

Biomedical & Nutritional Intervention Week 1



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- ⤴ Looking into functional medicine approach providing the insight I needed to heal imbalances.
- ⤴ Passion propels purpose

Week 1 - Biomedical Overview

Introduction to Autism Expert Training

Autism & Related Disorders - today's epidemic

Additional Disorders occurring along w/ASD

Future Predictions of Crisis

BioChemistry Overview

Prevalence

- ⤴ For many years autism was rare - occurring in just five children out of 10,000. However, since the early 1990s, the rate of autism has increased dramatically around the world, with figures as high as 60 per 10,000. In March, 2014, the US Federal Centers for Disease Control that 1 in 68 children in the US is diagnosed with an ASD.
- ⤴ 1 in 68 children has been identified with autism spectrum disorder (ASD) according to estimates from CDC's Autism and Developmental Disabilities Monitoring (ADDN) Network.
- ⤴ ASD is reported to occur in all racial, ethnic, and socioeconomic groups.
- ⤴ ASD is about 4.5 times more common among boys (1 in 42) than among girls (1 in 189).
- ⤴ The Alliance for Natural Health USA (ANH-USA) MIT Senior Researcher <http://www.anh-usa.org/half-of-all-children-will-be-autistic-by-2025-warns-senior-research-scientist-at-mit/>

Prevalence

ASD is reported to occur in all racial, ethnic, and socioeconomic groups

ASD is about 4.5 times more common among boys (1 in 37) than among girls (1 in 151)



Why Use a Biomedical Approach?

⤴ Biomedical approaches:

- Treat the underlying causes of the symptoms, based on functional medical testing, scientific research, and clinical experience, with an emphasis on nutritional and nutraceutical interventions
- Offer new ways of understanding and addressing anxiety, obsessions, illness, imbalance and compulsive behaviors and researching the symptoms of underlying disease and adrenal-thyroid-hormone dysfunctions
- Anxiety, obsessions, and compulsivity are common in ASD and are symptoms of underlying disease and dysfunctions

Why Use a Biomedical Approach?

⤴ Biomedical approaches:

- Biomedical research suggests that food and supplements affect health conditions such as autism, asthma, sensory issues, learning disabilities, attention issues, social anxiety, mood regulation, and more
- Imbalances in digestion and absorption of nutrients, immune dysfunction, and detoxification problems play central role in causing behavioral and mood changes
- Most do not offer biomedical interventions, leaving parents and caregivers to learn on their own

Why Use a Biomedical Approach?

⤴ Biomedical approaches:

- Use a whole-body approach to identifying the core imbalances, including the gut-brain connection, hormonal imbalances, immune system dysfunction, mitochondrial dysfunction, and methylation defects.
- Homeopathy is a beneficial way to address these underlying metabolic imbalances.

Biomedical Balance of the Body

- ⤴ Brain
- ⤴ Sleep
- ⤴ Stress Levels
- ⤴ Bowels
- ⤴ Eliminate any additional chemicals
- ⤴ Electromagnetic field exposure/protection
- ⤴ What you put on your body
- ⤴ What you put in your body
- ⤴ Personal care products
- ⤴ Pesticides from food
- ⤴ Water
- ⤴ Environment: Pollution, Mold

What Toxins are Affecting a Child's Health?

- ⤴ Food sensitivities/excitotoxins
- ⤴ Candida/sugar cravings
- ⤴ Parasites
- ⤴ Chemicals/pesticides
- ⤴ Viral overload
- ⤴ Chronic bacteria
- ⤴ Heavy metals
- ⤴ Household toxins
- ⤴ Antibiotic and OTC medicine overuse
- ⤴ Processed diet lacking “clean” ingredients



ASD Children: Toxic Overload

- ⤴ Toxic chemical exposure: pesticides, phthalates, benzene, xylene, vinyl chloride, organophosphates, insecticides, styrene, exhaust fumes, 2-4-D
- ⤴ Glyphosate
- ⤴ Personal care products
- ⤴ Electromagnetic fields
- ⤴ Excess sensory input
- ⤴ Stress/internal conflicts
- ⤴ Mycotoxin, Histamine, Excitotoxin

ASD Children: Toxic Overload

Toxic
Chemical
Exposure

Environment
Pesticides
Insecticides

Glyphosate

Personal
Care

Electro
Magnetic

Excess
Sensory

Stress
Internal

Cause of Symptoms

⤴ What exactly is causing a child's symptoms that are being diagnosed as autism?

- Verbal stims
- Perseveration
- Repetitive
- Language delays
- Rigid behaviors
- Scripted language
- Constipated
- OCD
- Motor tics
- Low muscle tone
- Distended belly
- Anxiety (can cause rapid heartbeat, dizziness, shortness of breath, muscle tension, GI upset, diarrhea, headache)



Other Possible Complications

- ⤴ PANDAS
- ⤴ Anxiety disorders
- ⤴ Seizures
- ⤴ Sensory issues
- ⤴ Impulsive behavior
- ⤴ Depression, mood swings
- ⤴ Aggression
- ⤴ Oppositional defiant disorder
- ⤴ Social-cognitive impairments
- ⤴ Tourette's disorder/tics
- ⤴ Panic disorder
- ⤴ Specific phobia
- ⤴ Post-traumatic stress and acute stress disorder
- ⤴ Separation anxiety disorder

Possible Infectious Causes of ASD, Anxiety, and OCD

- Clostrida species
- Bartonella
- Borrelia
- Streptococcus PANDAS
- PITANDS (Many families have found that other things aside from strep can trigger their child such as virus, EBV, mycoplasma pneumonia and even Lyme. PITANDS is for other infection-triggered agents.)
- Toxoplasma gondii
- In ASD, these infections are often chronic and difficult to diagnosis with conventional tests

Differential Diagnosis

⤴ All of these lead to excitotoxicity in the brain:

- Chronic infections
- Strep
- Viruses
- Glutamate
- Ammonia
- Mercury
- Aluminum
- Lead
- Pesticides and herbicides
- Glyphosate
- Household toxins
- Nutritional deficiencies
- High electromagnetic fields
- Vaccine adjuvants (viral fragments)



Metabolic Imprint of the Body Burdens

⤴ Oxidative Stress

- Thimerosal (Mercury)
- Arsenic
- Lead
- Aluminum Overload
- Glyphosate
- Depletion of Antioxidants
- Low Glutathione
- Low Vitamin C

Metabolic Imprint of the Body Burdens

⤴ Mitochondrial Dysfunction

- Elevated Oxidative Stress Markers such as Homocysteine
- Abnormal Ammonia
- Low Carnitine
- Low Tiglylglycine (TG), one of the most specific markers for mitochondrial disorders resulting from mutations of mitochondrial DNA

Metabolic Imprint of the Body Burdens

⤴ Mitochondrial Dysfunction

- Low CoQ10
- Mitochondria are especially important to organs that utilize large amounts of energy, such as the muscles, heart, and brain; important functions including steroid synthesis, calcium regulation, free radical production, and the induction of programmed cell death, all of which are involved in the pathogenesis of numerous disorders.
- If a mitochondrial dysfunction is detected, a number of different toxic chemicals implicated in mitochondrial damage can be reviewed to find the potential cause.

Impaired Detoxification

⤴ Methylation Defects

- Helps rid body of toxins and make specific brain chemicals

⤴ Sulfation Defects

- May lead to neurotransmitter imbalance and elevated urinary levels of dopamine metabolites; usually associated with repetitive behavior, peptide issues, gut imbalances, and elevated candida

⤴ Cysteine Deficiency

- Precursor to glutathione that increases the body's production of GSH; may also reduce formation of glutamate, and excitatory neurotransmitter that kills brain cells in excess.

Impaired Detoxification

- ⤴ Glutathione Deficiency (GSH) detoxification impairment
- ⤴ Extremely Low Vitamin C
- ⤴ Monitor Candida
- ⤴ Abnormally high levels of opportunistic pathogens

Gastrointestinal Dysfunction

⤴ Dysbiosis

- Yeast
- Bad bacteria
- Parasites
- Virus
- Lack of good flora

⤴ Malabsorption

⤴ Maldigestion

- Enzyme deficiency
- IgG food sensitivities
- Urinary peptides



Immune System Dysregulation and Inflammation

⤴ Pro-inflammatory Cytokines

- Shown to regulate the growth and cell proliferation of neuronal tissue and to modulate host responses to infection, injury, inflammation, and diseases of uncertain etiology
- Increased levels of pro-inflammatory cytokines such as TNF-alpha, and decreased levels of anti-inflammatory cytokines such as IL-10 have been observed in children with ASD
- Imbalanced levels of these cytokines can augment inflammation and cause excess damage to tissues

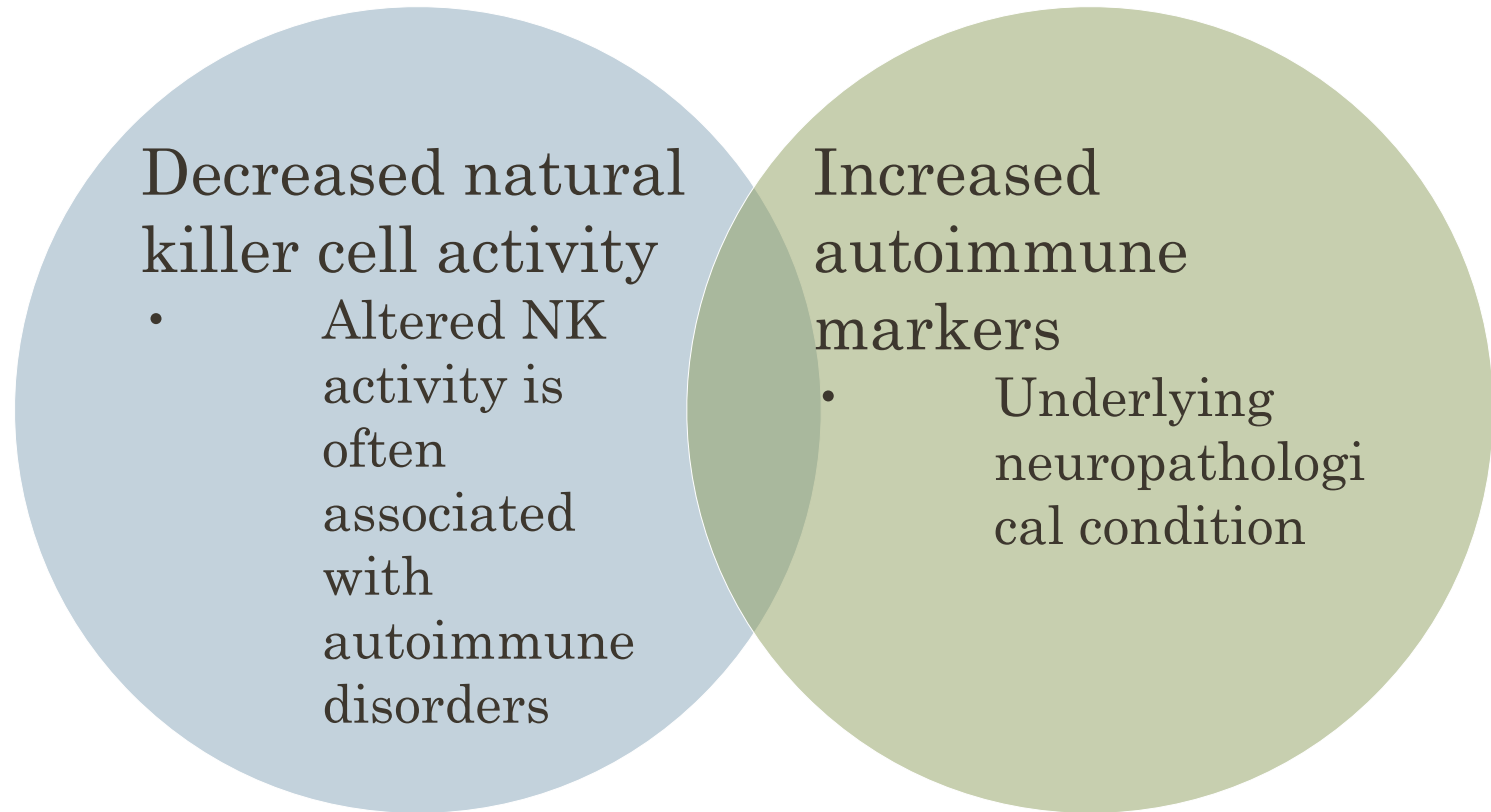
⤴ Decreased Natural Killer Cell Activity

- Altered NK activity is often associated with autoimmune disorders

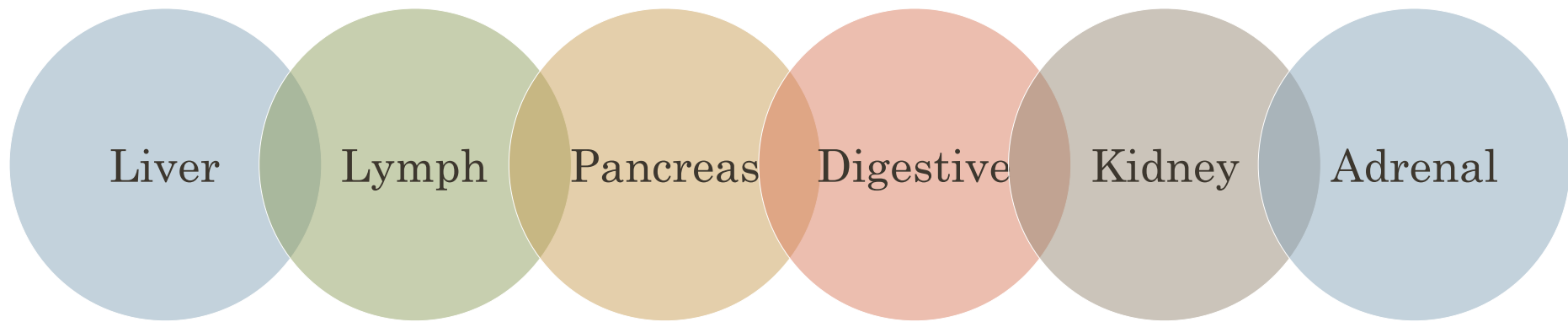
⤴ Increased Autoimmune Markers

- Underlying neuropathological condition

Immune System Dysregulation and Inflammation

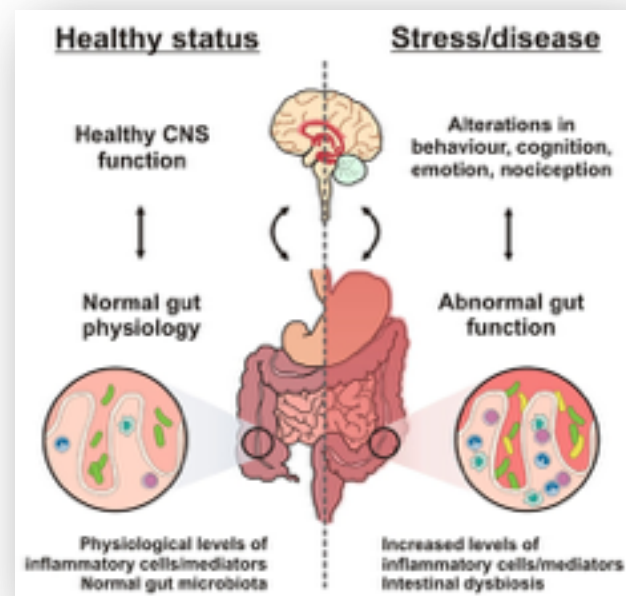


Commonly Stressed Systems



Gut-Brain Connection

- The gut-brain connection is well established
- Removing these toxic substances and then treating any remaining gut issues leads to reduced inflammation, among other improvements.
- As one's overall health restores, there is a marked improvement.

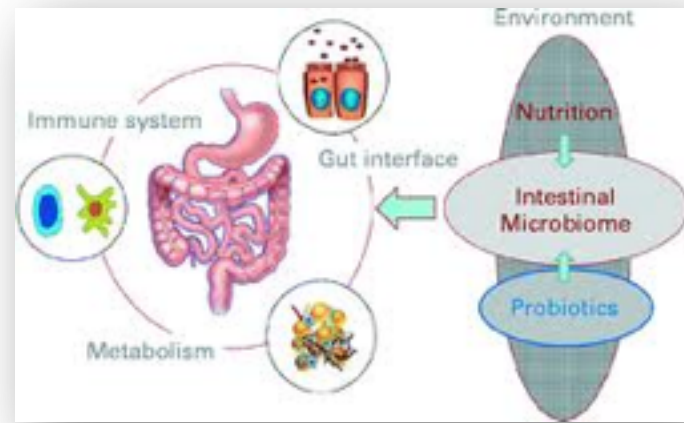


Gut-Brain Connection

- ⤴ GI tract contains approximately 100 million neurons; more than the spinal cord or peripheral nervous system
- ⤴ 95% of the body's serotonin is in the gut
- ⤴ There is a bidirectional pathway between the gut and brain. Communication occurs along immunologic, neural, and biochemical.
- ⤴ Gut microbes affect brain development and behavior. Stress alters gut microbes.

Gut-Immune System

- About 80% of your immune system resides in your gastrointestinal tract
- 500 species of bacteria live inside you.
- Some of these bacteria are referred to as "good" and some as "bad." The ideal balance between them is 85% good and 15% bad.



Gut-Immune System

➤ What sorts of things influence the ratio between good and bad bacteria?

- Diet
- Geographic location
- Stress
- Health issues
- Environmental toxins



Adrenal Overload

Some symptoms of adrenal stress

- Hypoglycemia
- Dark circles under eyes
- Lack of mental alertness
- Constipation
- Dilated pupils
- Poor immune modulation
- Allergies
- Chronic fatigue
- Sleep issues



Adrenal, Anxiety, ASD, Hyperactivity Analysis

- ⤴ Anxiety, obsessions, and compulsions are symptoms
- ⤴ Conditions often involve a biomedical component involving imbalances in monoamine neurotransmitters (dopamine, serotonin, norepinephrine) as well as other substances in the brain, including glutamate, inflammatory markers, and brain-derived neurotrophic factor
- ⤴ These conditions involve the central nervous system, the autonomic nervous system, HPA axis, mitochondria, gastrointestinal system, and immune system

Common Digestive Symptoms

- ⤴ Leaky gut
- ⤴ Candida overgrowth
- ⤴ Frequent stomach pains and digestion problems
- ⤴ Skin problems (skin infections, eczema, psoriasis, acne, dermatitis)
- ⤴ Foggy brain / trouble concentrating
- ⤴ Tiredness and exhaustion
- ⤴ Anxiety

Common Digestive Symptoms

- ⤴ Obsessive compulsive disorder (OCD)
- ⤴ Anger outbursts
- ⤴ Irritability
- ⤴ Headaches
- ⤴ Intense cravings for sugars, sweets, and simple carbs
- ⤴ Itchy skin

Week 2 Initial Intake Questions

- ⤴ Initial Intake Session with Caregivers is crucial
- ⤴ What Questions to Ask and Why
- ⤴ Uncovering hidden information assisting with future treatment approach
- ⤴ Understanding importance of child's medical history
- ⤴ What to visibly look for in child and caregivers