

## Research – Treatment

A large, randomized, double-blind placebo-controlled study found that a similar strong, balanced multi-vitamin/mineral supplement resulted in modest but statistically significant improvements in the Average Change of all symptoms on the Parent Global Impressions-Revised, and significant improvements in subscores in expressive language, tantrumming, hyperactivity, and overall symptoms. The supplement improved the level of many vitamins and minerals. There were also many improvements in metabolism, including improvements in oxidative stress, methylation, glutathione, sulfation, plasma ATP. The children with low levels of vitamin K and biotin (both made by gut bacteria) improved the most.

*Adams JB et al., Effect of a Vitamin/Mineral Supplement on Children with Autism, BMC Pediatrics 2011, 11:111*

One open-label study [49] found that micronutrient supplementation was comparable or more effective than treatment with pharmaceuticals in terms of improvements in the Childhood Autism Rating Scale, Childhood Psychiatric Rating Scale, Clinical Global Impressions, and Self-Injurious Behavior.

*Mehl-Madrona L et al., Micronutrients versus standard medication management in autism: a naturalistic casecontrol study. J Child Adolesc Psychopharmacol 2010, 20(2):95-103.*

One small randomized, double-blind, placebo-controlled study published found that a strong, balanced multi-vitamin/mineral supplement resulted in improvements in children with autism in sleep and gut function, and possibly in other areas.

*Adams JB et al., Pilot study of a moderate dose multivitamin-mineral supplement for children with autistic spectrum disorder. J Altern Complement Med. 2004 Dec;10(6):1033-9.*

One study found that high-dose vitamin C (1.1 g per 10 kg bodyweight) helped children with autism.

*Dolske MC et al., A preliminary trial of ascorbic acid as supplemental therapy for autism. Prog Neuropsychopharmacol Biol Psychiatry 1993 Sep;17(5):765-74.*