



# Fertility Preservation



## Fertility Preservation at Miami Cancer Institute

Most of us dream of having a family, but few of us ever anticipate life handing us the diagnosis of cancer. When patients are diagnosed with cancer, survival is foremost on the patient's mind; however, many cancer treatments have devastating effects on the reproductive system.

The Fertility Center of Miami with its team of reproductive endocrinology physicians and laboratory personnel, is committed to helping you preserve your dream of having a family even in the face of an overwhelming diagnosis.

Established in 1991 on the campus of Baptist Hospital of Miami, the Center has been a continued innovator and leader in the field of infertility and assisted reproduction. It is our privilege to work in collaboration with the oncologists, psychologists and other specialists at Miami Cancer Institute to provide you with a comprehensive approach to cancer treatment.

Our team of board-certified fertility specialists excels in achieving positive outcomes, while offering a comfortable setting that revolves around you. It is our mission to make sure your fertility is being preserved, so your dreams are made a reality when YOU are ready.

## Fertility Preservation in Women

The most common form of fertility preservation in women is to cryopreserve oocytes ("egg freezing"). By doing so, one is taking today's fertility potential and transferring it forward into the future when it is an appropriate and safe time to conceive.

Conception occurs with the in vitro fertilization of the oocytes and transfer of the developing embryos into a healthy uterus. In essence, the process of in vitro fertilization (IVF) is divided into two parts, performing the egg harvesting now, and saving the fertilization and pregnancy for later.

The most optimal time to freeze eggs is PRIOR to undergoing treatment that may affect the overall quality or quantity of eggs present. Freezing eggs has some advantages over cryopreserving embryos in that it is less expensive, and a designated male partner does not need to be identified.

In patients who have a designated male partner, the option exists to fertilize the eggs now, develop the embryos and cryopreserve the latter.

Embryo freezing has the added advantage to know that the eggs have successfully fertilized and developed to the



blastocyst stage. Preimplantation Genetic Screening (PGS) can be done to ensure genetic competency of the embryos if appropriate and desired.

Egg harvesting for the purpose of egg freezing requires a minimum of two to three weeks. In those cases where time is not available, or the patient too young or not accepting of the process of ovarian stimulation and egg retrieval, consideration for ovarian tissue banking can be given. Either an ovary or a portion of the ovary is harvested at laparoscopy (under general anesthesia) with the tissue then being cryopreserved. At a later date, the tissue can be transplanted back into the patient and stimulated with fertility drugs to produce eggs.

This latter procedure is considered experimental at the present time. It is hoped that in the future, we may be able to stimulate the ovaries in an in vitro environment to produce eggs or be able to mature eggs in vitro from this tissue, and thus avoid the risks associated with transferring the ovarian tissue back into the patient. However, at present these approaches are not yet feasible.



## Fertility Preservation in Men

The simplest and most common form of fertility preservation in men is sperm banking. An ejaculated semen sample may be cryopreserved. When thawed, the sperm can be used for either intrauterine insemination of the female partner at the time of ovulation, or for the in vitro fertilization of eggs. The more samples that are produced, the greater the potential to use more natural and less technological methods of conceiving when ready. In rare cases, if need be, electrical stimulation can be used to elicit an ejaculatory response if medical conditions preclude the former. In adolescence the biggest hurdle is the psychological aspect of discussing the situation and encouraging masturbation. In those situations where ejaculation is not possible, or in prepubescent male cancer patients (considered experimental), testicular tissue cryopreservation can be considered. This is performed with testicular biopsy or sampling performed by a urologist under either local or sedative anesthesia. When ready to conceive, the tissue is thawed, sperm isolated and used to fertilize eggs using a technique called intracytoplasmic sperm injection (ICSI).

### Other Considerations

When indicated, biologic gametes or embryos can be used with third party reproduction. So even in cases where a uterus or cervix needs to be removed, the embryos that will be created can be placed into a gestational carrier leading to a successful full-term birth. In other situations, where good quality eggs or embryos do not exist, use of donor eggs from either an egg bank or designated donor can be utilized. Similarly, in men, if necessary donor sperm can be used to help create a family.

### Our Concierge Service

The Fertility Center of Miami is committed to providing all cancer patients quick, easy access to our physician experts and laboratory expertise. All you need to do is call our office (305) 596-4013 and ask for our oncofertility liaison.

Within 24 to 48 hours, we will ensure that:

- 1 Reproductive Endocrinology and Infertility physicians will speak with the Fertility Preservation Nurse Practitioner and your referring medical specialist at Miami Cancer Institute to expedite your consultation in our office or at the institute.
- 2 We will review options for fertility preservation and help guide you and your family with your decisions.
- 3 We will provide you with material which will explain the methodology and what you can expect throughout your time with us.
- 4 Our financial counselors will advise you on prospective costs associated with the fertility preservation method you are considering.
- 5 In cases of IVF or egg freezing, we will assist you in obtaining easy access fertility drugs from those pharmaceutical companies that have an assistance program to those in need.
- 6 We will treat you with dignity and respect while providing you with some hope for the future.



## Cancer Treatment and Fertility Risks

Chemotherapy, radiation, and surgery can all have adverse effects on the reproductive system. In general, the higher the dose and longer the treatment, the greater the risk of subsequent reproductive problems. Factors such as age, type of cancer, and treatment regimen all influence the risk. Each patient's situation is unique, and their risks are individualized; therefore it is important to have a treatment plan tailored to the specific circumstances.

Well established fertility preservation options are available for both men and women as well as adolescents. Experimental approaches to fertility preservation also exist for the pre-pubescent cancer patient.

## Genetics & Cancer

Our knowledge of the genetic causes of cancer is rapidly evolving. Today, there are several known genetic mutations that predispose patients to the development of cancer. Through our collaboration with genetic counselors, we have a unique opportunity to identify a subgroup of patients who are at risk of developing cancer (i.e., BRCA mutation). In these situations, early consideration for either conception or fertility preservation with oocyte or embryo cryopreservation should be given. Furthermore, when a specific genetic mutation is identified Pre-Implantation Genetic Diagnosis (PGD) can be utilized to screen for a healthy embryo.

Having cancer  
does not preclude  
having a family



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