

Popular scientific abstract

Health effects of palm oil – from science to public health¹

Palm oil is a common source of fat used by the food industry. It's cheap and neutral in flavour, has a long shelf life and has several desirable technical qualities. However, the widespread use of palm oil is questioned from an environmental and sustainability perspective, and also from a health perspective. The reason that palm oil is questioned from a health perspective is that palm oil has a high content of saturated fat, especially the saturated fatty acid palmitic acid.¹

High intake of saturated fatty acids affects cholesterol levels in the blood, including increased levels of LDL cholesterol. LDL cholesterol is prone to form plaques in the arteries, and high levels are a known risk marker for heart disease and cardiovascular disease. Several large scientific literature reviews have shown that a high intake of saturated fatty acids, particularly myristic acid, lauric acid and palmitic acid, is associated with increased levels of LDL cholesterol. It has also been shown that decreased levels of LDL cholesterol reduce the risk of heart disease. A high intake of polyunsaturated fatty acids is linked to lower levels of LDL cholesterol. According to WHO and the Nordic Nutrition Recommendations 2012 (NNR 2012), which the Swedish dietary recommendations are based upon, intake of saturated fatty acids should be limited in favour of polyunsaturated fatty acids.

The scientific evidence regarding the effects of palm oil on blood lipids is limited. However, a comprehensive literature review from 2013 found that palm oil raises LDL cholesterol to a greater extent than other vegetable oils containing a higher proportion of unsaturated fatty acids, such as rapeseed oil, sunflower oil and olive oil. A scientific review paper published in 2014 found that replacing palm oil for fats containing either other saturated fatty acids or unsaturated fatty acids resulted in both favourable and unfavourable effects on the blood lipids. The effects depend on the replacement fat and how much and how often the food in question is consumed.

In Sweden the most common sources of palm oil are buttery spreads (soft margarine spreads), margarine, cookies, cakes, wheat bread and pastries. In other words, these are foods we should limit our intake of, as they have a high energy content and contain no or very few nutrients. NNR 2012 recommends that the intake of saturated fat not exceed 10 percent of our daily energy intake. According to the Swedish dietary survey *Riksmaten 2010–2011*, saturated fatty acids contribute 13 percent of the daily energy intake in the average Swede. Hence, Swedes consume more saturated fat than is recommended.

There are no exact figures on the consumption of palm oil in Sweden. In cooperation with the Swedish Food Administration, estimated data on the intake of palmitic acid have been produced for this report. According to *Riksmaten 2010–2011*, Swedes eat five grams of palmitic acid from vegetable sources per day. According to *Matkorgen 2010* (a study on the content of nutrients and undesirable substances in the average Swede's food basket), the

¹ The full report (in Swedish) is available on SNF's homepage: http://snf.ideon.se/palmolja_2014/

intake of palmitic acid from vegetable sources is eight grams per day. However, there is no exact data on the intake of palmitic acid from palm oil specifically (five grams of palmitic acid is equivalent to 12 grams of palm oil). Palmitic acid from vegetable sources includes palmitic acid from palm oil but also from other plant-based sources, such as cocoa butter and soybean oil.

Based on current scientific knowledge, there is no evidence that exchanging palm oil for other fats/oils with high proportions of saturated fatty acids and with similar technical and sensory characteristics as palm oil would provide a substantial beneficial effect on Swedish public health. Instead of focusing on the intake of palmitic acid or other individual saturated fatty acids, there should be a focus on ensuring the quality of the overall diet. The intake of saturated fatty acids should be limited in favour of polyunsaturated fatty acids, in accordance with the NNR 2012 recommendations.

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