

# Amniotic sac membrane could be source for human eggs

January 11 2013, by Kevin Hattori

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Researchers at the Technion-Israel Institute of Technology say cells from the amniotic membrane part of the placenta normally discarded after a woman gives birth could one day be a source for human eggs. The first-of-its-kind discovery was published online last month in *Reproductive Biology and Endocrinology* (2012, 10:108).

[Amniotic membrane](#) cells – originated about eight days after conception – preserve the plasticity of an embryo's cells before they differentiate. The Technion researchers found these cells also have the ability to differentiate into ones that express the properties of the germ cells that produce ova. (Germ cells are [biological cells](#) that give rise to the cells that fuse with another during conception.)

"Germ cell development has been difficult to study in humans because important early events occur after implantation," said Prof. Shalev, who added that the study of germ cell development in humans is especially challenging because ethical issues can be involved.

What is known is that these [germ cells](#) remain undifferentiated until a female reaches sexual development (i.e. starts menstruating). In order to turn into ova, the cells need the proteins or hormones that surround the ovary in adolescent girls.

The researchers are now at work to replicate the conditions present in adolescents. Their goal will be to produce [human eggs](#) by adding proteins or hormones to the differentiated amniotic cells.

"It is too early to know when this will be achieved, but we have discovered the principle," said Prof. Shalev.

"When it is done successfully, women who do not produce healthy ova – or any at all – could use them to become pregnant," he continued. "These ova would be probably be used mostly for women who have entered [premature menopause](#)."

Provided by American Technion Society

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