Nourishing Hope

Using Food and Nutrition to Improve ADHD & Autism

What the Science Says

By Julie Matthews, Certified Nutrition Consultant

Food and nutrition influence the health, learning, and behavior of children. As a parent or clinician addressing a disorder such as autism or ADHD, it's important to understand the connections between what goes into the body and how it functions. You can affect the existence or severity of varied symptoms by giving strategic attention to children's diet. Nourishing hope is about using scientific research, practical knowledge, and individualized insight to help discern and apply the most supportive food and nutrition plan for each child.

With this approach, children are improving. Thousands of parents and clinicians around the world are documenting and blogging their personal experiences – that addressing a child's underlying health issues (fundamentally through diet/nutrition) has led to improvements in ADHD and autism related symptoms.

Recovering from these disorders is possible, and has been documented. Increasingly there are reports of children losing their diagnoses, returning to mainstream classrooms, and making previously unheard of strides.

When I began my nutrition career thirteen years ago, I was initially curious about the connections between food ingredients, artificial additives, and behaviors associated with ADD/ADHD. My initial research paper revealed that many common symptoms of the disorder could stem from what children eat - I advised altering diet.

But then I discovered something bigger – that ADHD, autism, and many other childhood disorders have similar underlying factors, and that they are *all* influenced by diet. I became intently focused on understanding biochemistry and the specifics of using special diets to help autism and beyond. My final research report on Autism: Environmental Contributors, Biochemical Observations, and Nutrient Intervention, later became my book *Nourishing Hope for Autism.*

Informing and inspiring others has become my life's work.

In this first of four articles, I will explain WHY and HOW special diets help. Knowing that science is on your side will help you be most effective at nourishing hope for your child.

ADHD, Autism and Neurological Conditions are WHOLE BODY Disorders

Let's explore autism as an overarching example. Children with autism are the "canaries in the coalmine," alerting us that something is wrong and that action is needed. They are the most sensitive and easily injured by the toxins, stressors, and deficiencies in our environment. What we learn by studying autism helps us understand and address a myriad of childhood disorders today.

Autism has long been considered a "mysterious" disorder that begins/ends in the brain, and that affects observable social behavior. The mainstream healthcare system continues to view the disorder this way, believing that it cannot be changed or influenced.

Yet since 1967, the Autism Research Institute and other organizations have approached autism as a "whole body disorder," believing that the brain is affected by the body's biochemistry.

Physicians and parents have been sharing data for years, observing and documenting an array of common physiological symptoms of autism. Harvard professor Martha Herbert M.D., Ph.D., was among the first to describe the brain and behavior as "downstream" from the body's functioning; explaining that what happens in the brain of the child with autism is literally impacted by what occurs in their body's organs and biochemistry, beginning with the digestive system.

When accurately seen as a whole body disorder, parents and physicians are more likely to identify the physical symptoms of autism that routinely get overlooked. With this broader comprehension it becomes apparent that there are many things you can do to address these challenges and help children improve.

Common Physical Symptoms with Similar Underlying Causes

Children with autism routinely exhibit physical symptoms; such as diarrhea, constipation, bloating and GI pain, frequent infections, food allergies, sleeping challenges, and inflammation/pain. For many children, nutrient deficiencies, imbalanced biochemistry, digestive problems, and inflammation underscore these symptoms.

For example, all of following conditions have underlying inflammation: Autism[1,2,3], ADHD[4], depression[5,6], anxiety[7,8], schizophrenia[9,10], asthma, allergies, autoimmune conditions, inflammatory bowel disorders, and eczema.

These underlying conditions cause symptoms in children with varied diagnoses—many of these are comorbid (existing together): eczema, hyperactivity, inattentiveness, mood imbalances, allergic reactions, diarrhea/constipation. Regardless of the diagnosis, these symptoms are signs that the body suffers underlying biochemical imbalances.

A child's diarrhea, rash, and eczema are not "unrelated, concidental symptoms" to their ADHD diagnosis—they are connected. In fact, *most* neurological and childhood disorders (autism, ADHD, allergies, asthma, anxiety, depression) have similar internal factors that cause external symptoms - factors that parents and clinicians can influence.

Modern Day Crisis - Reversible

American children are sicker today than ever before: 1 in 2 suffers from a chronic health condition.

The "Standard American Diet" blindly consumed today (not just in America) involves fast food, processed, packaged, and junk food with artificial additives and pounds of added sugar. Eating this way is a huge cause of nutrient deficiencies, and the sugar and additives tax and deplete the system more. Too many children today do not get the minimum requirement of nutrients that are needed for brain development; including zinc, iron, calcium, B6, omega 3s and more.

Furthermore, toxins/chemicals, overuse of antibiotics, and environmental stressors deplete and interfere with our bodily system, adding to inflammation, deficiencies, and digestive disturbances. Over recent generations, these deficiencies and stressors affect our genetics, turn on and off genes that lead to increased childhood disorders and disease.

Because the body and brain are connected, as you affect health, you also affect learning and behavior. The science says that you can improve these childhood disorders.

Gut and Brain Connection

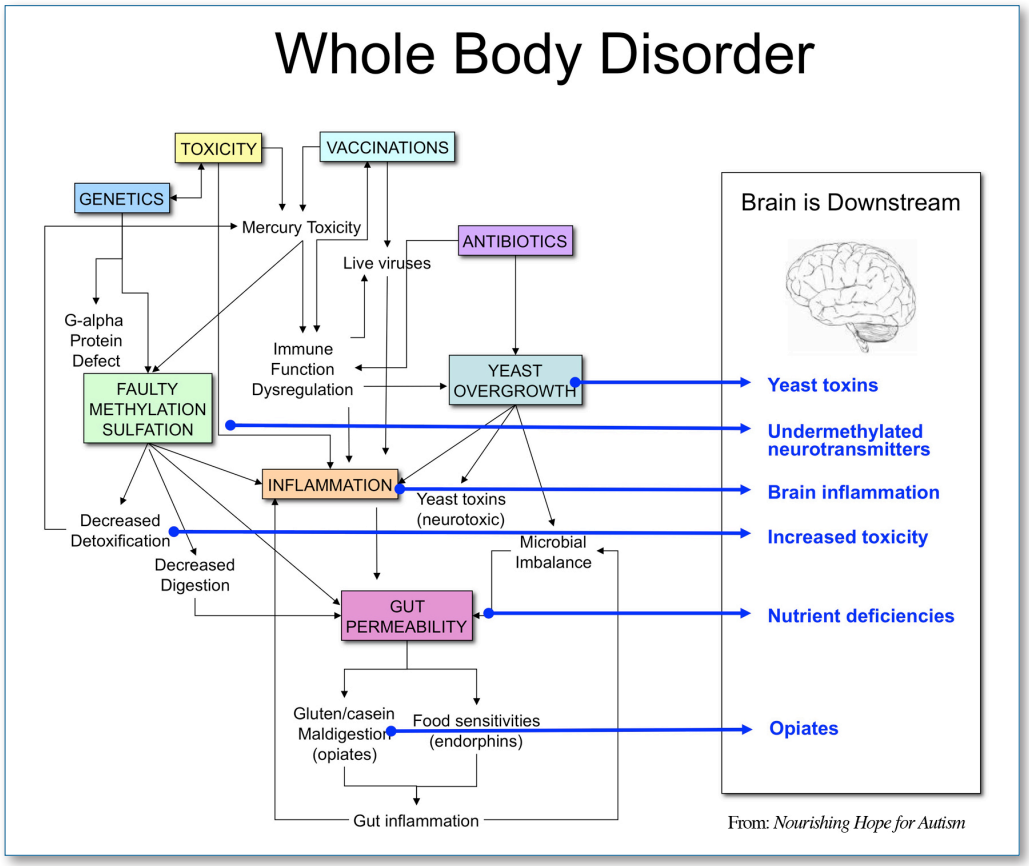
What children eat affects how their body and brain operate for several reasons: the chemicals and substances in foods can affect the brain, foods can feed or starve out harmful microbes in the gut that create toxins that affect the brain, the foods we digest become nutrients for the brain to function."

The work of Dr. MacFabe at the University of Western Ontario has illustrated this gut-brain connection with autism[11]—that the condition of the gut affects the functioning of the brain. Hippocrates, the father of modern medicine said, "All disease begins in the gut." We must remember that the foods we eat are in constant contact with the gut, and of significant influence on the body and behavior.

For many children, the physiological and behavioral symptoms of autism and ADHD may stem from or are exacerbated by impaired digestion and GI health. One research study concluded that "unrecognized gastrointestinal disorders...may contribute to the behavioral problems of the nonverbal autistic patients."[12]

CONDITIONS LINKED TO INFLAMMATION

- Autism
- ADHD
- Depression
- Anxiety
- Schizophrenia
- Asthma
- Allergies
- Autoimmune conditions
- Inflammatory Bowel Disorders
- Eczema



Nutrients are essential to all biochemical and brain function. Adequate nutritional status requires the consumption of nutrient dense food and proper digestion to breakdown and absorb those foods. Poor digestion can lead to a condition known as leaky gut; marked by malabsorption of nutrients, inflammatory responses to foods that are not broken down, and a burden to the detoxification system.

Poor digestion often stems from environmental factors (as well as genetic susceptibility), lack of beneficial bacteria, inflammation, and immune system response to certain foods. And studies have shown leaky gut,[13] low levels of beneficial flora,[14] inflammation and immune response to food[15] [16] in children with autism. Additionally, the response to certain foods such as gluten and casein can create an opiate or inflammatory reaction that can affect the brain.

Gluten & Casein - Possible Opiates

Certain foods, such as wheat and dairy, contain proteins (gluten and casein) that can form opiate compounds if they are not properly digested. They fit in the opiate receptor of the brain and mimic other opiates like morphine[17]. This opiate effect can directly influence the brain and result in symptoms similar to morphine—foggy thinking, inattentiveness, constipation, and more.

Gluten and casein, when not tolerated can cause an inflammatory response that can create digestive disturbances, pain throughout the body, and nutrient absorption issues. Inflammation is so important to understand and control because cytokines (inflammatory chemicals) can negatively affect behavior and mood[18].

Research shows gluten intolerance is a factor in depression[19], anxiety[20], ADHD[21], and schizophrenia[22]. And there are a number of studies on the opiates in autism[23, 24, 25] a decrease in GI symptoms on a GFCF diet[26], and a reduction in autistic symptoms with a GFCF diet[27, 28, 29].

As a parent addresses matters within their control, i.e. their child's diet, nutrition, and lifestyle, they are literally supplying the body the nutrients and condition it needs to heal. Improving these underlying factors influences the trajectory of dis-order and leads to better overall health and well being, and subsequently improved learning and behavior.

How the Body Affects the Brain

Not only are the gut and the brain connected, but the entire body and the brain are connected. There are many body systems and biochemical processes that need to work properly for the body to be healthy and the brain to function well — they require nutrients, a normal inflammatory response, good cellular and metabolic function, proper digestion, and adequate detoxification. Most neurological and childhood conditions are whole body disorders; therefore strategies that help support and heal the body of children with autism can benefit other disorders too, and help everyone to heal and thrive.

Referring to the chart, "Whole Body Disorder" from my book *Nourishing Hope for Autism*, let's look at the research I've gathered on autism. On the left you can see the complex set of factors that influence autism: toxins, environmental factors, digestive health, and inflammation. The right side indicates the affects they can have on the brain. While this chart denotes autism, as I continue to explain, this body/brain connection holds true for ADHD, learning delays, and other neurological conditions facing children and adults.

Here's how imbalanced biochemistry affects the brain and the symptoms of autism, as well as ADHD, anxiety, depression and many other conditions:

- **Opiates** can be created from inadequate breakdown of gluten, casein, and soy leading to symptoms of opiate excess – foggy thinking, insensitivity to pain, opiate addiction and withdrawal, and irritability.
- **Methylation malfunction**: when this biochemical cascade is not working properly (often seen in autism[30]), neurotransmitters can-

According to Hippocrates, "All disease begins in the gut," and this certainly proves true with ADHD and autism. As you can see, digestion and gut health affect the brain, and as well as many other body systems and symptoms.

not be methylated (and therefore are not "activated") as they need to be, increasing the likelihood of anxiety, depression, ADHD, and sleeping issues.[31]

- **Inflammation** in the gut and brain can be caused by toxins, food sensitivities, or bad bacteria or yeast in the gut. This can cause pain that affects behavior—self-injurious behavior, leaning over furniture, and head banging can all be signs of pain[32]. Inflammation is also a sign of oxidative stress and deficiency in the cell (and brain).

- When **detoxification** is poor, (studies show low sulfation[33] and low glutathione[34] in autism) toxins from food and the environment can build up and act like drugs/neurotransmitters on the brain, (causing irritability, aggression, brain/cellular damage) as with salicylates, artificial ingredients, MSG, mercury and aluminum.

- **Poor Digestion and Nutrient Deficiencies**. When digestion is poor and the gut is too permeable ("leaky gut"), as in autism[35], the nutrients that are supposed to get through cannot absorb properly. This leads to nutrient deficiencies that can affect all cellular function, including the brain. Iron and zinc are two of these nutrients that are low in autism[36], [37] and ADHD [38, 39].

- **Yeast**. When there is yeast overgrowth in the body, toxins enter the bloodstream and make their way to the brain where they can cause symptoms ranging from spaciness, foggy thinking, and drunken behavior[40].

According to Hippocrates, "All disease begins in the gut," and this certainly proves true with autism and ADHD. As you can see, digestion and gut health affect the brain and many other body systems and symptoms.

Food interacts with the gut constantly and can have a profound impact on symptoms. *Removing* the offending foods that contribute to inflammation, trigger immune response (food sensitivities), and increase toxicity is crucial, and *adding* foods that support a healthy ecosystem and provide needed nutrients, is essential.

Understanding that gut and brain are connected helps explain WHY autism, ADHD, and overall health are improved through a diet that supports digestion/GI health and biochemistry. GI health and biochemistry are partners. Biochemistry involves cellular processes that require energy, nutrients, and enzymes to function, and proper digestion is required to obtain and absorb the nutrients needed for these processes. Biochemistry can go awry if there are insufficient nutrients, an inability to digest and absorb nutrients, a limitation on a particular nutrient, or inability to convert a nutrient to the active and usable form. Attention to diet is crucial.

5 AREAS WHERE FOOD MATTERS

A healthy diet and good digestion is essential for good health.

By supporting biochemistry, digestion, and nutrient status through strategic attention to diet and nutrition ("nourishing hope"), you can improve the symptoms of autism, ADHD, and beyond.

Here are five major areas where nourishing hope can help improve the health of the gut, the whole body's biochemistry, and positively affect autism, ADHD, and your child's overall physical and mental health.

1) Inflammation and Leaky Gut

Improving digestion, reducing inflammation, and healing the gut are important steps in overall health and healing. Behavior, language, and skin rashes are a few areas that commonly improve.

- ***Remove foods that inflame the gut***. Gluten, casein, soy, corn, and eggs are common offenders. The exact foods to remove will depend on the individual; however, the gluten and casein-free diet is the most popular and successful place to begin (for autism). Sugar and refined oils also contribute to inflammation.

- ***Add foods that heal the gut***. Foods such as ginger and turmeric reduce inflammation. Fish oil, flax seeds, walnuts contain omega 3s that have anti-inflammatory properties. Fermented foods help heal the gut.

- ***Add foods that supply beneficial bacteria***. Fermented foods such as non-dairy yogurt, young coconut kefir, and raw sauerkraut contain good bacteria that create a healing environment that helps reduce inflammation.

- ***Add foods that increase beneficial bacteria***. Prebiotics are foods (often high in soluble fiber) that support and help increase good bacteria levels in the gut. They include: asparagus, bananas, beans/legumes, chicory root, garlic, honey, kefir/yogurt, leeks, onions, and peas. Butyric acid is a short chain fatty acid (often produced by good bacteria from the eating soluble fiber), found in butterfat and ghee that helps nourish the intestinal lining.

2) Nutrient Deficiencies

Nutrient deficiencies are common among children with autism[41] and ADHD. Poor quality and limited diets add to this problem. Specific nutrients are required for complex biochemical processes, and nutrients can only be digested and absorbed through food and supplementation when the GI tract is functioning well. In addition to boosting digestion, it is important to get a wide variety of nutrients.

- ***Increase the quality and digestibility of food.*** Increase food quality and the amount of nutrient-dense foods such as grass-fed meats and organic vegetables in the diet. For ideas on getting greater variety, see the list of nutrient-dense foods. Soaking and fermenting grains increases their digestibility.

- ***Add in more vegetables.*** Puree vegetables and add them to meatballs, smoothies, pancakes, muffins, and sauces. Try juicing to get concentrated nutrients that are easy to digest. Ice pops from juices or smoothies help get these nutrients into kids.

- ***Add supplementation.*** It is not always possible to get the requisite therapeutic levels of nutrients through foods alone. Use vitamins, minerals, fatty acids, or amino acids to address your BioIndividual Nutrition™ needs.

3) Yeast Overgrowth

Yeast is a harmful organism that can affect energy level, clarity of thought, and intestinal health. Yeast overgrowth is often triggered by antibiotic use and can create gut inflammation, resulting in decreased gut function. The following dietary practices help rid the body of yeast overgrowth.

- ***Remove sugars.*** Sugars feed yeast, contributing to yeast overgrowth. Reduce the amount of cookies, muffins, and other sugar-rich treats. Even sugar in fruit, especially dried fruit and fruit juice can be a problem for children.

- ***Remove yeast-containing foods.*** Bread, grapes, plums, aged meats and cheeses, and vinegars can feed yeast and should be removed.

- ***Remove starches.*** Some people need to eliminate starches that can feed yeast such as potatoes, corn, and gluten-free grains.

- ***Add probiotic-rich foods.*** Fermented foods contain live beneficial bacteria that crowd out yeast and support a healthy internal environment. Many are commercially available or you can save money by learning to make your own! See Cooking To Heal for recipes and videos!

NUTRIENT-DENSE FOODS

- **Vitamin A:** Cod liver oil, butter/ghee, liver, and egg yolk.
- **Vitamin C:** Sweet potato, winter squash, broccoli, leafy green, liver
- **Vitamin B6:** Sunflower seeds, pistachios, walnuts, lentils, grains and beans, rice bran, blackstrap molasses

- **Vitamin B12:** Liver, eggs, fish, lamb, beef
- **Folic acid**: beans, rice germ, liver, asparagus, broccoli, bananas

- **Omega 3:** Fish/cod liver oil, egg yolk, butter/ghee, flax seeds, hemp seeds, walnuts
- **Iron:** blackstrap molasses, liver, pumpkin seeds, duck egg
- **Zinc:** Pumpkin seeds, nuts, legumes, ginger, oats

- **Magnesium:** Sweet potato, winter squash, broccoli, leafy greens, seaweed, nettles, whole grains, nuts, legumes
- **Calcium:** Broccoli, leafy greens, winter squash, seaweed, nettles, nuts

4) Toxicity and Poor Detoxification

When detoxification is not working optimally or is overburdened by pre-existing toxins, avoiding further toxins in food is a must. Toxic chemicals can cross the blood brain barrier and affect the brain's functioning increasing hyperactivity, aggression, irritability, and self-injurious behavior.

- ***Avoid food additives.*** Artificial ingredients are very difficult for the body to process, avoiding artificial colors, flavors, preservatives, and MSG is crucial.

- ***Avoid toxins in food supply and meal preparation.*** Prevent the introduction of further toxins into the body by avoiding aluminum and plastic in cooking, by avoiding aluminum pans, aluminum foil, storing and microwaving in

plastic, and canned foods.

- ***Eat organic.*** Only high quality foods that are free of pesticides and hormones: organic produce, grass-fed meat, pastured eggs and chickens (non-organic chicken can contain arsenic). Avoid consuming pesticides, GMOs (genetically modified organisms), and hormones, and getting higher nutrient content - by eating organic.

- ***Add foods that support the liver.*** Antioxidants support liver detoxification: beta carotene, vitamins A, C and E, B vitamins including folic acid, selenium, and glutathione. (see list of nutrient dense foods). Sulfur-rich foods are especially beneficial in liver detoxification processes such as broccoli, cabbage, cauliflower, collard greens, kale, and Brussels sprouts. The spices cinnamon and turmeric support the liver.

5) Poor Methylation and Sulfation

Methylation, transsulfuration, and sulfation are one set of biochemical pathways that do not function optimally for many children. These pathways can be supported by avoiding certain substances that impede them, and providing the nutrients needed for proper functioning.

- ***Remove phenolic foods.*** Artificial phenols occur in petroleum-derived additives such as all artificial colors, flavors, and preservatives. Even naturally occurring phenols, called salicylates, present in (organic and conventional) foods such as grapes, apples, berries, almonds, honey, and more can create a variety of behavioral, emotional, and physical symptoms. When the biochemical processes of methylation, transsulfuration, or sulfation are not functioning well, limiting phenols and salicylates is important.

- ***Improve methylation and sulfation through supplementation.*** Supplementing with nutrients that can support these biochemical pathways is important. Methyl-donors and methylation/transsulfuration support such as: vitamin B12, folate, B6, DMG/TMG, magnesium, and zinc are important supplements to consider. Determining which supplements are needed and adding them, can be very helpful to the biochemistry and reducing autism and neurological-symptoms.

Possibility & Potential

I hope you are realizing a few things: that children suffering from disorders like autism and ADHD have greater potential than previously thought.

And that becoming strategic about food and nutrition choices benefits every child to varied extent. This science based "tool" is accessible to all parents. As you take charge of your child's diet, you directly influence how their body and mind operate - your actions can have immediate (sometimes profound) impact.

Simply begin: remove artificial ingredients, reduce sugar, avoid gluten and casein, lessen starches, add fermented foods or probiotics, or introduce more vegetables.

Start wherever it's easiest. Even just stopping the use of artificial colored candy as behavioral reinforcers can be the first step of nourishing hope. Enlisting the help of a nutrition consultant or experienced practitioner is advised. Someone that specializes in nutrition for childhood disorders can help you gain confidence to begin and provide appropriate food suggestions and meal ideas. A professional can help determine which dietary principles and practices suit your situation, how best to begin and evolve your approach, and to ensure your child is getting adequate nutrition in their special diet.

Whether you reach out to a nutrition consultant or begin on your own, getting good nutrition, avoiding problematic ingredients, and supporting good digestion are practices that will benefit everyone in the family.

In the next article, *Diets and Nutrition That Help*, you'll learn proven strategies that anyone can begin and follow. Armed with WHY, you'll next learn HOW to use this information to help your child.

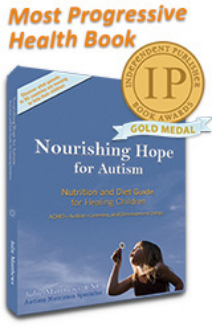
---

1 Vargas, Diana L., et al. "Neuroglial activation and neuroinflammation in the brain of patients with autism." Annals of neurology 57.1 (2005): 67-81.
2 Li, Xiaohong, et al. "Elevated immune response in the brain of autistic patients." Journal of neuroimmunology 207.1 (2009): 111-116.
3 Rossignol, D. A., and R. E. Frye. "A review of research trends in physiological abnormalities in autism spectrum disorders: immune dysregulation, inflammation, oxidative stress, mitochondrial dysfunction and environmental toxicant exposures." Molecular psychiatry 17.4 (2011): 389-401.
4 Donev, Rossen, and Johannes Thome. "Inflammation: good or bad for ADHD?." ADHD Attention Deficit and Hyperactivity Disorders 2.4 (2010): 257-266.
5 Miller, Gregory E., and Ekin Blackwell. "Turning Up

the Heat Inflammation as a Mechanism Linking Chronic Stress, Depression, and Heart Disease." Current Directions in Psychological Science 15.6 (2006): 269-272.
6 Raison, Charles L., Lucile Capuron, and Andrew H. Miller. "Cytokines sing the blues: inflammation and the pathogenesis of depression." Trends in immunology 27.1 (2006): 24-31.
7 O'Donovan, Aoife, et al. "Clinical anxiety, cortisol and interleukin-6: Evidence for specificity in emotion–biology relationships." Brain, behavior, and immunity 24.7 (2010): 1074-1077.
8 Pitsavos, Christos, et al. "Anxiety in relation to inflammation and coagulation markers, among healthy adults: the ATTICA study." Atherosclerosis 185.2 (2006): 320-326.
9 Saetre, Peter, et al. "Inflammation-related genes upregulated in schizophrenia brains." Bmc Psychiatry 7.1 (2007): 46.
10 Leonard, Brian E., Markus Schwarz, and Aye Mu Myint. "The metabolic syndrome in schizophrenia: is inflammation a contributing cause?." Journal of Psychopharmacology 26.5 suppl (2012): 33-41.
11 MacFabe, Derrick F., et al. "Neurobiological effects of intraventricular propionic acid in rats: possible role of short chain fatty acids on the pathogenesis and characteristics of autism spectrum disorders." Behavioural brain research 176.1 (2007): 149-169.
12 Horvath K, Papadimitriou JC, Rabsztyn A, Drachenberg C, Tildon JT. Gastrointestinal abnormalities in children with autistic disorder. J Pediatr. 1999 Nov;135(5):559-63.
13 D'Eufemia P, Celli M, Finocchiaro R, et al. Abnormal intestinal permeability in children with autism. Acta Paediatr. 1996 Sep;85(9):1076-9.14 Finegold SM et al. Gastrointestinal microflora studies in late-onset autism. Clin Infect Dis 2002 35(Suppl 1):S6-S16.
15 Jyonouchi H, et al. Proinflammatory and regulatory cytokine production associated with innate and adaptive immune responses in children with autism spectrum disorders and developmental regression. J Neuroimmunol. 2001 Nov 1;120(1-2):170-9.
16 Jyonouchi H, Sun S, Itokazu N. Innate immunity associated with inflammatory responses and cytokine production against common dietary proteins in patients with autism spectrum disorder. Neuropsychobiology. 2002;46(2):76-84.
17 Zioudrou, Christine, Richard A. Streaty, and Werner A. Klee. "Opioid peptides derived from food proteins. The exorphins." Journal of Biological Chemistry 254.7 (1979): 2446-2449.
18 Harrison, Neil A., et al. "Inflammation causes mood changes through alterations in subgenual cingulate activity and mesolimbic connectivity." Biological psychiatry 66.5 (2009): 407-414.
19 Pynnönen PA, Erkki T Isometsä ET, Verkasalo MA, Kähkönen SA, Sipilä I, Savilahti E and Aalberg VA. Gluten-free diet may alleviate depressive and behavioural symptoms in adolescents with coeliac disease: a prospective follow-up case-series study. BMC Pychiatry. 2005, 5:14
20 Potocki P, Hozyasz K. Psychiatric symptoms and coeliac disease. Psychiatr Pol. 2002 Jul-Aug;36(4):567-78.
21 Niederhofer, Helmut, and Klaus Pittschieler. "A preliminary investigation of ADHD symptoms in persons with celiac disease." Journal of Attention Disorders 10.2 (2006): 200-204.
22 Kalaydjian AE, Eaton W, Casella N, Fasano A. The gluten connection: the association between schizophrenia and celiac disease. Acta Psychiatr Scand. 2006 Feb;113(2):82-90.
23 Jinsmaa Y, Yoshikawa M. (1999) Enzymatic release of neocasomorphin and beta-casomorphin from bovine beta-casein. Peptides, 20:957-962.
24 Reichelt KL, Knivsberg AM, Lihnd G, Nodland M: Probable etiology and possible treatment of childhood autism. Brain Dysfunction 1991; 4: 308-319.
25 Shattock P, Whiteley P. (2002) Biochemical aspects in autism spectrum disorders: updating the opioid-excess theory and presenting new opportunities for biomedical intervention. Expert Opin Ther Targets. Apr;6(2):175-83
26 Jyonouchi H, Geng L, Ruby A, Reddy C, Zimmerman-Bier B. (2005) Evaluation of an association between gastrointestinal symptoms and cytokine production against common dietary proteins in children with autism spectrum disorders. J Pediatr. May;146(5):582-4.
27 Knivsberg AM, Reichelt KL, Nodland M. (2001) Reports on dietary intervention in autistic disorders. Nutritional Neuroscience, 4(1):25-37.
28 Knivsberg AM, Reichelt KL, Hoien T, Nodland M. (2002) A randomised, controlled study of dietary intervention in autistic syndromes. Nutritional Neuroscience, 5(4):251-61
29 Whiteley P, Haracopos D, Knivsberg AM, Reichelt KL, Parlar S, Jacobsen J et al. The ScanBrit randomised, controlled, single-blind study of a gluten- and casein-free dietary intervention for children with autism spectrum disorders. Nutr Neurosci 2010; 13(2): 87-100.
30 James, S. Jill, et al. "Metabolic biomarkers of increased oxidative stress and impaired methylation capacity in children with autism." The American journal of clinical nutrition 80.6 (2004): 1611-1617.
31 Miller AL. The methylation, neurotransmitter, and antioxidant connections between folate and depression. Altern Med Rev. 2008 Sep;13(3):216-26.
32 Horvath K, Papadimitriou JC, Rabsztyn A, Drachenberg C, Tildon JT. Gastrointestinal abnormalities in children with autistic disorder. J Pediatr. 1999 Nov;135(5):559-63.
33 Waring, R. H., Ngong, J. M., Klovrza, L., Green, S., & Sharp, H. (1997). "Biochemical parameters in autistic children." Developmental Brain Dysfunction, 10, 40-43.
34 James, S. Jill, et al. "Efficacy of methylcobalamin and folinic acid treatment on glutathione redox status in children with autism." The American journal of clinical nutrition 89.1 (2009): 425-430.
35 d'Eufemia, P., et al. "Abnormal intestinal permeability in children with autism." Acta Paediatrica 85.9 (1996): 1076-1079.
36 Latif A, Heinz P, Cook R. Iron deficiency in autism and Asperger syndrome. Autism. 2002 Mar;6(1):103-14.
37 Hiroshi Yasuda, Kazuya Yoshida, Yuichi Yasuda, Toyoharu Tsutsui. Infantile zinc deficiency: Association with autism spectrum disorders. Scientific Reports. Nov 2011, Vol. 1
38 Konofal E, Cortese S, Lecendreux M, Arnulf I, Mouren MC (2005). "Effectiveness of iron supplementation in a young child with attention-deficit/hyperactivity disorder". Pediatrics 116 (5): e732–4.
39 Arnold LE, DiSilvestro RA (2005). "Zinc in attention-deficit/hyperactivity disorder". Journal of child and adolescent psychopharmacology 15 (4): 619–27. doi:10.1089/cap.2005.15.619. PMID 16190793.
40 Logan BK, Jones, AW. Endogenous ethanol 'auto-brewery syndrome' as a drunk-driving defence challenge. Med Sci Law. 2000 Jul;40(3):206-15.
41 Adams JB, Audhya T, McDonough-Means S, Rubin RA, Quig D, Geis E, Gehn E, Loresto M, Mitchell J, Atwood S, Barnhouse S, Lee W. Nutritional and metabolic status of children with autism vs. neurotypical children, and the association with autism severity. Nutrition & Metabolism 2011 Jun 8;8(1):34.

ABOUT JULIE MATTHEWS

Julie Matthews is an internationally respected Certified Nutrition Consultant specializing in autism spectrum disorders. She is an expert in applying food, nutrition, and diet to aid digestive health and systemic healing. Her guidance and support tools stem from extensive research and applied clinical experience. Julie supports parents of children with autism from around the world and collaborates with pediatricians, family doctors, and researchers. She educates at the leading biomedical autism conferences, writes for varied publications, and has a private nutrition practice in San Francisco, California.



NOURISHING HOPE FOR AUTISM

Diet and nutrition intervention guide for parents and professionals. Provides the scientific WHY and HOW various diets help children find relief from the symptoms of autism and ADHD. Contains step-by-step nutrition guide that stems from extensive clinical experience and research.

COOKING TO HEAL

Inspiring 4 hour LIVE nutrition and cooking class (DVD) – with Special Diet Cookbook (diet compliant recipes.) Learn to follow any special diet; how to provide good nutrition, address food restrictions and sensitivities, and still create meals families (and picky eaters) will love.