

Non-HDL Cholesterol: Evolving Evidence Leads to a Novel Strategy

Key Takeaways

The **2021 Canadian Cardiovascular Society (CCS) Dyslipidemia Guidelines** strongly recommend:



For any patient with triglycerides >1.5 mmol/L, non-HDL-C or ApoB should be used instead of LDL-C as the preferred lipid parameter for screening



Lp(a) levels should be measured at least once in a person's lifetime as it is strongly predictive of recurrent ASCVD events

Why did the CCS guidelines promote non-HDL-cholesterol from an alternative measurement for screening to the generally preferred measurement over LDL-C, especially in patients with elevated triglycerides?

- ✓ When triglycerides are >1.5 mmol/L, some of the cholesterol in LDL particles is replaced by triglycerides, which promotes the production of more atherogenic small, dense LDL particles and **makes the amount of LDL-C an unreliable measure** of the true LDL particle number
- ✓ Other particles in addition to LDL accumulate in the artery walls and contribute to atherogenesis, whereas HDL-C does not. Thus, **non-HDL-C is a more accurate predictor** of CV event risk and a lipid-lowering treatment benefit compared to LDL-C

What is the recommendation about Lp(a) in particular?

The **CCS guidelines recommend measuring Lp(a) levels once in a person's lifetime**, as part of initial lipid screening. It is strongly predictive of recurrent ASCVD events, but it is not currently considered a treatment target.

- ✓ Lp(a) is an LDL-like particle that is a potential independent and causal risk factor for ASCVD
- ✓ Mendelian randomization studies have suggested a causal link between elevated Lp(a) and heart disease, stroke, and aortic stenosis
- ✓ Plasma concentrations of Lp(a) are determined by a single gene and are generally stable throughout life. **Lp(a) is not influenced by age, sex, fasting state, inflammation, or lifestyle factors, and does not require repeat measurements**

Since the blood test is available across Canada and is covered in most provinces, clinicians should ensure all their patients have an Lp(a) level on file, both for CVD risk stratification and to help inform decisions about lipid-lowering treatment intensification.

While there is no current treatment targeting Lp(a) specifically, an elevated result should prompt physicians to treat other risk factors such as high LDL-C more intensively



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