



Methyl Nutrients and One-Carbon Metabolism in Chronic Diseases

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Message from the Guest Editor

One-carbon metabolism provides one of the most common structural units of organic compounds, the methyl group, and includes the methionine and folate cycles, which are mechanistically co-dependent. Methyl group homeostasis ensures its correct utilization to carry out methylation reactions. S-adenosylmethionine (SAM) is the methyl donor in these reactions involved in multiple cellular functions such as epigenetic control of gene expression, redox defense, or the synthesis of creatinine, polyamine, and phospholipids. Besides methionine and folate, other nutrients that are substrates or cofactors in one-carbon metabolism include other B vitamins, betaine, and choline. Thus, one-carbon metabolism relies on dietary constituents to drive and coordinate the generation of methyl groups for myriad biological outcomes. Notably, changes in SAM-dependent methylation reactions have been linked to chronic diseases.

Authors are invited to submit research, reviews, and hypothesis-driven articles that address topics related to the relationship between nutrients and one-carbon metabolism with an emphasis on susceptibility to chronic diseases.





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