Abstract

Title: Walnuts lower a high level of LDL cholesterol in adults - A systematic review

Author: Emma Albinsson and Jessica Nyström

Supervisor: Frode Slinde

Examiner: Anna Winkvist

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Background: The most common cause of death globally and nationally is cardiovascular disease (CVD). A high low density lipoprotein (LDL) cholesterol can contribute to the development of CVD. According to the Nordic Nutrition Recommendations 2012, an exchange of saturated to unsaturated fats may lower LDL cholesterol. Walnuts are rich in unsaturated fats but also contain other components can counteract the development of CVD.

Objective: The objective of this systematic review was to evaluate the evidence whether a high level of LDL cholesterol can be lowered by an intake of walnuts.

Search strategy: The literature search was performed in the databases PubMed and Scopus. Keywords and MeSH terms like “walnut”, juglandaceae, “LDL” and lipoproteins were used. Snowballing was performed to find more relevant articles.

Selection criteria: Inclusion criteria were RCT in English or Swedish, original articles, human studies, adults with a LDL cholesterol >3 mmol/L, intervention with walnuts and reported LDL cholesterol at baseline and at follow-up. The exclusion criteria were short-term studies (shorter than three weeks), studies where participants had a significant weight loss (p <0,05) and when the intervention were walnuts other than in its natural form like walnut oil or walnut extract in capsules.

Data collection and analysis: Three RCT with crossover design were included and examined for quality according to the SBU’s “Template for review of randomized trials”. One of the studies was excluded due to low-moderate study quality. The evidence rating was carried out with the University of Gothenburg’s “Template foundation of the compiled evidence” according to GRADE.

Main results: Both studies showed a significant decrease in LDL cholesterol, about -10%, during the intervention period with walnuts.

Conclusions: There is high evidence (++++) that a high level of LDL cholesterol in adults is lowered within six weeks by eating a walnut-rich diet compared to a diet without walnuts.

Keywords: Walnuts, LDL, cholesterol, cardiovascular disease