

CHOLESTEROL
- LDL,
PLASMA/
SERUM

Orderable - LIPIDS

Turnaround Time: 24 hours

Alternate Name(s):

Low Density Lipoprotein Cholesterol
Cholesterol-LDL
LDL-C

Specimen:

Adult	Pediatric
4.5 mL Green (Lithium Heparin) top Vacutainer tube	0-2 years: 0.5 mL Green Microtainer 2-10 years: 3 mL Green top tube
Red, Gold, or Lavender (EDTA) top tubes are also acceptable	

Collection Information:

12-14 hour fast recommended.

Habitual diet and activity, stable diet over preceding 4 weeks. No recent illness. LDL levels are reduced for up to 8 weeks with acute illness (e.g. myocardial infarction, acute infection), testing should not be performed during this time.

Reference Ranges:

<3.50 mmol/L

If LDL-C \geq 3.50 mmol/L in primary prevention setting for low risk patients with Framingham Risk Score (FRS) 5-9.9% or intermediate risk patients, consider therapy. Therapy also suggested in low risk patients with LDL-C \geq 5.00 mmol/L/.

If LDL-C \geq 1.80 mmol/L in a patient with atherosclerotic cardiovascular disease, treatment intensification is recommended.

Refer to 2021 CCS guidelines (Pearson et al. reference below) for additional LDL-C and non-HDL-C thresholds based on risk stratification.



Laboratory:
Core Lab



Requisition:
GENERAL LABORATORY
REQUISITION



Method of Analysis:
Calculated (NIH Equation)



Test Schedule:
As required

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If triglycerides ≥ 1.50 mmol/L, refer to non-HDL-C instead of LDL-C for dyslipidemia assessment.

As of July 11, 2022, LDL-C has been calculated using the NIH equation (shown below)

NIH Equation:

$$\text{LDL-C} = \left[\frac{\text{Cholesterol}}{0.948} \right] - \left[\frac{\text{HDL-C}}{0.971} \right] - \left[\frac{\text{Triglycerides}}{3.74} + \frac{\text{Triglycerides} \times \text{Non-HDL-C}}{24.16} - \frac{\text{Triglycerides}^2}{79.36} \right] - 0.24$$

References:

- 1) White-Al Habeeb NMA et al. Can J Cardiol. 2022. Online ahead of print. Doi: 10.1016/j.cjca.2022.03.019.
- 2) Pearson GJ et al. Can J Cardiol. 2021. 37(8):1129-1150. Doi: 10.1016/j.cjca.2021.03.016.