

Date: March 26th, 2014

To: North Zone, South Zone, Central Zone, Edmonton Zone, DynaLifeDx
All Physicians, Nurses, and Laboratory Directors and Managers

From: AHS Laboratory Services

Re: Lipids - Fasting versus Non-Fasting – Clinical Considerations and Laboratory Specimen Collection Policy for Community Patients

PLEASE POST OR DISTRIBUTE AS WIDELY AS APPROPRIATE

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 **April 14th, 2014**, 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 2012 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 2012 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. 2012 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 29 (2013) 151–167.
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.

Inquiries and feedback may be directed to:

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