



## MEMORANDUM #86

To: UNC Hospitals Attending Physicians, Housestaff, Department Heads, Nursing staff and Supervisors

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Subject: **Apolipoprotein B Testing**

Date: September 30, 2009

On October 5, 2009 the Core Laboratory will introduce in-house testing for apolipoprotein B using an immunoassay-based method (Vitros 5600, Ortho Clinical Diagnostics). Samples for this test have been sent previously to Mayo Medical Laboratories.

**Clinical significance:** Apolipoprotein B (apo B) is a component of all of the proatherogenic lipoprotein particles, i.e., LDL, IDL, VLDL, and lipoprotein (a). Each lipoprotein particle contains one molecule of apo B. Therefore, apo B measurements provide a good estimate of the number of proatherogenic lipoprotein particles in the circulation and correlate strongly with risk of coronary artery disease. Additional studies further support its use in assessing specific patient populations, such as those who have diabetes or metabolic syndrome, as these patients often have an increase in the proatherogenic particles but relatively “normal” LDL-C concentrations. The test is also useful when assessing patients with hypertriglyceridemia, especially those cases in which HDL measurement or calculated LDL are not possible. For these patients, the fact that most of the total apo B is associated with LDL makes apo B a reliable surrogate for LDL particle concentration. While apo B and the non-HDL cholesterol calculation give similar predictions of risk in epidemiological studies, it is important to remember that they measure different things and are independent predictors of risk.(2, 5)

Apo B is also useful in the diagnosis of several dyslipoproteinemias, such as familial hypercholesterolemia, familial combined hyperlipidemia, and familial dysbetalipoproteinemia. Several references listed below provide algorithms for its use in diagnosing these conditions.(3, 6, 7)

**Ordering Information:** Test ID - APOLB, Test number – MO38, CPT code – 82172

**Specimen requirements:** 4 mL blood serum separator tube/Gold top 3 microtainers

Note: Current data indicate patients do NOT need to be fasting. There are recommendations that patients abstain from alcohol for 24 hours.

**Availability:** Testing will be performed 24 hours/day.

**Reference range:** 51-123 mg/dL

Note: The NCEP Adult Treatment Panel III guidelines do not make recommendations for apo B targets since the test was not readily available at the time. It is anticipated that APT IV will have greater emphasis

on this test. Other groups (2, 4) have, however, issued recommendations for targeted or optimal concentrations (2, 3): <120 mg/dL for low risk patients, <105 mg/dL for moderate risk patients, and < 85 mg/dL for high-risk patients. We will update these when ATP IV is released next year.

**References:**

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For questions or more information, please contact Drs. Hammett-Stabler or Chapman via the Core Laboratory at 6-2361.