Nourishing Hope for Autism
Food & Nutrition MATTER

Julie Matthews, CNC

I’ll provide you (via e-mail)

✓ PDF of today’s slides
✓ e-Book – “Using Food and Nutrition to Improve Autism and ADHD”
✓ GFCF Success Guide
✓ Become a part of the community
Nourishing Hope Agenda

• Whole Body Disorders
• Foods and Ingredients to Avoid & Nutrient-Dense Foods to Add
• Special diets: GFCF, SCD/GAPS, low oxalate and more
• Review of Dr. James Adams recent study on GFCF Diet and Supplementation
• Helping picky eaters

Autism is a **neurological** condition

– body chemistry

influences brain chemistry.
Body’s Effect on Brain
ADHD • Autism • Asthma • Allergies • Anxiety

**IMMUNE**
- Gut Inflammation
- Poor pathogen fighting
- Food sensitivities

**DIGESTION**
- Leaky gut
- Dysbiosis
- Less nutrient absorption

**DETOXIFICATION**
- Decreased detoxification
- Food additites

**NEUROLOGY**
- Brain Inflammation
- Opiates
- Microbial toxins
- Neurotransmitters
- Nutrient deficiencies

**Biochemistry**
- SAM: Universal Methyl donor
- Metabolism of: Methyl groups, DNA, RNA, neurotransmitters
- Neurotransmitter function
- Fatty acid metabolism
- Allergic responses
- Motivation
- Cellular energy
- Cell membrane and protein function

**Vitamin B12**
- Methylmalonyl-CoA
- Metabolism
- Creatine synthesis
- Processing of homocysteine
- Maintenance of neural health

**SAM**
- S-adenosyl methionine
- Methylation
- DNA repair
- Neurotransmitter synthesis

**Methionine**
- Metabolism
- Homocysteine production
- Processing of homocysteine

**Cystathionine**
- Metabolism
- Sulfur amino acids
- Processing of sulfur compounds

**Cysteine**
- Metabolism
- Antioxidant production
- Processing of sulfur compounds

**Sulfide**
- Processing of sulfur compounds
- Antioxidant production

**Biochemistry**
- Nutrients
- Fatty acids
- Amino acids
- Vitamins
- Minerals

**Metabolism**
- Energy production
- Carbohydrate metabolism
- Lipid metabolism
- Protein metabolism

**Transmitters**
- Serotonin
- Dopamine
- Norepinephrine
- GABA

**Solution**
- Inflammation
- Oxidative stress
- Neurotransmitter dysfunction

**Biochemistry**
- Nutrients
- Fatty acids
- Amino acids
- Vitamins
- Minerals
To work properly, biochemical pathways require nutrients...

that come from...

**WHAT WE EAT**
As you improve the body and its systems...

you support improved health, learning and behavior.

Importance of GI Health

“All disease begins in the gut”
- Hippocrates, the father of modern medicine

Gut has constant contact with food

- Immune:
  - Physical barrier of defense against bacteria, viruses, etc.
  - Largest part of the immune system (70%) found in the gut

- Neurotransmitters:
  - The greatest amount (90%) of the “brain chemical” serotonin is found in the GI tract
  - Amino acids (absorbed from protein digestion) are precursors for neurotransmitters

- Full body function:
  - Vitamins/minerals absorbed in the gut are cofactors for enzyme reactions, metabolism, conversion of nutrients and fat
How Diet Can Help - Support Digestion & Biochemistry

• Leaky Gut and Gut Inflammation
  - Remove foods that inflame gut
  - Add foods that reduce inflammation and heal the gut
  - Add foods that supply beneficial bacteria

• Nutrient Deficiencies
  - Increase the quality of food and digestibility

• Yeast Overgrowth
  - Remove sugars
  - Reduce refined flour products and starches
  - Add probiotic-rich foods

• Toxicity and Poor Detoxification
  - Avoid food additives
  - Avoid toxins in food supply and meal preparation

• Faulty Methylation and Sulfation
  - Remove phenolic foods
  - Improve methylation and sulfation through supplementation

What Parents Report with Dietary Intervention

• Gastrointestinal problems relieved
• Diarrhea & constipation lessens
• Improved language skills and learning
• Greater focus and attention
• Reduced hyperactivity
• Eye contact
• More appropriate behavior
• Better sleeping
• Easier toilet training
• Skin rashes or eczema clear up

✓ General Health & Happiness Improved
Healing Diets

**Remove:** Avoid offending foods and substances
- Artificial additives
- Gluten, casein, soy, corn, phenols, oxalates, starches

**Replenish:** Increase healthy foods
- Whole and unprocessed foods (sweet potatoes not potato chips)
- Organic and locally grown
- Fermented foods: rich in probiotics
- Grass-fed/pastured meat and eggs
- Good fats
Holistic Nutrition Approach

STEP 1

1. Cleaning up the Diet
2. Choosing the Foods
3. Supplement Basics
4. Diet Basics
5. Addressing an ASD Diet

Moving Forward

7. courthouse Nutrition Fundamentals
8. Refining the ASD Diet
9. Cleaning up the Gut
10. Supplement Specifics
11. Immune Support
12. Detox
AVOID
Top 7 Things to Get Out of the Diet

<table>
<thead>
<tr>
<th>Ingredients to Avoid</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food additives:</td>
<td>candy, cereal, “kids” foods</td>
</tr>
<tr>
<td>Artificial colors/flavors and preservatives, Nitrite and sulfites</td>
<td>Bacon/lunch meat, dried fruit/wine</td>
</tr>
<tr>
<td>MSG (hydrolyzed protein, yeast extracts)</td>
<td>broth, bullion, soup, meat-flavored foods</td>
</tr>
<tr>
<td>Pesticides</td>
<td>non-organic produce and meat</td>
</tr>
<tr>
<td>Aspartame and other artificial sweeteners</td>
<td>Sodas, candy, and other foods</td>
</tr>
<tr>
<td>Trans fats</td>
<td>partially hydrogenated oil, commercial margarine, mayonnaise, peanut butter</td>
</tr>
<tr>
<td>(Added) Sugar</td>
<td>Sugary foods, high fructose corn syrup</td>
</tr>
<tr>
<td>Food allergens</td>
<td>Gluten, dairy, eggs</td>
</tr>
</tbody>
</table>

- Food additives can cause: Hyperactivity*, inattentiveness, aggression, irritability, headaches/pain, trigger asthma, can be addictive


Holistic Nutrition Approach

**STEP 2**
Common Household Toxins

- AVOID chemicals in the food we eat, AND from our home and environment
- Room “freshener,” fragrance and perfume
- Flame retardant in car seats & clothing
- Fabric softener
- Chemical cleaners
- Sunscreens (nano and chemical)
- Toothpaste
- Flea treatments and ant sprays
- Food supply: Artificial additives, cookware and storage containers

Holistic Nutrition Approach
Nutrient Deficiencies in Autism

- Magnesium, calcium, zinc, selenium, iron
- Vitamin B6, B12, folic acid, B1, B2, B3, biotin
- Vitamin D and A
- Vitamin C
- Omega 3 fatty acids
- Amino acids: glutathione, cysteine, l-carnitine, taurine, and glycine

Food vs. Supplements

- Food is the foundation for getting proper nutrition.
  - Food has phytonutrients, enzymes, probiotics and other compounds needed for good health
- However, for most children, additional supplementation may be required
  - A multivitamin/mineral formula helps ensure all children meet minimum requirements
  - Special diets may limit intake of certain nutrients (like calcium on a dairy-free diet), supplemental nutrients may be needed
  - For genetic/biochemical reasons, certain active forms or higher amounts may be necessary
First 9 Supplements to Consider

1. Digestive Enzymes
2. Probiotics
3. B12 - methylcobalamin
4. Folate - Folinic or 5-MTHF
5. B6 - pyridoxine or P5P
6. Magnesium
7. Calcium
8. Cod liver oil or fish oil
9. Multivitamin/mineral formula

Holistic Nutrition Approach

*From Nourishing Hope for Autism*
Children Cannot Live on Junk Food

• Boy with autism hospitalized - limp and severe pain with walking, cough, tachypnea, hypoxia, and tachycardia - diagnosed with pulmonary hypertension.
• The boy ate only chicken nuggets, crackers, cookies and water. He would not eat fruits, vegetables, juice, or vitamins.
• Found to have “undetectable” levels of vitamin C, low vitamin B1, B6, B12, and vitamin D.
• Once nutrient levels were replenished, metabolic bone disease and pulmonary hypertension were reversed – and a healthy boy revived.

➢ Good nutrition is essential, even with a picky eater

The Nourishing Hope Food Pyramid

Animal Protein

©Julie Matthews/Nourishing Hope • NourishingHope.com
Protein

- Protein (essential amino acids) building blocks for:
  - Muscle and tissue growth and repair, neurotransmitters, immune responses, enzymes, detoxification
- Often need to focus on getting more in diet
- Some protein at each meal
- Bio individuality - amounts vary.
  - Some kids need more, some children cannot process protein well: High ammonia, low HCl, low zinc, B6, or iron
- Animal protein is easier to digest and has more concentrated amounts of protein for children in need of healing

Animal Protein

- Red Meat
- Bone Broths
- Fish
- Organ Meats
- Poultry
- Eggs
- Dairy (optional)
Vegetables

- Leafy green
- Red vegetables
- Orange/yellow vegetables
- Purple vegetables
- Green vegetable (green beans, celery, fennel)
- Cruciferous vegetables
- Sulfur-Rich/Immune Supportive
- Fermented vegetables
- Starchy tubers (optional)
- Some people avoid high salicylate and high oxalate vegetables
Fats / Oils

• Fish oil: Salmon, sardines, fish eggs/salmon roe, cod liver and fish oil supplements
• Plant oils: Olive oil, avocados, nuts/seeds
• Plant saturated fats: coconut oil, palm oil, macadamia nuts
• Animal fats: lard and bacon (pork), tallow (beef), chicken fat (Pastured sources)
• Dairy fat: casein-free ghee (Grass-fed sources)
• AVOID Vegetable oil: canola, safflower, corn, soy, and cottonseed oils
Fish Oil Studies

- Brain Development
- Autism
- ADHD, omega 3 deficiency in ADHD
- Speech, imitation, coordination, eye contact, behavior, sensory issues
- Behavior, reading, spelling
- Inflammation
- Depression
- Heart disease


Saturated Fat

Vital Roles of Saturated Fat

- Brain — Saturated fats important brain development
- Bones — Saturated fats help body put calcium in bones
- Liver — Saturated fats protect the liver from poisons
- Lungs — Can’t function without saturated fats — protects against asthma
- Immune System — Enhanced by saturated fats — fights infection
- Essential Fatty Acids — Work with saturated fats

Coconut Oil

- Contains many antifungal and antiviral components
- Anti-inflammatory effects
- More easily digested and absorbed
- Used immediately to create energy
- Enhances absorption of minerals

Plant and animal saturated fat

<table>
<thead>
<tr>
<th>Plant</th>
<th>Animal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coconut</td>
<td>Meat/fat</td>
</tr>
<tr>
<td>Palm</td>
<td>Eggs</td>
</tr>
<tr>
<td>Macadamia</td>
<td>Butter</td>
</tr>
</tbody>
</table>
Animal Fat

- **Good fats:**
  - Monounsaturated fat
  - Essential fatty acids
  - Saturated fat

- **Essential fat soluble vitamins:** A, D, E, and K
  - Assimilation of minerals
  - Important for immune function
  - Antioxidant status or oxidative stress
  - Strong bones

- **Cholesterol**
  - Brain development and function
  - Aids digestion
  - Builds strong bones and muscles, and Repairs damaged tissue
  - Building block for hormones
  - Regulates blood sugar
  - Protects against infectious diseases
  - Cholesterol is an activator for oxytocin receptors in the brain

The Foundations

The Nourishing Hope Food Pyramid

Avoid Gluten and Dairy, and Avoid Caffeine as needed - limit per candies, sodas, sugars and grains. © Julie Matthews / Nourishing Hope
Top Nutrition Boosters
4 Foundations from the Pyramid

- Grass-fed meat
- Broth and stock
- Fermentations
- Juicing

Grass-fed/Pastured Animal Protein

<table>
<thead>
<tr>
<th>Grass-fed/pastured</th>
<th>Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Rich in Vitamin A, D, and K and good fats</td>
<td></td>
</tr>
<tr>
<td>• Eggs from pastured hens higher omega 3 /DHA*</td>
<td></td>
</tr>
<tr>
<td>• Meat - Higher in CLA and tryptophan</td>
<td></td>
</tr>
<tr>
<td>• Cream/butter higher in vitamins A &amp; D</td>
<td></td>
</tr>
<tr>
<td>• Unhealthy animals-poor food</td>
<td></td>
</tr>
<tr>
<td>• Inflammatory grains-create inflammatory food</td>
<td></td>
</tr>
<tr>
<td>• Low Vitamins A&amp;D and others</td>
<td></td>
</tr>
<tr>
<td>• Higher in fats &amp; cholesterol- particularly bad fats</td>
<td></td>
</tr>
<tr>
<td>• Higher in arachidonic acid (inflammatory)</td>
<td></td>
</tr>
<tr>
<td>• Low in anti-inflammatory fats</td>
<td></td>
</tr>
</tbody>
</table>

— Organic is not necessarily grass-fed

Good sources near you—check out WestonAPrice.org chapter leaders


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Broths

• Provides nutrients in easy to absorb form
• Bone Broths
• Rich in gelatin, amino acids, and minerals
• Vegetable Broths
• Adding vegetables to broths increases the vitamin and mineral content of the broth and adds flavor

Fermented Foods
Rich in Probiotics

**Dairy-free:**
• Raw sauerkraut/Cultured vegetables
• Non-dairy yogurt
• Beverages (contain yeast that kills candida):
  • Kombucha
  • Young coconut kefir
  • “Sodas” (hibiscus/rosehip tea with kefir starter)

**Dairy:** Milk-based yogurt/kefir

<table>
<thead>
<tr>
<th>Bacterial ferments (Lactobacillus)</th>
<th>Yeast and Bacteria ferments</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Cultured vegetables</td>
<td>• Kefirs</td>
</tr>
<tr>
<td>• Yogurts</td>
<td>• Kombucha</td>
</tr>
</tbody>
</table>
Juicing

- Stored and pasteurized juices contain significantly less nutrients: zinc, iron, calcium, vitamins B1, B5, and B6
- Fresh and raw vegetable juice contain many times more vitamins & phytonutrients than bottled
- Higher concentration of nutrients
  – Chlorophyll and phytonutrients
- Get nutrients without needing to eat/chew vegetables
- Children that like liquids, juices and smoothies
Holistic Nutrition Approach

STEP 5

Therapeutic Diets & BioIndividual Nutrition
### Special Diets

<table>
<thead>
<tr>
<th>Diet Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GFCF (Gluten-free and Casein-free)</td>
<td>No gluten (wheat, rye, barley, spelt, kamut, and oats) or casein (dairy)</td>
</tr>
<tr>
<td>Food Sensitivity Elimination/Rotation</td>
<td>Eliminating all other food sensitivities: Soy, corn, eggs, citrus, peanuts, chocolate, cane sugar</td>
</tr>
<tr>
<td>SCD (Specific Carbohydrate Diet)/GAPS</td>
<td>Restricts carbohydrates to only fruits, non-starchy vegetables, and honey. No grains, starchy vegetables, or mucilaginous fiber</td>
</tr>
<tr>
<td>Paleo/Primal Blueprint</td>
<td>Meat, fruit, vegetables, fat and nuts. No grains or beans. Often removes potatoes and dairy too.</td>
</tr>
<tr>
<td>Low Oxalate Diet</td>
<td>Restricts high oxalate foods (nuts, beans, greens)</td>
</tr>
<tr>
<td>Low FODMAPS Diet</td>
<td>Low in fermentable, poorly absorbed carbs such as fructose, lactose and FOS.</td>
</tr>
<tr>
<td>Body Ecology Diet &amp; other Yeast Diets</td>
<td>Anti-yeast diet combining principles of anti-yeast diets including no sugar, acid/alkaline, fermented foods</td>
</tr>
<tr>
<td>Feingold/FAILSAFE Diets</td>
<td>Restricts high phenolic foods, including all artificial ingredients and high salicylate fruits (and more)</td>
</tr>
</tbody>
</table>

Weston A Price Dietary Principles: Solid nutrition foundation for everyone

### BioIndividuality

Need to Consider:
- Gene expression
- Biochemical imbalances
- Nutrient deficiencies
- Health conditions
- Environmental stressors
- Microbiome

Goal = BioIndividual Nutrition®
Gluten-Free/Casein-Free: (GFCF) & Other Food Sensitivities

Gluten and Casein

- Common IgG reactions in autism
- Possible opiate response
- Inflammatory response
- Autoimmune response
  - Antibodies to folate receptor alpha (casein)
- Other possible reactions
- Trying the diet is the “gold standard” of how a child reacts to gluten and casein
  = Try the diet
Gluten/Casein Studies in Autism
(Evidence Level: A)

- Research on gluten and casein and OPIOIDS in Autism

Gluten/Casein Studies in Autism
(Evidence Level: A)

- DIGESTIVE PROBLEMS WITH GLUTEN & CASEIN in Autism

- REDUCED AUTISTIC SYMPTOMS with GFCF diet
Gluten/Celiac and Autism
5 Year old Boy

- Described as “an increasingly picky eater and would reject food on the basis of taste, smell, or appearance.”
- Severe language problems, bloating, belching, abdominal pain, nausea, vomiting, and diarrhea. Deficiencies in vitamins A, D, and E, and omega 3 & 6, saturated fat, CoQ10 and folate.
- On gluten-free diet “gastrointestinal symptoms rapidly resolved, and signs and symptoms suggestive of autism progressively abated.”
- “Within 1 month, the boy’s gastrointestinal symptoms were relieved and his behavior had changed dramatically. ...Became progressively more communicative and told her that he loved her. Within 3 months, his functioning had improve so much that he no longer required an individualized leaning program and was able to enter a normal classroom with no aide.”


Gluten Grains & Ingredients to Avoid

<table>
<thead>
<tr>
<th>Grains</th>
<th>Hidden Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>Hydrolyzed Vegetable Proteins</td>
</tr>
<tr>
<td>Rye</td>
<td>MSG</td>
</tr>
<tr>
<td>Barley</td>
<td>Dextrin</td>
</tr>
<tr>
<td>Spelt</td>
<td>Malt</td>
</tr>
<tr>
<td>Kamut</td>
<td>Citric acid</td>
</tr>
<tr>
<td>Triticale</td>
<td>Artificial flavors &amp; coloring</td>
</tr>
<tr>
<td>Oats (commercial)</td>
<td>“Spices”</td>
</tr>
<tr>
<td>Semolina</td>
<td>Soy sauce (unless wheat-free)</td>
</tr>
<tr>
<td></td>
<td>Potato chips/fries</td>
</tr>
</tbody>
</table>

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## Casein-Containing Foods to Avoid

<table>
<thead>
<tr>
<th>Foods</th>
<th>Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk</td>
<td>Whey, Galactose</td>
</tr>
<tr>
<td>Cheese (all)</td>
<td>Casein, Caseinate</td>
</tr>
<tr>
<td>Yogurt</td>
<td>Lactose, Lactalbumin</td>
</tr>
<tr>
<td>Butter</td>
<td>Lactic acid</td>
</tr>
<tr>
<td>Buttermilk</td>
<td>Sherbet</td>
</tr>
<tr>
<td>Ice cream</td>
<td>Canned tuna</td>
</tr>
<tr>
<td>Kefir</td>
<td>Cool whip</td>
</tr>
<tr>
<td>Cream</td>
<td>Artificial butter flavor</td>
</tr>
<tr>
<td>Sour cream</td>
<td></td>
</tr>
</tbody>
</table>

## Avoid Soy

- Not good substitute for dairy or protein
- Very difficult to digest
- Irritate the gastrointestinal tract
- Blocks absorption - calcium, magnesium, iron, copper and especially zinc - due to phytic acid and oxalates
- Soy compounds block thyroid function
- Endocrine disruption in the reproductive hormones of both males and females
- Form opioids 1

**Soy sources:** tofu, soy protein, miso, tempeh, soy milk, soy cheese or ice cream, soy sauce, tamari, soy oil

**Hidden soy:** lecithin, vitamin E

Dr. Jim Adams Study
The following slides courtesy of Dr. Adams

Treatment Schedule

Day 0: Vitamin/Mineral supplementation begins.
Day 30: Essential Fatty Acid supplementation begins.
Day 60: Epsom Salt baths begin (2x/week)
Day 90: Carnitine supplementation begins
Day 180 Digestive Enzyme supplementation begins;
Day 210: Healthy, casein-free, gluten-free diet is begun.
  Group meeting with nutritionist, and then individual
  meeting to review diet planning with family

Day 365: Final assessment of autism severity and overall
functioning status.

Blood and urine collections at beginning and end of study.
Participants

**Treatment group:** 37 started, 28 finished
- 3 dropped (lack of interest)
- 4 disqualified (inconsistent with supplements)
- 2 had possible adverse effect of vitamin/mineral supplement on behavior, stopped all supplements, but had good improvement on special diet

**Delay group:** 30 started, 27 finished
1 disqualified due to major improvement in diet
2 disqualified due to major change in school

RIAS (IQ/Memory)

- Verbal IQ – little change
- Memory – little change
- Non-verbal IQ – treatment group improved more
  Treatment +6.7; Delay: -0.6; p=0.02
Vineland Adaptive Behavior Scale

Over 12 months, treatment group gained 20 months of development, vs. 4 months in delay group, p<0.01

Parent Global Impressions

Treatment group had much greater improvement than Delay group on Average PGI-R score, 1.2 vs. 0.1, p<0.0001

Scale: -3 (much worse), 0 — no change, 1-slightly better, 2-better, 3-much better
Parent Ratings of Treatment Effectiveness

Scale:
0 – no change; 1 – slightly better; 2 – better; 3 – much better

Vitamin/Mineral – 85% will continue
EFA – 89%
Epsom Salt – 70%
Carnitine – 44%
Digestive Enzyme – 44%
Healthy GFCFSF Diet – 63%
Phenols & Salicylates
Feingold Diet & Failsafe Diet

Beyond GFCF

• Soy-free
• Corn-free
• Grain-Free (Specific Carbohydrate Diet, GAPS Diet and Paleo diet)
• Feingold/Phenols Diet
• Low Oxalate Diet
**Effects of Faulty Biochemistry in Autism**

 Phenols, Salicylates, and Amines

**Can cause:**
- Hyperactivity
- Red cheeks/ears
- Itchy skin
- Upset stomach
- Asthma
- Headaches
- Bedwetting
- Fatigue
- Diarrhea
- Depression
- Irritability
- Aggression
- Defiant behavior
- Sleep issues
- **Cravings for** salicylates, amines, and/or glutamates.
High Phenol/Salicylates

- Almonds
- Apples
- Apricots
- Berries, raspberries, cherries
- Chili powder
- Cider and cider vinegar
- Cloves
- Coffee
- Cola drinks
- Cucumbers and pickles
- Curry powder
- Endive
- Grapes, raisins, currants

- Honey
- Nectarines and peaches
- Oranges and oranges
- Paprika
- Peppers (bell and chili)
- Pineapple
- Plums and prunes
- Radishes
- Tea
- Tomatoes
- Wine and wine vinegar
- Oil of wintergreen

Continue to Evolve Diet

- Instead of giving up on diet, consider other factors that could be interfering with results.
  - Salicylates
  - Oxalates
  - Grains
  - FODMAPS
  - And more
Grain-Free Diets

Specific Carbohydrate Diet, GAPS Diet, Paleo

Types of Grain-Free Diets

• Specific Carbohydrate Diet (SCD) and Gut and Psychology Syndrome Diet (GAPS Diet)
  – Removes di- and polysaccharides
  – Allows certain beans
• Paleo
  – Removes grains and all beans, and no added sugar. However, does not necessarily remove all di- and polysaccharides (seaweed, aloe, flax, chia)
  – Some Paleo authors do not remove all starchy tubers (sweet potatoes)
Low FODMAPS Diet

FODMAPs Acronym

• Fermentable
• Oligosaccharides
  – Fructans
  – Fructo-oligosaccharides (FOS)
  – Galacto-oligosaccharides
• Disaccharides
  – Lactose
• Monosaccharides
  – Fructose
• And
• Polyols – sugar alcohols
FODMAP Foods
Fermentable carbohydrates

- Fructans: Onion, Artichokes, asparagus, beets, Brussels sprouts, cabbage, garlic, leeks, peas, bulb/white part of green onions
- Galacto-oligosaccharides: Legumes
- Lactose: Milk, yogurt, cottage cheese
- Fructose: Apples, pears, mango, watermelon, honey
- Polyols: Sugar alcohols such as xylitol

Phenols & Salicylates
Feingold Diet and Failsafe Diet
**Phenols and Amines**

Phenol/aromatic ring bound to -OH group
Broken down by phenolsulfotransferase enzymes (PST)

- **Artificial Phenols**
  - Artificial colors, flavors, preservatives (petroleum-based)
  - Propionic acid
- **Salicylates**
  - Salicylic acid (aspirin)
  - Phenols occurring in plant foods like apples, berries, grapes, almonds, honey, spices/herbs
- **Amines**
  - Neurotransmitters – serotonin dopamine
  - Histamine, tyramine and other amine containing foods

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**Foods High in Food “Chemicals”**

**Salicylates**
- Berries
- Apples
- Grapes
- Tomato
- Almonds
- Honey
- Avocado
- Spinach
- Cantaloupe
- Watermelon
- Dates
- Herbs and spices

**Amines**
- Banana
- Cheese, yellow
- Aged or blue cheese
- Chocolate/cocoa
- Wine/beer
- Fermented foods: sauerkraut, yogurt, tempeh
- Soy sauce
- Bone broths
- Meat and aged meat

**Glutamates**
- MSG
- Autolyzed yeast
- Soy sauce
- Parmesan cheese
- Vegemite/Marmite
- Sauerkraut
- Bone broths
- Gelatin
- Peas
- Corn
- Tomatoes
Biochemistry

Effects of Faulty Biochemistry in Autism
Low Oxalate Diet

Oxalates Defined

- Oxalate is an ion or molecule with a negative charge
- Found in plant foods – and can come from the diet
- Can also be made by the body (endogenous)
- Bound together in the gut they are excreted in the stool before absorbing
- In the body, they are excreted in the urine or may be stored in tissues
High Oxalate Foods

• Nuts, especially almonds & peanut
• Beans, most
• Beets
• Figs
• Rhubarb
• Swiss chard
• Field greens
• Spinach
• Amaranth and buckwheat
• Soy

• Sweet potatoes
• Some berries - Goose berries, raspberries and blackberries
• Chocolate
• Citrus peel
• Kiwi and starfruit
• Tea

Top Diets

<table>
<thead>
<tr>
<th>Diet Type</th>
<th>Diet Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GFCF (Gluten-free and Casein-free)</td>
<td>No gluten (wheat, rye, barley, spelt, kamut, and oats) or casein (dairy)</td>
</tr>
<tr>
<td>Food Sensitivity Elimination/Rotation</td>
<td>Eliminating all other food sensitivities: Soy, corn, eggs, citrus, peanuts, chocolate, cane sugar</td>
</tr>
<tr>
<td>SCD (Specific Carbohydrate Diet)/GAPS</td>
<td>Restricts carbohydrates to only fruits, non-starchy vegetables, and honey. No grains, starchy vegetables, or mucilaginous fiber</td>
</tr>
<tr>
<td>Paleo/Primal Blueprint</td>
<td>Meat, fruit, vegetables, fat and nuts. No grains or beans. Often removes potatoes and dairy too.</td>
</tr>
<tr>
<td>Low Oxalate Diet</td>
<td>Restricts high oxalate foods (nuts, beans, greens)</td>
</tr>
<tr>
<td>Low FODMAPS Diet</td>
<td>Low in fermentable, poorly absorbed carbs such as fructose, lactose and FOS.</td>
</tr>
<tr>
<td>Body Ecology Diet &amp; other Yeast Diets</td>
<td>Anti-yeast diet combining principles of anti-yeast diets including no sugar, acid/alkaline, fermented foods</td>
</tr>
<tr>
<td>Feingold/FAILSAFE Diets</td>
<td>Restricts high phenolic foods, including all artificial ingredients and high salicylate fruits (and more)</td>
</tr>
</tbody>
</table>

Weston A Price Dietary Principles: Solid nutrition foundation for everyone
**Biochemical Causes of Picky Eating**

- Addictions to opiates (gluten/casein) cause consumption of primarily wheat and dairy containing foods.
- Addictions to chemicals (MSG, artificial additives) cause restriction to one brand or large preference for processed foods.
- Nutrient deficiencies (zinc) makes everything taste bad or bland.
- Yeast, viral, and microbial overgrowth may cause focus on eating mainly high carb and sugar foods.
- Sensory sensitivities can restrict the consumption of certain textures - Seek a feeding therapist when needed.
Ideas for Picky Eating

• Remove addictive foods
• Improve nutrient status with supplementation
• Get creative with TEXTURE
  – Chicken pancakes and meatballs for protein
  – Vegetable Laktes and Carrot/Kale Chips for vegetables
• Incorporate (“hide”) pureed vegetables in muffins, pancakes, meatballs, pasta sauce
• Visual Presentation

Vegetable Favorites

• Kale chips
• Brussels sprout chips
• Carrot chips
• Butternut squash chips
• Carrot fries
• Rutabaga fries
• Butternut squash hash browns
Words of Encouragement

• Learning curve is steep, but...
• You WILL get the hang of it - not hard to do
• Though not always easy at first, the improvements make it worthwhile
• As symptoms decrease, quality time increases
• It’s beneficial to focus on improving diet

I’ll provide you (via e-mail)

✓ PDF of today’s slides
✓ e-Book – “Using Food and Nutrition to Improve Autism and ADHD”
✓ GFCF Success Guide
✓ Become a part of the community
Diet & Nutrition Learning Tools
Autism • ADHD • Learning and Development Delays

Nourishing Hope for Autism
Autism Diet & Nutrition Guide
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