Myths and Facts in Micronutrient Supplements: Minerals

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Food supplements in forms of vitamins, minerals, phytochemicals, or combination of them have been widely used all over the world. Minerals which are commonly consumed are calcium, magnesium, phosphorus, potassium, and other trace elements such as zinc, chromium, copper, iron, and selenium. There are some clearly indications for usage of certain minerals, including iron in prevention and cure of anemia and calcium for increasing bone density and prevention of certain fractures. However, other benefits of mineral supplement in non-deficient population are still controversial.

Some minerals show positive effects in improving insulin function such as selenium, zinc and chromium supplement. Nevertheless, long term effects on plasma glucose and hemoglobin A1c are still conflicting. Usage of mineral supplement for cancer prevention either as sole nutrient or in combination with other vitamins and antioxidants are also inclusive. This may be due to different mixes and doses of vitamins and minerals as well as previous nutrient deficiencies in the studied population. A systematic review and meta-analysis of primary prevention of cause-specific death and incidence of cardiovascular disease and cancer showed no significant risk reduction for any of the outcomes by the multivitamins and minerals supplementation (MVMs) containing selenium, zinc, or magnesium. In pregnancy, iron supplement is indicated in those with low hemoglobin or ferritin level. While, calcium supplementation may reduce the risk of gestational hypertension and preeclampsia. Nonetheless, the confirmation study in larger population is necessary before routine supplementation is recommended.

Although MVMs can improve the intake adequacy of various nutrients, overdosing which usually occurs in those taking single mineral supplement rather than MVMs can also cause some adverse effects. Thus, those who would want to use mineral supplements should carefully follow the “Established Tolerable Upper Intake Level” recommendation.

References

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