

The Moss Nutrition Digest

Timely Tidbits to Support Your Practice

November, 2020

Zinc Deficiency & Binge Eating Disorders: A Role for Zinc-L-Carnosine?

Zinc-L-carnosine is a unique, chelated nutraceutical made from two naturally occurring components: *zinc*, an essential trace element, and *L-carnosine*, a dipeptide composed of the amino acids beta-alanine and L-histidine.

Among their numerous biochemical roles and activities, both zinc and L-carnosine alone exhibit potent antioxidant and wound healing properties. Studies suggest the chelated complex, zinc-L-carnosine, may be three times more effective than its individual components in helping to support GI comfort and function, the primary researched therapeutic use for this compound.

Zinc-L-carnosine (also known as Polaprezinc) has been extensively studied to enhance gastrointestinal mucosal defense mechanisms, notably in the upper GI tract. In Japan, it has been approved for more than two decades as a treatment for dyspepsia, gastric lesions and gastric complaints of an inflammatory nature. Zinc-L-carnosine also serves as a good source of bioavailable, supplemental zinc.

In November 2020, Moss Nutrition introduced **CarnoZinc Select™** which provides the patented PepzinGI® brand of zinc-L-carnosine in the well-researched dosage of 75 mg per capsule. Concurrent with the launch of this new product, a Japanese study was published in the *Journal of Clinical Psychopharmacology* suggesting an unusual potential use for zinc-L-carnosine: as a complementary appetite regulating therapy for patients with binge eating disorders.

The mineral zinc functions as a cofactor in more than 300 enzymatic reactions. Among its numerous biochemical roles, zinc is critical for taste function and appetite regulation, and zinc deficiency is well known to be a common finding in eating disorder patients. Signs of insufficient zinc status include loss of taste, loss of hair, acne, dermatitis, fragile nails, painful inflammation of the mouth and tongue, depression, mood swings and diarrhea.

The dipeptide L-carnosine may help regulate eating behavior by participating in the central histaminergic system, an appetite regulating system. Both zinc and L-carnosine also help to modulate glutamate transmission in neural pathways, another key appetite-regulating biomechanism.

Based on the association of both zinc and L-carnosine with appetite regulating systems as outlined above, an open label pilot study was designed to investigate the potential use for zinc-L-carnosine in people with appetite dysregulation disorders.

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The study followed 29 male and female patients suffering from either Binge Eating Disorder (BED) or Bulimia Nervosa (BN) for 16 weeks. All subjects were found to exhibit at least three symptoms of zinc deficiency at outset, with hair loss and dermatitis most prevalent. Participants were instructed to take 75 mg of zinc-L-carnosine, two times per day and were seen every 4 weeks to track frequency of binge eating episodes and monitor zinc status, among other measurements taken.

The results found that all patients with Binge Eating Disorder exhibited a highly significant and steady decrease in the 4-week frequency of binge eating episodes and days, with 23% (n=5) of BED patients achieving full remission by the final 4-week cycle of the study. The Bulimia Nervosa patients also had a reduction in binge eating episodes, with 14% (n=1) achieving remission by week 16. By the end of the study, zinc status had improved in all members of both the BED and BN groups, and a substantial number of zinc deficiency symptoms were alleviated across the board. The supplement was found to be well-tolerated as well as effective.

The success of this trial suggests that zinc deficiency may play a greater role in driving binge eating than previously thought, and that zinc-L-carnosine, an affordable supplement with a strong safety profile backed by years of clinical use, most notably for upper GI and gastric complaints, may offer effective complementary support for binge eating disorders.

REFERENCES

1. Hudson T. Nutrient Profile: Zinc-Carnosine. *Natural Medicine Journal*. Nov. 2013, Vol 5, Issue 11.
2. Sakae K, et al. Polaprezinc (Zinc-L-Carnosine Complex) as an Add-on Therapy for Binge Eating Disorder and Bulimia Nervosa, and the Possible Involvement of Zinc Deficiency in These Conditions: A Pilot Study. *J Clin Psychopharmacol*. Nov/Dec 2020;40(6):599-606.