# Hormone that controls hunger and appetite also linked to reduced fertility

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Researchers at Yale School of Medicine have found that in-utero exposure to the hormone grhelin, a molecule that controls appetite and hunger and nutrition, can result in decreased fertility and fewer offspring.

Results from this research will be presented in an abstract at the 2008 Society for Gynecologic Investigation (SGI) Annual Scientific Meeting held March 26-29 in San Diego, California.

Ghrelin, the so-called “hunger hormone,” is produced in the stomach and brain, induces food intake, and operates through a brain region that controls cravings for food and other energy sources. Ghrelin decreases the HOXA 10 gene that is involved in developmental programming of the uterus. The HOXA 10 gene determines how the uterus will develop in adulthood.

“When you’re obese, ghrelin levels are lower, and based on these preliminary findings, they may result in lower fertility,” said lead author on the abstract, Hugh S. Taylor, M.D., professor in the Department of Obstetrics, Gynecology & Reproductive Sciences and section chief of Reproductive Endocrinology and Infertility at Yale School of Medicine.

The researchers bred mice designed to be deficient in ghrelin production. These mice had offspring with decreased fertility and that produced smaller litter sizes. These offspring also had lower expression of the HOXA 10 gene, which is important for proper development of the uterus in the embryo. In the adult uterus, it maintains the ability of the uterus to provide an optimal environment for proper development of the embryo.

“Obesity may have an effect on pregnancy in the next generation,” said Taylor, adding that the findings underscore the importance of nutrition, energy utilization and appropriate ghrelin levels on normal uterine development. Taylor and his team will next study the effects of lower ghrelin levels on humans.

Source: Yale University