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Effects of zinc, magnesium, and chromium supplementation on cardiometabolic risk in adults with metabolic syndrome: A double-blind, placebo-controlled randomised trial

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The prevalence of Metabolic Syndrome (MetS) has been increasing rapidly worldwide. The activities of zinc, magnesium and chromium have a potential association with MetS; therefore, we investigated the effects of zinc, magnesium and chromium supplements on metabolic risk factors in adults with MetS. In this double-blind, placebo controlled randomised study, 32 adults with MetS were included in the zinc, magnesium, and chromium-administered group (n = 16) or the placebo group (n = 16) and received either 300 mg magnesium, 600 µg chromium and 36 mg zinc per day or placebo over a 24-week period. The primary endpoint was the change in the MetS components, including serum glucose, triglyceride and high-density lipoprotein cholesterol levels, blood pressure and waist circumference. Data were analysed using repeated-measures analysis of variance. The metabolic risk factors did not change post-intervention, but the serum C-reactive protein level decreased in the mineral-supplemented group compared with that in the placebo group. Further studies with stricter inclusion criteria are needed to better evaluate the potential for zinc, magnesium and chromium to improve metabolic risk in adults with MetS.

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