

## CONSENT FORM FOR EMBRYO THAW CYCLE

### INSTRUCTIONS:

This consent form provides a description of the treatment that you are undertaking.

- Read the consent completely. If you have any questions please speak with your doctor.
- Do not make any additions or deletions to the consent.
- Treatment **cannot** be started until all consents are signed.
- Consents must be signed in front of your nurse or physician.

### INTRODUCTION

Embryos that have been previously frozen following in vitro fertilization (IVF) can be thawed and transferred into the woman's uterus in an attempt to achieve a pregnancy. This document explains the technique and describes the major and foreseeable risks, and the responsibilities of those who participate in this treatment.

This consent is valid for a period of one calendar year after it has been signed. Please make a copy for your records. It is recommended that you review the consent prior to each treatment cycle. If you have any questions about your treatment then it is your responsibility to speak with your physician.

#### *Pre-treatment Recommendations*

During treatment a woman should avoid any activity, behavior and medications that could reduce her chance of conceiving and having a healthy baby. In addition, the recommendations listed below should be followed.

1. A prenatal vitamin should be taken on a daily basis before the treatment is begun. This will reduce the chance that a baby will be born with a neural tube defect (e.g. spina bifida), which is a birth defect that affects the development of the spine.
2. Smoking must be avoided before and during treatment. It is also contraindicated during pregnancy.
3. Recreational drugs are absolutely contraindicated.
4. Ingestion of aspirin or aspirin-like products (e.g. Motrin<sup>®</sup>, Advil<sup>®</sup>, Anaprox<sup>®</sup>, Naprosyn<sup>®</sup>, Aleve<sup>®</sup>, etc.) should be avoided during treatment. However, in certain circumstances your doctor may prescribe low dose aspirin (baby aspirin, 81 mg). Tylenol<sup>®</sup> is safe to take before and during pregnancy.
5. The use of alcohol should be avoided during treatment and after pregnancy is established.
6. The use of all prescription and over-the-counter medications (including herbal remedies) should be discussed with a physician before starting a treatment cycle.
7. HIV (human immunodeficiency virus) screening is strongly recommended for all couples undergoing infertility treatment. HIV is the virus that causes acquired immunodeficiency syndrome (AIDS). A woman infected with HIV can pass the virus to her unborn child. Please talk to your physician about having this test performed.

8. Ingestion of some fish, which contain higher amounts of mercury, can affect the development of the nervous system of a fetus. During the treatment and after pregnancy is established you should avoid eating these fish—shark, swordfish, king mackerel, tilefish and canned tuna fish. You should limit the intake of all other fish to 12 oz. per week.

## **DESCRIPTION OF TREATMENT**

This treatment involves several steps, as outlined below. Patients are not guaranteed success at any or all of these steps. If optimal results are not achieved at any step, it may be recommended that the treatment should be stopped and the cycle cancelled.

### **I. Maturation of the Uterine Lining**

#### **Non-Medicated or Natural Approach**

During a woman's menstrual cycle a single ovarian follicle develops that ultimately results in the ovulation of a single egg. Prior to ovulation the follicle produces estrogen which stimulates the growth of the lining of the uterine cavity (endometrium). After ovulation, the ovary then produces progesterone, which causes the maturation of the endometrium and prepares it for implantation. With the non-medicated approach the embryo transfer is performed 2-3 days after ovulation as determined by urinary LH testing or following the administration human chorionic gonadotropin. If the timing of the ovulation cannot be accurately determined it may be recommended to cancel the cycle and proceed with a medicated approach.

#### **Medicated Approaches**

A medicated approach can be used to mature the lining of the uterus. The advantage of a medicated approach is that there is more control of the stimulation and there is a lower chance of having to cancel the cycle.

##### **Estrogen only**

This is the most common medicated approach used to prepare the uterine cavity. Estrogen is administered orally (Estrace<sup>®</sup>) by itself or in combination with an estrogen patch (Vivelle<sup>®</sup>). The estrogen is started with the beginning of the menstrual period. After the estrogen has been administered for approximately two weeks either vaginal or intramuscular progesterone is begun. The embryo transfer is performed on the fourth day after the initiation of the progesterone administration.

##### **Lupron<sup>®</sup>/Estrogen**

Lupron<sup>®</sup> is an injectable medication that initially stimulates the pituitary gland to release FSH and LH, which are the hormones that regulate ovulation. With continued administration of Lupron<sup>®</sup>, the pituitary gland is temporarily depleted of FSH and LH, which puts the ovaries to rest. After the Lupron<sup>®</sup> has had this desired effect which can take up to several weeks, estrogen and progesterone are administered as described above.

Lupron<sup>®</sup>, estrogen and progesterone are not FDA-approved for this purpose. These medications have been approved for other indications. Lupron<sup>®</sup> has been approved for the treatment of endometriosis and uterine fibroids. Estrogen and progesterone medications have been approved for hormonal replacement for menopausal women.

#### **Monitoring**

During this phase of the treatment, monitoring may be performed with blood hormone levels and vaginal ultrasound exams to help determine the timing of the embryo transfer. The need for monitoring requires the woman's presence in the vicinity of a Boston IVF monitoring site during the treatment.

### **Side Effects**

The use of these medications (Lupron<sup>®</sup>, estrogen, and progesterone) can cause side effects such as nausea, vomiting, hot flashes, headaches, mood swings, joint pains and visual symptoms. Some women may have an allergic reaction to the drugs. A rare risk of estrogen administration is the formation of blood clots, which can compromise the blood supply to vital organs, causing serious problems. These problems may include a stroke or heart attack. Any of these conditions may cause death or serious long-term disability. Most studies of low-dose estrogen usage by women do not show an increased risk of these complications.

## **II. Thawing of the Frozen Embryos**

On the day of the scheduled embryo transfer, the straw(s) containing the frozen embryos will be removed from the storage tank and thawed. After the thawing is completed, the embryos are examined to determine their viability. The chance of pregnancy following this treatment is related to the number and quality of the embryos that are transferred. In an effort to provide the best chance of pregnancy, it may be necessary to thaw a number of straws containing the frozen embryos. This will allow the best quality embryos to be selected for the transfer. On average, 70-80% of frozen embryos will survive the thawing. However, it is possible that none of the embryos will survive the thawing.

## **III. Embryo Transfer**

At the time of the embryo transfer, a physician will review the embryo thaw results and a decision will be made regarding the number of embryos that will be transferred. Increasing the number of embryos transferred will increase the chances of pregnancy, but will also increase the risk of a multiple pregnancy (e.g., twins, triplets, etc). Embryos not suitable for transfer will be discarded.

In order to perform the embryo transfer the woman is placed in the same position as if she were having a pelvic exam. A speculum is placed into the vagina and the cervix is visualized. The vagina and cervix are rinsed with a solution. An abdominal ultrasound examination will be performed to help with the placement of the catheter. The biologist loads the embryos into a catheter, which the physician inserts through the cervical canal and into the uterine cavity. After proper placement of the catheter the embryos are injected into the uterine cavity. The catheter is examined by the biologist to confirm that the embryos have been discharged. Following the procedure the woman will be sent home. Activity should be limited on the day of the embryo transfer. Thereafter, normal activity should be resumed.

Very rarely, a uterine infection may occur after embryo transfer. The most common symptoms associated with infection are pain and fever. If fever, vomiting, abdominal pain or any other symptoms develop following embryo transfer, you should contact your physician.

### **Assisted Embryo Hatching**

The zona pellucida is the outer protective membrane that surrounds the egg. After the sperm has penetrated the egg and fertilization has occurred, the embryo develops within the confines of the zona pellucida for a period of 5-7 days. Thereafter, an area of the zona pellucida thins out and the embryo "hatches" or is expelled out of the confines of the zona pellucida. It is only then that the embryo has the opportunity to implant into the uterine wall for the establishment of a pregnancy. It is possible that some embryos do not undergo this "hatching" process normally. A laboratory technique has been developed to facilitate the embryo with this "hatching" process and is referred to as *assisted hatching*. There is controversy as to whether the performance of assisted hatching increases the chance of a successful pregnancy following IVF treatment.

**The assisted hatching procedure-** The assisted hatching procedure is performed on the day of the embryo transfer. With the aid of a microscope and fine instruments, the zona pellucida is thinned by the application of a dilute acidic solution. The embryos are then transferred back into the incubator until the embryo transfer is performed.

Your physician may prescribe an antibiotic and a corticosteroid (methylprednisolone) which will be started on the day of the egg retrieval and continued for a period of four days.

The following risks are associated with the assisted hatching procedure.

1. The embryos may be destroyed or injured precluding their ability to implant.
2. There is an increased chance that an embryo splits and leads to a set of identical twins. This type of a multiple pregnancy is referred to as monozygotic twinning (MZT). The risks associated with MZT are described later in the consent under Treatment Outcomes.
3. The procedure may yield presently unknown risks to the baby and/or mother.
4. Assisted hatching may not improve your chances of establishing a pregnancy.
5. There are risks associated with medications that may be prescribed
  - a. Methylprednisolone- This medication has an anti-inflammatory action and modifies the immune response. The following side effects may occur but are more common when this drug is administered for a longer duration or at higher doses: mood swings, insomnia, depression, psychotic manifestations, muscle weakness, permanent hip replacement, impaired wound healing, increase sweating, headaches, vertigo, allergic reaction, loss of muscle mass, osteoporosis and abdominal distention. Other side effects include an increase in blood pressure, salt and water retention, increase excretion of potassium and calcium may occur. The use of methylprednisolone may mask the signs of an infection, make one susceptible to a new infection, and make it difficult to localize the source of an infection.
  - b. The use of antibiotics may result in the following side effects which are dose-related: nausea, vomiting, diarrhea, loss of appetite, rashes, sensitivity to the sun, rare hypersensitivity reaction which may cause shock, blood diseases including reduced platelets or fractured blood cells which could result in anemia and/or bleeding.

#### **IV. Treatment Following the Embryo Transfer**

Progesterone, a hormone produced by the ovary, prepares the lining of the uterus for implantation. Natural progesterone is available and be administered vaginally or by intramuscular injection. If pregnancy occurs, the progesterone may be continued for a period of time. Studies have confirmed that there is no increased risk of birth defects or health risks to women who take natural progesterone supplements during pregnancy.

Eleven days after the embryo transfer, a blood pregnancy test will be done. If this test is found to be positive, a repeat pregnancy test may be done 2-3 days later. If the pregnancy test results are within expected values then a vaginal ultrasound will be done approximately five weeks after the embryo transfer to determine the status of the pregnancy. Because of the potential for complications following the embryo transfer, access to medical care is important up to the time of the pregnancy test and beyond if pregnancy is established. If travel is absolutely necessary, it should be discussed with a physician.

#### **TREATMENT OUTCOMES**

The chance of success (the delivery of a live born infant) following the transfer of thawed frozen embryos. is highly individual and is dependent on many factors, some of which include: the age of the woman, the infertility diagnosis, the number of previous cycles of treatment, and the number and quality of the embryos that are transferred. Despite repeated attempts of treatment, there is the possibility that pregnancy will not occur.

The following is a list of common events that can occur after pregnancy is established.

**Miscarriage** - The risk of miscarriage in the general population is 15-20%. The risk of miscarriage increases with advancing maternal age. For women over 40 years of age, the risk may exceed 40%. Studies have shown that either there is either no increase or a slight increase in the risk of miscarriage in women who conceive with thawed embryos. Most miscarriages are associated with lower abdominal cramping and bleeding, but do not necessarily require surgical treatment. In some cases, removal of the pregnancy tissue must be accomplished by a surgical procedure called a dilatation and curettage (D&C).

**Tubal (Ectopic) Pregnancy** - Approximately 5% of pregnancies that result from IVF treatment are located outside of the uterine cavity. The majority of ectopic pregnancies are present in the fallopian tube. The chance of tubal pregnancy is greater in women with damaged tubes. If a woman has a tubal pregnancy, she may need surgical treatment, which may involve the removal of the involved tube. Medical treatment with methotrexate may be an option in selected cases.

**Multiple Pregnancy** - The chance of a multiple pregnancy increases with the number of embryos that are transferred. Approximately 65-70% of pregnancies following the transfer of multiple embryos result in the birth of only one baby. Of the 30-35% of pregnancies that are multiple, approximately two-thirds are twins and one-third are triplets. The chance of a quadruplet pregnancy is 1-2%. Multiple pregnancies are associated with an increased risk of most complications of pregnancy including but not limited to miscarriage, toxemia, congenital anomalies, gestational diabetes in the mother and premature birth. Monozygotic twinning (MZT) is a multiple pregnancy that results from the splitting of a single embryo which will lead to a set of identical twins. The incidence of MZT is increased in pregnancies conceived following IVF and may occur in up to 5% of pregnancies achieved after the transfer of embryos at the blastocyst stage. In addition to the above stated complications associated with a multiple pregnancy with MZT there is a greater chance of twin-to-twin transfusion which can affect the growth of the fetuses and increase the chance of other complications. A multiple pregnancy may also pose increased emotional and financial hardship for a couple. If a multiple pregnancy develops, the couple may consider a multi-fetal reduction procedure. This procedure, which is performed at three months of pregnancy, reduces the pregnancy to a lower and safer number. Although the success rate is 90-95% a miscarriage may result from the procedure. The best time to discuss the risks of multiple pregnancy and multifetal pregnancy reduction with your physician is before your treatment cycle begins.

**Premature Birth** - Some studies have suggested that women with infertility who conceive after successful IVF treatment have a slightly higher rate of premature delivery when compared to fertile couples who conceive spontaneously. The cause of this association is unknown.

**Other Risks** - Most infants who have been born following the transfer of frozen embryos are normal. The rate of congenital abnormalities (birth defects) in babies conceived naturally is 2-3% and is not different in babies conceived with IVF. It is important to be aware that genetic abnormalities, structural abnormalities, mental retardation and other abnormalities may occur in babies conceived following IVF, as well as, those conceived naturally.

**Psychological Risks** - IVF can be psychologically stressful. Anxiety and disappointment may occur at any of the phases described above. Significant commitment of time and finances may be required. Couples are encouraged to consider meeting with a counselor.

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

1. Proper timing of the transfer may not be possible and the cycle may be cancelled.
2. The embryos may not survive the thawing process.
3. Embryo transfer into the uterus may be technically difficult or impossible.

4. If transfer is performed, implantation(s) may not result.
5. If implantation occurs, the embryo(s) may not grow or develop normally.
6. Equipment failure or malfunction, infection, technical errors and/or human errors or other unforeseen factors may result in loss or damage to embryos.

The foregoing general information is based upon the experience and knowledge of the Boston IVF physicians. It is based, in part, upon a review of the literature pertaining to Reproductive Medicine. This information is generally accurate and comprehensive, however, medicine is a dynamic discipline and reproductive medicine in particular is constantly evolving. Estimates of risks factors and the relative benefits of alternative treatment that have been discussed with you represent the best professional judgment of the physicians and caregivers of Boston IVF taking into account your specific needs and circumstances.

### ***PRIVACY***

*Data from your ART procedure will also be provided to the Centers for Disease Control and Prevention (CDC). The 1992 Fertility Clinic Success Rate and Certification Act requires that CDC collect data on all assisted reproductive technology cycles performed in the United States annually and report success rates using these data. Because sensitive information will be collected on you, CDC applied for and received an “assurance of confidentiality” for this project under the provisions of the Public Health Service Act, Section 308(d). This means that any information that CDC has that identifies you will not be disclosed to anyone else without your consent.*



## ACKNOWLEDGEMENT OF INFORMED CONSENT AND AUTHORIZATION

We acknowledge that we, the undersigned, are voluntarily seeking treatment with an **Embryo Thaw cycle** in order to conceive a child. We will acknowledge our natural parentage of any child or children born through this treatment.

We have discussed this treatment in detail with a Boston IVF physician and caregivers in language that we understand. We understand the purpose, risks and benefit of the treatment. **We acknowledge that we have read all pages of this consent form and all of our questions concerning the treatment have been fully answered to our satisfaction.**

We are aware that there are other centers in the area that offer this treatment and we have freely chosen to have the treatment at Boston IVF.

**By consenting to treatment at Boston IVF we accept the responsibilities, conditions and risks involved as set out in this document and as explained by the staff of Boston IVF. In addition, we consent to the techniques and procedures used to accomplish this treatment described in this document and as explained by the physicians and staff of Boston IVF.**

We understand and acknowledge that medicine is not an exact science and that in cases of doubt Boston IVF physicians and caregivers will exercise their best professional judgment.

We acknowledge and agree that acceptance into treatment and our continued participation is within the sole discretion of Boston IVF. We understand that should this cycle be unsuccessful, it may be determined that further treatment may not be indicated.

We acknowledge that it is our responsibility to notify Boston IVF in writing if we become aware of any information that Boston IVF should have in order to discharge its obligations under this agreement.

We agree to notify BIVF immediately in writing of any change in our marital status including separation or divorce.

We also understand that we are financially responsible for any medical expenses that are not covered by our insurance policy.

In order to obtain required cycle outcome data we give Boston IVF consent to contact any physicians who provided care during and after a pregnancy.



By signing this document we acknowledge that we have had a thorough discussion with our Boston IVF physician and caregivers. This discussion included information on the risks, benefits, side effects and complications of the treatment. Furthermore, we acknowledge that the discussion with our Boston IVF physician provided sufficient information to allow us to make an informed decision whether or not to proceed with treatment. The discussion with our Boston IVF physician included alternatives including the option of having no treatment.

**By signing this document we acknowledge that our Boston IVF physician and caregivers have obtained from us informed consent to proceed with Embryo Thaw cycle.**

**It is required that you have this document witnessed at Boston IVF, if unable because of distance the default is to have this document officially notarized.**

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Signature of Patient

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Signature of Partner

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Signature of Physician

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On this \_\_\_\_ day of \_\_\_\_\_, 201\_\_\_\_, before me, the undersigned notary public, personally appeared \_\_\_\_\_, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the proceeding or attached document in my presence.

On this \_\_\_\_ day of \_\_\_\_\_, 201\_\_\_\_, before me, the undersigned notary public, personally appeared \_\_\_\_\_, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the proceeding or attached document in my presence.

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
Notary Public