

Abstract

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Small dense low-density lipoprotein and its role as an independent predictor of cardiovascular disease.

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PURPOSE OF REVIEW: This review discusses whether the relationship of small dense low-density lipoprotein to cardiovascular risk is direct, due to the atherogenic properties of the particle, or a reflection of concomitant abnormalities in high-density lipoprotein and plasma triglyceride.

RECENT FINDINGS: Recent studies have examined whether low-density lipoprotein size distribution or concentration of small low-density lipoprotein is related more strongly to risk. It appears that the latter is a better predictor in major surveys, although in smaller cohort studies particle size shows a strong association with atherosclerosis burden. While the main causes of the formation of small dense low-density lipoprotein are relatively well understood, novel metabolic factors may also play a role, and pharmacologic interventions such as glitazones may have a direct regulatory impact.

SUMMARY: Evidence links abnormalities in low-density lipoprotein structure to cardiovascular risk. The plasma concentration of small dense low-density lipoprotein is likely to be more informative than relative low-density lipoprotein particle size, and although methods are available for quantitation of this subfraction, there is considerable room for improvement. It is not yet clear how knowledge of the small dense low-density lipoprotein concentration may add to risk prediction.

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