

Prolactin

MDL Test Number: 654

Methodology: Immunoassay

CPT Codes: 84146



Specimen Collection Platform:

Serum in Serum Separator Tube (SST)

Turnaround Time:

24 - 72 hours

Stability:

Room temperature

Test Additions*:

30 days to add tests



What is Prolactin?

Prolactin is a hormone made by the pituitary gland, a small gland at the base of the brain. Its main role is to prepare the breast for milk production and to sustain the milk supply after birth. It also acts on the ovaries and the testes, where a high level suppresses the

hormones that drive ovulation and sperm production. That second effect is why prolactin is measured so often in women being evaluated for missed periods, nipple discharge, or difficulty becoming pregnant.

Prolactin does not sit at a steady level. It is released in bursts throughout the day, and differences of up to about 30% from one day to the next are normal in the same healthy person. Levels rise during sleep and are lowest a few hours after waking. Prolactin is also a stress hormone, so something as ordinary as the blood draw itself can raise a result for a short time. Levels are naturally a little higher in women than in men, rise at puberty under the influence of estrogen, and fall around menopause. In pregnancy, prolactin climbs to ten or twenty times its usual value, returning to normal within about three weeks of delivery in women who are not breastfeeding.

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.

Why test for Prolactin?

Prolactin is measured when a symptom points toward the pituitary gland or toward a hormonal cause of a menstrual problem. It is commonly ordered to:

- **Investigate periods that have stopped or become irregular.** A high prolactin level is one of the most common hormonal causes, and it has to be ruled out before polycystic ovary syndrome, also called polyendocrine metabolic ovarian syndrome (PMOS/PCOS), is diagnosed.
- **Evaluate milky nipple discharge** that is not explained by breastfeeding (galactorrhea).
- **Work up difficulty becoming pregnant**, because a high prolactin level blocks ovulation.
- **Look for a prolactin-producing pituitary tumor (prolactinoma)**, the most common type of pituitary tumor, particularly when headaches or changes in vision are present as well.
- **Check whether a medicine is responsible for a high level**, which is a far more common explanation than a tumor and is looked for first.
- **Follow a known prolactinoma during treatment**, where the level is expected to fall.
- **In men, evaluate low sex drive, erectile difficulty, or infertility**, where a high prolactin level suppresses testosterone.



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Special Instructions:

- **Time of the blood draw:** The time the sample was collected should be recorded on the request. Prolactin follows a daily rhythm, rising during sleep and reaching its lowest point a few hours after waking, and it also rises with stress, including the stress of the draw itself. For those reasons, a mildly high result is often rechecked on a second sample before it is acted on.
- **Biotin supplements:** Biotin is sold on its own and is present in many hair, skin, and nail products. At high levels, it can change the result of this test. Patients should tell the ordering provider what they take and at what dose, so the provider can decide whether the timing of the draw needs to change.
- **Hormonal contraceptives and estrogen therapy:** Women taking oral contraceptives or estrogen treatment may have prolactin levels above the usual range. Any current hormone treatment should be noted on the request so the result can be read correctly.
- **Other medicines that raise prolactin:** Several classes of prescription medicine raise prolactin as an expected effect, including some drugs for mental health conditions, some for nausea, and some for blood pressure. A complete and current medication list should be provided with the request.
- **Comparing results over time:** Different laboratories and different methods can give slightly different results on the same sample. Repeat testing should be done at the same laboratory whenever possible.

Limitations:

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

- One high result does not settle anything on its own. Sleep, stress, and the blood draw itself can all raise prolactin briefly, and the level swings from day to day even in health, so a repeat sample is usually needed before a high value is treated as real.
- The test reports how much prolactin is in the blood, not why it is there. Medication, an underactive thyroid, kidney disease, and a pituitary tumor can all raise the level, and the number alone does not separate them.
- Rarely, antibodies that some people carry after routine contact with animals or animal products can interfere with tests built this way and produce a result that does not fit the clinical picture.
- A prolactin 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):

Prolactin is reported in nanograms per milliliter (ng/mL). The manufacturer publishes one range for adult women and one for adult men. Pregnancy and breastfeeding are not covered by either, because prolactin normally rises many times above these values at those times.

- **Adult females (not pregnant): 1.9 – 25 ng/mL**
- **Adult males: 2.5 – 17 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*
Prolactin	PCOS/PMOS	N
Prolactin	Hypopituitarism (e.g. Sheehan syndrome)	↓
Prolactin	Normal early pregnancy	↑
Prolactin	Lactation	↑↑
Prolactin	Underactive thyroid (e.g. Hashimoto)	↑

*↑ – Increased, ↑↑ – Markedly Increased, ↓ – Decreased, N – Normal.

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

1. Petersenn S, et al. Diagnosis and management of prolactin-secreting pituitary adenomas: a Pituitary Society international Consensus Statement. *Nat Rev Endocrinol*. **19**, 722–740 (2023).
2. Melmed S, et al. Diagnosis and treatment of hyperprolactinemia: an Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab*, **96**, 273–288 (2011).
3. Karaca Z, et al. Sheehan syndrome. *Nat Rev Dis Primers*, **2**, 16092 (2016).
4. Teede HJ, 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. Practice Committee of the American Society for Reproductive Medicine. Current evaluation of amenorrhea: a committee opinion. *Fertil Steril*, **122**, 52–61 (2024).
6. Santoro N. Update in hyper- and hypogonadotropic amenorrhea. *J Clin Endocrinol Metab*, **96**, 3281–3288 (2011).



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