

MY IVF DIARY

It may be helpful to record your progress through your IVF cycle. This diary will help keep a record of your appointment dates, medication dosage, blood test results, and ultrasound measurements. Please bring this diary to your appointments.

	Repronex, Luveris or Menopur			Bravelle, Gonal-F or Puregon			E ₂	Ultrasound	
Date	Bought	Used	Left	Bought	Used	Left	pmol/L	Right	Left

Date and time of HCG: _____

Date and time of egg retrieval: _____

Date and time of embryo transfer: _____

THE IVF EXPERIENCE Conceiving a baby seems like it should be the easiest thing in the world – but for many couples this is not the case. Having difficulty getting pregnant is more common than you might think, especially among women over the age of 35.

Almost one in six couples will have trouble getting pregnant and that number increases to more than 1 in 2 after the age of 39. Approximately 40% of the time infertility is caused by female factors, 40% of the time by male factors, and 20% by a combination of both.

For many couples, advances in medical treatment have made it possible to achieve their dream of having a baby.

In vitro fertilization (IVF) is one of the most widely used treatments for infertility. It is often known as the test-tube baby procedure. Since the first IVF baby, Louise Brown, was born in 1978, over 2,000,000 babies have been born as a result of IVF.

Other Assisted Reproductive Technologies (ARTs) include Intracytoplasmic Sperm Injection (ICSI), Microsurgical Epididymal Sperm Aspiration (MESA), Testicular Sperm Extraction (TESE), Blastocyst Culture, Donor Oocytes, Gestational Surrogacy, and Fertility Preservation by egg or sperm freezing.

THE FERTILITY JOURNEY: AN EMOTIONAL ROLLER COASTER You and your partner probably planned just when you would start your family. You may have spent years trying not to get pregnant, only to discover when you began to try that it didn’t happen. This can challenge your life plans, your self-identity, and your relationship as a couple. You may experience a whole range of feelings, such as pain, fear and anger – which, in turn, can lead to anxiety and depression.

Genesis Fertility Centre consistently offers pregnancy rates that are among the best in the country. Our physicians are specialists in Reproductive Endocrinology and In Vitro Fertilization. They are internationally recognized experts in the field of reproductive medicine, and are also faculty members at the University of British Columbia. Genesis Fertility Centre is one of the largest IVF programs in Canada and has been at the forefront of reproductive medicine since 1995, helping thousands of couples achieve their dream of having a baby.

Along with your physician, you will have a highly trained team of nurses and embryologists ensuring you receive the best possible care every step of the way. With the largest staff-to-patient ratio of any fertility centre in Canada, at Genesis you are under the care of one of the most experienced and dedicated teams of fertility specialists to be found anywhere.

First, it is important to understand how emotionally difficult this experience is for most couples. Studies have shown that women experiencing fertility issues have distress levels equal to women with cancer, AIDS, or other life-threatening illnesses.

If you are struggling with feelings of fear, anger, guilt, and loneliness, you are not alone.

COPING AS A COUPLE Struggling with a fertility problem can have a big impact on your relationship with your partner. For many couples, going though this journey together can lead to greater intimacy and closeness. But it can also bring out feelings of anger and resentment.

Men and women tend to react differently to the emotional experience of infertility. Sometimes it may seem like your partner is not committed to the whole process.

“It just seems like it doesn’t bother my husband, like he goes on with his day and it doesn’t affect him. It is all I can think about!”

At the same time, men may find it very distressing to see their partner upset and dealing with medications, injections, and medical procedures and not know how to help. Some men confess to feeling guilty or overwhelmed by the intensity of their partner’s emotions, making it hard for them to express their support.

“It kills me to see her in so much pain. I wish I could help her feel better, but I always seem to say the wrong thing at the wrong time.”

Infertility can affect your feeling of being a woman and test your relationship. Love-making often becomes baby-making. As well, you may feel cut off from friends and family, so you depend even more on your partner. Learning how to support each other can actually make you closer as a couple. Studies have shown that the better the couple's relationship during fertility treatment, the lower the stress levels and the better their overall experience is.

“To top it all off, because I feel so alienated from my usual supportive community, there is more pressure on my husband to be there for me. But I know it is stressful for him too. He needs support too. He doesn't really have anyone to talk to about it either.”

There are many things that can help you cope with your IVF experience. Learning ways to manage your stress and care for yourself can help you feel more in control of your life and allow you to make better choices about your fertility treatment.

You can find a list of counselors with experience in fertility on our website (www.genesis-fertility.com). You can also draw on support from counselors in your local community. If you would like to do this, please ask the counselor to call us to clarify the support time available and payment details.

SOME TIPS TO OPTIMIZE YOUR HEALTH

WOMEN

We recommend that you have an annual physical and breast exam as well as a pap test.

Supplements: Recent studies indicate that a daily folic acid supplement (0.4 mg to 1.0 mg) can reduce the risk of certain birth defects. These include serious central nervous system defects such as spina bifida. Folic acid should be started six weeks prior to conception and continued through the first trimester (3 months) of the pregnancy. The folic acid can be taken as a separate tablet or as a part of a standard multivitamin tablet (most contain at least 0.4 mg).

Weight: Try to maintain a healthy weight. The dose of medication prescribed for you may be influenced by your body weight. Heavier women often need more medication and they may have difficulty

absorbing it. If this is the case, you may be asked to delay treatment until your weight has dropped to a better range. As well, pregnancy rates drop markedly above a certain weight or body mass index (BMI). Women who are underweight or have eating disorders may also experience difficulties that should be addressed before treatment begins.

Smoking: Women who smoke have a lower chance of becoming pregnant and a higher rate of miscarriage.

Infections: If either you or your partner suffers from genital herpes, we will suggest that you take a medication (acyclovir) to prevent an outbreak close to the time of your egg retrieval. Please discuss this with the nurse at least one month prior to the cycle.

MEN

To optimize your sperm count for IVF treatment, we recommend that you follow these guidelines for at least three months prior to the IVF cycle.

Excessive heat: Avoid exposing testicles to excessive heat like hot baths, hot tubs, saunas, tight-fitting underwear, or long distance bicycling.

Smoking: Smoking can decrease sperm quality and sperm function.

Marijuana: THC can decrease sperm quality and the ability of sperm to fertilize an egg.

Prescription and over-the-counter drugs: Anabolic steroids, hair-loss medications (e.g. Propecia®), and some prescription medications may reduce sperm production.

Other illnesses: Report any fevers or flu-like illnesses to an IVF nurse as sperm production may be affected.

Ejaculate regularly: Sperm are produced constantly. If you have not ejaculated for more than 5 to 7 days, there will be many aging or dead sperm in your sample. To obtain the best sample on the day of egg retrieval, we suggest that you have intercourse or ejaculate a few times during the stimulation phase (e.g., every 2 to 5 days). You should then abstain for two to three days prior to egg retrieval.

Sperm freezing: In certain situations, it is advisable to freeze a sperm sample before undergoing an IVF treatment cycle.

If you have experienced difficulty collecting a sample under pressure, we recommend that you have a backup sample frozen before the IVF cycle.

10 WAYS TO CARE FOR YOURSELF DURING THIS PROCESS

1. **Find a local support group.** Although support from family and friends is helpful, sometimes they just don't get what you are going through or know the right thing to say. You can end up feeling isolated. Talking to someone going through the same thing can be really helpful.
2. **Log on to an online discussion group.** Several organizations offer online support groups and message boards where you can connect with people who understand what you are going through. Visit the following websites to participate in online support forums, or go to our website and check under resources for a more complete list.
 - Infertility Awareness Association of Canada: www.iaac.ca
 - IVF Connections: www.ivfconnections.com
 - IVF.CA: www.IVF.ca
 - Infertility Network: www.infertilitynetwork.org
3. **Talk to a counselor.** Genesis offers a free counseling session for patients going through IVF and ICSI. Our counselors are all experienced in helping couples cope with fertility issues. They can help you learn strategies for dealing with stress, managing your IVF cycle, and nurturing your relationship with your partner. Ask one of our staff for more information, or follow the “Counseling” links on see our website. (www.genesis-fertility.com)
4. **Look at complementary therapies.** Therapies such as acupuncture, mind-body therapy, yoga, and massage have been shown to help reduce stress and improve your well-being.
5. **Take time to do something special for yourself.** This is a time to practice self-care, to nurture yourself, and even to pamper yourself a bit.
6. **Keep a journal.** Journaling can provide an outlet for your feelings and help you gain clarity and perspective.
7. **Nourish yourself.** Eating a healthy diet of whole grains and plenty of fresh fruits and vegetables can help you maintain a healthy weight and provide the necessary nutrients to keep you feeling well.
8. **Get exercise — every day if possible.** Exercise is a potent stress reliever. While this is not the time to begin training for the marathon, regular aerobic exercise like walking, hiking, cycling, or dancing is one of the best things you can do to lift your mood and relieve anxiety.
9. **Make time for your partner.** Find things to do that you both enjoy and have nothing to do with IVF or fertility. Plan a date with your partner or a mini getaway to reconnect and revitalize your relationship.
10. **Talk to your doctor or someone on your care team** if you are feeling overwhelmed and check our website for other kinds of support. This is a difficult time, and you'll need to take care of yourselves physically and emotionally to make it through the process.

This may reduce your anxiety about collecting the sample on the day of retrieval.

If the results of your semen analyses fluctuate from one sample to another, it may be advisable to freeze in case there is further deterioration in the results.

Please discuss this with a Genesis staff member if you would like to freeze a sperm sample as

a back-up. In any case, you will be asked to provide a fresh sample on the day of egg retrieval, if possible.

The sperm count and motility will often decrease after the freezing process, which means that some of the frozen/thawed samples will only be suitable for ICSI.

THE IVF CYCLE BEGINS

An orientation session will take place shortly before your treatment begins. This session should cover many of the questions you may have about treatment, your health, and what to expect over the next few months.

You can find a video that outlines the process of a typical IVF cycle at Genesis on our web site, www.genesis-fertility.com. This and other resources on our web site might be of value to you.

GETTING READY

Before beginning any treatment, both you and your partner must sign consent forms. A nurse will review the consent information with you and discuss any concerns you may have prior to signing. You will be asked to sign the consent forms in the presence of a Genesis staff member on or before the first day of treatment.

FOR MEN

You will be asked to have a semen analysis within six months prior to the IVF cycle. If there are concerns about the quality of the sample (for example, sperm count, sperm motility, or number of abnormal forms), you may be asked to provide a sample for specialized testing in our laboratory.

FOR WOMEN

Call Genesis when you start your period **in the month that you plan to start treatment**. If it falls on a weekend, please wait until Monday to phone. A nurse will confirm the date on which to start using the medications.

Before you start your IVF treatment, a nurse will teach you or your partner how to give the injections. By learning to give your own injections, you will reduce your number of visits to Genesis during your treatment cycle.

PHASES OF THE IVF CYCLE

1. PITUITARY SUPPRESSION PHASE

During an IVF cycle, it is important that several eggs mature at once and that they are collected at the right time. In the first phase of your IVF treatment, you will take a medication called a GnRH agonist. This temporarily suppresses the hormones that send messages from your pituitary gland to your ovaries. Suppressing these hormones prevents eggs from

being released too soon. You will take the medication daily by nasal spray or injection.

2. OVARIAN STIMULATION PHASE

In this phase, your ovaries will be stimulated to produce more eggs than usual. You will take daily injections of luteinizing hormone (LH) and follicle stimulating hormone (FSH) for about 10 to 14 days. These hormone injections will stimulate your ovaries to produce several follicles, each of which may contain an egg.

MONITORING OVARIAN STIMULATION

During the ovarian stimulation phase, you will have frequent blood tests to monitor your estrogen levels. Once you start the injections, you will usually have the first blood test four to six days later. Subsequent blood tests will become more frequent – approximately every one to three days.

After seven to ten days of injections, you will begin having vaginal ultrasounds at Genesis. Ultrasounds are performed in the morning along with the blood test. You will choose an ultrasound appointment time between 7:30 a.m. and 9:00 a.m. Monday to Friday. On weekends, ultrasounds are performed at 8:00 a.m. We are open seven days a week.

About 5% to 10% of women do not complete the ovarian stimulation phase because not enough follicles develop. This can be very frustrating and disappointing. If this should happen in your case, one of our IVF physicians will discuss the reasons. We will arrange a more detailed follow-up with your physician to discuss your options for further treatment. A portion of the treatment cycle fee will be refunded if the cycle is cancelled (please see fee schedule for details).

BLOOD SAMPLE LABS

- Daily (except Saturday): 7:30 a.m. - 9:00 a.m.
Genesis Fertility Centre
- Saturdays: 7:30 a.m. - 8:30 a.m.
Fairmont Medical Building, 701-750 West Broadway

Alternate labs (Monday to Friday): Richmond, Burnaby, Surrey, North Vancouver, Victoria, Kamloops, and Kelowna.

If you would like to use one of these labs, please make the necessary arrangements with one of our nurses.

3. EGG RETRIEVAL PHASE

Once the blood tests and ultrasounds show that you have suitable estrogen levels and a reasonable size and number of follicles, you will stop both your FSH injections and GnRH agonist.

We will give you a **specific evening** (date and time) on which to give yourself the final injection of hCG (human Chorionic Gonadotropin). This will trigger the final maturation of the eggs. Thirty-six hours after the hCG injection, we will retrieve the eggs in the clinic.

Before the retrieval, you will get a short-acting medication intravenously to control pain. One of our physicians will gently insert an ultrasound-guided needle through the top of the vagina into your ovaries (figure 1).

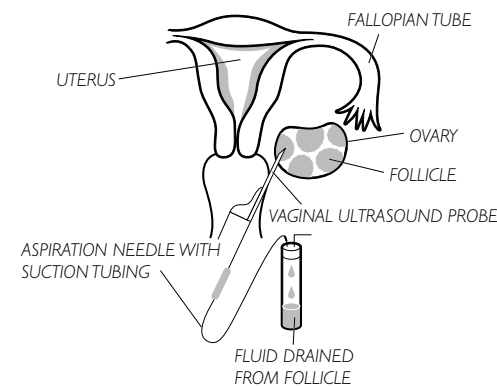


figure 1. Egg Retrieval Procedure

The fluid is drained from each follicle, and an embryologist examines it under a microscope for eggs. Not every follicle contains an egg, but at least half of the large follicles usually have an egg.

The procedure takes about 15 to 20 minutes, and we ask you to rest in the recovery room for about an hour afterwards. It is common to feel cramping and discomfort, and to have some vaginal spotting or bleeding after egg retrieval. You might find a heating pad or Tylenol® helpful. If you have severe pain or heavy bleeding, please contact Genesis.

4. FERTILIZATION (INSEMINATION) PHASE

The sperm sample is washed and concentrated and then added to the eggs a few hours after retrieval. One of our embryologists examines the eggs the next day for fertilization. If the sperm

sample looks normal, we expect about 70% to 80% of the eggs to be fertilized. One of the embryologists will phone you to discuss the results of fertilization.

It is important to know that not every egg will be fertilized, and not every egg that is fertilized will go on to form a good quality embryo (figure 2).

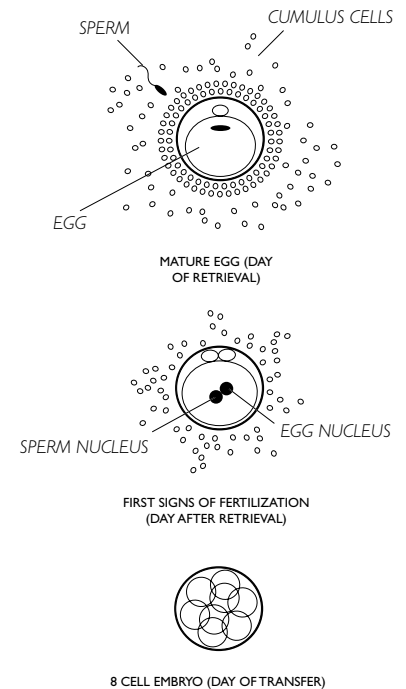


figure 2. Fertilization Phase

5. EMBRYO TRANSFER PHASE

Three to five days after your egg retrieval, we will transfer your fertilized eggs (embryos) to your uterus using a fine plastic tube (transfer catheter). The catheter is passed through the cervix into the uterus, where the embryos are released (figure 3).

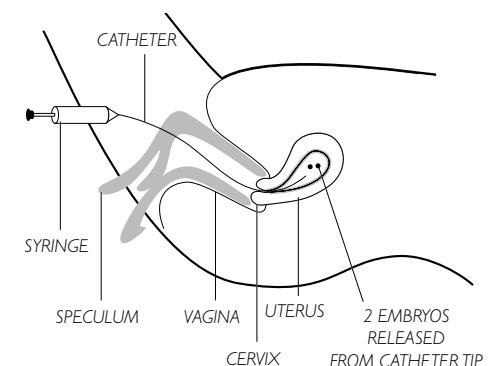


figure 3. Embryo Transfer

You will be asked to arrive with a full bladder that morning, and you will be able to watch the procedure on ultrasound. Once the embryos are released, the catheter is slowly removed and checked under the microscope to ensure that there are no embryos remaining. The transfer process lasts only a few minutes, and most women don't find it uncomfortable. You can return home immediately after the transfer.

The exact number of embryos transferred depends on your age and the quality of your embryos. Your physician and a nurse will discuss with you the appropriate timing for embryo replacement and the number of embryos to be replaced in your particular case. You will discuss this with your doctor before your treatment cycle and again as treatment progresses, should there be any changes to the original plan.

We choose the healthiest embryos that are the most likely to result in pregnancy. If you have any extra healthy embryos, you may choose to have them frozen for a future embryo transfer. Extra embryos are available for freezing in approximately 50% of all IVF cycles.

You will be prescribed progesterone to help keep the endometrium (the lining of the uterus) in optimal condition for implantation. You start the progesterone on the evening of your egg retrieval.

6. LUTEAL PHASE AND PREGNANCY TEST

This phase is the two-week waiting period between the embryo transfer and the pregnancy test. We suggest that you take it easy for 24 hours after your embryo transfer. You can resume light activity over the next few days, but avoid strenuous activity because your ovaries remain enlarged for some time. Many women return to work after a few days if their jobs aren't too strenuous.

Sexual intercourse should be avoided for about one week. Showers or tub baths are fine as long as the bath is not too hot or prolonged. Saunas and hot tubs should be avoided. Common sense is your best guide!

If you experience bloating, breast tenderness or lower abdominal cramping, you may take Tylenol® to relieve the discomfort. If you are concerned that symptoms are getting progressively worse, call Genesis and speak to a nurse.

Vaginal bleeding may occur before you are due for your pregnancy test. Although you might be alarmed by this, it does not necessarily mean that the treatment was unsuccessful. You should continue using the progesterone until the blood work results are known. At the same time, the progesterone itself may delay your period, and this does not necessarily mean that you are pregnant.

The luteal phase can be both exciting and stressful. This time is often emotionally charged. It is important that you try and minimize stress and maintain balance in your life. We encourage you to take time to do something special for yourself. If your job is very demanding or stressful, you might want to take a few extra days off. Waiting for your results can feel like months, rather than weeks. Both you and your partner will be going through an intense time, so remember to be patient with each other and to take care of yourselves physically and emotionally.

If you are having a hard time dealing with the stress of waiting, we encourage you to call Genesis for support. Many couples also find it helpful to visit a counselor during this period. Don't forget that a counselor is available as part of your treatment cycle.

CYCLE OUTCOME Seventeen days after egg retrieval, you will have a blood test to find out if you are pregnant.

If your result is positive, a second blood test will be arranged to monitor your progress, and we will schedule an ultrasound for you in about three weeks. The ultrasound will confirm the location of the pregnancy in the uterus and whether you have a single or multiple pregnancy. There is a small chance that an embryo may implant in the fallopian tube (ectopic or tubal pregnancy). This may require surgical removal or may be treated with a medication to make the tubal pregnancy reabsorb. If more than one embryo was transferred, a multiple pregnancy may occur.

A weak positive test result could mean that implantation happened later than usual. More often, though, it unfortunately means that the embryo did not implant successfully. In either case, you may have more blood tests to monitor your progress. This is a very difficult and confusing stage because the results are not clearly positive or negative. The progesterone should be continued until we know the final results.

A negative pregnancy test result is always disappointing and devastating. Many women experience intense grief, anger, and sense of loss. It is normal to have these feelings at this time, but it can be helpful to have someone to talk to about how you are feeling. Don't hesitate to discuss this with members of your care team or with one of our counselors.

Once you stop taking the progesterone, bleeding will usually start within a couple of days. We will call you to make an appointment with your physician, who will review your treatment cycle with you and discuss your options for future treatment.

ADDITIONAL PROCEDURES

INTRACYTOPLASMIC SPERM INJECTION (ICSI)

Intracytoplasmic sperm injection (ICSI) is a specialized form of in vitro fertilization (IVF) used to treat severe cases of male infertility. With ICSI a single sperm is injected into a mature egg.

Before the first successful ICSI pregnancy in 1992, doctors had very little to offer couples with male factor infertility, aside from using donor sperm. ICSI has revolutionized the treatment of male infertility. To date, thousands of children have been born around the world as the result of ICSI.

Approximately 40% of all infertility is due to a male factor. ICSI can help couples who have poor or

no egg fertilization during standard IVF. As well, ICSI allows a much higher fertilization rate for men who have:

- Many abnormally shaped sperm (poor morphology)
- Few moving sperm (poor motility)
- Very low sperm counts
- Any obstruction in the testes or epididymis which prevents the release of sperm
- Anti sperm antibodies (antibodies produced by the man's own body which may inhibit sperm function)
- Vasectomy reversals resulting in very low sperm counts or poor quality sperm production

HOW IS ICSI DONE? First we retrieve eggs from your partner in the same process that is used for a standard IVF cycle. Then your semen sample is prepared in the lab to isolate as many healthy moving sperm as possible. The sperm are washed and prepared for fertilization.

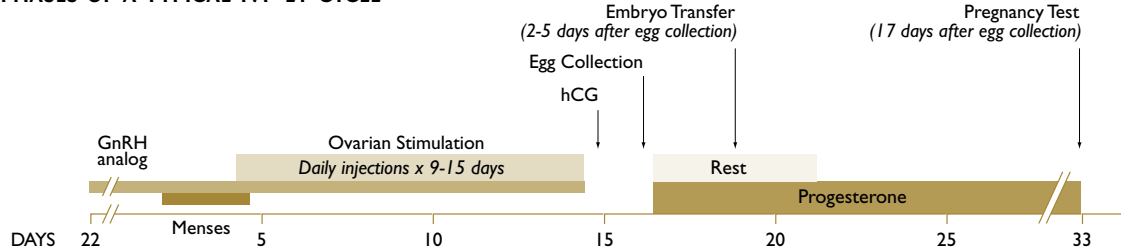
Following egg retrieval, the eggs are allowed to rest for 4 to 6 hours, and then cells surrounding the eggs are carefully removed. One of our embryologists examines the eggs under a microscope to determine which ones are mature and suitable for fertilization. A special instrument is used to hold the eggs in place, and then a very thin needle (the injection pipette) is used to inject a single, normal-appearing sperm into each egg (figure 4).

THE PARTNER'S ROLE:

We encourage you to have your partner with you during the procedure. After your procedure, we will ask your partner to produce his semen sample (unless you are using donor sperm). You may accompany him if you wish.

Some men have concerns about this part of the process, so if you would prefer to collect the sample at home on the day of egg retrieval, please inform the staff in advance. If you have any concerns about collecting the sample, please discuss this with the staff prior to the cycle, and we will arrange to freeze a sample as a backup.

PHASES OF A TYPICAL IVF-ET CYCLE



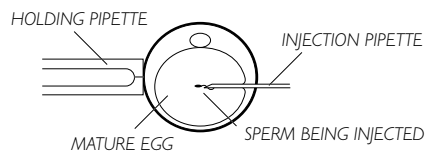


figure 4. Intracytoplasmic Sperm Injection

The embryologist then places the injected eggs in an incubator overnight, and checks them the next morning for signs of fertilization. After 24 hours, we see how many eggs have divided and developed into embryos. We choose the embryos most likely to grow into a healthy baby for transfer.

Not all eggs fertilize, and not all fertilized eggs become embryos. As with standard IVF, there are a number of factors that determine how many embryos are replaced. You may choose to have any healthy embryos that are not implanted frozen for future use.

WHAT IS THE SUCCESS RATE OF ICSI? As the first fertility clinic in BC to successfully perform ICSI, Genesis has helped thousands of couples conceive with ICSI. At Genesis, an average of 70% to 80% of mature eggs will fertilize normally. More than 95% of couples undergoing ICSI will have at least one embryo to transfer. The clinical pregnancy rates are similar to those of standard IVF and vary with the age of the woman. Please see our web site for current, age-specific pregnancy rates.

RISKS Tens of thousands of healthy children have been born around the world as a result of ICSI, and approximately half of all IVF cycles performed in the world use ICSI.

One concern about ICSI is the possible health impact of this procedure on any resulting children. Some otherwise healthy men can carry a genetic cause for their sperm problem. These genetic abnormalities can be transmitted to a baby born through ICSI. The most common known genetic abnormalities related to male infertility are:

- Cystic fibrosis gene mutations leading to congenital absence of the vas deferens (the tube that carries sperm from the testicle to the penis).
- Deletions of one or more genes present on the Y chromosome, called Y chromosome microdeletion.

- Chromosomal abnormalities, most frequently extra X or Y chromosomes, which may be associated with severely reduced or absent sperm counts.

Men who carry one or more of these chromosome problems may not be able to father a child, except using ICSI. It is possible that children born after ICSI may inherit a chromosome problem or have a birth defect. From several large studies, we know that the rate of chromosome problems and major birth defects is slightly increased (1% to 2% higher than the general population) in the offspring of men with low sperm counts, whether they are conceived spontaneously or with ICSI.

At Genesis, we offer genetic testing and counseling to look for these potential problems. ICSI is a remarkably safe technique, and Genesis is one of Canada's most experienced clinics at performing ICSI.

PREDICTING THE HEALTH OF A NEWBORN

For ICSI, the most important predictors of newborn health are:

- The mother's age at delivery
- Family history
- Occurrence of pregnancy complications

BLASTOCYST TRANSFER

BACKGROUND IVF embryos are usually transferred on the third day following egg retrieval at the six-to-eight cell stage. To reach the blastocyst stage (50 to 150 cells), the embryos must continue to grow for two or three more days before they are ready for transfer into the uterus.

Recent advances in IVF laboratory methods have allowed for the successful culture of embryos to the blastocyst stage. Blastocysts may have a better potential to implant into the uterine wall than earlier-stage embryos, as many embryos stop growing at the four-to-eight cell stage, probably because of some inherent problem. Those embryos that successfully reach the blastocyst stage are probably more developmentally competent than earlier-stage embryos. As well, their stage of development, when replaced into the uterus, is very similar to what it would be in a natural conception cycle.

WHAT ARE THE ADVANTAGES AND DISADVANTAGES OF BLASTOCYST TRANSFER?

- We can select the most robust embryos with the greatest chance of implantation
- Fewer embryos need to be transferred (two blastocysts should have a higher chance of pregnancy than three or four embryos on day three)
- Minimized risk of a high multiple pregnancy
- Fewer embryos will survive or grow to this stage (probably about 30% to 50% of the embryos)
- A small chance (up to 10%) that none will reach the blastocyst stage and, therefore, no embryos will be available to transfer
- The availability of "extra" embryos for freezing is significantly reduced
- There is an additional fee for blastocyst transfer

WHO IS A CANDIDATE FOR BLASTOCYST CULTURE?

- Women 37 years or older, provided they have enough good quality embryos on day three
- Women under 37 years who are good candidates for a single embryo transfer

WHAT IS THE PROCEDURE? The embryos are cultured in the IVF laboratory for 5 to 6 days after egg retrieval. At least three good quality embryos should be available on the third day after egg retrieval to maximize the chances of obtaining at least one or two blastocysts.

CRYOPRESERVATION (FREEZING)

WHAT IS CRYOPRESERVATION? Cryopreservation is a procedure for freezing and storing embryos (fertilized eggs).

During IVF, more embryos may be created than will be transferred immediately. You will have the option of freezing any extra good quality embryos. In the cryopreservation process, water in the embryos is replaced with a chemical solution (cryoprotectant) that acts like antifreeze. This solution prevents ice crystals from forming which would destroy the embryo. Embryos are placed in liquid nitrogen and stored at -196° C. They may be stored this way for prolonged periods of time. When embryos are

thawed, the cryoprotectant is removed and replaced with water. About 50% to 65% of good quality embryos will survive the freeze/thaw process.

WHY CHOOSE CRYOPRESERVATION? Cryopreserving embryos gives you additional chances to become pregnant after an egg retrieval procedure. If there are extra good quality embryos following the first embryo transfer, they can be frozen and transferred at a later date.

There is an additional cost for the freezing and storing of embryos: however, this is much less expensive than undergoing a second IVF treatment cycle.

WHAT ARE THE POTENTIAL BENEFITS?

- The medication protocol is simpler because the ovaries do not require stimulation.
- Cryopreservation helps to reduce the inconvenience, discomfort, and cost of IVF by reducing the number of egg retrievals a woman undergoes, while allowing additional chances to become pregnant.

WHAT ARE THE POTENTIAL RISKS?

- The embryos may not survive the freeze/thaw process (60% to 70% survival rate).
- Each new cycle can become another possible source of frustration and disappointment.
- You may feel pressure to continue treatment – just because you have frozen embryos.
- You or your partner's feelings may change. At some point, one of you may feel that you have done enough and now face a decision about what to do with stored embryos. This may cause feelings of guilt about ending treatment and moving on to pursue other life goals.
- If one of you changes your mind about doing the procedure or if problems arise in your relationship, the question of ownership and disposal of embryos could become a problem.

WHO IS ELIGIBLE FOR CRYOPRESERVATION?

Everyone involved with IVF treatment will be offered the option of cryopreservation. Many couples, however, will not have enough extra embryos suitable for freezing. The best quality embryos (those most likely to result in pregnancy) are usually transferred in the treatment cycle. To be selected for freezing, embryos must not

show any signs of fragmentation (cell breakdown) or abnormal development. Obviously, not all embryos will meet these criteria.

HOW ARE EMBRYOS REPLACED? We transfer cryopreserved embryos to the uterus during a menstrual cycle in which you take supplemental estrogen and progesterone. These hormones mimic your body's natural cycle and ensure that the endometrium (lining of the uterus) is well developed.

About 60% to 70% of the embryos will survive the freeze/thaw process, so we may need to thaw four to six embryos (or more) in order to obtain an adequate number of good quality embryos for transfer. We recommend that you wait at least two months following an IVF cycle before transferring frozen/thawed embryos. This allows your body a period of rest before attempting to achieve pregnancy again.

HOW LONG CAN EMBRYOS BE STORED?

Embryos can be stored indefinitely. We will continue to store embryos for as long as you wish to pay for storage.

It is very important that you advise Genesis of any change in your address. We will attempt to contact couples prior to discarding embryos at the end of a two-year period. However, if you cannot be contacted, the embryos will be discarded.

WHAT HAPPENS IF WE SEPARATE OR DIVORCE?

In the unfortunate event that a couple separates or divorces and there are stored embryos, both partners should contact Genesis. Your consent form will need to be changed to reflect your new plans for your embryos (e.g. destroy the embryos or continue to store with ownership transferred to one partner).

WHAT HAPPENS IN THE EVENT OF DEATH OR MENTAL INCAPACITY? In the event that either partner dies or becomes mentally incapacitated, the most recent written consent will be valid and used to determine the fate of the embryos. Please contact Genesis if this occurs for a review of your consent forms. If both partners die or become incapacitated while their embryos are in storage, the embryos will be discarded.

WHAT IF WE CHANGE OUR MINDS? If a couple has selected cryopreservation and one partner changes his/her mind **before** embryos are frozen, the partner must inform Genesis and the other partner in writing of their withdrawal of their consent. The consent becomes void, and freezing will not take place.

If one partner changes his/her mind **after** the embryos have been frozen, the same procedure applies as for divorce or separation. You will remain responsible for the initial freezing fee and any applicable storage fees until a mutual decision has been made. If either partner decides to discard embryos prior to the end of two years, they must notify the other partner and Genesis, in writing, of their withdrawal of consent to freeze embryos.

GENESIS PHARMACY

Genesis has a licensed pharmacy. The Genesis pharmacy can provide you with all of the fertility medications you need for IVF. Because we do not charge a dispensing fee, our prices are usually lower than other pharmacies. If you live outside of the Lower Mainland of BC, medications can be shipped to your home.

Medications can be purchased at our pharmacy 7 days a week:

Monday – Friday	8:30 a.m. – 4:00 p.m.
Saturday & Sunday	By appointment only

Here is a list of medications you might use during your IVF cycle.

GnRH AGONIST (SYNAREL, BUSERELIN, LUPRON)

These medications prevent premature ovulation by suppressing hormone secretion from the pituitary. The suppression usually occurs within two to three weeks. The agonist must be continued until the day of hCG. Side effects are uncommon but may include headaches, hot flushes or decreased sex drive. Buserelin and Lupron are given by injection, while Synarel is a nasal spray.

GnRH ANTAGONIST (ORGALUTRON, CETROTIDE)

These medications prevent premature ovulation by suppressing pituitary hormone secretion. Suppression occurs rapidly, within two hours of injection. Antagonists are given by subcutaneous injection during the last few days of FSH stimulation. Side effects may include headache, nausea or injection site itching or redness.

FSH OR LH – FOLLICLE STIMULATING HORMONE OR LUTEINIZING HORMONE (BRAVELLE, GONAL-F, LUVERIS, MENOPUR, PUREGON OR REPRONEX)

These hormones are normally produced by the pituitary. They cause growth of the follicles and maturation of the eggs within them. They are given by subcutaneous injection (under the skin). Side effects may include injection site irritation and exaggerated menstrual symptoms such as cramping, mood swings and headaches.

HCG – HUMAN CHORIONIC GONADOTROPIN (OVIDREL, PPC)

This is a natural hormone that causes the final maturation of the eggs within the follicles.

It is given by subcutaneous injection. The egg retrieval is performed 34-36 hours later. Side effects may include mild nausea, abdominal cramping, redness or discomfort in injection site.

PROGESTERONE (PROMETRIUM®, CRINONE)

Progesterone is normally produced by the collapsed follicle after ovulation occurs. It prepares the lining of the uterus for implantation of the embryo. Your own progesterone production is supplemented by additional natural progesterone. Progesterone is taken vaginally. Side effects include premenstrual symptoms such as tiredness, bloating and breast tenderness. **If you are allergic to peanuts, ask us for an alternative to Prometrium®.**

HOW DO I GIVE MYSELF THESE MEDICATIONS?

Some fertility medications are given by injection, some are taken by mouth and some are taken in the vagina. Your nurse will give you instructions on how to take each medication.

For further information about injection technique, please see these websites:

- Gonal-F Pen
<http://www.fertilitylifelines.com/serono/products/gonalf/pen/instructions.jsp>
- Puregon Pen
<http://www.puregonpen.com/>
- Repronex/Menopur/Bravelle
<http://www.ferringfertility.ca/repronex.htm>

WILL MY INSURANCE COVER THESE MEDICATIONS?

It is estimated that you will spend \$2000 – \$4000 on medications. This range reflects the difference in women's age, weight and individual response to the medications.

You may have an Extended Health Plan that will cover some or all of the medications. Every health plan is different. Please contact your health insurance provider directly to determine whether any of the medications are covered, to what extent, and for how many treatment cycles. Health insurance companies may require the Drug Identifying Numbers (DIN) to assess your coverage.

PREPARING FOR EGG RETRIEVAL & EMBRYO TRANSFER

PRIOR TO THE EGG RETRIEVAL Your HCG injection is to be given at _____ p.m. on _____.

You will **stop** using your GnRH agonist (Synarel, Buserelin or Lupron) on the day of your hCG injection. You will also **stop** your FSH and LH injections (Bravelle, Gonal-F, Luveris, Menopur, Puregon or Repronex) on the day of your hCG injection. On the day after your hCG injection you will not have bloodwork or an ultrasound.

FOR MEN

We recommend two to five days of abstinence from intercourse before the egg retrieval.

THE NIGHT BEFORE YOUR EGG RETRIEVAL It is very important that your lower bowel is empty when the retrieval is done. If you have not had regular bowel movements during the few days before retrieval, please take a laxative (e.g. Senokot®) or a glycerine suppository.

Please remove dark nail polish as it interferes with the monitoring equipment we use during the egg retrieval.

THE DAY OF THE EGG RETRIEVAL You should have a light breakfast such as toast, cereal, juice, tea or coffee in the morning.

Please feel free to have a bath or shower before coming to the clinic, but do not use perfume or scented products. Do not wear any jewelry other than a wedding ring or medical alert item. Do not bring valuables to the clinic. You may wish to bring a pair of socks to keep your feet warm in the procedure room. Feel free to bring an MP3 player to listen to during the procedure.

Come to Genesis Fertility Centre at _____ on _____.

Before the procedure, you will change into a wrap-around skirt and have an IV (intravenous) started. Your partner is welcome to join you in the procedure room for the egg retrieval. Unless you are using frozen or donor sperm, he can collect his sample after the procedure.

Please speak to a nurse if you would like to make other arrangements for collecting the sample.

AFTER THE EGG RETRIEVAL

Following the retrieval, you will be taken to the recovery room where you will stay for 30 to 60 minutes. You may feel sleepy from the medications you received during the procedure. The medications may not be eliminated by your body for up to 24 hours. You may feel “hung over” or just not your normal self. During this period we ask that you:

1. **do not** drive a car or operate machinery or power tools
2. **do not** drink any alcoholic beverages
3. **do not** make any important financial or legal decisions

On discharge, you **must** be accompanied by your partner or another responsible person who may either drive you home or accompany you home in a taxi. Public transportation is not an option.

You may have some light bleeding or spotting for one to three days after the retrieval. This is from the procedure; it is not coming from the uterus, and it is not a period. Also, spotting is not uncommon between the day of embryo transfer and the pregnancy test.

You may feel pelvic discomfort or cramping for the first few days after the egg collection. You may take Tylenol® Extra Strength, 2 tablets every 4 hours to relieve this discomfort. Please do not use ibuprofen or aspirin-containing products.

You may eat whatever you like after the egg collection as long as you are not nauseated. If you are nauseated, stick to clear fluids and crackers or toast until the nausea subsides.

In the evening, take your first dose of Prometrium®. Insert 2 capsules into the vagina with your finger as far as you comfortably can. Starting the morning after the egg retrieval, take the Prometrium® vaginally twice a day, approximately 12 hours apart. Always use 2 capsules at a time.

EMBRYO TRANSFER

Your embryo transfer is scheduled for _____ a.m. on _____.

The morning dosage of Prometrium® should be taken vaginally, after your embryo transfer.

You should arrive at Genesis with a full bladder to make the embryo transfer as easy as possible. Drink two to three cups of water in the hour before your transfer.

The embryo transfer is an easier procedure than egg retrieval. It is unlikely that you will require any medication. After the embryo transfer, some women notice a small amount of spotting or a small amount of air passed from the vagina. Please do not be alarmed. It is from the procedure, and it does not mean that you are expelling the embryo(s).

It is recommended that you limit your activity for the next few days. Your ovaries are much larger than normal and it will take several weeks for them to return to normal size. They can become irritated and quite uncomfortable with heavy lifting or too much activity. Remember, common sense is your best guide!

PROMETRIUM® contains progesterone, the natural hormone that the body uses to maintain the lining of the uterus, and help the embryo implant and grow.

On the day of embryo transfer, the morning dose of Prometrium® is taken after your embryo transfer. Always use 2 capsules twice daily, approximately 12 hours apart. Please try to take the Prometrium® at the same times every day. Some of the white coating from the capsule will appear as a white, sticky discharge from the vagina. Please do not stop taking the Prometrium® until you have had your pregnancy test and received the result from a Genesis staff member.

LUTEAL PHASE The luteal phase (the time between the embryo transfer and your first pregnancy test) is both exciting and stressful. You may find it helpful to see one of our counselors during this time. Counseling time (1.5 hours) is available with each completed IVF cycle.

Continue to take the Prometrium® capsules twice daily until you know the results of your pregnancy test. Remember that spotting is common during this time. You do not need to notify the clinic of spotting, but please call us if you believe you have started a full bleed.

Many women also worry about the effects of various activities on their chances of conception. The most important factors influencing the chance of pregnancy are the woman's age and the number and quality of the embryos. However, the following guidelines may minimize discomfort during the luteal phase or early pregnancy, and may help you to have a healthy pregnancy:

- **Do** take your Prometrium®: it helps to maintain the proper conditions for implantation
- **Do** take a prenatal vitamin with folic acid: it helps with normal development of the baby's brain and spinal cord
- **Do not** swim or take tub baths for 48 hours after embryo transfer
- **Do not** do heavy lifting or strenuous aerobic exercise (i.e. jogging, aerobics, tennis, skiing, mountain climbing) until your ovaries return to normal size – likely around the time of the pregnancy test
- **Do not** begin any new physical activities during the luteal phase
- **Do not** douche or use tampons unless your pregnancy test is negative and your period starts
- **Do not** have intercourse or orgasms until the fetal heartbeat is seen on ultrasound, or the pregnancy test is negative

If you have not started your period by the date written on your requisition (about 17 days after the egg retrieval), take the requisition for the pregnancy test to a nearby Lifelabs location. A list of labs can be found on the back of the requisition. Please leave a message for the nurses at Genesis (604 879 3032, ext 234) stating your name, the lab location you attended, and the phone number at which you can be reached the next day for results. If you live out of town, the phone number of the lab you attended is also helpful. Depending on the location, it will take 1 to 2 days before we receive your pregnancy test result.

NOTES

MEDICATION LIST WITH DRUG IDENTIFICATION NUMBERS (DIN) FOR IVF TREATMENT

You will need one of the following medications:

Ovarian Suppression	Amounts	DIN
SYNAREL	8 ml	(DIN 02188783)
BUSERELIN	1 mg/ml	(DIN 02225166)
ORGALUTRAN	0.25 mg	(DIN 02245641)
CETROTIDE	3 mg	(DIN 02247767)
CETROTIDE	0.25 mg	(DIN 02247766)

You will need some of the following:

Ovarian Stimulation	Amounts	DIN
PUREGON	50 IU	(DIN 02242439)
PUREGON	100 IU	(DIN 02242441)
PUREGON	300 IU	(DIN 02243948)
PUREGON	600 IU	(DIN 02243948)
PUREGON	900 IU	(DIN 02243948)
GONAL-F	75 IU	(DIN 02248154)
GONAL-F	450 IU	(DIN 02248156)
GONAL-F	1050 IU	(DIN 02248157)
GONAL-F PEN	300 IU	(DIN 02270404)
GONAL-F PEN	450 IU	(DIN 02270390)
GONAL-F PEN	900 IU	(DIN 02270382)
BRAVELLE	75 IU	(DIN 02268140)
MENOPUR	75 IU	(DIN 02283093)
REPRONEX	75 IU	(DIN 02247790)
LUVERIS	75 IU	(DIN 02269066)

<i>Other Medications</i>	<i>Amounts</i>	<i>DIN</i>
<i>OIDREL</i>	<i>10,000 IU</i>	<i>(DIN 02262088)</i>
<i>PPC</i>	<i>10,000 IU</i>	<i>(DIN 02247459)</i>
<i>PROMETRIUM</i>	<i>100 mg</i>	<i>(DIN 02166704)</i>
<i>CRINONE</i>	<i>90 mg</i>	<i>(DIN 02241013)</i>