Lab tests: what to take and why

This is a reference list, not a prescription. Your doctor decides what you should test, and you can show them this list. Together these tests make a map of your health: how your body keeps blood sugar steady, how much insulin it takes, what is happening with fats, the liver and kidneys, whether you have enough iron, and whether there is inflammation.

Sugar and insulin

- Fasting glucose: how much sugar is in your blood right now. The body can keep glucose looking good for years at the cost of a lot of insulin, so glucose alone is not enough.
- Fasting insulin: always look at it next to glucose, from the same blood draw.

  Normal glucose, high insulin: the pancreas is coping, but it has to work hard. This can be one of the signs of insulin resistance.

  Normal glucose, low insulin: usually a sign of good insulin sensitivity.

  High glucose, low insulin: the question is whether the pancreas is coping. Then look at C-peptide.
- C-peptide is made together with insulin. Low C-peptide with high glucose is a reason to look closely at how the pancreas works. High C-peptide together with high insulin can be seen when the body is compensating for insulin resistance; it is assessed together with glucose and kidney function. To find out how much of their own insulin a person on insulin injections still makes, C-peptide helps: injected insulin does not contain it.
- Hemoglobin A1c (HbA1c). Fasting glucose is a photo of one morning; HbA1c is a short film about blood sugar over 2–3 months.

Fats (Lipid panel)

- Judging by total cholesterol is a mistake. The body needs cholesterol as a building material. Look at the “bad” LDL, the “good” HDL and triglycerides.
- The ratio of triglycerides to HDL matters. Low triglycerides and high HDL is a favourable picture. The other way round, dig deeper.
- If LDL is high, apolipoprotein B (ApoB) is added: it helps estimate the number of particles that can take part in forming atherosclerotic plaques.
- Lipoprotein(a), Lp(a), is enough to check at least once in your life. It is genetic: when it is high, the risks remain even if everything else is normal.

Liver

- ALT enters the blood when liver cells are damaged.
- AST is found both in the liver and in muscles, so it can be raised after a hard workout. Avoid intense training for 1–2 days before the test.
- GGT rises when the liver is under strain and when bile flow is impaired.

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Uric acid

It forms when purines break down, and heavy processing of fructose speeds this up. High uric acid means the body makes a lot of it or the kidneys cannot clear it fast enough. Over time it can crystallise in the joints.

Kidneys

- eGFR: the estimated filtration rate of the kidneys.
- Creatinine. If it is raised, look closely at the kidneys. It runs higher with a lot of muscle and lower with little muscle.

Inflammation

- High-sensitivity C-reactive protein (hs-CRP) is the “smoke” from inflammation somewhere in the body, for example from fat inside the belly or gut problems. The marker itself does not show the cause or the place of the inflammation: from it alone you cannot conclude that the problem is in the gut. To assess background cardiovascular risk, it is usually tested outside an acute infection.

Thyroid

Sometimes sugar and insulin are excellent, but there is no energy. Then TSH and free T4 are checked. High TSH with low T4 hints at an underactive thyroid.

Blood and iron

- Complete blood count (CBC) and iron: ferritin (stores) and transferrin (transport). Iron is needed for hemoglobin, which carries oxygen to the cells.
- Vitamin B12 and folate: needed for making blood, cell division and the nervous system.
- Vitamin D, 25(OH)D.

At home, without a lab

- Waist and height: measure your waist at the level of the navel, in the morning, while breathing out, and divide by your height. Below 0.5 is good.
- Blood pressure: at home, at rest, at the same time of day, and write it down.

How to take the tests

- For fasting tests, follow the preparation time your lab gives. Plain water is usually fine. Do not stop medications on your own; if you take insulin or medications that can lower blood sugar, check the preparation in advance.
- Use the reference ranges on your lab’s report. Your doctor interprets the results.

If you take medications that lower blood sugar or blood pressure, inject insulin, are pregnant or breastfeeding, discuss any change in your diet with your doctor first.