



# LIPID CASCADE

**CVD risk management** for at-risk patient populations



## Smart testing for cardiovascular disease risk management

### Current Perspectives on LDL Management

The causal link between high levels of low-density lipoprotein (LDL) particles in the development of cardiovascular disease (CVD) is well established. Elevated LDL drives entry of these atherogenic particles into the arterial wall, accelerating development of CVD.<sup>1</sup> The longer there is exposure to elevated LDL, the greater the risk for cardiovascular events.<sup>2</sup>

Use of LDL lowering therapies is a core strategy in CVD risk reduction.<sup>3</sup> Once therapy is initiated, LDL values may be monitored to assess individual patient response to therapy and guide decisions regarding the need for further treatment adjustments.<sup>3</sup>

**Effective management of LDL requires a reliable measurement of LDL.**

### Two Ways to Measure LDL

Traditional low density lipoprotein-cholesterol (LDL-C) – calculated or direct – is an estimate of LDL quantity based on the amount of cholesterol contained in the LDL particle.<sup>2</sup> However the amount of cholesterol per particle varies between individuals – particularly in patients with type II diabetes, statin-treated patients, and those with the cardiometabolic risk (CMR) factors below<sup>2,4,5</sup>:

- **Age:** men  $\geq 45$  yrs, women  $\geq 55$  yrs<sup>6</sup>
- **Elevated BP** ( $\geq 130/\geq 85$  mmHg; on antihypertensive medication)<sup>7</sup>
- **Abdominal obesity/waist circumference:** male  $\geq 40$  ins (Asian  $\geq 35$  ins), female  $\geq 35$  ins (Asian  $\geq 31$  ins)<sup>7</sup>
- **Elevated triglycerides** ( $\geq 150$  mg/dL), low HDL (men  $< 40$  mg/dL, women  $< 50$  mg/dL), increased numbers of small dense LDL particles<sup>4,7</sup>; on drug treatment for elevated triglycerides or HDL-C
- **Elevated fasting blood glucose** ( $\geq 100$  mg/dL)<sup>7</sup>, on drug treatment for elevated glucose
- **Insulin resistance** (IR)<sup>4</sup>

Because the per-particle amount of cholesterol varies in these at-risk patients, LDL-C may be an unreliable measure of LDL quantity for patient management.<sup>2,5,8</sup>

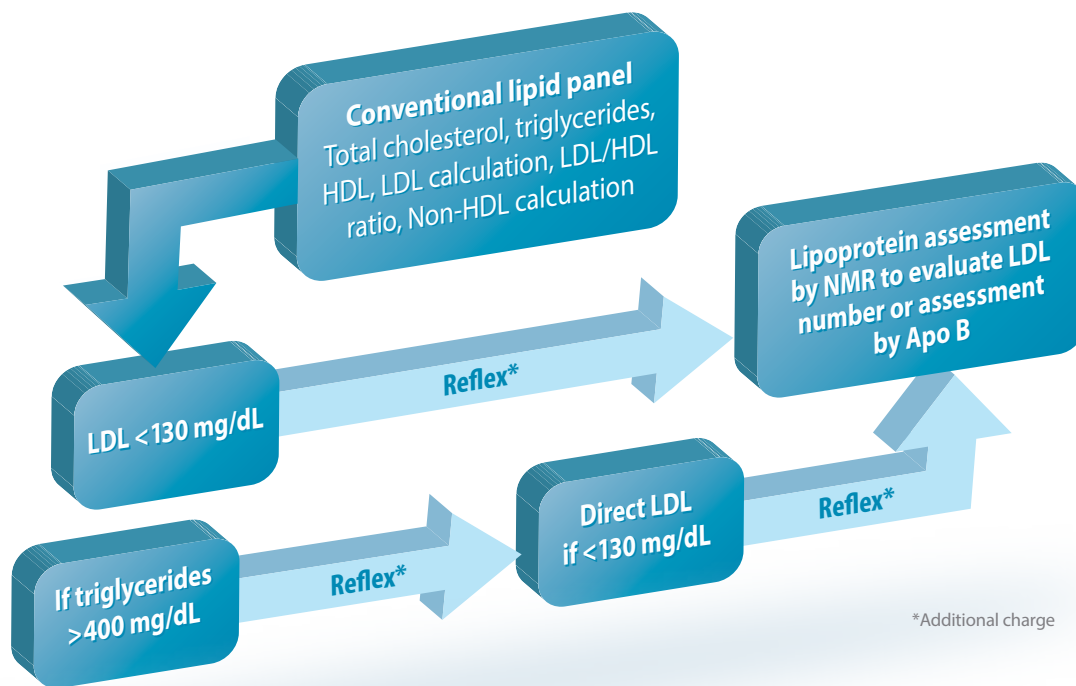
Alternatively, the number of LDL particles (LDL-P) can be measured by nuclear magnetic resonance (NMR) or apolipoprotein B (Apo B) immunoassay. Neither measurement quantifies LDL-P in a manner that depends on the amount of cholesterol contained inside the LDL particle.

## LDL-Particle Number in Clinical Management

Studies have demonstrated when LDL measures are in agreement (concordant), LDL cholesterol values and particle number are equally associated with CVD risk.<sup>5,9</sup> However when LDL cholesterol values and particle measures disagree (discordant), CVD risk tracks with particle measure: LDL-P or Apo B.<sup>5,9,10</sup> As a result, many experts advise that LDL-P or Apo B be used to adjudicate response to therapy and optimize treatment decisions in patients with type 2 diabetes, statin-treated patients, and those with CMR factors.<sup>4,5,8,11,12,13</sup>

### The Two Lipid Cascade Test Options

- Lipid Cascade with Reflex to Lipoprotein Particle Assessment by NMR (123836)
- Lipid Cascade with Reflex to Apolipoprotein B (363676)



Requiring a single blood draw, LabCorp's Lipid Cascade options offer convenient, step-wise testing by reflexing from a traditional lipid panel to lipoprotein particle testing by nuclear magnetic resonance (NMR) or apo B (depending upon the ordered test option) when the LDL value is < 130mg/dL.

For specimen collection requirements and CPT codes, please visit the online Test Menu at [www.LabCorp.com](http://www.LabCorp.com).



## Both Lipid Cascade options are available as part of LabCorp's CVD Report.

- Lipid Cascade with Reflex to Lipoprotein Particle Assessment by NMR (123836)
- Lipid Cascade with Reflex to Apolipoprotein B (363676)

Order number **910385** in addition to a lipid panel, either Lipid Cascade option, or NMR LipoProfile to receive the CVD Report on an individual patient basis. Alternatively, generate the CVD Report for all your patients when ordering a lipid panel, either

Lipid Cascade option, or NMR LipoProfile by completing the CVD Report Physician Request and Acknowledgement form. See your LabCorp representative for more information and to obtain the form. There is no additional charge for the report.

Visit the LabCorp Test Menu at [www.LabCorp.com](http://www.LabCorp.com).

### References

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