Cholesterol: Understanding & Optimizing Your Levels

More in-depth lipid testing can give us a better evaluation of your overall cardiovascular risk and the best ways to reduce this risk

Apolipoprotein B (ApoB):

What it is: ApoB is a protein found on all atherogenic (plaque-forming) particles, including LDL, VLDL, IDL, and Lp(a).
Why it matters: Instead of just measuring how much cholesterol is floating around (like LDL-C), ApoB tells you how many particles are circulating—and particle number drives plaque buildup.
👉 **More particles = more opportunities to penetrate artery walls ↠ higher risk**

General goal: <80 mg/dL

(sometimes <70 for higher-risk patients)

How to lower ApoB:

- Reduce insulin resistance (nutrition, weight, movement)
- Increase fiber intake
- Omega-3s, sometimes other supplements
- Medications if needed (statins, ezetimibe, etc.)

High-Sensitivity C-Reactive Protein (hs-CRP):

What it is: hs-CRP is a blood marker that measures low-grade inflammation in the body. It can detect small elevations that may reflect chronic inflammation and cardiovascular risk.
Why it matters:
Chronic, low-level inflammation can contribute to:

- Damage to the lining of blood vessels
- Plaque formation and progression
- Increased cardiovascular risk

👉 Think of hs-CRP as a marker of the inflammatory environment your cardiovascular system is exposed to.

Optimal goal: <1 mg/L

- **1–3 mg/L - average/intermediate risk**
- **>3 mg/L - higher cardiovascular risk**
- **>10 mg/L - often suggests active inflammation/infection; recheck**

How to improve hs-CRP:

- 🍭 Reduce added sugars and sugary beverages
- 🍞 Limit refined carbohydrates (white bread, pastries, sweets)
- 🍺 Limit or avoid alcohol
- 🥗 Eat more vegetables, lean protein, and high-fiber foods
- 🐟 Increase omega-3 fats (fatty fish or supplements)
- 🏃 Exercise consistently
- ⚖️ Maintain a healthy weight
- 🩺 Manage blood sugar and insulin resistance

Homocysteine

What it is: An amino acid produced during methylation (a key biochemical process involved in detox, DNA repair, and neurotransmitters).
Why it matters:

- Elevated levels can:
  - Damage blood vessels
  - Increase oxidative stress
  - Promote clotting

Optimal goal: 5-8 umol/L

Elevated risk: >10

Common causes of elevation:

- Low B vitamins (B12, B6, folate)
- Genetic variants (like MTHFR)
- Kidney dysfunction
- Chronic inflammation

How to lower homocysteine:

- B vitamins (especially methylated forms if needed)
- Increase leafy greens (folate)
- Address gut health and absorption
- Reduce alcohol, support detox pathways

Lipoprotein(a) or Lp(a):

What it is: Lp(a) is an LDL-like particle with an added protein called apolipoprotein(a).
Why it matters:

- Highly genetic
- Promotes plaque formation AND clotting
- Acts almost like a "sticky LDL"

👉 Think of it as **genetic** cardiovascular risk you're born with

- **Diet and lifestyle have minimal impact**
- Important to test at least once in a lifetime

Optimal goal: <30 mg/dL (or <75 nmol/L)

Elevated risk: >50 mg/dL (or >125 nmol/L)

What you can do if elevated:

- Focus aggressively on modifiable risks
- Sometimes Niacin or prescription PCSK9 inhibitors may be beneficial