

## Obesity: its impact on the menstrual cycle

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### ABSTRACT

#### OBESITY: ITS IMPACT ON THE MENSTRUAL CYCLE

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Menstrual disorders are common gynecological problems in reproductive women. It is reported that the prevalence of menstrual irregularity ranges from 10% to 38% in menstruating women and is considered an indicator of endocrine disorders and reproductive health status.

Although body fat and positive energy balance is necessary for normal reproductive function, body fat at the extremes may be detrimental.

Obesity is associated with many comorbidities and obese women frequently suffer from reproductive disorders, including polycystic ovary syndrome, infertility, and menstrual disorders.

There are several known mechanisms for the influence of adipose tissue on ovulation and menstrual cycle: (1) adipose tissue converts androgens to estrogen; (2) body weight influences the direction of estrogen metabolism, obese women producing more potent forms of estrogen because of activated estrogenic activity; (3) obese women have diminished capacity for estrogen binding with SHBG, which inactivates estrogen and results in an elevated percentage of free serum estradiol; and (4) adipose tissue stores steroid hormones in obese women.

Hormonal abnormalities, including increased testosterone and insulin levels and a decreased sex hormone-binding globulin (SHBG) level were found in obese women, potentially influencing the menstrual cycle.

In addition, central effects on hypothalamic pituitary axis also potentially regulate ovarian function. FSH and progesterone was found to be decreased with measures of both total and central adiposity.

In conclusion, obesity directly affects ovary, endometrial, oocyte, and corpus luteum function. This generates reproductive disorders, including polycystic ovary syndrome, menstrual disorders, anovulation and infertility.

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