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## Autism and Nutraceuticals: What are nutraceuticals and how can they help children with ASD?

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One in 68 children in the United States is diagnosed with Autism Spectrum Disorder (ASD). ASD is a lifelong developmental disorder defined by diagnostic criteria that include deficits in social communication and interaction, and repetitive patterns of behavior, interest, or activities. ASD is a spectrum disorder where the child's abilities may range from severely challenged to gift. The cause of ASD remains unclear; however, emerging theories suggest that there is no single cause of ASD. Instead it is presumed that ASD is caused by an interaction of both genetic and environmental factors. Over the past 5 years significant advances have been made in identifying several genetic and environmental risk factors for developing ASD. This new research is due in part to the Combating Autism Act (Public Law 109-416). Some of this new emerging research investigates the role of nutraceuticals in treating ASD and supporting evidence shows its use to be very encouraging. Nutraceuticals offering potential benefits for ASD include multivitamin and mineral supplementation, vitamin C, methylcobalamin (methyl-B12), pyridoxine (vitamin B6), L-carnitine, omega-3 fatty acids, probiotics, flavonoids and carnosine. The author will discuss each of the nutraceuticals, their potential benefits and supporting research-based studies. Nutraceuticals discussed in this presentation are limited to those with randomized and placebo controlled research-based findings.

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## Preventing childhood obesity from the wound and beyond

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Obesity has become a worldwide issue with devastating long term consequences. There are several precipitating factors that make this such a common complication of childhood. In addition to the more obvious factors such as excessive sugar consumption and screen time, current evidence reveals that food allergies, autism, prematurity, as well as vitamin D deficiency may be causative. Infants who have severe food allergies, autism or who are simply picky eaters may take in inadequate nutrition but excessive energy. Preterm infants and infants born small for gestational age often have a down regulated metabolism which may lead to a rapid increase in weight despite adequate caloric intake if sub-optimal protein is not provided. In addition to the aforementioned factors, emerging studies have indicated the importance of proper nutrition during pregnancy and lactation and the impact that has on the long- term health of the fetus. Dietitians play an integral role in the care of these patients and their input is crucial to the prevention of obesity and its long-term consequences. Implementation of prevention guidelines is paramount from pregnancy through adulthood. Long- term consequences associated with childhood obesity include, but are not limited to asthma, cardiovascular disease, hypertension, diabetes, cancer, metabolic syndrome as well as psychological disorders. The longer the obesity goes on the more likely it is to be associated with these outcomes. Widespread research and prevention of childhood obesity need to be ubiquitous in order to eradicate this problem.

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