The Medical Side of the GF/CF Diet

What is being treated and why it isn't just "Autism"

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Disclaimer

- Information is for educational purposes only.
- Information contained in presentation is not to be taken as medical advice.
- All medical decisions need to be discussed with your personal healthcare provider.

What is "Autism"

DSM IV Criteria for Autism

- What is not included in the criteria:
  - Gastrointestinal Symptoms
    - Food intolerances, picky eating, aversions
    - Food refusal
    - Constipation
    - Diarrhea
    - Food allergies
    - Food intolerances
    - Food aversions
    - Vegetable intolerance
    - Vomiting
    - Appetite changes
    - Loss of appetite
    - Weight loss or gain
    - Fatigue
    - Irritability
    - Irritable bowel syndrome
    - Constipation
    - Diarrhea
    - Other gastrointestinal disturbances

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  - Horvath K, Perman JA. Autism and gastrointestinal symptoms.
  - Gastroenterol J. 2002 Jun;4(3):251
  - Horvath K et al. Gastrointestinal abnormalities in children with autistic disorder.
  - J Pediatr. 1999 Nov;135(5):559
  - Buie WR, Jun;4(3):251
  - Rett's Disorder or Childhood Disintegrative Disorder

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Agreement was made that there was agreement between all participants, resulting in a thorough discussion.

Many theories have been discussed, but the majority of the results were presented in the following sections:

1. Individual and group therapy models were compared and contrasted, with discussions centered around outcomes.
2. Clinical trials have suggested certain therapies may be beneficial in specific cases, but further research is needed.
3. The combination of therapies has shown promise in improving outcomes, with a focus on individualized care.
4. Long-term outcomes remain a topic of interest, with ongoing research aimed at understanding the long-term impacts on patients.

Consensus Report GI and Autism

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Consensus Report GI and Autism Take Away Messages

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My Take Away Message

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- The focus was turned to creating consensus statements to guide future research and treatment.

Why use a GF/CF diet in Autism?

- **Balancing clinical judgement and research**
  - Evidence-based medicine
  - Overwhelmingly positive evidence from CASES, Autism, Postnatal Care, and others for a gluten free, casein free (GFCF) diet as a primary treatment for all of the common GI conditions in children with ASDs.
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Opioid Excess Theory

- **Origins from the 1990's research by Curtis Duban**
  - Speculated that the low incidence of GI symptoms in children with ASDs may be related to a lack of opioid receptors in the gastrointestinal tract.
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Casomorphins/Gliadorphins

- **Neuronal Receptors for Casomorphins and Gliadorphins**
  - Casomorphins are endorphins produced by the body in response to specific stimuli.
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  - Gliadorphins are endorphins produced by the body in response to specific stimuli.
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GI symptoms and Autism

- **Increased incidence of GI symptoms in Autistic children**
  - Multiple studies have suggested that there may be a subgroup of children with ASDs who have increased GI symptoms.
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  - Studies have shown that children with ASDs may have increased GI symptoms compared to typically developing children.
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**Toxins that preferentially injure the CVO**

1. Inorganic Mercury (Hg)
2. Cadmium
3. MSG
4. Paraoquat

**Chronic Infections**

- Overgrowth of pathogenic flora within the intestines and/or invasion of pathogenic microbes from outside the body
  - Bacteria
  - Yeast
  - Viruses
  - Parasites

**New Research**

- Dr. Alessio Fassano
  - Director, Center for Celiac Research, Digestive Disease Research Center, University of Maryland School of Medicine

**Toxins that preferentially injure the CVO**

- Inlet
- MCG
- MP Musu 2001
- A Fasano For the past 20 years, has been
- So called
- Esophageal sphincter

**Chronic Infections-Literature**

- Infections
  - Dr. Bernard Rimland (Founder of ARI) spoke about the importance of the brainstem as far back as 1964.
  - Robert M. Craig. Small intestinal bacterial overgrowth
  - Chinese

**Zonulin and Gluten research**

- Zonulin, a newly discovered molecule of intestinal permeability, and its expression in celiac disease

**Present Research and Practice**

- Based on both the collective experience of practitioners and anecdotal evidence supplied by parents indicate that the GF/CF diet is beneficial for the underlying conditions manifesting as “autism.”
- 2009 survey by Autism Research Institute reported:
  - 46% of parents stated their child improved on the GF/CF diet

**Zonula Occludens**

- Toxin isolated from Vibrio Cholerae
  - led to the discovery of a molecule, named zonulin, that is involved in the permeability of intracellular tight junctions of epithelial and endothelial barriers of the small intestine
  - it is a "key" to the door that opens the tight junctions in the intestine that keep large molecules from entering the bloodstream.
**New Research: Cerebral Folate Deficiency/Folate Receptor Autoantibodies**

- Dr. Edward Quadros - SUNY University

  - Authored papers with Dr. Vincent Ramaekers
  - Showing the presence of high affinity blocking autoantibodies to the passage of folate across the blood-brain barrier.
  - Even though the serum folate level was normal, the CSF level was deficient, leading to cerebral folate deficiency.
  - Demonstrated an inverse relationship between elevation in autoantibodies and decreased 5MTHF.

*A Milk-Free Diet Downregulates Folate Receptor Autoimmunity in Cerebral Folate Deficiency Syndrome*

- Two groups (31 males w/ ADD) with Cerebral Folate Deficiency were split into two groups:
  - **Group A:**
    - Baseline Folate Autoantibody testing
    - Folinic Acid added (7 months)
    - Test repeated
    - MILK FREE diet initiated
    - Test repeated (3-13 months)

  - **Group B:**
    - Baseline Folate Autoantibody testing
    - Folinic Acid added (7 months)
    - Test repeated
    - Diet NOT CHANGED
    - Test repeated (12-24 months)

*Introduction of Folic Acid (0.5-1.0mg/day) starting dose, adjusted to 0.5-4.5mg/day depending on improvement and CSF concentration. Continued for 7 months prior to dietary intervention.*

- All participants CSF 5MTHF levels improved with folic acid supplement.
- However, the autoantibodies did not decrease.
- Significant clinical improvement in 6 out of the 10 patients with autism also observed, including:
  - Improvement in regard to:
    - Attention
    - Communication
    - Less stereotypes
- This was prior to any diet change.

*After MILK FREE diet introduced, autoantibodies remained low in 7 out of the 12 patients on diet.*
- Blocking antibodies reduced from baseline avg. of 2.08 to 0.35 (p=0.012)
- 7 of the 12 on diet had levels below detectable range.

- Of the Autism patients, there was continued and even more significant improvement in:
  - Severe ataxia resolved
  - Irritability, marked unrest significantly improved

*Same symptoms on pts. not on milk free diet did not see significant improvements*
**Cerebral Folate Deficiency and Mitochondrial Dysfunction**

- Dr. Rossignol and Dr. Frye note that Cerebral Folate Deficiency is one of the many conditions that contribute to mitochondrial dysfunction.

**Conclusion**

- Research into the medical conditions associated with the DSM-IV definition of autism are headed in new and exciting directions
  - Zonulin-Mediated Tight Junction Intestinal Permeability
  - Cerebral Folate Deficiency
  - Folate Receptor Autoantibodies
  - Mitochondrial Dysfunction
- These are just a few of the new conditions being identified showing improvement with dietary interventions

**Conclusion**

- As these conditions are better understood, research will identify biomarkers that can then be quantified reliably.
- Treatments can then be initiated specifically toward these biomarkers and followed for progress.
- That will, in turn, improve the characteristics associated with these conditions that are defined by the checklist known as "Autism.”

**Conclusion**

- Our children deserve better than a mixture of studies that are missing the target.
  - In order to hit the target, however, it must be identified as such.
  - AUTISM IS A MEDICAL DISORDER, NOT A MENTAL DISABILITY