

Progesterone

MDL Test Number: 630

Methodology: Immunoassay

CPT Codes: 84144 x 1



Specimen Collection Platform:

Serum in Serum Separator Tube (SST)

Turnaround Time:

24 - 72 hours

Stability:

Room temperature

Test Additions*:

30 days to add tests

Specimen Collection:



1. Immediately after blood collection, invert the tube(s) gently 5 times to ensure mixing of clot activator.



2. Allow the tube to rest upright for at least 30 minutes after collection to ensure proper clotting.



3. Centrifuge for at least 15 minutes at 2200-2500 RPM within one hour of collection.



4. Do not remove the stopper or pour off serum.



What is Progesterone?

Progesterone is a steroid hormone. Most of it is made by the corpus luteum, the structure the ovary forms after it releases an egg, and, once a pregnancy is established, by the placenta. Small amounts come from the adrenal glands (small glands that sit on top of

the kidneys) in both women and men. Its main work is to prepare the lining of the uterus to receive a fertilized egg and to hold a pregnancy through its earliest weeks.

Progesterone levels follow the menstrual cycle closely, and that pattern is what makes the test useful. Levels stay low through the first half of the cycle, rise sharply once an egg has been released, and reach their highest point about a week later. If no pregnancy begins, they fall back to baseline roughly four days before the next period. A level that has clearly risen is therefore evidence that ovulation took place, and a level that has not is evidence that it did not. In pregnancy, the corpus luteum keeps producing progesterone until roughly the seventh to ninth week, when the placenta takes over, and concentrations continue climbing through all three trimesters.

Why test for Progesterone?

A healthcare provider may order a progesterone test to measure how much of the hormone is present in the blood. Common reasons include:

- **Confirming that ovulation has taken place**, using a sample drawn in the second half of the cycle — the most common reason for ordering this test
- **Looking into periods that are irregular, infrequent, or absent, including in polycystic ovary syndrome, also called polyendocrine metabolic ovarian syndrome (PMOS/PCOS)**, where cycles often pass without an egg being released
- **Evaluating difficulty getting pregnant** as part of a first-line workup
- **Checking whether treatment given to bring on ovulation has worked**
- **Following a patient who is taking progesterone** as replacement therapy
- **Evaluating an early pregnancy that may be at risk**



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Special Instructions:

- **Collection timing:** This test answers a different question depending on when in the cycle it is drawn. To confirm ovulation, the sample should be taken about a week after an egg would have been released, around day 21 of a 28-day cycle, adjusted for a longer or shorter one. A sample drawn too early or too late reads low, whether or not ovulation happened.
- **Hormonal contraceptives:** Combined pills, patches, and rings work by preventing ovulation, so progesterone stays near its first-half-of-cycle level throughout. Results from patients on these methods run close to 0.70 ng/mL against a midluteal figure many times higher, and cannot be used to confirm or rule out ovulation.
- **DHEA supplements:** DHEA is sold over the counter and is common in functional medicine practice. It raises progesterone results substantially without raising the patient's actual level, the manufacturer measured an 80 percent shift at high supplement levels. For a patient taking DHEA, a different method that is not affected by it should be used.
- **Tube type:** Blood for this test must not be collected in an EDTA tube. EDTA more than doubles the apparent progesterone level, which is large enough to turn a result that shows no ovulation into one that appears normal.
- **Comparing results over time:** Progesterone methods differ from one another more than most hormone tests do; the same sample can read a third lower on one method than on another. When results are being tracked over time, use the same test at the same laboratory each time so the comparison is meaningful.

Limitations:

Every laboratory test has limits. For progesterone, the main ones are:

- This test measures progesterone directly between 0.2 and 40 ng/mL. Results below the lower value are reported as less than 0.2 ng/mL, which is low enough to answer the question the test is usually asked. Levels in later pregnancy climb well above the upper value, so those samples are diluted and measured again, and the reported number is calculated from that dilution.
- Triglycerides interfere with this test and push results down rather than up. A markedly fatty sample can read at roughly half its true value, which is enough to make an ovulatory cycle look anovulatory. A sample drawn after fasting avoids this.
- Closely related steroid hormones such as 17-hydroxyprogesterone and 11-deoxycorticosterone have a similar chemical structure, so a small amount of each is measured along with progesterone. Newer medications built on a progesterone-like structure may also be picked up and read falsely high.
- A small number of patients carry natural antibodies in their blood, often people who work closely with animals or who have received certain antibody-based treatments, that can interfere with the test and produce an unexpected result.
- A single progesterone value cannot establish that the second half of the cycle is inadequate. Levels swing hour to hour, healthy, fertile women produce low readings, and current reproductive medicine guidance holds that luteal phase deficiency has not been shown to be a condition that causes infertility on its own.
- A progesterone result is one piece of a larger picture. It is meant to be read together with the patient's symptoms, medical history, and other test results, never on its own.

Reference Range(s):

Progesterone is measured in nanograms per milliliter (ng/mL). Because levels change so much across the menstrual cycle, a result is compared against the expected range for the point in the cycle at which it was drawn:

- **Follicular phase (first half of the cycle, before an egg is released): up to 1.13 ng/mL**
- **Luteal phase, days 7 to 8 (the midluteal draw used to confirm ovulation): 6.0–24 ng/mL**
- **Pregnancy, first trimester: 9.3–33.2 ng/mL**
- **After menopause: up to 1.0 ng/mL**

A result outside these ranges is not automatically a problem, and a result inside them does not rule one out. Only the ordering provider can interpret what a given number means for a given patient. Patients should always go by the reference range printed on their own laboratory report.

Analyte	Disorder	Expected Value*
Progesterone	Anovulatory cycle	↓
Progesterone	PCOS / PMOS	↓
Progesterone	Primary ovarian insufficiency	↓
Progesterone	Pregnancy, first trimester	↑↑
Progesterone	Postmenopause	↓

*↓ – Decreased, ↑↑ – Markedly Increased.

What are some references that discuss the medical necessity of testing Progesterone?

1. Bulun SE, Babayev E. Physiology and pathology of the female reproductive axis. In *Williams Textbook of Endocrinology* 15th edn (eds Melmed, S. et al.) Ch. 15 (Elsevier, Philadelphia, 2025).
2. Practice Committee of the American Society for Reproductive Medicine. Diagnostic evaluation of the infertile female: a committee opinion. *Fertil Steril*, **103**, e44–e50 (2015).
3. Practice Committees of the American Society for Reproductive Medicine and the Society for Reproductive Endocrinology and Infertility. Diagnosis and treatment of luteal phase deficiency: a committee opinion. *Fertil Steril*, **115**, 1416–1423 (2021).
4. Teede, H. J. et al. Recommendations from the 2023 International Evidence-based Guideline for the Assessment and Management of Polycystic Ovary Syndrome. *J Clin Endocrinol Metab*, **108**, 2447–2469 (2023).
5. Panay N, et al. Evidence-based guideline: premature ovarian insufficiency. *Hum Reprod Open*, **2024**, hoae065 (2024).
6. Santoro N, et al. The menopause transition: signs, symptoms, and management options. *J Clin Endocrinol Metab*, **106**, 1–15 (2021).



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