

# Older Mothers May Have Special Fertility Genes

BY KATE JOHNSON  
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COPENHAGEN — Women who give birth after age 45 may have a special set of genes that makes them more fertile than average women, according to Israeli researchers.

"These women are models for us to learn about fertility," Neri Laufer, M.D., said at the annual meeting of the European Society of Human Reproduction and Embryology.

Dr. Laufer of Hadassah University Medical Center, Jerusalem, outlined his work with more than 200 Ashkenazi Jewish women who had conceived spontaneously after the age of 45 (*Fertil. Steril.* 2004;81:1328-32).

"More than 80% of these women have six children or more and a low miscarriage rate," he said.

Genetic profiling performed on eight of these women identified a clustering of genes that decreases apoptosis and in-

creases DNA repair. The genes were not found in a control group of six women of the same age whose childbearing had ended at age 30.

"These women appear to differ from the normal population due to a unique genetic predisposition that protects them from the DNA damage and cellular aging that helps age the ovary," Dr. Laufer said.

Preliminary work with a group of similarly fertile Bedouin women has identified the same genetic expression, he said at a

news conference. Dr. Laufer said his team plans to study women from other ethnic/genetic groups to compare their genetic fingerprints. Identifying the presence or absence of this gene set could help doctors counsel women about their reproductive expectations, he said.

He added that the presence of genes linked to extended reproductive potential may indicate genetic capabilities to resist general aging. "What we don't yet know is, will these women also live longer?" ■

## Early Transfer May Offset IVF Problems in Some

COPENHAGEN — Early embryo transfer on the first day after fertilization may remedy certain in vitro fertilization failures due to poor embryo quality, researchers reported in a poster presented at the annual meeting of the European Society of Human Reproduction and Embryology.

A subset of patients with good ovarian stimulation, egg quality, and fertilization have embryos that stop developing or exhibit extended fragmentation by their second day in culture, said Olia Anastasiou of the Laboratoire de VIF et de Biologie de la Reproduction at Hôpital Tenon in Paris.

"We have patients like this, most of whom have had three trials of [in vitro fertilization] with really bad quality embryos. It's been a real question mark what to do for them," she said in an interview.

Prolonging embryo culture to the blastocyst stage (day 5) for such patients is a risk that usually results in no surviving embryos to transfer, she explained.

Her team's hypothesis was that certain maternal proteins, which are normally responsible for preimplantation embryo development, were deficient in these patients, making their embryos unable to survive the culture conditions in vitro.

For this group, they investigated the benefit of early embryo transfer at the pronuclear stage, just 1 day after fertilization.

A total of 27 patients were initially included in the study. The average age of the patients was 35 years; all had experienced at least two in vitro fertilization [IVF] failures due to "drastically impaired" embryonic development. None had achieved a pregnancy despite normal parental karyotypes and sperm DNA fragmentation rates.

The patients had their third and fourth IVF cycles performed with transfer and cryopreservation of pronuclear-stage embryos. Eight clinical pregnancies were obtained, representing a pregnancy rate of 29% and an implantation rate of 14%.

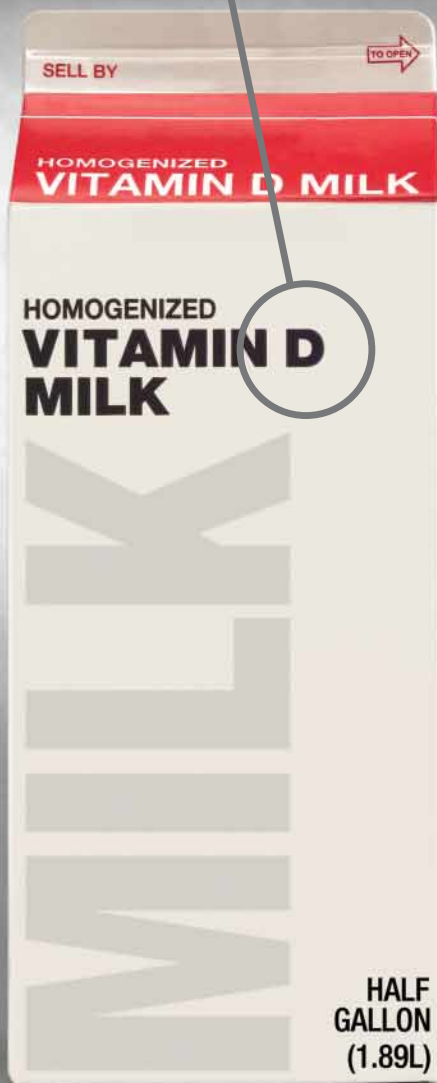
Data now have been collected for 50 patients—15 of whom have become pregnant, for a pregnancy rate of 27%.

"We were surprised ourselves since between all of these patients we had performed more than 180 cycles with absolutely no pregnancy," she said.

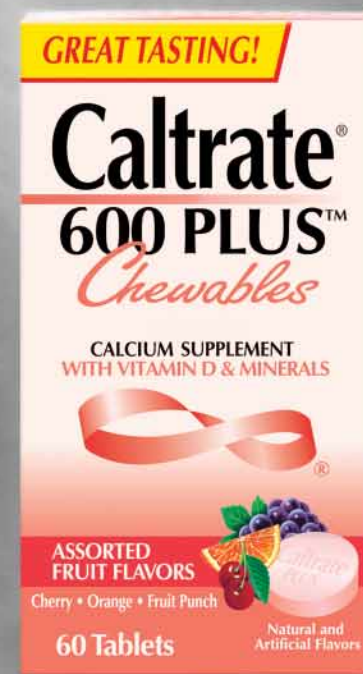
No pregnancies have yet been reported from the cryopreserved embryos.

—Kate Johnson

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References: 1. Office of the Surgeon General. *Bone Health and Osteoporosis: A Surgeon General's Report: What Is Bone Disease?* Available at: [www.surgeongeneral.gov/library/bonehealth/factsheet1.html](http://www.surgeongeneral.gov/library/bonehealth/factsheet1.html). Accessed November 19, 2004. Page 3. 2. *Bone Health and Osteoporosis: A Report of the Surgeon General*. Washington, DC: Office of the Surgeon General, US Dept of Health and Human Services; 2004:12.

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