Donor Egg Recipient
In-Vitro Fertilization Handbook
**Introduction**

Potential egg recipients are women who have premature ovarian failure, women who are carriers of a genetic disease, or women who have had a poor response to IVF using their own eggs. Egg donation involves retrieving oocytes from a donor’s ovaries to allow other women achieve a pregnancy.

All couples who wish to be considered for Donor Egg / IVF must have an initial consult with a clinician. Your prior clinical history will be reviewed to determine whether this is a suitable option. It is important that your medical records be made available at the time of this consultation. We may request that certain fertility tests be performed before entering the Donor Egg Recipient IVF program. Also, other therapeutic options may be discussed at that time. We prefer that both partners be present at the time of the initial consultation.

**Recipient Workup and Getting Started**

Following your initial consultation, you will need to complete the following:

1. **Psychological Counseling**
   It is impossible to state with any degree of certainty or specificity the psychological implications of your participation in the Egg Donor Program. A consultation is required with a clinical psychologist during which time psychosocial issues surrounding egg donation and the possible short and long-term implications for families formed as a result of this technology. During this meeting you will be able to discuss your feelings and thoughts related to egg donation in order to assist you in making an informed and responsible decision. You will also have the opportunity to address the ethical issues of family building through donor egg. Some of the areas of potential difficulty that will be discussed, among others, are the possible curiosity of a child regarding his/her genetic heritage, discontinuity of traditional connectedness usually experienced in the parent/child relationship, and questions and feelings that might arise in the future.

2. **Infectious Disease Testing**
   We ask that all couples perform infectious disease testing to ensure both partners are healthy. If any test is positive, it will need to be evaluated by an infectious disease doctor before proceeding.

3. **Hormone bloodwork**
   We recommend reproductive hormone testing prior to proceeding and correcting any abnormalities if needed.

4. **Semen Analysis**
   Evaluating your partner’s sperm is an important step to ensure it is of optimal quality. This test will help us evaluate which type of insemination we will perform for IVF.

5. **Sonohysterogram, Femvue, or a Hysterosalpingogram**
   A sonohysterogram is a type of transvaginal ultrasound used with the placement of saline into the uterus that allows the doctor to view the uterine cavity and diagnose any pathology, such as scar tissue, polyps, fibroids or a septum. A femvue or a hysterosalpingogram is an ultrasound or x-ray that is performed after a small catheter is placed into the uterus and saline or dye enters the cavity and fallopian tubes. One of these tests must be performed within one year of proceeding with the donor egg process.

6. **Consents**
   Consents need to be signed in our office and witnessed to proceed with the procedure.
7. **Egg Donor Matching and Selection**

Reproductive Science Center of NJ works with known donors that you can bring to our program. For anonymous fresh egg donation, we are affiliated with Tiny Treasures, a nationwide donor recruitment agency, which provides our patients with a wider variety of donors. We are also affiliated with two frozen egg banks which have eggs for immediate release.

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**Egg Donor Screening and Workup**

The following is a list of necessary screening for egg donors:

1. **Egg Donor Questionnaire**
   All egg donors will receive an egg donor questionnaire and infectious disease questionnaire. Each form needs to be filled out in its entirety. All questions need to be answered with honesty. Included are questions pertaining to infectious disease risk, medical history and family history.

2. **Medical Records and Gynecological Records**
   It is recommended to have a copy of the donor’s medical and gynecological records for our review.

3. **Consultation**
   A physical examination and medical history will be performed by a clinician. This will include a transvaginal ultrasound and pelvic exam. The donor will have a thorough explanation of the risks and side effects of the medications and procedure. Consents will be signed.

4. **Psychological Counseling**
   The egg donor is required to have a counseling session with a clinical psychologist to review psychosocial issues surrounding egg donation and the possible short and long-term implications as a result of this technology. Also a mental disease assessment of the egg donor and her family is completed. She must be approved by the psychologist to proceed with a cycle.

5. **Hormonal Bloodwork**
   Egg donors have follicular phase bloodwork done in the beginning of their cycle, on cycle day 2, 3 or 4. This bloodwork includes estradiol, AMH, and FSH to assess her ovarian reserve, as well as TSH and prolactin levels.

6. **Infectious Disease Testing**
   All egg donors are required to have certain F.D.A. approved infectious disease testing, including blood work, cervical cultures and possibly a urine test within 30 days of the egg donation. If you choose, additional initial infectious disease testing can be performed before beginning the cycle as well. If any test is positive, the egg donor may not be a candidate for this procedure. Infectious disease screening includes, but is not limited to:
   1. Gonorrhea culture
   2. Chlamydia culture
3. Hepatitis B surface antigen
4. Hepatitis B Core antibody, total
5. Nucleic acid tests for Hepatitis B and C
6. Nucleic acid test for HIV-1
7. Hepatitis C antibody
8. Syphilis
9. West Nile Virus
10. Human Immunodeficiency Virus (HIV1/2/0)
11. Other disease screening as appropriate by history, or as indicated in future evaluation.
12. Screening questions regarding West Nile Virus, Sepsis and CJD

7. Other Testing

Depending on the ethnicity of your partner and the donor, it may also be recommended to have the donor screened for genetic conditions such as: Cystic Fibrosis, Sickle Cell Screen, Canavan's, Gaucher's, or Tay-Sach’s Disease. These are done at an additional cost.

As a recipient, you will have the opportunity to review the “Donor Questionnaire Form” to learn about the egg donor’s personal and family history. If this is an anonymous donor, there will not be any demographic information provided.

Recipient Couple Preparation

For a fresh egg donor cycle: The recipient’s and donor’s menstrual cycles are synchronized with birth control pills. The donor’s ovaries are stimulated to produce multiple eggs (oocytes). These eggs are removed from the donor’s ovaries just prior to ovulation (their release from the ovary), and are placed in a special laboratory dish, along with sperm from the recipient’s husband, partner or donor. Fertilization is then possible in vitro (which literally means “in glass”) rather than in the fallopian tube.

The recipient’s uterus is prepared with estrogen and progesterone. The endometrial lining is monitored along with hormone levels. Following successful fertilization of the eggs in vitro, the embryos are placed into the recipient’s uterus.

For a frozen egg donor cycle:
The recipient’s uterus is prepared with estrogen and progesterone. The endometrial lining is monitored along with hormone levels. The eggs are received from the bank and are thawed per the egg bank’s protocol and are placed in a special laboratory dish. Using a recipient’s husband, partner or donor sperm, fertilization is then possible in vitro (which literally means “in glass”) rather than in the fallopian tube. Following successful fertilization of the eggs in vitro, the embryos are placed into the recipient’s uterus. Listed below are the individual steps of the IVF process, which you would undergo as an egg recipient.

The Recipient’s Hormonal Preparation

During an Embryo Transfer Cycle you will be taking hormone replacement medication to make the lining of your uterus receptive to the embryo(s). The medications you will be taking are: birth control pills, leuprolide injections, estrogen injections or pills, and progesterone injections and or vaginal suppositories.

You will be given the medication, Lupron, a man-made hormone that will temporarily prevent your menstrual cycle. This medication will be taken prior to the estrogen and progesterone. It will allow your doctor to synchronize the lining of your uterus to that of your donor. Lupron is given by an injection (shot) under the skin. Common side effects include hot flashes, vaginal dryness and vaginal spotting. These are not serious
problems and resolve with the discontinuation of the medication. Lupron is not associated with increased rates of miscarriage or malformation and is not known to cause significant or serious side effects in its users.

The hormones estrogen and progesterone, which are used to prepare the uterine lining for pregnancy, may have side effects. These are given in amounts intended to duplicate, as closely as possible, the normal function of the ovary. Minor side effects such as headache, breast tenderness, or mild weight gain may occur. In high doses, estrogens cause increased risks of unwanted clotting in blood vessels producing an increased chance of stroke or heart attack, but these risks are not suspected for the doses used here. Progesterone is not thought to have any harmful effects.

**In - Vitro Fertilization**

After the eggs have been thawed or removed from the donor, an embryologist examines the eggs and grades the maturity of the ovum. After their identification, the ova are transferred to a culture dish containing IVF culture medium and placed in an incubator. The incubator is set at specific conditions that mimic the natural environment of the female body. A sperm sample is obtained and processed to obtain the most healthy and motile sperm. The sperm are then added to the culture dish, a process called insemination, containing the ovum to allow for fertilization. The following morning the ova are studied for the evidence of fertilization. Fertilized ova are incubated for another day to allow for the development of an embryo.

**Insemination / Fertilization**

Insemination of the oocytes obtained is performed in one of two ways:

1. **Traditional IVF**
   A semen sample is obtained by masturbation or a sample is thawed the morning of egg fertilization. The concentrated sperm is diluted in culture medium and used for the inseminate (to fertilize the eggs). The oocytes are placed in the culture medium containing the inseminate. The oocytes are closely evaluated for maturity and placed in the incubator until the following morning.

2. **Intracytoplasmic Sperm Injection (ICSI)**
   ICSI is the direct injection of a single sperm into an oocyte. For its performance, robotic instruments are used which convert large-scale movements of the embryologist into delicate movements of microscopic glass pipettes. Couples who have failed fertilization in a previous IVF cycle, who have severe male factor infertility, or using frozen eggs are excellent candidates for ICSI. It is the most successful technique used for severe male factor infertility. Semen is obtained and prepared as with traditional IVF. The sperm obtained are then used for the injection of the oocyte. The oocyte is stripped of its protective coating of cells and held in place with a holding pipette. A single sperm is picked up with the injection needle and directly injected into the center of the oocyte. After all the oocytes have been injected, they are returned to the incubator until the following morning.

**Embryo Transfer**

A transvaginal ultrasound to evaluate your uterine lining is performed to make sure your estrogen dose is appropriate. Also, a “mock” transfer will be performed sometime prior to your embryo transfer cycle to determine the length and contour of your uterus.

Three to five days following oocyte retrieval, the laboratory dishes are removed from the incubator and each is examined for an embryo. A five day transfer is called a blastocyst transfer. All or some of the embryos that have normally developed will be transferred to the recipient's uterus (based on the American Society of Reproductive Medicine guidelines). This minor procedure, which requires no anesthesia, is called an embryo transfer. A vaginal speculum will be inserted and a fine plastic catheter is passed through the cervix and the embryos are placed within the uterus. A blood pregnancy test is performed twelve (12) days following the
embryo transfer to determine if pregnancy has occurred. If positive, additional blood work may be required to monitor the progression of the pregnancy.

**Assisted Hatching**

- Assisted hatching is a procedure in where the shell of the embryo (zona pellucida) is opened using micromanipulation. This helps the embryo shed its outer coating and in certain cases improves implantation and pregnancy rates. Assisted hatching has been shown to be beneficial in older women where the shell tends to be thick and in women who have tried IVF but were unsuccessful. Several studies have reported an increased pregnancy rate from 19% to 44%.
- The opening in the shell is performed using a chemical or laser technology. A small opening, between 10 to 20 microns, is made to facilitate embryo hatching. This procedure is very quick and can be completed in less than half a second.

**Blastocyst Transfer**

- With a natural conception the embryos arrive in the uterus approximately 5-6 days after fertilization in the fallopian tube. During an IVF cycle the embryos were routinely transferred back to the uterus 3 days after fertilization in the embryology lab. Recently, the laboratory techniques have improved to allow us to mature the embryos further. This has enabled us to select the embryos which have the best chance for survival.
- By growing embryos to a more advanced stage we are able to transfer fewer embryos without decreasing the chance for pregnancy. This advancement maintains a high pregnancy rate while decreasing the risk of conceiving a high order multiple pregnancy.

**Post Embryo Transfer Care**

You should remain on bed rest for 48 hours after the embryo transfer. You may get up for meals and to use the bathroom. Plan to reduce your activities for the first week after the embryo transfer and avoid intercourse for at least two weeks. A pregnancy test is performed about 12 days after the embryo transfer.

**Embryo Cryopreservation**

Often times an excess number of high quality embryos result from an IVF cycle. We have the capability to cryopreserve, or freeze, these embryos for future embryo transfers. The embryos are slowly frozen using an extremely cold liquid (Nitrogen), and stored in holding tanks here at the Reproductive Science Center of New Jersey. These embryos can be stored for a long period of time. You will be given a consent form for cryopreservation, which must be read carefully, signed and returned, prior to beginning your IVF cycle.

**Preimplantation Genetic Testing (PGT)**

PGT allows detection of life-altering genetic abnormalities prior to embryo transfer. This technique reduces the number of women requiring chorionic villus sampling or amniocentesis. After the embryo is fertilized and allowed to grow, an embryo biopsy is performed. This procedure involves removing either a blastomere, which is a cell from the embryo that contains its DNA. This cell is analyzed for genetic abnormalities. As a women gets older the chromosomes in the egg do not divide normally, therefore it is possible that too many chromosomes are present in the embryo, causing possible birth defects, pregnancy loss, and/or mental retardation; ex. Down’s syndrome is due to an extra chromosome 21. Knowing whether the embryo is chromosomally normal can be completed within 24 hours, thus saving the parents undo stress for 9 months. There is considerable need for chromosomal analysis of preimplantation embryos in couples who carry a chromosomal condition (ex. balanced translocations), in women with advanced age and women with previous children having genetic anomalies. Couples / women having recurrent pregnancy loss, repeated IVF failures or repeated poor quality embryos could also benefit from the PGT procedure to select healthy competent embryo.
Complications Associated with Donor Egg / IVF
There is a possibility that multiple gestations (twins, triplets, or more) may result from the return of multiple embryos to the uterus. The risk of multiple gestations is limited by placing only two to three embryos into the uterus. If a multiple gestation occurs, there is an increased risk for pregnancy complications including miscarriage and pre-term labor. The average risk of multiple gestations for all IVF programs is 27%, with the majority of women having twins. The long-term effects of IVF remain to be determined, but to date there are no known ill effects to children born through IVF.

Ownership Rights for Embryos Resulting From Egg Donation
The egg donor will relinquish ownership of her eggs at the time they are removed from her body during the retrieval. At that point, her participation in the egg donor process is considered complete. The donated oocytes will be inseminated with the recipient’s partner’s sperm, and the appropriate number of resulting embryos will be transferred to the recipient. Any remaining embryos may be cryopreserved (frozen) for a future transfer to the recipient. If optimal synchronization of your cycle and the donor’s cycle has not been attained, the embryos will be cryopreserved for future transfer to the recipient. You should also understand that once the eggs are removed from the donor, any resulting embryos are the sole responsibility of the recipient couple. The donor will have no responsibilities, rights, or obligations in relation to such embryos or to their disposition or to any remaining eggs whether or not fertilized.

Resulting Offspring
Any offspring resulting from egg donation and IVF are the children of the recipient couple. The egg donor has no parenting rights, claims on or responsibilities for any offspring, or any rights or claims against the recipient couple, even if the egg donor and embryo recipient are related, unless there is a separate contractual agreement between the parties. The recipient couple is fully responsible for any and all offspring, regardless of the outcome of the pregnancy.

Obstetrical Care
If a pregnancy occurs, we will refer you back to your Obstetrician/Gynecologist. There is no increased risk of abnormalities with Donor Egg / IVF babies but there may be an increase in premature deliveries. Genetic counseling and amniocentesis may be recommended for any woman using donor eggs of a donor over the age of 35; a genetic abnormality, however, can occur at any age. Chorionic villus sampling (CVS) is a new alternative for first trimester genetic diagnosis. It may be associated with higher rates of miscarriage than amniocentesis. You will need to discuss genetic testing with your Obstetrician during your initial visit for obstetrical care.

Emotional Impact
As patients go through infertility evaluation and treatment, they may experience a number of emotions ranging from depression to joy. Friends or family may tell couples who have been infertile that if they "just relax," they will be able to conceive a child. Such advice can cause the couple to feel angry, frustrated, and sad. Although stress has been shown to contribute to infertility in some cases, emotional problems are not a major cause. Most infertility problems have physical causes.

A couple may feel isolated by infertility because they have difficulty doing what comes easily to others. Infertile couples often feel powerless to control events and to effect change because their lives seem to be governed by the woman's menstrual cycle. Social activities and work schedules are arranged to accommodate plans for conception. A counselor who specializes in infertility may prove helpful. The infertile couple has to handle a myriad of emotions, including disappointment, a sense of failure, blame, lack of self-esteem, depression, hope, joy, and resolution. Patients often liken the evaluation and treatment phase to a roller coaster ride because it has highs and lows.
Healthcare providers can best assist infertile couples by assessing their needs, acknowledging their rights to their feelings, and offering support and encouragement as they work toward their resolutions. Our clinical staff, as educators, are in favorable positions to provide needed information to infertile couples by writing patient education materials that are tailored to the specific needs of these patients.

Patient support groups also can be helpful to an individual or couple. In a group, many avenues can be explored, such as sharing feelings and experiences, exchanging information, and learning about legislation—it is important to have infertility recognized as a condition that necessitates insurance coverage.

**Conclusion**

We have a very advanced team of professionals who supervise every step of the entire process. Our IVF team and equipment are at the forefront of reproductive medicine. Be assured that all our efforts are directed toward a successful procedure and to guide you safely through your treatment.