



# LABORATORY ALLIANCE of Central New York, LLC

## Reflex to Direct LDL Measurement

Measurement of low density lipoprotein cholesterol (LDL) is useful in assessing the risk for heart disease and in monitoring cholesterol-lowering therapy. A standard lipid panel consists of total cholesterol (TC), high-density lipoprotein cholesterol (HDL), and triglycerides (TG). By applying the Friedewald equation ( $LDL = TC - HDL - TG/5$ ), an estimate of LDL concentration is calculated and reported as well. Calculated LDL is approximately as accurate as direct LDL measurement when TG levels are not significantly elevated and is included at no additional cost when a lipid panel is performed. When triglycerides are high, the formula is no longer accurate for the estimation of LDL. In this situation, accurate determination of LDL requires direct measurement.

Direct LDL measurement is reflexively ordered whenever calculation of LDL cholesterol will not be accurate due to significant elevation of serum TG. The previous TG cutoff value for direct LDL measurement was 250 mg/dL. Beginning January 18th, Laboratory Alliance of Central New York will increase the TG cutoff for direct LDL measurement to 300 mg/dL. This cutoff is within the established guidelines for accurate calculation of LDL and should represent a cost savings to patients.

Increased serum TG can be due to intrinsic lipid disorders; however, TG levels may increase in any patient after eating. Therefore, it is recommended that all patients be instructed to **fast for at least 12 hours** prior to blood draw for the lipid panel. Alcohol has also been shown to cause pronounced TG elevation, and patients should be instructed to refrain from alcohol use for 24 hours prior to blood draw. [http://www.labtestsonline.org/helpful/reference\\_ranges\\_lightbox.html](http://www.labtestsonline.org/helpful/reference_ranges_lightbox.html)

The lipid panel is most clinically significant when performed on patients who are "metabolically stable." Illness, surgery, trauma, sudden weight loss or gain, and pregnancy can all temporarily affect cholesterol levels, and lipid testing should be avoided during these processes, if possible.

For questions or concerns regarding these test services, please contact Ms. Cheryl Haskins, Chemistry Manager, at 315-410-7014.