What is CombiPGS™?

CombiPGS is a test that helps you and your physician select embryos with the best chance of a successful pregnancy. Chromosomal abnormalities can cause failure of an embryo to implant or can lead to the early loss of a pregnancy even after successful implantation. CombiPGS is a Pre-implantation Genetic Screening (PGS) test that can identify the most common type of chromosomal abnormality found in embryos – aneuploidy. An aneuploid embryo is one that does not have the correct number of chromosomes. Using proven technology, CombiPGS examines all 24 chromosomes (22 chromosomes plus the X and Y chromosomes) from the developing embryo.

CombiPGS can help:

- Increase the likelihood of successfully achieving pregnancy
- Decrease the likelihood of implantation failure or early miscarriage as a result of fetal aneuploidy
- Decrease the risk of having a baby with a chromosomal abnormality, such as Down syndrome
- Provide more confident embryo selection for single embryo transfer
- Minimize the total number of IVF cycles required to successfully achieve pregnancy

About CombiMatrix

CombiMatrix is a genetic testing laboratory whose mission is to provide specialized genetic tests that make a difference. Our testing services provide patients and physicians with information that can assist in making more informed care decisions.

Understanding Preimplantation Genetic Screening (PGS)

Clinical Insights.

Improved Outcomes.

CombiMatrix

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Lit.No. 11192014

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High-Tech. High-Touch.

Is PGS right for you?

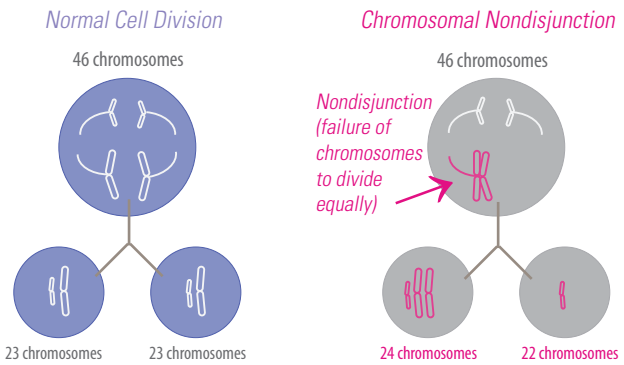
The goal of PGS is to identify which embryos have normal chromosome counts and which ones have aneuploidy. This information is then used (along with a number of additional factors regarding embryo health) to help rank the embryos in terms of which one(s) to implant first. Although many couples are aware that the risk of fetal aneuploidy increases with the age of the mother, many are unaware of the fact that a significant proportion of embryos, even from healthy, young egg donors, also have aneuploidy. In fact, when evaluated at Day 5, embryos from women under age 35 years show an aneuploidy rate of 32%, and embryos from women over age 40 show an aneuploidy rate of >76%. (These rates are 53% and 86%, respectively, for Day 3 embryos.)*

While PGS may be considered for a variety of reasons, many couples are more likely to consider PGS if they:

- Have experienced >1 failed IVF cycle
- Have experienced recurrent pregnancy loss
- Have had a child or a previous pregnancy with an aneuploidy
- Are planning a single-embryo transfer
- Will be using embryos where the egg donor is ≥ 35 years of age
- Wish to minimize the risk of an aneuploid pregnancy

Why does aneuploidy occur?

Aneuploidy is a type of chromosomal abnormality that occurs as the result of a sporadic error during cell division. Normally, our cells have 46 total chromosomes; 22 pairs of numbered chromosomes and two sex chromosomes, with females having two X chromosomes and males having an X and a Y. The failure of the chromosomes to separate equally during the process of cell division typically causes both of the resulting cells to be aneuploid. See diagram below:



For example, egg cells and sperm cells each carry one half the total number of chromosomes seen in the rest of the cells in our bodies (23 instead of 46). During cell division, if the chromosomes do not divide properly, we may end up seeing one cell with 24 chromosomes and the other with 22, rather than two evenly divided cells with 23 chromosomes each. When these aneuploid cells are fertilized with another cell that has the correct number of chromosomes, the resulting embryo will have too few or too many chromosomes. Many times, the abnormality is so severe that the embryo does not survive. In some situations, the pregnancy may continue even though the baby has an aneuploidy. Some of the more commonly recognized aneuploidies include: Down Syndrome (trisomy 21), Edwards Syndrome (trisomy 18) and Turner Syndrome (monosomy X). CombiPGS helps identify the best embryos for transfer, optimizing your chances for a successful pregnancy.

Please note that PGS detects whole chromosome and segmental aneuploidies only. It does not detect disorders due to microdeletions or microduplications, structural chromosome rearrangements or single gene disorders. If you have a family history of one of these disorders, you may wish to consider Pre-implantation Genetic Diagnosis (PGD).

How Is PGS performed?

This will depend on the type of procedure your doctor recommends. If you are undergoing a Day 3 blastomere biopsy, a single cell from the developing embryo will be removed and sent for analysis. If you are undergoing a Day 5 trophectoderm biopsy, several cells from the outer layer of the embryo will be removed and sent for analysis. (Please note that PGS can be performed for both fresh and frozen embryo transfers.)

Once CombiMatrix has received your sample, each individual embryo is bar-coded to provide optimal security and accuracy throughout the testing process. Microarray technology is used to evaluate each embryo for aneuploidy, and the results are reported back to your doctor, who will discuss the findings with you.

*Harton GL et al. Diminished effect of maternal age on implantation after preimplantation genetic diagnosis with array comparative genomic hybridization. Fertil Steril. 2013 Dec; 100(6):1695-1703.

Is PGS covered by my insurance?

Most insurance plans provide very limited or no benefits for assisted reproductive treatments and/or IVF and IVF-related testing. However, CombiMatrix is dedicated to making quality PGS testing affordable so that more families can benefit from this technology. Prior to your procedure, CombiMatrix will work with your reproductive health care specialist to provide you with information regarding your financial responsibility. Payment-in-full is required before any testing can be initiated.

Additional questions?

If you still have questions or want to learn more, speak to your doctor, genetic counselor or other healthcare provider.

Additional information is also available on our website at www.combimatrix.com.

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