



HORMONE TESTING

# Progesterone Information Sheet

## What is Progesterone?

Progesterone is a female sex hormone that is primarily produced in the corpus luteum in normally menstruating women, with small amounts also produced in the adrenal cortex (1).

## What are the roles of progesterone?

Progesterone is essential for the preparation of the uterus for implantation by causing the uterine lining to thicken. During pregnancy, progesterone production continues to maintain the uterine lining, help nurture the developing fetus throughout the pregnancy, and to trigger the breasts to produce milk (2).

Progesterone also acts in non-reproductive tissues, often in partnership with estradiol. Examples include estradiol reduction of bone resorption and progesterone stimulation of bone formation, and coordinated increases in nitric oxide activity to improve blood flow (3).

## What are normal progesterone levels?

Progesterone levels fluctuate during each menstrual cycle. They are low (< 0.5 ng/mL) during the follicular phase, with a rapid rise following the luteinizing hormone (LH) surge at ovulation to 3 - 25 ng/mL (4). If no conception occurs, progesterone levels decline and menstruation begins (5).

If an egg is fertilized, the corpus luteum maintains progesterone levels until around week six. The placenta produces progesterone for the remainder of the pregnancy, with levels increasing to 7.25 - 44 ng/mL in the first trimester, and 65 - 229 ng/mL by the third trimester (4).

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## What do abnormal progesterone levels mean?

Abnormally low progesterone levels are observed in mid-luteal phase in females whom have disorders of ovulation. This luteal phase deficiency is associated with infertility and spontaneous abortion, and is estimated to occur in approximately 10% of infertile women (6). Low progesterone levels during the first 10 weeks of pregnancy are indicative of threatened abortion and ectopic pregnancy (7, 8).

## Progesterone changes during perimenopause

During the perimenopause phase (time around the final menstrual period), progesterone production decreases, but estrogen levels often remain higher (9). This results in an imbalance of estrogen and progesterone, contributing to the many symptoms that can occur in the months-to-years before menopause (3). Oral progesterone can be prescribed to symptomatic women during perimenopause. It is effective for improving sleep, vasomotor symptoms, increasing bone formation, and has beneficial cardiovascular effects (3).

### References:

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