Appendix C: Lipid Testing in Primary Prevention of Cardiovascular Disease (CVD)

Table 1. Lipid tests available for CVD primary prevention[†]

Lipid Test	Purpose	MSP Cost*	Results Includes[++]	Fasting Requirments
Full lipid profile	Risk assessmet	$21.31	total cholesterol (TC); high density lipoprotein cholesterol (HDL-C); low-density lipoprotein cholesterol (LDL-C); non-HDL-C; and triglycerides (TG) May include: Total cholesterol to HDL-C ratio (TC/HDL-C)	Yes - 8 to 10 hours
Non-HDL-C [†]	Follow-up	$12.20	TC; HDL-C; non-HDL-C May include: TC/HDL-C	No
Apolipoprotein B (apoB)	Follow-up	$16.60	apoB	No

† As per outlined on the Standard Outpatient Laboratory Requisition (SOPLR). As of October 2013, non-HDL-C has been included on the SOPLR.
* Medical Services Plan (MSP) prices as of Medical Services Commission (MSC) Payment Schedule August 2013.
[++] Lipid reporting practices are not standardized, and what is reported may vary according to the lab.

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 at age ≥ 40 and asymptomatic women at age ≥ 50 to establish a baseline;

➙ all patients with pre-existing risk-related conditions (e.g., hypertension, diabetes mellitus, chronic kidney disease); 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.

*For more information on how to classify a patient's risk assessment, see BCGuidelines – *Cardiovascular Disease – Primary Prevention*.

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.

While it is not clear which test is the better predictor of major cardiovascular events, they both appear to be stronger indicators than LDL-C. Another advantage of these tests is that fasting is not required.[1-5] Non-HDL-C has the slight advantage over apoB because it is the cheaper test ($12.20 vs $16.10) and would have been calculated in the full lipid profile (a baseline measurement).

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 4 - 6 months to assess the impact of lifestyle management.
- Follow-up within 4 - 6 months of the initiation of statin therapy to assess patient adherence and response from statin therapy.

The treat-to-target approach for lipids in primary prevention is not supported.[6] 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.

References

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