

The Effectiveness of Zinc Supplementation in Taste Disorder Treatment: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

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Abstract : Food taste and flavor affect food choice and acceptance, which are essential to maintain good health and quality of life. Reduced circulating zinc levels have been shown to adversely affect taste which can result in reduced appetite, weight loss and psychological problems, but the efficacy of Zinc supplementation to treat disorders of taste remains unclear. In this systematic review and meta-analysis, we aimed to examine the efficacy of zinc supplementation in the treatment of taste disorders. We searched four electronic bibliographical databases; Ovid MEDLINE, Ovid Embase, Ovid AMAD and PubMed. Article bibliographies were also searched, which yielded additional relevant studies. To facilitate the collection and identification of all available and relevant articles published before 7 December 2020, there were no restrictions on the publication date. We performed a systematic review and meta-analysis according to the PRISMA Statement. This review was registered at PROSPERO and given the identification number CRD42021228461. In total, we included 12 randomized controlled trials with 938 subjects. Intervention includes zinc (sulfate, gluconate, picolinate, polaprezinc and acetate); the pooled results of the meta-analysis indicate that improvements in taste disorder occurred more frequently in the intervention group compared to the control group (RR = 1.8; 95% CI:1.27 -2.57, p=0.009). The doses are equivalent to 17 mg- 86.7 mg of elemental zin for three to six months. Zinc supplementation is an effective treatment for taste disorders in patients with zinc deficiency or idiopathic taste disorders when given in high doses ranging from 68-86.7 mg/d for up to three months. However, we did not find sufficient evidence to determine the effectiveness of zinc supplementation in patients with taste disorders induced by chronic renal failure.

Keywords : taste change, taste disorder, zinc, zinc sulfate or Zn, deficiency, supplementation.

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