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Potential Hypoglycemic Effect of Micronutrients Supplementation and Their Role in Regulating Carbohydrate Metabolism in Diabetic Rats

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Abstract:

The rapid increase in the prevalence of diabetes mellitus across the world gives diabetes the status of an epidemic in the 21^{st} century. There is an exponential increase in diabetes patients due to population growth, aging, urbanization, unhealthy eating habits, increasing prevalence of obesity, and physical inactivity. The supplementation of micronutrients and multi-vitamins can play a role in decreasing diabetes complications along with regulating carbohydrate metabolic enzymes and antioxidant status of the liver. A recent study by El-Agamy et al. (2020) revealed the potential hypoglycemic effects of vitamin E, zinc, and selenium supplementation and their role in regulating carbohydrate metabolism in diabetic rats through regulation of Pkm2, GSk3 β gene expression, and in ameliorating the antioxidant status of liver tissues. People with diabetes should be educated about the importance of acquiring daily vitamin and mineral requirements from natural food sources.

Keywords: Hypoglycemic effects, vitamin E, zinc, selenium, supplementation, carbohydrate metabolism.

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