first full day of bleeding of your menstrual cycle, call the clinic at 519-570-0090 x 226 to reach the nurses. They will assist you in scheduling your appointments.

For your Day 3 ultrasound, please arrive with a **FULL BLADDER.** Please finish drinking at least 5-6 glasses of water no later than 1 hour prior to your scheduled appointment. The remaining ultrasounds will be transvaginal and do not require a full bladder.

MEDICATIONS and STIMULATION

There are two goals to drug therapy. The first is to stimulate the ovaries to produce multiple mature eggs and the second is to prevent premature ovulation (release of the eggs) prior to the retrieval procedure.

The drugs we use to stimulate the ovaries, called Follicle Stimulating Hormones (FSH), help grow the eggs during your cycle. The medication you are taking is:

☐ Gonal F ☐ Puregon ☐ Menopur ☐ Letrozole*
☐ Rekovelle ☐ Pergoveris

*Letrozole is a different class, it is called an aromatase inhibitor. It blocks estrogen production which tells the brain to produce more FSH naturally in the body rather than adding it directly like the other medications listed here.

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The drugs used to prevent ovulation by suppressing your own pituitary hormones and allow the growth of the eggs. The medication you are taking is:

☐ Cetrotide ☐ Orgalutran ☐ Suprefact ☐ Decapeptyl

NOTE: If you are taking Suprefact/Decapeptyl, it is **important** to practice birth control during the month you wish to start; this means you can abstain from sexual activity or use condoms. If your order is Suprefact, it will start on CD 21 of the cycle before a planned cycle.

Most of these drugs are taken by injection. You (or a support person) will be instructed on how to administer these drugs on the days you aren't attending the clinic. Injection supplies are available for purchase through the clinic (if needed). Please purchase alcohol wipes for your own use from any pharmacy.

Letrozole is an oral medication. These pills are taken daily from Cycle Day 3 to 7 (or Cycle Day 4 to 8) as ordered by the physician. Like other FSH medications, these will help with ovarian stimulation.

We will keep you informed as soon as possible if there are changes to your specific treatment. Drug protocols change at times to accommodate how your body responds to the medication.

Do NOT stop any medications unless directed by the nurse or doctor. If you have questions about which medication you are taking or how to administer them properly, please contact the nurse. Any errors in dosing or administration may require your cycle to be modified or potentially cancelled.

Approximately mid-cycle, the physician will decide when you are ready for your egg retrieval. You will be required to give a hormone injection called Lupron or Pregnyl (hCG). This will bring about or "trigger" final maturation and ovulation of the eggs. All other injections will stop on the day of the trigger injection. You will start taking Doxycycline 100 mg twice a day the day before the retrieval. This is an antibiotic and will help prevent infection following the egg retrieval. Egg retrieval will happen approximately 35-36 hours after the administration of the trigger injection.

OOCYTE RETRIEVAL (OPU or OVUM PICKUP)

On the day of OPU, you are required to be in Suite 508 at the time given to you by the nursing staff, usually 1 hour before the procedure. You will be there for most of the morning.

An intravenous (IV) line will be started which will allow the medical staff to administer fluids, sedatives, and analgesics (pain medication) so you will be comfortable during the procedure. If required, an anti-anxiety medication called Ativan, will be given to you and is administered under the tongue.

You will be taken into the operating room, and your follicles will be visualized with ultrasound. A mild antiseptic solution will be used to cleanse the vagina.

For the OPU, a fine needle is attached to the side of the transvaginal ultrasound probe. The probe is gently placed in the vagina and advanced into the ovary with ultrasound guidance. The needle penetrates each follicle in both ovaries and drains the fluid from inside each follicle. The follicular fluid is immediately given to the laboratory and examined by the embryologist for the presence of an oocyte (egg).

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Egg retrieval usually takes 20-30 minutes but may vary depending on the number of follicles. Discomfort will vary from patient to patient but analgesics will be given via the intravenous route to relieve any discomfort. Please inform the nursing staff should you feel any discomfort.

During the OPU, the embryology staff will notify the physician of the number of eggs retrieved during the procedure. Often, there is a delay in isolating the count and the procedure may conclude before the lab finishes locating all the eggs. It is possible that no eggs are retrieved during the procedure. A final count of eggs can be provided to you prior to leaving the Clinic. Maturity of the eggs is assessed a few hours later; it is possible that none of the retrieved eggs are mature.

The recovery period following egg retrieval lasts for 1 – 2 hours, or until deemed safe for you to go home. You will have to have someone drive you home. Light vaginal bleeding, cramping, or soreness may persist to the next day, but these can usually be managed with Tylenol. Return to routine activities is usually possible by the following day.

OOCYTE CRYOPRESERVATION

After cleaning and separating the eggs from surrounding cells and debris, all eggs retrieved are placed in Petri dishes which contain a culture medium that is rich in nutrients necessary for growth.

The eggs are kept for 1-2 hours in the media before cryopreservation. Only mature eggs (stage MII) will be able to be frozen; any immature eggs are discarded.

Eggs are added to a special freezing media which removes water from the cells to prevent ice formation. Once ready, eggs are placed on a freezing device/straw and immediately frozen in liquid nitrogen (LN2) which is -190°C. The straws containing the eggs are placed in our secure LN2 storage tanks. They can remain frozen indefinitely until future thaw and IVF. There is a 1-5% chance that an egg will not survive at the time of thaw, however, this is rare due to advanced freezing techniques.

RISKS OF TREATMENT

With hormone therapy, there is a 5 – 10% risk of Ovarian Hyper-Stimulation Syndrome (OHSS). OHSS is a complication which occurs when the ovaries over respond to the FSH injections and produce an excessive number of eggs. Symptoms range from mild to severe and may include nausea and/or vomiting, pelvic/abdominal pain, abdominal distension, shortness of breath, edema (weight gain/fluid retention), and blood hormone/chemistry changes. In very extreme cases (< 1%) OHSS may result in stroke and potentially death. OHSS can last between a few days to a few weeks and usually resolve on its own. Drinking 1 liter of Gatorade daily seems to help relieve some of the symptoms. In more severe cases, you may need either abdominal drainage of fluid or hospitalization. If you experience any of these symptoms it is important to call the nurse. If the office is closed and the symptoms are severe, please go to the nearest emergency department. The egg retrieval or embryo transfer may be cancelled if the physician suspects the risk of OHSS is significant; cancelled cycles will be reviewed with the physician.

Egg retrieval carries a very low risk of infection or significant bleeding. There is a very low risk of ovarian torsion which can cut off the blood supply to the ovary.

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Undergoing an oocyte retrieval and subsequent IVF does not guarantee that any viable eggs are recovered, the eggs that are collected may not be mature or be suitable for insemination, mature eggs may not successfully fertilize or continue to develop into blastocysts, and any blastocysts may not be suitable for transfer or cryopreservation.

SUCCESS RATES / EXPECTATIONS

Throughout the process of egg freezing / IVF, there is an attrition of reproductive material:

- An oocyte retrieval may not yield any eggs.
- Not all eggs retrieved may be mature.
- Not all eggs that are inseminated will fertilize (~70-85% of mature eggs)
- Not all embryos that fertilized will continue to develop into blastocysts (~30-50% of fertilized eggs)
- Not all blastocysts that develop will be sufficient quality to transfer/cryopreserve
- Not all embryos genetically tested (e.g., PGT-A) will be euploid/normal
- Not all transferred embryos will result in a pregnancy/live birth (~30-60% per transfer).

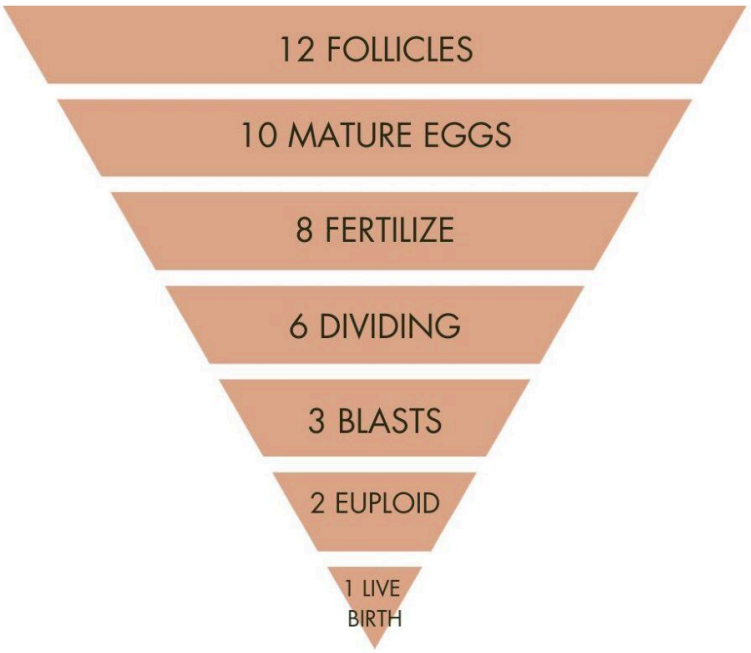

Figure 1 - The IVF Funnel

This is called IVF attrition or the "IVF Funnel." Along each step in the process, there is a loss of reproductive material. The outcome of an IVF cycle is also highly dependent on oocyte quality, sperm quality, and individual diagnosis of infertility. [See Fig 1.]

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For example, if 10 mature eggs are used, a standard result would be 2-3 useable blastocysts. But individual results are highly variable and may be different for each patient. Likewise, it may take multiple embryos transfers to achieve a pregnancy; typically, transferring genetically normal embryos will result in a pregnancy sooner.

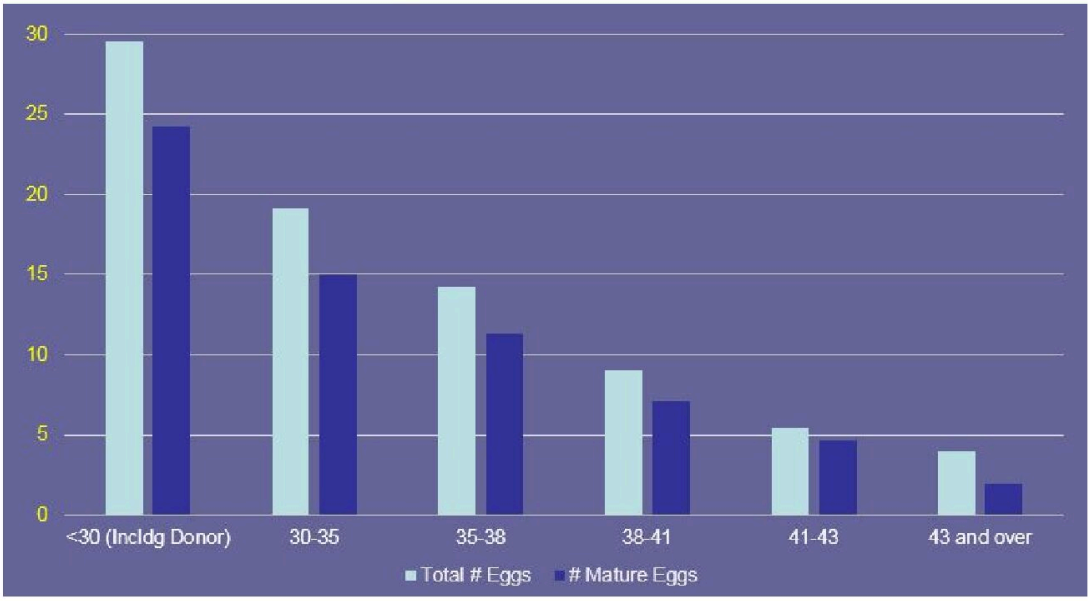

Figure 2 - Egg Yield per Age Group

Additionally, even using a genetically normal embryo, recipients of advancing reproductive age have reduced implantation/pregnancy rates.

The process of IVF is heavily dependent on the number of mature eggs available; starting with fewer eggs will be more likely to result in a failed cycle where no embryos develop. The quality and quantity of eggs is highly correlated with egg-provider age; younger patients tend to get more eggs and those eggs are more likely to be genetically normal. However, it is possible for someone to have better or worse outcomes as compared to age-matched controls (i.e., low ovarian reserve premature ovarian insufficiency). [See Fig 2.]

If possible, freezing more eggs for future use will increase the likelihood of effective treatment. Multiple egg retrieval cycles will provide more high-quality eggs than undergoing a subsequent retrieval at a later time. We have assistive technologies (i.e., AI) to assess egg quality which may help make a decision whether to proceed with an additional cycle(s).

Your physician can give you a reasonable estimate for the likelihood of success based on your individual cycle and diagnosis, however, we cannot know the outcome until the cycle has concluded.

Please call the nursing staff at (519) 570-0090 x 226
if you have any questions during or after your cycle.