

Preimplantation

# GENETIC TESTING

Build a healthy family



Tests available:

- SELECT PGT-A
- SELECT PGT-M
- SELECT PGT-M/HLA
- SELECT PGT-SR
- STAR PGT-SR



Reprobiogen



**Svetlana Madjunkova, MD, PhD,**  
COO and Scientific Director of Reprobiogen

Reprobiogen is a reproductive biotechnology company and a national leader in comprehensive reproductive genetic testing. Reprobiogen supports families, fertility and reproduction specialists, with state-of-the art genetic testing and informed decision making, based on test results that allow for the dream of building a healthy family.

## Leaders in Preimplantation Genetic Testing

Reprobiogen is focused on providing high precision Preimplantation Genetic Tests (PGT): **SELECT PGT-A, SELECT PGT-M, SELECT PGT-M/HLA, SELECT PGT-SR** and its most recent genetic test innovation **STAR PGT-SR**.

## Expertise in innovation and research

The team of geneticists, genetic counsellors and genetic technologists, specializes in the research and development of new genetic methodologies. **STAR PGT-SR** patented technology was internally developed by the genetics team of Reprobiogen.

## What is Preimplantation Genetic Testing?

Preimplantation Genetic Testing (PGT) is a process to test embryos created through in vitro fertilization (IVF) before they are transferred into the uterus.

## Why is Preimplantation Genetic Testing important?

Preimplantation Genetic Testing (PGT) increases the likelihood of IVF success by selecting the 'fittest, healthiest' embryos for IVF transfer. Preimplantation tests are performed by taking a few cells from each embryo at day 5/6 of the developmental stage before they are frozen for a future embryo transfer into the uterus. This leads to:

- Higher pregnancy success rates through IVF and shortening the time to achieving a successful pregnancy<sup>1-4</sup>
- Lower miscarriages or loss of pregnancy post IVF<sup>1-4</sup>
- Improves success in patients undergoing single embryo transfer<sup>1-4</sup>
- Increases the likelihood of having a healthy baby<sup>1-4</sup>

## Who should consider PGT?

IVF patients:

- With a history of repeated implantation failure
- With one or more miscarriages
- Who have had previous pregnancies affected by chromosomal abnormalities
- With male factor infertility
- Women 35 years of age and older
- As a whole will benefit from selecting the healthiest embryo for transfer



# REPROBIOGEN OFFERS FIVE MAIN TYPES OF PGT

## SELECT PGT-A

### PGT for Aneuploidies\*

**SELECT PGT-A** is a comprehensive chromosome screening to test embryos for numerical chromosomal abnormalities prior to transfer. All 23 pairs of human chromosomes, including 22 pairs of autosomes and 1 pair of sex chromosomes, are analyzed to evaluate any numerical gains or losses of chromosomes. Uniquely **SELECT PGT-A** can reliably detect ploidy changes such as haploidy\*\* and triploidy\*\*\*. By selecting healthy embryos with the correct number of chromosomes, implantation rates increase, miscarriages decrease and healthy live birth rates increase. The results obtained from **SELECT PGT-A** helps IVF physicians and patients decide which embryos to transfer.

\* Reprobiogen PGT-A is designed to assess loss or gain of chromosomal material. It does not assess balanced changes within or between chromosomes.

\*\* A single set of chromosomes instead of two

\*\*\* An additional set of chromosomes





# SELECT

PGT-M

## PGT for Monogenetic Disorders

**SELECT PGT-M** is a test for detection of familial diseases carried by either one or both gamete providers (egg/sperm), called monogenic disorders. This is a highly specialized genetic test for those who have an increased risk of passing on a familial genetic condition to their children.

**SELECT PGT-M** increases the chances of having a healthy child.

# SELECT

## PGT-M/HLA

### PGT for Monogenetic Disorders and HLA Typing

This test involves screening embryos through two stages. The first stage being a **SELECT PGT-M** test to select the healthy embryos, as described above, and a second test involves screening of the healthy embryos for Human Leukocyte Antigen (HLA) to check for HLA match with a child who may be suffering from a life threatening blood disorder. **SELECT PGT-M/HLA** increases the chances of having a healthy child who is compatible to his/her sick sibling who will need in the future a bone marrow transplant.





# SELECT

PGT-SR

## PGT for Structural Rearrangements

**SELECT PGT-SR** is a specialized test for couples where one or both partners carries a known balanced structural rearrangement of their chromosomes. **SELECT PGT-SR** checks for the presence of segmental chromosomal gains and/or losses resulting from unbalanced chromosomal rearrangements on the embryos produced by the IVF process. The test detects abnormalities and reports if any chromosomal rearrangements are present that can increase the risk of miscarriages and abnormalities in their offspring. The embryos are screened and only the healthy embryos with the right chromosomal arrangement are chosen for embryo transfer and implantation in the uterus. This is a proactive step that can assist in improving IVF success results and achieve a healthy pregnancy for this group of patients at very high risk of miscarriages and affected offspring.

## Introducing the new



The team of geneticists at Reprobiogen has developed a new patented process for preimplantation genetic testing for chromosomal SStructural Analysis for Rearrangements called **STAR PGT-SR<sup>5</sup>**.

### **STAR PGT-SR offers:**

- Extensively validated technology during clinical trials to achieve high sensitivity and specificity.
- Accurate, timely and actionable results .
- Superior process patented methodology for **STAR PGT-SR** that can accurately discriminate embryos that carry a balanced chromosome rearrangement (BCR) from those that do not preventing vertical transmission, from parents to children. Avoids passing on the translocation to future generations.
- It also detects the presence of cryptic imbalances and complex rearrangements, often missed by other conventional PGT-SR technologies, that can cause mental retardation and/or congenital anomalies.
- Advanced technology to distinguish whether an embryo is euploid (non-translocation carrier) or euploid (translocation carrier). In these special cases knowing that an embryo is euploid, having the correct number of chromosomes, is not sufficient because it can be euploid but be a carrier of a genetic disease.
- Fastest turnaround time for **STAR PGT-SR** test results (3-5 weeks).
- Possible to get two genetics tests done in parallel for cost effective and timely results.



## Who can benefit from STAR PGT-SR?

- If one or both parents have a history of genetic diseases or translocations, they can opt for the new **STAR PGT-SR** test to reduce the risk of having a pregnancy or child with balanced or unbalanced structural abnormality, which involves extra or missing genetic material.
- Patients who have had previous pregnancies affected by chromosomal abnormalities that involve subchromosomal deletions or duplications.
- Patients with male factor infertility related to structural rearrangements, microdeletions/duplications.

## What is involved in the process of getting genetic testing done?

- **Referral from your healthcare provider** for PGT.
- Reprobiogen processes referral and may request additional medical info and details.
- **Genetic Counselling** for info, queries & expectations.
- As soon as agreement with consent form is signed and fees to Reprobiogen are settled by the healthcare provider (HCP), or patient, the test kit is sent to the clinic of the HCP for the collection of the DNA or embryo samples.
- Samples are collected at the healthcare provider's clinic, as per instructions in the kit, and sent to Reprobiogen for analysis.
- **Reprobiogen provides report to healthcare provider.** Patient and doctor both can connect with our genetic counsellors to discuss the details.

**Note:** The time duration for processing each test report may vary on numerous factors. Please connect with Reprobiogen to discuss the same.



## Genetic Counselling

Genetic Counsellors are specialized healthcare professionals certified to practice in several subspecialty areas of genetics including reproductive genetics supporting patients and HCP in family planning, ART, infertility and prenatal diagnosis. They will help you and your healthcare provider make an informed decision

and recommend whether you are a good candidate for these tests. The genetic counsellors will also act as a liaison between the fertility specialist the genetics laboratory and the patient.

### What can I expect during a genetic counselling session?

There are two main objectives during a counselling session:

- **Review of your family history:** The genetic counsellor will develop a three-generation family tree to identify your genetic risks. This will help ascertain if additional tests are needed. The team may request additional medical records to support their assessments.
- **Informed consent:** The genetic counsellor will have a detailed discussion with you on the recommended genetic test(s). The purpose of this consultation is to support your understanding and address your apprehensions. It will include information on the process, cost, risks, limitations, outcomes, and implications on your fertility journey.
- **Pre-test and Post-test counselling:** Detailed overview of the advantages and limitations of the test in the decision making process. Sensitive and non-directional counselling on the genetic test results for both patients and HCPs.

#### References:

1. Dahdough EM, 2015
2. Rubio C, 2017
3. Munne S, 2017
4. Hou W, 2019
5. Madjunkova S, NEJM June 18, 2020

# Genetic counselling at Reprobiogen:

To support the preimplantation genetic diagnosis program, Reprobiogen provides a comprehensive plan for genetic counselling. Our team of counsellors is board-certified to provide you the best guidance and support you in your fertility journey.



Available and  
accessible



30-60 minute  
meetings



Virtual-phone and  
video appointments



Comprehensive  
support – start to finish



Detailed  
summary and  
analysis of session



Link between you,  
your fertility specialist and  
the genetics laboratory

Contact us to discuss  
your genetic tests need

[reprobiogen.com](http://reprobiogen.com)

reprobiogen.com



Reprobiogen

1 (800) 974-4818

1 (437) 836-9147

790 Bay St., Suite 1100,  
Toronto, ON Canada  
M5G 1N8