



Consultation on the SACN draft report Saturated Fats and Health Report

Comments Form

Organisation:	Dairy UK
Name of commentator and contact details:	Erica Hocking

- Please do not PDF the form.
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Closing date: 5pm 3 July 2018

General comments	Comments
Saturated fatty acids	<p>Please insert each new comment in a new row</p> <p>Saturated fat is a diverse family of fatty acids all with varying effects on health, some have a neutral or beneficial effect on health and disease risk, however the effects of individual fatty acids are missing from this report.</p> <p>For example studies show pentadecanoic acid (C15:0) and heptadecanoic acid (C17:0) (fatty acids found in dairy and biomarkers of dairy intake) have an inverse relationship with CVD and T2DM (Pfeuffer M & Jaudszus A, 2016, Jenkins et al., 2015). This highlights that not all saturated fatty acids are created equally, nor should they be addressed as a single nutrient.</p> <p>References:</p> <ul style="list-style-type: none"> Pfeuffer M & Jaudszus A (2016). Pentadecanoic and Heptadecanoic Acids: Multifaceted Odd-Chain Fatty Acids. <i>Advances in Nutrition</i>, Volume 7(4), 730–734, Jenkins B, West J.A and Koulman A (2015). A Review of Odd-Chain Fatty Acid Metabolism and the Role of Pentadecanoic Acid (C15:0) and Heptadecanoic Acid (C17:0) in Health and Disease. <i>Molecules</i>, 20(2), 2425-2444;
Foods containing saturated fats	<p>We consume foods and meals, and follow dietary patterns, therefore setting guidelines and recommendations based on the evidence of single nutrients is unhelpful, particularly in terms of forming food-based guidelines. The effects of foods containing saturated fatty acids on health are not evaluated in this report.</p> <p>Foods are more than their sum of nutrients, and we do not eat nutrients in isolation. Saturated fats are often found in the presence of other unsaturated fatty acids and nutrients such as calcium, protein and carbohydrates.</p> <p>Nutrients within the food matrix can interact with saturated fats and their overall metabolic effect/role. For example, studies show that calcium in dairy can bind to saturated fat, therefore reducing the amount of saturated fat that is absorbed by the body^[1].</p> <p>There is a large and growing body of evidence, including several systematic reviews and meta-analyses, related to the role of foods on cardiovascular-related outcomes^[2-17].</p> <p>In addition, foods naturally containing fatty acids within their matrix may not be modifiable or easily adjusted without significant processing. Therefore recommending the reduction or increase of a single nutrient will result in the need for modification of the overall diet and may inertly encourage the population to decrease their consumption of whole foods which can provide a nutrient-rich package.</p> <p>References:</p> <ol style="list-style-type: none"> Bendsen NT, Hother AL, Jensen SK, Lorenzen JK, Astrup A (2008). Effect of dairy calcium on fecal fat excretion: a randomized crossover trial. <i>Int J Obes (Lond)</i>.32(12):1816-24. Javanbakht M, Jamshidi AR, Baradaran HR, Mohammadi Z, Mashayekhi A, Shokrane F, Rezai Hamami M, Yazdani Bakhsh R, Shabaninejad H,

	<p>Delavari S, Tehrani A. (2018). Estimation and Prediction of Avoidable Health Care Costs of Cardiovascular Diseases and Type 2 Diabetes Through Adequate Dairy Food Consumption: A Systematic Review and Micro Simulation Modeling Study. <i>Arch Iran Med</i>.1;21(5):213-222.</p> <ol style="list-style-type: none"> 3. Gholami F, Khoramdad M, Shakiba E, Alimohamadi Y, Shafiei J, Firouzi A (2017) Subgroup dairy products consumption on the risk of stroke and CHD: A systematic review and meta-analysis. <i>Med J Islam Repub Iran</i>. 27;31:25. 4. Gholami F, Khoramdad M, Esmailnasab N, Moradi G, Nouri B, Safiri S, Alimohamadi Y.(2017) The effect of dairy consumption on the prevention of cardiovascular diseases: A meta-analysis of prospective studies. <i>J Cardiovasc Thorac Res.</i>;9(1):1-11. 5. Guo J, Astrup A, Lovegrove JA, Gijbbers L, Givens DJ, Soedamah-Muthu SS (2017). 6. Milk and dairy consumption and risk of cardiovascular diseases and all-cause mortality: dose-response meta-analysis of prospective cohort studies. <i>Eur J Epidemiol</i>;32(4):269-287. 7. Wu L, Sun D. (2017). Consumption of Yogurt and the Incident Risk of Cardiovascular Disease: A Meta-Analysis of Nine Cohort Studies. <i>Nutrients</i> 22;9(3). 8. Drouin-Chartier JP, Brassard D, Tessier-Grenier M, Côté JA, Labonté ME, Desroches S, Couture P, Lamarche B. (2016) Systematic Review of the Association between Dairy Product Consumption and Risk of Cardiovascular-Related Clinical Outcomes. <i>Adv Nutr</i>; v 15;7(6):1026-1040 9. Liang J, Zhou Q, Kwame Amakye W, Su Y, Zhang Z. (2017) Biomarkers of dairy fat intake and risk of cardiovascular disease: A systematic review and meta analysis of prospective studies. <i>Crit Rev Food Sci Nutr</i>;3;58(7):1122-1130 10. Smith CE, Coltell O, Sorlí JV, Estruch R, Martínez-González MÁ, Salas-Salvadó J, Fitó M, Arós F, Dashti HS, Lai CQ, Miró L, Serra-Majem L, Gómez-Gracia E, Fiol M, Ros E, Aslibekyan S, Hidalgo B, Neuhauser ML, Di C, Tucker KL, Arnett DK, Ordovas JM, Corella D. (2016) Associations of the MCM6-rs3754686 proxy for milk intake in Mediterranean and American populations with cardiovascular biomarkers, disease and mortality: Mendelian randomization. <i>Sci Rep</i>;14;6:33188. 11. Chen GC, Wang Y, Tong X, Szeto IMY, Smit G, Li ZN, Qin LQ (2017). Cheese consumption and risk of cardiovascular disease: a meta-analysis of prospective studies. <i>Eur J Nutr</i>. 2017 Dec;56(8):2565-2575. 12. Pimpin L, Wu JH, Haskelberg H, Del Gobbo L, Mozaffarian D (2016). Is Butter Back? A Systematic Review and Meta-Analysis of Butter Consumption and Risk of Cardiovascular Disease, Diabetes, and Total Mortality. <i>PLoS One</i>;29;11(6):e0158118. 13. Alexander DD, Bylsma LC, Vargas AJ, Cohen SS, Doucette A, Mohamed M, Irvin SR, Miller PE, Watson H, Fryzek JP (2016). Dairy consumption and CVD: a systematic review and meta-analysis - CORRIGENDUM. <i>Br J Nutr</i>;115(12):2268 14. Alexander DD, Bylsma LC, Vargas AJ, Cohen SS, Doucette A, Mohamed M, Irvin SR, Miller PE, Watson H, Fryzek JP (2016). Dairy consumption and CVD: a systematic review and meta-analysis. <i>Br J Nutr</i>;115(4):737-50. Review. Erratum in: <i>Br J Nutr</i>. 2016 Jun;115(12):2268. 15. Tapsell LC (2015) Fermented dairy food and CVD risk. <i>Br J Nutr</i>;113 Suppl 2:S131-5. 16. Qin LQ, Xu JY, Han SF, Zhang ZL, Zhao YY, Szeto IM (2015). Dairy consumption and risk of cardiovascular disease: an updated meta-analysis of prospective cohort studies. <i>Asia Pac J Clin Nutr</i>;24(1):90-100. d 17. Soedamah-Muthu SS, Ding EL, Al-Delaimy WK, Hu FB, Engberink MF, Willett WC, Geleijnse JM (2011). Milk and dairy consumption and incidence of cardiovascular diseases and all-cause mortality: dose-response meta-analysis of prospective cohort studies. <i>Am J Clin Nutr</i>;93(1):158-71.
SFA & LDL as a marker of CVD	There are many factors associated with increased circulating LDL cholesterol and targeting dietary SFA for CVD is not justified by the totality of the available evidence.
HDL Cholesterol	RCTs looking at the effects of lipids after consuming cheese versus reduced fat cheese and whole milk versus skimmed milk show no significant difference in LDL cholesterol, however they suggest whole fat products increase

	<p>HDL cholesterol ^[18-19]. Increased concentration of HDL has been linked to reduced risk of CVD, however this report does not look at the effects of foods on HDL.</p> <p>References:</p> <p>18. Raziani F, Tholstrup T, Kristensen MD, Svanegaard ML, Ritz C, Astrup A, Raben A (2016). High intake of regular-fat cheese compared with reduced-fat cheese does not affect LDL cholesterol or risk markers of the metabolic syndrome: a randomized controlled trial. <i>The American Journal of Clinical Nutrition</i>, 104(4) 973–981,</p> <p>19. Engel S, Elhauge M, Tholstrup T (2018). Effect of whole milk compared with skimmed milk on fasting blood lipids in healthy adults: a 3-week randomized crossover study. <i>European Journal of Clinical Nutrition</i>. 72;249–254</p>
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Please add extra rows as needed

Comments by paragraph	Comments
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Pages: 9, 10, 11 , 12, 13 & 14	A declaration of interests and conflicts of interests of the authors and members is missing from this section, please enclose full disclosure for all.
Section 2 2.2 / 2.3	The strict guidelines for data collection may have missed the opportunity to include recent RCTs not covered by meta-analysis or systematic reviews.
2.18	There's an acknowledgement that saturated fat is a collective term for a diversity of fatty acids with potentially varying effects on non-communicable disease outcomes and risk factors, but this was not addressed in the report. Addressing the diversity of each saturated fatty acid is essential to these guidelines as there may be a profound bearing on how SFA from some foods, such as milk, is perceived and how dietary food-based guidelines based on single nutrients is developed.
2.18	There is a large and growing body of evidence, including several systematic reviews and meta-analyses, related to the role of foods and the food matrix on health-related outcomes which are not included in this report, and therefore limits the evidence that has been evaluated.
3	Not all fat is metabolised or absorbed by the body for energy, section three is missing information on fat excretion and its effects in the presence of other nutrients.
3	The effects of long chain fatty acids, short chain fatty acids, even chain fatty acids and odd chain fatty acids on health and disease risk may differ but this is not included in this section.
3.27	Carbohydrates can be converted into saturated fatty acids in the body, what is the potential effect on health from carbohydrate storage and conversion to SFA? Is this more of a risk factor than food sources? For example, one could avoid saturated fat in the diet but still have high amounts of saturated fat in stores via carbohydrate consumption.
5.6	Include grams of saturated fat as well as percentages.
5.9 and 5.10 and 5.16	Whilst milk and milk products contribute 22% of saturated fat intakes to adults (19 – 64 years) and children aged 11-18 years, and 31% to children age 4-10 years, they are nutrient dense products and contribute the most B12, B2, iodine and calcium to the diet and significant amounts of vitamin A and zinc. They are also a source of quality protein and contain small amounts on MUFA and PUFA. Their nutrient density is not addressed here.
7.6	Trans fats come from two sources, industrial and ruminant, they do not have equal effects on health. Industrial TFA, found in processed foods, are associated with increased risk of CHD. Studies on ruminant TFA on the other hand are

	<p>mixed with most showing no association with CHD. However, it is not possible to consume the amount of ruminant TFA in a normal diet at levels that would contribute to a detrimental effect.</p>
16.6	<p>SACN recommends substituting SFA intake with PUFA may reduce risk of a number of cardiovascular outcomes, but evidence from RCTs and PCS is mixed. There is no support for an effect of substituting SFA intake with PUFA on type 2 diabetes, cancer and cognitive outcomes. SACN does not present evidence supporting a benefit of substituting SFA with MUFA or carbohydrate on cardiovascular outcomes.</p>
16.6	<p>In terms of risk factors from RCTs only, there is evidence that reducing SFA intake, and replacing SFA with PUFA, MUFA or carbohydrate reduces total and LDL cholesterol. In each scenario, however, a reduction in HDL is also observed.</p> <ol style="list-style-type: none"> The evidence linking SFA to non-communicable chronic disease is not equivocal or unilateral. We are concerned the recommendations may be miscommunicated as relevant for all cardiovascular outcomes, type 2 diabetes, cancer, cognitive outcomes, non-communicable disease or, indeed, 'health' The strength of the evidence for the recommendations is from studies of risk factors, rather than disease outcomes; and the major risk factor upon which recommendations are derived is LDL cholesterol. The heterogeneity within LDL particles is not addressed, including the particularly atherogenic nature of small dense LDL. We are concerned that the recommendations are largely based on LDL risk factor data rather than disease outcomes. The evidence suggests reducing/replacing SFA has a detrimental effect on HDL cholesterol. This is not discussed adequately in the report The evidence indicates that replacing SFA with MUFA or carbohydrate is not warranted as a guideline
16.6	<p>The recommendation is aligned to qualitative recommendations on MUFA that are not substantiated in the report, and a food-based dietary guideline that conveys a different saturated fat recommendation.</p> <p>There is very little evidence to support substitution of saturated fat with PUFA or MUFA in this study, and certainly none concerning MUFA and non-communicable chronic disease outcomes. The current wording of the recommendations should reflect this.</p>
16.7	<p>The recommendation is made in context of existing dietary values, however, there is no further note on the nutrient richness of foods that contribute to SFA intakes in the recommendations. Although it may be argued that SACN's remit was to provide a nutrient guideline, their final recommendations endorse a food-based dietary guideline.</p>
16.7	<p>The Eatwell Guide is endorsed as representing SACN recommendations on saturated fat. Changes from the Eatwell Plate to the Eatwell Guide included increasing carbohydrate intake (from 54% to 58% energy) and reducing saturated fat intake (10% to <u>8% energy</u>), as analysed by Scarborough et al (2016). The evidence presented in this report</p>

	suggests that replacing saturated fat with carbohydrate may not be beneficial and currently does not reflect SACN recommendations in this report.
16.9	SACN recommends reducing SFA intake reduces risk of cardiovascular events and coronary heart disease events. There is no support for an effect of reducing SFA on cardiovascular disease mortality, stroke, peripheral vascular disease, blood pressure, type 2 diabetes, and the range of cancers and cognitive outcomes investigated.

Please add extra rows as needed