



# Fertility Preservation for Trans Women: Sperm Banking

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# About the Author

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Dr. Ottey received her BA in Biology from Rosemont College in 1997 and then received her PhD in Genetics from Thomas Jefferson University in Philadelphia in 2003. In 2003 she began a post-doctoral fellowship at the University of Pennsylvania's School of Veterinary Medicine. Her graduate and post graduate work was in cancer research using cell and molecular biology techniques.

Dr. Ottey joined Fairfax Cryobank in June of 2006 at the Philadelphia site as Site Manager/Laboratory Supervisor, a position in which she could make a more immediate impact on bettering lives by helping women and couples build their families. She received her HCLD certification from AAB in 2011 and moved into the position of Laboratory Director for the Cryobank. As Director she oversees the Sperm Donor Program, patient sperm banking, and all laboratory processes.

# Trans Women Patients and Sperm Banking

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When beginning the medical transition, you should consider your options for preserving your fertility. If you would like to proceed, you will need to identify a sperm banking facility in your area or choose a mail in sperm banking kit.

Transitioning is a complex process that includes many stresses, both internal and external. You may be asked about your desire to have children by family and friends; you may be questioning this yourself. By banking your sperm, you are allowing yourself the option to have a biological child in the future. Any medical transitioning, from hormone replacement therapy (HRT) to gender confirmation surgeries will lead to sterility. Choosing to bank now, having options later, will reduce potential additional stress. You should speak to your physician and therapist about this option.



## What is the first step?

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You will need to find a local sperm bank or clinic in your area that provides sperm banking services. You will call and speak to the staff about your desire to bank sperm and should begin by asking them what is required in order to bank (paper work), what are the associated costs, and if they have experience with transgender patients. It is important for you to be as comfortable as possible in order to produce a semen sample; knowing that the clinic staff has experience with patients like you can help reduce your stress.

If there is not a local clinic, you can purchase a mail in sperm banking kit from a sperm bank that provides this service.  
([www.fairfaxcryobank.com/sperm-banking-kit-priority-male](http://www.fairfaxcryobank.com/sperm-banking-kit-priority-male))



# How do I ensure that I provide the best semen sample?

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In order to provide the best semen sample stay well hydrated, eat well, sleep well and live an overall healthy lifestyle.

Scrotal temperature is important to a healthy semen sample; it is able to descend away from the body to bring the temperature down which allows the production of healthy sperm. Wearing tight fitting clothing, tucking and taping, or wearing a gaff will increase the temperature of the scrotum and could have a detrimental effect on healthy sperm production.

The sperm bank or clinic will ask that you come in with at least 72 hours of sexual abstinence which includes abstaining from masturbation. This time period has been determined as the ideal amount of abstinence that allows you to provide the best ratio of motile (moving) sperm to total sperm count. Some people provide a better sample with 96 hours of abstinence. If you are banking more than one ejaculate, the staff at the sperm bank or clinic may ask you to increase your number of abstinence hours for a better sample.

# How do I ensure that I provide the best semen sample?

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Most sperm banks and clinics will provide some form of stimulation in the donor rooms; magazines or movies. You are also able to bring in your preferred magazine or your mobile device. Samples are produced by self-masturbation. Most sperm banks and clinics do not allow you to bring a partner into the donation room, so you will have to self-stimulate. Once you are checked into the room, you will be allowed whatever time necessary to produce the sample.

You should wash and dry your hands. Do not get any water in the specimen cup, as water will kill the sperm. You may be provided with lubricant, but must not get any lubricant in the specimen cup. Try not to be intimidated by the size of the specimen cup; you are not expected to fill the cup. The specimen cup is large so that it is easier for the patient to produce a sample into the opening of the cup.

Once you have produced the semen specimen the staff will place it into an incubator to liquefy then will proceed with the semen analysis.

# What is the semen analysis?

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The technician in the lab will do a semen analysis of your sample to identify the health of the sample and determine how best to freeze the sample. The following are the parameters that the staff will analyze:

Semen Parameter	World Health Organization 2010 Standard
Liquefaction	20-60 minutes the coagulated semen should liquefy
General Appearance	The color and viscosity will be observed: the semen should be a whitish gray color
Volume	The volume or amount of semen should be 1.5 mL or more
pH	7.2 or lower is considered normal
Count	Greater than 40 million cells/mL is considered normal
Motility	Is presented as a percent; you will see a simple motility which should be greater than 50%
Vitality	If a sample has a low motility, a viability stain should be done to determine if the sperm are dead or only immotile

Once the initial semen analysis is completed, the count and motility will determine how the sample is frozen. A volume of freeze media, containing a cryoprotectant such as glycerol, is added to the semen sample. This helps the cells to survive the process of freezing and thawing. Then the semen sample plus freeze media is divided into several cryovials if possible. Generally, sperm banks and clinics will try to put a minimum of 5 million total motile cells into each cryovial, but will place more if possible. A vial with 10 million total motile cells can be used for an intracervical insemination with a female partner. If there are less than 5 million total motile cells or less in the vial, it can be combined with additional vials for an insemination or can be used for in vitro fertilization.



## How many times should I bank my sperm?

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This is dependent on two important factors: the cost and the quality of your sample. If you have a healthy semen sample that yields a large number of vials with high total motile sperm count, you may choose to only bank one sample. If you bank additional samples you will have more potential insemination attempts, and the possibility of additional inseminations for sibling pregnancies.

There are several costs associated with banking your sperm; they can include: a consultation, the semen analysis, processing and freeze, blood tests, and storage. Once you know the associated costs, you can make the best decision for your financial situation.

## How are the sperm stored and how long can they be stored?

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Once the sperm have been frozen using liquid Nitrogen vapor they will either be plunged in liquid Nitrogen (non-quarantine) or placed into a liquid Nitrogen vapor tank (quarantine). Liquid Nitrogen is  $-196^{\circ}$  Celsius. Metabolic activity in living cells ceases around  $-135^{\circ}$  Celsius, thus cells frozen in liquid nitrogen or liquid nitrogen vapor are “cryopreserved”. Cryopreserved cells can be stored for many years. So many in fact, that it is not known what the limits are. There has been a successful pregnancy that resulted from thawed sperm that had been frozen for 40 years. (Szell, Bierbaum, Hazelrigg & Chetkowski, 2013)



# I am a trans woman partnered with a woman, how can my samples be used in the future?

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If you are partnered with or intend to partner with a woman you will bank your sperm as a Client Depositor. A Client Depositor (CD) is someone banking their sperm for use in the future with a sexually intimate partner. Typically this will require you to complete some paper work, including a storage agreement. You will be asked to provide blood test results for several infectious diseases or can have those tests drawn on-site at the sperm bank or clinic. Then you will provide a semen sample that will be analyzed, processed, and stored.

When you and your female partner are ready to begin the process of having children, your partner should see a physician to determine her fertility. The physician will suggest the best plan for achieving pregnancy while considering the amount of sperm you have banked.

The banked sperm can be used for an intracervical insemination where the semen sample is thawed, drawn up into a catheter and inserted into your partner's vagina. The semen is placed on the cervix where the sperm will travel into the uterus up to the fallopian tubes to fertilize the egg. The banked sperm can also be washed and used for intrauterine insemination where the catheter is inserted through the cervix into the uterus. If the physician advises in vitro fertilization, the banked sperm will be used with eggs harvested from your partner to fertilize in a petri dish. The resulting embryo will then be transferred into your partner's uterus. Intra-cytoplasmic sperm injection can also be used if necessary. This would be used if there is a very low sperm count or immotile sperm. This process requires that eggs be harvested from your female partner, then healthy eggs are chosen and a single sperm is inserted directly into the egg. An embryo would then be transferred into your partner's uterus.

# Why do I need to provide blood test results or have my blood drawn if my samples will be used with a sexually intimate partner?

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This testing is required to determine how your sperm samples will be stored. If all of the tests are non-reactive, your sample will be stored in non-quarantine tanks. If any tests are reactive or if you do not provide test results, your samples will be required to be stored in quarantine, which can be more costly.



# I am a trans woman partnered with a man, how can my samples be used in the future?

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If you are partnered with a male or intend to partner with a male, you will be a Directed Donor (DD). You would also be a DD if you proceed as a single woman building a family using a surrogate or gestational carrier (GC). A DD is a person banking sperm for use with a non-sexually intimate person. Because your sperm would be used for pregnancy in a surrogate or GC with whom you are not sexually intimate, regulatory agencies require more testing. You will be required to complete a medical history form, infectious disease testing, a physical exam, and risk assessment. The sperm bank or clinic will outline the specific requirements of their program including the costs associated.

If all of your infectious disease test results are non-reactive, your sample can be stored in non-quarantine. If you have a reactive test results, the samples would be stored in quarantine, which is more costly.

Depending on the state in which your physician practices, there may be a required six month quarantine period before samples can be released. If this is the case, you need follow up blood tests that will “release” the specimens from that quarantine period. Some physicians and or states may require other periods of quarantine, such as three months. Be sure to clarify with the sperm bank, clinic and physician so you can plan your time line accurately.

# I am a trans woman partnered with a man, how can my samples be used in the future? Continued

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You will need to choose a surrogate or a GC. A surrogate is donating an egg for fertilization and will carry the pregnancy. The banked sperm will be thawed and used for either intracervical insemination or washed for intrauterine insemination, as described above.

If you opt for a gestational carrier you will need to start with an egg donor from an egg bank or clinic. The egg will be fertilized in vitro using your thawed banked sperm. The resulting embryo would be transferred into the gestational carrier for the pregnancy.

If you will be using a surrogate or gestational carrier you should work with an attorney to establish all of the required legal paper work necessary to determine parentage, and to ensure that all agreements are in order for a smooth process.

# Reference

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Szell, A., Bierbaum, R., Hazelrigg, B., & Chetkowski, R. (2013). Live births from frozen human semen stored for 40 years. *Journal of Assisted Reproduction and Genetics* , 30(6), 743-744.