TEST

Follicle-stimulating hormone (FSH) blood test

This blood test measures a hormone involved in egg development, sperm production, and puberty.

WHAT IT MEASURES
Follicle-stimulating hormone made by the pituitary gland

SAMPLE
Blood

FASTING NEEDED?
No

HOW LONG IT TAKES
About 5 to 10 minutes

RESULTS IN
Usually 1 to 3 days, varying by laboratory

USED FOR
Investigating reproductive, pituitary, testicular, ovarian, or pubertal concerns

MAIN LIMITATION
Levels fluctuate with menstrual stage and hormone treatment

Overview

A follicle-stimulating hormone, or FSH, test measures FSH in your blood. FSH is made by the pituitary gland, a small gland at the base of the brain.

FSH helps control the menstrual cycle and egg development. In the testes, it supports sperm production. It also plays an important role in puberty.

FSH is part of a feedback system involving the brain, pituitary gland, ovaries or testes, and hormones such as oestrogen and testosterone. An FSH result is therefore rarely interpreted alone.

Why the test is ordered

An FSH test may help investigate:

FSH may also be measured during fertility assessment or treatment. However, it cannot measure egg quality, count the exact number of remaining eggs, or predict whether pregnancy

will occur.

For people aged 45 or older with typical symptoms, menopause can often be identified from symptoms and menstrual changes without an FSH test. Testing may help when the diagnosis is less clear.

- Irregular or absent periods
- Difficulty becoming pregnant
- Possible menopause or early loss of ovarian function
- Low testosterone, low sperm count, or reduced sexual function
- Unusually early or late puberty
- A possible pituitary or brain signalling problem

Who should have the test

You may be offered this test if symptoms, menstrual or fertility history, sexual development, or other hormone results need further investigation.

In someone with ovaries, FSH may be checked when periods stop unexpectedly, cycles become irregular, or reduced ovarian function is suspected. It may be combined with luteinising hormone (LH), oestradiol, anti-Müllerian hormone, or ultrasound.

In someone with testes, FSH may be checked with testosterone and LH to help distinguish a testicular problem from one involving the pituitary gland or brain. A semen analysis is more direct when sperm production is the main concern.

Children may be tested when puberty starts earlier or later than expected. Results must be interpreted according to age and stage of puberty.

How to prepare

You usually do not need to fast. You can normally eat, drink water, and take your usual medicines unless other tests collected at the same time require different preparation.

Tell the person arranging the test about hormonal contraception, hormone replacement therapy, testosterone, fertility medicines, and medicines affecting the pituitary gland. Do not stop prescribed treatment unless specifically advised.

If you have menstrual cycles, timing may matter. For some fertility assessments, FSH is measured near the beginning of a period. Other situations may require different timing or

repeat testing.

Mention supplements containing high-dose biotin, sometimes marketed for hair or nail health. Biotin can interfere with some laboratory methods.

What happens during the test

A healthcare professional places a band around your upper arm, cleans the skin, and inserts a small needle into a vein, usually inside the elbow. Blood is collected into a tube.

You may feel a brief scratch or sting. The blood draw usually takes only a few minutes, and you can generally resume normal activities immediately.

Understanding your results

FSH is commonly reported in international units per litre, although formats vary.

There is no single range for everyone. Interpretation depends on the laboratory, age, sex, pregnancy status, menstrual stage, menopause status, medicines, and clinical context. Use the reference range provided with your result.

Higher FSH may mean the pituitary gland is sending a stronger signal because the ovaries or testes are responding less than expected. This can occur after menopause, with reduced ovarian function, or with some testicular conditions.

Low FSH may occur when the pituitary gland or the part of the brain controlling it is not producing enough hormonal signal. It can also be expected during pregnancy or with certain hormonal medicines.

A normal result does not rule out every reproductive or hormonal problem. FSH can fluctuate during perimenopause, and normal FSH does not guarantee normal fertility. Children's results must be assessed with their growth, physical development, and other hormone tests.

What affects the results

FSH is released in pulses and changes over time, so one blood sample is only a snapshot.

Factors affecting interpretation include:

Time of day is usually less important than menstrual timing or hormone treatment. If repeat measurements are needed, similar testing conditions can make comparison easier.

- Menstrual-cycle timing and perimenopause
- Pregnancy
- Age and stage of puberty
- Hormonal contraception or hormone replacement therapy
- Testosterone, fertility treatment, and medicines affecting pituitary hormones
- Recently starting or stopping hormonal treatment
- Significant illness, undernutrition, or intense physical stress
- Pituitary, ovarian, testicular, genetic, or chronic conditions
- Biotin interference with certain laboratory methods

Accuracy and limitations

Laboratory assays usually measure FSH reliably, but its clinical meaning is less exact. Results may differ slightly between laboratories and testing platforms.

A single normal result may miss intermittent or developing ovarian dysfunction because FSH fluctuates. A higher result can be misleading if interpreted without considering menstrual timing, age, oestradiol, or medicines.

FSH also has limits as a fertility test. Higher early-cycle FSH can be associated with a reduced response to ovarian stimulation, but normal FSH does not confirm normal egg quantity or quality. Anti-Müllerian hormone and an ultrasound antral follicle count may better estimate ovarian response, although neither can guarantee pregnancy.

If a pituitary problem is suspected, other hormone tests and sometimes an MRI scan may be more informative. If sperm production is the concern, semen analysis is more useful than FSH alone.

Risks and complications

The main risks are a small bruise, brief soreness, or feeling faint during or after the blood draw. Applying pressure usually limits bleeding and bruising.

Serious complications from routine blood sampling are uncommon.

What happens next

Your result will be reviewed with your symptoms, age, menstrual or sexual history, medicines, and other test results. Follow-up may include repeating FSH at a particular menstrual stage or checking LH, oestradiol, testosterone, prolactin, thyroid hormones, or a pregnancy test.

Depending on the findings, further tests may include semen analysis, pelvic ultrasound, genetic testing, or pituitary imaging.

An unusual FSH result alone is not generally an emergency. Arrange routine follow-up to discuss an unexpected result or persistent symptoms.

Seek urgent medical help for a sudden severe headache with new loss of vision, fainting that does not quickly improve, or bleeding from the needle site that does not stop with firm pressure. These symptoms are not caused by the FSH level itself and need separate assessment.

Common questions

Can I drink coffee before an FSH test?

Usually, yes. Fasting is not normally required, so plain coffee is generally acceptable. Follow different instructions if you are also having fasting tests.

Does the time of day matter?

Usually not enough to require a particular appointment time. Menstrual-cycle timing and hormonal medicines are often more important.

Can I exercise beforehand?

Normal activity is unlikely to meaningfully change FSH. Mention heavy training or major recent changes in activity because intense exercise over time can affect reproductive hormones.

What day of my period should I have the test?

Some fertility assessments use testing within the first few days of the menstrual cycle. Other reasons may require different timing, so follow the instructions provided.

Can hormonal contraception affect the result?

Yes. Hormonal contraception and other hormonal treatments can suppress or alter FSH. Do not stop them solely for the test without medical advice.

Does a high FSH result mean I cannot become pregnant?

No. FSH alone cannot determine whether pregnancy is possible. It must be considered with age, menstrual history, other tests, ultrasound findings, and other fertility factors.

Sources

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- Follicle-Stimulating Hormone, Serum: test overview and interpretation , Mayo Clinic Laboratories
- AACC guidance document on biotin interference in laboratory tests , The Journal of Applied Laboratory Medicine , 2020