Saturated fat may not be associated with a greater health risk whilst trans fat could have a role

09 March 2015

A team of researchers from Canada conducted a large study on the health effects of both saturated and trans fatty acid consumption. They combined data from 70 previously conducted observational studies and looked at the associated roles of these fatty acids in increasing the risk of death, cardiovascular disease, coronary heart disease, stroke and type 2 diabetes. Overall findings suggested that eating higher amounts of saturated fat was not associated with an increased risk in comparison to lower amounts for these health outcomes. The consumption of higher amounts of trans fat was associated with an increased risk. The authors are cautious drawing conclusions and point to methodological limitations of the included studies and to the fact that these observational studies cannot provide evidence for a cause and effect relationship. Moreover, they warn that one must carefully consider the effects of alternative foods before amending dietary guidelines for saturated and trans fatty acids.

It was the World Health Organization (WHO) who commissioned the current study, which serves as the background evidence review for updating WHO guidelines on saturated and trans fatty acids. Current guidelines recommend that saturated fatty acids should be limited to less than 10% energy in the diet, but the current consumption levels in Europe are higher than that. These fatty acids are found in animal-based foods such as meat, eggs, dairy products and also in some plant-based foods like cacao and coconut. Trans fatty acids contribute 1–2% of the average diet and are either produced through a partial hydrogenation process of liquid plant oils, or occur naturally in animal products such as meat and dairy. The advice is to minimise the intake of trans fats from any source. For more background information on fats, read EUFIC’s Review Facts on Fats - the Basics.

The results of this study seem to confirm previous reviews based on the effects of saturated and trans fats. There was no correlation found between the dietary levels of saturated fats and an increased risk of death, cardiovascular disease, coronary heart disease, stroke or type 2 diabetes. Total trans fat intake was associated with an increased risk of death (34%), death from coronary heart disease (28%), and development of coronary heart disease (21%). There was no relationship with increased risk of stroke or type 2 diabetes.

Determining whether industrially produced or animal derived trans fat was responsible for this increase proved difficult for the researchers given the small number of studies available in this area. A slightly increased risk for coronary heart disease was observed for higher levels of industrially produced trans fat, whereas trans fats from dairy sources were found to somewhat reduce the risk of heart disease and type 2 diabetes. However it was highlighted that this may be due to the difference in the levels of consumption, as animal derived trans fats were consumed at relatively low levels in comparison to industrially produced trans fats that were consumed between twice and five times more.

The authors emphasised that it was a review of observational studies and therefore could not provide
causal evidence of an effect of saturated or trans fat on the development of the health outcomes examined, and only describes potential associations. The reviewed publications for this study typically relied on different dietary assessment tools (including food frequency questionnaires, 24 hour recalls, or seven day food records), of which all have the potential to limit the accuracy of long term dietary fat intakes. Measurement error is often present in these types of studies and can lead to bias in the results.

Important when the authors assessed the quality of the evidence, and thus the certainty of the associations, according to the GRADE (Grading of Recommendations Assessment, Development and Evaluation) system, they found that the quality was very low for saturated fat, and very low to moderate for trans fats. This affects the levels of confidence of the findings and one has to be careful when drawing conclusions.

The authors note that the common recommendations for both saturated and trans fatty acids still apply: “we aren’t advocating an increase of the allowance for saturated fats in dietary guidelines, as we don’t see evidence that higher limits would be specifically beneficial to health.” Also, “if we tell people to eat less saturated or trans fats, we need to offer a better choice. Unfortunately, in our review we were not able to find as much evidence as we would have liked for a best replacement choice”. As summarised in the recent EUFIC Review - Dietary Fats and Health, there seems to be a consensus in scientific community that the best replacement for saturated fats is with PUFA.

Other expert opinions suggest that, rather than specific nutrients, it is the combination of nutrients that contribute to an overall risk, and that their relationships need to be investigated thoroughly before single nutrients can be deemed safe. More expert views on this specific study can be found here: http://www.sciencemediacentre.org/expert-reaction-to-review-investigating-the-effects-of-trans-unsaturated-fats-and-saturated-fats-on-health/.

For further information please see: