
Date: June 1, 2017
To: All Zones, Physicians, Nurses, Laboratory Directors and Managers
From: AHS Laboratory Services
Re: Lipids - Fasting versus Non-Fasting – Clinical Considerations and Laboratory Specimen Collection Policy for Community Patients
(Update from 2014 Bulletin)

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Key Messages:

Clinical considerations are important when ordering and interpreting fasting versus non-fasting lipid test results. Physicians need to clearly indicate to the patient and on the test requisition (as a reminder for the patient) the requirement for either fasting or non-fasting prior to specimen collection.

Effective immediately the laboratory will collect the specimen for lipid testing at whatever time and in whatever state (fasting or non-fasting) a community patient presents.

The lipid profile report (Total, HDL and LDL Cholesterol and Triglycerides) or Triglycerides (if ordered alone) will indicate the number of hours a community patient has fasted prior to specimen collection.

Background:

- Total and HDL Cholesterol are not significantly different in the fasting and non-fasting states (variation in the range of 2% for cholesterol and 2-6% for HDL cholesterol). Triglycerides and therefore calculated LDL Cholesterol are variable in the non-fasting state.
- As Total and HDL Cholesterol are the only lipid results used in the determination of the Framingham Risk Score, the risk score is not significantly impacted by non-fasting lipid results.
- Fasting specimen collection is recommended if triglycerides levels are of specific clinical concern.
- The 2012 Canadian Cardiovascular Society guidelines continue to recommend fasting specimen collection because LDL Cholesterol is recommended as a primary indicator of the need for therapy and as the primary target during therapy.
- Recent articles (2 - 4), most notably by Naugler *et al* (2) have challenged the need for fasting specimen collection for lipid testing of most patients.
- In some respects, the 2016 guidelines of the Canadian Cardiovascular Society are lending support to the use of non-fasting lipid results with the introduction of non-HDL Cholesterol (Total Cholesterol minus HDL Cholesterol) as alternate target in medium and high risk patients on therapy. Non-HDL Cholesterol is not significantly different in the fasting and non-fasting state.
- Standardization of lipid reports based on the 2016 guidelines of the Canadian Cardiovascular Society (CCS) (1) is expected across the province in the near future.
- Non-fasting specimen collection is more convenient for patients and is beneficial to laboratory collection sites because of the reduction in demand for early morning collections.

- Patients at risk for hypoglycaemia with prolonged fasting may in particular benefit from non-fasting specimen collection.

Why this is important:

With recent challenges to the need for fasting specimen collection for lipid testing, many community patients are presenting to specimen collection facilities for specimen collection in the non-fasting state presumably on the advice of their physicians. In some cases, physicians have indicated “non-fasting” on the test requisition.

Action Required:

A. Physician

1. Clearly indicate to the community patient and on the test requisition (as a reminder to the patient) if the specimen for testing is to be collected “fasting” or “non-fasting”.
2. If required, provide the patient with the following instructions for fasting.

Fasting is defined as: “Nothing to eat, chew or drink other than small amounts of water. Prescription medication and smoking are permitted”.

Fasting Lipid Profile and Fasting Triglycerides

- i. Fasting for a minimum of 12 hours (8 hours if diabetic) and a maximum of 16 hours (there is a small but significant change beyond 16 hours).
- ii. No alcohol consumption for 24 hours prior to specimen collection.

References:

1. Anderson TJ, et al. 2016 Update of the Canadian Cardiovascular Society Guidelines for the Diagnosis and Treatment of Dyslipidemia for the Prevention of Cardiovascular Disease in the Adult. *Canadian Journal of Cardiology* 32 (2016) 1266 - 1267.
2. Sidhu D, Naugler C. Fasting time and lipid levels in a community-based population: a cross-sectional study. *Arch Intern Med.* 2012 Dec 10;172 (22):1707-10.
3. Khera AV, Mora S. Fasting for lipid testing: is it worth the trouble? *Arch Intern Med.* 2012 Dec 10;172 (22):1710-1.
4. Gaziano JM. Should we fast before we measure our lipids? *Arch Intern Med.* 2012 Dec 10;172 (22):1705-6.
5. Schaefer EJ, et al; Coronary Artery Disease /Fasting and Postprandial Plasma Lipoproteins, *Am J Card.* 2001 Nov 15;88:1129-1133.

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This bulletin has been reviewed and approved by:

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