

In Vitro Fertilization – A Patient’s Guide

South Jersey Fertility Center has been providing In Vitro Fertilization (IVF) services since 1989 in our outpatient facility in Marlton, New Jersey. For your convenience, we also have an office at the Jersey shore and one office in Gloucester County.

Marlton is a New Jersey suburb of Philadelphia and is conveniently located near the New Jersey Turnpike, Atlantic City Expressway and Interstate 295. We have daily office hours including evenings and Saturday mornings. The hours are Monday through Thursday 7:15 a.m. to 8 p.m., Friday 7:15 a.m. to 4 p.m., and Saturday 7:15 a.m. to 11 a.m. We are available every day including Sundays and Holidays for Egg Retrievals and Embryo Transfers.

Our Shore office is located in Egg Harbor Twp., New Jersey which is 20 minutes south of Atlantic City and 1 hour from Marlton. The Egg Harbor Twp. office hours are 8 a.m. – 4 p.m. Monday, Thursday and Friday and 8 a.m. to 1p.m. Tuesday and Wednesday. Our Gloucester County office is in Sewell near Kennedy Hospital – Washington Twp. We have patient hours there Monday through Friday. Afternoon and early evening appointments are available. The Egg Retrieval and Embryo Transfer portions of the IVF process are performed in our IVF Center in Marlton. However, you can consult with one of our doctors at any of our locations to discuss your treatment and to monitor your ovarian stimulation with ultrasounds and blood tests.

Some medical insurance policies cover the cost of IVF. If not, the cost for a single IVF cycle is \$6811. This price does not include extra procedures that are sometimes chosen by patients, such as ICSI and cryopreservation of embryos. The fertility medications may or may not be covered by your prescription plan. Without coverage your expenses for these injections will run between \$3500 and \$6,000. The screening tests performed prior to the start of the IVF cycle are billed to your insurance company; however, if they are not covered by your insurance company, you will be responsible for these costs.

South Jersey Fertility Center is a provider for most insurance companies, including: Aetna, Horizon Blue Cross/Shield of NJ, Atlanticare, Amerihealth, Cigna, United Healthcare, GHI, Pennsylvania Blue Cross/Shield, Keystone, Local 54, NJ Direct 10/15, United Healthcare/Oxford, PHCS, Qualcare, TPA, Tricare, in additional to other plans.

For more information, please feel free to call us or visit our website, www.sjfert.com.

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I.

About Us

History

The first “test tube baby” recently turned 30 years of age. Since that first In-Vitro Fertilization success, over one million healthy pregnancies have been conceived by means of this procedure. We at **South Jersey Fertility Center (SJFC)** have been active since 1989 in refining these techniques to yield higher chances for successful conceptions. We strive to offer the best individual care to you in a comfortable, supportive environment. All four of our physicians are board-certified in Reproductive Endocrinology & Infertility.

Our Staff

IVF Nurse Coordinators

Barbara Alice, APN-C, MSN
Tracy Krause, APN-C, MSN
Rachael Ieropoli, RN
Cat Imbesi, RN

Physicians

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IVF Laboratory

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Tracy Hunter
Laura Wagner
Tammy Selwood
Karlene Davis
Lori Sapp

Business Staff

Carol L. McDade, Practice Manager
Sandy Rack, Financial Counselor

Billing Staff

Lorinda Bolton

Throughout your treatment your contact person for questions will be the IVF Nurse Coordinators. Barbara, Tracy, Rachael and Cat are available during office hours from 8 AM to 4 PM, Monday through Friday. After hours and on weekends they can be reached by beeper through our answering service by asking for the “IVF Coordinator on-call.” Please try to limit non-urgent questions to normal business hours.

II. Assisted Reproductive Techniques (ART) – General Information

ART includes various methods of aiding human reproduction through techniques that involve removing a woman's eggs from her ovaries. By far the most common of these procedures is IVF.

A. In-Vitro Fertilization & Embryo Transfer (IVF)

IVF is a process by which one or more eggs (oocytes) are removed from the ovaries by a non-surgical needle aspiration through the vagina and then fertilized outside the body. If the male partner has a very low sperm count, then fertilization is achieved by injecting a single sperm into each egg in a process called Intra-Cytoplasmic Sperm Injection (ICSI). If the sperm count is normal, then the usual procedure is to place a droplet of washed sperm (50,000 - 100,000) onto each egg. Successfully fertilized eggs are called embryos. A select number of embryos are placed into the uterus for implantation and establishment of pregnancy. This process bypasses the fallopian tubes. It is ideal to have at least several mature eggs to start this process. The ovaries are stimulated to make more than the usual single mature egg. This is accomplished through the use of daily injectable fertility medications. This requires close monitoring of the follicle growth through blood tests and pelvic ultrasounds.

Indications for IVF:

1. Absence or blockage of the fallopian tubes (including prior tubal ligation)
2. Functionally damaged tubes
3. Insufficient sperm
4. Long standing infertility despite other therapy
5. Endometriosis
6. Unexplained infertility

The IVF cycle steps:

1. Ovarian stimulation
2. Retrieval of eggs while patient is sedated
3. Fertilization of eggs
4. Transfer of a select number of embryos into the uterus
5. Option of freezing any extra embryos that are of good quality

B. Assisted Fertilization and Hatching

Intra-Cytoplasmic Sperm Injection (ICSI)

In cases of suboptimal sperm counts or poor sperm motility, Intra-cytoplasmic Sperm Injection (ICSI) is used to increase the chance of successful fertilization. The procedure consists of injecting a single sperm directly into the egg. Manipulation of the eggs requires special equipment specifically designed to perform this very intricate procedure.

Even under normal circumstances, approximately 25% of eggs fail to fertilize despite the presence of sperm. Also, even in a natural setting, some fertilized eggs will develop a third pronucleus before the egg begins dividing into two cells. Such eggs are called polypronuclear, and they are abnormal. In the IVF lab, if we see a polypronuclear embryo we will not transfer it to the uterus. Although rare, some of the eggs may be damaged during the sperm injection process. Damaged eggs do not fertilize. We cannot be certain at this time that manipulation of the eggs will not increase the risk of obstetrical complications or fetal abnormalities. However, hundreds of thousands of normal babies have been conceived by the ICSI technique since its introduction in 1992. A survey of births conceived through ICSI revealed a 3-fold increase in sex chromosome aneuploidy, that is an abnormal number of X or Y chromosomes which can result in some birth defects. The rate of such aneuploidy is still quite low, yet with ICSI it is 0.6% compared to the usual rate of 0.2%. The higher risk for sex chromosome aneuploidy is thought to be due to abnormalities in the sperm. Often men with extremely low sperm counts (less than one million motile sperm) have small deletions in the Y chromosome, the chromosome responsible for sperm production. These deletions can cause abnormal sorting of the X and Y chromosome during sperm production. Without the use of ICSI, these men would be unable to reproduce.

Sometimes ICSI is recommended for men whose sperm count is only minimally decreased. ICSI may be recommended when there are not many eggs available (fewer than 5 mature eggs). ICSI offers more chance of fertilization in these cases. At times ICSI may be recommended in cases of long-standing "unexplained" infertility to overcome any potential unrecognized sperm problem, especially when the infertile couple has never shared any pregnancy.

Assisted Hatching

Assisted Hatching is intended to assist the embryo in breaking out of its “shell” in order to attach to the uterine lining. This procedure is performed just prior to transferring the embryos to the uterus by creating a small opening in the zona pellucida (shell) with the aid of laser. The risk of damaging the embryo from the Assisted Hatching procedure is rare. We usually perform Assisted Hatching on all embryos being transferred to the uterus with the exception of embryos at the blastocyst stage.

C. Number of Embryos to Transfer

Increasing the number of embryos transferred into the uterus increases the chance for a resulting pregnancy up to a point; however, the more embryos returned to the uterus, the higher the risk of a multiple gestation. Our team of doctors, nurses, and embryologists will help you determine the best number of embryos to transfer in your individual situation. Our goal is to optimize the pregnancy rate while reducing the risk of high-order multiple gestation. The decision is often a balance between your willingness to risk a multiple gestation and your openness to the possibility of choosing a fetal reduction procedure in the event that there are triplets or more. Other important factors are your age, the reason for your infertility and the quality and stage of the embryos to transfer. Younger patients under 35 typically have only 2 fresh embryos transferred if the embryos are of at least average quality. We typically recommend that one additional embryo be transferred when frozen embryos are being used. Women under the age of 35 with good quality embryos are encouraged to transfer only one embryo to the uterus in order to avoid twins, especially if she is willing to freeze the extra embryos (see bottom of page “Embryo Cryopreservation”). The chance for pregnancy is reduced only a small amount in that group of women who transfer only one instead of two embryos. There is about a 1% chance of “identical twinning” occurring in each IVF cycle. This is when an embryo divides after arriving in the uterus.

Blastocyst Transfer

By the 5th or 6th days of culture, healthy embryos usually reach the blastocyst stage. They contain more than 50 cells and have a fluid cavity in their center. When an embryo reaches this stage it has proven itself to be quite viable. In 1999, we began extending the embryo culture in order to transfer embryos at the blastocyst stage. By transferring blastocysts, we are able to maintain high pregnancy rates while lowering high order multiple rate of pregnancy by limiting the number of embryos we transfer to two. The embryo quality and stage of development of the embryos on the third day of growth will dictate which day the embryo transfer will be. We recommend transferring embryo(s) to the uterus on the 3rd or 4th day of culture (before they reach the blastocyst stage) if there are not that many high quality embryos from which to choose.

D. Embryo Cryopreservation (Freezing)

You may find that you have “extra” good quality embryos beyond those needed for transfer into your uterus at one time. These can be preserved for another pregnancy attempt in your future, thus saving you from having to undergo the entire ovarian stimulation and egg retrieval process all over again. Cryopreservation of embryos is performed on the fifth and sixth day of culture, thus it is done before you know if you have become pregnant from the fresh cycle. We only freeze embryos that are of adequate quality, as judged by our embryologists. Generally embryos are frozen only if 2 or more are adequate. No more than 2 embryos are frozen in a single vial. Multiple vials can be used. When you want to conceive with the frozen embryos, we can thaw them 2 at a time until the number you want to you want to transfer to your uterus is reached. A “frozen embryo cycle” is performed in either a programmed cycle (which includes administration of Lupron shots, Estrogen pills and patches, and vaginal progesterone gel) or a natural cycle following monitored ovulation. A “frozen” cycle is safer and easier for you than is a “fresh” IVF cycle. However, the success rate is generally only two-thirds as good as the success of a “fresh” cycle. Still, the “frozen” success rate is much higher than if you had no embryos left; and thus, had to conceive on your own. The embryos are usually thawed the same day as the transfer to your uterus. Typically 75% of the embryos survive the thawing process. Studies have found no increase in malformation of babies born from this procedure. Often health insurance does not cover the cost of freezing or storing your embryos. Your embryos are stored in small vials submerged in liquid nitrogen. You need not worry about an electrical power outage impacting on your embryos since the tanks do not require electricity. The embryos can be stored for an indefinite period of time. We have had a pregnancy arise from embryos frozen for as long as 11 years. In the long run, embryo cryopreservation improves the likelihood of eventual conception at a decreased cost.

If at some point in the future you decide that you no longer have a need for these cryopreserved embryos, you should contact us. One option is to have us thaw the embryos, in which case they naturally disintegrate as they would have done had they not been frozen. Another choice some couples make is to donate the embryos to another infertile couple – either known to them or anonymously.

E. Risks of IVF

The two most common “side effects” of IVF are abdominal discomfort and multiple gestations.

Ovarian Hyperstimulation Syndrome

During the process of ovulation induction, we are stimulating the ovaries to produce more than the usual number of mature eggs. The egg grows inside of a fluid-filled sac called a follicle which measures almost an inch in diameter when fully ripe. The consequent increased size of the ovaries produces symptoms such as abdominal bloating and pain. Usually the symptoms are mild and can be managed with rest to avoid jarring the delicate ovaries (no exercise, no intercourse). Symptoms such as shortness of breath, nausea and severe abdominal fullness can sometimes develop 4-14 days after the egg retrieval. This is termed "Ovarian Hyperstimulation Syndrome". In this syndrome the ovaries leak fluid into the abdomen. About 1% of patients require removal of this fluid by a thin needle in a procedure done in our office which is similar to the egg retrieval process. Sometimes the procedure needs to be repeated a few days later if more fluid re-accumulates. The syndrome always resolves on its own within 3 – 5 weeks. It tends to worsen for awhile when the pregnancy test is positive. On rare occasions fluid can accumulate in the chest which could require drainage of the fluid during a hospital stay. Hospitalization is sometimes required if the nausea is so bad that you cannot drink fluids. You should drink plenty of fluids to stay well hydrated. The way we try to lessen the risk of this syndrome is to monitor the ovarian response to the injectable medications closely. Lower doses are less likely to cause the syndrome.

Ovarian Torsion

On very rare occasions an ovary can get so large that it can twist on its stalk. This causes abrupt onset of severe pain on one side or the other of your pelvis. If you experience such pain, please contact our office. Often a surgical laparoscopy is necessary to untwist the ovary.

Internal Bleeding

This is extremely rare. If a blood vessel should be punctured near your ovary you might need a surgical or radiological procedure to stop the bleeding. In this event you might also need a blood transfusion.

Pelvic Infection

This is also a very rare complication. If you should develop pelvic pain and fever 1-3 days after either the egg retrieval or embryo transfer, you should contact our office. Additional antibiotics might be necessary.

Anesthesia Risks

Intravenous anesthesia medications will be given by an anesthetist to cause sedation to the point where you should not feel pain during the egg retrieval procedure. Most patients do not even have a memory of the procedure because of the anesthesia given. There are risks of anesthesia including nausea. More serious complications are extremely rare and can be discussed with your anesthetist.

F. Multiple Births

There is an increased risk of multiple gestation for women undergoing IVF because often more than one embryo is transferred into the uterus in order to optimize the chance of pregnancy. At our center the chance for twins is as high as 40%. If more than two embryos are placed in the uterus, the risk for triplets can approach 15%. Quadruplets have occurred rarely (about 1 in 200).

Multiple gestations (esp. triplets and beyond) have a much higher chance for pre-term labor and pre-term delivery which can result in handicaps or even death of the newborns. The mother is also at increased health risk from pregnancy related conditions such as gestational diabetes and high blood pressure (pre-eclampsia). Even twin pregnancies carry higher risks than does a single for pregnancy. Therefore, our goal is to minimize the incidence of multiple gestations. Toward that goal, we encourage patient who have a favorable prognosis for pregnancy (age <35 and very good quality embryos) to transfer only one embryo to the uterus, especially if they are willing to freeze the remaining embryos.

Selective Fetal Reduction

In an effort to lower the chance for the above mentioned poor outcomes for the mother or newborns, patients carrying triplets or more are encouraged to consult with a High-Risk Obstetrician (Perinatologist). They can discuss the option of selecting only two fetuses to continue growing in the uterus. Selective Fetal Reduction is performed like an amniocentesis at 9-13 weeks gestation. This is obviously a difficult decision to make. The procedure is not without risks as 5% of reductions will lead to loss of the entire pregnancy. No decision needs to be made in advance of you becoming pregnant, but we recommend that you explore your feelings regarding this matter as it sometimes influences the number of embryos which are transferred to your uterus.

G. Emotional Aspects of IVF

We are aware of the intense emotions involved when a couple is battling infertility and its treatment. You and your partner may have been through years of treatment and disappointment. Men and women handle feelings differently, so it becomes overwhelmingly important to have good communication and understanding of what your treatment involves. You may experience anger, guilt, fear, shame, sadness and/or loss at different times. The stress of the IVF cycle is not to be underestimated.

Realizing this, we can refer you for counseling services should you desire to pursue this option. Various providers may accept your insurance and we strongly advise you to consider this option for support. Please contact us for more information on care providers.

Also, there are a variety of excellent printed resources available to you and we would urge you to read as much as possible in advance of your cycle. A list of publications and support groups is available at the back of this guide for your review.

It is important for you to contemplate beforehand how you might react to the results of your pregnancy test. What are your feelings? How would you cope? Do you have support from family, friends, and community? Are you financially ready? Are you emotionally ready? What are your feelings about Selective Fetal Reduction? What would you do if you conceived with triplets or quadruplets?

H. Birth Defects

Is IVF associated with a higher risk of birth defects? The answer is not completely clear at this time. One million babies have been born through IVF worldwide. IVF accounts for almost 1% of all the births in this country each year. Over 100,000 IVF cycles are performed each year in the U.S.

There has been much publicity concerning a report out of Australia in 2002 that studied the rates of birth defects in the babies conceived through IVF at two fertility clinics there. They found an 8% rate of birth defects compared to a 4% rate of defects in couples without fertility problems. Most of the birth defects were minor. This finding is at odds with other larger studies conducted in the Netherlands and in Hungary. In the U.S. the outcomes of pregnancies conceived by IVF are registered and analyzed by the Society of Assisted Reproductive Technology (SART). SART has declared that IVF is not thought to result in birth defects at a higher rate than natural conception. SART reported a rate of birth defects of 1.9% for the 134,000 children delivered between 1996 and 2000. This rate is similar to the incidence of major abnormalities reported in our general population. Concerns about ICSI for cases of severely low sperm counts have been published and this is addressed in this Guide in the section on Assisted Fertilization (page 5).

Another study from Australia reported in 2002 that IVF infants were twice as likely as the general population to be underweight at birth even if they excluded those born early and those that were multiple gestations (twins or triplets). The reason for this finding is not clear. It could be that infertile couples have a higher chance for low birth-weight babies regardless of how they conceive. Even so, the chance of an IVF baby having a NORMAL birth weight, according to the Australian study, is 94%. Interestingly, when twins conceived by IVF were compared to twins in the general population, their outcome and birth weights were no different.

A single report has found a 6-fold increase incidence of a rare genetic defect known as Beckwith-Wiedemann Syndrome in IVF babies. This syndrome is characterized by an obvious enlarged tongue and mental retardation. Beckwith-Wiedemann Syndrome occurs in 1 out of 15,000 births in the general population. Even if the 6-fold increase risk of this syndrome is confirmed by a larger study, it would still translate to an incidence of only 1 in 2,500 IVF births.

III. Preparation for the IVF Cycle

A. Preparation

1. Consultation

During the initial consultation, you will meet with one of our physicians at South Jersey Fertility Center. A medical history is obtained and we will review your medical records. We encourage your partner to attend this consultation with you. The consultation allows you both to ask questions while you learn about the different steps in IVF. We will discuss options suitable for you, to give you the best chance of becoming pregnant.

Information regarding costs will be discussed, and we will record your insurance information. Our financial counselor will send to you within two weeks the status of your insurance coverage and the extent to which you will be financially responsible.

A second consultation will be scheduled with the IVF Nurse Coordinator to discuss the treatment steps in more detail. This is done as a general informational group session with 3-5 couples at once. These one hour sessions are held on a frequent basis at the Marlton, Egg Harbor Twp, and Sewell offices. The fee for the consultation is \$50. We accept insurance coverage for the visit or copay along with appropriate referral if applicable. This is the time when your questions can be addressed, so it is helpful to be prepared in advance.

You should be aware that there are some general health matters which you can control that may improve your chances for success through IVF. Smoking more than 10 cigarettes a day cuts the chances for pregnancy by 50%. So try to decrease or eliminate cigarettes. If you think you need help to quit, let our staff know. Women who are obese also have a diminished chance for successful conception through IVF and they have more risks during pregnancy of getting diabetes, hypertension, and needing a Cesarean section. Obesity is defined as weighing over 180 lbs. for a woman standing 5 ft. 5 inches. The weight marker goes up or down by about 5 lbs. for every inch difference. Weighing over 280 lbs. is extreme obesity and this weight precludes the safe use of IVF.

2. Insurance: Payment and Referrals

You must contact the financial counselor in our billing office prior to the screening tests. The billing office will contact your insurance company to see if they will cover all or part of the IVF cycle. If your insurance company does not cover the cycle, you will be sent an itemized list of the procedures and fees. Full payment is to be made when the injections start.

For patients who have insurance that will cover the IVF cycle, you must obtain all appropriate referrals necessary for the treatment cycle. You will be advised by the billing office to this effect. It is your responsibility to have the referrals at the time of your visit or we will not be able to see you. In addition, you will be responsible for a copay (where applicable) for every visit.

3. Consent Forms

The signed IVF consent form must be returned to our office at the time of your FIRST visit during the treatment cycle (usually day 20 or day 2-4 of your cycle).

The embryo cryopreservation (freezing) consent form should be returned to us at the start of stimulation if you would like to freeze any extra embryos. Any payment for this is made at the start of the stimulation. If you end up not having any embryos to freeze, then your payment will be returned to you.

4. Medications

They should be purchased prior to the start of the IVF cycle. It is important to order your medications in advance, as some pharmacies may not have them on the shelf. If your insurance doesn't cover your medicines, please shop around as pricing varies greatly. See the list of pharmacies in this guide. It is your responsibility to check your insurance coverage for medications. Some prescription plans require precertification before you can obtain the medications. If this is the case, you must contact the office prior to picking up the medications. It may take several days before the insurance companies will authorize the medications. Bring the injectable medications with you on your first visit when we instruct you on their use.

5. Start of Cycle

Our policy is to allow each couple to undergo a treatment cycle at their convenience. However, twice a year the embryology lab is closed during the scheduled equipment re-calibration. Also, there may

be a time when your treatment will be placed on a waiting list. We try to avoid this, but you must understand that at times this is necessary during high volume periods.

If pregnancy does not occur and you would like to undergo another treatment cycle, you should contact our office to speak to the Nurse Coordinator regarding any changes in your treatment plan. All of the information from your previous treatment cycle is reviewed and discussed with the medical team at South Jersey Fertility Center within two weeks of the completion of your treatment cycle.

B. Screening Tests

It takes about two months from the time of the initial consultation to the start of the IVF cycle to perform all of the screening tests. Screening tests should be current (within 12 months of the IVF cycle). All screening tests **MUST** also be completed before beginning a treatment cycle. The following are the screening tests required:

1. Semen Analysis

We require that a semen analysis be performed in our laboratory prior to starting the IVF cycle. This will help our embryologist prepare your sperm properly the day of the egg retrieval. Our Andrologist/Embryologist will look closely at the sperm motility to determine if the ICSI procedure will be recommended in order to insure adequate fertilization. An appointment must be scheduled in advance. Please remember that 2 to 5 days of abstinence is recommended. The fee for this evaluation is \$100 if it is not covered by insurance.

If you think that you might have difficulty collecting the semen specimen on the day of the egg retrieval or if you might be out-of-town, we recommend that you freeze a sperm sample as a back up. The cost for freezing a sperm sample is \$350, including storage for 6 months. This can be done at the same time as the semen analysis, but the freezing is only done at the Marlton office. You must tell us in advance that you wish to have the specimen frozen.

2. Pelvic Evaluation

Uterine Measurement (Trial Transfer)

Performed during the pelvic exam, this test determines the depth and curvature of your uterus so that when the eventual embryo transfer takes place, we know to place the embryos to the correct depth. This does not usually hurt but you may experience some slight cramping.

Cervical Cultures

Gonorrhea and Chlamydia cultures are obtained in a fashion that is similar to having a pap smear done. The presence of these infections, if left untreated, may result in complications during the IVF cycle.

Pelvic Ultrasound

The ovaries are imaged by soundwaves to document the absence of abnormal cysts.

3. Hysterosalpingogram (HSG) or Hysteroscopy or Sonohysterography

Any of these three tests are sufficient to be sure that there are no significant abnormalities inside the uterus, such as polyps, fibroids, or scar tissue which could cause you to have a miscarriage if not surgically corrected. Premedication with three Advil tablets should be taken approx. 1 hr. before any of these tests. This reduces potential menstrual-type cramping. Often the Sonohysterogram is performed at the same time as the cervical cultures in the first half of your menstrual cycle. It consists of inserting a small catheter through the cervix and instilling saline solution while visualizing the uterus with a vaginal sonogram.

4. Day 3 FSH and Estradiol Blood Test

These hormone levels tell us your ovarian reserve. The chance of becoming pregnant is better when the FSH is less than 10 and the Estradiol level is less than 60 pg/ml. The dose of your ovarian stimulation medications may be determined by these values. The test is drawn on the 2nd, 3rd, or 4th day of your menstrual cycle. The first day that full flow begins is defined as the 1st day of your cycle.

5. Infectious Disease Screening - Blood

Blood testing for HIV, Hepatitis B & C, and syphilis for both the patient and her partner is required. Additionally Rubella (German Measles) and Varicella (Chicken Pox) testing will be done, since exposure during pregnancy can cause birth defects. If you are not immune to Rubella or Varicella, you will be given the option to proceed with IVF or to postpone treatment for 1-3 months so that you can be vaccinated. Testing for HIV is required so proper counseling can be initiated prior to pregnancy, since the risk of transmission to the fetus/newborn is greatly lowered with the use of anti-retroviral medications during pregnancy. The blood tests may be drawn at a laboratory or through your primary care physician's office.

6. Antibiotic Therapy

You and your partner are required to take a course of antibiotics (usually Zithromax) before you start the ovarian stimulation. This minimizes the chance of the persistence of an underlying infection not detected by cervical cultures.

7. Up-to-Date Pap Test

We strongly recommend that you have a current (within 1 year) pap smear from your gynecologist or family practitioner. If you are 40 years of age or older you should have a mammogram. Please notify us of any problems.

8. Vitamins

You should be taking a prenatal vitamin or folic acid every day, as should all women attempting to conceive, in order to decrease the chance for some birth defects such as spina bifida.

C. Ovarian Stimulation Protocols

The purpose of ovarian stimulation is to yield multiple, healthy, fertilizable eggs. At South Jersey Fertility Center, ovarian stimulation is individualized to meet the patient's needs based upon a number of factors including age, prior IVF attempts, cycle day 3 levels of FSH, and the number of small ovarian follicles seen sonographically at the start of stimulation. We do not have a "universal" protocol for all patients, but rather we individualize the protocol and the dosage of medications based on the individual patient. The hMG/FSH stimulating injectable medicine is usually required daily for 7-14 days. Frequent monitoring visits will be required while you are taking these injections (about 5 visits in all). All totaled, you will go through 3-5 weeks of daily shots.

All visits for monitoring the ovarian stimulation with ultrasound and blood test are between 7:15 a.m. and 8:30 a.m. in the Marlton and Sewell offices, 7:30 - 9 a.m. in the Egg Harbor Twp. office. The most common protocol is the "Birth Control Pill / Lupron Overlap" Protocol. Birth control pills are begun cycle day 2-5. After approximately 2 weeks of pills, lupron shots are then added. The last pill is taken usually about 7 days after the lupron starts. A few days after the pills are stopped a period usually arrives. Stimulation of the ovaries in the form of FSH/hMG shots commences about 4 days after the last birth control pill. (See fig. 1) A variant of this protocol is to avoid the birth control pills. In this "Luteal Lupron" protocol, Lupron is started approx. on day 20 of the previous cycle. It will take about 10-14 days for menses to start and stimulation can then be started. (See fig. 2) Other protocols may be used for patients who are "low responders". These include the "Antagonist" protocol (fig. 3) or the "Micro-flare" protocol (fig. 4). In these protocols, birth control pills are often utilized for 2-3 weeks prior to starting FSH/hMG shots.

Once you begin your treatment cycle, it is advisable to avoid medications, including over the counter medications such as adult-strength aspirin and Motrin as well as alcohol, caffeine, cigarettes, and marijuana. You may take Tylenol if needed for pain relief or fever. If another doctor prescribes a medication for you or your partner, please let us know. If you want to take an herbal supplement, please ask our approval first.

Ejaculation should occur not less than 2 days nor more than 7 days prior to the IVF retrieval so as to optimize the semen parameters. During your stimulation cycle, you may have sexual relations but we recommend condom use to avoid the possibility of an ectopic pregnancy which could result from a stray egg. Please check with our office staff should any questions arise.

Once treatment begins, it is imperative that you are available for office visits as required.

1. "Birth Control Pills/Luteal Lupron" Protocol: (See fig. 1)

This protocol is commonly used for people with irregular periods, polycystic ovaries or for the purpose of scheduling cycle starts more precisely. You will begin birth control pills with the onset of your menses. Your IVF coordinator will instruct you as to when to start Lupron so that it will overlap with your birth control pills for one week. You will need to have an ultrasound prior to starting Lupron to make sure there are no large cysts on the ovaries. You will take 10 units unless, otherwise specified, of the Lupron *daily* each morning. You will be instructed when you are to drop the dose of Lupron to 5 units daily which is usually 2 days prior to stimulation start. You will continue to take this dose until instructed to stop just prior to the egg retrieval. You will be seen in the office for bloodwork and ultrasound prior to starting stimulation shots. This is usually on a Friday.

2. "Luteal Lupron" Protocol: (See fig. 2)

This is the same as the above protocol with the exception that no birth control pills are used. Instead, you will begin the Lupron about day 20 of your cycle. You will be told what day to come in for the start of the stimulating shots (usually a Friday). If no menses occurs within 2 weeks, please call the Nurse Coordinator for instructions. ***You must use protection in order to avoid potential for pregnancy in the cycle when you are to start Lupron on day 20, unless your tubes are tied or absent. Conceiving while using Lupron would dramatically increase your chance for miscarriage.***

3. “Antagonist” Protocol: (See fig. 3)

This protocol does not use Lupron. Instead, it uses an “antagonist,” such as Ganirelix or Cetrotide, which is started AFTER the hMG/FSH injections have begun. You will begin birth control pills with the onset of your menses. The last birth control pill is usually taken on a Monday. Then the hMG/FSH injections usually start on that Friday (4 days later). Four to five days after you’ve started the hMG/FSH injections you should bring the antagonist medicine in with you for your sonogram visit. We will teach you how to administer this simple shot when it is necessary for you to start it. It is typically started when a follicle reaches about 13 mm size. You do NOT continue the antagonist shots after you do your Ovidrel shot.

4. Estrace Antagonist Protocol: (See Fig. 4)

This protocol is commonly used for patients who have a history of low response or have had tests indicating a potential for low response. You will not be using birth control pills for this protocol. You must use protection to avoid pregnancy. You will have blood work and an ultrasound on cycle day 20 or 21. Then you will begin taking Estrace tablets twice a day. You will need to call us on cycle day 1 while taking Estrace to schedule a baseline ultrasound and blood work on cycle day 2 or 3. Then you will be instructed to start stimulation injections. Estrace tablets continue through the first three days of stimulation only.

Figure 1
Birth Control Pills/Lupron Overlap Protocol

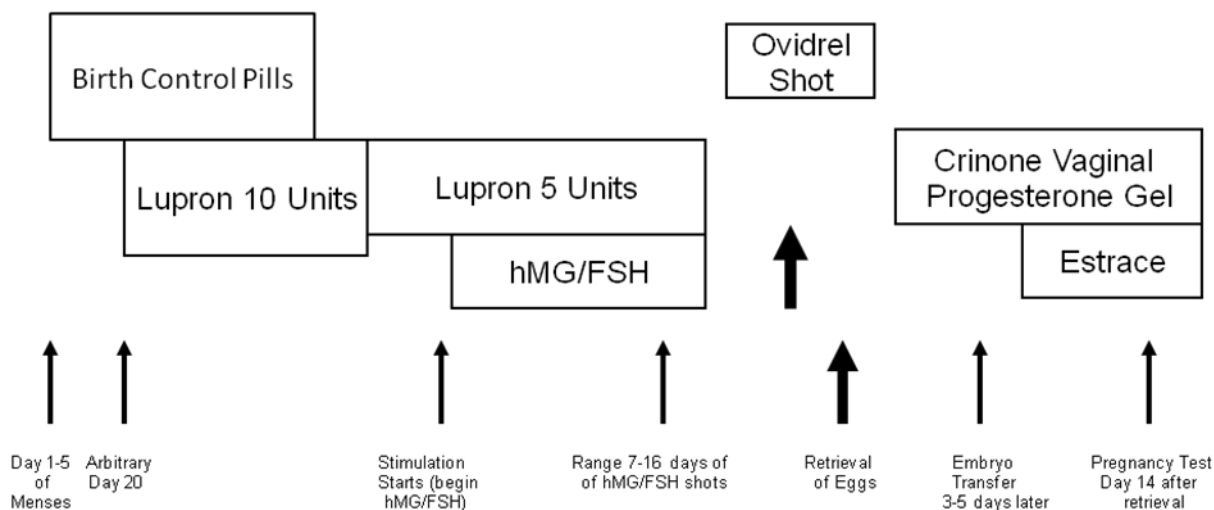


Figure 2
Luteal Lupron Protocol

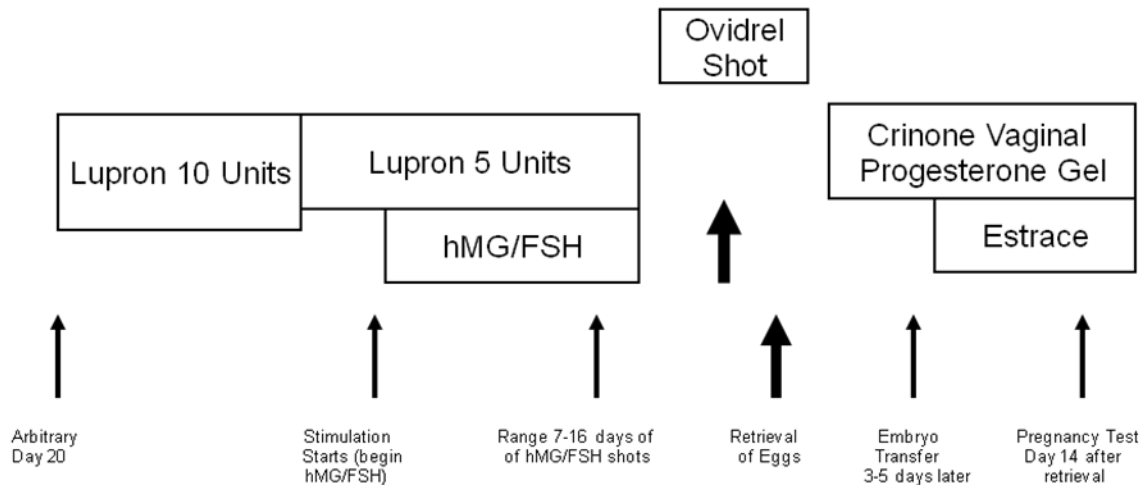


Figure 3
Antagonist Protocol

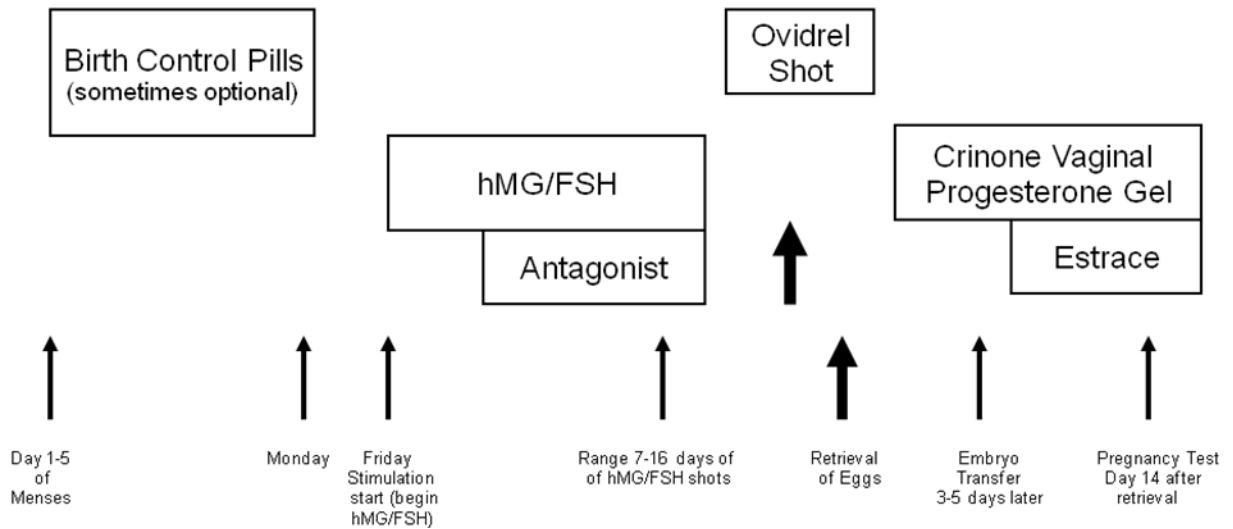
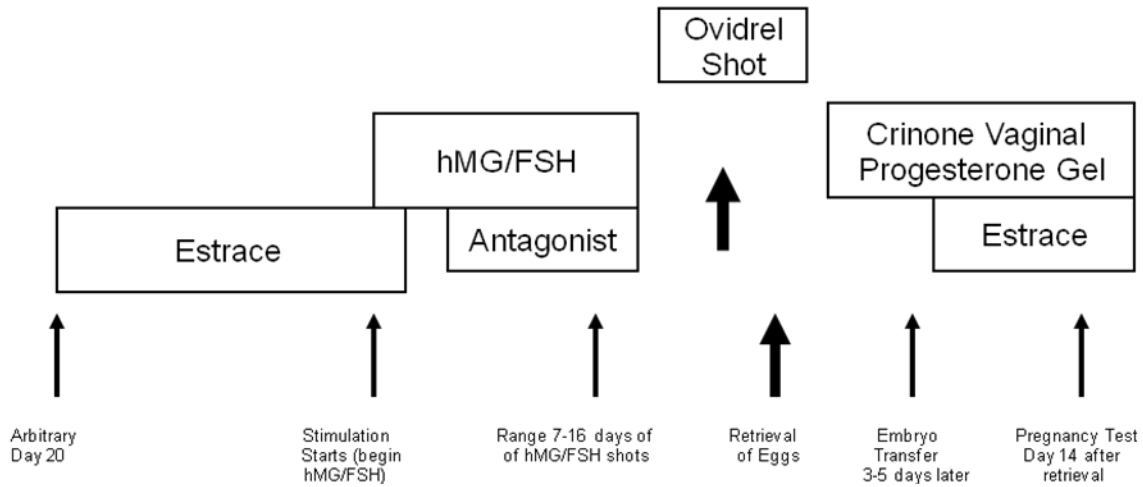


Figure 4 Estrace Antagonist Protocol



D. **Cancellation of Cycles**

There are times when a cycle may be cancelled prior to the egg retrieval. The reasons for this could be:

1. Fewer than 3 follicles are developing to full size
2. There is a premature LH surge. In other words, your body has taken over releasing the egg prior to us going in to retrieve it
3. Premature dramatic rise in progesterone level prior to the HCG shot
4. Poor ovarian response - If after more than 5 days of stimulation the serum estradiol is still very low
5. Excessive risk of ovarian hyperstimulation due to too many ovarian follicles or too fast a rise in estradiol hormone
6. Severe medical illness during the course of treatment.

We try to avoid a cancellation as much as possible by monitoring you closely; however, there are times when it is unavoidable. If your cycle is cancelled prior to the egg retrieval, you will be required to pay only for the fee of monitoring the stimulation, which includes the visits, ultrasounds and blood work (assuming that your insurance doesn't cover IVF).

E. **ART and Disability Leave**

The following is information that addresses disability when going through the ART treatment cycle. Please be aware that you will need to be out of work for the day of the egg retrieval and the following day. In addition, you will be out of work on the day of the embryo transfer and the following day.

If you are applying for state short term disability, you will not qualify for it while undergoing an ART treatment cycle. The state has declined disability payments in the past because it is not medically necessary for you to be out of work for more than 7 work days unless you experience a complication from the procedure.

Please make arrangement to use your paid sick/vacation/personal days for the days that you need to be out of work. You may qualify for the "Family Medical Leave Act" which allows you to take excused days off from work without pay for medical treatment.

IV. In Vitro Fertilization – Specific Instructions

A. IVF Steps

1. Prior to the Egg Retrieval

Two days prior to the egg retrieval (while you are in our office for your monitoring visit) you will be given instructions in person regarding the timing of your Ovidrel injection. At that time you will be given an instruction sheet which will detail what you must bring with you for the egg retrieval. Please review the information very carefully, and call us with any questions you might have.

2. Day of the Egg Retrieval

Be prepared to take this day and the next day off from work. We will try to give you as much advance notice as possible, but this is not always possible. Be prepared to spend 3-4 hours in our facility. You may not drive, as you will have just been sedated.

Eggs are collected by ultrasound-directed needle aspiration in our Marlton facility. This is performed by one of our doctors using intravenous conscious sedation administered by an anesthesiologist. The retrieval is performed 36 hours following the Ovidrel injection. The most common approach is to place the needle through the vaginal wall into the ovary. Vaginal ultrasound guidance allows the doctor to accurately guide the needle from follicle to follicle, aspirating eggs. Risks associated with the procedure are rare, but include bleeding and infection.

Your husband/partner should be in our office at the time of the procedure. Once the procedure is completed, we will ask him to obtain a semen specimen in one of our private collection rooms. Regarding the collection of the semen, we understand that there is a lot of stress and anxiety associated with the IVF procedure and that there are times when a variety of factors can prevent him from obtaining the specimen. We ask that if he feels that there would be a problem obtaining a specimen in our facility on the day of the procedure, please advise us so we can discuss options. Please feel completely at ease with discussing any problems with the physician or staff, as we are here to make the procedure run smoothly and to reduce any additional stress on either partner. In most cases, we can freeze a semen sample in advance, if you alert us to your desire for this.

You will know before you leave our facility how many eggs were obtained. You will need to have decided *in advance* of the retrieval if you want to freeze embryos. All consent forms for "Cryopreservation of Embryos" must be signed and returned to us in advance of the egg retrieval. Payment for freezing embryos must be received on or before the day of retrieval.

3. Day After Egg Retrieval

The day after the procedure, you will be contacted by the Nurse Coordinator or the Doctor who will inform you of the fertilization status of the egg(s). You will be called daily with the status of your embryo(s) until the transfer is scheduled.

4. Two Days after the Egg Retrieval

You will begin taking progesterone vaginal gel each morning. You will receive a phone call to schedule the day of the transfer of embryos to your uterus. It will usually take place 3-5 days after the egg retrieval (depending on the number and quality of your growing embryos).

5. Day of Embryo Transfer

The embryos will be gently placed into the uterus using a small flexible catheter passed through the cervix (not unlike a pap smear) while an ultrasound probe on your abdomen is watching the depth of the catheter. This is a short procedure. You will need to have a moderately full bladder at the time of the embryo transfer. The bladder need not be painfully full. You will remain lying down for 30 minutes following the transfer. You should stay home the day of the transfer and also the following day. You are permitted to drive yourself home after the transfer, but most patients prefer to have someone else drive them home. The number of embryos to transfer will be discussed with you and your partner by the physician performing the transfer. You are encouraged to use the progesterone vaginal gel both in the morning (before the embryo transfer) and soon after arriving back home.

6. Day After the Embryo Transfer

You will begin taking estrogen tablets by mouth.

7. Follow-Up After the Transfer

You will be scheduled to return to the office for a blood test approx. 7 days after the egg retrieval to check your serum estrogen level and then again a week after that for the serum pregnancy test.

Please continue to take your progesterone and estrogen until we get the final results of the blood testing. Many women do not "feel" pregnant, even if they are. **Please do not stop taking progesterone or estrogen under any circumstance, even if you are bleeding.** It is not unusual to have vaginal spotting or bleeding for up to 2 weeks after the transfer. It doesn't necessarily indicate a failure to conceive. Please call the office for any questions.

If you are not pregnant, you will be instructed to discontinue the progesterone and estrogen and your menses will begin within a week.

If you are pregnant, you will continue on the progesterone and estrogen until 10 weeks of pregnancy. We test your Beta HCG (pregnancy hormone) and progesterone levels every 3-4 days to make sure that everything is progressing well until 6 weeks gestation at which time we schedule a sonogram in the office to identify the pregnancy. The sonogram is then repeated weekly 1 to 2 times to confirm normal progress of fetal growth.

8. Pregnancy Follow-up Care

You will be released to the care of your OB 6 weeks following the egg retrieval (at 8 weeks of gestation). You should be eating a healthy, well-balanced diet, avoiding alcohol and nicotine, and limiting caffeine. While under our care, if you have problems such as heavy vaginal bleeding or abdominal pain, please call our office immediately.

We love to hear from you about how your pregnancy is progressing. We welcome birth announcements and photos. In order to comply with the Society for Assisted Reproductive Technology (SART) requirements, we must report to SART the outcomes of all pregnancies. Thus, we must ask you to complete a survey that asks for the date of your delivery, weight of the baby, type of delivery (vaginal or Cesarean section) and any complications you may have had with your pregnancy or delivery. Your identity will be kept anonymous in the data base. Please keep us updated regarding any change in your phone number or mailing address.

B. Information about Fertility Drugs

Listed below is a description of the fertility drugs. You will be instructed by our nurses on which medications you will be using and at what dosage. **Patient following our recommended protocols will not need to use any needles longer than ½ inch long subcutaneous ones.** Some women administer their own injections while others have their injections given by their partner or relative or neighbor. *You will be instructed by our staff as to the proper method of mixing and giving the injections at the start of your treatment.* Bring with you all medications and the person who will be giving you the injections. Please let us know if arrangements need to be made for advance instruction. We can also loan you a DVD or VHS tape, which you may take home for a few days to go over the instructions.

Lupron 14 day Kit (2.8 ml vial) -- The purpose of this medication is to stop the body from producing too much LH hormone which would then trigger ovulation too early. Lupron is injected subcutaneously in the thigh with a small 50 unit insulin syringe or with the syringes that come in the kit. Lupron is to be taken daily (usually in the morning) until you are instructed to discontinue it just prior to your Ovidrel injection.

Some of the side effects you may experience from this medication include hot flashes, breast tenderness, mood swings, and headache. They usually resolve in 1-2 weeks

GnRH Antagonist (Ganirelix or Cetrotide) – This medicine prevents the body from producing a premature LH hormone surge which would then trigger ovulation too early. It is a daily subcutaneous injection in the thigh. It is usually begun 4-8 days after the start of the hMG/FSH stimulating drugs, when the follicles have grown to half-size. You will be advised by our staff when to begin the antagonist. The dose is 250 micrograms.

Menopur (hMG) - 75 IU ampules -- This medicine stimulates the body to increase the number of follicles that mature. It consists of Follicle Stimulating Hormone purified from the urine of post-menopausal women. It has a very small amount of HCG which provides some LH activity, which in relatively small amounts can be beneficial for the follicular maturation. Some of the side effects you may experience are bloating, mood swings, ovarian enlargement, breast tenderness, fluid retention and irritation at the injection site. The medication should be stored either at room temperature or in the refrigerator. It should not be exposed to extreme heat above 77 degrees Fahrenheit. This medicine is in the form of a powder which must be dissolved with the saline solution included in the box. Please remember that once the medication is mixed it should be used within an hour (24 hours if kept refrigerated). Injections are given once a day.

Bravelle – 75 units/vial – This is the same as Menopur (see above) but without the small amount of hCG.

FSH (GONAL-f, Follistim, or Follistim AQ) -- These are genetically engineered “recombinant FSH” (not urinary based products). It acts the same as Menopur (see above) except that it lacks the hCG component

Ovidrel – This is the “recombinant hCG”. It is a large dose of pregnancy hormone which mimicks the LH-surge needed for the final maturation of the follicles. It is administered only when the follicles have reached sufficient size. The mature eggs will ovulate (release from the follicles) about 40 hours after this shot is given. Obviously a successful IVF cycle requires that eggs be removed from the follicle before that ultimate “release”, so we schedule the egg retrieval procedure for 36 hours after this shot. Thus, precise timing of this shot is critical. Two (2) syringes of Ovidrel is the recommended dose for IVF cycles. HCG also stimulates the corpus luteum of the ovary to make progesterone and estradiol for the next week. This medicine will falsely turn a pregnancy test positive for up to 12 days.

Human Chorionic Gonadotropin (HCG, Pregnyl, or Novarel) - 10,000 Unit Vial -- This is the older version of Ovidrel (see above). It is an intramuscular injection.

Crinone 8% progesterone vaginal gel -- This medication is to supplement your body's own supply of progesterone. It is a natural hormone identical to what your ovaries normally make after ovulation. Supplementation is recommended because the egg retrieval process can sometimes temporarily interfere with this hormone production. Progesterone is important in preparing the uterine lining to support an early pregnancy. You will use progesterone supplementation until you reach the 10th week of gestation. We recommend that you start the Crinone on the 2nd day after the egg retrieval. It is administered every morning (even before embryo placement). The day of embryo placement, you will repeat the Crinone application when you get home. Crinone can cause a thick cottage cheese-like vaginal discharge. You can use a clean finger to help clean out some of the discharge immediately before your next dose.

Zithromax Z-Pak (Azithromycin) - This 5-day course of an antibiotic will be started two days prior to the egg retrieval. The antibiotic is given to minimize risk of infection. If you are allergic to zithromax, please inform us ahead of time.

Medrol - You will be given a prescription for Medrol 16 mg, which is to start 2 days after the egg retrieval and continue for 5 days. This is given to suppress any inflammatory response your body might have toward the embryos and thereby maximize the chance for implantation.

Estrace – This is identical to one of the estrogens that you own body makes during early pregnancy. You start this the day after embryo transfer. You will continue this until you are 10 weeks pregnant (or until the pregnancy test returns to negative). It is safe for use during your pregnancy.

Progesterone (Intramuscular Injection) – See the description on progesterone supplementation under the heading “Crinone” in this section. This is an intramuscular shot is administered daily in the buttocks and is an alternative to Crinone. It can cause temporary soreness at the injection sites. If you decide to use this shot, it is begun the day after the egg retrieval.

Please notify us in advance of any medication allergies you have including peanut allergies. Please also, notify us of other medications you are taking, including over-the-counter drugs, "street" drugs, alcohol, tobacco, or herbal pills.

IV --- D.

How to Do Injections

To dispose of used syringes and needles, place them in a plastic milk or soda container. Call your local township for instructions on how they permit you to dispose of needles and syringes.

The type of FSH/hMG medication prescribed for you is determined by our medical team. It is often based on your prescription plan coverage, to limit your out-of-pocket expenses.

To view instructional videos on fertility medications, please go to our website at www.sifert.com and go to tab for “Patient Resources” the click “Medication Instructions”. This will bring you to Ascend and Freedom’s websites. You may view one or both of them for the particular medication you need instructions.

General Instructions for Menopur, Bravelle or Vials of Gonal-F

No matter how many vials your dose requires, you will use only one ml of the liquid for mixing each injection. Each vial has 75 units of medicine.

Loading the Syringe

Pick up one of the needles and syringes. Make sure the needle is tightly twisted onto the syringe. Remove the needle cover and place the needle into the water ampule. Draw back on the plunger and bring the water or saline into the syringe to the 1 ml mark. Then insert this into the vial with the powder and inject the water or saline into it. It will dissolve immediately. Draw back on the plunger and bring the mixed solution into the syringe. For dosages greater than one vial, place the mixture into another vial of powder and so on until the correct dosage is reached.

Preparing Syringe for Injection

Replace the cover over the needle, and untwist the needle. Twist on a new needle of the correct length. Point the needle to the ceiling and flick the syringe to remove bubbles. Gently push up on the plunger until you see the air pocket leave the syringe and enter the needle hub. A small amount of air injected into you will not harm you. When using Menopur, letting the syringe rest for 15 minutes lessens the chance that the injection will produce a burning sensation.

Choice of Injection Site (See figures on following page)

The standard IVF patient need only do subcutaneous (sc) shots (1/2 inch or less). They are given either in the lower abdomen, the thigh, or the upper arm.

Injecting the Medicine

Locate the injection site, which was previously explained to you by the nurse in our office. Clean the area with alcohol and let dry. Insert the needle to its *full depth*. Push the plunger to inject the medicine. Remove the needle and dab the area with gauze or tissue. Do not be alarmed if you notice a little blood or liquid coming out of the injection site.

If you drop or touch the needle by mistake, it is now contaminated. That needle should not be used. However, the medicine inside the syringe is fine. Just twist off the contaminated needle, replace it with another one and proceed with the injection.

Follistim AQ (Pen)

Follistim AQ cartridges are pre-liquified and are available in 300 (silver), 600 (gold), and 900 (blue) unit amounts. Sometimes you will be able to get up to 70 units more out of these cartridges (depending on your dose) because they are over-filled to allow for priming of the needle. Each cartridge comes with individually wrapped needles. Once you get the medicine from the pharmacist it will stay good for 3 months if you store it at room temperature. It will last for 3 years if refrigerated or until the expiration date on the box. Once the cartridge has been placed into the injector pen, the cartridge expires in 28 days.

1. You will receive the injector pen and needles. Instructions for loading the cartridge into the pen will be given to you by our nursing staff and is also found in the package insert.
2. Wipe the end of the pen with alcohol (this is the small rubber stopper of the cartridge).
3. Put the needle on the pen by twisting and remove the cap. Take sheath off needle.
4. Turn the yellow dial toward you to the correct dosage number. If you pass the desired number, **do not turn it back away from you** or some of the medicine will squirt out. Instead, continue to

turn the dial toward you to higher numbers until the dial restarts at zero. Then try again to dial it to the correct number.

5. Prepare the injection site with an alcohol wipe. Common injection sites are the lower abdomen, thigh, and upper arm (see the package insert) or our injection site diagram in this packet.
6. Insert the needle to its full depth straight into your injection site and press the plunger button all the way down. Hold in place for 5 seconds.
7. After the injection, if the yellow dial reads anything other than zero, it means that the cartridge ran out of medicine and you must load a new cartridge. Keep the yellow dial at its current setting. This is the amount you still need to inject. Remove the needle by twisting it off. Place a new cartridge in the pen. Twist on a new needle. Now you are ready to inject the remaining amount.
8. Now that injection is completed, untwist the needle and store the pen (containing the cartridge) in a safe place away from excess heat.

Multidose GONAL-f

Two sizes are available. The powder vial contains 1050 or 450 units of FSH. It comes with empty syringes. After this medicine is mixed with the water, it must be kept refrigerated (NOT frozen) and then discarded 28 days later.

1. Flip off the plastic cap to the powder vial and wipe it with alcohol.
2. Twist off the needle cap from the syringe labeled "Bacteriostatic Water for Injection," and then pierce the center of the rubber stopper of the powder vial with the full depth of the needle. Push all of the water slowly into the powder vial. Then dispose of the needle & syringe.
3. Do not shake the vial. The powder will dissolve quickly.
4. Use one of the GONAL-f syringes that came in the kit to draw up the correct dose (look closely at the markings on the side of the syringe). Always first wipe the rubber top of the GONAL-f vial before each dose.
5. You will need to hold the vial upside down with the needle pointing toward the ceiling. While the needle tip is submerged in the liquid, draw back the plunger. Adjust the plunger until it is at the correct dosage mark.
6. Withdraw the needle and avoid contaminating it.
7. Prepare the injection site with an alcohol wipe. Common injection sites are the lower abdomen, thigh, and upper arm (see the package insert) or the injection site diagram in this packet.
8. Insert the needle to its full depth straight into your injection site and then depress the plunger to inject the medicine.

Gonal-F Pen

Gonal-F RFF Pen is a pre-filled syringe that is available in 300,450, and 900 unit amounts. Each pen comes with individually wrapped needles. It can be stored refrigerated until the expiration date or at room temperature for up to 3 months. It should be discarded 28 days after opening.

1. Wipe the tip of the pen with alcohol
2. Remove paper tab from needle and twist the needle onto the pen.
3. Remove outer needle cap.
4. Set your dose by turning the dial until the prescribed dose is lined up with the black arrow.
5. Pull out the injection button as far as it will go. Confirm that the red arrow matches your dose and is fully visible. If it is not visible, there is not enough medicine to complete the full dose. You will need to use a new pen to complete the remaining dose. (You will have to do the math.)
6. Prepare injection site with an alcohol wipe
7. Remove inner needle cap
8. Insert the needle to its full depth straight into your injection site.
9. Push the injection button until it stops
10. Hold in place for at least 5 seconds.
11. Remove needle and apply pressure
12. Replace outer needle cap and untwist needle from pen. Discard used needle in sharps container.
13. Replace pen cap and store at room temperature or in refrigerator.

Ovidrel Prefilled Syringe (Use this medicine only one day per cycle at the designated time)

The medication is already prepared in the syringe. Allow the syringe to adjust to room temperature prior to injecting. It should be kept refrigerated and the expiration date should be checked.

1. Prepare the injection site with an alcohol wipe.
2. Remove the needle cap. Point the needle toward the ceiling and gently tap on the syringe to allow air bubbles to rise to the top.
3. Slowly push the plunger until the air bubbles are removed and a small drop of liquid appears at the top of the needle.
4. Insert the needle into the injection site to its full depth straight into your injection site.
5. Push on the plunger until all the liquid is injected.
6. Remove the needle and apply pressure to the site.

HCG (Human Chorionic Gonadotropin), Pregnyl or Novarel

You will receive a box that contains a water vial and a powder vial

1. Remove the plastic tabs off each vial. Clean rubber stopper with alcohol.
2. Take 3cc syringe with 22 gauge 1 ½" needle and place needle in water vial.
3. Draw up one milliliter water and remove needle.
4. Place needle into powder vial and inject slowly to dissolve the medicine.
5. Draw up entire content of vial.
6. Remove 22 gauge needle and discard in sharps container.
7. Twist on 25 gauge 1 ½' needle
8. Remove cap and point needle to ceiling.
9. Tap gently on syringe to allow bubbles to rise to the top.
10. Push the plunger slowly until the air bubbles are removed and a small drop of liquid appears at the tip of the needle.
11. Prepare the upper-outer buttock area with alcohol. (See Injection Site Diagram in this packet)
12. Insert the needle to its full depth straight into your injection site.
13. Push on the plunger until all the liquid is injected.
14. Remove the needle and apply pressure to the site.

Lupron

This medication comes in a box containing a vial of liquid medicine, 14 insulin syringes and alcohol pads. It can be stored at room temperature until rubber seal is pierced; then it should remain refrigerated.

1. Remove plastic cap off medicine vial.
2. Clean rubber stopper with alcohol.
3. Remove cap from insulin syringe.
4. Insert needle into medicine vials and turn bottle upside down so that the needle is in the liquid.
5. Draw up prescribed amount of units into syringe. Be sure there is no air in syringe and remove from bottle.
6. Prepare the injection site with an alcohol wipe.
7. Insert the needle to its full depth straight into injection site.
8. Push on the plunger until all the medicine is injected.
9. Remove the needle and apply pressure to the site.

Ganirelix

The medication is already prepared in the syringe. It should be kept at room temperature. See numbers 1 to 7 under "Ovidrel" for instructions.

Cetrotide

Each box contains a tray with one powder vial, one water syringe, and two needles. It should be kept refrigerated until the expiration date.

1. Remove the plastic tab off the powder vial.
2. Clean rubber stopper with alcohol.
3. Remove plastic cover off water syringe and twist on 20 gauge needle.
4. Inject the entire amount of water into the powder vial.
5. Draw up entire mixture back into syringe.

6. Remove 20 gauge needle and twist on the 27 gauge needle.
7. Point the needle toward the ceiling and gently tap on syringe to allow air bubbles to rise.
8. Slowly push the plunger until the air bubbles are removed and a small drop of liquid appears at the tip of the needle.
9. Prepare the injection site with an alcohol wipe.
10. Insert the needle to its full depth straight into your injection site.
11. Push on the plunger until all the liquid is injected.
12. Remove the needle and apply pressure to the site.

Progesterone-in-Oil – (50mg/ml)

Lift off the tab on the top of the bottle of Progesterone. Do not remove the rubber stopper. Wipe off the rubber stopper with alcohol. Twist off the needle that is with the syringe and replace it with an 18 gauge needle. This is a larger needle which will help you to draw up the oil easier. *Do NOT* use this 18 gauge needle on the body. Insert the needle into the bottle. Draw back on the plunger until the liquid reaches the 1ml mark. Place the cover over the needle. Twist off the 18 gauge needle and replace it with the 22 gauge needle that you originally took off.

This injection is always in the buttocks (the upper outer portion). Because the medicine is in an oil base, you should massage the area *gently* to disperse the medication into the muscle. You will notice a slight bump in the area. Do not be alarmed if you notice a little blood coming out of the injection site.

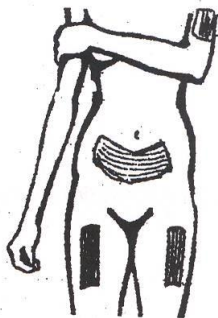
If you develop significant redness, inflammation or pain at the injection site, please call our office as we may need to change the medication. You may apply hot compresses to the areas on your buttocks to help the medication absorb and reduce inflammation.

You may try icing the injection site prior to the injection for increased comfort.

Note: Most patients will inject the medication just under the skin (subcutaneous-SC) with a small fine needle.

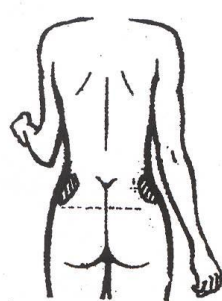
Subcutaneous (SC) Injection Sites

(Thigh, Abdomen, or Upper Arm)

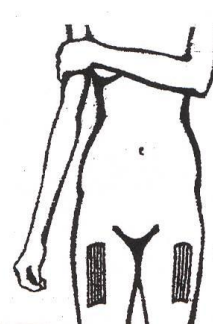


Intramuscular (IM) Injection Sites

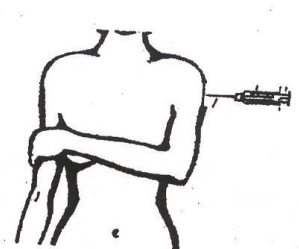
IM Progesterone Site
(Upper-Outer Buttocks)



IM hMG/FSH Site
(Thigh)



IM Deltoid Site
(Upper Arm)



The standard IVF protocol uses only subcutaneous shots. (½ inch long needles)

V. Glossary of Infertility Terminology

Anovulation - Failure to ovulate on a regular basis

Antagonist (to GnRH) - This medication immediately suppresses the pituitary release of FSH and LH, thereby allowing us to better control the ovarian stimulation.

Assisted Hatching - A process, whereby a small hole is drilled into the zona (eggshell) of the oocyte. This is done to enhance embryo implantation in the lining of the uterus.

Beta HCG Level - This is the "pregnancy" hormone which is detected in the blood when an embryo implants in the body. (Pregnancy test).

Chemical Pregnancy - This is when the Beta HCG level is positive, but the gestation does not grow large enough to be seen by ultrasound. Most of the time this is also called an early miscarriage.

Clinical Pregnancy - This is a pregnancy that is documented by ultrasound to contain a gestational sac inside the uterus.

Corpus Luteum - The ovarian cyst which normally develops from the follicle after it releases its egg. It produces both progesterone and estrogen, which in turn support a pregnancy. If no pregnancy occurs, the cyst will dissolve on its own.

Cryopreservation - The process of freezing excess embryos, sperm or eggs and storing them in a cryoprotectant until they are needed in the future.

Ectopic Pregnancy – This is a pregnancy which implants abnormally somewhere other than in the uterus (usually in one of the fallopian tubes). You may experience bleeding and abdominal pain. This can be life-threatening and usually requires surgery and/or medicine to remove the abnormal pregnancy.

Embryo - A fertilized egg in the early stages of fetal growth

Embryo Transfer - The placement of a 3 – 6 day-old embryo into the uterus through the vagina

Estradiol (E₂) - This hormone is produced by the growing follicles during the first half of the menstrual cycle. After ovulation it is produced by the corpus luteum in the ovary. It is commonly measure in the blood to assess proper response to fertility shots.

Fallopian Tubes - Ducts through which eggs travel to the uterus once released from the follicle. Fertilization normally takes place in the fallopian tube. The tube nurtures the embryos for the first 4 days.

Follicles - Fluid-filled sacs in the ovary, which each contain a single the egg. The egg is then released toward the Fallopian tube at ovulation. Each month a follicle grows to maturity inside the ovary. Each ovary contains thousands. Some are large enough to be seen by ultrasound exam.

Follicle Stimulating Hormone (FSH) - This pituitary hormone stimulates follicle growth in the ovary. The level is measured during your first baseline visit. An elevated level of FSH (greater than 10-15) signifies a diminished chance for successful pregnancy due to a poor reserve of eggs in the ovary.

Follicular Phase - This is the first half of your cycle during which a follicle matures.

Gamete - This is a sperm or egg cell.

Gamete Intra-fallopian Tube Transfer (GIFT) - A procedure in which the sperm cells and the eggs are introduced into the fallopian tube(s) by a catheter during a laparoscopy, now rarely performed in the 21st century.

Human Chorionic Gonadotropin (HCG) - This hormone is given to finalize the maturation of the egg inside of its follicle. It triggers ovulation 40 hrs. later. Also, this is the hormone which is produced by a growing pregnancy (specifically by the placenta).

Intra-cytoplasmic Sperm Injection (ICSI) – This is a process by which a single sperm cell is injected into the oocyte to enhance fertilization. Especially useful for male factor infertility.

Implantation - This is the process by which an embryo attaches and imbeds into the lining of the uterus.

Laparoscopy - This is a surgical procedure in which a telescope-like instrument is introduced into the pelvic cavity through a small incision near the navel. During this process, we are able to visualize and operate on all of the pelvic organs.

LH (Luteinizing Hormone) - This pituitary hormone helps with the production of estrogen from the follicle.

LH Surge - This is a spontaneous rapid rise in LH level in the blood which finalizes the maturation of large follicles and triggers ovulation. Its function can be substituted by a shot of hCG.

Lupron (Leuprolide Acetate) – After 10 or more days of use, this medication suppresses the pituitary release of FSH and LH, thereby allowing us to better control the ovarian stimulation.

Luteal Phase - This is the second half of your cycle following ovulation. Both progesterone and estradiol are produced during this period of time to support a pregnancy.

Oocyte - The egg cell. These are made in the ovary before a woman is born. It is the largest cell (in terms of mass) in the human body.

Ovulation - The release of a matured egg from the ovarian follicle.

Ovulation Induction - Hormonal therapy which is used to help stimulate egg maturation and release.

Progesterone - A hormone which is produced during the second half (luteal phase) of the menstrual cycle. It prepares the lining of the uterus for implantation of the embryo. Additional amounts of progesterone are sometimes necessary if the body is not producing enough to support the pregnancy.

Selective Reduction - A procedure offered to patients with multiple gestation (usually triplets or more). A needle procedure is performed by a perinatologist to reduce the number of fetuses being carried. This may lower the risks to the mother and to the pregnancy that can occur with multiple gestations.

Vaginal Probe Ultrasound - This instrument allows us to visualize the pelvic organs, i.e. ovaries, uterus through the use of sound waves. A vaginal probe is inserted into the vagina during this procedure. It is brief and not painful. An empty bladder is recommended.

Zygote – A fertilized egg one day after the egg meets the sperm.

Zygote Intra-Fallopian Tube Transfer (ZIFT) - A procedure where fertilized eggs are transferred into the fallopian tube through the laparoscopy, now rarely done in the 21st century.

List of Additional Resources

National Resolve (the national infertility association since 1974), 1310 Broadway, Somerville, MA 02144, 617-623-0744, www.resolve.org

How to be a Successful Fertility Patient. Robin. Peggy. New York: William Morrow and Company Inc. 1993. \$15.00 softcover.

Surviving Infertility: A Compassionate Guide Through the Emotional Crisis of Infertility. Salzer, Linda. New York. Harper Perennial 1991. 389 pages. \$13.00 softcover.

What to Do When You Can't Get Pregnant: The Complete Guide to All the Technologies for Couples Facing Fertility Problems. Daniel Potter, 2005, 288 pages

Fertility Facts (Conceive Magazine Editors) by Chronicle Books, 2008, 312 pages.