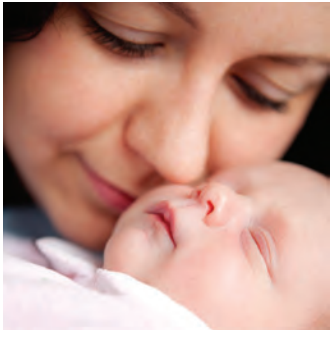
FERTILITY PRESERVATION 101



"Should Survivorship be limited to one generation?"
—Kristin Armstrong

When diagnosed with cancer, survival is foremost on the patient's mind. However, many treatments used to fight cancer can adversely affect fertility, which is a fact often overlooked in the race to defeat cancer. But advancements in reproductive technology have given cancer survivors hope for future reproduction, which makes the Fertility Preservation conversation more important than ever.

TABLE OF CONTENTS

WHEN TO CONSIDER FERTILITY PRESERVATION

It is important that discussions regarding Fertility Preservation begin at diagnosis. Often, oncology treatment plans change course, quickly going from "unlikely" to cause infertility to "definite" without the opportunity to reassess options. At this point it is often too late to take the necessary Fertility Preservation steps.

- Both the American Society of Clinical Oncologists (ASCO) and American Society of Reproductive Medicine (ASRM) recommend the education of oncology patients about the options available to preserve their fertility.
- Fertility Preservation counseling should emphasize the effect of cancer treatment on future fertility, the timetable for oncology treatment and the options available for Fertility Preservation. A nurse navigator, patient navigator or social worker can be an ideal person to educate the patient or facilitate fertility conversations between the patient and his/her physician.
- Although most frequently associated with cancer treatment, Fertility Preservation has also been used for medical conditions like lupus, glomerulonephritis, and myelodysplasia, as well as in adolescent females with conditions known to be associated with premature ovarian failure, such as Turner mosaicism.

PRESERVING FERTILITY IN CHILDREN DIAGNOSED WITH CANCER

Parents of children diagnosed with cancer often do not think about Fertility Preservation. The majority of children treated for cancer can now expect to be cured. Recent advances in assisted reproduction have focused attention on the long-term fertility outcome for these survivors. While many of these procedures are still considered experimental, the success in animal models is extremely encouraging. What was once thought to not be possible is now possible. Just over 30 years ago, the first test-tube baby was born. The advancements today are occurring at a rapid pace. "We have to try to preserve the (reproductive) tissue now or we will never succeed. We think the technology will be available in the future to use this frozen tissue to restore lost fertility." said Dr. Peter Shaw, head of the Adolescent and Young Adult Oncology Program at Children's Hospital of Pittsburgh. The most important thing we can do as healthcare providers is to provide these patients and families with up to date information and resources.

CANCER TREATMENT AND FERTILITY RISKS

Cancer and its treatment can cause infertility. The first step in making decisions regarding Fertility Preservation options is to be aware of the risks associated with cancer treatments. Chemotherapy, radiation and surgery can all affect the reproductive system. In general terms, the higher the dose and/or longer the treatment, the greater the chance for reproductive problems for a cancer patient. Factors such as age, type of cancer and type of treatment can influence risk.

Chemotherapy & Radiation: The most damage is done when children are treated with both chemotherapy and radiation therapy to the abdomen or pelvis. A few of the chemotherapy drugs that are linked with the highest risk of infertility include Chlorambucil, Cyclophosphamide, Procarbazine, Melphalan and Cisplatin. Certain drug combinations are more likely or less likely to harm fertility, so it is important that an individualized treatment plan be developed. Bone marrow and stem cell transplant patients usually receive high doses of chemotherapy and radiation, so it is important that these patients be counseled on cryopreservation prior to treatment. Radiation to the brain can affect the pituitary gland, which may cause fertility issues.

BOYS FERTILITY PRESERVATION OPTIONS IN PRE-PUBESCENT BOYS

TESTICULAR TISSUE FREEZING

Sperm banking is not an option for pre-pubescent boys who are not yet producing sperm. However, there are some experimental studies underway to preserve testicular tissue obtained by biopsy and freeze it for future use. The tissue contains stem cells which will be able to start spermatogenesis (sperm production). Testicular tissue freezing is considered experimental and is generally only offered in a research setting with IRB oversight. Several studies are developing protocols that will enable scientists and physicians to use the frozen/thawed testicular tissue and stem cells to produce sperm in the laboratory or by re-implanting, years later, back into the individual. Research has proven these strategies are effective in animals and it is envisioned that they will also be effective in humans.

The Fertility Preservation Program of Pittsburgh is approved to freeze testicular or ovarian tissue that might be used to restore fertility when experimental techniques emerge from the research pipeline. For more information on standard and experimental options for preserving fertility please visit http://www.mwrif.org/220 or call (412-641-7475).

Future use of specimens in ART procedures described on page 26.

TESTICULAR SHIELDING

The use of shielding to reduce the dose of radiation delivered to the testes may be discussed with a physician. Radiation shielding does not protect against chemotherapy, but is another possible option for protecting the testes of pre-pubescent boys.

For boys who have reached puberty, it is assumed they will follow the same Fertility Preservation protocols as men, discussed on pages 12–15.

GIRLS FERTILITY PRESERVATION OPTIONS FOR PRE-PUBESCENT GIRLS

OVARIAN TISSUE CRYOPRESERVATION

The main Fertility Preservation option for young girls is to freeze ovarian tissue. Through a laparoscopic procedure, a small piece of the ovary, which is rich in follicles containing immature eggs, is removed. This biopsy specimen is then frozen for the patient's future use.

This procedure can be quickly performed by a reproductive endocrinologist and does not delay chemotherapy. It can and has been performed in very young girls (the youngest to date was just shy of 17 months old), and chemotherapy can actually be started the next day, which is the best part, no delay to treatment.

Years down the road when a female has been cured of her cancer and wants to consider having a family, this ovarian tissue can be thawed and re-implanted, with the hope that it will then produce mature eggs from which pregnancy can occur. A second potential use of the tissue is to attempt to grow the ovarian tissue, in an in vitro environment, and harvest mature oocytes for fertilization and embryo production followed by transfer of the embryos to the female. This approach is currently being studied by the Oncofertility Consortium. For additional information, please visit www.oncofertility.northwestern.edu.

Both of these processes are considered experimental, but there have been multiple reported births from the use of cryopreserved ovarian tissue followed by re-implantation, worldwide.

The costs to collect and freeze ovarian tissue are in the $10,000-$15,000 range for the procedure. In some patients, it can be done as part of another necessary surgery so that most of the cost is covered by insurance. Storage fees range from $275 to

$1000. Financial assistance programs exist to help with the costs, and are listed on page 27 of this booklet.

OVARIAN TRANSPOSITION

Ovarian Transposition is an outpatient surgical procedure (usually laparoscopic) where the ovaries are moved higher in the abdomen away from the radiation field to minimize exposure and damage. It can be done in both pre- and post-pubescent patients. The success rates have only been measured in terms of the percentage of women who regain their menstrual periods, not in terms of being able to have a live birth. Typically, about half the women will begin menstruating again. The procedure can sometimes be covered as part of another necessary surgery so that most of the cost is covered by insurance.

OVARIAN SHIELDING

The use of shielding to reduce the dose of radiation delivered to the ovaries may be discussed with your physician. Radiation shielding does not protect against chemotherapy, but is an effective strategy to prevent damage due to radiation.

Future use of specimens in ART procedures described on page 26.

MEN

CANCER TREATMENT AND FERTILITY RISKS

Cancer and its treatment can cause infertility. The first step in making decisions regarding Fertility Preservation options is to be aware of the risks associated with cancer treatments. Chemotherapy, radiation and surgery can all affect the reproductive system. In general terms, the higher the dose and/or longer the treatment, the greater the chance for reproductive problems for a cancer patient. Factors such as age, type of cancer and type of treatment can influence risk.

Chemotherapy & Radiation: The most damage is done when men are treated with both chemotherapy and radiation therapy to the abdomen or pelvis. A few of the chemotherapy drugs that are linked with the highest risk of male infertility include Chlorambucil, Cyclophosphamide, Procarbazine, Melphalan and Cisplatin. Bone marrow and stem cell transplant patients usually receive high doses of chemotherapy and radiation, so it is important that these patients be counseled on cryopreservation prior to treatment. Radiation to the brain can affect the pituitary gland, which may cause fertility issues.

Surgery: Surgery offers the greatest chance for cure for many types of cancer. These types of surgery can affect a man's fertility:

- Testicular surgery: Surgical removal of a testicle is called an orchiectomy. This is a common treatment for testicular cancer. Fertility depends on the functioning of the remaining testicle. Cancer in both testicles is much less common.
- Prostate surgery: Men whose prostate cancer has spread beyond that area may have both testicles removed, called a bilateral orchiectomy. These men must bank sperm prior to treatment, as this procedure will cause infertility. One of the surgery options for men whose prostate cancer has not spread is called a radical prostatectomy, which removes the prostate and seminal vesicles. This surgery leaves men with no semen.
- Other surgeries: A few types of cancer surgery can cause nerve damage, which affects ejaculation. Surgeries used to treat bladder cancer and to remove pelvic lymph nodes fall into this category. The testicles will be able to produce sperm, however, no fluid can exit the penis. Sperm banking prior to surgery is recommended, though post treatment procedures such as TESE (see below Options), are available.

FERTILITY PRESERVATION OPTIONS FOR MEN

SPERM BANKING/CRYOPRESERVATION

Cryopreservation, the ultra-low temperature storage of cells or groups of cells, has proven to be the most effective method of Fertility Preservation in males. Human sperm was first cryopreserved in the 1950's, and has been in widespread use since the 1980's. Sperm storage periods of more than 28 years prior to pregnancy have been documented, however, physicists calculate that sperm may be successfully stored for several thousand years.

- Sperm Banking is a simple way to preserve fertility, with a generally high success rate. Specimens are collected through masturbation. Multiple collections (2-3) with 48 hour abstinence between collections is the ideal. It is also best to collect before treatment begins. However, today's advanced technologies have produced multiple pregnancies from as little as one specimen and have indicated that viable samples may be collected after some treatments have begun.

- Sperm banking from home is an efficient method that allows patients to store sperm within 24 hours of diagnosis. Visit www.overnitemalekit.com as an example.
- Costs: The costs for sperm freezing vary depending on the number of specimens banked and the charges for the blood testing, but generally can be completed for less than $1,000. Storage fees also vary, depending on the storage facility, but are in the $275-$500 per year range. Shipping fees may also apply. Financial assistance programs are listed on page 27 of this booklet.

TESTICULAR EPIDIDYMAL SPERM EXTRACTION (TESE)

TESE is a method of sperm retrieval involving needle biopsy to obtain individual sperm from the testes and/or the epididymis or a micro-dissection of the testicular tissue itself. If sperm cells are found they are removed and used immediately or frozen for future use. Men with blockage of their vas deferens, spinal cord injuries, Multiple Sclerosis or impotence due to surgical procedures are typical candidates for this procedure.

- Costs: There is a wide range in the cost of TESE due to many factors such as hospital fees and anesthesia, but average in the $6,000-$16,000 range.
- TESE is a procedure that may be used prior to treatment or post-treatment, however, post-treatment success is significantly lower and clearly not as convenient as using cryopreserved sperm.

Future use of specimens in ART procedures described on page 26.

- Many urologists are able to utilize a more intense form of TESE, enabling them to identify small areas in the testicles where sperm are made and then carefully extract these healthy sperm cells, even in men whose testicles have been severely damaged by chemotherapy. This technique has proven effective post-treatment in a percentage of men who otherwise are considered infertile. In a recent study at NY Presbyterian Hospital researchers were able to retrieve sperm in 37% (27 of 73) of male cancer survivors, with an overall sperm retrieval rate of 42.9% (36 of 84). This resulted in a 57.1% fertilization rate per injected egg (oocyte) and a live birth rate of 42% overall. Altogether there were 15 deliveries involving a total of 20 children.

ELECTROEJACULATION (EEJ)

Electroejaculation uses a probe attached to an electric current to induce ejaculation. Once ejaculation is released, it is then collected and prepared for use in artificial insemination or frozen for future use. EEJ requires general anesthesia in all patients who have abdominal and perirectal sensation. Men with spinal cord injuries, Multiple Sclerosis or impotence due to surgical procedures are typical candidates for this procedure.

TESTICULAR TISSUE FREEZING – OPTION FOR PRE-PUBESCENT BOYS

Testicular tissue freezing is an outpatient procedure where testicular tissue is surgically removed and frozen for future use. When needed, the testicular tissue is thawed and then evaluated in an attempt to locate and retrieve sperm cells of varying degrees of maturity which may be used in combination with Intra Cytoplasmic Sperm Injection (ICSI). When testicular tissue banking is used for young boys, the tissue is obtained by biopsy and frozen for future use. The tissue contains stem cells which will be able to start spermatogenesis (sperm production). This method is considered experimental, with no live births as yet, but may be the best possible option for pre-pubescent boys. This is discussed in slightly more detail in the section titled Testicular Tissue Freezing option for pre-pubescent boys.

TESTICULAR SHIELDING – OPTION FOR PRE-PUBESCENT BOYS

The use of shielding to reduce the dose of radiation delivered to the testes may be discussed with a physician. Radiation shielding does not protect against chemotherapy, but is another possible option for pre-pubescent boys.

Future use of specimens in ART procedures described on page 26.

WOMEN

CANCER TREATMENT AND FERTILITY RISKS

Cancer treatments may cause infertility and premature ovarian failure. The first step in making decisions regarding Fertility Preservation options is to be aware of the risks associated with cancer treatments. Factors such as age, type of cancer and type of treatment can influence risk. Chemotherapy, radiation and surgery can all affect the reproductive system. In general terms, the higher the dose and/or longer the treatment, the greater the chance for reproductive problems for a cancer patient.

Chemotherapy and Radiation: Many chemotherapy drugs will damage eggs, depending upon the type and dose of chemotherapy. Drugs most likely to cause infertility are alkylating drugs (cyclophosphamide) and nitrosources. Radiation can damage ovaries, whether it is directed to the abdomen, pelvis or brain. Radiation to the brain can affect the pituitary gland, which is responsible for hormone production.

Surgery: As with men, surgery offers the greatest chance for cure for many types of cancer. These types of surgery can affect a woman's fertility:

· Hysterectomy (removal of uterus)

· Oophorectomy (removal of ovary/ovaries) – a woman can still carry a pregnancy

· Trachelectomy (removal of cervix, but not uterus) – a woman can still carry a pregnancy

Hormone treatments: Younger women are typical candidates for hormone therapy after chemotherapy ends. In breast cancer cases, a five year course of tamoxifen may be prescribed. It is best to discuss these types of treatments with a healthcare team, as they can affect fertility as well.

A reproductive endocrinologist (RE) and fertility specialist can work with a patient's oncology team to provide important information about fertility options and information about a fertility evaluation. For help finding a local RE, please visit the American Society for Reproductive Medicine's website www.reproductivefacts.org.

FERTILITY PRESERVATION OPTIONS FOR WOMEN

CRYOPRESERVATION

Thousands of births result each year from the use of frozen embryos. Egg (oocyte) freezing success has significantly improved and is now more readily available than it was just a few years ago. Current research on ovarian tissue cryopreservation is yielding exciting results. Ovarian tissue freezing offers the advantage of limited to no treatment delay, while other options unfortunately can cause treatment delay for some cancers. Many treatment plans for breast cancer do allow ample time for Fertility Preservation following surgery and prior to chemotherapy or radiation treatment.

EMBRYO FREEZING

Future use of specimens in ART procedures described on page 26.

Embryo freezing is the most widely used Fertility Preservation method, and it is considered the best option for a patient who has an available sperm source. The limitations for use with oncology patients include treatment delay (between two to six weeks), the potential risk of estrogen exposure for those patients with estrogen-sensitive tumors, and the need for a male partner or other sperm source.

Once eggs are mature from the medications, doctors will remove them in an outpatient surgical procedure using a light form of anesthesia for about 10-20 minutes. The procedure is done vaginally with an aspirating needle, so there are no incisions or scars from the treatment. Once removed, the eggs will be fertilized in the lab with sperm to create embryos. The embryos that develop successfully will be frozen for future use.

Years of data support very high cryo-survival rates of embryos frozen at this very early stage. The Society of Assisted Reproductive Technologies reports thousands of live births annually including nearly 9,000 live births from frozen embryos in the calendar year 2009 alone.

The costs to collect and freeze embryos are in the $10,000-$15,000 (per cycle) range. Storage fees vary, depending on the storage facility, but are in the $350-$1000 per year range. Shipping fees may also apply. Financial assistance programs exist to help with the costs, and are listed on page 27.

EGG (OOCYTE) FREEZING

If possible to arrange, egg (oocyte) freezing provides the patient with the combination of the least invasive procedure and most options in the future. Currently two primary methods of egg freezing exist; the more traditional slow-freezing protocols and the more recently applied vitrification protocols. Both methods have resulted in hundreds of live births worldwide. Egg (oocyte) cryopreservation had long been labeled experimental, but the American Society for Reproductive Medicine (ASRM) lifted the experimental label in 2012. Studies found that in young patients, egg freezing techniques have been shown to produce pregnancy rates leading to the birth of healthy babies, comparable to IVF cycles using fresh eggs. Egg (oocyte) freezing has similar limitations as embryo cryopreservation (treatment delay and potential risk of estrogen exposure for those patients with hormone-sensitive tumors), but there is no sperm source required at the time of freezing.

The costs to collect and freeze eggs are in the $10,000-$15,000 (per cycle) range. Storage fees vary, depending on the storage facility, but are in the $275-$1000 per year range. Shipping fees may also apply. Financial assistance programs exist to help with the costs, and are listed in the "Resources" section of this booklet.

OVARIAN TISSUE CRYOPRESERVATION – OPTION FOR PRE-PUBESCENT GIRLS

The main Fertility Preservation option for young girls is to freeze ovarian tissue. These young patients can have a laparoscopic procedure done where a small piece of the cortex of the ovary is removed. The cortex is very rich in follicles containing immature eggs. This biopsy specimen is then frozen for the patient's future use.

This procedure can be quickly performed by a reproductive endocrinologist and does not delay chemotherapy. It can and has been performed in very young girls (the youngest to date was just shy of 17 months old), and chemotherapy can actually be started the next day, which is the best part, no delay to treatment.

Years down the road when a female has been cured of her cancer and wants to consider having a family, this ovarian tissue can be thawed and re-implanted, with the hope that it will then produce mature eggs from which pregnancy can occur. A second potential use of the tissue is to attempt to grow the ovarian tissue, in an in vitro environment, and harvest mature oocytes for fertilization and embryo production followed by transfer of the embryos to the female. This approach is currently being studied by the

Oncofertility Consortium. For additional information, please visit www.oncofertility.northwestern.edu.

Both of these processes are considered experimental, but there have been multiple reported births from the use of cryopreserved ovarian tissue followed by re-implantation, worldwide.

The costs to collect and freeze ovarian tissue are in the $10,000-$15,000 range for the procedure. In some patients, it can be done as part of another necessary surgery so that most of the cost is covered by insurance. Re-implantation fees are additional. Storage fees vary, depending on the storage facility, but are in the $275-$1000 per year range. Shipping fees may also apply. Financial assistance programs exist to help with the costs, and are listed on page 27 of this booklet.

IN VITRO MATURATION (IVM)

IVM is an experimental procedure which involves the culturing of immature eggs (oocytes) which are collected from follicular aspiration in an attempt to grow them to a mature status. At this point they may be frozen or fertilized to make embryos which can then be frozen.

OVARIAN TRANSPOSITION – OPTION FOR PRE-PUBESCENT GIRLS

Ovarian Transposition is an outpatient surgical procedure (usually laparoscopic) where the ovaries are moved higher in the abdomen away from the radiation field to minimize exposure and damage. It can be done in both pre- and post-pubescent patients. The success rates have only been measured in terms of the percentage of women who regain their menstrual periods, not in terms of being able to have a live birth. Typically, about half the women will begin menstruating again. Ovarian transposition can sometimes be done as part of another necessary surgery so that most of the cost is covered by insurance.

Future use of specimens in ART procedures described on page 26.

RADICAL TRACHELECTOMY

Radical trachelectomy is an option for cervical cancer patients. The cervix is removed, and the uterus preserved. Although most women are diagnosed with cervical cancer after puberty, this procedure can be performed on pre-pubescent girls. Radical trachelectomy is considered experimental, and the success rate is not known. Radical trachelectomy can sometimes be done as part of another necessary surgery so that most of the cost is covered by insurance.

OVARIAN SUPPRESSION

Currently there are several groups looking at the effectiveness of GnRHa (Gonadotropin Releasing Hormone analog) treatment to suppress ovaries during chemotherapy. The theory is to basically shut down the ovarian functions so that the chemotherapeutic treatments have a lessened impact. These hormones are administered via injection and cause temporary menopausal symptoms, but not permanent menopause. Clinical trials for a specific cancer sometimes utilize this treatment. Among the trials which have been conducted to date, the overall success rate is unknown as specific results have varied greatly, from no improvement to success. If this option is selected, it is important to have a full fertility evaluation as soon as possible following treatment.

OVARIAN SHIELDING – OPTION FOR PRE-PUBESCENT GIRLS

The use of shielding to reduce the dose of radiation delivered to the ovaries may be discussed with your physician. Radiation shielding does not protect against chemotherapy, but is an effective strategy to prevent damage due to radiation.

"The goal is to bring quality to the lives we fought so hard to keep. We want lives that are rich, we want children and we want to be happy."
—An Anonymous Cancer Survivor

ADDITIONAL OPTIONS

THIRD PARTY REPRODUCTION

SPERM DONOR

A sperm donor may be chosen by couples unable to produce children due to male infertility or by females without a sperm source. A donor may be chosen by the recipient (“known” donor), or recipients may choose an anonymous or non-anonymous donor via a sperm bank or agency. Pregnancy is achieved by using ART procedures. The costs of donor semen purchased from a sperm bank range in price from $200-$700 per vial. Additional insemination costs vary depending on cycle type. Shipping and storage fees may also apply.

EGG (OOCYTE) DONOR

An egg (oocyte) donor may be chosen when a woman is unable to produce her own eggs (oocytes). A donor may be chosen by the recipient (“known” donor), or recipients may choose an anonymous or non-anonymous donor via an egg donation agency. The donor receives fertility medications to stimulate the production of multiple eggs. The eggs (oocytes) are then fertilized with a sperm source in a laboratory and the embryos are

transferred into the recipient's uterus. The fees paid to an egg donor and/or agency are in the $5,000-$15,000 range, with additional costs for ART procedures. Storage fees for additional embryos may also apply.

DONOR EMBRYOS

Once their family is complete, some couples opt to donate excess embryos. Embryo donors complete a three-generation medical/genetic history, a psycho/social evaluation, additional blood testing and sign an informed consent and agreement to donate. While there are many programs across the United States that administer embryo donation, there generally are waiting lists from a few months to a year or more to receive embryos. The costs to use donated embryos generally range from $2,000 to $5,000 for the above listed embryo donor screening and legal agreements and then $2,000 to $5,000 for the frozen embryo transfer.

GESTATIONAL CARRIER (SURROGATE)

A gestational carrier is a woman who carries a pregnancy for another woman or couple. The intended parent provides the egg (oocyte), from which an embryo is created and transferred to the gestational carrier's uterus. This method is sometimes chosen when a woman has had her uterus removed, has a serious medical condition or when recurrent IVF failure is an issue. A gestational carrier is selected through an agency or organization, with signed consents from all parties. Gestational carrier costs range from $10,000-$100,000, and costs for ART procedures will also apply as well as storage fees. The legal status of using a gestational carrier varies by state, so it is important that a knowledgeable and reputable attorney/agency be utilized.

ASSISTED REPRODUCTIVE TECHNOLOGIES (ART) PROCEDURES

INTRA-UTERINE INSEMINATION (IUI)

IUI is the simplest and least expensive procedure. IUI involves monitoring (timing) of ovulation in the female, and then insemination into the uterus using a catheter.

- Pregnancy rates: 13-23%, age dependent
- Costs: $1,000 per cycle, non-medicated

IN VITRO FERTILIZATION (IVF)

IVF involves the hormonal stimulation of the female followed by the retrieval of eggs and subsequent fertilization of the eggs in a laboratory prior to the transfer of the fertilized eggs (embryos) back in the female.

- Pregnancy rates: 35-50%, age dependent (www.sart.org)
- Costs: $8,000-$12,000 per cycle, however, some states offer insurance coverage and many clinics offer money back pregnancy guarantee programs.

INTRA CYTOPLASMIC SPERM INJECTION (ICSI)

ICSI involves the same steps as IVF, with the addition of injecting a single sperm into an egg to promote fertilization. This procedure allows the use of sperm retrieved by TESE, Electroejaculation and Testicular Biopsy.

- Pregnancy rates: 35-50%, age dependent (same as IVF)
- Costs: $9,000-$13,750 per cycle, however, some states offer insurance coverage and many clinics offer money back pregnancy guarantee programs.

IN VITRO MATURATION (IVM)

IVM involves the culturing of immature oocytes which are collected from follicular aspiration in an attempt to grow them to a mature status. At this point they may be frozen or fertilized to make embryos which can then be frozen. Techniques to utilize IVM are currently being investigated, therefore this procedure is considered experimental and has limited availability.

RESOURCES

Fertility Preservation
www.fertilitypreservation.com
www.mwrif.org/220
www.myoncofertility.org
www.oncofertility.northwestern.edu
www.overnitemalekit.com

General Information & Support
www.asrm.org
www.cancer.net
www.livestrong.org
www.mylifeline.org
www.patientresource.net
www.resolve.org
www.tamikaandfriends.org
www.tcancer.org
www.triagecancer.org

AYA's (Adolescents & Young Adults)
www.i2y.com
www.planetcancer.org
www.vitaloptions.org
www.youngsurvival.org

Children
www.acor.org/ped-onc/
www.alexslemonade.org
www.beyondthecure.org
www.ccfoa.org
www.childrenscancernetwork.org
www.curesearch.org
www.nvchildrenscancer.org

Fertility Fact Sheets
www.fertilitypreservationinfo.com

Clinicians
www.aposw.org
www.aonnonline.org
www.aosw.org
www.asco.org
www.nconn.org

Financial Resources
www.livestrong.org/fertilehope
www.patientadvocate.org
www.thesamfund.org
www.vernaspurse.org

Florida • 1-888-953-9669 | Minnesota • 1-888-489-8944 | Nevada • 1-888-831-2765 | Texas • 1-888-350-3247

www.reprotech.com