CHOLESTEROL - LDL, PLASMA/SERUM

Orderable - LIPIDS
Turnaround Time: 24 hours

Alternate Name(s):
Low Density Lipoprotein Cholesterol
Cholesterol-LDL
LDL-C

Specimen:

<table>
<thead>
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<th>Adult</th>
<th>Pediatric</th>
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<tbody>
<tr>
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<td>4.5 mL Green (Lithium Heparin) top Vacutainer tube</td>
<td>0-2 years: 0.5 mL Green Microtainer 2-10 years: 3 mL Green top tube</td>
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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 ≥ 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 ≥ 5.00 mmol/L.

If LDL-C ≥ 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.
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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:**

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

**References:**