# **Special Issue**

# Lipids and Fatty Acids: Their Interrelationship with Metabolic Syndrome

# Message from the Guest Editors

Metabolic syndrome is a multifactorial condition characterized by central obesity, insulin resistance, hypertension, and dyslipidemia, all of which increase the risk of type 2 diabetes and cardiovascular disease. Lipids and fatty acids play a central role in the pathophysiology of metabolic syndrome. Elevated circulating triglycerides, increased free fatty acids, and altered lipoprotein metabolism contribute to insulin resistance and endothelial dysfunction. Saturated fatty acids promote inflammation, oxidative stress, and ectopic fat deposition, whereas polyunsaturated fatty acids, particularly omega-3, exert protective effects by improving lipid profiles, reducing inflammation, and enhancing insulin sensitivity. Dysregulation in the lipid metabolism, including impaired HDL function and increased small and dense LDL particles, further amplifies cardiometabolic risk. Understanding the mechanistic links between lipid species, fatty acid composition, and metabolic pathways provides insight into targeted therapeutic strategies. Dietary interventions and pharmacological modulation of the lipid metabolism remain promising approaches to prevent and manage metabolic syndrome.

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## Deadline for manuscript submissions

25 May 2026



# **Nutrients**

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Impact Factor 5.0 CiteScore 9.1 Indexed in PubMed



mdpi.com/si/258520

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# Message from the Editorial Board

Nutrients is an on-line open access journal that was first published in 2009. Nutrients adheres to rigorous peer-review and editorial processes and publishes only high quality manuscripts that address important issues related to the impacts of nutrients on human health. The Impact Factor of Nutrients has risen rapidly since its establishment and it is now ranked in the first quartile of journals publishing in the field of nutrition and dietetics research.

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