Associations between nutrient intake and gastrointestinal symptoms in autism spectrum disorder

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Many children and adolescents with autism spectrum disorder (ASD) have significant gastrointestinal (GI) symptoms, but the etiology is not well understood. Studies have shown conflicting evidence on whether there are nutritional deficiencies in the various diets of individuals with ASD. However, little is known about the relationship between dietary intake and GI symptoms in ASD. Many patients with ASD try gluten-free and/or casein-free diets, and there is anecdotal evidence of improvement in ASD symptoms with dietary changes to these regimens. A previous study conducted by this group has suggested an association between autonomic function and stress response with lower GI symptomatology. The goal of the present study was to assess for potential relationships between GI symptoms and nutrient intake from diet in the same sample of individuals from the previous study, and to determine whether dietary differences might have contributed to our previously observed findings of a relationship between stress response and GI functioning in ASD.

Results

Gastrointestinal Symptoms

- The most frequently occurring GI disorders in the sample were functional constipation (42.5%), irritable bowel syndrome (11.7%), lower abdominal pain associated with bowel symptoms (9.2%), and upper pain associated with bowel symptoms (7.5%). See Table 1.

Stress response

- A significant positive relationship was found between cortisol response to stress and a greater lower GI tract score. See Table 2.

Presence of regressive ASD significantly modified the relationship between lower GI tract score and cortisol response to stress. See Figure 1.

- A dietary nutrient intake significantly correlated with total dietary fiber intake and vitamin B6 intake; however, these relationships did not survive correction for multiple comparisons (Bonferroni Correction). See Table 4.

- There were no significant associations between lower GI tract symptoms and dietary intake.

Discussion

- Lower GI tract symptoms were significantly correlated with total dietary intake fiber and vitamin B6 intake; however, these relationships did not survive correction for multiple comparisons (Bonferroni Correction). See Table 4.

- There were no significant associations between lower GI tract symptoms and dietary intake.

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