

Anti-Müllerian Hormone (AMH)

MDL Test Number: 653

Methodology: Immunoassay

CPT Codes: 82166



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 Anti-Müllerian Hormone (AMH)?

Anti-Müllerian hormone (AMH) is made by the small, resting follicles in the ovaries — the fluid-filled sacs that each hold an immature egg. The number of those follicles falls steadily through adult life, and because every one of them

contributes a little AMH to the bloodstream, the amount circulating tracks how many are left. That pool is called the ovarian reserve, and AMH is the closest a blood test comes to counting it without an ultrasound.

AMH behaves differently from the other reproductive hormones. It is not driven by the pituitary gland at the base of the brain, so it does not rise and fall through the menstrual cycle the way estradiol does. The manufacturer reports that levels vary little from day to day. What AMH does change with is age: it is highest in the early twenties and declines through the reproductive years to become undetectable around menopause. This is why a result is compared against a range for the patient's own age group rather than against one adult figure.

Why test for Anti-Müllerian Hormone (AMH)?

AMH is measured when the question is how many eggs remain, rather than how the ovaries are working this month. It is commonly ordered to:

- **Assess ovarian reserve in a woman being evaluated at a fertility clinic**, where it helps predict how the ovaries will respond to stimulation and guides the choice of treatment before therapy begins.
- **Support a diagnosis of polycystic ovary syndrome, also called polyendocrine metabolic ovarian syndrome (PMOS/PCOS)**. The 2023 international guideline accepts a raised AMH in adults as an alternative to counting follicles on ultrasound.
- **Work up periods that have become irregular or stopped**. A markedly low AMH points toward the ovaries themselves, while a normal AMH points away from them and toward a cause higher up, such as stress, weight loss, or heavy training.
- **Investigate suspected primary ovarian insufficiency (POI)**, where the ovaries stop working before the age of 40.
- **Assess the ovaries before and after treatment that can damage them**, including chemotherapy, radiation, and surgery on the ovary, and to inform a discussion about preserving fertility beforehand.
- **Give a general sense of where a woman sits in reproductive aging** when she is planning the timing of a pregnancy.



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Special Instructions:

- **When the sample should be drawn:** The manufacturer directs that samples for AMH be taken on days 2 to 4 of the menstrual cycle, counting the first day of bleeding as day 1. That is the timing used in the study behind this test, in which AMH and the ultrasound follicle count were measured together. Ask the ordering provider what to do when periods are irregular or absent.
- **Fertility medicines:** The manufacturer directs that this test not be used on samples from patients who have received Cetrotide, Ovitrelle, Endometrin, or follistatin within one to two weeks of testing, because these products can affect the result. Any recent fertility treatment should be listed on the request.
- **Hormonal contraception:** Combined pills, patches, rings, and hormonal intrauterine devices can lower a measured AMH, and a result taken while they are in use can understate the ovarian reserve. Current or recently stopped contraception should be noted on the request so the provider can interpret the number in that light.
- **Biotin supplements:** Biotin is sold on its own and is present in many hair, skin, and nail products, often at high doses. The manufacturer tested this test only up to a biotin level that such a supplement can exceed, so the effect above that point is not described. Patients should tell the ordering provider what they take and at what dose.
- **Comparing results over time:** Different laboratories and different AMH methods can give different numbers on the same sample. Repeat testing should be done at the same laboratory whenever possible.

Limitations:

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

- AMH estimates how many eggs remain, not their quality, and not whether a woman will conceive. Professional guidance is explicit that measures of ovarian reserve should not be used as a fertility test on their own or to decide who may be offered treatment. The manufacturer also states that this test is not for monitoring a woman already undergoing ovarian stimulation.
- The manufacturer's own study shows the test works better in one direction than the other. A result below its cutoff makes a low follicle count very likely, but women above the cutoff were split almost evenly between high and normal follicle counts, so a high AMH says much less than a low one.
- The lowest value this test reports is 0.08 nanograms per milliliter, and anything under that is reported as less than 0.08 rather than as a number. Levels after menopause and in primary ovarian insufficiency are often below this point, which is where the test can confirm that the reserve is exhausted, but cannot say by how much.
- 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.
- An AMH result is one piece of a larger picture. It is meant to be read together with the patient's symptoms, medical history, age, and other test results — never on its own.

Reference Range(s):

FAMH is reported in nanograms per milliliter (ng/mL). There is no single adult range. Because AMH falls with age, the manufacturer publishes five age bands, measured in healthy women rather than in women being investigated for a fertility problem, and publishes none above 45 years. The bands are also very wide, the youngest spanning more than fourteenfold. A result inside the band for a patient's age is therefore not by itself strong evidence about her ovarian reserve, and should be read alongside her history.

- **18 to 25 years:** median 3.60, **1.02 – 14.63 ng/mL**
- **26 to 30 years:** median 3.82, **0.69 – 13.39 ng/mL**
- **31 to 35 years:** median 2.47, **0.36 – 10.07 ng/mL**
- **36 to 40 years:** median 1.71, **0.18 – 5.68 ng/mL**
- **41 to 45 years:** median 0.54, **0.01 – 2.99 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*
AMH	PCOS / PMOS	↑↑
AMH	Primary ovarian insufficiency	↓↓
AMH	Diminished ovarian reserve	↓
AMH	Postmenopause	↓↓
AMH	Functional hypothalamic amenorrhea	N

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

What are some references that discuss the medical necessity of testing Anti-Müllerian Hormone (AMH)?

1. Practice Committee of the American Society for Reproductive Medicine. Testing and interpreting measures of ovarian reserve: a committee opinion. *Fertil Steril*, **114**, 1151–1157 (2020).
2. 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).
3. Panay, N. et al. Evidence-based guideline: premature ovarian insufficiency. *Hum Reprod Open*, **2024**, hoae065 (2024).
4. Gordon, C. M. et al. Functional hypothalamic amenorrhea: an Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab*, **102**, 1413–1439 (2017).
5. Harlow, S. D. et al. Executive summary of the Stages of Reproductive Aging Workshop +10: addressing the unfinished agenda of staging reproductive aging. *J Clin Endocrinol Metab*, **97**, 1159–1168 (2012).
6. Bulun, S. E. & 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).



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