Suppressed ovarian follicle development in women with obesity may explain reduced fertility

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Women with obesity, even those with regular menstrual cycles, have suppressed ovarian follicle development and reduced production of

reproductive hormones, which may underlie reduced fertility, according to a new study being presented Saturday at ENDO 2022, the Endocrine Society's annual meeting in Atlanta, Ga.

For reasons that have been unclear, obesity adversely impacts reproductive health in women, even in women reporting regular menstrual cycles, said lead researcher Marla Lujan, Ph.D., of Cornell University in Ithaca, N.Y.

"This study provides new and fundamental knowledge related to ovarian function in the context of obesity," Lujan said. "This knowledge may be used to inform improvements in current contraception and infertility treatments, both of which are known to be suboptimal in women with obesity."

Ovarian follicles are small sacs filled with fluid that are found inside a woman's ovaries. The follicles contain an immature egg, or oocyte. During ovulation, a mature egg is released from a follicle.

The researchers studied 21 women with obesity and 21 women of normal weight, ages 19 to 38 with a self-reported history of regular menstrual cycles. They were evaluated every other day from one ovulation to the next using ultrasound imaging. Their follicle number and size were recorded at each visit, and blood samples were taken to measure hormone levels.

Luteal phase defect (LPD) occurs when a woman's ovaries do not release enough progesterone following ovulation, or the uterus lining doesn't respond to progesterone. The study found that LPDs are more prevalent in women with obesity during natural ovulatory cycles, which may help explain reduced fertility in these women, the researchers said.

"Our research provides evidence that follicle development is suppressed

with obesity and that alterations in distinct stages of follicle development are associated with reduced reproductive hormone production," said Alexis Oldfield, Ph.D. candidate and first author on the report.

"This is the first comprehensive comparison of follicle growth in non-obese versus obese populations during natural menstrual cycles," she said. "These data are unique and innovative in showing that even in those with self-reported regular menstrual cycles, ovarian physiology is compromised with obesity."

Provided by The Endocrine Society

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