



Understanding Autism Spectrum Disorders

The Importance of Biomedical Testing

Traditionally, the diagnosis of Autism Spectrum Disorders (ASD) has been based on the observation of behavior, and treatment focused primarily on alleviating challenging behaviors. However, there are biomedical components to ASD in which underlying medical issues often cause or contribute to autistic behavior. Some of the most common problems include gastrointestinal (GI) overgrowth of *Candida* and *Clostridia*, inability to detoxify environmental toxins, and development of food intolerances and/or allergies. These physical and environmental factors limit the nutrients available to the brain and body, resulting in damage to cellular, metabolic, and central nervous system functionality.

Genetic susceptibility to Autism may determine who develops this complex disorder, but nutrient deficiencies and food allergies strongly influence the severity of symptoms. Exposure to toxins and imbalanced microbial growth in the GI tract contribute to pathological responses to food. Yeast (most commonly, *Candida*), parasites, viruses, and bacteria, particularly *Clostridia*, all have the potential to act as pathogens. Eradicating harmful and often recurrent intestinal microbes and restoring proper intestinal flora balance is the best place to start so the body can begin to heal and detoxify itself. Eliminating IgG-reactive foods which can contribute to inflammation is an important part of healing the GI tract.

Issues Seen in ASD Potentially Exacerbated by Abnormal Intestinal Flora

- Impaired detox pathways
- Reduction in glutathione levels
- Poor sleep quality
- Speech and behavioral issues
- Oxidative stress
- Immune dysfunction
- Deficient essential fatty acids

Recommended Tests for ASD

- Organic Acids Test
- GPL-TOX Profile
- MycoTOX Profile
- Metals – Toxic + Nutrient Elements
- IgG Food MAP with *Candida* + Yeast
- Glyphosate Test

Optional Tests for ASD

- Advanced Cholesterol Profile
- Comprehensive Stool Analysis
- Copper + Zinc Profile
- Omega-3 Index Complete
- Streptococcus Antibodies Profile

Recommended Tests for Autism Spectrum Disorders

Organic Acids Test (OAT)

Many children with Autism Spectrum Disorders have an overgrowth of certain *Clostridia* species, which produces a compound called HPHPA, which may disrupt dopamine metabolism. HPHPA is a potent toxin with profound neurological effect, and can lead to moodiness, tantrums, extreme anxiety, aggression, and /or self-injurious behavior.

GPL-TOX Profile

Because exposure to environmental pollutants has been linked to many chronic diseases, including Autism, we have created GPL-TOX Profile, that screens for the presence of 173 different toxic chemicals including organophosphate pesticides, phthalates, benzene, xylene, vinyl chloride, pyrethroid insecticides, acrylamide, perchlorate, diphenyl phosphate, ethylene oxide, acrylonitrile, tiglyglycine, and more.

MycotoX Profile

Mycotoxins released from mold fungi are some of the most prevalent toxins in the environment. A majority of mycotoxin exposures are through food ingestion or airborne exposure from water-damaged buildings and homes. Studies are now coming out correlating the severity of symptoms from mycotoxin exposure with Autism, perhaps due to compromised detoxification abilities.

Metals - Toxic + Nutrient Elements - Hair

Symptoms of Autism are consistent with those of a mercury toxicity. Metal toxicity impacts cognition, language, immunity, and behavior. Identifying and eliminating metals such as lead, arsenic, aluminum, and mercury is an important step toward recovery. Evidence shows that children with Autism tend to have low levels of glutathione and cysteine, which are critical to the removal of toxic metals like mercury.

IgG Food MAP with Candida + Yeast

IgG-mediated food sensitivities create problems because they stress the child's immune system, compromising digestion and resulting in inflammation and increased behavioral issues. IgG food allergy testing can identify the specific antibody reactions not commonly tested by allergists. Eliminating offending foods strengthens the immune system and may help significantly reduce autistic symptoms and GI problems.

Glyphosate Test

Glyphosate is the world's most widely produced herbicide. High correlations exist between glyphosate usage and numerous chronic conditions, including Autism. Exposure to glyphosate can lead to an alteration of the intestinal microbial flora in which harmful species such as *Clostridia*. Those compounds inhibit the conversion of dopamine to norepinephrine in the brain and in the sympathetic nervous system.



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