

CCS sets new guidelines for management of lipid metabolism disorders that affect cholesterol and cause atherosclerosis

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CLINICAL ATHEROSCLEROSIS

Myocardial infarction, acute coronary syndromes
Stable angina, documented coronary disease by angiography (>10% stenoses)
Stroke, TIA, documented carotid disease
Peripheral artery disease, claudication and/or ABI < 0.9

ABDOMINAL AORTIC ANEURYSM

Abdominal aorta > 3.0 cm or
Previous aneurysm surgery

DIABETES MELLITUS

≥ 40 years of age or
> 15 years duration and age ≥ 30 years or
Microvascular complications

CHRONIC KIDNEY DISEASE

> 3 months duration and
ACR > 3.0 mg/mmol or
eGFR < 60 ml/min/1.73m²

LDL-C ≥ 5.0 MMOL/L

LDL-C ≥ 5.0 mmol/L or
Document familial hypercholesterolemia
Excluded 2nd causes

ABI, ankle-brachial index; ACR, albumin:creatinine ratio; eGFR, estimated glomerular filtration rate; LDL-C, low-density lipoprotein cholesterol; TIA, transient ischemic attack. Credit: *Canadian Journal of Cardiology*

The Canadian Cardiovascular Society (CCS) has published an important update to its guidelines for the management of dyslipidemia - lipid metabolism disorders - that can cause cardiovascular disease. These disorders are very common, affect atherosclerosis-promoting lipids like cholesterol, and are a major target of widely used drugs like statins. The guidelines update evidence-based guidance for cardiologists and other clinicians regarding which patients will benefit from statin therapy. There is also new information on the use of health behavior modifications and non-statin medications to help doctors make the difficult decisions about when to use drugs to treat cholesterol and when other approaches are possible. The update is published in the *Canadian Journal of Cardiology*.

Central to the new guidelines is the recommendation that decision-making should be shared between physician and patient. "As dyslipidemia is an important risk factor for cardiovascular disease, these guidelines will allow appropriate risk assessment, treatment, and surveillance options of our at-risk population," explained Todd J. Anderson, MD, of the Libin Cardiovascular Institute, Cumming School of Medicine, University of Calgary. "The overall goal of the process was to produce a document based on the best available evidence that would allow clinicians and patients to make collaborative treatment decisions. These guidelines are not absolute, but are meant to launch one-on-one discussion between practitioner and patient."

The revised guidelines reflect new clinical trial and epidemiologic evidence. They include important recommendations like:

- A cardiovascular risk assessment should be completed every five years for men and women age 40 to 75 and women with a history of hypertensive disease in pregnancy to guide therapy to reduce major cardiovascular events. Sharing the results of the risk assessment with the patient supports shared decision-making and improves the likelihood that patients will reach their lipid targets.
- Non-fasting lipid and lipoprotein testing in adults without a history of high lipid levels who are being screened as part of a comprehensive risk assessment, although the panel suggests that lipid tests should still be measured fasting for individuals with a history of high triglyceride levels. This will greatly facilitate testing because the traditional requirement for a fasting period before the blood test for lipids created logistical hurdles, and new data indicate that this is not necessary.
- Low-density lipoprotein cholesterol (LDL-C) should continue to be used as the primary target because most clinicians are familiar with this, although the panel anticipates a shift to using newer indices like non-high-density lipoprotein cholesterol (non-HDL-C) or apoprotein B in the future;
- Statins remain the drugs of choice. The panel recommends [statin therapy](#) in five high risk conditions, including clinical atherosclerosis, abdominal aortic aneurysm, most diabetes mellitus, chronic kidney disease (more than 50 years of age), and those with LDL-C \geq 5.0 mmol/L, to lower the risk of cardiovascular events and mortality.
- The panel also recommends ezetimibe as second line therapy to lower LDL-C in patients with clinical cardiovascular disease if targets are not reached on maximally tolerated statin therapy.
- For primary prevention, the panel recommends performing a [risk assessment](#) for those who do not have high risk conditions.

- Two PCSK9 inhibitors, a new class of biologic drugs that have been shown to dramatically lower LDL cholesterol levels (evolocumab and alirocumab), have recently been approved in Canada, the U.S., and Europe. The panel recommends their use to lower LDL-C in patients with heterozygous familial hypercholesterolemia and [atherosclerotic cardiovascular disease](#) whose LDL-C remains above target despite maximally tolerated statin therapy.
- The panel acknowledges that there are concerns about a variety of possible adverse effects of statins and recommends that all purported statin-associated symptoms should be evaluated systematically, incorporating observation during cessation, re-initiation (same or different statin, same or lower potency, same or decreased frequency of dosing) to identify a tolerated, statin-based therapy for chronic use. It also recommends that vitamins, minerals, or supplements for symptoms of myalgia perceived to be statin-associated should not be used.

The panel has strengthened its previous lifestyle advice. "Lifestyle interventions remain the cornerstone of chronic disease prevention, including cardiovascular disease," emphasized Dr. Anderson. "Data from the INTERHEART study indicate that, in addition to the traditional risk factors (abnormal lipids, hypertension, smoking, and diabetes), abdominal obesity, dietary patterns, alcohol consumption, physical inactivity, and psychosocial factors are modifiable risk factors for heart attacks worldwide in both sexes and at all ages."

Specifically, the panel recommends that:

- All adults who smoke should receive clinician advice to stop smoking, observing that smoking cessation is probably the most important health behavior intervention for the prevention of [cardiovascular disease](#).

- All individuals should be offered advice about healthy eating and physical activity and should preferably adopt the Mediterranean, DASH (Dietary Approaches to Stop Hypertension), or Portfolio diet.

More information: Todd J. Anderson et al. 2016 Canadian Cardiovascular Society Guidelines for the management of Dyslipidemia for the Prevention of Cardiovascular Disease in the Adult, *Canadian Journal of Cardiology* (2016). [DOI: 10.1016/j.cjca.2016.07.510](https://doi.org/10.1016/j.cjca.2016.07.510)

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