Mother's obesity may lead to infertility in the next generation

March 23 2011

Levels of the hormone ghrelin are low in obese women and a recent study accepted for publication in *Endocrinology*, a publication of The Endocrine Society, reports that mice whose mothers had low ghrelin levels were less fertile due to a defect in implantation.

Hormones involved in energy balance and metabolism, such as ghrelin, have been shown to regulate reproductive function in animals and humans. However ghrelin's role in reproductive tract development remains unclear. The current study examined the effect of ghrelin deficiency on the developmental programming of female fertility.

"While our study involved mice, we believe our findings have significant implications for women," said Hugh Taylor, MD, of the Yale University School of Medicine in New Haven, Conn. and lead author of the study. "Our results suggest that low ghrelin levels could program the development of the uterus in the female children of obese women. These women may then be less fertile as adults."

In this study, researchers observed that female mice born of mice with ghrelin deficiency had diminished fertility and produced smaller litters than mice born of mice with normal ghrelin levels. Mice exposed to ghrelin deficiency in-utero demonstrated alterations in uterine gene expression which lead to impaired embryo implantation and consequently low fertility.

More information: The article, "Maternal Ghrelin Deficiency

Compromises Reproduction in Female Progeny through Altered Uterine Developmental Programming," appears in the April 2011 issue of *Endocrinology*.

Provided by The Endocrine Society