

What Standard Testing Misses

A conversation reference, not a universal panel. Decisions to test belong with a qualified clinician.

Why standard testing stops where it does

Standard testing is built around diagnostic thresholds: the point where disease is present or close. That is a sensible design for finding disease. It is not designed to show the years of drift beforehand, because those earlier markers rarely change what a threshold-based pathway does next. Functional and longevity medicine works in that gap.

Diabetes risk

Standard test: HbA1c or fasting glucose.

What it misses: by the time either rises above normal, the pancreas has usually been over-producing insulin to compensate for years. Insulin resistance is the early, silent phase.

The earlier marker: fasting insulin, and HOMA-IR calculated from fasting insulin and glucose. High fasting insulin with a still-normal glucose is the pattern standard testing is built to miss.

Cardiovascular risk

Standard test: lipid panel (total cholesterol, LDL, HDL, triglycerides).

What it misses: LDL is a concentration, not a count. Two people can have the same LDL while one carries far more of the particles that drive plaque.

The better markers: ApoB, a direct count of those particles, predicts cardiovascular risk more strongly than LDL alone in head-to-head studies. Lp(a) is a separate, largely genetic risk factor that is not routinely tested; worth testing once.

Inflammation

Standard test: nothing, routinely.

What it misses: chronic low-grade inflammation ("inflammaging") is one of the twelve recognised hallmarks of aging and an active driver of cardiovascular, metabolic and cognitive decline.

The earlier marker: high-sensitivity CRP (hs-CRP). Elevated hs-CRP has been shown to predict cardiovascular events independently of cholesterol.

Thyroid function

Standard test: TSH alone.

What it misses: TSH is a pituitary signal, not a direct measure of the hormones doing the work. A normal TSH can sit alongside low free T3, or rising antibodies years before TSH moves.

The fuller picture: free T3, free T4 and antibodies (TPO, TgAb) alongside TSH.

Liver health

Standard test: ALT and AST, flagged once clearly abnormal.

What it misses: fatty liver disease can be well underway with ALT and AST still in range.

The earlier marker: the FIB-4 score, calculated from age, ALT, AST and platelets, all already on a standard panel.

Micronutrient status

Standard test: usually nothing unless there is a specific symptom.

What it misses: vitamin D, ferritin (iron stores) and homocysteine can sit outside optimal ranges for years while a full blood count looks unremarkable.

The earlier marker: test them directly. Homocysteine is a risk marker worth knowing, not a target proven to change outcomes on its own.

How to use this with your own doctor

This is a conversation-opener, not a replacement for your GP: "My standard results are normal. What else is worth knowing before something shows up on that test?" Normal range is not the same as optimal, and the gap between them is where functional and longevity medicine does its work.

Clinical interpretation and limits

This is a discussion reference, not a universal testing panel or a replacement for standard care. An out-of-range marker does not by itself explain symptoms, identify a cause or prove that treatment will help. Additional testing depends on history, examination, risk and a clear decision it could change.

Fasting insulin and HOMA-IR are surrogate estimates, not diagnostic tests for diabetes. Assays and thresholds vary; routine testing is not generally recommended for most people at risk of diabetes. HbA1c and glucose remain established diagnostic tools.

ApoB reflects atherogenic particle burden rather than a literal particle count. Lp(a) is usually measured at least once in adulthood; repeat testing may be appropriate when clinical circumstances or treatments change. Interpret both within overall cardiovascular risk.

hs-CRP is non-specific: infection, injury and inflammatory conditions can raise it. Interpret in a clinically stable person and consider repeat measurement when indicated. A single result does not diagnose inflammation or indicate a specific treatment.

A normal TSH is usually informative for primary thyroid disease. Free T4, free T3 and antibodies are selected for specific indications, not automatically ordered together. Positive antibodies with normal thyroid function do not alone require treatment.

FIB-4 estimates risk of advanced liver fibrosis in appropriate at-risk groups; it does not diagnose fatty liver or measure early liver health. Age affects accuracy, including reduced performance below 35 and different thresholds above 65. It is not a routine universal screening test.

Vitamin D, ferritin and homocysteine need a clinical indication and context. Routine vitamin D screening in healthy adults is not generally recommended. Ferritin can rise with inflammation. Lowering homocysteine has not consistently reduced cardiovascular events; an "optimal" range is not a universally validated treatment target.

- Prentki M, Nolan CJ. Islet β cell failure in type 2 diabetes. J Clin Invest 2006. <https://www.jci.org/articles/view/29103>
- Sniderman AD et al. Meta-analysis of LDL-C, non-HDL-C and apoB as markers of cardiovascular risk. Circ Cardiovasc Qual Outcomes 2011. <https://www.ahajournals.org/doi/10.1161/circoutcomes.110.959247>
- Lipoprotein(a): a genetically determined, causal and prevalent risk factor for atherosclerotic cardiovascular disease. AHA Scientific Statement. <https://www.ahajournals.org/doi/10.1161/ATV.0000000000000147>
- Ridker PM et al. Rosuvastatin to prevent vascular events in men and women with elevated C-reactive protein (JUPITER). N Engl J Med 2008. <https://www.nejm.org/doi/full/10.1056/NEJMoa0807646>
- Transitioning FIB-4 score: from fibrosis screening tool to key biomarker for clinical endpoints. J Hepatol. [https://www.journal-of-hepatology.eu/article/S0168-8278\(24\)00353-2/fulltext](https://www.journal-of-hepatology.eu/article/S0168-8278(24)00353-2/fulltext)
- Homocysteine as a risk factor for cardiovascular disease. Swiss Med Wkly. <https://smw.ch/index.php/smw/article/download/672/669/1332> (association only; B-vitamin trials have had mixed cardiovascular results)

Further clinical guidance

Laboratory analysis in diabetes: ADA/AACC guideline (2023) — <https://pmc.ncbi.nlm.nih.gov/articles/PMC10516260/>

AASLD practice guidance: fatty liver and FIB-4 (2023) — <https://pmc.ncbi.nlm.nih.gov/articles/PMC10735173/>

American Thyroid Association: thyroid function tests — <https://www.thyroid.org/thyroid-function-tests/>

Endocrine Society: vitamin D prevention guideline (2024) —

<https://www.endocrine.org/clinical-practice-guidelines/vitamin-d-for-prevention-of-disease>

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