

Food Allergies- Testing & Diets

Intolerance to certain foods, especially gluten (wheat related grains) and casein (milk protein), is a common occurrence among children with developmental delays. Before adopting an elimination diet, however, many parents consult an allergist to determine if the diet is necessary. Surprisingly, after extensive scratch testing, the child is often found not to be allergic to any foods. Some parents choose to eliminate gluten and casein proteins anyway, and find their youngster responds with improved attention, sleep and/or language skills.

How is this improvement possible if the child was not allergic in the first place? The answer lies in understanding the difference between allergies and other types of chemical reactions within the body.

IgE versus IgG Reactions

Allergies are defined as specific reactions within the immune system involving an antibody called immunoglobulin E (IgE). Immediate responses such as hives, congestion or swelling typically result from IgE activity. Traditional scratch testing identifies IgE triggers such as pollen or peanuts, which can cause symptoms that range from annoying to lethal.

Very different responses are delayed allergy reactions. If they occur more than two hours after eating a food, they may result from immunoglobulin G (IgG) rather than IgE activity. IgG reactions may cause symptoms such as sleep disturbances, subsequent bed wetting, sinus and ear infections, or crankiness. Blood tests rather than scratch tests are the only way to screen for IgG allergies.

Where immunoglobulins are involved, the word “allergy” can legitimately be used to describe symptoms after exposure. A reaction to gluten or casein sometimes shows up in IgG or IgA blood testing, and is, therefore, referred to as an “allergy.”

Poor Digestive Functions

Poor digestive function has a number of causes. It may result from an immature gut in infants and from heavy antibiotic usage or the lack of the protein digesting enzyme DPP4. The possible relationship between the lack of DPP4 enzyme and the symptoms of PDD/autism is the recent discovery of Dr. Alan Friedman at Johnson & Johnson Labs. Without essential digestive enzymes, such as DPP4, partially digested proteins such as gluten and casein may leak into the blood.

Partially digested proteins have odd configurations and mimic other complex molecules such as endorphins. Endorphins are nervous system proteins that act as painkillers. Partially digested gluten or casein proteins may bind to pain killing (opiate) receptors and cause behavioral symptoms of poor eye contact, irritability, or disconnection.

Poor digestion may or may not elicit an immunoglobulin response. It may cause inflammation symptoms instead, such as intestinal irritability, stomachache and/or diarrhea. These reactions are not technically allergies. Nor is opiate activation technically a true allergy. When IgG or IgE testing finds milk or gluten sensitivity, it is because the chemical messages weaving through the body tripped the allergy system.

Other Gut Problems

Similarly, when reactions to a food are aggression, poor concentration, or seizures, many other explanations are possible. All body systems are interdependent and so intertwined that designing tests to understand and study their discrete functions can be very difficult. The artificial distinctions placed between immune and neurological systems hinder diagnosis and treatment. This imprecise diagnosis can be very frustrating, but there are too many ways for the body to react and communicate. That is, it is unlikely that one testing system will ever be able to find and sort all possible reactions.

Best "Test" for Reactions

The best “test” for reactions is elimination of suspect items. The limitation with this approach is that irritants can interact. That is, exposure to one item will not cause symptoms, but when two mildly reacting foods are present, together they trip a response by overloading the system. In “load” reactions, a little is tolerable, but too much of one or a combination of two or more causes trouble. Blood testing may then be useful, but the problem in load allergies is usually a leaking gut.

Rather than eliminating additional foods, the answer is repairing the underlying leak. The reason that secretin has been extremely useful in autism is its ability to correct gut function. For more information about IgE and IgG reactions and the leaky gut, read *Biological Treatments for Autism and PDD* and *The Leaky Gut Syndrome*.

Diet and Autism: Is there a Connection?

Bread and milk are daily staples in an American child’s diet. But there is growing evidence that these seemingly wholesome foods may harm the developing brains of some autistic children. For decades, parents of many autistic children have reported improvements in their children’s symptoms when gluten and casein (proteins in certain grains and dairy) are eliminated -- better eye contact, language, sociability, sleep, and fewer bowel problems and aggression. Recently, scientific studies have begun to validate these numerous anecdotal reports.

Why does the gluten-free/casein-free (GFCF) diet help some children? The most popular theory, the opioid hypothesis, suggests that many of these children are unable to properly break down certain proteins. This is not the same as an allergy (although many autistic children also have food allergies). Rather, faulty digestion of gluten (protein in wheat, oats, rye and barley) and casein (protein in milk/dairy products) leads to a buildup of opioid-type molecules that have a narcotic effect on the brain, like opium or morphine.

Most people have intestinal enzymes that help them digest or break down gluten and casein into smaller protein pieces called peptides, and then into even smaller pieces called amino acids. But when these enzymes are defective, the large molecules of incompletely digested gluten and casein peptides (with an opioid structure) can “leak” from an over-permeable gut into the bloodstream. Some of the opioid peptides are carried to the brain where they can mimic neurotransmitters, resulting in a scrambling of brain inputs and outputs. Interestingly, children with autism exhibit many of the addictive behaviors of animals drugged with opioids, akin to being on a morphine drip. Also consistent with this theory, studies show that 80% of people with autism have elevated levels of opioid-type peptides in their urine.

We know that digestive problems, including chronic diarrhea or constipation, may affect at least half of all children with autism. Some theories for the faulty enzyme production and leaky gut syndrome in some autistic children include intestinal inflammation or damage from viral infections (e.g., measles), yeast infections (overgrowth of *Candida albicans*) and possibly a weakening of the membranes in the intestinal tract from heavy metals (like mercury from thimerosal-containing vaccines). This poor digestion can also result in nutritional deficiencies of basic vitamins, minerals and other nutrients, which further aggravates the nerves and gut in these children.

How do you know if the diet will work? Some urine tests are available to detect “leaky gut” and the presence of opioid peptides in urine. Lisa Lewis PhD and Karen Seroussi, both parents of autistic children who have researched and written extensively about the GFCF diet, suggest a three to six month trial of strict adherence to the experimental diet is best. Working with the child’s physician and a nutritionist is important to ensure proper nutrition. Lewis Mehl-Madrona MD PhD, a Stanford trained physician now practicing in Saskatoon Canada, finds that at least half of his autistic patients improve significantly within a month of starting the GFCF diet. If unsure after this period, he suggests challenging the child with a grilled cheese sandwich on whole wheat bread. Sensitive children will become clearly worse. Because nutrient deficiencies resulting from faulty digestion and a self-limiting diet are common, a basic multivitamin may help re-nourish the child’s nerves and gut, including B-vitamins and minerals like magnesium and zinc (which aid the nervous system) and antioxidants like selenium and vitamins A, E, C (which protect from cellular damage of inflammation), and other nutritional supplements like anti-inflammatory omega 3 and 6 oils from flaxseed, evening primrose, or fish oil.

While we continue to sort out the root causes of the sharp rise in autism in our children, diet modifications (along with other complementary therapies like homeopathy, body therapy and more) may offer another pathway of hope and healing to the families of these unique children. Experience shows that younger children often respond better than older children. It is important not to go “cold turkey” with the diet since the children can have withdrawal symptoms, i.e., a worsening of condition. Interestingly, children can be addicted to the narcotic effect of the opioids, explaining why they may crave breads and dairy. Especially in children under age 5 years, eliminate offending foods gradually over about 2 weeks. It is often easier to eliminate dairy first, followed by gluten foods which can be more challenging. Fortunately many resources are available (see below). The diet

must be strict and can be difficult to follow, complicated by the fact that many autistic children self restrict foods. But when carefully planned to substitute missing nutrients (like calcium and vitamin D), side effects are few, and many children improve.

Casein: Foods to Avoid

Casein is a protein in dairy. Avoid all bovine (cow, sheep, goat) dairy products, including ALL milk, butter, cheese, cottage cheese, cream cheese, sour cream, yogurt, ice cream, etc. Read labels & avoid casein, caseinate, and even whey found in many soy cheeses, tuna, margarine, artificial flavorings, medicines and more. NOTE: When dairy is eliminated it is vital to add calcium and vitamin D (with fortified milk substitutes or acceptable vitamin/mineral supplements).

Gluten: Foods to Avoid

Gluten is a protein in common grains: wheat (durum, semolina, kamut, spelt), rye, barley, triticale, and possibly oats. Read labels scrupulously. Many processed foods contain ingredients with gluten including malt (from barley), grain starches, hydrolyzed vegetable/plant proteins, textured vegetable proteins, grain vinegars, soy sauce, grain alcohol, flavorings and fillers in vitamins and medications. ALLOWED grains: rice, corn, potato, tapioca, beans, sorghum quinoa, milled, buckwheat, arrowroot, amaranth, and nut flours.

Practical Resources for GFCF diet:

Popular websites offering support to families implementing gluten and casein-free diets:

ANDI: Autism Network for Dietary Intervention - <http://www.autismNDI.com>

Gluten Free/Casein Free (GFCF) Support Group - <http://www.gfcfdiet.com/>

Popular books and articles by physicians or parents of children with autism:

Special Diets for Special Kids by Lisa Lewis, PhD 1998, 251 pages.

Unraveling the Mystery of Autism and Pervasive Developmental Disorder: A Mother's Story of Research & Recovery by Karyn Seroussi, 2002, 304 pages.

Frequently Asked Questions About Dietary Intervention for the Treatment of Autism and Other Developmental Disabilities. By Karen Seroussi, co-founder, Autism Network for Dietary Intervention - <http://www.enabling.org/ia/ceeliac/doc/autgffaq.rtf>

Autism: An Overview. By Lewis Mehl-Madrona MD, PhD. Article reprinted from Autism/Aspergers Digest Magazine 2000 @ <http://healing-arts.org/children/>

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