TECHNOLOGY

AMH and ovarian reserve: which tests really show your chances of pregnancy

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What AMH and ovarian reserve are, what the normal anti-Müllerian hormone values are, when to test FSH and do an antral follicle count. What to do if AMH is low.

“Your AMH is low” — a phrase after which many women google until three in the morning and conclude there will be no children. It is one of the most common and most harmful mistakes in reproductive medicine.

AMH is an important value, but it answers only one question. Let us work out which one, which figures count as normal, and what to do if the result is not what you hoped.

What ovarian reserve is

A woman is born with all the eggs she will ever have. A newborn girl has about 1–2 million; by the first period around 300–400 thousand; and from then on the number steadily falls, regardless of pregnancies or contraceptive use.

Ovarian reserve is the stock of follicles left in the ovaries at this moment. It determines how many eggs can potentially be retrieved with stimulation — and therefore how effective an IVF programme will be.

The key clarification that changes the whole picture: ovarian reserve speaks about the number of eggs, not their quality. Quality is determined above all by age. So a woman of 42 with a good AMH and a woman of 30 with the same AMH are two completely different clinical situations.

AMH: what it is and what is normal

Anti-Müllerian hormone (AMH) is produced by the cells of small follicles that have not yet started to grow actively. The more such follicles, the higher the AMH. It is the most accurate laboratory marker of reserve available.

The main practical advantage: AMH barely changes over the cycle, so it can be tested on any day — no need to guess “day two or three”.

Approximate values (units and reference ranges differ between laboratories, so look at your own laboratory’s sheet). Important: AMH is age-dependent — 1.2 ng/ml at 26 means a reduced reserve, while at 41 it is the expected result, so the table is never read without age:

- above 4.0 — high; with other signs, possible PCOS
- 1.0–4.0 — within the expected range
- 0.5–1.0 — reduced reserve
- below 0.5 — substantially reduced reserve

What AMH does not show:

- the chances of conceiving naturally. This is the most important point. A low AMH does not mean infertility: a woman with an AMH of 0.4 can conceive on her own, because natural conception needs one egg per cycle, not twenty
- egg quality and the risk of chromosomal abnormalities
- the exact age of menopause — the forecast is only approximate.

What AMH shows well: how many eggs to expect from stimulation, which dose of medication to choose and which protocol will be safe. That is precisely why a fertility specialist orders it in the first place.

An important detail: long-term use of combined oral contraceptives can lower the AMH result. If the figure seemed unexpectedly low while on the pill, it is worth rechecking later.

Antral follicle count (AFC)

The second most important marker — and, in the view of many specialists, no less reliable than AMH. On ultrasound the doctor counts the small follicles of 2–9 mm in both ovaries on day 2–5 of the cycle.

Guidelines: a total above 15 — good reserve, 7–15 — expected, below 7 — reduced.

The advantage of AFC is that you see the result immediately, and with it the state of the ovaries, uterus and endometrium. The drawback is its dependence on the quality of the machine and the doctor's experience, so it is worth having it done where reproductive patients are seen every day. At Ekstramed that is the expert ultrasound service.

The most reliable assessment is AMH + AFC together, in combination with age. A single value is never a verdict.

FSH, LH, oestradiol: when and how to test

These tests are sensitive to the day of the cycle, and this is where patients make the most mistakes.

FSH (follicle-stimulating hormone) — tested on day 2–5 of the cycle. A value up to 10 IU/l is considered favourable, above 10–12 a sign of reduced reserve, and persistently high figures point to ovarian exhaustion. The peculiarity of FSH is that it changes later than AMH: by the time FSH is raised, the reserve has usually been reduced for some time.

Oestradiol — also on day 2–5, together with FSH. Without it FSH can be misread: a high oestradiol at the start of the cycle can "mask" a raised FSH.

LH — on day 2–5. The LH/FSH ratio matters: a raised ratio is one of the signs of polycystic ovary syndrome.

Progesterone — about 7 days before the expected period (day 21 in a 28-day cycle). It shows whether ovulation occurred.

Prolactin — tested in the morning, fasting, at rest, without breast stimulation or intercourse the day before. It is the test that is “raised” through poor preparation more often than through illness.

TSH and free T4 — on any day. A thyroid disorder affects the cycle, the ability to conceive and the course of pregnancy.

Doing the whole profile in one laboratory is more practical than collecting results from different places: reference ranges and methods differ, and comparing such figures with one another is not valid.

What to do if AMH is low

First, the main point. AMH cannot be raised. There is no drug, vitamin, diet or procedure that creates new follicles: a woman does not produce new eggs. Every promise to “restore ovarian reserve” is marketing.

But that does not mean doing nothing. Here is what genuinely makes sense:

1. Don’t waste time. With a reduced reserve the main resource is time. The difference between coming now and “in a year, once work settles down” can be fundamental. This is the most important piece of advice in the whole article.

2. Check the figure. Repeat the AMH, do an antral follicle count, assess FSH. Laboratory errors and the effect of the pill happen.

3. Choose the right protocol. With a low reserve specific approaches are used — minimal stimulation, protocols with pre-treatment, accumulating eggs or embryos over several cycles. The aim is not “to get many” but to get a few of good quality.

4. Consider cryopreservation. If a pregnancy is not planned now but the reserve is already reduced, freezing eggs preserves the possibility for the future. The earlier, the better the material.

5. Know the back-up options. If your own eggs are not enough, the egg donation programme gives high chances of pregnancy. It is worth talking about calmly and in advance — not as a “last resort” at a moment of disappointment.

6. Remove the controllable factors. Smoking reliably accelerates the decline of reserve — the best-proven link between lifestyle and ovarian reserve. The effect of excess weight and certain toxins is also discussed.

When to check your reserve even if you are not planning a pregnancy yet

- age over 33–35 and a pregnancy planned “someday”
- a history of ovarian surgery, especially for cysts or endometriomas
- chemotherapy or radiotherapy in the past
- early menopause in your mother or sister
- the cycle has become shorter (from 28 days to 24–25) — often the first sign of a declining reserve
- no pregnancy after 6–12 months of trying.

A work-up is simply information. It either relieves the anxiety or gives you time to act while there are still many options.

Frequently asked questions

On which day of the cycle should AMH be tested? Any day. AMH is stable through the cycle; no special preparation is needed.

Is an AMH of 0.3 a verdict? No. It means few eggs are expected from stimulation, and that there is no point in delaying. Pregnancies with a low AMH do happen — both natural ones and in IVF programmes.

Can AMH be raised with vitamins? No. Certain supplements (such as DHEA or coenzyme Q10) are discussed in the context of the response to stimulation, but they do not increase the stock of follicles and are prescribed only by a doctor.

My AMH is high — is that good? Mostly it is favourable for IVF, but a very high AMH can be a sign of PCOS and calls for extra attention to the risk of hyperstimulation during the programme.

Does the contraceptive pill affect the result? Long-term use of the pill can lower AMH. Be sure to tell your doctor you are taking it.

Where to test AMH in Ivano-Frankivsk? At the Ekstramed clinic: the test is done in our own laboratory, and the result is interpreted straight away, together with the ultrasound, by a gynaecologist and fertility specialist. To book — the contacts section.

This article is for information only and does not replace a consultation with a doctor. Hormone values can only be interpreted together with age, history and ultrasound findings.