ADVICE

TSH: normal range in women, high and low le els, pregnancy

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What a TSH test shows, the normal range in women, what a high or low level means and which values do ctors aim for when planning pregnancy or IVF.

H is thyroid-stimulating hormone. It is made not by the thyroid but by the pituitary gland, and it works as a regulator: when the thyroid makes too little hormone, the pituitary releases more TSH to push it on; wh en it makes too much, less. That is why TSH changes before the thyroid's own hormones do, and why a thyroid check starts with it.

What is a normal TSH level in women

For adults most laboratories give a range of roughly 0.4–4.0 mIU/L. The exact figures depend on the meth od, so go by the reference range on your own report. The range is the same for women and men, and the upper limit creeps up slightly with age. Planning a pregnancy and pregnancy itself have their own val ues — more on those below.

One result just outside the range is not a diagnosis. TSH varies through the day, rises after an illness and shifts with some medicines. A borderline value is therefore usually rechecked a few weeks later, togeth er with free T4.

High TSH: what it means

high TSH means the thyroid cannot keep up and the pituitary is urging it on. This is called hypothyroidi sm. It comes in two forms:

- subclinical — TSH is raised but free T4 is normal; often there are no symptoms

- overt — TSH is raised and free T4 is low

he commonest cause is autoimmune thyroiditis (Hashimoto's), in which the immune system gradually damag es the gland; it is confirmed by anti-TPO antibodies. Less often hypothyroidism follows iodine deficiency, t yroid surgery or radioactive iodine treatment, or some medicines.

Its signs come on slowly and are easily put down to tiredness: sleepiness, feeling cold, dry skin, hair loss, constipation, weight gain, low mood, heavy or irregular periods.

Hypothyroidism is treated with levothyroxine — a tablet of the very hormone the body is short of. The d ose is adjusted by TSH. Whether to treat subclinical hypothyroidism is decided by the doctor, taking a ge, antibodies and pregnancy plans into account.

ow TSH: what it means

low TSH most often means the thyroid is making too much hormone and the pituitary is holding it back. T his is hyperthyroidism. Its causes include Graves' disease, nodules that produce hormone on their own, inflammation of the gland and too high a dose of levothyroxine.

The signs are palpitations, sweating, trembling hands, weight loss despite a good appetite, irritability, poor sle p, and light, infrequent periods. To find the cause, the work-up adds free T4 and T3, TSH-receptor anti bodies and a thyroid ultrasound.

Not every low TSH is a disease: early in pregnancy it falls normally.

e thyroid, the cycle and infertility

yroid hormones affect ovulation. Hypothyroidism can disrupt the cycle, suppress ovulation and raise prola ctin; hyperthyroidism can make periods light and infrequent. Untreated hypothyroidism is linked to a hig her risk of miscarriage. That is why TSH is part of the basic pre-pregnancy work-up and the list of tes ts before IVF.

When a pregnancy or IVF is being planned, many doctors aim lower — for a TSH below 2.5 mIU/L, especia lly when anti-TPO antibodies are present. The guidance here is not clear-cut, so whether a TSH between 2 .5 and 4 needs treatment is decided case by case.

SH in pregnancy

In the first trimester the pregnancy hormone hCG acts partly like TSH and stimulates the thyroid itself. T H therefore falls, sometimes below the usual limit. If free T4 is normal, this is physiology, not illness.

t the same time the need for thyroid hormone rises: in the first months, before the baby's own thyroid is fully working, its development depends on the mother's hormones. Pregnant women are assessed against separate TSH ranges for each trimester. Where the laboratory does not give them, about 4.0 mIU/L is usu ally taken as the upper limit in the first trimester.

If you already take levothyroxine, tell your doctor as soon as the pregnancy test is positive: the dose is usually raised early on, and TSH is checked roughly once a month in the first half of pregnancy.

ow to take a TSH test

- in the morning, ideally fasting; for follow-up tests, at the same time each time
- if you take levothyroxine — before the morning tablet
- biotin and multivitamins containing it can distort the result: tell your doctor; they are usually stopp ed 2–3 days before the test
- avoid testing in the middle of an acute illness unless it is urgent

For a first check TSH alone is enough. If it is out of range, the doctor will add free T4 and anti-TPO antibo dies. The tests can be done at the clinic — TSH and thyroid hormones: prices and preparation.

When to see a doctor

If your TSH is outside the reference range, you have noticed the symptoms above, an ultrasound has fo
und a nodule or you are planning a pregnancy, show your results to a doctor. You can book an appointmen
t online.

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his article is for information and does not replace a consultation with a doctor. Diagnosis and treatment ar
e decided by a doctor on the basis of your results.