



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

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### **Message from the Guest Editors**

Dear Colleagues,

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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