

## Safety of Implementation the Gluten - Free Diet in Children with Autism Spectrum Disorder

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**Abstract :** Background: Autism is a pervasive developmental disorder, the incidence of which has significantly increased in recent years. Children with autism have impairments in social skills, communication, and imagination. Children with autism has more common than healthy children feeding problems: food selectivity, problems with gastrointestinal tract: diarrhea, constipations, abdominal pain, reflux and others. Many parents of autistic children report that after implementation of gluten-, casein- and sugar free diet those symptoms disappear and even cognitive functions become better. Some children begin to understand speech and to communicate with parents, regain eye contact, become more calm, sleep better and has better concentration. Probably at the root of this phenomenon lies elimination from the diet peptides construction of which is similar to opiates. Enhanced permeability of gut causes absorption of not fully digested opioid-like peptides from food, like gluten and casein and probably others (proteins from soy and corn) which impact on brain of autistic children. Aim of the study: The aim of the study is to assess the safety of gluten-free diet in children with autism, aged 2,5-7. Methods: Participants of the study (n=70) - children aged 2,5-7 with autism are divided into 3 groups. The first group (research group) are patients whose parents want to implement a gluten-free diet. The second group are patients who have been recommended to eliminate from the diet artificial substances, such as preservatives, artificial colors and flavors, and others (control group 1). The third group (control group 2) are children whose parents did not agree for implementation of the diet. Caregivers of children on the diet are educated about the specifics of the diet and how to avoid malnutrition. At the start of the study we exclude celiac disease. Before the implementation of the diet we performe a blood test for patients (morphology, ferritin, total cholesterol, dry peripheral blood drops to detect some genetic metabolic diseases), plasma aminogram) and urine tests (excretion of ions: Mg, Na, Ca, the profile of organic acids in urine), which assess nutritional status as well as the psychological test assessing the degree of the child's psychological functioning (PEP-R). All of these tests will be repeated after one year from the implementation of the diet. Results: To the present moment we examined 42 children with autism. 12 of children are on gluten-free diet. Our preliminary results are promising. Parents of 9 of them report that, there is a big improvement in child behavior, concentration, less aggression incidents, better eye contact and better verbal skills. Conclusion: Our preliminary results suggest that dietary intervention may positively affect developmental outcome for some children diagnosed with ASD.

**Keywords :** gluten free diet, autism spectrum disorder, autism, blood test

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