



Laboratory Bulletin

Date: October 11th, 2016
To: All Zones - Physicians and Allied Health Care Professionals, and Laboratory Directors, Managers, Supervisors
From: AHS Laboratory Services
Re: Provincial Standardization of Lipid Reference Intervals and Reporting Comments

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Key Messages:

- Starting late October and early November, 2016, lipid reference intervals and reporting comments for total cholesterol, high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C), triglycerides, non-HDL-C and apolipoprotein B for both adult and pediatric populations will be updated across the province. The Total:HDL-C Ratio will no longer be reported in the profile. Non-HDL-C (calculation: total cholesterol minus HDL-C) will be added to the profile.
 - The changes are supported by the AHS Laboratory Chemistry Network, AHS Laboratory Leaders and provincial Cardiology representatives. They are based on Canadian Cardiovascular Society Guidelines (2016), National Cholesterol Education Program Adult Treatment Panel III (NCEP ATP III), and Integrated Guidelines for Cardiovascular Health and Risk Reduction in Children and Adolescents (2012).
- Cholesterol, triglyceride and apolipoprotein B will be available for individual ordering across the province.
- HDL-Cholesterol will not be available as a single test request for adults or pediatric patients. It will remain part of the Lipid Profile for both.
- Provincial standardization of the **adult lipid profile** is as follows:

Analyte	Age	Reference Interval	Result Comment
Total Cholesterol	18 – 150 yrs	N/A	N/A
HDL-C	18 – 150 yrs	N/A	N/A
LDL-C	18 – 150 yrs	0.0 - 3.4 mmol/L	N/A
Triglycerides	18 – 150 yrs	0.0 - 1.7 mmol/L	N/A
Non-HDL-C	18 – 150 yrs	0.0 - 4.2 mmol/L	<p>For patients 30 years of age or older, the Framingham Risk Score (FRS), modified for family history, is recommended for risk assessment (2016 CCS Guideline, Can J Cardiol 2016): FRS Calculation Resources can be found at https://myhealth.alberta.ca/Alberta/Pages/Heart-Disease-Risk-Calculator.aspx.</p> <p>Low Risk (FRS < 10%) Treatment advised if LDL-C \geq 5.0 mmol/L Treatment target: > 50% reduction LDL-C</p> <p>Intermediate Risk (FRS 10 - 19%) Treatment advised if LDL-C \geq 3.5 mmol/L OR Non-HDL-C \geq 4.3 mmol/L OR ApoB \geq 1.2 g/L; Consider treatment for men \geq 50 and women \geq 60 yrs with one additional CV risk factor Treatment targets: LDL-C < 2.0 mmol/L OR decrease by > 50% OR Non-HDL-C < 2.6 mmol/L OR ApoB < 0.8 g/L</p> <p>High Risk (FRS \geq 20% or presence of high risk features) Treatment advised in all patients Treatment targets: LDL-C < 2.0 mmol/L OR decrease by > 50% OR Non-HDL-C < 2.6 mmol/L OR ApoB < 0.8 g/L</p>

- Provincial standardization of **adult single** lipid test requests is as follows:

Analyte	Age	Reference Interval	Result Comment
Total Cholesterol	18 – 150 yrs	N/A	Desirable < 5.17 mmol/L High \geq 6.21 mmol/L
ApoB	18 – 150 yrs	<1.2 g/L	If result is \geq 1.2 g/L : Treatment advised if Framingham Risk Score is Intermediate or High Treatment target for ApoB < 0.8 g/L (2016 CCS Guideline, Can J Cardiol 2016) If result is <1.2 g/L: Treatment target for ApoB < 0.8 g/L (2016 CCS Guideline, Can J Cardiol 2016)
Triglycerides	18 – 150 yrs	0.0 - 1.7 mmol/L	N/A

- Provincial standardization of the **pediatric lipid profile** is as follows:

Analyte	Age	Reference Interval	Result Comment
Total Cholesterol	0 - 17 yrs	N/A	N/A
HDL-C	0 - 17 yrs	N/A	N/A
LDL-C	0 - 17 yrs	N/A	N/A
Triglycerides	0 - 17 yrs	N/A	N/A
Non-HDL-C	0 - 17 yrs	N/A	Lipid Profile acceptable limits relative to dyslipidemia and atherosclerosis risk: Total Cholesterol Acceptable <4.40 mmol/L HDL-C Acceptable >1.16 mmol/L LDL-C Acceptable <2.84 mmol/L Triglycerides Acceptable <0.85 mmol/L (0-9 years) OR <1.02 mmol/L (10-17 years) Non-HDL-C Acceptable <3.10

- Provincial standardization of **pediatric single** lipid test requests is as follows:

Analyte	Age	Reference Interval	Result Comment
Total Cholesterol	\leq 1 yr	2.36 - 5.32 mmol/L	Acceptable limit relative to dyslipidemia and atherosclerosis risk is < 4.40 mmol/L
	>1 - 17 yrs	2.70 - 5.89 mmol/L	Acceptable limit relative to dyslipidemia and atherosclerosis risk is < 4.40 mmol/L
ApoB	0 - 17 yrs	<0.90 g/L	Acceptable limit relative to dyslipidemia and atherosclerosis risk is <0.9 g/L
Triglycerides	0 - 17 yrs	<1.50 mmol/L	Acceptable limit relative to dyslipidemia and atherosclerosis risk <0.85 mmol/L (0-9 years) OR <1.02 mmol/L (10-17 years)

Why this is important:

- Standardization of lipid reporting will provide improved patient care across the province, and it will align lipid reporting with the most recent guidelines, including the 2016 Canadian Cardiovascular Society Guideline.
- There will be improved consistency for individual lipid test ordering.

Inquiries and feedback may be directed to:

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This bulletin has been reviewed and approved by:

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