Proceedings of the Nutrition Society (2023), **82 (OCE2)**, E49 doi:10.1017/S0029665123000587

46th Annual Scientific Meeting of the Nutrition Society of Australia, 29 November – 2 December 2022, Sustainable nutrition for a healthy life

The association between dairy foods and the risk of cardiovascular diseases: a concern in middle age?

D.I. Givens[1]
[1]*Institute for Food, Nutrition and Health, University of Reading, Reading RG6 5EU, United Kingdom.*

Cardiovascular diseases (CVD) remain a major cause of death and morbidity in many parts of the world and many dietary guidelines limit the intake of saturated fatty acids (SFA) as they are regarded as an important risk factor for CVD due to their association with increased blood cholesterol. Dairy foods are often a major contributor to dietary intake of SFA and since many dietary guidelines contain restrictions on SFA intake, this can lead a moderation of dairy food intake despite meta-analyses generally showing dairy to have a neutral or negative association with CVD.[(1)] Many prospective studies and randomised controlled trials (RCT) do not support a simple positive association between SFA intake and the risk of atherosclerotic CVD and its components, although some early studies had a number of methodological weaknesses. Studies which included blood cholesterol data do broadly support the positive relationship between SFA and blood low density lipoprotein-cholesterol (LDL-C) but without increased CVD risk resulting, despite LDL being a causal factor in atherosclerotic CVD.[(2)] These data suggest that LDL-C alone is not a consistently good predictor or cause of CVD risk, perhaps particularly in relation to dairy food consumption although some non-dairy food studies have also shown LDL-C reduction was not reflected in reduced CVD risk. This creates considerable doubt, at least for dairy foods, concerning the validity of the traditional diet-heart hypothesis which positively relates SFA intake to increased serum LDL-C and subsequent increased CVD. There is now some emerging evidence to explain this which is highly relevant to dairy foods including the potentially counterbalancing effect of SFA-stimulated high density lipoprotein cholesterol (HDL-C), specific food matrix factors,[(3)] and SFA being associated with the less atherogenic large buoyant LDL particles[(4)] and possible counterbalancing hypotensive effects of dairy proteins. Many parts of this emerging evidence are not fully understood or confirmed in adequately powered studies but do point to a need for more food-based dietary recommendations and several respected groups have provided convincing arguments for this and not by simple limits on SFA intake. Direct or consequential restrictions on dairy food consumption do not seem warranted in middle age but there remains a clear need to better understand the association of the different dairy food types with CVD and other diet-responsive non-communicative chronic diseases.

References

1. Soedamah-Muthu SS, de Goede J (2018) *Curr Nutr Rep* **7**, 171-182.
2. Borén JM, Chapman J, Krauss RM, *et al.* (2020). *Eur Heart J* **41**, 2313–2330.
3. Thorning TK, Bertram H, Bonjour J-P *et al.* (2017) *Am J Clin Nutr* **105**, 1033–1045.
4. Froyen E (2021) *Lipids Health Dis* **20**, 86.