

THE IVF HANDBOOK



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INTRODUCTION

In vitro fertilization ("IVF") is a treatment process that is designed to help an infertile couple/woman achieve a pregnancy when other methods of doing so appear to hold less promise for achieving a pregnancy or have proven unsuccessful. In the normal reproductive process, an egg is released from the ovary of the female and ultimately united with sperm from the male. This union of sperm and egg ("fertilization") ordinarily occurs along the fallopian tube, which joins the female's uterus to the ovary. In the IVF process, fertilization occurs in the laboratory after the egg and the sperm have been collected from the female and the male, respectively. Following fertilization, the resulting embryo or embryos are transferred to the uterus of the female with the hope that the reproduction process will continue as it would in the normal course.

Before the IVF process begins, the female and male partners undergo a detailed clinical evaluation to determine whether they are appropriate candidates for IVF. The IVF process itself involves four phases:

- Stimulating the development of eggs in the female's ovaries (referred to as "ovulation induction")
- Removing the eggs from the female's ovaries once developed (referred to as "egg retrieval") and collecting sperm for the male
- Placing the eggs and sperm together in the laboratory to allow fertilization to occur
- Transferring the fertilized eggs ("embryos") into the uterus with the goal to establish a pregnancy (referred as to "embryo transfer")

This document explains the IVF process and describes the major risks associated with the IVF process. Once executed, this document will reflect your formal written consent to proceed with IVF.

BEFORE YOU START

Before you start the IVF process, your physicians and nurses in the Fertility Design Clinic will review your history and current health status to make sure that you are an appropriate candidate for IVF. This involves reviewing your past medical records, including relevant operative notes and x-rays, and also involves an evaluation of your partner. You will also be asked to undergo a physical exam, a blood test, a consultation with a social worker, and a measurement of your uterus.

It is recommended that you avoid activities, behaviors, and medications during the IVF process that might reduce the prospect of a successful IVF result. For example, it is recommended that you:

- Avoid smoking, drinking alcohol and the use of any recreational drugs and
- Avoid taking aspirin and similar products,

It is also recommended that you:

- Take a prenatal vitamin containing folic acid on a daily basis
- Disclose to your physician all prescription and over-the-counter medications you are taking.

THE IVF PROCESS

As noted above, the IVF process involves 4 phases. It must be emphasized that you cannot be guaranteed that you will achieve a successful result in any of these phases and you cannot be guaranteed that the IVF process will result in pregnancy. If less than optimal results are obtained in any phase, it may be recommended that the IVF process be terminated and the IVF cycle cancelled.

Ovulation Induction

The ovulation induction phase of the IVF process is intended to control the timing of the release of your eggs and to increase the chance that more than one egg will be produced during the IVF cycle. This is accomplished through the use of medications, which will first suggest your ovaries and later stimulate your ovaries.

You may be instructed to take oral contraceptive pills to improve response to ovarian stimulation. Additionally, you may be taking the medication Leuprolide Acetate (also called Lupron) starting in the second half of your menstrual cycle to suppress your ovaries. Once Lupron is started, you will be taking this medication as a daily injection for at least two weeks. A baseline ultrasound (a kind of x-ray which uses sound waves instead of radiation) will be taken of your reproductive organs and a blood test will be performed after you have been on Lupron two weeks to make sure that the Lupron has adequately suppressed your ovaries. If the results of the baseline ultrasound and blood test are acceptable, you will be told when to start to take certain medications, which will stimulate the ovaries. These medications include Gonal-F, Clomiphene Citrate, Menopur, Luveris, etc. During the stimulation phase, you will usually be taking one or two injections each day of the active medications, along with a single daily injection of Cetrotide (Antagon) each day. **This medication will help prevent your follicles from releasing an egg prior to egg retrieval.** Ultrasound and blood work monitoring will start a few days after the start of the active medications to monitor the development of the structures in your ovaries (called 'follicles') which contain the eggs, to monitor hormone levels and with this information, to make appropriate adjustments of your medications and calculate the timing of egg release and retrieval. When your eggs are mature, you will be given instructions to take a medication called human chorionic gonadotropin or "HCG" (also called Profasi, Pregnyl, Ovitrel or Novarel) to trigger to ovulation.

You and/or your partner will be instructed how to administer the injections which are required during the ovulation induction phase.

Egg Retrieval

The procedure to retrieve your eggs will take place approximately 36 hours after your single injection with HCG. Egg retrieval is an outpatient procedure. An MGH anesthesiologist will be present during the procedure to administer anesthesia. During the procedure, you will be placed in the same position as if you were having a pelvic exam. After your vagina is cleaned with a saline solution, a vaginal ultrasound probe will be placed in your vagina allowing the physician to visualize your follicles. With ultrasound guidance, a needle is inserted through the vagina wall and separately, into each follicle in both of your ovaries. Fluid is removed from each follicle and examined by the lab to determine whether an egg is present. The egg retrieval procedure is usually completed within approximately 30 minutes.

An adult should accompany you home after the egg retrieval procedure and stay with you for the 24 hours following your departure from the hospital after the egg retrieval procedure.

With the use of fertility drugs, more than one egg is frequently collected during the egg retrieval procedure. Prior to the egg retrieval procedure, an ultrasound will determine the approximate number of follicles present on each of your ovaries. This should provide a guide, but by no means an exact determination, as to how many eggs you can expect to have retrieved during the retrieval process. In some instances, no eggs are retrieved, in others, up to 10 eggs or more may be obtained. It is important to understand that not every follicle contains an egg, and that some eggs are not healthy or will not fertilize. It is also important to note that some eggs may be released by the ovaries and lost prior to the egg retrieval process and that some eggs may not develop properly.

During the same day as the egg retrieval procedure takes place, your partner, if applicable, will be asked to produce a semen specimen. The lab requires at least two hours to complete the sperm processing procedure. During this time, the sperm will be checked and prepared for fertilization. If, due to concerns as to the quality of your partner's sperm or if you have elected to use donor sperm for fertilization, a donor specimen will be processed. In such cases, an informed consent for use of donor sperm for IVF should be executed and placed in your medical record.

Insemination

Following egg retrieval and the production and preparation of the sperm specimen (unless the intracytoplasmic sperm injection or "ICSI" procedure is utilized, in which case you will have executed an additional consent relating to that procedure), the eggs are identified and placed in a plastic dish, together with the sperm specimen. To achieve fertilization, the eggs and sperm are placed in something called a culture medium and put in an incubator to allow fertilization and early embryo development to proceed. Whether fertilization will be successful is dependent on many factors. In some cases, none of the eggs fertilize. Once an egg is fertilized, it becomes an embryo which may or may not develop appropriately. If one or more embryos develop(s) satisfactorily, it/they can then be transferred to your uterus. The number of embryos that will be transferred to your will depend on how many embryos are determined to be of suitable quality for transfer, as well as the number that your treating physicians determine can safely be transferred to your uterus in any one cycle.

If multiple healthy eggs are collected during retrieval and successfully fertilized, and not all of the resulting embryos will be transferred to your uterus, it will be important to know what you and your partner wish to do with those embryos(e.g. freeze your remaining embryos for possible future treatment cycles, discard them, donate them, etc.). A separate consent form is attached to this document to identify your options and to confirm your choice with respect to these extra healthy embryos.

Embryos that are not suitable for transfer (such as those that result from abnormal fertilization or fail to develop properly) unused sperm and eggs that are not suitable for use (such as those that are immature or fail to fertilize) will be disposed of in accordance with your preferences below (Acknowledgement of Informed Consent and Authorization).

Embryo Transfer

The embryo transfer is performed 2-3 or 5-6 days after date of egg retrieval. No anesthetic is required for this procedure. Once you are in the transfer room, you will be positioned on a stretcher in a similar position to the one used to obtain a Pap smear. A speculum (a smooth instrument used to separate the vaginal walls in order to see the cervix) is placed in the vagina and after washing the cervix, the physician will transfer the embryos with a special tube or "catheter" into the uterus. You will be advised to have a full bladder at the time of embryo transfer to improve visualization of the uterus for transfer. Abdominal ultrasound guidance is commonly utilized to assist in visualization of the catheter. Once the embryos have been

transferred, the IVF lab will examine the catheter to confirm that all embryos contained in the catheter have been discharged into the uterine cavity. (In the event that your physician recommends a procedure called "assisted hatching"-- you will be given information explaining the procedure and may be asked to consent to it prior to embryo transfer). It is suggested that you reduce your activity for the 24 hours following your embryo transfer.

As noted above, embryos that are not transferred, but are of suitable quality for transfer ("extra" embryos) can be frozen, stored, and transferred at a later date. If you do not wish to freeze extra embryos, then they can be disposed of in another manner you choose. Your options with respect to these extra embryos are discussed further in a separate consent form entitled: "Agreement and Informed Consent to Embryo Freezing and Frozen Embryo Disposition". **That Agreement /consent form must be executed before your IVF treatment cycle can be begin.**

Treatment Following the IVF process

Progesterone is a hormone made by the ovary that prepares the lining of the uterus for implantation of embryos. Studies have shown that women who take medications to stimulate ovulation may need supplemental progesterone. For this reason, you will be asked to take progesterone following egg retrieval. Natural progesterone is available and can be administered either by intramuscular injection or vaginally. If pregnancy occurs, the progesterone will be continued until at least the 10th week of pregnancy.

Approximately 17 days following your egg retrieval, a blood pregnancy test will be done. If this test is found to be positive, a repeat pregnancy test will likely be done 2 days later. If the test results continue to be encouraging, a vaginal ultrasound will be done approximately 3, 5 weeks after the embryo transfer to determine the status of your pregnancy. Based on the results of this ultrasound, a second ultrasound will be likely be scheduled the following week.

The time period that follows your embryo transfer and precedes the receipt of your pregnancy test results may prove to be the most difficult and challenging time of the IVF process. Many patients find this period of time to be the most stressful part of the IVF cycle. Please feel to contact the Vincent Reproductive Medicine and IVF program for support or to discuss your concerns.

If your pregnancy test results are negative, we will give you instructions regarding the stopping of your progesterone and further care.

RISK FACTORS AND TREATMENT OUTCOMES

As the above indicates, the IVF process requires that you take a variety of medications, undergo monitoring through a variety of means, and undergo a number of procedures. All of these carry some measure of risk, with the primary risks being described below.

Risk Factors Associated with Medications

There are minimal side effects associated with the use of oral contraceptive pills (OCP's) when used for the short duration required in an IVF suppression phase. OCP's should not, however, be taken if you are pregnant.

Leuprolide Acetate, or Lypron, will put you into a temporary menopausal state. For this reason, you may begin to experience hot flashes after using the medication for about a week. Additionally, although most patients tolerate Lupron quite well, some women report headaches or temporary bloating of the abdomen. Lupron may also change the nature of your menstrual cycle. Your period may come earlier or later than you expect the flow may also be heavier or lighter than usual. There have been no documented long-term side effects from the short-term use of Lupron.

Many women actually have a decrease in side effects once they start their achieve medications. This is related to the increased estrogen in the blood stream during the stimulation phase, which decreases the side effects associated with Lupron. Clomiphene citrate has often been associated with hot flashes and rarely with visual changes. The physician or nurse must be notified if visual changes occur. Although side effects can occur (see discussion of ovarian hyperstimulation, below,) most women tolerate these medications quite well. Antagon and Cetrotide have not been associated with significant side effects, although, on occasion, the medicine may fail to suppress the release of the egg(s) from the ovaries prior to the egg retrieval. Except for, ovarian hyperstimulation (which will be described below,) which can occasionally be caused by hCG (Ovitrelle) there are virtually no known side effects associated with injections of hCG, and most women tolerate this medication quite well.

Mild redness and bruising at the injection sites on the skin are common side effects of the subcutaneous and intramuscular injections. A small amount of bleeding at the time of the injection is also not uncommon. Although less common, the injection sites may become infected or you may experience an allergic reaction at the injection site. Contact the IVF nurses if you have questions or concerns.

Doxycycline should not be taken on the day of your egg retrieval until you have returned home, since you will not have eaten anything on the morning of your egg retrieval. It is also advisable to refrain from any extensive sun exposure for up to 2 weeks following your taking doxycycline, since this medication can cause the development of an extensive skin rash following exposure to the sun. You should be sure to eat prior to taking doxycycline, since it can upset an empty stomach.

There are no known side effects on a pregnancy associated with natural progesterone. This includes the progesterone in oil for injection, Crinone or Prometrium, in suppository form. The synthetic forms of progesterone, such as medroxyprogesterone acetate (Provera, Cycrin, Curretab) or norethindrone acetate (Norlutate, Aygestin) are not appropriate, and should be avoided, during your pregnancy. These forms of progesterone (such as those in the birth control pill or Provera) may be associated with adverse side effects when taken during a pregnancy. Although the natural progesterone that you will be taking following embryo transfer is not associated with side effects, it is important to know that this supplemental progesterone may give you symptoms of pregnancy (such as breast engorgement or bloating) even though you may not actually be pregnant. In addition, you may bleed during the time you are taking supplement progesterone even if you have a normal pregnancy. Accordingly, although you should feel free to call the IVF nurses with any questions or concerns you may have, you should continue to take your natural progesterone following embryo transfer until you receive the results of your pregnancy test.

In addition to the above, the use of the above medications can also cause side effects such as nausea, vomiting, hot flashes, headaches, mood swings and visual symptoms. Allergic reactions are also possible, but rare. You may take Tylenol or Extra Strength Tylenol as needed for pain control. Please avoid taking Advil or any other brand of Ibuprofen, however. Should you feel the need to take any other form of medication, please contact the IVF program prior to beginning other medications.

II. Risk Factors Associated with Monitoring

The primary monitoring tools utilized during the course of the IVF cycle are ultrasound examinations and blood testing. Ultrasound examinations are usually painless and generally considered to be safe. Blood drawing may be associated with mild discomfort and, occasionally, bruising, bleeding, infection or scar at the needle sites.

III. Risk Factor Associated with Egg Retrieval

Complications from the egg retrieval process occur at a rate of less than 1-2% and may include infection within the pelvis, bladder infection, injury to the intestines or other internal organs, or injury to blood vessels resulting in bleeding. Any of these complications, and others, could require hospitalization and, possible, additional medical or surgical treatments that could impair or prevent the chances of achieving pregnancy during this cycle or in the future, although this is rare. Also in extremely rare instances, it may be necessary to remove one or both ovaries, or to perform a hysterectomy, leaving you possibly unable to conceive a biological child and/or to carry a pregnancy. An antibiotic is administered prior to egg retrieval procedure to reduce the chance of an infection. A side effect of this medication could be an allergic reaction.

As part of the egg retrieval procedure, an anesthesiologist administers medications. You will have a consultation with the anesthesiologist before the procedure to review the risks and benefits of the anesthesia. **It is critical that you not eat or drink anything after midnight of the evening before your egg retrieval procedure.**

IV. Other Risk Factors associated with the IVF Process

Ovarian Hyperstimulation - After egg retrieval, your follicles can fill up with fluid and form cysts. This, in turn, can cause enlargement of your ovaries and, in some cases, lead to lower abdominal discomfort and bloating. These symptoms generally occur 5-10 days after the egg retrieval, and, if they occur, usually resolve within 1-2 weeks on their own. A pregnancy can make the symptoms of ovarian hyperstimulation worse. Approximately 1-2% of all patients who take fertility medications develop severe ovarian hyperstimulation. This condition is characterized by large ovarian cysts and fluid in the abdominal and, sometimes, chest cavities. Symptoms of severe ovarian hyperstimulation include abdominal distention and bloating along with weight gain, shortness of breath, nausea, vomiting and decreased urine output. Women with severe ovarian hyperstimulation may need to be admitted to the hospital for observation and treatment. Rare, but serious consequences of severe ovarian hyperstimulation include formation of blood clots that can lead to stroke, kidney damage and possibly death. Every woman who takes fertility medications can develop ovarian hyperstimulation, but the chance is higher in a woman with a high level of estrogen in her blood and a large number of ovarian follicles. For this reason, in cases when the estrogen level is significantly elevated, the cycle may be cancelled or the eggs will be retrieved and all embryos that result will be frozen to postpone achieving pregnancy until a time when it will not increase the risk of this condition.

Ovarian Torsion (Twisting) - In less than 1% of cases, a fluid filled cyst(s) in the ovary can cause the ovary to twist on itself. This can decrease the blood supply to the ovary and result in significant lower abdominal pain. Surgery may be required to untwist or possibly remove the ovary.

Ovarian Cancer- In the general population, any woman has a 1 in 70 chance of developing ovarian cancer during her lifetime. Studies have shown that infertile women have a higher chance of developing ovarian cancer than fertile women.

Psychological Risks- Undergoing treatment the IVF is psychologically stressful. Anxiety and disappointment may occur at any of the phases described above. A significant commitment of time and, at times, finances may be required. All couples are encouraged to meet a counselor before, during and after a treatment cycle.

V. Risk Factors Associated with Pregnancy

In general, the success rate (the delivery of a live born infant) following a cycle of IVF varies. Pregnancy following IVF treatment is dependent on many factors, some of which include: the age of the woman, the woman's clinical history and status, the number of previous cycles of treatment, the number and quality of the eggs retrieved in any given cycle, the quality of the semen sample, and the number and quality of embryos that are transferred. Despite repeated attempts of IVF treatment, there is the possibility that pregnancy will not occur.

There are many complex and sometimes unknown factors, which may prevent the establishment of pregnancy. Known factors which may prevent the establishment of pregnancy include, but are not limited to, the following:

1. The ovaries may not respond adequately to the medications.
2. Technical problems including inadequate visualization or the position of the ovaries may prevent retrieval of the eggs.
3. There may be failure to recover an egg because ovulation has occurred prior to the time of the egg retrieval.
4. Eggs may not be recovered for a variety of other reasons.

5. The eggs may not be normal (e.g. not of a quality sufficient to fertilize).
6. The male partner may be unable to produce a semen sample or the semen sample may be of insufficient quantity or quality.
7. Fertilization of the eggs and sperm to form embryos may not occur.
8. Cell division of the embryos may not occur.
9. The embryos may not develop normally (e.g. may not be of a quality sufficient to transfer into your uterus to try and achieve a pregnancy).
10. Embryo transfer into the uterus may be technically difficult or impossible.
11. If the transfer is performed, implantation (s) in your uterus may not result.
12. If the implantation occurs, the embryo(s) may not grow or develop normally.
13. Equipment failure, infection, technical problems, human error and/or unforeseen factors may result in loss or damage to the eggs, semen sample and/or embryos.

If pregnancy does result from the IVF process, there are still risk factors, which should be considered. An overview of some the more common risks are discussed below:

Miscarriage - The risk of miscarriage in the general population is 15-20%. The risk of miscarriage increases with the age of the woman. For women over 40 years of age, the risk may be as high as 40%. Studies have shown either no increase or a slight increase in the risk of miscarriage in women who conceive with IVF. Most miscarriages are associated with lower abdominal cramping and bleeding, but do not necessarily require treatment. If additional medical treatment is indicated, the medication Misoprostil may be used to assist in resolving an impending miscarriage. In some cases, however, complete removal of the pregnancy tissue must be accomplished by a surgical procedure called a dilatation and curettage (D&C). This procedure is usually performed under anesthesia in the operating room and involves placing a suction tube into the uterus to remove the pregnancy tissue.

Tubal (Ectopic) Pregnancy - Approximately 6-7% pregnancies that result from IVF treatment are located outside the uterine cavity. The majority of ectopic pregnancies are present in the fallopian tube. The chance of tubal pregnancy is greater in women with damaged tubes. If a woman has a tubal pregnancy, she may need surgical treatment, which, may involve the removal of the involved tube. Medical treatment with Methotrexate, **a one- time injectable medicine that may help resolve a tubal pregnancy and thus avoid surgery**, may be an option in selected cases.

Multiple Pregnancy - When more than one embryo is transferred, the possibility increases that you will have a multiple pregnancy. The chance of a multiple pregnancy increases with the number of embryos that are transferred. Approximately 65-70% of pregnancies following the transfer of multiple embryos result in the birth of only one baby, rate of twins is 30%, triplets <5%. The chance of a quadruplet pregnancy is <1%. All multiple pregnancies are associated with an increased risk of every complication of pregnancy including but not limited to miscarriage, toxemia, congenital anomalies, gestational diabetes in the mother and premature labor and birth. Premature birth is the single greatest cause of death or disability in newborn infants. In contrast to a single intrauterine pregnancy, a multiple pregnancy may cause increased emotional and financial hardship for a couple. If a multiple pregnancy develops, the couple may consider being referred to a specialist who can perform a procedure to reduce the number of developing embryos. This procedure is performed at three months of pregnancy. Although this procedure is successful 90-95% of the time, a miscarriage could result, with all embryos being lost.

Other Risks- Most infants who have been born following IVF are normal. The rate of congenital abnormalities (birth defects) in the general population is 2-3%/ Recent studies suggest the rate of congenital abnormalities in infants born following IVF may be increased by 1-2% over the general population. It is important to be aware that genetic abnormalities, structural abnormalities, mental retardation and other abnormalities may occur following either IVF or pregnancies that are conceived naturally.

MILD STIMULATION OF OVULATION INDUCTION FOR IVF AND ICSI

HISTORY

The world's first IVF live birth occurred in 1978 when Louise Brown was born. This was a pivotal scientific and clinical achievement by the late Patrick Steptoe and Professor Bob Edwards. It occurred from fertilization of an egg collected in a natural menstrual cycle before the follicle would have otherwise have ruptured. Prior to that, they had used FSH injections to promote the development of eggs but an ectopic pregnancy resulted and this made them abandon this approach.

At the same time Ian Craft was exploring the role of using clomiphene citrate tablets (Clomid), initially alone, and then given with FSH injections, believing as he did that it was not practical to run an IVF programme in the National health Service with a team on constant standby waiting to detect the LH surge which precedes ovulation by approximately 40 hours. His team achieved the world's first intra-uterine pregnancy resulting from drug induction but unfortunately the patient miscarried at weeks in Bristol. Persistence with this approach led to Britain's and Europe's first test tube twins (now 25) being born on the 29th April 1982.

However, because a percentage of patients ovulated before the intended egg recovery, with much disappointment to all, Ian Craft researched the use of a compound called an LHRH analogue to switch off the pituitary before starting FSH injections and this then became the standard method of induction of ovulation worldwide and it remains so in many countries.

However, whilst it had many advantages with multiple follicles being promoted and multiple eggs being collected there are also some many consequences if careful titration is not properly monitored.

We now believe these to include:

- A greater risk of developing ovarian hyperstimulation syndrome (OHSS) compared to a newer alternative milder strategy especially in:
 - a) Young women.
 - b) Women with multiple follicles in their ovaries seen on ultrasound scan.
 - c) Women with polycystic ovary condition (PCO).
 - d) When excessively high doses of FSH are given.
 - e) When HCG injections are given to support the luteal phase after embryo transfer
- An increase in the naturally occurring incidence of chromosome abnormalities of eggs
- Multiple embryo generation resulting in the need for freezing
- An unacceptable incidence of multiple pregnancy when too many embryos are transferred

CONCEPT OF MILD STIMULATION

The introduction of an alternative compound to inhibit ovulation, i.e an LH antagonist which is given by subcutaneous daily injections allows a woman to use her normal menstrual cycle without switching off the pituitary gland usually a week before a period starts.

Then low-dose FSH stimulation is given to augment the FSH that the body produces raising the threshold so that a reasonable (but not excessive) cohort of eggs are produced- may be just 2 to 6 and not in excess of 10 commonly occurs with the former strategy.

In any cohort of eggs there is either no potential child or just one, less frequently, two or three etc. It is possible that although embryos are generated none may make a child in one particular cycle, but do so in another. It is of interest to be aware that in women aged 30 approximately 40% of cycles are associated with chromosomal abnormal eggs.

Mild stimulation can be achieved by using FSH injections on an alternate day, or daily basis either alone or in conjunction with a course of tablets (e.g. Clomid or Letrozole) which boosts the pituitary production of the patients own FSH.

The benefits of this approach are:

- it is more akin to nature with egg collection occurring about day 14 in a menstrual cycle that nature initiated and not significantly later as commonly occurred with the former protocol
- a marked reduction in incidence of OHSS
- a lower cost
- a more 'patient friendly' protocol
- a success rate that it is not significantly differently from the former protocol
- a lower prospect of chromosome abnormalities of the eggs and hence embryos

"PATIENT FRIENDLY" DRUG PROTOCOL AND CYCLE MANAGEMENT

The monitoring of your response to the raised level of FSH in your body is achieved in two ways:

a) By vaginal ultrasound scanning performed at intervals as your follicles grow.

b) By undertaking blood estradiol hormone measurement, if necessary (with mild stimulation the latter has less importance than with the earlier more aggressive protocols).

A moderate elevation of your own FSH is achieved with mild stimulation using a relatively low dose of FSH, i.e. 150IU per day and, or the use of tablets, or in combination.

Our protocol consists of you receiving:

- a. Letrozole 2.5 mg tabs x 2 from day 2 to day 6 of the cycle and gonadotropin inj. units daily in one of two protocols. The dosage of the gonadotropin will be changed accordingly to the doctor's indications.
- b. Organlutran or Cetrotide (the LH antagonist) 0.25 mgs subcutaneous daily starting from day 6 of your cycle

When the follicles are mature, with the leading follicle reaching approximately 17mm in diameter, you will receive 5000IU of HCG to mature the follicles and egg collection will be planned 34 to 36 hours later.

ULTRASOUND SCAN REQUIREMENTS

An ultrasound scan will be performed on day 2 prior to your starting any medication along with a requested pre-treatment blood sample for later review and further scans will be planned for days 7,9,11 etc.

We will request a repeat blood sample on the day the HCG is due to be administered and immediately before egg collection along with a sample of follicular fluid.

IVF/ICSI

Egg collection will be performed by our Centre's experienced staff and our qualified anesthesiologist will give you intravenous sedation to ensure that you have minimal discomfort.

Your partner will have produced a fresh semen sample for preparation or have a frozen sample available for fertilization.

EMBRYO TRANSFER

We will select the most mature and regular embryo which is dividing on the right time frame and transfer it under ultrasound scan control, i.e. will perform a single embryo transfer (SET) to minimize your multiple pregnancy risk but maximize your chance of having a viable baby. This will be performed on day 3, i.e. 72 hour after egg collection. Any embryos considered good enough quality too freeze by our lab team will be frozen for your potential future use.

PREGNANCY TEST

You will have a Beta HCG i.e. pregnancy test on day 12 from egg collection.

If the test is positive, we will recommend that you continue taking Cyclogest pessaries for a further 8 weeks, at which time these can be discontinued. We will recommend that you have a nuchal thickness scan at 12 weeks to assess fetal normality.

If the test is unfortunately negative, but you have frozen embryos, these will be required to use within 6 months of the IVF AND ICSI cycle. They will then all be thawed and the most favorable (one) or (two) embryos will be transferred depending on the guidelines yet to be decreed by the HFEA.

If the test is positive and your pregnancy advances beyond six months and there are frozen embryos, you, or your PCT, will be requested to pay our center's usual annual storage charge. Similarly, if you wish to utilize these in order to try and have a second child, London Fertility Centre can process treatment in a natural menstrual cycle at our standard charge costs.