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Unofficial English translation of the original press-release by Gabriele Wickert

A relatively simple, new sperm test could spare certain infertile couples who want to have children an arduous journey: Men are identified whose sperm cannot naturally fertilize an egg cell – although all semen parameters are completely normal. Only one small component is dysfunctional, an ion channel in the cell membrane. The only way to overcome this defect is to inject a sperm cell directly into the egg (ICSI).

The sperm test was developed by a team from the University of Münster under Professor Timo Strünker. It is still being tested but was introduced for the first time on December 6 at the DVR Congress in Leipzig. The scientist from the Center for Reproductive Medicine and Andrology (CeRA) claims, if the defect is diagnosed at the beginning of fertility treatment, the affected couple can avoid frustrated fertility treatments ranging from ovulation induction, to intrauterine insemination, or even in-vitro fertilization.

According to the pilot study, up to 1% of men from the subgroup with "unexplained" infertility could suffer from such a defect; the number of affected patients may be higher. The prevalence is currently being investigated on larger numbers of patients. Strünker assumes that in the vast majority of cases the defect is genetically determined and that all sperm cells are affected.

The test is used to check whether a specific ion channel (CatSper) - which is present exclusively on sperm cells - is active. The CatSper channel is opened by the female sex hormone, progesterone, which is secreted by the egg cell. Calcium ions thus flow into the sperm and act on its "molecular motor". The sperm cell can then break through the egg coat, almost like a turbo engine. If the channel is defective, this cannot occur and fertilization does not take place.

Infertile couples in which the man suffers from a CatSper defect have no choice but to bypass this obstacle and insert the sperm directly into the egg via a treatment known as intra cytoplasmic sperm injection (ICSI). Thereby, the "defective" sperm cell fertilizes the egg and pregnancy can occur.

The rapid test provides a result within 30 minutes. Only a small amount of ejaculate and two test solutions are required. The evaluation requires only a microscope, which is standard equipment in urological, andrological and reproductive medicine practices. The test is patent pending. The results of the pilot study should be published in 2020.