Blood Tests

THYROID & SEX HORMONES

Test Name	Optimal	Actual	Primary Clinical Indications
TSH	1.0–2.0 mIU/L		Thyroid function, metabolic rate, energy levels
Free T3	3.5–4.2 pg/mL		Active thyroid hormone, energy production, metabolism, brain function
Free T4	1.2–1.5 ng/dL		Thyroid gland output, precursor to T3
Reverse T3	<15 ng/dL		Thyroid conversion efficiency, metabolic slow-down, stress response
Testosterone - Males (Total) - Males (Free) - Females (Total) - Females (Free)	 600–1000 ng/dL 150–250 pg/mL 40–70 ng/dL 3–8 pg/mL		Muscle mass, bone density, libido, mood, metabolic function
Bioavailable T - Males - Females	 250–600 ng/dL 15–50 ng/dL		Active testosterone available for cellular function, muscle recovery, cognitive performance
SHBG - Males - Females	 20–40 nmol/L 30–80 nmol/L		Regulates free testosterone and estrogen levels, metabolic function
Estradiol (E2) - Males - Females (Premen) - Females (Postmen)	 20–40 pg/mL 50–200 pg/mL 10–40 pg/mL		Bone health, cardiovascular function, cognitive function (in men and women)
Progesterone - Males - Females (Luteal)	 0.3–0.8 ng/mL 5–20 ng/mL		Neuroprotection, sleep quality, hormone balance, fertility
DHEA-S - Males - Females	 1500–3000 ng/dL 1000–2500 ng/dL		Precursor to androgens/estrogens, stress resilience, anti-aging marker

METABOLIC PANEL

Test Name	Optimal	Actual	Primary Clinical Indications
Glucose (Fasting)	70–85 mg/dL		Blood sugar control, insulin sensitivity, diabetes risk
Hemoglobin A1C (HbA1c)	4.8–5.2%		Long-term blood sugar control, insulin resistance, diabetes risk
Fasting Insulin	2–4 uIU/mL		Early detection of insulin resistance, metabolic flexibility
Blood Urea Nitrogen (BUN)	10–16 mg/dL		Kidney function, protein metabolism, hydration status
Creatinine - Males - Females	 0.7–1.1 mg/dL 0.6–1.0 mg/dL		Kidney function, muscle breakdown marker
Sodium (Na)	137–144 mmol/L		Fluid balance, adrenal function, nervous system signaling
Potassium (K)	4.0–4.5 mmol/L		Muscle function, heart rhythm, nerve signaling
Calcium (Ca)	9.0–10.0 mg/dL		Bone health, nerve conduction, muscle function
Albumin	4.0–5.0 g/dL		Protein status, liver function, inflammation marker
ALT	10–30 IU/L		Liver health, metabolic function
AST	10–30 IU/L		Liver function, muscle breakdown marker
Uric Acid - Males - Females	 4.0–6.5 mg/dL 3.5–5.5 mg/dL		Gout risk, metabolic dysfunction, oxidative stress, kidney function

INFLAMMATION

Test Name	Optimal	Actual	Primary Clinical Indications
HS C-Reactive Protein	<0.3 mg/L		Chronic inflammation, cardiovascular risk, metabolic health, autoimmune conditions
Homocysteine	6–8 µmol/L		Cardiovascular disease, cognitive decline, methylation efficiency (B-vitamin status), blood clot risk

LIPID PANEL

Test Name	Optimal	Actual	Primary Clinical Indications
LDL	70–100 mg/dL		Cardiovascular risk, oxidation potential, metabolic health
VLDL	<20 mg/dL		Atherogenic lipid fraction, cardiovascular disease risk
HDL	>60 mg/dL		Cardiovascular protection, cholesterol transport efficiency
Triglycerides	<80 mg/dL		Metabolic health, insulin sensitivity, cardiovascular risk
Total Cholesterol (TC)	170–200 mg/dL		Hormone production, cell membrane integrity (context-dependent)
TC/HDL Ratio	2.5–3.0		Cardiovascular risk predictor, metabolic efficiency

NUTRITIONAL

Test Name	Optimal	Actual	Primary Clinical Indications
Vitamin D (25-OH)	50–70 ng/mL		Bone health, immune function, inflammation regulation, hormone production, cardiovascular health
Ferritin - Males - Females	 50–150 ng/mL 40–100 ng/mL		Iron storage, anemia risk, oxidative stress (excess levels can increase inflammation and metabolic dysfunction)
Magnesium (RBC test)	5.0–6.5 mg/dL		Muscle function, cardiovascular health, nervous system regulation, sleep quality, glucose metabolism

CARDIOVASCULAR

Test Name	Optimal	Actual	Primary Clinical Indications
Lipoprotein(a)	<10 mg/dL		Genetic cardiovascular risk marker, atherosclerosis risk, stroke and heart attack prediction
Apolipoprotein B (ApoB)	<60 mg/dL		Number of atherogenic particles, direct cardiovascular disease risk marker, superior to LDL alone