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Carotenoids and cardiovascular disease.

[Riccioni G.](#)

Cardiology Unit, San Camillo de Lellis Hospital, Manfredonia (FG), Italy. griccioni@hotmail.com

Abstract

Carotenoids are a class of natural fat-soluble pigments found principally in plants. They have potential antioxidant biological properties due to their chemical structure and interaction with biological membranes. The most abundant carotenoids in the diet are beta-carotene, lycopene, lutein, beta-cryptoxanthin, zeaxanthin, and astaxanthin. Numerous epidemiologic studies have supported the hypothesis that antioxidants could be used as an inexpensive means of prevention, and possibly treatment, of cardiovascular diseases, even though findings from interventional trials have been mixed, with some positive findings, many null findings, and some suggestion of harm in certain high-risk populations. Recent smaller interventional studies with carefully chosen populations, such as those under high levels of oxidative stress, have yielded largely positive results. This suggests that we need more hypothesis-driven and rigorous clinical trial designs. The aim of this review is to examine the published studies about the use of carotenoids, especially lycopene and astaxanthin, in the treatment of cardiovascular diseases.

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