

Title: Nutritional aspects of Autism Spectrum Disorder – case study of the role of folate

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Biography

Dr. George Ayoub is an educator and health scientist with research in three areas: glaucoma, where he identified herbal medicines that help protect vision; cancer, where



he has identified foods that stop the growth of cancer cells; and mental health, where he seeks to reduce symptoms of autism and mood disorders related to nutritional deficits. He has taught 10,000 students over the past 25 years in biological, psychological and medical disciplines. He regularly speaks on contemporary issues regarding body, health and nutrition and is the author of 8 books on health and nutrition, including health guides for community clinic patients: *Yo Saludable* and *To Your Health*, both published in 2020.

Abstract

Autism spectrum disorder (ASD) is a developmental disability that can create significant behavioral and communication challenges. The prevalence of ASD among children at 8 years of age is approximately 2%, and the prevalence is similar across ethnic groups. Studies have shown that the majority of ASD children make an antibody to the high-affinity folate receptor in response to a dietary component. This folate receptor antibody (FRA) blocks transport of folate across the blood-brain barrier (BBB), resulting in a cerebral folate deficiency (CFD). In clinical trials, these ASD children had improvement in their communication when placed on a daily supplement of folate in its reduced form, which can enter the brain via a low-affinity transport.

We here report that nutritional modification combined with psychotherapy of ASD children can partially overcome this CFD, reducing ASD symptoms in our study. Our studies indicate that nutritional treatment of CFD with reduced folate in children at the earliest stages may be most productive in limiting long-term ASD symptoms.