Greenwich Fertility

Where Hope Comes Alive

Gestational Carrier and Intended Parents Handbook

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Introduction

Welcome to Greenwich Fertility. We look forward to working with you, hand in hand, to achieve your family building goals. This packet will help you understand the processes of a Gestational Carrier (GC) cycle at Greenwich Fertility. The use of a gestational carrier has become an established treatment for infertility due to abnormalities of the uterus or absence of the uterus. They have also been used for patients who have been told that they may not carry a pregnancy themselves for medical reasons or for same sex couples who wish to become parents. The main goal of using a gestational carrier is to allow a patient or couple the opportunity to become parents who are unable to carry the pregnancy themselves. Often, the eggs are obtained from a female intended parent (IP) and the sperm from her male partner; the resulting embryos are then transferred into a gestational carrier. Donor gametes, egg and/or sperm, may also be employed.

The gestational carrier is a healthy woman chosen by the intended parent/parents, often with the help of outside agencies, who will carry the pregnancy to term for the intended parents. There is no genetic link between the gestational carrier and the baby. This is an elective procedure designed to result in the patient's pregnancy when other treatments have failed or are not appropriate. Greenwich Fertility requires that the intended parents and gestational carrier seek separate outside legal counsel and draw up a mutually agreeable legal contract to clarify all issues pertaining to the arrangement before embarking on treatment.

We appreciate that the gestational carrier journey can be complicated, but with information, preparation, and a highly trained and experienced professional staff, we hope to make your experience a positive one. This handbook includes information about gestational carrier options, requirements for screening and testing of the biologic parents and gestational carrier, oocyte retrieval procedure, embryo transfer procedures, psychological and genetic consultations, medication instructions, consent forms, and financial policies.

Physicians

Barry Witt, M.D.

Anate Brauer, M.D.

Laura Meyer, M.D.

Nora Miller, M.D.

Greenwich Fertility's exceptionally trained, board certified physicians see patients by appointment only. Available appointment dates will vary depending on whom you select as

your primary consulting physician. Please contact the physician's office directly to schedule an appointment.

Gestational Carrier Nurse Coordinator and Orientation

Christine Monroe, RN

203-863-2990

Christine.Monroe@greenwichhospital.org

The Greenwich Fertility Gestational Carrier nurse will coordinate the care plans of all intended parents and gestational carriers. She will be available to you throughout your cycle. Each intended parent and gestational carrier will have a comprehensive orientation to review the topics outlined in this handbook and to receive prescriptions and instructions for the medications needed during the donation cycle.

Our nurses are available to answer questions or help with any matter, Monday through Friday, 8:00 am to 4:00pm. For after hours, weekends, and for all medical emergencies, please call the Greenwich Fertility main line at 203-863-2990, which is covered by the answering service when the office is closed.

Consent forms

There are several Greenwich Fertility consent forms that the intended couple and gestational carrier must review and sign in the presence of a clinical or nursing staff member or notary public. All consents must be signed prior to starting a cycle

Billing

The Greenwich Fertility Billing Department is available to answer questions related to the financial policy for a gestational carrier cycle. Matters regarding finances should be directed to a billing representative at 203-863-2990, Monday- Friday, 9:00 am – 4:00pm.

Psychological Services and Psycho-Educational Consultation

All patients using third party reproduction including gestational carriers and/or donor eggs, and/or donor sperm must meet with one of our licensed psychologists. This means that the Intended Parent/Couple (IP) and the prospective Gestational Carrier (GC) and her husband or live-in partner/significant other (if applicable) are required to meet together with one of our psychologists. This screening will most likely be scheduled during the Gestational Carrier's medical screening but can be scheduled at a different time if necessary. The reason for this meeting is to give all parties the opportunity to learn more about the emotional and psychological issues they may experience/ have experienced surrounding their decisions.

An initial meeting will be conducted with each party separately. The clinical interview will include psychological and social history, assessment of present functioning, and detailed discussion of psychological/emotional aspects of participating as a GC/IP. The interview will take approximately 60-90 minutes. The PAI (psychological testing) will be administered by the psychologist or by a trained assistant (nurse or PCA) to the Gestational Carrier and her spouse. This test will be administered in a room free from distractions and usually takes 60-90 minutes to complete.

Once the individual meetings with the Psychologist has been conducted with all of the parties concerned, the GC , her partner (if applicable)and the IP(s) will be required to meet as a group with the psychologist. Should any concerns become apparent or arise from these meetings they will be addressed with the parties prior to proceeding with the treatment cycle.

If recommended, psychological support may be offered to the GC or IP upon request during/following the pregnancy, as needed, to be covered by the IP.

Please note our psychologists are very experienced in all aspects of reproductive counseling, including stress management, mood disorders, pregnancy loss, sex therapy, and couples counseling and are available for therapy should any patient/couple wish to use this service.

Procedure for Intended Parents undergoing a Gestational Carrier Cycle

Greenwich Fertility patients considering using the services of a gestational carrier should be advised to call the coordinator to schedule a consult to start the procedure for a Gestational Carrier cycle. At this initial consultation the physician will describe the steps, outlined below, which are involved in a gestational carrier cycle. They will explain that Intended / biologic parents undergoing a GC cycle are considered gamete "donors" and therefore must undergo, comprehensive screening and testing procedures that are mandated by the Food & Drug

Administration (FDA), the New York State Department of Health (NYSDOH) and the American Society of Reproductive Medicine (ASRM). The GC Coordinator will provide the IPs with information regarding **Gestational Carrier Agencies**, which can help them to identify potential suitable gestational carriers, legal counsel and guidance through the whole process, if desired. Intended parents may come with their own GC. In that case, all of the same steps are required as outlined here for an agency GC. Our goal is to streamline the GC cycle process and to minimize the number of visits required for each of the participants.

1. The Intended patient(s) will schedule a routine "New Patient consult" with the Greenwich Fertility physician they select. This will include the Consult, a physical examination of the female partner and male partner (if needed), and diagnostic testing of both partners as is required of all IVF patients at GFIVF. Infectious disease testing of either or both partners will be conducted if they have not been previously performed.

2. For patients referred by NYU Fertility Center, each of the following tests will be accepted as long as it has been performed <u>within the past year</u>: physical examination, serum TSH and prolactin, Pap smear, Mammogram, and Semen Analysis. All genetic testing results will also be accepted. Medical records and prior testing results should be sent to Greenwich Fertility prior to the scheduled consult.

3. The female IP will need to undergo the following testing:

    a. TSH, Prolactin, genetic testing, and Hemoglobin Electrophoresis. Infectious disease testing for HIV, Hepatitis, syphilis, gonorrhea/Chlamydia and cytomegalovirus will be conducted at this time, if needed. An up to date pap smear is also required.

4. The male IP will need to provide an ejaculate for semen analysis and undergo infectious disease testing and genetic testing if needed.

5. The IP(s) as the "egg donor" and "sperm donor" must each complete the following as required by federal law:

    a. Greenwich Fertility questionnaire assessing risks for transmission of infectious diseases and detailing their social and medical histories.

    b. Greenwich Fertility physical assessment which may be conducted at Greenwich Fertility. For Male IPs, a physical exam will be scheduled with one of our affiliated Urologists.

    c. Infectious disease testing including blood work, cervical cultures and possibly urine tests within certain time frames and testing methodologies as outlined by

the FDA. These tests include, but are not limited to HIV (the virus responsible for AIDS), syphilis, and hepatitis (types B and C), Gonorrhea and Chlamydia.

An appointment is made for the testing of infectious disease screening of the IP couple according to the FDA regulations. Our highly trained staff will help you coordinate these steps. For females, this must be done within 30 days prior to the egg retrieval. For males, the testing must be done within 7 days of the sperm sample production or the day of the egg retrieval. For most males, the recommendation will be to cryopreserve sperm in order to facilitate compliance with FDA regulations. Infectious disease testing is performed immediately prior to providing an ejaculate for cryopreservation. The semen specimen used in a GC cycle must be collected/cryopreserved and the donor tested according to FDA regulation at Greenwich Fertility.

FDA regulations stipulate a quarantine of the cryopreserved, donor sperm specimens for 6 months and subsequent infectious disease re-testing of the intended father. However, this requirement can be waived by the GC since this is considered a directed donation.

Results of FDA labs, FDA physical or the FDA questionnaire that may deem an IP "ineligible" must be resolved prior to moving forward with a cycle.

If you are using donor gametes:

If you are using anonymous donor sperm, these specimen(s) must be collected and cryopreserved (frozen) at and released by sperm banks licensed by the New York State Department of Health (NYSDOH). To purchase these cryopreserved specimens, you will need to open an individual account with the sperm bank of your choice.

If you are using anonymous donor eggs with frozen eggs, the donor will have already undergone the above FDA, NYSDOH and ASRM required screening and testing. If using an anonymous donor through an agency, we will perform her FDA screening during her stimulation cycle.

6. The GC and/or Gestational Carrier Agency should have her profile and medical records forwarded to the Greenwich Fertility doctor for review. This should include obstetrical and gynecological records and a letter from an obstetrician-gynecologist stating that the patient is a good candidate for carrying a pregnancy.

7. After review of the GC records, your Greenwich Fertility physician will approve the GC for her medical screening and evaluation by the psychologist. An appointment is made for the GC

(and any intimate partner) with the psychologist, as well as a group meeting with the GC and IP's together.

8. Upon final approval by the Greenwich Fertility Physician, the IP's and GC should complete legal contracts as discussed below and documentation (a letter of clearance) by their independent counsels should be provided.

10. Upon completion of all the steps above, the GC cycle may be scheduled.

Gestational Carrier and sexually intimate partner requirements

Once the Gestational carrier has been identified her medical records and profile must be provided to your Greenwich Fertility physician for review and approval. **The GC must have a letter of clearance from her OB/GYN to carry a pregnancy and must provide this plus all past medical records to the Greenwich Fertility physician for review.**

When the intended parents have selected and have finalized the legal arrangements for the GC they will move on to the second phase of the procedure to test the GC. If the IP(s) have already identified a GC at the time of the consult, then they can immediately move to this phase. However, **before the GC can be seen at Greenwich Fertility, signed copies of all legal contracts between the IP and the GC must be received**. Once the above documents have been received and reviewed, then appointments will be scheduled for the GC and her partner for medical and infectious disease testing. . **The testing will require a full day and will involve medical examination/testing and psychological testing**. It may be requested that the Intended parent(s) also be present on the day of the testing. In some cases, if requested by the IP's and GC, the GC may be seen at Greenwich Fertility prior to legal contracts being signed and the legal contracts will be signed after evaluation of the GC.

The following steps describe the steps required

1 An initial psycho-educational consultation between the GC, her partner if applicable followed by a group meeting involving the GC, her partner, and the IP(s).

2 The GC will undergo a physical exam by our physician and by an Obstetrician/Gynecologist or Perinatologist of their choice, to evaluate whether there are potential risks that the pregnancy may pose to the GC.

3 Subsequent testing at GFIVF will proceed after the GFIVF physician meets with the GC to discuss the procedure and sign the appropriate GFIVF consents:

   a. Ultrasound examination of the uterus

   b. Uterine sounding (measurement of length of uterine cavity by passing a catheter into the cervix)

c. Checklist labs for the GC and partner (if applicable) including infectious screening tests

d. Urine GC/Chlamydia testing

e. Serum TSH, Prolactin

f. Rubella, Varicella, Measles, Blood type and Rh (if no records available)

g. Pap Smear (If no records available)

h. Urine Drug – Toxicology screen

i. Hysterosonogram (HSN). This test is usually performed between day 5 and day 10 of the menstrual cycle. The test is used to look for polyps or fibroids that could decrease the chances of success if they are not removed.

Contract & Legal Concerns

A surrogate parenting agreement is a formal contractual relationship between a woman and another individual or couple in which the woman agrees to carry a pregnancy for another individual or couple through an IVF embryo transfer using genetic material that does not include her own eggs. The woman is designated as the "gestational carrier" or GC, and the individual(s) who desire to have a child are designated as the intended parent(s) (IP or IPs). In addition to the medical procedures, there are multiple laws and regulations that should be addressed in order to protect everyone involved

The gestational carrier and intended parent(s) must have ongoing legal counsel by an appropriately qualified legal practitioner who is experienced with third-party reproduction and licensed to practice in the relevant state or states, or in the event of an international arrangement, the intended parent(s)' home country. Gestational carriers and intended parents should have their own, separate legal representation.

A legal contract prepared by such counsel must be in place prior to commencement of final screening and testing of the GC in preparation for the GC cycle. This contract should contain information designating the roles of all participants involved with respect to parental rights. Additionally, the contract should address all relevant issues, including but not limited to, the amounts, timing and escrowing of compensation (if any), insurance coverage for the pregnancy and offspring, medical care and decision making, and any other information relevant to a pregnancy, parental rights or the arrangement. The clinic staff is not able to provide legal advice.

All parties involved should be aware that the state of the law pertaining to gestational carrier arrangements and parental rights resulting from such arrangements differs from state to state. Each participant (the GC with any spouse) and the Intended Parent(s), should retain and be represented by a lawyer with relevant experience in family law and gestational carrier contracts. The participants will have to take legal actions to allow the intended parent(s)' name(s) to be recognized as the legal parents and hopefully entered on the child's birth certificate. This may require a court petition prior to the birth of the baby and should be handled by an experienced reproductive technology law attorney. The clinic, and any employees or contractors, are not able to review the contract for completeness or content. A letter of clearance from the respective attorneys will be required prior to treatment with a statement that a valid legal contract has been prepared, negotiated, and properly entered into to the satisfaction of the intended parent(s) and the gestational carrier (and any spouse), that the GC and IPs have had independent counsel, and all participants understand and assume the risks of proceeding.

STARTING THE GESTATIONAL CARRIER CYCLE

Once the GC and the intended parent(s) have successfully completed all required testing and have been cleared, then dates for the GC cycle will be set.

In cases where the IP's embryos are not cryopreserved in advance, the Intended mother and the GC will then be linked together and synchronized for Oocyte retrieval and embryo transfer. We recommend that embryos are created and cryopreserved in advance of an embryo transfer to a GC to minimize and complications in coordinating the cycles. In this way the cycle will then follow the preparation and timing employed in a Frozen Embryos Transfer (FET) cycle. Infectious diseases testing of the IP (directed egg donor) will be performed at the start of ovarian stimulation during her GC cycle.

Treatment Overview

The individual providing eggs will undergo ovarian stimulation and egg retrieval or harvest. This treatment will be identical to in vitro fertilization (IVF) with the exception that the embryos will be placed into the uterus of the gestational carrier. A description of the IVF process and risks is attached to the end of this document, as well as in our IVF handbook

Gestational Carrier Treatment Overview

The instructions below provide an overview of the treatment for a gestational carrier. The clinic staff will provide a detailed treatment schedule.

A gestational carrier cycle may include some or all of these steps:

- Oral Contraceptive Pills (OCP's/birth control pills)
- Prenatal vitamins, supplements, and prescription medications
- Pituitary suppression using GnRH agonists or antagonists (e.g., leuprolide, Lupron®, ganirelix, Cetrotide®)
- Development of mature endometrium (uterine lining) using estradiol
- Progesterone for luteal phase support. Progesterone is usually given in an injectable form, however vaginal preparations may be considered in some cases.
- Transfer of the embryo(s) back into the uterus
- Pregnancy test

Oral Contraceptive Pills (OCP's)

The gestational carrier will begin using oral contraceptive pills (OCP's) at the beginning of the menstrual cycle. Some people experience spotting or bleeding while on the pills, and this is normal. The OCP's prevent ovulation and help to regulate the timing of the cycle. After 1 to 4 weeks on pills, the gestational carrier will come in to the clinic for an ultrasound to make sure that the endometrial lining is thin, and that there are no large cysts on the ovaries that might interfere with the treatment.

Prenatal Vitamins and Other Medications

The gestational carrier will need to begin taking prenatal vitamins if not already using them. Folic acid alone may also be used. It's also important not to use any non-steroidal anti-inflammatory medications once the treatment starts. These medications may hinder implantation of the embryos. Examples of this type of medication are ibuprofen (Advil® Motrin®) and naproxen sodium (Aleve®). Similarly, anti-histamines such as Benadryl have also been shown to hinder implantation and should be avoided. It is all right to use acetaminophen (Tylenol®). Any medications prescribed by other physicians, or any over-the-counter medications, including herbal remedies, should be brought to the attention of the physicians. The gestational carrier should only take medications that are considered safe during pregnancy.

Pituitary Suppression Using GnRH agonists and antagonists

Approximately two weeks after beginning the OCP's, GnRH agonists or antagonists (leuprolide, Lupron®, ganirelix, Cetrotide®) may be started. These medications suppress the pituitary gland, preventing natural hormones from interfering with the lining of the uterus. Potential side effects of pituitary suppression are hot flashes, headaches, vaginal dryness, and mood changes. There are no known long-term effects of using this medication as prescribed in a gestational carrier cycle.

Development of Mature Endometrium (uterine lining)

After the oral contraceptives are stopped, or during ovarian suppression with Lupron, a menstrual period will start. This menses may be lighter than usual. At this point an ultrasound and blood test evaluation is commonly performed. If normal, the estrogen will be started. Additional estrogen in the form of shots, pills, patches, or suppositories may be prescribed in certain circumstances. Vaginal discharge may increase as estrogen level increases, and some people feel more emotional during this time as well. Ultrasound and blood testing will be performed periodically to evaluate the development of the endometrium. You will continue your estrogen or estradiol medication until your pregnancy test is positive. If positive; you will continue this medication up to twelve weeks of pregnancy. If pregnancy test is negative; you will discontinue medication.

Progesterone for Luteal Phase Support

The most noticeable side effect of progesterone is constipation. The best intervention for this is to increase fluid intake, especially water and other non- caffeinated beverages. Progesterone can also mimic symptoms of pregnancy, such as breast tenderness and nausea. This medication makes the uterus undergo final preparation for receiving an embryo. In a "fresh" GC cycle, the gestational carrier typically starts progesterone on the same day the egg collection takes place for the intended mother or egg donor. For an FET cycle, the date of progesterone start is obtained based on when the endometrial lining is ready and when the embryology laboratory schedule determines the date of the planned transfer. In that case, progesterone is started 6 days prior to the embryo transfer. Once progesterone is begun, it is continued at least until the day of the pregnancy test. If your pregnancy test is positive, you will continue progesterone for up to twelve weeks. If your pregnancy test is negative, you will discontinue progesterone.

Gestational Carrier: Potential Risks

Medications

The risks associated with the medications, both oral and injectable, are rare, but may include mood changes, weight gain, headaches, hot flashes, vaginal dryness, discomfort and bruising at injection sites, increased vaginal discharge, breast tenderness, nausea, and constipation. Rarely, patients may experience an allergic reaction to the progesterone, which may include hives, a rash, and itching. Rarely, high doses of estrogen can increase the risk of blood clots, liver disease, gallbladder disease, or increased growth of any estrogen-sensitive tumor that may be present. There may be other risks which, at the present time, have not yet been identified. The occurrence of any of the above may also result in increased financial cost and emotional strain. Blood sampling may result in bruising or infection. The embryo transfer may be slightly uncomfortable and carries a minor risk of infection. Ultrasound exams may cause discomfort. There are no other known risks associated with ultrasound.

Multiple Pregnancies (Twins, Triplets, and More)

There is a risk of multiple pregnancies that increases with the number of embryos transferred. The determination of the number of embryos to transfer into the uterus is based on the goal of maximizing the chance of a pregnancy and minimizing the risk of multiples. The intended parent(s) and the gestational carrier have input on the number of embryos to transfer and everyone, including the physician, must be in agreement. Elective single embryo transfer, especially in the setting of a genetically tested embryo, is highly encouraged

Pregnancy Problems and Complications

All pregnancies are at risk of complications. Complications may increase the health risk to the gestational carrier or result in risk to the baby/babies. Fertility treatments may increase some of these risks. There are also risks of malformations or birth defects that are common to all pregnancies. There may be unknown long-term side effects as a result of this procedure, including those that could occur in subsequent generations as a result of currently unknown genetic problems associated with the embryos. A detailed discussion of these risks is beyond the scope of this document, but any specific questions regarding risks should be addressed with the physician.

Roadblocks

There are several issues that could occur which would prevent completion of the cycle, and/or prevent pregnancy. Some potential gestational carriers may be identified before the cycle as unsuitable for pregnancy due to medical, psychological or social reasons. Treatment may be stopped at the discretion of our physician for a variety of medical reasons before transfer. There may be no embryos surviving or no actively dividing embryos available for transfer. Laboratory procedures may result in loss or damage to the embryos. Certain infectious diseases may prevent the transfer of embryos to the gestational carrier. The actual embryo transfer may be difficult or impossible to accomplish. The carrier's lining may also not adequately develop which would result in cancellation of the cycle. If embryos are transferred, pregnancy may still not occur. If pregnancy does occur, it may not continue until full term. Should a miscarriage or ectopic pregnancy occur, additional medical care may be necessary and may result in additional emotional and financial investment.

The IVF Procedure

A complete description of the IVF process including the female IP's stimulation and retrieval procedures is attached to the end of this document.

Sperm

If applicable, the male intended parent will receive an appointment to provide a fresh sperm sample that will be used to fertilize the eggs. He will need to bring a photo ID and come to Greenwich Fertility Embryology Laboratory at ***Greenwich Hospital (5 Perryridge Road Greenwich, CT 2nd floor Watson Pavilion)*** to provide a fresh specimen. Shortly after signing in, he will be directed to the sperm collection suite. After he has collected his specimen, he will be asked to wait until the embryologist analyzes his specimen and advises him if it is suitable or another specimen is required. Male partners should not leave the premises until the embryologist indicates his specimen is adequate for the procedure. If donor sperm is being used, our laboratory will thaw a specimen on the day of the egg retrieval. It must be confirmed that the donor sperm specimen(s) are in storage at the Greenwich Fertility IVF lab before stimulation treatment is started.

Fertilization

In order to fertilize the eggs, they are either exposed to sperm in a dish for routine insemination procedures, or intracytoplasmic sperm injection (ICSI) is performed. ICSI involves the direct injection of a single sperm into the interior of an egg using an extremely thin glass needle. ICSI allows couples with male factor infertility to achieve fertilization and live birth rates close to

those achieved with in vitro fertilization (IVF) using conventional methods of fertilization in men with normal sperm counts.

The day after the eggs are exposed to sperm, a nurse will call the intended parents with fertilization results. The fertilization results will include how many eggs have fertilized to become embryos and when the transfer is planned. Grading and assessing embryo quality cannot be performed by the embryology laboratory at this time. Such assessment is performed on day 5 of embryonic development and you will be given a summary of the embryo grading prior to the embryo transfer.

The Embryo Transfer

The embryo transfer is performed at our IVF facility at Greenwich Hospital ***(5 Perryridge Road Greenwich, CT 2nd floor Watson Pavilion)***. The procedure, which is usually painless, is performed by placing a small catheter into the uterus of the GC and gently placing the embryos into the cavity of the uterus. There are no special requirements or limitations for embryo transfer. The GC may take any prescribed medications and eat and drink that day. Embryo transfers are usually performed between 11:00 am and 1:00 pm. Arrival should be 30 - 45 minutes prior to the assigned transfer time.

On the day of transfer, a Greenwich Fertility physician will review the status of the embryos with the IP's and GC and his/her recommendation for the number to be transferred. The procedure itself is very simple. It resembles an intrauterine insemination. After being positioned in the embryo transfer procedure room, an embryologist will place the embryo(s) into a special catheter. A physician will pass the catheter through the cervix into the uterus, and then inject the embryos and a tiny bit of fluid gently into the uterus. An ultrasound may be used during this procedure to monitor the position of the catheter in the uterus. Following embryo transfer there are a few specific activity limitations. It is generally recommended to "take it easy." We recommend that eating well and getting plenty of sleep, but no smoking or alcohol use. Continue to take the estrogen, progesterone and any other prescribed medications as instructed.

Pregnancy tests are done 8-10 days after embryo transfer. If pregnancy results are positive, supplemental hormones may continue until 12 weeks of pregnancy (10 calendar weeks).

Cryopreservation of Embryos

Freezing (or “cryopreservation”) of embryos is a common procedure. Since multiple eggs (oocytes) are often produced during ovarian stimulation, on occasion there are more embryos available than are considered appropriate for transfer to the uterus. These embryos, if viable, can be frozen for future use. This saves the expense and inconvenience of stimulation to obtain additional eggs in the future.

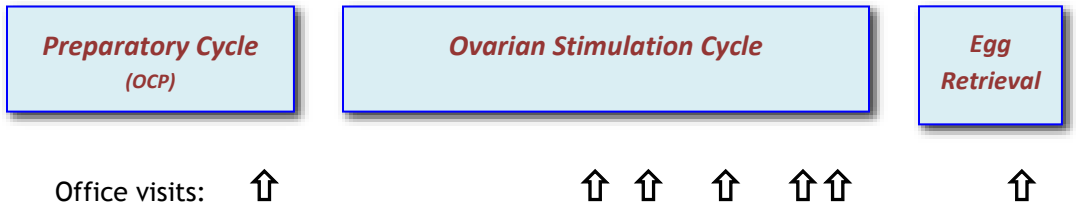
Thank you for considering Greenwich Fertility as your provider and partner throughout this journey.

The IVF Process

Ovarian Stimulation of Intended Parent to Obtain Eggs

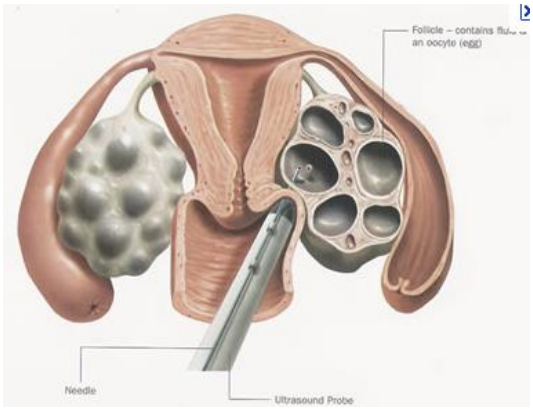
- **Injections of the natural hormones FSH and/or LH (gonadotropins) are used to cause a group of eggs to develop to maturity.**
- **Additional medications are used to prevent premature ovulation.**
- **An overly vigorous ovarian response can occur, or conversely an inadequate response.**

Medications are used to stimulate the ovary in hopes of inducing the simultaneous growth of several oocytes (eggs) over the span of 8 or more days. Monitoring of the ovarian response by ultrasound is important. A typical pattern of office visits is shown below:



Egg Retrieval

- **Eggs are removed from the ovary with a needle under ultrasound guidance.**
- **Anesthesia is provided to make this comfortable.**
- **Injury and infection are rare.**



A transvaginal ultrasound probe is used to visualize the ovaries and the egg-containing follicles within the ovaries. A long needle is guided into each follicle and the contents aspirated. The aspirated material includes the egg. For the female intended parent, the retrieval is the last procedure she must undergo.

In vitro fertilization and embryo culture

- **Sperm and eggs are placed together in specialized conditions (culture media, controlled temperature, humidity and light) in hopes of fertilization.**
- **Culture medium is designed to permit normal fertilization and early embryo development, but the content of the medium is not standardized.**
- **Embryo development in the lab helps distinguish embryos with more potential from those with less or none.**

After eggs are retrieved, they are transferred to the embryology laboratory where they are kept in conditions that support their needs and growth. The eggs are placed in small dishes or tubes containing "culture medium," which is special fluid developed to support development of the embryos made to resemble that found in the fallopian tube or uterus. The dishes containing the embryos are then placed into incubators, which control the temperature and atmospheric gasses the eggs experience.

A few hours after eggs are retrieved, sperm are placed in the culture medium with the eggs, or individual sperm are injected into each mature egg in a technique called Intracytoplasmic Sperm Injection (ICSI) (see below). The eggs are then returned to the incubator, where they remain to develop. Periodically over the next few days,

the dishes are inspected so the development of the embryos can be assessed.

The following day, after eggs have been inseminated or injected with a single sperm (ICSI), they are examined for signs that the process of fertilization is underway. At this stage, normal development is evident by the still single cell having 2 nuclei; this stage is called a zygote or a 2PN embryo. Two days after insemination or ICSI, normal embryos have divided into about 4 cells. Three days after insemination or ICSI, normally developing embryos contain about 8 cells. Five days after insemination or ICSI, normally developing embryos have developed to the blastocyst stage, which is typified by an embryo that now has 80 or more cells, an inner fluid-filled cavity, and a small cluster of cells called the inner cell mass.

Certain decisions regarding this phase will need to be made beforehand, including:

- The manner of fertilization
    - ICSI involves the direct injection of a single sperm into the interior of an egg using an extremely thin glass needle. ICSI allows couples with male factor infertility to achieve fertilization and live birth rates close to those achieved with in vitro fertilization (IVF) using conventional methods of fertilization in men with normal sperm counts. ICSI may also be used to maximize the rate of fertilization of previously cryopreserved (frozen) eggs or eggs that are shared with other recipients.
- Whether a fresh transfer will be done to the GC or whether cryopreservation of all blastocysts will be done in advance of the transfer cycle to the GC.
    - If cryopreservation is planned, whether Preimplantation Genetic Screening (screening embryos for chromosomal abnormalities prior to freezing them) is to be done prior to cryopreservation in order to reduce the risk of miscarriage once the GC conceives.
- What to do with extra eggs and/or embryos
    - Freezing (or “cryopreservation”) of embryos is a common procedure. Since multiple eggs (oocytes) are often produced during ovarian stimulation, on occasion there are more embryos available than are considered appropriate for transfer to the uterus. These embryos, if viable, can be frozen for future use. This saves the expense and inconvenience of stimulation to obtain additional eggs in the future.

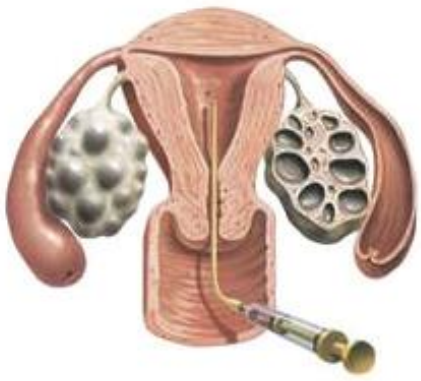
Embryo Transfer into Gestational Carrier

- **After a few days of development, or in a frozen embryo transfer (FET) cycle, the best appearing embryos are selected for transfer.**
- **The number chosen influences the pregnancy rate and the multiple pregnancy rate.**
- **Embryos are placed in the uterine cavity with a thin tube.**
- **Excess embryos of sufficient quality that are not transferred can be frozen.**

One or more embryos are selected for transfer to the uterine cavity. Embryos are placed in the uterine cavity with a thin tube (catheter). Ultrasound guidance may be used to help guide the catheter or confirm placement through the cervix and into the uterine cavity. Although the possibility of a complication from the embryo transfer is very rare, risks include infection and loss of, or damage to, the embryos.

The number of embryos transferred influences the pregnancy rate and the multiple pregnancy rate. The age of the woman who provided the eggs, and the appearance of the developing embryo, have the greatest influence on pregnancy outcome and the chance for multiple pregnancy.

Elective single embryo transfer (eSET) is highly recommended for GC carriers in order to prevent the gestational carrier from being pregnant with twins. If embryos have undergone PGS, an elective single embryo transfer should be done at the time of the subsequent frozen embryo transfer (FET) cycle.



Hormonal support of the uterine lining

- **Successful attachment of embryo(s) to the uterine lining depends on adequate hormonal support.**
- **Progesterone, given by the intramuscular or vaginal route, is routinely given for this purpose.**

Successful attachment of embryos to the uterine lining (endometrium) depends on adequate hormonal support of the lining. The critical hormones in this support are progesterone and estradiol. Normally, the ovary makes sufficient amounts of both hormones. However, in IVF cycles, this support is not always adequate. Therefore, progesterone is routinely given, and some clinics also prescribe estradiol. Progesterone is given by the intramuscular or vaginal route. Estradiol is given by the oral, vaginal, transdermal or intramuscular route. The duration of this support is from 2 to 10 weeks.