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Abstract

Title: Does coconut fat have beneficial effects on blood cholesterol in healthy adults? - a systematic review

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Background
Coconut fat has gained a lot of attention for its claimed beneficial effects concerning health. Its fat content is made up of approximately 90% saturated fatty acids. The intake of saturated fats affects blood cholesterol levels. Cholesterol can be measured through total cholesterol (TC), Low Density Lipoprotein (LDL), High Density Lipoprotein (HDL), Very Low Density Lipoprotein (VLDL) and LDL/HDL ratio. Research has been done on single fatty acids from coconut fat and positive results regarding health have been reached. However it is important to elucidate that conclusions based on studies made on single fatty acids may differ from coconut fat as a whole.

Objective
The aim of this systematic review was to investigate how a diet rich in coconut fat would affect blood cholesterol levels when it came to TC, LDL, HDL and the LDL/HDL-ratio.

Search strategy
The databases PubMed and Scopus were used in the literary search process for relevant articles. Search words of importance for the systematic reviews’ research question were applied.

Selection criteria
RCT, CCT and cohort studies from 1990 to present, both investigating coconut fat vs. other fats as well as coconut fat vs. placebo were considered. Studies including pregnant women, participants using drugs that influenced blood lipid metabolism or studies on single fatty acids were excluded.

Data collection and analysis
Appropriate materials were selected and three final studies were chosen, two RCT and one CCT. The study quality and the strength of evidence of the endpoints were based upon the validation template Granskningsmall för randomiserade studier, Granskningsmall för observationsstudier och icke-randomiserade kontrollerade studier and Sammanfattande Evidensformulär.

Main results
The test diets rich in coconut fat (SFA diets) led to significantly higher TC and LDL levels compared to diets rich in HUFA (safflower oil, soya-bean oil or a HUFA mix). Only one study showed significantly higher HDL levels in all its subjects after a coconut fat diet. TC and LDL were significantly higher on a butter diet compared to a coconut fat diet (SFA versus SFA). The LDL/HDL ratio was lower after the HUFA mix diet compared to the SFA diets.

Conclusions
Coconut fat as the main fat in the diet significantly increases TC and LDL levels, which is today not considered beneficial regarding blood cholesterol in relation to health. The outcomes on HDL levels however differ between the studies. The LDL/HDL ratio is higher when comparing coconut fat diets with a HUFA diet. The strength of evidence regarding coconut fat’s effect on TC, LDL and HDL is measured mediate-high (+++) and for LDL/HDL ratio low (++).