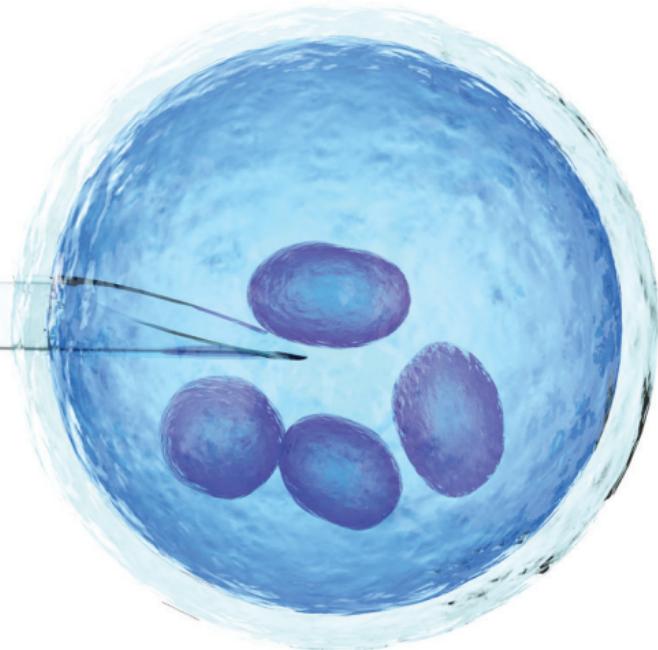
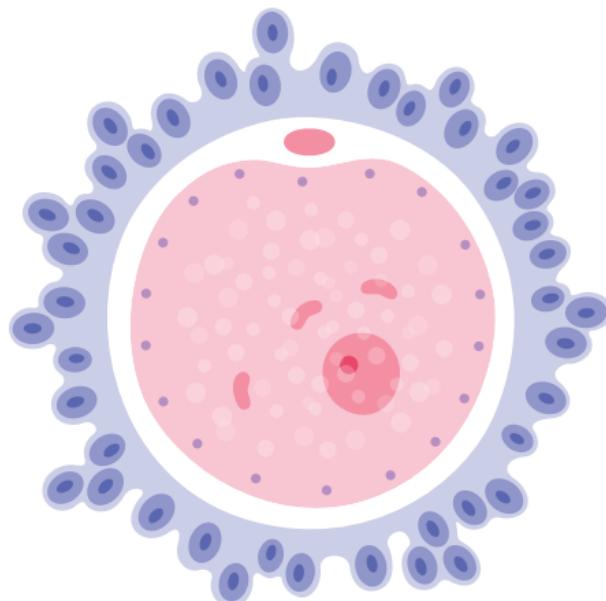




# PREIMPLANTATION GENETIC TESTING (PGT)



Preimplantation Genetic Testing is a significant advancement that can help in knowing whether the embryo formed via in vitro fertilisation is suitable for implantation.



### **What is PGT?**

Preimplantation Genetic Testing is a screening test that can be performed on the embryos which are developed through in vitro fertilisation. This test helps in analyzing the embryos genetically before they are transferred to the uterus.

### **How does genetic analysis of embryos help?**

Humans have 23 pairs of chromosomes, with genetic material that encodes their formation and traits. Any chromosomal abnormality can lead to failure in the implantation of the embryo altogether, miscarriage, or genetic disease. PGT helps in testing the embryo genetically thereby increasing the chances for the success of IVF and assures that there are no genetic abnormalities.

## **Who can benefit from PGT?**

The couples who can benefit the most from PGT include:

- Age of woman above 35 years
- If there is a family history of genetic disease
- If there are chances of genetic disease as discussed during the genetic analysis of couples
- If a woman has a history of recurrent miscarriages
- History of IVF failure in past

PGT is not restricted to the above and it is advisable to discuss with your gynaecologist if PGT is suggested for you.

## **How is PGT done?**

PGT is a laboratory procedure. After an IVF has been performed for the development of embryos, some cells outside the embryo are biopsied and a genetic analysis is done on them. If healthy, the embryo is considered suitable for transfer to the uterus.

## **Which are the abnormalities that can be detected through PGT?**

Depending on the type of chromosomal abnormalities that can be detected by PGT it can be of the following types:

### **PGT- A**

This is **Preimplantation genetic testing for Aneuploidies**

Embryos with any extra or missing chromosomes are called aneuploids. Such embryos either fail to implant and lead to miscarriage

or if get implanted they lead to the birth of a child with a genetic condition. PGT- A test helps in the identification of the number of chromosomes thereby leading to increased chances of IVF success, and giving birth to a healthy baby.



## PGT-SR

This is **Preimplantation genetic testing for Structural rearrangements**

All 23 pairs of chromosomes have a unique structure and arrangement. Any mismatch in the structure of chromosomes (due to translocation, inversion, etc) can lead to significant genetic conditions or failure of pregnancy. PGT-SR screens for any such abnormality in couples who may have increased risk for such a condition.

For both PGT-A and PGT-SR, cells are biopsied from the embryo formed after IVF and tested.

## **PGT-M**

This is **Preimplantation genetic testing for Monogenic/single-gene defects**

This test is advised when the couple has a chance of passing down a specific genetic disorder to the embryo. This is specifically suggested when the genetic consultation of a couple demonstrates any autosomal dominant or recessive condition which can be transferred or if you have had a child with a genetic disease previously.

In PGT-M apart from the biopsy of cells from the embryo, blood samples from the couple and other family members may also be needed for genetic analysis. Diseases such as cystic fibrosis, muscular dystrophy, etc can be determined and chances of giving birth to a healthy baby are increased by such a test.

One is advised to discuss their specific health condition with a gynaecologist in detail to know if any Preimplantation Genetic Test is advisable for them. Ankura hospital for women and children has a team of expert obstetricians and gynaecologists who guide you through each step of infertility treatment.



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