

Autism Spectrum Disorders & Dietetics: Professional Competencies

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BOOK: EATING FOR AUTISM



Autism Spectrum Disorders & Dietetics: Professional Competencies

- Overview
- Common Treatments
- Nutritional Interventions
- RD Competencies

RD Competencies

1. Diagnosis
2. Common Treatments
3. Nutritional Interventions
4. Nutritional Management of GI Problems
5. Feeding Problems



Autism Spectrum Disorder



Autistic Disorder

- Puzzling childhood disorder
- 1 in 100 individuals
- Spectrum disorder
- Affects communication, social interaction, and behavior

Autism Spectrum Disorder

Symptoms/Characteristics

- Little or no eye contact
- Not responsive to verbal cues
- Difficulty in expressing needs
- Repeats words or phrases in place of normal language
- Insistence on sameness
- Prefers to be alone; aloof manner
- Tantrums
- Spins objects
- Inappropriate attachments to objects
- Sustained odd play

Autism Spectrum Disorder



What causes autism?

Theories:

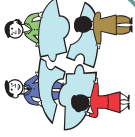
- Genetic
- Biological or neurological differences in the brain
- Environmental factors

"There is no known single cause for autism. It seems that some children are born with a genetic susceptibility to autism. What makes some susceptible children develop autism and others not is an important research question."

Autism Spectrum Disorder

Interdisciplinary Team

- Registered Dietitian
- Physician
- Occupational Therapist
- Speech Language Pathologist
- Behavioral Specialist Consultant



Common Treatments

- Medication
- Education
- Conventional
- Complementary and Alternative Medicine (CAM)
- Biomedical

Medication

- 1.) Antidepressants**
(Anafranil, Luvox, Prozac, Wellbutrin)
- 2.) Anti-psychotic**
(Clozani, Risperdal, Zyprexa)
- 3.) Stimulants**
(Ritalin, Adderall, Dexedrine, Concerta, Focalin, Daytrana, Metadate CD)
- 4.) Nonstimulant** (Strattera)
- 5.) Antihypertensives** (Catapres, Tenex)

Education

- Physical therapy
- Occupational therapy
- Speech therapy
- Behavioral therapies
- Support services
- Art
- Music

What is the missing piece?
★ Nutrition therapy



Education

- IFSP**
(Individual Family Services Plan)
 - Outcomes & Objectives
 - A written plan for providing Early Intervention services to an eligible child and his family.
 - (Birth through 2 years of age)
- IEP**
(Individual Education Program)
 - Goals & Objectives
 - A written plan for providing Special Education and related services to a child with a disability covered under the IDEA.
 - (Age 3 through 21 years of age)

Education

“Incorporating Nutrition Outcomes into the child’s IFSP or Goals into the IEP is an opportunity to designate the required nutrition services to address the child’s developmental and educational needs.”

Elizabeth Strickland, MS, RD, LD

Individual Family Services Plan

IFSP

Nutrition Outcomes

- 1.) Improve child's growth rate
 - Monitor weight & length once a month
 - RD teach parents how to maximize child's caloric and nutrient intake
- 2.) Develop age appropriate feeding skills
- 3.) Consume a diet of age appropriate foods and textures

Individualized Education Program

IEP

Example of Nutrition Goals

- 1.) Develop or refine age appropriate feeding skills
- 2.) Consume a diet of age appropriate foods and textures
- 3.) Child will independently follow his dietary restrictions
- 4.) Develop meal planning, grocery shopping, and cooking skills
- 5.) Eat out in a public restaurant



Individualized Education Program

Examples of Nutrition Related Services

1. Provide a healthy morning and afternoon snack.
2. Staff to add 1 tablespoon polyucose powder to soft food at lunch and each snack.
3. Assigned school staff member to monitor child's lunch and snack choices to minimize diet error and facilitate independent choices.
4. School nurse measure child's weight and height once a month.
5. RD review and modify school menus to accommodate child's dietary restrictions.
6. RD to consult with School Cafeteria Manager as needed.
7. GFCF food substitutions used at lunch will be provided by the school.
8. Do NOT use food as a reward system or reinforcer. Transition to a non-food reward system within two weeks.
9. Behavioral specialist suggest nonfood reward system/reinforcer to be used in place of food.

Individualized Education Program

"Child requires a Gluten Free Casein Free Diet to benefit from his special education program. Gluten and casein negatively impacts child's behavior and ability to learn. Following the restrictive diet is an independent living skill the child must learn to master."

Present Level of Performance: Child can not identify which foods are unsafe for him to eat.

Annual Goal: Child will identify "safe" vs.

"unsafe" foods so he can independently follow his dietary restrictions.

Individualized Education Program

Short-Term Objectives:

1. By December 2009, child will be able to correctly identify an "unsafe" food 25% of exposures.
2. By March 2010, child will be able to correctly identify an "unsafe" food vs. a "safe" food 50% of exposures.
3. By May 2010, child will be able to correctly identify an "unsafe" food vs. a "safe" food 90-100% of exposures.

Special Education:

1. Staff will provide special instruction and learning activities to teach child "safe" vs. "unsafe" foods
 2. Staff will use positive reinforcement for correct food choices
- Start Date:
Location:
Frequency:
Duration:

Individualized Education Program

Related Services:

1. GFCF foods used for lunch will be provided by the school
2. RD to review school lunch menu once per month and recommend food substitutions
3. RD to provide technical assistance to cafeteria manager as needed
4. Assigned school staff member will monitor child at lunch and snack to minimize diet noncompliance

IFSP/IEP Nutrition Resources

1. **Special Education Law**
Peter Wright www.wrightslaw.com
2. **Writing IEP**
Dr. Barbara Bateman
3. **Accommodating Children with Special Dietary Needs in School Nutrition Programs**
USDA, Food and Nutrition Service
4. **Book: Eating for Autism**
Appendix 4: IEP Nutrition Goals & Objectives
Elizabeth Strickland, MS, RD, LD
www.ASDpuzzle.com

Conventional

- Speech Therapy
- Occupational Therapy
- Physical Therapy
- Social Interventions (i.e. RDI)
- Behavioral Interventions
- Applied Behavioral Analysis (ABA)
- Discrete Trial Training
- TEACCH
- Picture Exchange Communication System
- Floor Time (i.e. Greenspan)
- Social Stories

Complementary and Alternative Medicine (CAM)

- Art
- Music
- Animal
- Chiropractic
- Homeopathy
- Traditional Chinese Medicine (TCM)
- Ayurveda

Biomedical

- Chelation for toxic metals
- Hyperbaric Oxygen Therapy
- Antifungal treatment
- Transfer factor
- Intravenous immunoglobulin (IVIG)
- Secretin Infusion
- Glutathione infusion
- High Dosage Vitamin B 6
- Methyl Vitamin B 12 (subcutaneous)
- GFCF Diet

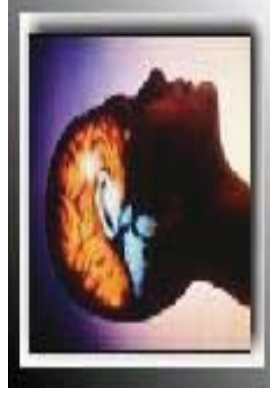
Nutrition Therapy

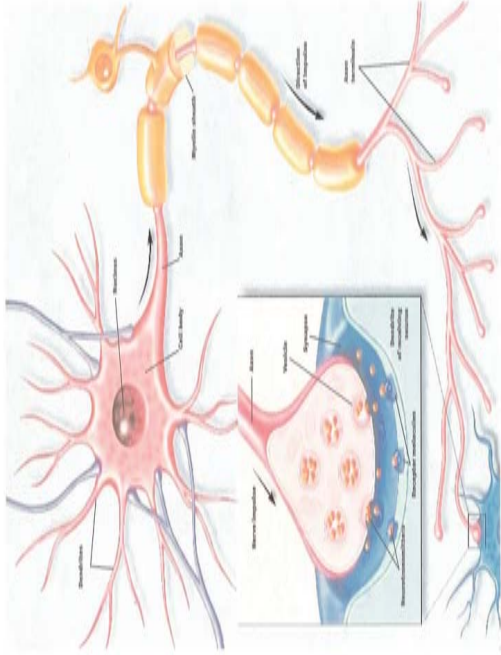
Nutrition – Autism - Research

“The overall evidence for dietary interventions are limited. The current evidence consists of results from limited number of studies of weak design. Studies that have been completed are inconclusive due to bias, design flaws, or inadequate sample sizes.”

Cynthia Cadieux, PhD, RD
James Madison University

Nutrition – Autism Connection





Nutrients Critical for Brain Function

- Protein
- Carbohydrate
- Fat
- Omega Fatty Acids
- Amino Acids
- Vitamins
- Minerals
- Water



Nutrition Therapy

Goal of **Nutrition Therapy**

- Support the structure and function of the child's brain and body to perform at their optimum level.
- Maximize the child's brain function to enhance their response to other treatment approaches (SLP, OT, PT, Behavioral, Special Education Instruction, etc...).

Nutrition Therapy

- Nutrition assessment (ABCDEF)
- Develop an individualized Nutrition Care Plan
- Recommend dietary changes
- Recommend nutritional supplements
- Treat nutritional deficiencies
- Heal the gastrointestinal tract
- Help treat feeding problems
- Refer to MD for laboratory test
- Treat food allergies/sensitivities/intolerances
- Support parents in the decision process

Nutrition Therapy

BASIC

- Healthy diet
- Adequate basic nutrients
- Vitamin/mineral supplement
- Omega-3 fatty acids

ADVANCED

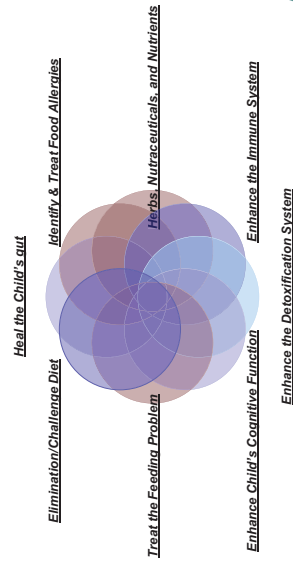
- Consider special diets
- Trial response of high dose vitamin B6
- Consider additional supplements

ADVANCED

Treat Common Problems

- Feeding problems
- Gastrointestinal disorders
- Food allergies, sensitivities, and intolerances

Advanced Nutrition Interventions



Vitamin Mineral Supplement

Children with autism are at increased nutritional risk

- Sensory problems
- Consume a limited variety of foods
- Mealtime behavior problems
- Elimination diets that limit certain foods
- Chronic gastrointestinal disorders

Vitamin Mineral Supplement

Subclinical Nutrition Deficiency

A deficiency of a particular vitamin, mineral, or essential fatty acid that is not severe enough to produce a classic deficiency symptom but rather has more global, subtle effects that result in loss of optimal health and impairment of body processes.

Vitamin Mineral Supplement

Nutrient Deficiency Stages

Preliminary	→	Depletion of tissue stores
Biochemical	→	Reduced enzyme activity
Physiologic/Behavior	→	Subclinical deficiency symptoms
Clinical	→	Symptoms worsen
Anatomical	→	Specific syndromes

*The Essential Guide to Vitamins and Minerals
Elizabeth Somer, MA, RD*

Vitamin Mineral Supplement

Subclinical nutrition deficiency symptoms

- Irritability
- Mood and behavior changes
- Poor concentration
- Depression
- Anxiety
- Sleep disturbances
- Loss of appetite



Vitamin Mineral Supplement

Selection of an OTC supplement

- Purchase from a reputable company
- Quality control
- Free of artificial flavors, colors, allergens, herbs
- Age appropriate
- Full spectrum of vitamins and minerals
- 100 – 300% RDA



Vitamin Mineral Supplement

Customized Supplement

- Prescribed by a Registered Dietitian
- Customized vitamin & mineral levels
- Pharmacy compound
- Prescription drug manufacturing standards
- Form
 - Liquid
 - Powder
 - Capsule



Vitamin Mineral Supplement

Approaches to get child to take supplement

1. Incorporate into child's Behavior Therapy Program
2. Oralfllo pill swallowing cup
3. Pill Swallow Program
4. Negotiation
5. Mix supplement into food or beverage

Vitamin Mineral Supplement

Mix in:

- Beverages
- Juice box
- Fruit smoothie
- Fruit sorbet
- Rice dream
- Yogurt, pudding, custard
- Peanut butter
- Fruit preserves
- Honey
- Ketchup
- Cooked foods (after cooking)
- Popsicles (homemade)
- Coromega®

Vitamin Mineral Supplement

Should you recommend a V/M supplement? YES

"Because most U.S. children do not receive adequate nutrition through their diet and children with autism have additional nutritional concerns, adding a daily multi vitamin and mineral supplement to the child's treatment plan is warranted."

Elizabeth Strickland, MS, RD, LD

Omega-3 Fatty Acids

Functions of Omega-3 Fatty Acids

- Brain development of the fetus, infant and young child
- Maintenance of normal brain function throughout life
- Vital for brain cell signaling
- Prominent structural fatty acid in the gray matter of the brain and retinol tissue



Omega-3 Fatty Acids

Deficiency of Omega-3 fatty acids are linked to:

- Autism
- ADHD
- Dyslexia
- Dyspraxia
- Depression
- Anxiety

Omega-3 Fatty Acids

"Supplementing children's diets with Omega-3 fatty acids improves poor learning and behavioral problems."

Journal of the Developmental and Behavioral Pediatrics
April 2007

"Supplementing with Omega-3 fatty acids decreased hyperactivity in children with autism spectrum disorders."
Biological Psychiatry
2007

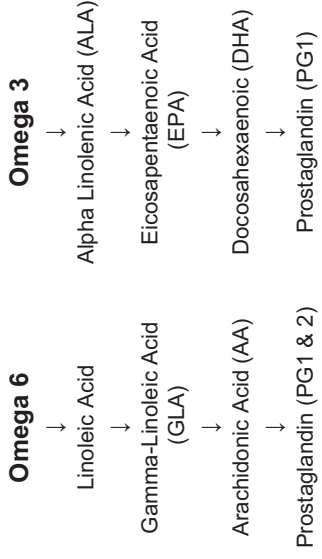
Omega-3 Fatty Acids

Many research studies indicate that supplementing with Omega-3 fatty acids reduces:

- Hyperactivity
- Inattention
- Impulsive characteristics
- Anxiety
- Cognitive problems



Omega-3 Fatty Acids



Omega-3 Fatty Acids

Adequate intake of Omega-3 Fatty Acids

Age	mg/day (EPA + DHA)
1 – 3 years	390mg
4 – 6 years	540mg
7 years & older	650mg

National Institutes of Health

Omega-3 Fatty Acids

Source

Salmon, Atlantic, farmed	608
Herring, Pacific	602
Herring, Atlantic	571
Salmon, Atlantic, wild	521
Tuna, fresh (blue fin)	426
Mackerel, Atlantic	341
Trout, mixed species	265
Flounder	142
Hallbut	132

USDA Nutrient Data Laboratory

Omega-3 Fatty Acids

Source

Cod, Pacific	EPA + DHA (mg per ounce) 78
Tuna, white (canned in oil)	69
Haddock	68
Catfish, wild	67
Catfish, farmed	50
Cod, Atlantic	45
Tuna, light (canned in oil)	36

USDA Nutrient Data Laboratory

Omega-3 Fatty Acids

Source

Cod liver oil	EPA + DHA 1,000 mg / teaspoon
Coromega™ (original)	580 mg / packet
DHA Junior®	70 mg / soft gel
Fish oil supplements	300 – 1,000 mg / capsule
Omega-3 enriched eggs	150 – 400 mg / egg



Omega-3 Fatty Acids

Should you recommend Omega-3 fatty acids? YES

"Because most U.S. children do not consume an adequate amount of Omega-3 fatty acids through their diet and children on the spectrum may have a compromised ability to convert dietary ALA to EPA and DHA, adding a daily Omega-3 (EPA + DHA) supplement to the child's treatment plan is warranted."

Elizabeth Strickland, MS, RD, LD

Additional Supplements

This situation is NOT appropriate!!!

"There are numerous vitamins, minerals, antioxidants, amino acids, nutraceuticals, and herbs believed to benefit autistic children. These supplements are accepted and commonly used as advanced nutritional interventions in the autism community; however, the medical community may not support their use."



Elizabeth Strickland, MS, RD, LD

*Lost Causes No More
Alternative Medicine
September 2004 Issue 70
Melanie Haliken
Photography by Arthur Coihen*

Additional Supplements

Additional Supplements

Supplements of interest:

- DMG
- Carnosine
- Flavonoid
- Vitamin B12

Supplements to enhance the child's:

- Immune system
- Cognitive function
- Detoxification system



Additional Supplements

Nutrients to enhance the immune system:

- Dimethylglycine (DMG)
- Iron
- Magnesium
- Selenium
- Vitamin A
- Vitamin C
- Vitamin D
- Vitamin E
- Zinc



Additional Supplements

Nutrients to enhance cognitive function:

- Carnitine
- Choline
- Coenzyme Q10 (CoQ10)
- Iron
- Zinc
- Ginkgo biloba



Additional Supplements

Nutrients to enhance the detoxification system:

- Alpha-Lipoic Acid
- Glutathione
- N-acetylcysteine (NAC)
- Selenium
- Trimethylglycine (TMG)
- Vitamin C
- Milk thistle

Special Diets

Common in the Autism Community:

- Elimination/Challenge Diet
- Gluten Free Casein Free Diet (GFCF)
- Specific Carbohydrate Diet™ (SCD™)
- Antifungal Diet
- Rotation Diet
- Feingold Diet

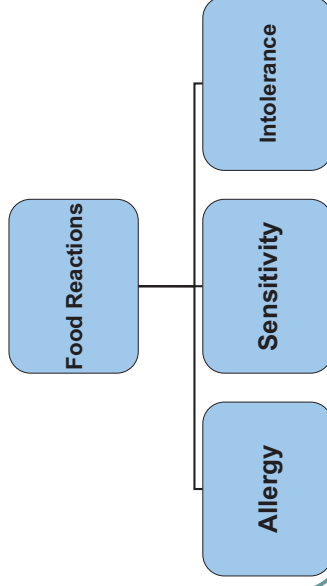
Elimination/Challenge Diet

- Children with food allergies are at higher risk for nutrition related problems and decreased growth.
- Children with autism are more negatively affected by the symptoms of food allergies, sensitivities and intolerances due to their problems with sensory integration dysfunction.

"A comprehensive nutrition assessment, consultation and follow-up by a Registered Dietitian is recommended to treat food allergies."

Eligabeth Strickland, MS, RD, LD

Food Reactions



Allergy

Allergy

Define: An adverse immunologic response to food protein.

*Symposium: Pediatric Food Allergy
Pediatrics Vol. 111 No. 6 June 2003*

Allergy

IgE Mediated Food Allergy

- Immunoglobulin E (IgE) antibody mediated immune response
- Involves acute reactions
- Affects the skin, respiratory system, and/or gastrointestinal tract

Non-IgE Mediated Food Allergy

- Cell-mediated immune response
- Involves sub acute and chronic reactions
- Affects primarily the gastrointestinal tract
(chronic diarrhea, loose stools, constipation, nausea, vomiting, reflux, bloating, abdominal pain & inflammation of the esophagus, stomach, small and large intestines)

Allergy

Foods responsible for 90% of allergic reactions:

- Milk*
- Wheat*
- Soy*
- Egg*
- Peanuts*
- Tree nuts*
- Fish
- Shellfish

* More commonly seen in children.

Allergy

IgE Mediated Food Allergy

- RAST
- CAP RAST
- CAP System FEIA
- Skin Prick
- Elimination/Challenge Diet

Non-IgE Mediated Food Allergy

- Endoscopy and biopsy
 - Elimination/Challenge Diet
- (If suspect EE, EG, and/or EC; Elimination/Challenge Diet is conducted for 8 – 12 weeks)

Sensitivity

Sensitivity

Define: A general term applied to a clinically abnormal response to a food or food additive.

- Does not involve the immune system
- Reactions imitate those of an allergy, usually mild
- Food additives commonly reported to cause reactions in sensitive individuals include sulfites, aspartame, MSG, preservatives (BHT and BHA), and tartrazine (yellow dye No. 5)

Intolerance

Intolerance

Define: Caused by a defect in metabolism, usually a deficient enzyme.

- Does not involve the immune system
- Reactions imitate those of an allergy

Example: Deficiency of lactase enzyme results in a milk intolerance.

(Test: Oral tolerance Test or Hydrogen Breath Test)

Food Reactions

5% of Food Reactions:

- IgE mediated food allergy

95% of Food Reactions:

- Non-IgE mediated food allergy
- Sensitivity
- Intolerance

Food Reactions

Symptoms:

- Ears** – ear infections
- Nose** – congestion, sneezing, runny nose
- Eyes** – tearing, puffy, dark circles under eyes
- Oral** – swelling of lips, tongue, mouth, and throat
- Skin** – hives, eczema, red checks, itching
- Respiratory** – cough, wheezing, asthma
- Intestinal** – reflux, diarrhea, constipation, nausea, vomiting, abdominal pain
- Neurological**- headache, migraine, behavioral problems

Food Reactions

IgG ELISA

- Measurement of IgG antibodies
- Not considered a valid food allergy test
- Controversial

"Food elimination based on IgG antibodies helpful in Irritable Bowel Syndrome"

*Scandinavian Journal of Gastroenterology
Journal of the American College of Nutrition
2004*

Food Reactions

Referral to a board-certified allergist:

- History, symptom diary, physical exam
- Diagnostic tests
 - Allergy vs. sensitivity vs. intolerance
 - IgE vs. Non-IgE mediated food allergy
- Physician-supervised oral food challenge to confirm positive test results
- Elimination/Challenge Diet

Food Reactions

Role of the Registered Dietitian:

- Heal the gastrointestinal tract
- Elimination of problematic foods
- Resolve nutrient deficiencies
- Assess the child's growth
- Assist parents with the Elimination/Challenge Diet

Gluten Free Casein Free Diet

- The GFCF Diet is the single most common Elimination/Challenge diet recommended for autistic children.
- There is very little evidence-based scientific research that supports or refutes claims of the GFCF Diet.

"Current research, clinical observation, and anecdotal reporting warrants a case-by-case consideration for a GFCF Diet trial response."

Elizabeth Strickland, MS, RD, LD

Gluten Free Casein Free Diet

Positive results reported by parents:

- Improves gastrointestinal symptoms
- Decreases hyperactivity
- Increases focus
- Reduces behavioral problems
- Improves speech & communication skills
- Improves sleep

Gluten Free Casein Free Diet

There are two main theories as to why eliminating the proteins gluten (wheat, rye, barley) and casein (cow's milk) from the autistic's child diet may be helpful:

1. **Opiate Excess Theory**
2. **Non-IgE Mediated Food Allergy Theory**

Gluten Free Casein Free Diet

Opiate Excess Theory

- 1979: "Opiate excess" theory for autism arose. Suggested that incompletely digested peptides with opioid activity could precipitate autism. (*Panksepp*)
- 1980s: Elevated levels of endorphin like substances in the cerebro-spinal fluid of children with autism (*Gillberg*).
- 1980s: Opiate peptides of dietary origin (gliadomorphine and casomorphine) detected in the urine of children with autism (*Reichelt*).
- 1990s: Studies continued on the "opiate excess" theory (*Shattock*) (*Cade*).

Gluten Free Casein Free Diet

Theoretical processes:

- Opiates naturally occur in the CNS from an endogenous origin.
- Elevated levels of opiate peptides (gliadomorphine & casomorphine) found in the urine of children with autism is too large to be of CNS origin.
- Excessive opioid peptides may have been derived from an exogenous source, the incomplete digestion of certain proteins (gluten & casein).

Gluten Free Casein Free Diet

Theoretical processes cont...

- The theory suggest that the opiate peptides leaked into the blood through a "leaky gut".
- The majority of these opiate peptides are excreted in the urine, but a small portion will stay in the blood and cross the into the brain and attach to opiate receptors in the brain.
- Proposed if this happened, the opiate peptides would mimic morphine and interfere with normal brain function, resulting in autistic symptoms.

Gluten Free Casein Free Diet

Theoretical processes cont...

- If the opiate excess theory is true, removing gluten and casein (exogenous source of gliadomorphine & casomorphine) would improve the child's behavioral and autistic symptoms..

*The Use of Gluten and Casein Free Diets with People with Autism
Autism Research Unit, University of Sunderland, UK
Paul Shattock*

Gluten Free Casein Free Diet

Non-IgE Mediated Food Allergy Theory

Theory proposed that children with autism may be predisposed to sensitivity to dietary proteins (gluten, casein, and soy) leading to GI inflammation and behavioral symptoms.

*Innate Immunity Associated with Inflammatory Responses with Cytokine Production Against Common Dietary Proteins in Patients with ASD
Neuropsychobiology 2002;46:76-84
Jyonouchi H, et al*

Gluten Free Casein Free Diet

Non-IgE Mediated Food Allergy Theory

Findings:

- 18% children with autism had allergen-specific IgE antibody and/or positive Prick Skin Test
- 91.8% of the children with autism had a positive response to GF/CF/SF Diet
- Children with autism had an increased proinflammatory cytokine response against dietary proteins (gluten, casein, and soy) which indicate these children have a Non-IgE mediated reaction to these proteins.

*Innate Immunity Associated with Inflammatory Responses with Cytokine Production Against Common Dietary Proteins in Patients with ASD
Neuropsychobiology 2002;46:76-84
Jyonouchi H, et al*

Gluten Free Casein Free Diet

Non-IgE Mediated Food Allergy Theory

“Research findings indicate that a Non-IgE mediated immune reaction to dietary proteins (gluten, casein, and soy) have a role in GI symptoms in autistic children.”

Innate Immunity Associated with Inflammatory Responses with Cytokine Production Against Common Dietary Proteins in Patients with ASD
Neuropsychobiology, 2002;46:76-84
Jyonouchi H, et al

Gluten Free Casein Free Diet

Should you recommend a GFCF Diet?

“Current research and clinical observation warrants a case-by-case consideration for a GFCF Diet trial response.”

Elizabeth Strickland, MS, RD, LD

Specific Carbohydrate Diet

- SCD was initially designed to treat Inflammatory Bowel Disease.
- Goal of the SCD is to restore health to the digestive system, correct dysbiosis, decrease intestinal inflammation, and heal the intestinal tract.

Breaking the Vicious Cycle
10th Edition 2003
Elaine Gottschall

Specific Carbohydrate Diet

- Parents of children with Autism “discovered” the SCD, tried the diet and many reported positive results.
- More recently, SCD has been proposed as a dietary treatment for Autism due to the number of children with gastrointestinal disorders.

Specific Carbohydrate Diet

- Carbohydrates are classified by their molecular structure.
- Allowed carbohydrates have a molecular structure that is small enough to be transported across the surface of the small intestine into the blood stream.
- Carbohydrates to avoid include disaccharides (lactose, sucrose, maltose) & polysaccharides.
- The SCD starts with a limited number of foods and gradually adds more foods as the intestinal tract heals.

Breaking the Vicious Cycle
10th Edition 2003
Elaine Gottschall

Antifungal Diet

- Based on the theory that autistic children have an overgrowth of yeast in their GI tract.
- The diet eliminates foods that contain yeast and foods that supposedly stimulate the growth of yeast.
 - Sugar
 - Fruit
 - Fruit juice
 - Fermented foods
 - Baker's yeast
 - Aged foods

Rotation Diet

- Based on the *belief* that rotating foods every four days will minimize reactions and reduce the likelihood of developing an allergy to these foods.

Lab Test

- IgG ELISA : Used to identify foods that are *believed* to cause a delayed food reaction.
- Mediator Release Test (MRT): *Believed* to identify non-IgE mediated food reactions.

Feingold Diet

- Based on the *theory* that certain foods (containing salicylates) and food additives trigger adverse physical and behavioral symptoms in sensitive children.

- The diet eliminates:

- artificial colors
- artificial flavors
- preservatives (BHA, BHT, TBHA)
- aspartame
- foods containing salicylates

Gastrointestinal Problems

- Studies suggest that the majority of children with autism may have a gastrointestinal disorder.
- Most of these children continue to suffer with undiagnosed GI disorders unable to verbally express the pain they feel.
- Identifying and correcting the child's GI disorder can lead to significant overall improvement in digestion, health, behavior, and brain function.

Gastrointestinal Problems

Symptoms

- Food refusal
- Limited variety of foods
- Mealtime tantrums
- Irritability
- Self abuse
- Sleep disturbances
- Abdominal pain
- Bloating
- Gaseousness
- Diarrhea
- Constipation
- Reflux
- Vomiting

"Child may be trying to tell us something he can not put into words."

Timothy Buie, MD

Gastrointestinal Problems

"70% of autistic children were found to have a lifetime history of gastrointestinal symptoms such as abnormal stools, constipation, frequent vomiting, and abdominal pain."

Journal of the Developmental and Behavioral Pediatrics
April 2006
Niehus, et al

Gastrointestinal Problems

Contributing Factors:

- Inadequate water intake
- Inadequate fiber intake
- Low or increased muscle tone
- Decreased physical activity
- Irregular toilet habits
- Unable to communicate need to have a bowel movement
- Holding their stool
- Medication side effects
- Long-term use of laxatives, suppositories, and enemas
- Cow's milk allergy
- Malnutrition
- Medical conditions

Gastrointestinal Problems

Nutritional Interventions

- Adequate fiber and fluid
- Modify the diet
- Eliminate problematic foods
- Limit excess juice and/or milk
- Heal the gut
 - (Probiotics, digestive enzymes, antifungals, omega-3 fatty acids, glutamine)
- Specific vitamin & mineral concerns (B12, Vitamin D, folic acid, calcium, magnesium, zinc, iron)
- Elimination/Challenge Diet
- Consider Gluten Free Casein Free Diet
- Referral to Gastroenterologist

Gastrointestinal Problems

Medical Treatment

Rule-out medical problems

- Gastroesophageal reflux disease (GERD)
- Eosinophilic gastrointestinal disorders (EGID)
- Inflammatory bowel disease (IBD)
- Celiac disease
- Abnormal intestinal anatomy
- Lactose intolerance
- Sucrose malabsorption
- Fructose malabsorption
- Fat malabsorption
- Bacteria overgrowth
- Parasites



Feeding Problems

Picky Eater

- Decreased variety of food (< 30 foods).
- Foods lost due to burn-out. Regained after 2 weeks.
- Able to tolerate new foods on plate, touch, or taste.
- Eats at least 1 food from most food textures.
- Adds new foods to repertoire in 15-25 steps.

Problem Feeder

- Restricted range of foods (< 20 foods).
- Foods lost due to burn-out, foods not regained.
- "Falls apart" when presented new foods.
- Refuses entire categories of textures.
- Adds new foods in > 25 steps.

Kay Toomey, Ph.D.

Feeding Problems

Contributing Factors of Feeding Problems

1. Physical
2. Psychological
3. Nutritional
4. Sensory integration
5. Behavioral
6. Parental
7. Environmental
8. Therapist

Feeding Problems

Role of the Registered Dietitian

- Identify feeding problem vs. picky eater
- Document you suspect a feeding problem
- Inform Physician and other Therapists
- Educate parents on basic feeding strategies
- Initiate development of a Interdisciplinary Feeding Team
- Assist in developing the Feeding Intervention Plan

Feeding Problems

Steps to eating

- Tolerate
 - Interact
 - Smell
 - Touch
 - Taste
 - Eating
- "SOS Approach to Eating"
Kay Toomey, Ph.D.
Pediatric Psychologist

Dietetics Profession Preparedness

- Individual: RD
- State: Dietetic Associations
- National: American Dietetic Association
- ADA Practice Groups: Pediatric & DIFM
- Research/Education/Training Centers:
 - University Center for Excellence in Developmental Disabilities (UCEDD)
 - Leadership Education Neurodevelopmental & Related Disabilities (LEND)
 - Developmental Disabilities Research Center (DDRC)

Summary

- 1 in 100 individuals in U.S. diagnosed with Autistic Disorder.
- A growing number of parents are using nutritional interventions.
- There is an unmet need for Registered Dietitians to provide services to these families.
- If Dietitians do not prepare and promote themselves, parents will continue to seek other professionals and nonprofessionals for nutrition information to treat Autism.

Thank you!!!



*Pass on the message...
Nutrition is a piece of the
Autism puzzle !*

Elizabeth Strickland, MS, RD, LD

EATING for AUTISM
THE 10-STEP NUTRITION PLAN TO HELP TREAT
YOUR CHILD'S AUTISM, ASPERGER'S, OR ADHD

Includes
75
Gluten-Free,
Casein-Free
Recipes

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ASPERGER'S, OR ADHD

Elizabeth Strickland, MS, RD, LD

In *Eating for Autism*, leading dietitian Elizabeth Strickland explains the nutrition-autism connection and presents an easy 10-step plan to positively change your child's diet. You'll learn how to:

- Make the transition to healthy foods and expand his diet
- Select the right multi-vitamin and mineral supplements
- Identify and treat gut problems and food allergies
- Make your child's favorite foods gluten-free and casein-free

NEW
TIME