Appendix C: Lipid Testing in Primary Prevention of Cardiovascular Disease

Table 1. Lipid Tests Available for CVD Primary Prevention†

Lipid Test	Purpose	MSP Cost*	Includes	Fasting Requirements¥
Full lipid profile	Risk assessment	$21.31	total cholesterol (TC); high-density lipoprotein cholesterol (HDL-C); low-density lipoprotein cholesterol (LDL-C); non-high-density lipoprotein cholesterol (non-HDL-C); and triglycerides (TG)	No
Non-HDL-C†	Follow-up	$14.72	TC; HDL-C	No
Apolipoprotein B (ApoB)	Follow-up	$16.60	ApoB	No

Footnotes:

† As per outlined on the Standard Outpatient Laboratory Requisition (SOPLR). As of October 2013, non-HDL-C has been included on the SOPLR.

* Prices as of Laboratory Services Outpatient Payment Schedule. Revised, June 1, 2020. Available at: http://www.bccss.org/clinical-services/bcaplm/health-professionals/laboratory-facilities

¥ Fasting is not required for any of the panels but clinician may specifically instruct patient to fast for 10 hours in select circumstances [e.g. history of triglycerides > 4.5 mmol/L], independent of laboratory requirements.

Full Lipid Profile Testing in CVD Primary Prevention

Indications for a full lipid profile include:

- CVD Risk Assessment

  Consider to assess CVD risk in:

  - all asymptomatic men and women ≥40 to establish a baseline;
  - all patients with pre-existing risk-related conditions (e.g., HTN, DM, CKD); and
  - all patients with a known family history of premature CVD (defined as men aged <55 years and women aged <65 years in first degree relatives).
- Reassessment of CVD Risk
  - A patient may be reassessed in 1 to 5 years depending on their initial risk assessment or if their risk factors change significantly.

Table 2. CVD Risk Reassessments

Previous Risk Assessment Classification	Low risk	Intermediate risk	High risk
Reassess risk in	5 years or if the patient's risk factors change significantly.	3 - 5 years or if the patient's risk factors change significantly.	1 - 3 years or if the patient's risk factors change significantly.

Non-HDL-C & ApoB Testing in CVD Primary Prevention

As of October 2013, non-HDL-C has been included in the full lipid profile and as separate measurement. It is calculated from subtracting HDL-C from TC; and represents all the cholesterol carried in lipoproteins other than HDL particles (e.g., intermediate density lipoproteins (IDL), very low density lipoproteins (VLDL), chylomicrons, chylomicron remnants, and lipoprotein(a)). Therefore, non-HDL-C measures the cholesterol present on all atherogenic lipoproteins.

ApoB is the primary protein for all atherogenic lipoproteins, and each atherogenic particle contains one molecule of ApoB. Therefore, the concentration of ApoB directly reflects the number of atherogenic particles.

Both non-HDL-C and ApoB appear to be stronger predictors than LDL-C for major future cardiovascular events. Non-HDL-C may also be a better indicator of residual risk after statin therapy than LDL-C. ApoB is not available with lipid profiles unless diagnosis of complex dyslipidemia is indicated.

Indications for a non-HDL-C or ApoB include:

- Men and women with elevated lipids from their initial risk assessment may be followed up with a non-HDL-C or an ApoB after 3 - 6 months to assess the impact of healthy behaviour modifications.
- Follow-up within 3 - 6 months of the initiation of statin therapy to assess patient adherence and response from statin therapy.

More frequent routine monitoring with a full lipid profile, non-HDL-C or an ApoB is considered not necessary for the sole purpose of treat-to-target.