



Cutting-Edge Research on Eating Disorders Beyond Eating: Comprehensive Understanding Linking Autism, Gut-Brain Axis, Gut Microbiota, Digital Tools, and Food Addiction

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Eating disorders are widespread, intricate problems in public health, significantly impacting individuals worldwide, regardless of age or sex. The range of eating disorders—including anorexia nervosa, bulimia nervosa, and binge-eating disorder—not only endangers physical health but also causes significant psychological distress. The repercussions of these illnesses have extensive implications, encompassing dietary shortages, organ damage, and in extreme cases, even death. The societal and healthcare consequences of eating disorders are significant, burdening medical systems and the wider social structure.

To address this increasing public health issue, researchers globally have implemented a multidisciplinary strategy. These researchers use a variety of advanced tools and methods—such as epidemiological studies, genetic analyses, neuroimaging techniques, and behavioral assessments—to understand the complex factors that cause and perpetuate eating disorders. Epidemiological studies determine prevalence rates and demographic patterns, providing insight into the extent and spread of various disorders.

The cumulative knowledge obtained from these studies assists in identifying characteristics that increase the likelihood of harm and establishes the basis for creating specific interventions and treatment approaches. The primary objective is to optimize the prevention, diagnosis, and treatment of eating disorders, thereby reducing the impact on affected individuals and lessening the burden on healthcare systems. Through the integration of knowledge from various fields, researchers aim to establish a path for the implementation of more efficient public health interventions. This will contribute to the development of a healthier society by enhancing approaches to addressing and controlling eating disorders.

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The link between autism spectrum disorder (ASD) and eating difficulties is complex since it involves heightened sensory sensitivities that affect the perception of flavor, texture, and other characteristics of food. People with ASD frequently have specific or limited eating habits, which can result in difficulties meeting their nutritional needs. The relationship extends to the gut-brain axis, where disturbances in gut microbiota may be affected by particular dietary preferences in individuals with ASD. Behavioral elements—such as specific patterns of food consumption and challenges in communal eating scenarios—further complicate the situation. The collective impact involves not only dietary considerations but also wider consequences for health and well-being. Successful intervention requires a thorough and diverse strategy that includes changes in food, therapies that address behavior, and techniques that focus on sensory experiences. These interventions should be customized to meet the specific needs of individuals with ASD and seek to improve their overall quality of life.

In this Special Section, a review titled “*Autism Spectrum Disorder and Eating Problem: The Imbalance of Gut Microbiota and the Gut-Brain Axis Hypothesis*,” [1] investigates the intricate relationship between ASD and eating challenges experienced by children and adolescents with this condition. It emphasizes the heightened sensory sensitivities that individuals with ASD often exhibit towards various aspects of food, resulting in restricted and less diverse diets. The study suggests that these dietary limitations may contribute to an imbalance in gut microbiota. Additionally, it explores the interplay between these eating challenges, the unique characteristics of ASD, and the gut-brain axis—a bidirectional communication system between the gastrointestinal tract and the brain. The review aimed to provide insight into the complex interactions and potential implications of diet, gut health, and neurological development in the context of

ASD in the younger population.

Another review titled, “*Assessment Method for Problematic Eating Behaviors in Children and Adolescents With Autism Spectrum Disorder*,” [2] explores the intricate link between ASD and eating problems, emphasizing the absence of established assessment guidelines. Traditional methods face challenges, potentially introducing caregiver biases. The comprehensive overview outlines diverse eating behaviors associated with ASD, including food neophobia, selective eating, binge eating, food avoidance, and chewing and swallowing problems. To address these challenges, the review recommends integrating digital tools such as augmentative and alternative communication, ecological momentary assessment, video analysis, behavioral analysis, and facial expression analysis. These innovative approaches aim to enhance assessments and provide a nuanced understanding of eating issues in individuals with ASD.

A report entitled, “*Case Reports of Binge Eating Patterns in the Recovery Phase of Anorexia Nervosa Patients With and Without Food Addiction*,” [3] explores food addiction, likening it to addictive behaviors seen in substance abuse, and

discusses its association with obesity and binge eating disorders. Examining two adolescent patients recovering from anorexia nervosa, the study observes distinct patterns of binge eating, emphasizing the impact of food addiction. The findings underscore the relevance of recognizing food addiction in treating eating disorders, particularly anorexia nervosa, suggesting that healthcare professionals should tailor their interventions accordingly.

The author wishes for this special section to provide guidance, elucidating the management of eating disorders.

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