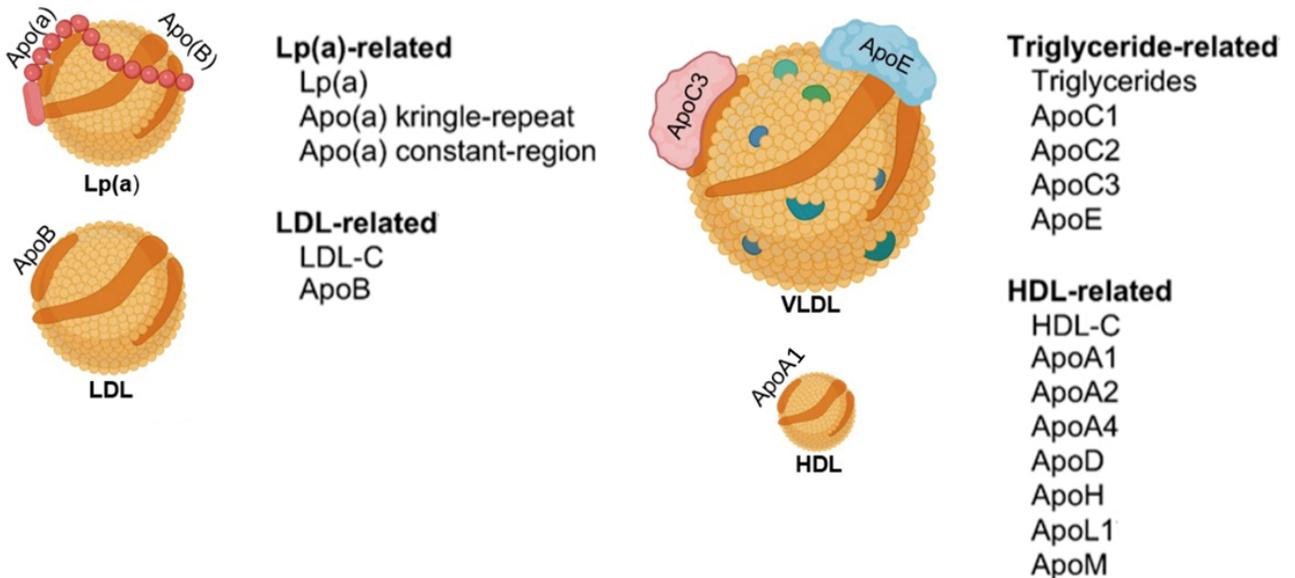**Apolipoprotein Proteomics for Residual Lipid-Related Risk in Coronary Heart Disease.**

Clarke R, Von Ende A, Schmidt LE, Yin X, Hill M, Hughes AD, Pechlaner R, Willeit J, Kiechl S, Watkins H, Theofilatos K, Hopewell JC, Mayr M; PROCARDIS Consortium.

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Lp(a)-related
Lp(a)
Apo(a) kringle-repeat
Apo(a) constant-region

LDL-related
LDL-C
ApoB

Triglyceride-related
Triglycerides
ApoC1
ApoC2
ApoC3
ApoE

HDL-related
HDL-C
ApoA1
ApoA2
ApoA4
ApoD
ApoH
ApoL1
ApoM

Key findings:

- Triglyceride-carrying apolipoproteins (ApoC1, ApoC3, and ApoE) and ApoB are strongly associated with the risk of CHD, independent of conventional lipid measures.
- ApoA4 and ApoM are inversely related to CHD, independent of conventional lipid measures.
- Lipoprotein(a) association with CHD, measured using peptides from the Apo(a)-kringle repeat and Apo(a)-constant regions, was not different from the association with conventionally measured lipoprotein(a).
- The disease associations with all apolipoproteins were directionally consistent in the PROCARDIS and Bruneck studies.
- **Apolipoproteins could help identify patients with residual lipid-related risk and guide personalized approaches to CHD risk reduction beyond statin therapy.**
- **A single, standardized mass spectrometry assay targeting a comprehensive panel of apolipoproteins affords an alternative to measuring individual apolipoproteins by different immunoassays.**