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Micronutrients in the Regulation of Skeletal Muscle Anabolism

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Message from the Guest Editor

Dear Colleagues,

The anabolism of skeletal muscle is regulated by several factors, including resistance exercise, anabolic hormones, and nutrition. Micronutrients (vitamins and minerals) are essential nutrients; they are required for energy metabolism, blood vessel formation and integrity, and bone formation, amongst other functions. They perform these functions by serving as coenzymes/cofactors in diverse reactions, as antioxidants, as essential components of organelles such as the mitochondria, and as building blocks (for example, the role of iron in bone formation).

Several signaling pathways, including the PI3K/AKT and mTORC1 pathways, are critical in regulating muscle anabolism; however, whether and how micronutrients regulate the functions of these pathways in muscle anabolism has been minimally studied. The roles of these nutrients might be regulated by protein synthesis, proteolysis, and or myotube formation. We hope that this collection of articles will help to address this gap and provide insights into novel mechanisms and interventions for optimizing muscle growth and function, either for athletes or in the management of muscle wasting conditions.



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