Lab reference intervals and proposed optimal targets.

Selected adult assay examples, not universal diagnostic or treatment targets. Age, sex, specimen and method matter. Use the interval on your own laboratory report. Sources checked 2026-11-04.

Marker	Laboratory reference examples	Historical target / interpretation
Homocysteine	**Quest:** Ages 18–29: male ≤12.9; female ≤10.9 µmol/L. source **Labcorp:** Ages 18–60: 0–14.5 µmol/L. source	No source-verified universal orthomolecular target. Age, B12/folate status and kidney function affect interpretation. The homepage's illustrative <7 target is not a universal clinical cutoff.
Ferritin	**Quest:** Men 19–59: 38–380; women 19–40: 16–154 ng/mL. source **Labcorp:** Men ≥20: 30–400; women 20–40: 30–150 ng/mL. source	No source-verified universal orthomolecular target. These are selected adult examples. Other age bands differ. Ferritin also rises with inflammation.
Vitamin C	**Quest:** Serum: male 0.2–2.1; female 0.3–2.7 mg/dL. source **Labcorp:** Plasma: 0.4–2.0 mg/dL. source	No source-verified universal serum optimum. Serum and plasma are different specimens. Recent intake, light protection and freezing matter; do not treat these assays as interchangeable.
25-OH vitamin D	**Quest:** 30–100 ng/mL. source **Labcorp:** 20.0–100.0 ng/mL; updated September 2026. source	No universal wellness target established. An upper lab limit is not a recommended concentration. Current professional guidance distinguishes deficiency assessment from outcome-specific targets.
RBC magnesium	**Quest:** 4.0–6.4 mg/dL. source **Labcorp:** 3.7–7.0 mg/dL. source	No source-verified universal orthomolecular target. RBC and serum results have different intervals. No single test completely describes magnesium status.

The comparison, with context.

Selected adult assay examples, not universal diagnostic or treatment targets. Age, sex, specimen and method matter. Use the interval on your own laboratory report. Sources checked 2026-11-04.

Marker	Laboratory reference examples	Historical target / interpretation
Zinc and copper / Cu:Zn	**Quest:** Adult zinc 60–130; copper ≥18: 70–175 µg/dL. source **Labcorp:** Zinc ≥11 months: 44–115. Copper ages 16–30: men 62–115, women 73–140 µg/dL. source	Historical Walsh 2004 reference: Cu/Zn 0.8–1.2. A study criterion, not a universally validated adult target. Cu/Zn and Zn/Cu are reciprocals; match units and specimen types. Individual-element intervals do not establish a ratio interval. Quest copper assay Labcorp zinc assay
Vitamin B12	**Quest:** >17 years: 200–1100 pg/mL. source **Labcorp:** 232–1245 pg/mL. source	No source-verified founder-specific optimum. A total serum B12 result sometimes needs clinical context and additional tests; supplementation and kidney function affect interpretation.
Serum folate	**Quest:** Adult normal >5.4; borderline 3.4–5.4; low <3.4 ng/mL. source **Labcorp:** >3.0 ng/mL. source	No source-verified universal orthomolecular target. Serum folate reflects recent intake. Do not substitute RBC folate thresholds or infer a psychiatric biotype from this result alone.
Free T3	**Quest:** >20 years: 2.3–4.2 pg/mL. source **Labcorp:** >19 years: 2.0–4.4 pg/mL. source	No universal upper-range target established. Interpret alongside TSH, free T4, symptoms and assay limitations. A high-normal result is not a general treatment goal.
Fasting insulin	**Quest:** ≤18.4 µIU/mL; fasting required. source **Labcorp:** 2.6–24.9 µIU/mL; fasting. source	No source-verified universal Pfeiffer/Walsh/Hoffer target. Quest calls its assay-specific category optimal. That does not establish an orthomolecular optimum, and insulin alone does not diagnose prediabetes.

Historical Walsh reference: the 2004 study lists Cu/Zn 0.8–1.2 and whole-blood histamine 40–70 ng/mL. These were study criteria in an uncontrolled, multicomponent intervention, not universal adult diagnostic targets. Original paper.
No source-verified universal Pfeiffer/Walsh/Hoffer target set was found for all ten markers. Detailed guides and references.