

Special Issue

Diet, Exercise, and the Metabolic Syndrome: Enrollment of Mitochondrial Machinery

Message from the Guest Editors

Mitochondria are the powerhouses of the cell and play a key role in maintaining homeostasis by finely regulating the balance between energy storage and expenditure. Systemically, in districts such as liver, adipose tissues, skeletal muscle and brain, the network of mitochondria and their closely interacting metabolic enzymes and transcription factors orchestrate nutrient sensing, uptake, transport, storage and usage. Genetic as well as environmental factor-dependent dysfunction of such a system has been reported to result in detrimental effects on lipid metabolism, insulin sensitivity, oxidative capacity and thermogenesis, to develop the escalating condition of metabolic syndrome. Thus, this Special Issue will focus on whether and how healthy diet and exercise prevent and/or counteract metabolic diseases with emphasis on the impacts of dietary composition, feeding frequency, exercise training, and bioactive compounds, on the mitochondrial compartment in metabolically active tissues. We outline the importance of the expected contributions in furnishing new perspectives for translational interventions in specific targeting of metabolic diseases.

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Deadline for manuscript submissions

closed (31 August 2022)



Nutrients

an Open Access Journal
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Impact Factor 5.0
CiteScore 9.1
Indexed in PubMed



mdpi.com/si/83286

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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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