A CLINICAL REFERENCE

The 7 Tests Routine Care Usually Misses

A clinical reference for high-performing adults.

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THE GAP

A normal physical is not the same as a healthy body.

Routine care is built to find disease that has already arrived — not the physiology that determines whether disease is on its way. The early signals of the diseases that will end up mattering — atherosclerosis, insulin resistance, declining cardiorespiratory capacity, sarcopenia — sit in measurements a standard panel was not designed to capture. ApoB. Lp(a). Insulin response. VO_2 max. Visceral fat. Lean mass. Grip strength. The numbers that change the conversation.

That gap matters most in high-performing adults. You can look healthy, train hard, and have normal basic labs while early atherosclerotic risk, insulin resistance, declining cardiorespiratory capacity, excess visceral fat, or low reserve is already on the page.

These seven tests do not replace clinical judgment. They give it better raw material.

They are accessible. They are well-studied. They tell you something your lipid panel, A1C, and BMI cannot. If you are serious about performance, longevity, or simply understanding what is actually happening in your body, these are the numbers to know first.

TEST 01

ApoB

WHAT IT MEASURES

The total number of atherogenic lipoprotein particles in your blood. Every LDL, VLDL, IDL, and Lp(a) particle carries exactly one ApoB. Count the ApoB, and you have counted the particles.

WHY IT MATTERS

Standard lipid panels measure LDL cholesterol — the cargo inside the particles. ApoB measures the number of particles themselves. These are not the same. Two people with identical LDL-C can have dramatically different ApoB, and it is ApoB — the particle count — that drives atherosclerosis. Every major cardiovascular study that has compared the two has found ApoB to be the more accurate predictor of cardiovascular events.

YOUR TARGET

Below 80 mg/dL for primary prevention. Below 60 mg/dL for aggressive risk reduction in high-risk individuals. Above 130 mg/dL is a clear signal that something needs to change.

WHAT TO DO

Ask your physician for an ApoB. It is a standard lab draw. Most labs run it. If your ApoB is elevated while your LDL is “fine,” that is the conversation most people never have — and the one that matters.

TEST 02

Lp(a)

WHAT IT MEASURES

A genetically inherited lipoprotein particle that independently raises cardiovascular risk. Your level is essentially fixed at birth.

WHY IT MATTERS

Roughly one in five adults has an elevated Lp(a). Elevated Lp(a) is associated with a substantially increased risk of heart attack, stroke, and aortic stenosis — and it does this independent of LDL, blood pressure, or any other standard risk factor. Most people with elevated Lp(a) have no idea. Their standard panel does not catch it.

YOUR TARGET

Below 50 mg/dL (or below 125 nmol/L depending on assay). Above that range is considered elevated. The higher the number, the more aggressive your other modifiable risk factors need to become.

WHAT TO DO

Measure it once. Lp(a) is genetically determined and stable across life — a single test tells you what you need to know. If elevated, the intervention is not on Lp(a) itself (current therapies are limited, though novel drugs are in late-stage trials). The intervention is to drive every other cardiovascular risk factor — ApoB, blood pressure, visceral fat — to aggressive targets.

TEST 03

Fasting Insulin

WHAT IT MEASURES

The amount of insulin your pancreas is producing in the fasted state.

WHY IT MATTERS

A1C and fasting glucose measure the output of metabolic dysfunction — the point at which compensation has already failed. Fasting insulin measures the compensation itself. When cells become resistant to insulin, the pancreas produces more of it to force glucose into tissue. Blood sugar stays normal. A1C stays normal. The patient gets a clean result — while fasting insulin climbs silently for years, sometimes a decade, before anything else moves. By the time A1C catches it, you have lost the window where intervention is easiest and most effective.

YOUR TARGET

Below 8 µIU/mL is a reasonable practical target. Above 10 µIU/mL is a signal worth investigating in context. Above 15 µIU/mL suggests meaningful metabolic compensation, even when A1C remains normal.

WHAT TO DO

Pair fasting insulin with fasting glucose to calculate HOMA-IR — a validated index of insulin resistance. Ask for both. If elevated, the interventions are well-known: reduce visceral fat, build muscle mass, add zone 2 cardio, address carbohydrate quality, and protect sleep. These are some of the highest-leverage interventions in medicine.

TEST 04

Oral Glucose Tolerance Test

WHAT IT MEASURES

How your body handles a standardized glucose load over two hours. Glucose is measured at baseline, one hour, and two hours — and when paired with insulin measurements at each time point, the test reveals the full metabolic picture.

WHY IT MATTERS

The OGTT is one of the most informative tests available for detecting early metabolic dysfunction. A one-hour glucose above 155 mg/dL independently predicts future diabetes, even when the two-hour reading and A1C are normal. Adding insulin measurements — the way this test was originally designed — identifies hyperinsulinemia years before any glucose marker moves. The test is rarely ordered this way in modern practice. It should be.

YOUR TARGET

Glucose should peak below 140 mg/dL at one hour and return to under 120 mg/dL at two hours. Insulin should peak modestly — a delayed or exaggerated insulin response, even with normal glucose, is a red flag.

WHAT TO DO

Ask specifically for an OGTT with insulin measurements at 0, 60, and 120 minutes. This is not a standard order; you will likely need to request it. It is the single most informative metabolic test available, and it will tell you more about your future trajectory than any A1C ever will.

TEST 05

VO_2 Max

WHAT IT MEASURES

The maximum rate at which your body can take in and use oxygen during exercise. The integrated output of your lungs, heart, circulation, and muscle — expressed as a single number.

WHY IT MATTERS

VO_2 max is the single most powerful predictor of all-cause mortality in modern medicine. A 2018 study in JAMA Network Open followed 122,007 patients and found that individuals in the elite fitness category had a five-fold lower mortality risk than those in the low-fitness category — larger than the mortality effect of smoking, hypertension, or diabetes. The relationship is linear. There is no ceiling. Every improvement in VO_2 max reduces your risk further. No medication produces a risk reduction of this magnitude across this many outcomes.

YOUR TARGET

The target is age- and sex-specific. Aim for the 75th percentile or higher for your age and sex. For a 40-year-old man, that is roughly 47 mL/kg/min; for a 40-year-old woman, roughly 38 mL/kg/min. The top category — elite fitness — begins around the 97.5th percentile and carries the largest mortality benefit.

WHAT TO DO

Get tested at a human performance lab or clinical exercise physiology facility. The test is a graded treadmill or bike protocol with a metabolic analyzer, takes about 20 minutes, and gives you the most predictive number in your health profile. Retest annually. Zone 2 cardio plus high-intensity interval work is the training combination that reliably improves it.

TEST 06

DEXA Body Composition

WHAT IT MEASURES

A full-body scan that quantifies lean mass, fat mass, visceral adipose tissue, and bone mineral density — region by region, with clinical-grade precision.

WHY IT MATTERS

Body weight and BMI are crude. A 185-pound man can be profoundly under-muscled and walk out of a physical with a clean chart. Muscle mass is the primary site of insulin-mediated glucose disposal — lose muscle, and metabolic health declines with it. Visceral adipose tissue — the fat surrounding abdominal organs — is more predictive of cardiometabolic risk than BMI or subcutaneous fat alone. Lean phenotypes can carry meaningful visceral fat invisibly — undetected on a mirror, undetected on a scale, sometimes detected only on imaging. Fitness raises the engine ceiling but does not always raise the metabolic floor. Bone mineral density determines fracture risk in later life, and hip fractures in older adults carry a one-year mortality rate of up to 30%. A DEXA scan gives you all three. A scale gives you none of them.

YOUR TARGET

Appendicular lean mass index (ALMI) above age- and sex-matched norms; higher is generally better. Visceral fat below 100 cm^2 for men and below 80 cm^2 for women. Bone density T-score above −1.0 — and ideally above 0 — at the hip and spine.

WHAT TO DO

Get a DEXA scan every 12 months. Use the trend, not just the absolute number. Lean mass responds to strength training. Visceral fat responds to combined caloric and metabolic work. Bone density responds to mechanical loading. All three remain responsive across the lifespan.

TEST 07

Grip Strength

WHAT IT MEASURES

How hard you can squeeze a calibrated handgrip device. A simple test that takes under a minute.

WHY IT MATTERS

Grip strength tracks closely with overall muscle quality and nervous-system function — and it independently predicts all-cause and cardiovascular mortality. The PURE study, which followed 142,861 adults across 17 countries, found that every 5 kg drop in grip strength was associated with a 16 percent rise in all-cause mortality and a 17 percent rise in cardiovascular mortality — a stronger mortality signal than blood pressure. It is one of the cheapest, fastest tests in medicine. It is almost never performed in routine practice.

YOUR TARGET

For men: dominant-hand grip above 40 kg (ideally above 50 kg). For women: above 25 kg (ideally above 30 kg). Decline with age is expected, but steeper-than-expected decline is a warning signal worth acting on.

WHAT TO DO

Buy a hand dynamometer (under $50) and test monthly. If grip is low, resistance training — particularly deadlifts, farmer's carries, rows, and loaded carries — will move it directly. Track the trend. Trend matters more than any single measurement.

THE FRAME

You cannot manage what you do not measure. But measurement is not management.

These seven tests give you the map. The decisions that come after — when to treat, when to wait, when to refer, and who is on the hook for the prescription — are the layer Vital Capacity is being built around.

NEXT STEPS

Start with the reference. Keep reading for the judgment.

The seven tests above tell you what to measure. The question they answer is not whether you're fit. The question is whether you're metabolically durable.

Vital Capacity is a performance medicine practice in development. It will combine advanced labs, VO_2 max testing, DEXA body composition, strength and recovery metrics, and a medical plan that changes as your body changes.

The newsletter is where that thinking is being built in public: the metrics that matter, the interventions worth defending, and the parts of clinical care that still require a physician on the hook.

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