Nutrition, Complementary Therapies and Autism: A look at the evidence

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Objectives

Use 3 cases (and a few sidebars) to explore:

- Autism from a nutritionist’s perspective
- Autism and nutrition-related integrative approaches
- Evaluating integrative approaches
Sidebar #1: What is a nutritionist?

• RD – Registered Dietitian
• RDN – Registered Dietitian Nutritionist
  • Bachelor’s from accredited (ACEND) program
  • Dietetics, not dianetics
  • Supervised practice program (6-12 months)
  • National exam
  • Ongoing CE

• Nutritionist
  • Nutritionist (not a nutritionalist)

All registered dietitians are nutritionists, but not all nutritionists are dietitians
Case Example: Aaron

- 5 years, 8 months
- Dx: ASD
  - OT services for gross motor, motor planning, flexibility
  - No feeding services, but some recommendations from OT
  - Pediatrician + Naturopath
Aaron’s Intake

- Feeding/Eating History
  - Gagging, hives (?anxiety) with foods, textures
  - Repertoire narrowed beginning ~age 1 ½ year

- Food pattern
  - Some vegetables, fruits
  - Nuts, nut butters
  - No meat or beans
  - Favorite food: Stage 2 sweet potatoes (2-3 jars at dinner)

- GFCF for 2 years
  - Dislikes milk alternatives
Aaron’s Supplements

- Ultimate Omega Minis, 8 pills/d
- Methylated B12 shots, qod
- Tetrahydrobiopterin (BH4), 2 pills/d
- 5-methylenetetrahydrofolate (MTHF), 10 pills/d
- Zinc, 60 mg
- Thorne Children’s Basic Nutrients (multivitamin), 6 pills/d
- Ferrous bisglycinate, 25 mg/d
- Vitamin D, 5000 IU
- Herbatonin (melatonin) 0.3 mg qod
Aaron’s Growth
Nutrition Assessment

- Growth
- Intake
  - Developmental appropriateness
    - Picky eating
    - Food repertoire
    - Response to new foods
  - Nutrients from food
  - Nutrients from supplements

Intake – Food Nutrients

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>✅</td>
</tr>
<tr>
<td>Protein</td>
<td>✅</td>
</tr>
<tr>
<td>Iron</td>
<td>✅</td>
</tr>
<tr>
<td>Zinc</td>
<td>✅</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>✅ - Ok, with supplement</td>
</tr>
<tr>
<td>Calcium</td>
<td>❌ - ~10% needs</td>
</tr>
</tbody>
</table>
Sidebar #2: Integrative medicine

- Allopathic medicine
  - Treatment of disease or injury with active intervention, such as medicine and therapy
  - Conventional, “mainstream” medicine or treatment
- Alternative medicine
  - Therapies used *in place* of allopathic medicine
- Complementary medicine
  - Therapies used *along with* allopathic medicine
- Complementary and alternative medicine (CAM) → Integrative Medicine
Integrative Medicine

Natural products
• For example: herbs (botanicals), vitamins and minerals, and probiotics
• Often sold as dietary supplements

Mind and body practices
• For example: acupuncture, massage therapy, meditation movement therapies, relaxation techniques, spinal manipulation, Tai chi, qi gong, yoga
• Performed/taught by trained practitioner
A few more definitions

- **Homeopathy**
  - *like is cured by like*
    - illness can be treated by a substance which produces similar symptoms in a healthy person (e.g., poison ivy extract for dermatitis)
  - *potentiation through dilution*
    - more dilute concoctions are more powerful and therapeutic

- **Naturopathy**
  - Based on 3 principles:
    - The body has a strong, innate power to heal itself
    - Symptoms of disease reveal the body’s attempt to reach a natural balance
    - Practitioners must consider the entire person (mental, emotional, social health) in treatment
  - Focus on eliminating bad habits and detoxification, eating clean, organic food, corrective habits and lifestyle modification
  - Includes acupuncture, chiropractic medicine
Quick Poll – Question 1

In the last 12 months, have you used complementary therapies and/or supplements?

• No
• No, but I did use a vitamin/mineral supplement
• Yes, I used a dietary supplement
• Yes, I used a non-supplement complementary therapy
• Yes, I used both supplements and complementary therapies
Use among adults – 2012 National Health Interview Survey

- In 2012, 33.2% of adults used complementary health approaches
  - 17.7% used natural products
    - Most common: fish oil (7.8%)
    - Increased: fish oil, prebiotics, probiotics, melatonin
    - Decreased: glucosamine/chondroitin, echinacea, garlic
  - Mind-body approaches
    - Most commonly used: yoga (9.5%), chiropractic or osteopathic manipulation, meditation, massage therapy
Use among children: 2007-2012

- Use of complementary approaches ~12% children
- Natural products most commonly used approach (fish oil, melatonin)
- Increase in movement therapies
- 44% used to treat specific condition

Use: Special health care needs

- ~2/3 families reported some supplement use by child
- Only 20% of those using supplements discussed with child’s HCP. Why?
  - Not important
  - Think would receive negative reaction
  - Doctor never asked

- Types of therapies used
  - Botanicals: greatest among children with CF, solid tumors, liver transplants
  - Amino acids: CF, neurobehavioral disorders
  - 5 most reported:
    - Disease-specific (e.g., Nutravene D, SuperNuThera)
    - Garlic
    - Methylsulfonylmethane
    - Echinacea
    - n-3 fatty acids

CAM Use: Autism

- 28% - any use
- 17% - special diets
- 20% - other

Higher use associated with
- GI symptoms
- Seizures
- CBCL total problem score
- No association with sleep problems
- Lower use of special diets with use of psychotropic meds

Why do families use complementary approaches?

- Want to provide best care for child
- Looking for cure for chronic or acute condition
- Natural approach
- Children with chronic conditions living into adulthood (e.g., CF)
- Expanded interest

Among adults:
- To treat illness
  - Relief of symptoms
  - Alleviation of side effects of conventional treatments
  - Philosophic reasons
  - Wanting greater control over health management
- For health promotion
- Mixed uses
Potential problems

- Safety
  - Natural = safe?
  - Contaminants
  - Mistaken plants
  - Current use vs. traditional use
  - Special circumstances, including medication interactions

- Evidence (or lack of) related to efficacy
  - Specific to pediatrics
  - Dosing

- Lack of standardization
  - Collection methods
  - Extraction techniques
  - Product purity
Potential problems – cont’d

• Limited family resources may mean CAM at expense of food or conventional, proven therapies
• Practitioners not necessarily trained in pediatrics
  • 30-33% of HP/NDs report peds training
  • 96-100% HP/NDs see children and adolescents

<table>
<thead>
<tr>
<th><strong>Vitamins</strong></th>
<th><strong>Intestinal</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>NuThera with P5P, without vitamins A or D - 2 capsules</td>
<td>Nystatin - 1,000,000 units</td>
</tr>
<tr>
<td>Vitamin C - 2000 mg, buffered</td>
<td>Caprylic acid - 975 mg</td>
</tr>
<tr>
<td>Vitamin A - 3750 IU via cod liver oil</td>
<td>Lactobacillus - 1 capsule</td>
</tr>
<tr>
<td>Vitamin E - 200 mg</td>
<td>Colostrum - 1 teaspoon</td>
</tr>
<tr>
<td>CoQ10 - 50 mg</td>
<td>Cranberry - 3 tablets</td>
</tr>
<tr>
<td>Riboflavin - 37 mg</td>
<td>Yeast control - 2 capsules</td>
</tr>
<tr>
<td>Folic Acid/B12 - 1600 mcg folate and 1000 mcg B12</td>
<td><strong>Amino Acids</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>** Minerals**</th>
<th>** Other**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium with vitamin D - 1000 mg</td>
<td>Milk thistle - 200 mg (2 capsules)</td>
</tr>
<tr>
<td>multiple minerals - 2 per day</td>
<td>MSM - 1500 mg</td>
</tr>
<tr>
<td>zinc - 40 mg</td>
<td>EnzymeAid - with every meal</td>
</tr>
<tr>
<td>magnesium glycinate - 240 mg</td>
<td>EnzymAid Companion - with every meal</td>
</tr>
<tr>
<td>selenium - 50 mcg</td>
<td>DPP-IV Forte - with every meal</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th><strong>EFA</strong></th>
<th><strong>Green food or Chlorophyll Perls - 3 capsules or 6 perls</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA and DHA - 2 EPA, 1DHA capsule</td>
<td></td>
</tr>
</tbody>
</table>
Regulation

• Dietary Supplement Health and Education Act of 1994 (DSHEA)
  • Herbal supplements ≠ regulated food additives
  • Prohibits claims to treat or cure a disease
  • Allows claims that body’s structure or function are affected
    • NO: “antidepressant”
    • YES: “reduces stress and frustration”
  • Manufacturer is responsible for controlling quality and safety…but FDA must prove that a product is unsafe
Current Good Manufacturing Practices (CGMPs)

- FDA requirements and expectations
- Manufacturers expected to guarantee identity, purity, strength composition of supplements, e.g.,
  - Correct ingredient
  - Correct (labeled) amount of ingredient
  - Prevent contamination (pesticides, heavy metals, bacteria)
  - Proper packaging and labeling
Independent Organizations

USP (United States Pharmacopoeia)

- Sets standards for medications & dietary supplements
- Verification program
- [www.usp.org](http://www.usp.org) and [www.uspverified.org](http://www.uspverified.org)

NSF

- What’s on the label is in the bottle
- Toxicology review (not efficacy)
- Contaminant review
### Table 2
Evidence-based support for treatments

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Evidence</th>
<th>Comments</th>
<th>Rating of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Natural Products</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herbal products</td>
<td>No specific studies of herbs and autism</td>
<td>No studies; no recommendations</td>
<td>D</td>
</tr>
<tr>
<td>Vitamins/minerals/supplements</td>
<td>Randomized DB/PC trials with vitamin mineral supplement. Outcome measures included PGI-R and symptoms of hyperactivity, tantrumming, and changes in biotin and vitamin K</td>
<td>Significant methodological problems</td>
<td>C</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>No evidence; theories</td>
<td>No evidence of effectiveness; significant potential for harm</td>
<td>D</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>2 DB PC trials showing improved sensorimotor, sleep, and GI symptoms and differences in vitamin C levels Other reference theoretic, ascribing cause(s) of ASD associated with oxidative stress</td>
<td>Some preliminary evidence; toxicity not significant</td>
<td>B</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>Treatment based on circumstantial evidence: symptoms of ASD during 2nd and 3rd year of life when vitamin D may be low; correlation of UV-B doses in USA with prevalence; relationship of vitamin D hormone (calcitriol) and serotonin and correlations of 25(OH)-vitamin concentration and scores on the Autism-Spectrum Quotient</td>
<td>Primarily hypothetical theories. Methodological problems: observational, epidemiologic assumptions</td>
<td>D</td>
</tr>
<tr>
<td>Vitamin B&lt;sub&gt;6&lt;/sub&gt; and magnesium</td>
<td>Cochrane review 2005 of existing studies: 3 studies; Owing to small number of studies, methodological quality of studies, and small sample sizes, no recommendation can be advanced regarding the use of B&lt;sub&gt;6&lt;/sub&gt;-Mg as a treatment for autism. Update in 2010 came to same conclusion. Study in 2006 with 33 children, poorly defined diagnosis, changes seen in blood studies; control by typical children; unblinded</td>
<td>Poor quality of studies precludes recommendations for treatment Potential neurotoxicity of B&lt;sub&gt;6&lt;/sub&gt; and/or magnesium; report of death from combination of multiple supplements with magnesium</td>
<td>D</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Treatments</th>
<th>Evidence</th>
<th>Comments</th>
<th>Rating of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxytocin&lt;sup&gt;153,154&lt;/sup&gt;</td>
<td>7 RCTs, small samples; benefits in emotional recognition, eye gaze. One trial with benefit at 6 wk</td>
<td>Longer-lasting products needed that can be tested in appropriate clinical trials No FDA-approved product on market with this clinical indication at present</td>
<td>C+</td>
</tr>
<tr>
<td>Secretin&lt;sup&gt;92,155–171&lt;/sup&gt;</td>
<td>&gt;900 children have been evaluated in DB PC trials. No behavioral benefit</td>
<td>No FDA-approved product on market with this clinical indication at present Risk from intravenous route, stress. No benefit documented</td>
<td>A</td>
</tr>
<tr>
<td>Gluten-free/casein-free diet&lt;sup&gt;59,172–190&lt;/sup&gt;</td>
<td>Single-blind trials suggested potential benefit in children 5–7 y of age with GI symptoms DB trial without demonstrable benefit</td>
<td>Provided by parents with/without professional guidance DB randomized trial with characterization of patients and standard outcome data would be needed to clarify utility of this intervention Risk for nutritional compromise with restriction of calcium, vitamin D in milk products, and other nutrients with additional restrictions. Can be delivered in a nutritionally sound fashion. Suggest consultation with registered dietitian</td>
<td>B</td>
</tr>
<tr>
<td>Hyperbaric oxygen therapy&lt;sup&gt;74,191–156&lt;/sup&gt;</td>
<td>Two randomized trials, conflicting results. Statistics might be interpreted differently, impact of other therapies possible</td>
<td>Randomized trial, DB of well-characterized patients using manualized approach and valid outcome measures would be needed to determine efficacy No FDA-approved product on market with this clinical indication at present</td>
<td>B</td>
</tr>
</tbody>
</table>
When considering alternative therapies…

- Is the product safe?
  - What is in it?
  - What pediatric studies have been completed?
  - Does this react/interfere with other meds?
  - What is a safe dose for a child?
- What is the cost to the family?
  - Does it interfere with funds for basics (food, housing, prescription meds)?
  - Will it augment or replace conventional therapy?

- Does it work?
  - Have there been efficacy studies/outcome measurements in children?
- How will it be evaluated?
  - What will be monitored?
  - Which change related to which therapy?
- What are the possible harmful effects?
  - Nutrients?
  - Food pattern?
  - Expense?
  - Other resources?
Supporting families

Sharing of unbiased and complete information in an appropriate and supportive manner

*I am an optimist and a realist*
*I know that there are no miracle cures for autism.*
*Yet, I am not afraid to dream of the day when there might be,*
*I still hold onto that dream.*
*Even if it is with the nail on my little finger*

Professional Codes of Ethics

- Academy of Nutrition & Dietetics
- American Academy of Pediatrics
## Supporting families: Professionals

| Academy of Nutrition & Dietetics  
| Code of Ethics  
| The dietetics professional must practice dietetics based on scientific principles and current information and provide sufficient information to enable clients to make their own informed decisions  
|  
| American Academy of Pediatrics  
| Use of CAM in Pediatrics  
| • Ask patients about therapies  
| • Respect the family’s perspectives, values and beliefs  
| • Monitor patient’s response to treatment, establish measurable outcomes for evaluation  
| • *Pirmum non noceri*  
| • Maintain current knowledge of popular therapies and evidence-based resources  
<p>|</p>
<table>
<thead>
<tr>
<th>Principles</th>
<th>What to Do</th>
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<tbody>
<tr>
<td>Discussion with families</td>
<td>Ask about all treatments</td>
</tr>
<tr>
<td>Family disclosure of CAM use to provider</td>
<td>Partnering to promote discussion</td>
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<tr>
<td>Choice of treatments</td>
<td>Shared decision making</td>
</tr>
<tr>
<td>Selection of non–evidence-based treatment</td>
<td>Educating about evidence and informed consumer practices</td>
</tr>
<tr>
<td>Sources of information</td>
<td>Provider awareness of potential sources of information (family, friends, nonmedical community, Internet)</td>
</tr>
<tr>
<td>Provider comfort and knowledge about CAM treatments</td>
<td>Seek out sources of education</td>
</tr>
<tr>
<td></td>
<td>Reviews of CAM treatment</td>
</tr>
<tr>
<td></td>
<td>Educational opportunities</td>
</tr>
<tr>
<td>Supplement</td>
<td>Intake</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Fish oil</td>
<td>1300 mg EPA + 900 mg DHA</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>135 mcg</td>
</tr>
<tr>
<td>BH₄</td>
<td>n/a</td>
</tr>
<tr>
<td>5-MTHF</td>
<td>50 mg</td>
</tr>
<tr>
<td>Zinc</td>
<td>60 mg</td>
</tr>
<tr>
<td>Ferrous bisglycinate</td>
<td>25 mg</td>
</tr>
</tbody>
</table>
Aaron was ‘spacy’ first 6 weeks of diet, but almost suddenly became more lucid

- Started GFCF 8/2013
- Started supplements 8/2013
- Started psychotherapy sessions 9/2013
Aaron – Nutrition recommendations

• Address potential nutrient deficiencies (calcium)
• Continued monitoring if GFCF continues
  • Where to find an RD
• Supplements:
  • Decrease those that provide > UL
  • Discussion of others
• Offer resources
  • Picky eaters
  • Parent-child feeding relationships
Case Example: Keane

- 2 years, 4 months
- Dx: ASD
  - Early intervention program provides
    - OT
    - Feeding
    - Education
  - Pediatrician
- Nutrition/Feeding Concerns
  - Picky eating pattern
    - Weekly feeding therapy
    - Education plan also addresses feeding
    - *Is his food pattern nutritionally adequate?*
  - Wants to try GFCF diet without increased nutrition risk
Autism and Nutrition – in a nutshell

• No known influence on physiologic needs (energy, protein, vitamins minerals)
• No known influence on growth, even with limited intake (Edmond, et al, 2010)
• Potential vitamin/mineral risks
  • Deficiencies if selective food pattern, (esp., if eliminate entire food groups)
  • Toxicities with supplementation
• Sensory, other feeding problems
• Other (less common) problems:
  • Pica, compulsive eating, mouth packing, emesis, gagging, rumination
  • GI problems (e.g., constipation, diarrhea, reflux, vomiting)
Autism Treatment Network – Diet and Nutrition Study (Hyman, et al, 2012 and beyond)

Overall: Similar amounts of nutrients (study & control groups)
- Few (either group) met fiber, choline, calcium, potassium, vitamins D & K
- All exceeded RDA - protein
- No group met DRI - fiber
- Lower anemia rate than NHANES

Children with ASD:
- 66% used supplements
- 4-8 yo
  - less energy
  - >% from carbohydrates
  - Less zinc, vitamins A & C
- Excess intakes
  - Varied with age for sodium, folate, manganese, zinc, vitamin A, selenium, copper

Weight
- More overweight: 2-5 yo w/ASD
- More underweight: 5-11 yo w/ASD
- More underweight: ASD on restricted diets; no difference in nutrient deficits
Potential Effects on Eating/Food Pattern

Need for routine, difficulty with transitions

- Problems with changes in mealtime routines
- Refusal of an unfamiliar food, dish, location
- Limited number of accepted foods, decreased acceptance over time
- Late acceptance of solids as an infant

Sensitivity to texture, taste, temp, smell; easily overstimulated

- Restricted intake
- Difficulty making transitions
- Refusal of vitamin/mineral supplements
- Possible gagging, vomiting
Potential Effects on Eating/Food Pattern

Short attention span

- Loses interest in eating after only a few minutes

Implied social interaction and communication skills

- Less receptive to positive eating behaviors modeled by others

The Dilemma

- Children with ASDs have persistent food preferences and feeding behaviors
- Standard anticipatory guidance from health professionals *(if he is hungry, he will eat)* has not worked
- Families have tried everything
Eating (and enjoying food) is **not** as simple as it looks.
Eating is an interactive process with many steps:

- **Eats food**
  1. chews and swallows independently

- **Tastes food**
  1. licks food
  2. bites food

- **Touches food**
  1. with fingers, hands
  2. with mouth

- **Smells food**
  1. in room
  2. at table, on plate

- **Tolerates food**
  1. in room
  2. at table
  3. on plate

Adapted from “Steps to Eating” Kay Toomey, PhD., Denver, CO
Strategies to improve eating

• Requests to eat versus pleading or threatening
• Child can leave the table when the family is finished; no “clean plate” demands
• Modeling behaviors - eating fruits and vegetables; but may have limited success
• Families are likely to need support in establishing mealtime structure
• Menu: foods that the family eats, including 1-2 foods that the child is known to accept

Strategies to improve eating

- Avoid too many changes at once
  - Keep mealtime/snacks routine – time, place, utensils; self feed if can
  - Small servings of 2-3 foods at a time…avoid too much food and too many choices
  - May offer new foods at same time with foods preferred; plan with therapist/educators
  - Calm mealtimes, minimize distractions

- Introduce foods in forms similar to accepted foods, and make gradual changes:
  - sandwiches made with crackers
  - sandwiches made on toast
  - sandwiches made with bread

Adapted from Nutrition Focus (Lucas et al, 2000)
Keane’s Growth – continued
Keane: Nutrition Assessment

- Growth
- Intake

Planning for GFCF – considerations
- What will he eat?
- Any other risk factors
- How to objectively evaluate effectiveness

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<tr>
<th>Intake – Food Nutrients</th>
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<tbody>
<tr>
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<tr>
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<tr>
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</tr>
<tr>
<td>Zinc</td>
</tr>
<tr>
<td>Vitamin D</td>
</tr>
<tr>
<td>Calcium</td>
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</table>
Quick Poll – Question 2

- Would you recommend that all families try a gluten-free, casein-free diet for their child with autism?
  - Yes
  - No
## A Closer Look: GFCF

<table>
<thead>
<tr>
<th>Background</th>
<th>Theories</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 15-38% of those with ASD</td>
<td>- Leaky gut</td>
</tr>
<tr>
<td>- Gluten – protein in wheat, rye, barley, triticale</td>
<td>- Urinary peptide</td>
</tr>
<tr>
<td>- Casein – protein in milk</td>
<td>- Opioid-excess</td>
</tr>
<tr>
<td>- +/- GI symptoms</td>
<td></td>
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</tbody>
</table>
Some of the GFCF evidence

**Systematic Reviews**

- Cochrane Review
  - 2 RCTs (n=10, n=15)
  - Lack of evidence to support use

- Mulloy, et al, 2010
  - 14 studies (n=188)
  - +/- gluten and/or casein
  - Report and/or direct observation
  - Published data do not support use

**RCTs**

- Elder, et al, 2006
  - n=15, followed for 12 w
  - No statistically significant findings – CARS, urinary peptides, in-home observation
  - Some parent report of improvement

- Whitely, et al, 2010 (ScanBrit)
  - n=72 → 35, followed up to 24 mo
  - Did not exclude other interventions
  - “May positively affect developmental outcome”
# A Closer Look: GFCF

## Risks
- Effects on nutrient intake (conflicting evidence)
- Potential:
  - B vitamins (GF)
  - Protein, calcium, vitamin D (CF)
  - Exacerbate other existing deficiencies
  - Protein (plasma amino acids)
  - Fiber

## Other Considerations
- Cost
- Parent-child relationship, family dynamics
- +/- GI symptoms
One Group’s Recommendations

- Physical signs and symptoms
  - FTT, GI, Skin….
  - Same as for general pop’n
- Parent education
  - Inconclusive evidence
  - Practical considerations
  - Difficult to r/o effects of other interventions
- Medical safety
  - r/o celiac disease, FTT
  - Consider gradual introduction if intake is already limited
  - RD guidance
  - Monitor growth
- Measuring treatment response
  - Systematic observations
  - Behavior goals
  - Trial duration ?12 wk/stage

Typical Intake
Typical Intake without Gluten
Typical Intake without Gluten + Casein
Keane

- Planning for GFCF – considerations
  - What will he eat?
  - Any other risk factors
  - How to objectively evaluate effectiveness
Case Example: Sarah

- 10 years, 8 months
- Dx: ASD

- Nutrition consult ordered to discuss GF diet
Final Sidebar: ASD and GI symptoms

- 1980-2012
- 15 studies (2215 children with ASD)
- Children with ASD experience elevated risk:
  - 3x general GI symptoms, constipation, diarrhea
  - 2x abdominal pain
  - No significant difference noted in other GI categories
Individuals with ASD deserve the same thoroughness and standard of care in the diagnostic workup and treatment of GI concerns as should occur for patients without ASD.

Behavioral treatment should not substitute for medical intervention.

Education – Parents, HCP
- Screen for possible GI
- Consider lower threshold for evaluation in ASD
- Consider child’s ability to communicate and review behaviors
- Need evidenced-based guidelines; variety of treatments
Summary

• Lots of information, lots of claims
• Not a lot of evidence (either way)

• Role of the professional

• More to come