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Fertility Test

Anti-Müllerian hormone (AMH)

Anti-müllerian hormone (AMH) is a hormone secreted by tiny fluid-filled structures in your ovaries called follicles, some of which will grow and mature, with one eventually releasing an egg during ovulation. AMH levels in your blood provide valuable insight into your ovarian reserve - the number of egg cells remaining in your ovaries.

Women are born with their lifetime supply of eggs, which naturally decline in both quality and quantity as they age. The highest levels are typically found in women aged 25-30, after which they progressively decline until menopause.

While an AMH test measures the amount of AMH in your blood and offers an estimate of your remaining egg quantity and potential fertile years, it cannot provide information about the quality of your eggs which is also a big factor in conceiving.

While AMH is a helpful tool for understanding fertility, it's not a definitive predictor of natural fertility or the ability to conceive naturally. Its accuracy can vary depending on factors like age, BMI, genetics, lifestyle, medical conditions (such as PCOS), treatments, and even vitamin D levels.

It's important to remember that AMH is just one piece of the puzzle - it provides a snapshot of your ovarian reserve at a specific moment in time. That's why our FullWell Fertility Test also includes assessments of vitamin D, TSH, and FSH for a more comprehensive understanding of your fertility and reproductive health.

For reference ranges specific to your age group, be sure to download the PDF report.



Your results

Your AMH level is low.

If your AMH levels are low for your age and suggest a lower than average ovarian reserve, now is a great time to book an appointment with your trusted healthcare practitioner or one of our preferred practitioners to discuss your reproductive health. Check out our list of trusted practitioners or reach out to Mayen to discuss next steps.

Remember that while AMH is a helpful tool for understanding fertility, it's not a definitive predictor of natural fertility or the ability to conceive naturally. Your result may be low for various reasons, including, but not limited to, your age, genetics, lifestyle, medical conditions and treatments, whether you are on hormonal birth control (it may make your AMH result temporarily appear lower) and even your vitamin D levels.

The relationship between vitamin D and AMH is complex, but research gives us some helpful clues. Studies suggest that vitamin D can influence AMH levels differently depending on your reproductive health. For example, in women with Polycystic Ovarian Syndrome (PCOS), vitamin D supplementation (and therefore higher vitamin D levels) tends to lower AMH, while in women without PCOS, higher vitamin D levels can help increase AMH levels1. If your AMH is on the lower side, it could be related to low vitamin D levels, so making sure your vitamin D is in a healthy range might support your ovarian reserve.

No need to worry or let the result get you down! Women with low ovarian reserve and those with high ovarian reserve have the same chances of conceiving naturally. That's because both typically ovulate one egg per month, and AMH measures egg quantity, not quality. And you only need one healthy egg to have a baby! What it does tell you is that your future fertility window may be narrower meaning, if you want to have children, plan to do so sooner. This is a great time to engage with a reproductive health specialist to explore your reproductive health further.

Consider booking an appointment with your trusted healthcare practitioner or one of our preferred practitioners or reach out to Maven to discuss next steps.

If you have additional questions about your results, talk to your healthcare practitioner.

For more information:

· Moridi I, Chen A, Tal O, Tal R. The Association between Vitamin D and Anti-Müllerian Hormone: A Systematic Review and Meta-Analysis. Nutrients. 2020;12(6):1567. Published 2020 May 28. doi:10.3390/nu12061567

Vitamin D (25-OH D)



Vitamin D is a unique fat-soluble vitamin because our bodies can produce it when exposed to sunlight, but it's also found in some foods and supplements. The degree to which your body produces it depends on factors like sunlight exposure, skin color, genetics, and levels of other supportive nutrients. It plays a vital role in supporting immune function, cell division, and bone health by helping the body absorb calcium. For women, having enough vitamin D before conception is especially important, as it helps regulate reproductive health, and if you aren't getting enough now, it can be difficult to catch up when you are pregnant and needs increase further to support things like baby's skeletal development.



Your results

Your vitamin D level is normal.

Great news! Your vitamin D level falls within the normal range. You are likely getting enough to support reproductive health. immune function, cell division, and bone health by helping the body absorb calcium.

If trying to conceive is on your mind, or you're looking to safeguard your fertility for the future, now's a great time to take steps to support your vitamin D levels. Remember, once pregnant, the body's demand for Vitamin D is so high that

Vitamin D plays a crucial role in supporting the reproductive process, working alongside certain sex steroid hormones that regulate ovulation. The female reproductive system — including the uterus, endometrium, ovaries, and placenta — contains vitamin D receptors, highlighting its importance in fertility. While this is true for women of all ages, studies show that vitamin D can be especially beneficial for those over 35 or those who have struggled with conception.

Additionally, vitamin D is essential during pregnancy and in assisted reproductive efforts like IVF. Once pregnant, the body's demand for Vitamin D is so high that randomized clinical control trials have shown that 4,000 IU daily is the absolute minimum amount of Vitamin D you would want to take for you ,and your baby's health to support the development of your baby's bones, kidneys, heart, and nervous system¹.

Adequate vitamin D levels not only supports egg quality and potentially AMH levels, but research also shows that higher levels of vitamin D in follicular fluid and serum are linked to better outcomes in assisted reproductive technology (ART) procedures². Vitamin D can have a lasting impact on both your health and your baby's health throughout pregnancy, delivery, and the postpartum period, so keeping your levels within a healthy range is key. Regardless of whether or not you want to conceive, vitamin D is important for your health.

The relationship between vitamin D and AMH is complex, but research gives us some helpful clues. Studies suggest that vitamin D can influence AMH levels differently depending on your reproductive health. For example, in women with PCOS, vitamin D supplementation (and therefore higher vitamin D levels) tends to lower AMH, while in women without PCOS, higher vitamin D levels can help increase AMH levels³. If your vitamin D level is on the lower side, this could be related to a lower AMH. Making sure your vitamin D is in a healthy range might support your ovarian reserve and overall reproductive health.

We recommend that vitamin D levels during fertility and pregnancy be at minimum, 40 $\,\mathrm{ng/mL^{4-6}}$.

Learn more about vitamin D here.



4,000 IU daily is the absolute minimum amount of Vitamin D you would want to take for your and your baby's health¹. If you're not looking to take any further steps right now, consider this full test annually and request a vitamin D test from your health practitioner 2-3 times per year as levels can change.

If you have additional questions about your results, talk to your healthcare practitioner. Check out our list of trusted practitioners or reach out to Mayen to discuss next steps.

Learn more about vitamin D here.

For more information:

- Hollis BW, Johnson D, Hulsey TC, Ebeling M, Wagner CL. Vitamin D supplementation during pregnancy: doubleblind, randomized clinical trial of safety and effectiveness [published correction appears in J Bone Miner Res. 2011 Dec; 26(12):3001]. J Bone Miner Res. 2011;26(10):2341-2357. doi:10.1002/jbmr.463
- <u>Farzadi L, Khayatzadeh Bidgoli H, Ghojazadeh M, et al.</u>
 <u>Correlation between follicular fluid 25-OH vitamin D and assisted reproductive outcomes. Iran J Reprod Med.</u>
 2015;13(6):361-366.
- Moridi I, Chen A, Tal O, Tal R. The Association between Vitamin D and Anti-Müllerian Hormone: A Systematic Review and Meta-Analysis. Nutrients. 2020;12(6):1567. Published 2020 May 28. doi:10.3390/nu12061567
- <u>Luxwolda MF, Kuipers RS, Kema IP, Dijck-Brouwer DA, Muskiet FA. Traditionally living populations in East Africa have a mean serum 25-hydroxyvitamin D concentration of 115 nmol/l. Br J Nutr. 2012;108(9):1557-1561.</u>
 doi:10.1017/S0007114511007161
- <u>Várbíró S, Takács I, Tűű L, et al. Effects of Vitamin D on</u>
 Fertility, Pregnancy and Polycystic Ovary Syndrome-A
 Review. Nutrients. 2022;14(8):1649. Published 2022 Apr
 15. doi:10.3390/nu14081649
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TSH



The thyroid-stimulating hormone (TSH) test gives us a peek into how well your thyroid — the body's "thermostat" — is doing its job. Think of your thyroid as the control center for metabolism, energy, and hormone balance. TSH is a hormone signal sent from the pituitary gland to your thyroid, prompting it to produce hormones like T4 and T3. These hormones help keep your body's systems running smoothly. By measuring TSH levels, we can get an idea of whether your thyroid is functioning as it should or if it might need a little extra support.

Your body has a clever way of keeping thyroid hormone levels just right. When your thyroid hormones are low, your pituitary gland sends out more TSH to give your thyroid a nudge to make more. On the flip side, if thyroid hormone levels are too high, the pituitary scales back TSH production to slow things down. What's considered a "normal" TSH level can depend on factors like your age, gender, and even the lab doing the testing.

TSH testing plays an important role in fertility because thyroid health and reproductive health are closely connected. If the thyroid isn't functioning properly — whether it's underactive (hypothyroidism) or overactive (hyperthyroidism) — it can throw off your hormones and disrupt things like your menstrual cycle and ovulation, making it harder to conceive. For women, low thyroid function can lead to irregular or missed periods, problems with ovulation, or shorter luteal phases (the time after ovulation). High TSH levels can also affect other hormones, like estrogen and progesterone, by altering the balance of hormone carriers in the blood.

Including a TSH test in a fertility workup can help uncover any thyroid issues that might be making it harder to conceive. If there's a thyroid-related concern, it can be addressed early, giving you the best chance to support your reproductive health and achieve your fertility goals.

Some B vitamins, particularly biotin, can interfere with the methodology of TSH testing, potentially leading to inaccurate results. For this reason, we recommend pausing supplements at least four days before testing.



Your results

Your TSH level is normal.

Great news! Your TSH level is within the normal range, indicating that your thyroid — the body's "thermostat" — is doing its job well. This means your thyroid is producing just the right amount of hormones to support metabolism, energy levels, and hormone balance.

If you're trying to conceive or planning for the future, a healthy thyroid is essential for reproductive health, helping to keep menstrual cycles regular and hormone levels balanced. Maintaining this balance can support your fertility now and in the future.

If you still suspect something is wrong with your thyroid and your TSH is above 2 ulU/L, it is still worth connecting with a thyroid specialist like Paloma health.

To learn more about all of the nutrients that go into supporting your thyroid, read this KnowledgeWell article.

Consider retesting annually as a check-in to proactively monitor any changes.

If you have additional questions about your results, talk to your healthcare practitioner. Check out our list of trusted practitioners or connect with a thyroid specialist like Paloma health.

FSH Low

Follicle-stimulating hormone (FSH) is a hormone produced by your pituitary gland (a small gland located in your brain) and plays a key role in reproduction and sexual development, in addition to helping to regulate the function of your ovaries and, therefore, your menstrual cycle. FSH stimulates the growth of ovarian follicles, which are the small sacs in the ovaries that contain your egg cells.

FSH testing provides valuable insight into your ovarian function and reproductive potential. Typically measured on day 3 of your cycle, FSH levels give an indication of your ovarian reserve — aka your remaining eggs.

FSH levels fluctuate throughout your menstrual cycle, typically peaking just before ovulation. When ovarian reserve is high, FSH levels are generally low. However, as ovarian reserve declines with age, especially as women approach perimenopause and menopause, FSH levels tend to increase. This happens because the body produces more FSH to encourage follicle development when fewer viable eggs are available. High FSH levels, particularly on day 3 of the cycle, may suggest diminished ovarian reserve and can serve as an early indicator of perimenopause or menopause.

FSH testing is a helpful tool for fertility evaluations and is often paired with other markers like anti-Müllerian hormone (AMH). While AMH provides a more stable measure of ovarian reserve, FSH reflects your body's efforts to stimulate follicle development. Together, these tests offer a clearer picture of your reproductive health and can guide the next steps if you're trying to conceive or planning for the future.



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Your results

Your FSH level is low.

Your FSH may be low for various reasons including:

- If you are breastfeeding (breastfeeding raises prolactin levels, the hormone that supports milk production, leading to lower FSH levels).
- You are on hormonal birth control (hormonal birth control will suppress FSH levels, so you aren't able to get an accurate result)
- · Incomplete development during puberty
- Your body not producing enough eggs/not ovulating
- Issues with the pituitary gland or hypothalamus (which regulates hormone production)
- Being underweight or undernourished leading to inability for your body to produce enough reproductive hormones, including FSH. In this case, you are not having a menstrual cycle. This condition is referred to as Hypothalamic Amenorrhea.

It is recommended to wait until you've had at least three regular menstrual cycles after stopping hormonal birth control — or after finishing breastfeeding — before retesting.

It's important to consider the whole picture when interpreting FSH levels, and your healthcare practitioner may recommend additional tests to better understand what might be happening.

Remember that a low FSH result doesn't mean you have a high ovarian reserve in this case. Instead, it suggests that your body isn't producing enough FSH to properly stimulate your follicles, which can affect egg development. Determining the root cause of this further investigation.

If your FSH level is low, you might consider booking an appointment with your trusted healthcare practitioner or one of our preferred practitioners to discuss the likely cause and next steps. Check out our list of trusted practitioners or reach out to Mayen to discuss next steps.

If you have additional questions about your results, talk to your healthcare practitioner.

For more information:

· Learn more about this test