DOCTOR'S DATA INC.

SCIENCE + INSIGHT

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Changes in LDL-C, VLDL-C, and sdLDL-C reporting in CardioMetabolic and Cardiovascular Risk profiles

Low-density lipoprotein cholesterol (LDL-C)

DDI has switched to a new equation known as the "Sampson" equation for calculating low-density lipoprotein cholesterol (LDL-C). The Sampson LDL-C equation is better than the previously used "Friedewald" equation in terms of accuracy and risk classification[1]. It is also accurate up to 800 mg/dL triglyceride concentrations, which is higher than Friedewald.

Very low-density lipoprotein cholesterol (VLDL-C)

DDI has switched to a new equation known as the "Sampson" equation for calculating very low-density lipoprotein cholesterol (VLDL-C). The Sampson VLDL-C equation is better than the previously used "Friedewald" equation in terms of accuracy and risk classification[1]. It is also accurate up to 800 mg/dL triglyceride concentrations, which is higher than Friedewald.

Small dense low-density lipoprotein cholesterol (sdLDL-C)

DDI has switched from direct measurements of sdLDL-C to calculated sdLDL-C using the "Sampson" equation. The calculated sdLDL-C has been demonstrated to be better than measured sdLDL-C in predicting atherosclerotic cardiovascular disease (ASCVD) risk[2]. Both changes represent improvements in CVD risk classification for the CardioMetabolic and Cardiovascular Risk Profiles. See references below for additional information.

References:

[1]Christopher D Koch, Joe M El-Khoury, New Sampson Low-Density Lipoprotein Equation: Better Than Friedewald and Martin-Hopkins, Clinical Chemistry, Volume 66, Issue 8, August 2020, Pages 1120–1121, https://doi.org/10.1093/clinchem/hvaa126

[2]Sampson M, Wolska A, Warnick R, Lucero D, Remaley AT. A New Equation Based on the Standard Lipid Panel for Calculating Small Dense Low-Density Lipoprotein-Cholesterol and Its Use as a Risk-Enhancer Test. Clin Chem. 2021 Jul 6;67(7):987-997. doi: 10.1093/clinchem/hvab048. PMID: 33876239; PMCID: PMC8260186.

3755 Illinois Avenue, St. Charles, IL 60174-2420

800.323.2784 (US AND CANADA) | 630.587.7860 (FAX) | +1.630.377.8139 (GLOBAL) | info@doctorsdata.com | doctorsdata.com