



**INE** | INSTITUTE OF  
NUTRITIONAL  
ENDOCRINOLOGY

## The Autism Puzzle



**Jan Chamberlain: BA, FNC, CFT, BMP**

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### ASD U.S. Stats:

- 1980's: 1 in 1,000
- 1990s: 1 in 2500
- 2000: 1 in 1000
- 2012: 1 in 88
- 2016: 1 in 68 children  
(1 in 42 boys)



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## 3 Core Symptoms:

- 1) Social Impairments
- 2) Communication Difficulties
- 3) Repetitive, Restrictive Behaviors



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## Autism Spectrum Disorders

- ✓ Asperger's
- ✓ PDD-NOS
- ✓ Autistic Disorder
- ✓ Rett Syndrome
- ✓ Co-morbid disorders: Tourette's, TICs, PANDAS, Fragile X syndrome, epilepsy
- ✓ Between 30-50% have seizures



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## Autism: Whole Body Disorder



- ✓ **Neurological**
- ✓ **Digestion/Gut: Microbiome** – (Gut is 2<sup>nd</sup> Brain) - pathogens, bacterial & yeast overgrowth
- ✓ **Genetic** – SNPs: MTHFR, COMT, CBS
- ✓ **Detox** - pathways impaired – sulfation, etc.
- ✓ **Mitochondrial** – poor muscle tone, oxidative stress



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## Autism: Considerations



- ✓ 62% w/ASD have autoantibodies to FRA (Folate Receptor Alpha protein) – transports folate to CNS
- ✓ 92% w/ASD unable to sulfate normally & detoxify
- ✓ 2.5 - 3x greater oxalate levels w/ASD
- ✓ Higher markers for oxidative stress w/ASD
- ✓ **Low Sulfate = High Oxalate = Depleted Glutathione = Mito Dysfunction/Microbiome Disruption**
- ✓ Much lower levels of bifidobacterium and much higher levels of lactobacillus w/ASD
- ✓ ASD-associated bacteria: higher Clostridia w/ASD; over 50% w/ASD have Sutterella bacteria.

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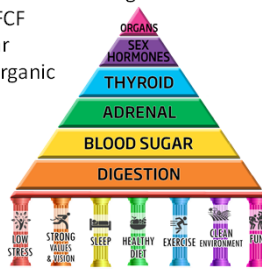
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## Begin with Digestion!

- ✓ Avoid a high-carb breakfast: stabilize blood sugar
- ✓ Avoid food allergens: start w/GFCF
- ✓ Eliminate caffeine, alcohol, sugar
- ✓ Avoid refined foods: eat fresh/organic
- ✓ Give the body an “oil change”
- ✓ Identify gut pathogens
- ✓ Rebalance gut microbiome
- ✓ Support detox pathways
- ✓ Identify food sensitivities
- ✓ Exercise, sleep, stress balance
- ✓ Plenty of pure water



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## Goals



- ✓ Remove offending foods and substances
- ✓ Customize for most significant symptoms
- ✓ Provide systemic support via nutrient rich foods
- ✓ Consist of whole, organic, unprocessed foods
- ✓ Include good fats – coconut oil, flax oil if tolerated
- ✓ Contain probiotic-rich foods
- ✓ Balance biochemistry - so more foods are tolerated
- ✓ Have variety

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### Ingredients to Avoid

- ✓ Benzoate preservatives: BHT, BHA
- ✓ Natural flavor, MSG
- ✓ High fructose corn syrup, sugar, and all relatives
- ✓ Artificial colors and flavors
- ✓ Artificial sweeteners: Splenda, Aspartame, Sucralose
- ✓ Natural flavors
- ✓ Hydrolyzed vegetable protein
- ✓ Flours



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### Fats to Avoid

- ✓ Hydrogenated oil
- ✓ Shortening
- ✓ Olestra
- ✓ Brominated vegetable oil
- ✓ Canola oil
- ✓ Vegetable oil
- ✓ Any oil that's not cold processed and stored in dark containers



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### The Sweet Stuff to Minimize

- ✓ Honey
- ✓ Maple syrup
- ✓ Rice syrup
- ✓ Barley malt
- ✓ Agave
- ✓ Coconut nectar
- ✓ Molasses
- ✓ Fructose
- ✓ Cane sugar



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## Where to Start?

- ✓ GFCFSF (Gluten-Free, Casein-Free, Sugar-Free)
- ✓ Assess gut microbiome
- ✓ Re-balance gut microbiome
- ✓ Identify most debilitating symptoms
- ✓ Do easiest diet trial first (e.g., low salicylate vs. low oxalate)
- ✓ Consider MTHFR
- ✓ FIR sauna for detox
- ✓ Start low & slow
- ✓ Progress as needed



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## Symptoms/Suspect Foods

- ✓ **Behavior:** Salicylates, Amines, Glutamates
- ✓ **Cognition/Mood:** All of above + Oxalates
- ✓ **Physical Symptoms** (dark circles, red cheeks, incontinence, hives, eczema, stimming, etc.): All of above + Di- and Polysaccharides (SCD/GAPS)
- ✓ **Digestive Pain or Inflammation (anywhere):** All of above + FODMAPs
- ✓ **Metabolic:** Oxalates



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## Food Cravings

- ✓ **Salicylates:** Fruit/grapes/tomato/ketchup/apples
- ✓ **Amines:** Bananas, chicken skin, bone broth
- ✓ **Glutamates:** Soy sauce, Brewer's yeast, parmesan
- ✓ **Oxalates:** Spinach, nuts
- ✓ **Glutein/Casein:** (Opiates) – wheat & dairy
- ✓ **Food Sensitivities:** Often will crave foods they don't tolerate



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### Reactions to Fruit:

- ✓ Berries, melon, oranges, nuts - OK – **FODMAPs**
- ✓ Berries, melon, oranges, nuts NOT - OK – consider **Salicylates**
- ✓ More clues: If onion, garlic, beans, beets, asparagus NOT - OK – consider **FODMAPs**
- ✓ If beans, asparagus, beet - OK – consider **Salicylates**
- ✓ If NO fruits tolerated, consider **Low/No Fructose Diet**



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### Sulfur vs Salicylates:

If reacting to **onion, broccoli, cauliflower:**

- Red peppers, tomato, almonds, avocado - OK, but NOT cabbage, broccoli, Brussels sprouts, egg – **SULFUR**
- Red peppers, tomato, almonds, avocado NOT OK, but cabbage, broccoli, Brussels sprouts, eggs - ARE ok – **SALICYLATES**



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### Sulfur vs FODMAPs:

If reacting to - **broccoli, cauliflower, cabbage, asparagus, Brussels sprouts:**

Artichoke, avocado, beets, apple - NOT OK; but eggs, kale, turnip, chard, bok choy, raspberries are OK - **FODMAPs**

Artichoke, avocado, beets, apple - OK; but NOT eggs, kale, turnip, bok choy, raspberries - **SULFUR**

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### Considerations

- ✓ Food Cravings/Obsessions
- ✓ Picky Eating – texture issues
- ✓ School/Work schedules
- ✓ Time
- ✓ Resources
- ✓ Travel
- ✓ Support/Help Available
- ✓ Immersion Experiences



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### Ideas

- ✓ Mono Meals – 1 or 2 Ingredients
- ✓ Rotating Schedule
- ✓ Color Coding
- ✓ Meal Charts
- ✓ Grab 'n Go Foods
- ✓ Weekly Meal Prep
- ✓ Intrinsic vs. Extrinsic Rewards
- ✓ Change Texture – dehydrate, etc.



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### Fun With Nourishing Foods

- ✓ The “Big Bowl”
- ✓ Combination salads
- ✓ Soups
- ✓ Cooked vegetables with raw sauces and dips
- ✓ Non-gluten grains (as tolerated) with raw sauces and vegetables
- ✓ Elixirs



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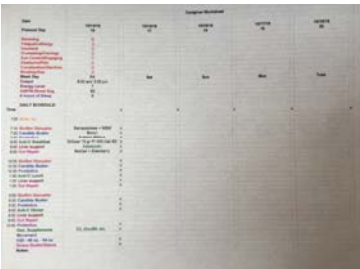
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### Tracking Symptoms/Foods

- ✓ NEPT Program: Master Health Tracker
- ✓ Daily/Weekly Color-Coded Overviews:



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### MTHFR C677T Basics:

- ✓ Avoid folic acid; Avoid folate & B12 blockers – Nitrous Oxide, antacids
- ✓ Eliminate gluten. Eliminate or reduce dairy.
- ✓ Sauna or sweat somehow (Epsom salt baths, sports, yoga) 1-3 x/week.
- ✓ Limit intake of processed foods/Eat fruits and vegetables – daily
- ✓ Castor Oil Packs over abdomen during times of pain, soreness, cramps
- ✓ Vegetable/fruit juice with chia seeds during times of pain, soreness, cramps
- ✓ Limit intake of high methionine containing foods if homocysteine elevated
- ✓ Coffee enemas during times of detoxification or pain
- ✓ Filter chlorine from tap water
- ✓ Drink ½ bodyweight in oz of H2O daily w/ electrolytes and vitamin C.
- ✓ Limit protein intake to 0.7 grams protein/kilogram of body weight.
- ✓ Remove mercury amalgams and root canals with a trained biological dentist.
- ✓ Avoid cooking, drinking, storing and heating in any type of plastic.
- ✓ Use an air purifier in your home and office
- ✓ Eliminate carpeting and install low VOC wood or tile flooring.
- ✓ Cook with electric stove and oven and remove gas stove and oven.

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### MTHFR Considerations

- ✓ The MTHFR enzyme is working at 70% or so in heterozygous individuals; 30% in homozygous individuals
- ✓ If inflammation is unchecked when supplementing w/methylfolate, symptoms may worsen.
- ✓ FIRST: improve diet/lifestyle - tolerating probiotics, turmeric, etc.
- ✓ Electrolytes
- ✓ Glutathione



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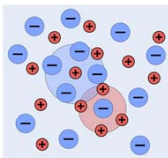
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## Electrolytes

- ✓ Methylation supported = cells divide
- ✓ Cells divide = magnesium & potassium reduced
- ✓ Symptoms:
  - Nausea/dizziness
  - Drink water & need to urinate quickly
  - Frequent thirst/urination
  - Dry skin
  - Muscle aches/cramps



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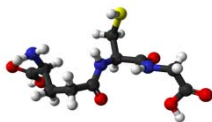
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## Glutathione

- ✓ Methylation supported = cells divide
- ✓ Cells divide = glutathione in cell reduced
- ✓ Any chronic condition - likely low in glutathione
- ✓ Pulsing recommended
- ✓ Symptoms worsen - open sulfite pathway
- ✓ B1
- ✓ Molybdenum



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## FIR Sauna Considerations

- ✓ Electrolyte deficient
- ✓ Glutathione deficient
- ✓ Methylation deficient
- ✓ Dehydrated
- ✓ Adrenal fatigue
- ✓ EFA deficient
- ✓ High chemical burden
- ✓ Genetic SNPs
- ✓ Mitochondrial fatigue
- ✓ Possibly hypothyroid



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# SHINE Conference 2016: NEPT

## Presentations - Jan Chamberlain: The Autism Puzzle

### References:

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