

Zinc, Copper, Selenium and Magnesium: The most common trace mineral deficiency among bariatric surgery patients is zinc deficiency, affecting 42% of patients one year after RYGB and 25% one year after SG. After a BPD-DS, OAGB, or SADI bypass, the prevalence of zinc deficiency is even higher, potentially as high as 91.7% one year after surgery. Moderate levels of zinc deficiency are associated with hypogeusia, hyposmia, anorexia, eczema, somnolence, and reduced dark adaptation, while severe forms are associated with acrodermatitis enteropathica, bullous or pustular dermatitis, diarrhoea, balding, mental abnormalities including depression, and recurrent infections due to impaired immune function(911).

It is recommended that zinc concentrations in plasma/serum be monitored if patients develop altered taste, anaemia, delayed wound healing, hair loss and/or glossitis. Additionally, it is recommended that post-operative monitoring be continued, after all procedures, at least once per year(508).

The highest prevalence of copper deficiency also occurs after malabsorptive surgeries. However, there are reports in the literature of its occurrence after RYGB. Thus, it is recommended that serum copper be monitored after a RYGB, SG, BPD-DS, OAGB or SADI bypass, as well as in individuals using supplementation with high doses of zinc and in patients with anaemia, leukopenia, thrombocytopaenia, or neuromuscular abnormalities(508).

Although serum selenium levels are measured uncommonly after bariatric surgery, studies have been published demonstrating selenium deficiency after SG, RYGB, and malabsorptive procedures(446, 508, 887, 906).

In cases of chronic diarrhoea, metabolic bone disease, unexplained anaemia, or unexplained cardiomyopathy, selenium should be monitored(508).

In the case of magnesium, more data are needed to recommend its routine evaluation. However, in cases of hypocalcaemia and hypomagnesaemia, investigations should be performed and treatment administered prior to calcium supplementation(508).

Supplementation: Per recent guidelines, as nutritional needs and adherence to supplementation may vary over time, it is recommended that supplements be reviewed and adjusted regularly,