

# Abstract

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## Alpha-lipoic acid and cardiovascular disease.

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**BACKGROUND:** Alpha-lipoic acid (ALA) has been identified as a powerful antioxidant found naturally in our diets, but appears to have increased functional capacity when given as a supplement in the form of a natural or synthetic isolate. ALA and its active reduced counterpart, dihydrolipoic acid (DHLA), have been shown to combat oxidative stress by quenching a variety of reactive oxygen species (ROS).

**DISCUSSION:** Because this molecule is soluble in both aqueous and lipid portions of the cell, its biological functions are not limited solely to one environment. In addition to ROS scavenging, ALA has been shown to be involved in the recycling of other antioxidants in the body including vitamins C and E and glutathione. Not only have the antioxidant qualities of this molecule been studied, but there are also several reports pertaining to its blood lipid modulating characteristics, protection against LDL oxidation and modulation of hypertension. Therefore, ALA represents a possible protective agent against risk factors of cardiovascular disease (CVD).

**SUMMARY:** The objective of this review is to examine the literature pertaining to ALA in relation to CVD and describe the most powerful actions and potential uses of this naturally occurring antioxidant. Despite the numerous studies on ALA, many questions remain relating to the use of ALA as a supplement. There is no consensus on dosage, dose frequency, form of administration, and/or preferred form of ALA. However, collectively the literature increases our understanding of the potential uses for supplementation with ALA and identifies key areas for future research.

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