

PID - Preimplantation Diagnostics

Our team is convinced that the development of preimplantation diagnostics endorses substantial improvements in the field of artificial insemination.



First Achievements

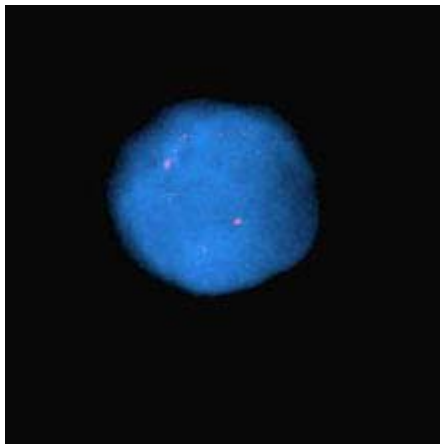
Just one month after the first preimplantation diagnostics (introduced in Austria), we documented the first pregnancy. We tested five eggs, only two of which were genetically inconspicuous (not predisposed to disease). These two eggs were then implanted into the patient, who is now the happy mother of twins.

Preimplantation diagnostics is currently carried out by Polar Bodies Analysis at the Wunschbaby Center. In this ethically indisputable method, both polar bodies of the egg are tested during egg-sperm fusion.

The genetic structure of the polar body, essentially a waste product of the egg, provides insight into the egg's genome, while the egg itself remains intact. If no chromosomal defects exist, the healthy egg can be further utilized. Sex identification or treatment of a diseased egg is not possible.

Polar Bodies Diagnostics is recommended to couples seeking artificial insemination techniques who:

- are over 35 years old
- have already had at least one miscarriage
- have a certain genetic predisposition.



Treatment procedure

For this procedure, the eggs can develop either naturally or by artificial techniques and are then extracted by an ultrasonic transvaginal puncture. Most cells in the body have a double chromosome set, meaning twenty-two chromosome pairs (autosomes) and two sex chromosomes: two X-chromosomes for females (46,XX); one X-, one Y-chromosome for males (46,XY). Germ cells however, or reproductive cells (egg and sperm cells), have only one chromosome set; otherwise a quadruplicate chromosome set would form upon egg-sperm fusion.

The female body naturally avoids this quadruplicate-set-formation by accumulating the second chromosome set in a polar body and thereby having this set inactive during further cell divisions after insemination. The extracted polar bodies are then genetically analyzed directly at our institute.

In our genetics laboratory, the polar body chromosomes are detected by a fluorescent dye and interpreted using the FISH-Method. Testing for incorrect divisions is carried out on chromosomes 13, 16, 18, 21 and 22. Over time, incorrect chromosomal divisions can make implantation impossible, cause mental and physical defects in the baby or spontaneous miscarriage. Guarantee of diagnosis is 90–95%. The patient will be informed of the result before embryo transfer.

Intentions:

- achieve high pregnancy
- reduce abortion rates
- reduce risks associated with multiple pregnancies
- minimize chances of losing the baby later through prenatal intervention (Amniocentesis, Chorionic villusbiopsy, etc.)
- minimize abortions using prenatal diagnostics
- help families with certain genetic predispositions wanting to have a child
- prevent any unnecessary consequences of an unfavorable transfer.

Limitations

All international studies as of yet have shown that this procedure does not disturb the embryo itself. Chromosomal rearrangements can not be eliminated, even if they are included in Polar Bodies Diagnostics.

There is an approximate 20–30% risk for an incorrect division of analyzed chromosomes if the second polar body can not be extracted. Deviations caused by the sperm cell can not be included in Polar Bodies Diagnostics. Prenatal screenings, such as continuous ultrasonic testing and blood tests, are strongly recommended to prevent deformities or genetic defects in newborns.

If you are interested in preimplantation diagnostics, we can set up an informational session at no charge:

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Follow [this link](#) for Information handout and informed consent regarding Polar Bodies Diagnostics