



Preimplantation Genetic Testing at ONE Fertility: PGT-A

Preimplantation Genetic Testing (PGT) – involves the biopsy and testing of cells from embryos created through IVF prior to transfer into the uterus (ie before implantation).

PGT-A is Preimplantation Genetic Testing for Aneuploidy (also known as PGS). - involves the screening of embryos for an unbalanced number of chromosomes, which is referred to as aneuploidy. The most commonly known example of aneuploidy is Down Syndrome which is caused by an extra copy of chromosome 21.

What is the Purpose of PGT-A?

Without **PGT-A** embryos are selected for transfer based on their physical appearance and development observed under the microscope. It is important to note that the appearance of the embryo does not tell us if the embryo is genetically normal. **PGT-A** allows us to identify abnormal embryos and therefore can give your physician additional information to help **SELECT** the best embryo for transfer to maximize the chance of having a successful pregnancy and a baby.

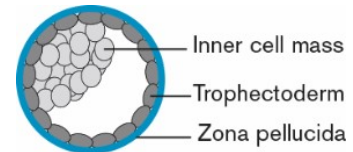
Who may potentially benefit from PGT-A

- Individuals experiencing recurring pregnancy loss;
- Individuals experiencing recurring implantation failure;
- Women of advanced reproductive age;
- Women who have high ovarian reserve and are expected to obtain a high number of embryos may benefit from reduced time to achieve a successful pregnancy.

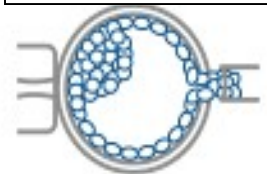
How is PGT-A performed?

Five to six days after egg retrieval, well developed embryos (called blastocysts) will have over 100 cells. A few cells are carefully removed from trophectoderm which is the part of the embryo that will form the placenta. These cells are sent for genetic analysis to an outside lab and the embryos are frozen for future use. Embryos may not qualify for PGT-A if they do not reach the blastocyst stage or if it is not technically possible to perform the biopsy due to insufficient quality of the outer layer of cells. Embryos for biopsy must be large enough for biopsy and have a trophectoderm quality grading of A or B. Lower quality embryos will not be biopsied but may be frozen for potential future use if you wish. Some embryos may therefore not reach a developmental stage suitable for testing. Even biopsied embryos are occasionally not suitable for analysis by the lab.

Blastocyst Embryo



Embryo Biopsy



PGT-A Results – What to expect?

It is unlikely that all of your embryos will be healthy. The percentage of healthy embryos varies from person to person. Not all of your embryos may have a conclusive result. Your embryos may be called 'mosaic'. Mosaic means the embryo possess both normal and abnormal cells. Recent developments have shown that mosaic embryos with a low-level of abnormal cells can produce pregnancies and live births. Please note that currently there is no conclusive research about the long term health of babies born from mosaic embryos. If you have only mosaic embryos, you and your doctor will decide if those embryos should be used. Unfortunately, sometimes there are no healthy embryos for transfer. This technology gives us the best chance of transferring a normal embryo. However, transferring a normal embryo does not ensure a pregnancy will occur. One goal of PGT-A is to lower the chance of pregnancy loss, though a loss could still occur. It may not increase the chance of becoming pregnant.

Are there any risks of doing PGT-A?

There is no guarantee that biopsied embryos will survive. The risk of loss of the embryos is low. In addition there remains a small risk that the results will not be accurate. For this reason, screening for genetic disorders in pregnancy is still recommended.

Sequence of Events

Discuss IVF and PGT-A with your Physician



Review the information provided by your Physician.
Decide if you want to proceed with PGT-A



Prepare for IVF

1. Do the testing that was ordered by your Physician (when applicable)
2. Attend IVF teaching
3. Sign IVF and PGT consents
4. Enroll for PGT with outside lab
(ONE Fertility will complete an enrollment form and send it to outside lab)



Call ONE Fertility on DAY 1 of your period 1 MONTH BEFORE IVF and speak to an IVF nurse to:

1. Review Estrace priming instructions
2. Arrange a follow up visit after your IVF

Call 905-634-4440 ext 4. Messages left on weekends/holidays will be returned on next business day



Begin Estrace priming as directed
Book IVF Stimulation start date as directed by the IVF nurse



Begin IVF Stimulation



Egg Retrieval and Fertilization



Biopsy of the Embryo(s) - Day 5/6 of embryo development
Embryos for biopsy must be expanded enough for biopsy and have a trophectoderm quality grading of A and B.



Sample sent for biopsy to outside lab



Embryos frozen for transfer in a future frozen embryo transfer (FET)



Follow up visit with your Physician where you will review the outcome from your IVF treatment including PGT-A results, plan your next steps and sign appropriate consents



Genetic Counselling - This step may be required or optional depending on your outcome. Your Physician will advise you.



Frozen embryo transfer with appropriate embryo