

No evidence older women generate new eggs

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It is highly unlikely that older women generate new eggs, report researchers at the University of South Florida in collaboration with a center in China.

The USF study, published in the March 2007 issue of the journal *Developmental Biology* and highlighted April 26, 2007 in *Nature*, counters the controversial findings of reproductive endocrinologist Jonathan Tilly, PhD, and his team of Harvard scientists.

Tilly's work, published in 2004 in *Nature* with a follow-up study a year later in *Cell*, challenged the biological dogma that mammals, including women, are born with a limited lifetime supply of eggs. Tilly reported the discovery of stem cells capable of migrating from bone marrow to mouse ovaries and generating new eggs there. The research fueled hopes that a new treatment – such as bone marrow transplantation – might one day help older women regain their fertility.

Since then, other papers have refuted Tilly's surprising finding that mice can produce eggs throughout their lives. Now, David Keefe, MD, professor and chair of Obstetrics and Gynecology at USF, and colleague Lin Liu, who also holds a post at Sun Yat-Sen University in Guangzhou, China, say they can find no evidence to support his hypothesis that women may generate new eggs after birth.

The USF researchers searched for markers of stem cells or of meiotic cell division in ovarian cells biopsied from 12 women between the ages of 28 and 53.

"Despite using the most sensitive methods available, we found no evidence of any egg stem cells in human ovaries, demonstrating that Dr. Tilly's findings in mice do not apply to women," Dr. Keefe said. "Dr. Tilly likely was seeing non-egg cells which resemble eggs. Another reason his findings do not apply to women could be because mice eggs are more resilient than women's eggs. The bottom line is that women should not expect stem cell therapy to treat egg infertility or menopause in the foreseeable future."

The traditional view of fertility holds that women are born with all their eggs and they are released one by one (occasionally two) at each ovulation. At menopause, few to no mature eggs are believed to remain in the ovaries.

Source: University of South Florida

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