

Abstract

Cite this article: Kanon A, Spies J, Macgibbon A, and Fuad M (2025). The use of Milk Fat Globule Membrane in lowering blood lipid levels in adults: results from a meta-analysis of randomized controlled trials. *Proceedings of the Nutrition Society* **84**(OCE2): E188. doi: [10.1017/S002966512510044X](https://doi.org/10.1017/S002966512510044X)

The use of Milk Fat Globule Membrane in lowering blood lipid levels in adults: results from a meta-analysis of randomized controlled trials

A. Kanon¹, J. Spies¹, A. Macgibbon² and M. Fuad²

¹University College Cork, College Rd, University College, Cork, Ireland and ²Fonterra Research and Development Centre, Private Bag 11029, Dairy Farm Road, Palmerston North 4472, New Zealand

Cardiovascular diseases (CVD) are the leading cause of mortality worldwide, with impaired lipids levels being a significant risk factor ⁽¹⁾. This meta-analysis provides comprehensive insights on the impact of bovine dairy-derived milk fat globule membrane (MFGM) supplementation on blood lipid profiles in adults. A systematic search was conducted across various databases (including PubMed, Scopus, Web of Science, the Cochrane Library, Google Scholar, ACS Publications, Academic Search Index, BMJ Journals, BNP Media, and others) up until March 2024, resulting in the inclusion of six trials with a total of 464 participants. The findings indicate that MFGM phospholipid supplementation may significantly reduce total cholesterol (TC) and low-density lipoprotein (LDL) cholesterol levels. A combined analysis of the effects on TC, LDL and triglycerides (TG) revealed a significant overall reduction in these markers (SMDs = -0.174 ; 95% CI: -0.328 – -0.021 ; $p = 0.026$; $I^2 = 0\%$). However, no significant increase or reduction was observed for high-density lipoprotein (HDL) (SMDs = 0.019 ; 95% CI: -0.289 – 0.326 ; $p = 0.906$; $I^2 = 95.5\%$) and TG levels (SMDs = -0.083 ; 95% CI: -0.198 – 0.033 ; $p = 0.160$; $I^2 = 0\%$). Overall, these results suggest that MFGM supplementation could be a promising dietary intervention for improving lipid profiles in adults. Nonetheless, further research is warranted to confirm these results and to better understand the potential variability in the impact of MFGM on blood lipid levels.

Keywords: MFGM; milk phospholipids; blood lipid; cholesterol; gangliosides; metabolic health; meta-analysis

Ethics Declaration: Yes

Conflict of Interest: MF, JS, and AM are employed by the Fonterra Cooperative group; a dairy company. AK used to work for Fonterra when this meta-analysis was conducted.

References

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