

Fertility & Women's Health Center of Louisiana
Assisted Reproductive Technologies Center

IVF Program Guide

Welcome to **The Fertility and Women's Health Center of La. / Assisted Reproductive Technologies Center**. We recognize that fertility treatment, especially In Vitro Fertilization, can often be a difficult and confusing process that affects couples in many areas of their lives. Our IVF program is designed with the intention of offering support and resources for each couple's unique medical, emotional, and financial needs.

The IVF process, from preliminary testing to the completion of a cycle, can last up to two months and requires a significant commitment of time and energy from everyone involved. To make this process easier, your medical team will guide and support you through each step of your treatment plan. The team of medical professionals is comprised of physicians, embryologists, nurses, and other healthcare professionals.

Our office staff is available to help you understand your insurance benefits and the costs associated with an IVF cycle, prior to initiating therapy. They will also provide you with options for financing the procedure should you desire.

This *IVF Program Guide* will serve as an important reference tool as you progress through your treatment. It contains information your medical team will refer to often when giving you instructions for scheduling pre-screening tests, dosing, medications, scheduling ultrasounds and blood work, and finally, when discussing the actual IVF procedure. **You should bring it with you to all of your appointments. We recommend you also bring a folder to keep all of your information together.**

If you have any questions, please call the IVF nurse during our office hours. If she is not available, please leave a message with the secretary that you are an IVF patient and she will return your call as soon as possible. If you need to speak with her or the physician regarding an emergency, let the receptionist know this.

Table of Contents

What is A.R.T.? (Assisted Reproductive Technology)	4
A.R.T. Laboratory Procedures	9
Indications for A.R.T	12
Possible Complications	14
Statistics	16
Communication Guidelines for patients	18
Patient Responsibilities	19
Infertility and emotions, stress management	22
Prescreening tests	23
Sample Stimulation	26
Financial Information	29
Medication list	32
Timeline	33
Other sources of information	34

THE ASSISTED REPRODUCTIVE TECHNOLOGIES (ART'S)

The Assisted Reproductive Technologies (ART's) are a group of treatment options used for couples with infertility that cannot be treated using simpler methods. These procedures have excellent success rates but require significant effort and can be expensive. For all of these reasons, advanced treatment options can be stressful. These natural stresses can be minimized if you understand the nuances of the various procedures. We encourage you to learn more and to freely ask questions of your medical team. Understanding the applications for each procedure will help you obtain the appropriate treatment and maximize your chance for success.

There are a number of different types of treatments encompassed under the ART umbrella. These include **In Vitro Fertilization (IVF)**, **Gamete Intrafallopian Transfer (GIFT)** and **Zygote Intrafallopian Transfer (ZIFT)**. To better understand the differences in techniques and indications for these procedures, it is important to understand the four basic components of an IVF cycle.

IN VITRO FERTILIZATION (IVF)

1. Ovulation Induction

Hormone injections are given to stimulate multiple egg production rather than the single egg normally produced by the body each month. This is done using one of several protocols. The most commonly used protocol involves the following:

- (a) **Lupron** injections: beginning the week before your IVF cycle to suppress the ovary, so that ovulation does not occur before the desired time.
- (b) **Daily gonadotropin injections** (Follistim, Gonal F, Repronex, Bravelle or others) are then added, beginning the third to fifth day of your IVF cycle to stimulate the development of the eggs. These are usually given

subcutaneously (under the skin) and are much less uncomfortable than the medications used in the past.

(c) We then **monitor** the progress of ovulation induction with ultrasounds and blood estrogen levels over several days.

(d) hCG injection is then give to enable the eggs to mature. Before the eggs release on their own, we will remove them from the ovary in the “egg retrieval”.

2. Egg Retrieval

An egg retrieval is performed by removing the fluid that contains the egg from the ovarian follicle using a needle especially designed for this purpose. This is a relatively minor procedure and is performed by visualizing the follicles with a vaginal ultrasound probe. A needle is directed alongside the probe, through the vaginal wall, and into the ovary. To avoid any discomfort, strong, short acting intravenous sedation is provided.

3. Fertilization and Embryo Culture

Once the follicular fluid is removed from the follicle, the eggs are identified by the embryologist and placed into an incubator. The eggs are inseminated with sperm later that day by combining sperm and eggs in a culture dish or by Intracytoplasmic Sperm Injection (ICSI).

During *conventional insemination*, eggs are placed in a culture media containing sperm and left overnight to undergo the fertilization process.

The *ICSI technique* is used to fertilize mature eggs in the event of sperm or egg abnormalities. Under the microscope, the embryologist picks up a single sperm and injects it directly into the egg. ICSI allows couples with very low sperm counts or poor quality sperm to achieve fertilization and pregnancy rates equal to traditional IVF. It is also recommended for couples who have not achieved fertilization in prior IVF attempts. Special urological procedures are available for cases where it is difficult to obtain sperm or for men with no sperm in the ejaculate.

The day following insemination by either method, the eggs will be checked to document fertilization. They are now zygotes and are placed in growth media. In the following days, they will become pre-embryos. Pre-embryos may continue to grow for two or three days and then be transferred to the uterus, or they may be transferred to a second (sequential) media after three days and continue to grow until the fifth or sixth day when they reach the 60 to 100 cell stage and are called blastocysts. Blastocysts must be either transferred into the uterus or cryopreserved for later use. **At The Fertility and Women's Health Center of La., actively dividing embryos (i.e living embryos) are never discarded.** They are either transferred to the uterus, or cryopreserved.

4. Embryo Transfer

Embryos may be transferred 2 to 6 days after egg retrieval. They are placed through the cervix into the uterine cavity using a small catheter. This procedure usually requires no anesthesia, although a low dose of valium is occasionally given to help relax the uterus.

Gamete Intrafallopian Transfer (GIFT)

This is a type of ART in which eggs and sperm are placed into the fallopian tube. The same method of ovulation induction is used as for IVF, and the egg retrieval is performed in the same manner as for IVF. Once the eggs have been retrieved they are placed, unfertilized, along with sperm into the fallopian tube by laparoscopy. This treatment requires a surgical procedure and is performed in an operating room. GIFT can only be performed if the fallopian tubes are open and normal. It is usually not as successful as IVF.

Zygote Intrafallopian Transfer (ZIFT)/Tubal Embryo Transfer (TET)

ZIFT, a combination of IVF and GIFT, transfers fertilized eggs (zygotes) into the fallopian tube. The ovulation induction process, egg retrieval, and insemination in the

laboratory are performed in the same fashion as an IVF cycle. However, the zygotes are transferred into the fallopian tube the day after egg retrieval. In TET, more mature pre-embryos are placed in the fallopian tubes on day 2 or 3 after fertilization. ZIFT and TET require a laparoscopic procedure, like GIFT. **These procedures are now only rarely used.** We will sometimes recommend ZIFT or TET when there is a severe cervical obstruction. ZIFT and TET, like GIFT, can only be performed if fallopian tubes are normal.

IVF Versus GIFT/ZIFT/TET

If tubal disease is a factor then only IVF can be performed and GIFT, ZIFT, or TET are not an option. Because the fallopian tube is the natural site of fertilization and early embryo development, the tubal procedures are theoretically advantageous. However, many well-controlled studies have shown **no advantage** in using GIFT, ZIFT, or TET over IVF. **The experience of many ART programs around the world now support the contention that IVF is the procedure of choice if the embryology laboratory is of the highest quality.** Many programs have good GIFT, ZIFT, or TET success rates, but due to subtle laboratory factors, are less successful with IVF. Another major difference between GIFT and IVF, ZIFT, or TET is that with GIFT there is no documentation of fertilization. This procedure should therefore not be performed if a significant egg or sperm problem exists, or if there is any possibility that the fallopian tubes are not perfect.

A major benefit of IVF to the patient is the avoidance of a laparoscopy and the general anesthesia required for GIFT, ZIFT, and TET. **We feel that the quality of our laboratory and the success of our IVF program allow us to avoid these unnecessary surgeries for our patients.** The ability to transfer fewer embryos with a greater potential for implantation should make GIFT, ZIFT, and TET less appealing. GIFT procedures CAN, however, be performed if indicated or desired by the patient.

ADDITIONAL ADVANCED TECHNOLOGIES

1. Assisted Hatching

Assisted Hatching (AH) is a procedure performed prior to transfer in selected cases. An embryo must escape or “hatch” from its protein shell, called the Zona Pellucida, before it can implant in the uterus. In AH, the zona may be opened with a glass scalpel or a chemical or laser can be used to dissolve part of the zona, to facilitate the hatching process. This technique is often used with prior failed IVF cycles, female age over 38, and with abnormally thick zona.

2. Percutaneous Epididymal Sperm Aspiration and Testicular Sperm Extraction (PESA and TESE)

Some men have no sperm in the ejaculate but still produce sperm in the testes. This may occur due to a vasectomy, to a congenital obstruction of the sperm ducts leaving the testes, or to inadequate development of the sperm such that they cannot leave the testes. In these situations, a urologist can remove sperm by placing a needle into the testis or the tubes that drain it. These procedures are done under anesthesia and can be very effective when combined with ICSI.

3. Cryopreservation

Embryos that are not transferred but continue to thrive in the laboratory can be cryopreserved (frozen). All embryos that survive to the blastocyst stage will be frozen if they are not transferred. These embryos are stored in liquid nitrogen and can be thawed at a later date. While the pregnancy rates with frozen embryos are not as high as in “fresh” IVF cycles, the procedures patients must undergo in preparing for a frozen embryo transfer are much simpler and less expensive.

4. Egg Donation

When a female patient is in her late 30's and early 40's, infertility may result from a decrease in ovarian function and a consequent fall in egg quality. In the event of a severe compromise in ovarian function, successful pregnancy is very unlikely. A treatment that often offers an excellent chance of success is to use eggs from a

donor who is capable of producing good quality eggs. The egg donor may be another patient undergoing IVF who expects to have more eggs than she needs, a relative or friend, or a young woman paid to donate her eggs. In most cases, she should be less than 30 years of age. This is a complex treatment option from medical, psychological and ethical viewpoints, but one that provides a very good chance for pregnancy. Because of Louisiana state law, we cannot provide oocytes from paid donors, but can provide you with information about programs in other states. If you are interested in donor oocytes from a woman known to you, we are happy to assist you.

**IVF LABORATORY PROCEDURES AT
THE FERTILITY AND WOMEN'S HEALTH CENTER OF LA.**

1. Fertilization and Embryo Growth

As the eggs are retrieved, they are identified by the embryologist and placed into the incubator to avoid exposure to light, temperature and pH changes. Brief notes are made on the condition of the eggs. Normally two-thirds to three-fourths of the eggs will be mature and ready to be inseminated or injected by ICSI. Immature or postmature eggs that may be retrieved have a much lower fertilization rate. After retrieval, the eggs are left in the incubator to complete their very final stage of maturation. This normally occurs between four and eight hours after the retrieval. Prior to retrieval, a sperm sample is collected from the male partner and processed by density gradient washing techniques. This process allows us to collect the most viable sperm to be use for insemination or ICSI.

- a. DAY 1: The day after retrieval, called Day 1, begins with the assessment of fertilization and the separation of those normally fertilized eggs. Cell division or cleaving will occur after the intermingling of the chromosomes overnight.
- b. DAY 2: We typically see the second cleavage division from a two cell to a four cell embryo on Day 2
- c. DAY 3: A third cleavage division from a four cell to an eight cell embryo is seen on Day 3.
- d. * Embryos will be assessed on Day 2 or 3 for transfer immediately into the uterus or placement into blastocyst media until day 5 or 6.

2. Embryo Assessment

High quality embryos will have reached a 4-cell stage on Day 2 and an 8-cell stage on Day 3 after retrieval and insemination. They will have a homogenous or non-

grainy cytoplasm within the cells. The membranes should be very smooth and not rough or jagged. The cells should be approximately the same size, touch each other, and form a round ball within the *zona pellucida* or shell. The *zona pellucida* itself should be clear and not too thick. A common finding in embryos is *fragmentation*; individual cells within the embryo may have broken up and appear as fragments inside the *zona*. Less fragmentation is better. Prior to transfer, the embryologist will have evaluated the embryos for their morphological appearance and **graded them on a scale of 1 to 4, with 1 being best**. This assessment gives us a subjective estimate of the likelihood of implantation once the embryos are replaced into the uterus. Those that have the best characteristics and are cleaving normally are believed to have a higher chance of implantation; these will be chosen for transfer.

This assessment is subjective and embryos that have poor morphological characteristics still have the ability to implant, although, in our experience, at a rate less than those with better characteristics. The number of embryos transferred depends on the cell number and quality of the embryos, the age of the woman, and the day of transfer (Day 3 vs. Day 5, 6).

Your doctor or embryologist will call you to notify you the grade of the embryos and when they will be transferred.

3. Identification and Handling of Sperm, Eggs, and Embryos

Couples can be assured that the eggs, sperm, and embryos in our possession in the laboratory are always handled with trust, respect, expertise, and care. Our labeling process and a series of checks and balances are designed to ensure matching you to your eggs, sperm, and embryos. **This is a constant priority throughout the IVF process. A review of the precautions and safe guards are outlined below for your information.**

- a. Two days prior to the egg retrieval, the laboratory receives written confirmation of the patient's name and her partner's name from the Clinical Coordinator. When the semen sample is collected, the partner is given a pre-printed label containing the patient's name, the partner's name, and the physician's name. In addition, the partner must fill out an *Andrology Test Request Form* indicating his name, his partner's name, their social security numbers, the time of collection, the number of days of sexual abstinence, and the purpose of sperm collection. If the specimen is collected outside of the hospital, appropriate identification (drivers license) will be required prior to accepting the specimen in the lab. Prior to processing the sample, the test tubes in which the specimen is to be processed are labeled with the partner's name, as well as the with same color of tape as is used to identify the couple's oocytes in the incubator. Additional special precautions are taken if donor sperm or donor eggs are used.
- b. Colored tape is used to uniquely identify the incubator location in which a given patient's oocytes reside. The tape is labeled with the patient's name and affixed to the incubator door. The same color of tape is also affixed to the patient's egg worksheet.
- c. Prior to insemination, the name on the test tube containing the partner's processed sperm specimen is cross-matched with the name of the petri dish containing the patient's oocytes by the inseminating embryologist. The embryologist documents this verification process on the egg worksheet.
- d. Immediately prior to the embryo transfer, the laboratory is given a label containing the transfer patient's name, then the embryologist verbally verifies the patient's name and/or social security number with the patient. This verification is documented on the egg worksheet.

- e. Embryos not selected for transfer may be cryopreserved or cultured to the blastocyst stage. Any embryos developing to the blastocyst stage that are not transferred are cryopreserved. All unfertilized oocytes and unused sperm are discarded. All embryos that stop dividing before reaching the blastocyst stage are discarded. (These embryos are not viable.) All embryos that are cryopreserved are again labeled to ensure the highest security possible.

WHEN IS IVF NEEDED?

1. Fallopian Tube Damage

The only options for treating significant tubal damage are surgical repair or bypassing the tubes with IVF. This decision must be carefully individualized in each situation.

2. Male Factor Infertility

One of the most dramatic advances in the treatment of infertility has been the capacity to obtain fertilization and pregnancy in the IVF lab with severely abnormal sperm samples by utilizing ICSI (Intracytoplasmic Sperm Injection). ICSI is often recommended if there is any suggestion of a sperm problem, if sperm are obtained surgically, or if there has been a prior failure of fertilization.

3. Endometriosis

Endometriosis may be effectively treated with a combination of surgical and medical therapy. Patients with endometriosis may also have anovulation. IVF is very effective as a second line of treatment if the initial treatment is unsuccessful.

4. Age Related Infertility

In normal reproductive life, a woman's ovarian function is diminished with age. In many cases, this reduced function can be overcome through the use of ovulation induction (OI) with clomiphene citrate or hormone injections (hMG/FSH) alone or with intrauterine insemination (IUI), without IVF, but when OI or OI-IUI are unsuccessful after three attempts, IVF alone or in conjunction with techniques such as Assisted Hatching and ICSI should be used. A test of ovarian reserve or

“fertility potential” is usually offered (called the “clomid challenge test”). If this is abnormal, egg donation is usually recommended.

5. Anovulation

The majority of patients with anovulation will conceive using simpler treatments, such as clomiphene citrate. (pills) However, those patients not conceiving with this treatment may require gonadotropin injections (such as Follistim, Repronex, or Gonal F). To avoid the possibility of having more than twins, some couples will choose IVF. IVF is also initiated when pregnancy has not occurred after three cycles of gonadotropins.

6. Unexplained Infertility

Approximately 20% of couples will have no identifiable cause of infertility after completing a comprehensive evaluation. IVF is often successful when more conservative treatments have failed, especially since some of these couples actually have some block to fertilization. (Inability of the sperm to penetrate the egg) Depending on age, it is customarily recommended that no more than three to six cycles of clomiphene citrate or three cycles of gonadotropins be attempted before moving on to IVF.

COMPLICATIONS

The two most important complications from IVF are **ovarian hyperstimulation syndrome (OHSS) and multiple pregnancy**. These and other potential complications are detailed in the Informed Consent Documents you will be asked to review and sign. A moderate degree of hyperstimulation with mild abdominal distention and discomfort develops quite frequently about a week after egg retrieval. This usually does not require any special treatment. About 1/100 ART cycles are complicated by severe enlargement of the ovaries in response to the high doses of hormones used to stimulate the development of multiple eggs. This may be associated with fluid accumulating in the abdomen and fluid and salt imbalances. Bed-rest and/or hospitalization may be required and these problems may be worsened or prolonged by pregnancy. Intravenous fluids are helpful, as is removal of the accumulated fluid of the abdomen. This is accomplished by placing a needle through the vaginal wall into the abdomen under ultrasound guidance and anesthesia. It is performed in the same way as an egg retrieval.

One of the important factors contributing to the chance of success in an IVF cycle has been the replacement of multiple embryos. It is therefore not surprising that a fairly high rate of multiple pregnancy occurs. The majority of these pregnancies are twins but triplets and even quadruplets can occur when three or four embryos are transferred. Multiple pregnancy carries increased risks to the mother and the fetuses. Blastocyst transfer of two embryos may reduce the risk of multiple births without reducing the overall chance of conception.

In the event of a high order multiple pregnancy (more than twins), there is a procedure known as selective reduction. The procedure is performed at about twelve weeks gestation, because in 50% of triplet pregnancies and 70% of quadruplet and higher order pregnancies, the spontaneous loss of one or more embryos occurs. Patients who are interested in this procedure are referred to a specialized center. Selective reduction carries a small risk of loss of the entire pregnancy. There are clearly important ethical and psychological issues for you to consider prior to utilizing this technique. Once again, high order multiple pregnancies can be

practically eliminated by transfer of no more than two embryos. **An exception is if one of the embryos divides to become identical twins.**

There have been many articles in the medical literature evaluating the association between the use of **fertility drugs and ovarian cancer**. These drugs have been used since the early 1960's but the high doses, typically associated with IVF, began in the early 1980's. Most of the articles have shown no increase in the risk of ovarian cancer with the use of these drugs. However, two articles showed a possible association between ovarian cancer and Clomiphene (Clomid, Serophene) treatment, and received a great deal of media exposure. After a thorough analysis of all studies by the American College of Obstetrics and Gynecology, the American Society for Reproductive Medicine, and a number of epidemiologists, the conclusion was that the data remain unclear. Further study will be required to clarify any possible association.

STATISTICS FOR THE FERTILITY AND WOMEN'S HEALTH CENTER OF LA.

2002 Statistics

IVF: Pregnancy Rate (per cycle) 38/61 (62%)

IVF: Ongoing pregnancy rate 28/61 (45%)

(All ages, 25 - 42)

Frozen Embryo Transfer 20%

SUMMARY

The Assisted Reproductive Technologies, especially IVF, represent a tremendous advance in the treatment of infertility. Every couple attempting this type of therapy should understand the nuances of the treatment and be realistic about their chance of success. Careful evaluation of the infertility problem, full pre-screening, and an individualized approach to treatment will maximize each couples chances for success. Our goal is to help you understand the process, its risks and benefits, and develop a treatment plan that will optimize your chances of achieving a pregnancy and delivering a baby.

COMMUNICATION GUIDELINES

We would like your interaction with our team to be as pleasant and productive as possible. Below are some suggestions that we hope will enable you to utilize our services to your best advantage and help facilitate communication between your and our medical team.

1. The nursing staff is usually the first line of communication between you and your physician. Our IVF nurses will be your main contact persons. If you do not understand your treatment plan, the sequence of testing, implications of test results, or anything else pertaining to your care, do not hesitate to call your nurse.
2. Try to combine as many questions into one phone call as to make this service more efficient.
3. There may be instances when you need to speak directly with your physician. In these situations, be prepared to tell the receptionist why you must speak to a physician rather than a nurse.

4. After a completed cycle, you have the opportunity to meet with the physician to review the details of the cycle. If you have significant concerns (either positive or negative) please let the physician know at this time.

5. The IVF cycle can be stressful. To minimize the stress make certain you understand what is expected of you before the cycle begins.

We encourage couples who are considering IVF to visit with a counselor or mental health professional, so that they may gain a better understanding of ways to cope with the emotional aspects of infertility, especially IVF. Whether you are at the beginning, the middle, or the end of the road to resolving your infertility, mental health professionals can serve as a valuable resource along the way. They can provide a list of reading materials, sometimes conduct support groups, and if necessary, will put you in touch with other couples who have had experiences similar to your own.

PATIENT RESPONSIBILITIES

Our IVF team works hard to ensure you receive highly individualized care that will optimize your chances for becoming pregnant. We ask your assistance in making this process as efficient and as simple as possible by considering the following:

1. Be Proactive

Your primary nurse will be able to answer most of your questions. The IVF nurse will be your resource during the cycle in which you are undergoing IVF. You will be given a list of required pre-screening tests by your primary nurse. In many cases, all of these tests can be completed in one to two visits. **It will be your responsibility to contact the office with the first day of your menstrual cycle to schedule these tests.**

2. IVF Booklet

Please read your IVF booklet. Most of the information that will be discussed by your physician and nurse is also included in this book. If you have questions regarding the IVF process, please refer to your booklet first. If you need more clarification, please call your primary nurse. Please bring this book to all visits.

3. Financial

Please contact the office as soon as you know when you will be cycling and be sure that all arrangements including insurance preauthorization are complete prior to initiating treatments. You will not be able to begin your cycle until your financial arrangements have been finalized and any required deposits have been received. **If your insurance coverage changes you must notify the financial office immediately.**

4. Medications

Please purchase all of your medication a before you are planning to cycle. Some of the medications have been in short supply and are frequently difficult to obtain on short notice. When you are ready to start your IVF cycle, the IVF nurse will design a cycle plan specifically for you and advise you which medications you will need according to your physician's instructions. Ask you nurse about purchasing your medications through fertility medication mail order companies (Partners in Care, Schrafts) to obtain significant discounts in the cost of medication.

5. Injections

Please pick up the injection instructions and reconstitution techniques video from your primary nurse. Review the information and set up a practice injection session with your nurse. **This video must be returned for use by other patients.**

6. Cycle Monitoring

You will require frequent visits for ultrasound and endocrine hormone monitoring during your IVF cycle. It is very important that you come for your appointment at the scheduled time, because other patients may be cycling at the same time and your early or late arrival could cause others to miss their assigned time. Failure to keep an appointed time on weekend visits may result in you paying additional charges. Please notify the nurse when scheduling your appointment if you will have any problem in keeping your appointment.

7. Triggering (hCG injection)

During your IVF cycle, frequent changes may be necessary in the amount of medication you are taking. Decisions to change medication and to give hCG to trigger your ovulation are made by a panel of physicians. Changes in medication and the timing of your hCG injection and egg retrieval are critical to maximizing your chances of becoming pregnant. **You must be available in person by telephone to receive your instructions.** We cannot leave this information on an

answering machine. If this medication is not give appropriately, you may have no mature eggs to retrieve. (and thus no pregnancy)

8. Consent Forms

You will be given consent forms when you initiate an IVF cycle. These consents describe the various medications and procedures that will be administered and performed during your cycle. Please review then carefully. **You must bring them, signed, to your primary nurse before beginning Lupron.** Please read and sign all consent forms, even if you think they do not apply in case at retrieval the embryologist should recommend additional laboratory procedures. **If you have concerns about any issue in them, discuss this with your physician as soon as possible rather than on the day of egg retrieval or embryo transfer.**

9. IVF Orientation

You will be given the opportunity to learn more about the IVF process and your medical team at an orientation. This class gives you a unique view of the procedure directly from the perspective of the physician, embryologist, nurse. Your primary nurse will help you schedule the date most appropriate to your IVF cycle.

Understanding infertility and your emotions. . . .

Treating fertility problems means taking care of not only physical needs but emotional ones as well.

Infertility is recognized as a life crisis and can be a major source of stress. That stress is usually intensified during treatment; especially throughout an ART cycle. While this is not a mandatory requirement, we encourage all couples to meet with a mental health professional prior to beginning treatment, as well as during and after a cycle. If you are interested in meeting with a counselor or psychologist, please notify your primary infertility nurse.

IVF PRE-SCREENING TESTS

It is critical that an assessment of any potential obstacles to achieving a pregnancy be reviewed before initiating an IVF cycle. This involves testing on both the male and female partner. The following is a description of commonly performed IVF pre-screening tests. Not every test is done on every person, but some tests are mandatory. Your physician will determine which tests need to be performed before initiating a cycle, and your primary nurse will provide a list of tests that will be required for your cycle. **All tests must be scheduled in advance.**

I. Female Tests

1. Ovarian Function Tests

An essential aspect of the IVF cycle is the ability to recruit and retrieve multiple follicles. The type and amount of ovulation induction (OI) drugs you will need during your IVF cycle is individualized based on hormone levels and the number of follicles present the cycle before you begin OI drugs.

- a. **Day 3 Blood Work** – tested on day 3 of menstrual cycle (day 1 is day of first full flow)
 - FSH (follicle stimulating hormone)
 - E2 (estradiol)
 - TSH (thyroid stimulating hormone)
 - Prolactin
 - DhEAS
- b. **Day 3 Ultrasound** – performed on Day 3 of the cycle
 - Number of 3 to 5 mm follicles
 - Endometrial thickness

A more sensitive measure of ovarian function can be obtained by performing a:

- c. **Clomiphene Challenge Test (CCT)**
 - Blood tests and ultrasound Day 3 & 10 of cycle
 - Medication day 5-9 of cycle

2. **Evaluation of the Uterine Cavity**

The embryos that develop in the lab during an IVF cycle will ultimately be placed into the uterine cavity. Therefore, it is critical that the cavity is normal. This is evaluated by a hysterosalpingogram (HSG), sonohystogram, uterine saline instillation (USI), or a hysteroscopy. These tests are scheduled between the end of menses and the onset of ovulation. Only one of them is needed.

- **HSG** – X-ray's the flow of dye through the uterus and the tubes. These tests are usually performed in the Radiology Department of a hospital.
- **Sonohystogram / USI (uterine saline installation)** – Ultrasound of the flow of fluid through your uterus. This test is performed in our office.

- **Hysteroscopy** – Viewing of the uterine cavity through a lighted scope. Abnormalities of the cavity, such as polyps or fibroids, may be removed at the same time. This test is usually performed in the operating room.

3. Trial Embryo Transfer

It is essential that the embryos are transferred into the uterine cavity easily, without disrupting the intrauterine environment. The trial embryo transfer can identify cervical or uterine irregularities that may interfere with the transfer of embryos into the uterus. During this simple office procedure, a special catheter is passed through the cervix into the uterus, measuring the angle and shape of the cervical canal, as well as the uterine depth. Catheter location is sometimes confirmed by an ultrasound. This test is performed at the end of menses and before ovulation.

4. Infectious Disease Testing and Immunity Screening

Blood testing on both partners is required to rule out Hepatitis and HIV exposure. Negative infectious disease results must be documented every twelve months.

- Hepatitis B surface antigen; Hepatitis C antibody
- HIV
- RPR (serology)
- Rubella titer (one time only) (Female only)
- Blood group and RH (one time only) (Female only)
- Varicella titer (one time only) (Female only)
- Cytomegalovirus titer

II. Male Testing

1. Semen Analysis and Wash

- A semen analysis with 24 hour survival test must be completed prior to the IVF cycle. You may schedule this Monday through Friday. The specimen may be brought from home or collected in the office. It should be collected in the same manner and place as it will be collected the day of IVF. If you plan to collect via intercourse, you should request a special sperm collection condom. **(Regular condoms have spermicide on them and are not acceptable.)**

TYPICAL IVF STIMULATION

Your primary physician will prescribe a medication protocol after careful review of your medical screening test results. Below are the primary protocols used in our office for the IVF stimulations. Because each protocol or treatment plan is individualized in our practice your stimulation schedule may vary slightly.

Lupron/Antagon/Centrotide Suppression Protocol

Pre-operative Visit: A pre-operative visit is usually needed before your IVF treatment begins. At this visit, you and your doctor will discuss the treatment plan, and you may visit with other members of our health care team such as a nurse or financial counselor. Semen count may also be reviewed. If sperm to be used, you will need to select a donor prior to starting your IVF cycle.

First Month – If oral contraceptive pills are not prescribed.

Day 10: Begin using an ovulation predictor kit to determine specific day of ovulation. Call the IVF nurse when you get your test dates. The IVF nurse will tell you when to begin your Lupron injection or Synarel nasal spray.

First Month – If oral contraceptive pills are prescribed.

Day 1-3: Call the IVF nurse no later than the third day of full flow. The nurse will tell you when to begin your control pill. When there are 5 active pills remaining (don't count the placebo pills), you will begin your stimulation. After you finish the last pill, you will begin your period in a few days. Call the IVF nurse when you begin your period.

The first month is skipped in most cases if Antagon or Cetrotide are to be used for suppression.

Second Month – Gonadotropin stimulation protocol (**Follistim /Gonal F /Repronex/Bravelle**)

Day 3: **Payment for cycle and Consents Due**

- Ultrasound, blood work - E₂, LH, progesterone, hCG (to rule out pregnancy), FSH
- Expect a call from the office between 2-4 p.m. with dosing instructions.
- Start Follistim /Gonal F/ Repronex, plus other drugs, if appropriate (e.g., Metformin, prolactin, or baby aspirin).
- Reduce Lupron dose if appropriate.

Day 4: (Stimulation Day 2) Continue Gonadotropin and Lupron.

Day 5: (Stimulation Day 3)

- Blood work (E₂, LH, Progesterone).
- Reduce or increase Gonadotropins, if directed.
- Continue Lupron.
- If Antagon or Centrotide are used instead of Lupron, they will be started on Day 3 to 6, depending on diagnosis.
- Expect a call from this office between 2-4 p.m. with dosing instructions.

Day 6: (Stimulation Day 4)

- Continue Gonadotropins and Lupron as directed.

Day 7: (Stimulation Day 5)

- Ultrasound to check for follicles, blood work (E₂, LH, progesterone).
- Review cycle response with physician and IVF Nurse. Cycle may be cancelled if not enough follicles developing.
- Expect a call between 2-4 p.m. with dosing instructions.

Day 8 & 9: (Stimulation Day 6 & 7)

- Continue Gonadotropins and Lupron as directed.

Day 9: (Stimulation Day 8, earliest day that hCG is given)

- Ultrasound, blood work (E₂, LH, progesterone).
- Take hCG to trigger ovulation or continue to decrease or increase gonadotropins as directed.
- Continue Gonadotropins and Lupron, if hCG is not given.

?????

When your eggs are mature, you will be instructed to take the hCG injection (usually in the evening) prior to the scheduled egg retrieval. The timing of the hCG injection is critical. If you take it greater than 12 hours before you are told, you must notify the office so we can adjust the timing of the egg retrieval. Egg retrieval is performed 10-15 days after starting medication. Keep in mind, each cycle is unique and some retrievals may occur before or after these days.

If you do not take the hCG correctly and at the correct time, the entire cycle is in jeopardy. It is important that you understand how to do this.

Financial Information

The costs associated with In Vitro Fertilization are broken down into three sections: Prescreening, Medications, and the IVF Cycle Costs. Couples without insurance coverage for IVF should inquire with our office about their eligibility for other associated financing programs. (Advanced Reproductive Care, Inc. covers all aspects of the IVF cycle.) Couples with insurance coverage for IVF will meet with the financial coordinator to determine what charges, in any, will be the responsibility of the patient.

Each IVF cycle can cost between \$10,000 and \$15,000 depending on the amount of medication used and the procedures that are needed. The use of ICSI is approximately \$1200 extra. Our financial coordinator will meet with the couple and discuss the specifics of the cost prior to any testing.

Medication	Purpose	Amount Needed	Begin	Administered	Possible Side Effects	Dosin	
Lupron/Synarel Antagon Centrotide	Suppress ovaries	1-2 Vials	9 days after LH surge Stimulation Day 3 to 6	Sub-Q-injection, nasal spray Sub Q Injection	Hot flashes, headaches lethargy, sleep disturbances	Deper	
GONADOTROPINS: Follistim Gonal F Repronex Bravelle	Stimulation of multiple eggs	20-80 ampules	After initial suppression	Sub-Q injection IM injection	Hyperstimulation syndrome	1-8 an indivi	
HCG (Profasi or Pregnyl , Novarel, or Ovidrel)	Egg maturation	1 vial	Determined by follicle size	Sub Q or IM injection	Hyperstimulation	10,000	
Doxycycline Duricef	Antibiotics	9 capsules	Day of retrieval x 4 days	Oral	Systemic reaction if allergic to penicillin	Doxy twice Duric daily	
Methyl Prednisolone	Enhances implantation	12 Tablets	Evening of fertilization	Oral	Contraindicated in certain individuals	20 mg each e days	
Progesterone in oil	Implantation support	2 vials	Evening of egg retrieval	IM injection	Discomfort at injection; Painful injection; Reaction to sesame oil	50 mg pregn contin	
Estrace	Hormone replacement	100 tablets	As directed	Oral or vaginal	Allergic reaction	As dir	
Micronized Progesterone	Hormone replacement	36 capsules	As directed	Oral or vaginal	Fatigue, nausea, bloating	200 m Indivi	
Heparin	Counteract antibody reaction	10 vials	As directed	Sub-Q injection	Bruising	As dir	
Baby Aspirin	Counteract antibody reaction	1 bottle 81 mg. Tablets	Day of retrieval	Oral		1 Tabl	

Infertility Resources on the Internet

1. The Fertility and Women's Health Center of La.
 - a. www.FWHCLA.com
2. Center for Disease Control National and Center Specific IVF Pregnancy Rates
 - a. www.cdc.gov
3. American Society for Reproductive Medicine
 - a. www.asrm.org
4. Child of My Dreams, Premier Online Infertility and Adoption Resource
 - a. www.child-dreams.com
5. RESOLVE
 - a. www.resolve.org
6. Fertility Resource
 - a. www.fertilitycommunity.com
7. Adoption Resources
 - a. www.adoption.org
 - b. www.adoptivfam.org
8. Pregnancy Loss: SHARE support groups
 - a. www.nationalSHAREoffice.com

