

## Lipid reporting changes

**Date Effective:**

September 25, 2018

**Background Information:**

Lipid reporting by Shared Health Laboratories is being updated to be better aligned with the Canadian Cardiovascular Society (CCS) Guidelines for the Management of Dyslipidemia for the Prevention of Cardiovascular Disease in the Adult and the Expert Panel on Integrated Guidelines for Cardiovascular Health and Risk Reduction in Children and Adolescents Summary Report.

The recommendation from the CCS is to screen all lipids in a non-fasting state, and repeat the triglycerides in a fasting state only if the initial results are elevated. Most lipids do not show significant variation with fasting, the exception is triglycerides. The calculation of LDL-cholesterol is only valid in patients whose triglyceride is < 4.5 mmol/L, therefore a fasting sample is recommended for patients with a history of triglyceride levels > 4.5 mmol/L.

**Changes in Laboratory Reports for Lipid Testing:**

- Laboratory reports have been updated to align with the 2016 CCS Guidelines for Adults and the 2012 NIH Guidelines for Children and Adolescence. Reference values have been updated, but do not replace the use of risk assessment tools.
- Laboratory reports will now include non-HDL-cholesterol.  
Non-HDL-cholesterol = (total cholesterol) – (HDL-cholesterol)
- Ratios for “cholesterol/HDL cholesterol” and “LDL cholesterol/HDL cholesterol” as well as “chylomicrons” and “appearance” will no longer be reported, as their use is not supported by current cardiovascular guidelines.
- There will be separate reference intervals for non-fasting and fasting triglycerides. Fasting triglycerides and non-fasting triglycerides will be separate for result trending.
- Fasting status will be indicated on report. “Fasting” will always refer (for adults) to a minimum of 8 hours without any intake except water (this includes no food, no tea, no coffee, no chewing gum). “Fasting” intervals for very young children will be determined by their pediatrician according to the age and capability of the patient.
- **Ordering professional must indicate to patient their fasting expectation.** A fasting sample is recommended for patients with a history of triglyceride levels > 4.5 mmol/L.

### Changes in HDL-cholesterol testing method:

- The method for assaying HDL-cholesterol is changing this fall at all Shared Health sites in Winnipeg and Brandon. These sites use the Roche HDL-cholesterol method. The new Roche assay (HDLc4) has:
  - Increased reactivity towards Apo E rich HDL which is relevant for people with reduced CEPT activity.
  - Reduced high results in samples from patients with liver disease and lipid disorder. The HDLc4 method measures the cholesterol content from HDL-C only, and not the cholesterol present in chylomicrons.
  - There is no change in the standardization and calibration of this method (CDC reference method), however due to the improvements in specificity, HDL-Cholesterol results may be lower for some patients.
- The Ortho method used to measure HDL-C in Thompson and Steinbach (Bethesda) remains unchanged.

### Resources:

- 2016 Canadian Cardiovascular Society Guidelines for the Management of Dyslipidemia for the Prevention of Cardiovascular Disease in the Adult. Anderson *et al.* Canadian Journal of Cardiology 32 (2016) 1263-1282. [http://www.onlinecjc.ca/article/S0828-282X\(16\)30732-2/pdf](http://www.onlinecjc.ca/article/S0828-282X(16)30732-2/pdf)
- Expert Panel on Integrated Guidelines for Cardiovascular Health and Risk Reduction in Children and Adolescents Summary Report. NIH Publication No. 12-7486A. October 2012. [https://www.nhlbi.nih.gov/files/docs/peds\\_guidelines\\_sum.pdf](https://www.nhlbi.nih.gov/files/docs/peds_guidelines_sum.pdf) Pediatrics. 2011 Dec;128 Suppl 5:S213-56. doi: 10.1542/peds.2009-2107C. Epub 2011 Nov 14.

### Patient Impact:

- Patients will be asked their fasting status at time of collection and this will be recorded on the laboratory report. This may decrease the need for some repeat testing.

### System Improvements:

- Details of patient fasting status are clear on report. This should aid interpretation and decrease need for repeat testing due to uncertainty regarding fasting status.
- Laboratory reports are aligned with current guidelines.
- HDL-Cholesterol assay has improved analytical specificity.

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