Abstract

Title: Trans fatty acids from ruminants - and its effect on blood lipid profile in healthy men and women
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Programme: Dietician study programme, 180/240 ECTS
Type of paper: Examination paper, 15 hp
Date: May 23, 2012

Background
Cardiovascular disease is the most common cause of death in Sweden. It is well known that there is a link between high consumption of industrial trans fatty acids and cardiovascular disease, but how natural trans fatty acids affect us remains uncertain.

Objective
The purpose of this article is to, based on the currently available scientific evidence, conclude whether an intake of trans fatty acids from ruminants generates an effect on the blood lipid profile of healthy men and women.

Search strategy
RCT articles were obtained through searches in databases such as PubMed, The Cochrane Library, and Scopus. Keywords used were "ruminants" AND "Cholesterol" AND "Trans Fatty Acids" and "ruminants" AND "Blood Lipids" AND "Trans Fatty Acids".

Selection criteria
Inclusion criteria were RCT studies conducted on healthy people who did not receive medication for hyperlipidemia. Moreover, the results were to be based on fasting blood samples, where at least ten hours of fasting preceded the analysis of the blood lipids.

Data collection and analysis
The search generated eight studies. These were graded according to SBU:s Granskningsmall för randomiserad kontrollerad prövning, after which four studies were selected. The results of the chosen studies were then put together and evaluated according to GRADES sammanfattande evidentformulär.
Main results
According to SBU:s granskningsmall för randomiserad kontrollerad prövning three of four studies were considered to have medium study quality, whereas the fourth had high study quality. The overall security of the evidence for selected outcome measures was evaluated to have moderate (+++ evidence strength according to GRADE. Three studies found a significant elevation of LDL cholesterol and total cholesterol after consumption of rTFA. Three of the studies showed a significant lowering of HDL cholesterol. One study observed significant differences in the blood lipid profile between men and women. Another study noticed significant differences in blood lipid levels between normal weight and overweight women. The amounts of trans fat used in the different studies were crucial to the outcome.

Conclusions
A consumption that exceeds the recommended intake of rTFA can affect blood lipids since significant effects on several markers of the blood lipid profile have been observed (moderate evidence strength +++). The scientific data has however displayed significantly different results, hence impeding any general scientific conclusion.