Microfluidics may be a new method of IVF

October 13 2005

University of Michigan technology more closely mirroring natural fertilization process is showing promise as a new method of in-vitro fertilization.

Researchers in the university Health System say microfluidics -- an emerging area of physics and biotechnology that deals with the microscopic flow of fluids -- can be used for IVF in mice. They also found lower numbers and concentrations of sperm were required when using microfluidic channels instead of culture dishes.

"Now that we are using microfluidics for fertilization, what you are starting to see is the whole IVF process happening on a chip," said Gary Smith, associate professor of obstetrics and gynecology, urology and physiology.

IVF is a process in which eggs are removed from a woman's body and fertilized with sperm outside the body. Fertilized eggs are then placed in the woman's uterus, where they can develop as in a normal pregnancy.

Lead author Dr. Ronald Suh, now with Urology of Indiana, said, "In the future, you will be able to take patients with low sperm counts, use microfluidics to select the best sperm, and achieve fertilization in one step."

The study appears online in the journal Human Reproduction.