

Nutritional Assessment and Therapy

Autism Spectrum Disorder: A PEN® Pathway Update

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Introduction Autism Spectrum Disorder (ASD) includes a range of conditions with social and behavioural challenges around mealtimes and food intake. With one in 66 children diagnosed with ASD, the role of dietary interventions warrants further investigation.

Objectives Determine key nutrition issues and effective nutrition and behavioural interventions to improve symptoms of autism, dietary intake and nutritional status among individuals with ASD.

Methods: A literature search was conducted using Pubmed. Relevant systematic reviews, randomized controlled trials and observational studies were included. Search terms included Autism Spectrum Disorder, nutrition, diet, food selectivity, food intake variety, omega-3, polyunsaturated fatty acid (PUFA), iron, gluten-free casein-free (GFCF), magnesium and vitamin B6. Using Practice-based Evidence in Nutrition (PEN®) processes and tools, articles were screened, summarized, critically appraised and synthesized into graded practice recommendations.

Results Of 231 articles retrieved, 42 had relevant titles. Abstract review left 22 meeting criteria for further evaluation. Additionally, four articles were identified from hand searching article reference lists. After full review, 13 studies were included published from 2011-2020. Collected evidence suggested GFCF diets and multivitamin/mineral supplementation may improve some symptoms of autism. Little/no benefits were observed with iron, magnesium and vitamin B6, PUFA or probiotic supplementation. Peripheral iron levels and intake were comparable to those without ASD. Classical and operant learning theories and exposure techniques were effective for short term improvement of restrictive eating and mealtime behaviours. The aforementioned conclusions and evidence syntheses are currently being reviewed by international experts before publication in PEN®.

Conclusion: Large scale research trials are needed to clarify if dietary interventions provide long-term benefits to individuals with ASD.

Significance: There is a need for a comprehensive understanding of nutrition issues experienced by those with ASD and whether effective evidence-based interventions can improve food and nutrient intakes, food enjoyment, mealtime behaviours and nutritional status.