PGT-A & PGT-M: What Nurses Need to Know

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Preimplantation Genetic Testing (PGT) is a genetic screening test used during in vitro fertilization (IVF) to analyze embryos for genetic changes before implantation. It is divided into three main categories: PGT-A, PGT-M, and PGT-SR, each serving a distinct purpose.

PGT-A (Preimplantation Genetic Testing for Aneuploidy) screens embryos for sporadic (not inherited) chromosome abnormalities, also known as aneuploidy. It is the most common type of embryo testing. Due to increasing risks of aneuploidy in oocytes and embryos related to maternal age, it may help reduce the time to live birth by identifying embryos with the correct number of chromosomes.

PGT-M (Preimplantation Genetic Testing for Monogenic Disorders) screens embryos for monogenic (single gene) conditions. The specific gene and mutation(s) must be known for patients to pursue this option. PGT-M assays are customized for each individual patient or couple; therefore, lead time is typically required prior to embryos being tested.

PGT-SR (Preimplantation Genetic Testing for Structural Rearrangements) screens embryos for specific inherited aneuploidy based on a parent's structural chromosome rearrangement, such as translocations or inversions. These rearrangements may not affect the number of chromosomes but can still disrupt normal development and lead to infertility, recurrent miscarriage, or congenital anomalies in a newborn. PGT-SR helps identify embryos with normal or balanced chromosomes.

These PGT methods may enhance IVF outcomes by enabling more informed embryo selection, reducing the risk of genetic disease transmission, and improving the chances of a healthy live birth.