Bio-Nutrient Therapy: An Evidence-Based Model For Autism Recovery

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Clinical Experience

- 10,000 ADHD & Behavior
- 4,600 Autism Spectrum Disorder
- 3,500 Schizophrenia & Bipolar Disorder
- 3,200 Depression
History of Autism

• Early 1900s – Autism referred to a range of psychological conditions (schizophrenia)
• 1940s – Autism was used to describe children with emotional or social problems. Asperger’s syndrome was identified.
• 1960s and 1970s – Treatment relied on pain and punishment, i.e., LSD, electric shock and behavior change techniques.
• 1980s and 1990s – Behavior therapy and highly controlled learning environments became primary treatments.
• Today – Research and treatment focuses on genetic and environmental factors, behavioral therapy, nutrients, dietary changes and more.
Autism is treatable and recovery is possible.
Neurotransmitters (NT) and neurological inhibitors, such as serotonin, dopamine and GABA, are critical to brain function.

Serotonin, dopamine, and other neurotransmitters (NT) are synthesized in the brain from vitamins, minerals and amino acids.

A genetic or epigenetic imbalance in a nutrient can alter brain levels of key neurotransmitters and result in abnormal brain chemistry.

By understanding biochemical imbalances in autism, advanced nutrient therapy aims to normalize a child’s body-brain chemistry, reducing brain inflammation and oxidative stress.
Evidence-Based Research

ASD Patient Database

Striking biochemical differences between ASD children and non-affected children discovered by William J. Walsh, PhD, of the Walsh Research Institute

• About 90 to 150 assays of chemical factors in blood, urine or hair for each of 6,500 patients
• More than 800,000 chemical test results
• ASD patients exhibited biochemical imbalances that are more severe than in violent behavior and mental illness
• Discovery of undermethylation in more than 95% of ASD patients
• Clear evidence of oxidative stress and metallothionein depletion
Distinctive Features of Autism

• Biochemical Imbalances
• Incomplete Brain Development
• Strong Genetic Disposition
• Onset after Environmental Insult
• High Oxidative Stress
• Gut-Brain Connection
Oxidative Stress and Autism

- Excessive oxidative stress is evident throughout autism spectrum disorder.
- An oxidative stress model can explain most symptoms of autism.
- Most autism therapies have antioxidant properties.
- Oxidative stress has become a leading focus of autism research.
Biochemical Abnormalities in Autism

- Depressed Glutathione & Cysteine
- Elevated Toxic Metals
- Depressed SAMe/SAH Ratio
- High Copper and Low Ceruloplasmin
- Depleted Zinc and Metallothionein
- Elevated Pyrroles (Pyrrole Disorder)
- Low B-6, C, and Selenium
- Elevated Urine Isoprostanes

Note: Each of these imbalances is associated with severe oxidative stress.
The Critical Role of Methylation

- Excessive nutrient overloads and deficiencies disrupt methylation pathways in the brain.

- To explain: The body’s methyl groups turn genes off or on by affecting interactions between DNA and the cell’s protein-making machinery genes.

- Because the methylation cycle is essential for mental and physical health, basic nutrients necessary for normal function of this cycle are critical.

- Too much or too little of important methyl groups can cause a methylation imbalance.
• Methylation impacts every important organ function, i.e., balance, blood pressure, pulse, respiratory, G.I., and urinary tract function.

• Overmethylation (low blood histamine) is associated with high anxiety, depression, underachievement, upper body pain, chemical and food sensitivities.

• Undermethylation (elevated blood histamine) is associated with OCD, Oppositional Defiant Disorder, seasonal depression, perfectionism and competitiveness.
Zinc Deficiency

- Zinc (Zn) is needed for regulation of GABA in brain.
- GABA is a “calming” NT that combats overloads of norepinephrine.
- Zinc deficiency is characteristic of autism.
- Zinc deficiency is also associated with ADHD, irritability, anxiety, explosive temper, violent or aggressive behavior.
Metal Metabolism

• Genetic inability to control copper, zinc, manganese and other trace metals.

• The absence of Cu and Zn homeostasis and severe Zn deficiency are suggestive of a Metallothionein (MT) disorder.

• MT functions include neuronal development, detoxification of heavy metals, and immune response. Many classic symptoms of autism may be explained by a MT defect in infancy including G.I. tract problems, heightened sensitivity to toxic metals, and abnormal behaviors.
Why is Metallothionein Important?

• Required for development of brain cells and synaptic connections.

• Prevents Hg, and other metal toxics from passing intestinal and blood/brain barriers.

• Required for homeostasis of Cu and Zn.

• Supports immune function.

Note: MT functioning can be disabled by excessive oxidative stress.
Consequences of Oxidative Stress: Mirror Classic Symptoms of Autism

- Hypersensitivity to Hg and other toxic metals
- Hypersensitivity to certain proteins (i.e., casein, gluten)
- Poor immune function
- Disruption of the methylation cycle
- Inflammation of the brain and G.I. tract
- Depletion of glutathione and metallothionein
- Excessive amounts of “unbound” copper
Oxidative Stress Can Impair Brain Development

• Excess oxidative stress can deplete GSH, impair the one-carbon cycle, and produce undermethylation.
• Undermethylation can reduce production of GSH, cysteine, and MT, and cause excess oxidative stress.
• Ample glutathione is required for proper functioning of metallothionein.
• Metallothionein (MT) is a key factor in early brain development.
Consequences of Oxidative Stress Overload in the Gastrointestinal (GI) Tract

- Destroys digestive enzymes needed to break down casein and gluten.
- Increases candida/yeast levels.
- Diminishes Zn levels and production of stomach acid.
- Produces inflammation.
- Results in a “leaky” intestinal barrier allowing toxics to enter the bloodstream.
The Epigenetic Theory of Autism  
(The Walsh Theory of Autism)

• The recipe for Autism:
  – Inborn Predisposition
  – Environmental Insult

• Environmental insults during the first month of gestation can produce abnormalities in gene expression that may persist throughout life.

• In some cases, these abnormalities can be transferred to future generations. This could result in a geometric increase in the number of autism-prone families.

• Epigenetic errors are enhanced by abnormal methylation and nearly all autism spectrum patients are undermethylated.

Environmental and Epigenetic Influences

- Epigenetics involves the alteration in gene expression due to chemical factors in the womb and the influence of environmental factors throughout life.

- Every cell in our bodies has the potential for expressing any of the 20,000+ genes in our DNA. The production of gene proteins or “gene expression” can be switched on or off (gene silencing or “bookmarking”).

- These epigenetic processes are more vulnerable to environmental factors such as radiation, temperature, dietary choices, toxic metals, viruses, stressful life events, etc.

- Attention has been focused on direct insults to the child from conception to age 3.
A Strategy for Enhanced Cognition, Speech and Socialization

- Powerful antioxidant therapy,
- Methylation protocols,
- Biochemical therapies aimed at reversing epigenetic errors,
- Behavioral therapies (ABA) that enhance brain maturation.
Metallothionein-Promotion Therapy and Biochemical Interventions

- Biochemical therapies and other interventions can either (a) adjust gene expression or (b) overcome the effect of altered gene expression.
- An epigenetic tendency for high oxidative stress can be effectively treated using Metallothionein-Promotion Therapy:
  - Directly aimed at development of brain cells
  - Potential for permanently correcting the intestinal and blood/brain barriers
  - Restores a key antioxidant system
Behavioral Therapies

• Applied Behavior Analysis (ABA)

• Stimulates organization of synaptic connections and cortex minicolumns

• Promotes brain maturation but is greatly slowed by oxidative overload and inflammation

• Especially promising when coupled with biochemical therapy
Comprehensive Evaluation

• Symptoms: Born Challenged? Or Regressed?
• Metal Regulation and Metal Dysregulation
• Environmental and Epigenetic Factors
• Gastrointestinal (GI) issues including food allergies/sensitivities and malabsorption
• Nutrient Imbalances vs. Dietary Controls
• Testing for Methylation Disorders
• Pyrrole Disorder: Zinc/B-6 imbalances
Overview of Treatment

• Physical Examination
• Extensive Patient History
• Specialized Laboratory Testing (blood and urine)
• Prescribed *individualized*, nutrient therapy program (vitamins, minerals and amino acids) aimed at normalizing body-brain biochemistry
• Address Gastrointestinal (GI) issues including:
  • Prebiotics and probiotics
  • Digestive enzymes
  • Antifungals
  • Natural chelation (safer removal of toxic metals)
  • Avoidance of gluten, casein and other food allergies
• Determine patient’s dietary requirements based on methylation status
Main Clinic – 25 miles west of Chicago, Illinois

U.S. Outreach Clinics:

- Fort Lauderdale, Florida
  *June 23 and 24, 2015*

- Garden Grove, California (near Anaheim)
  *August 4 and 5, 2015*

- Annapolis, Maryland
  *September 15 and 16, 2015*

- Burlingame, California (near San Francisco)
  *November 3 and 4, 2015*
Questions & Answers

To learn more, please visit www.mensahmedical.com