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Supplemental conditionally essential nutrients in cardiovascular disease therapy.

Kendler BS.

Dept. of Biology, CMSV Campus, Manhattan College, Riverdale, NY 10471, USA. barry.kendler@mountsaintvincent.edu

Abstract

Conditionally essential nutrients (CENs) are organic compounds that are ordinarily produced by the body in amounts sufficient to meet its physiological requirements. However, in disorders, such as cardiovascular disease (CVD), and in other physiologically stressful conditions, their biosynthesis may be inadequate. Under these circumstances, CENs become essential nutrients, comparable to vitamins. The CENs of primary importance in CVD, based on the quantity and quality of human clinical studies, are L-arginine, L-carnitine, propionyl-L-carnitine, and coenzyme Q10. Controlled studies of these CENs are reviewed in depth. Taurine is a CEN of secondary importance caused by a limited human database. Other putative CENs include alpha-lipoic acid, betaine, chondroitin sulfate, glutamine, and D-ribose, each of which is mentioned in passing. Collectively, CENs have demonstrated favorable clinical effects in CVDs, including chronic heart failure, myocardial infarction, angina pectoris, and in CVD risk factors, such as hypertension, hyperlipidemia, and lipoprotein(a). Limited research has pointed to possible benefits in CVD therapy accruing from supplementation with several CENs in combination. Additional controlled clinical studies of CENs in CVD are urgently needed. In view of the efficacy and safety of appropriate supplementation with CENs, it is strongly suggested that healthcare professionals become knowledgeable of these potentially important additions to the CVD therapeutic armamentarium.

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