

Dietary and Medical Interventions for Autism

(Biomedical treatment, Autism 101)

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Autism-working model

- Genetic predisposition PLUS environmental triggers (toxins, infections, and allergic triggers which cause gut-brain-immune dysfunction)



Autism

Language deficits
Social pragmatic deficits
Fine motor deficits
Hypotonia
Unusual behaviors



Cerebellar cognitive-affective syndrome. Schmahmann, ANPA conf 2-18-06)

Deficits with the following:

- Executive function
- Spatial cognition
- Language
- Affect -blunting or disinhibition

Language dysfunction

- Language delay- word deafness (not interpret word as having meaning initially), receptive language delay (not just delay, not acquire normal milestones of language, but also abnormal quality of speech and language).
- Speech-hypophonic, aprosodic (without melody)
- Often receptive language function > expressive language function (speech)



Social skill abnormalities

- Social pragmatic abnormalities
- Poor eye contact (eye fixation in autistics is at other's mouth) Dr. Joe Piven, University of North Carolina)



Fine motor difficulties

- weak grasp
- hypotonia of limbs (hands > feet), and axially (trunk)
- Dyspraxia
- Incoordination
- Writing deficits (graphomotor delay)

Underlying medical problems

- Nutritional deficiencies
- Immune dysregulation
 - allergy
 - infection
 - inflammation
- Heavy metal toxicities



Nutritional deficiencies of the following

- amino acid
- Essential fatty acids
- B vitamins
- Minerals
 - Zinc >lithium>magnesium= iron, >calcium
- Antioxidants, especially glutathione
- Nutrients of detoxification (cysteine, sulfate, and glutathione)
- Sometimes Vitamin A, C, E (especially gamma tocopherol)

Immune dysregulation

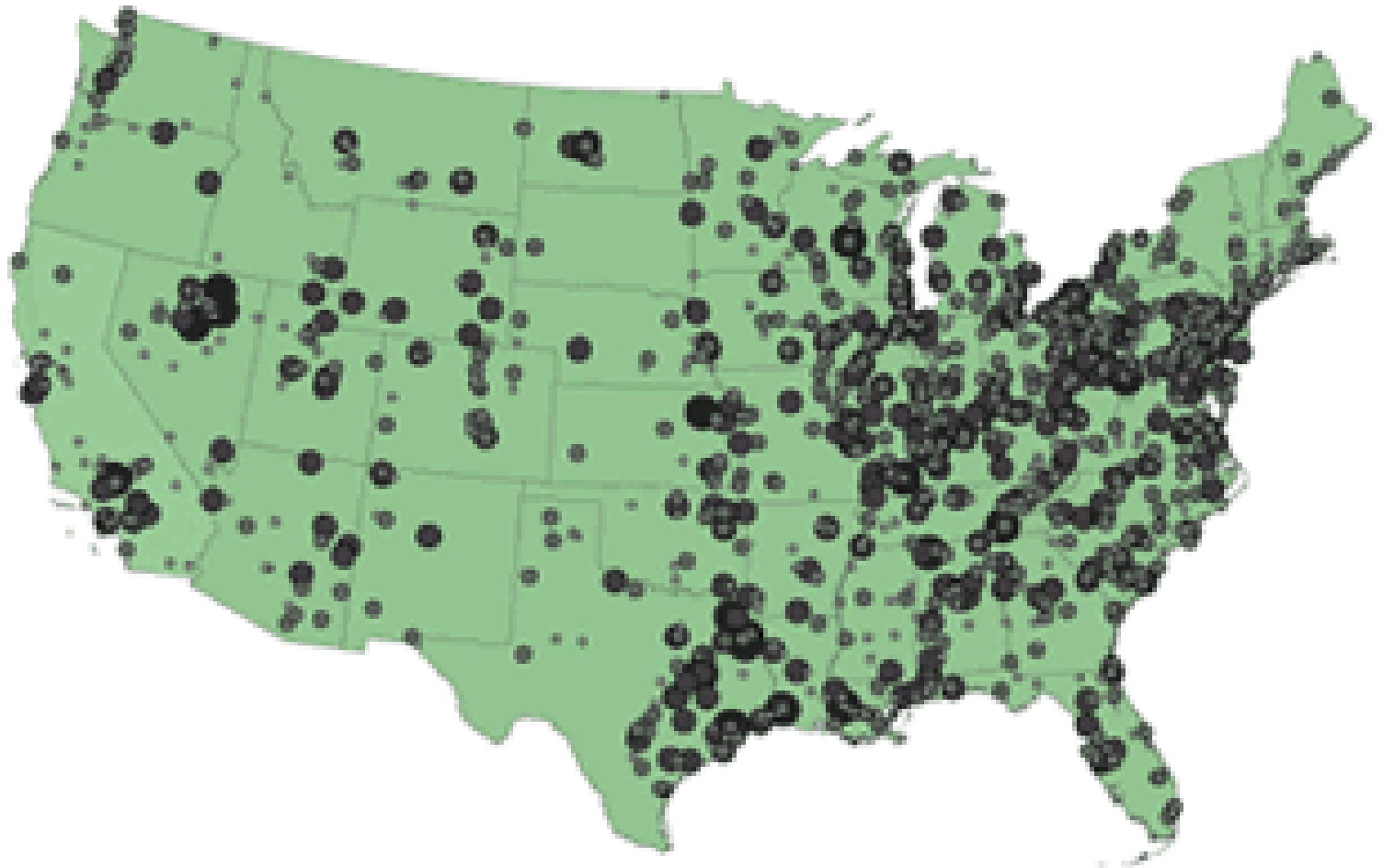
- Allergies (undigested food causing delayed hypersensitivities to food, but less frequently immediate allergies)
- Immunodeficiencies (secondary to nutritional deficiencies, also look for genetic causes)
- Chronic infection (viral, fungal , bacterial, parasitic)
- Neuroimmune -Majority of children

Toxicities-Heavy metal poisoning, sources

1. Thimerosal from vaccinations (Rhogam and influenza to mother), vaccinations to child
2. Dental amalgams
3. Fish (power plants, gold mining in CA)
4. Water (Arsenic, lead, mercury)
5. Food-aluminum and tin from cans

The Greater Sacramento Area has some degree of exposure to heavy metals—arsenic (water) , lead (pipes to homes, especially if older) mercury (from Gold mines during heavy rain runoff, accumulation in fish)

- Per NRDC (National Resources Defense Council), Lead in drinking water
- EPA website-multiple fish from different regions, including Bay Area, in which some fish have levels of mercury exceeding the safe limit (swordfish, etc)





Sacramento, mercury

- 300 abandoned mercury mines and thousands of abandoned gold mines
- 26 million pounds of mercury used in gold ore recovering in No Calif
- Biggest mercury problems in California at lakes, streams around old dams



Why treat?

- Autism is now treatable (has been for the past several years)
- Over 1000 documented cases of autism in which child is significantly improved or has recovered.
- See biochemical pathways involved in autism in handout
- See Parent Ratings of Behavioral Effects of Biomedical interventions (detox 76% better, nutritional supplements (30-63%), special diets (40-65%), food allergy Rx (61%))

Treatment

- I. Genomics-identify genetic predisposition of biochemical fragility
- II. Stop harmful environmental factors-toxins (heavy metals, drugs that challenge weak detoxification system, judicious use of antibiotics, and vaccinations)
- III. Restore nutrition –regular and for biochemical individuality
- IV. Stop inflam., normalize immune funct - antiinflammatory diet, -remove triggers, allergens, infections, heavy metals
- V. Remove toxins (detoxification of heavy metals)

Treatment duration

- 10 months- 1 ½ yrs approx for general gut-brain-immune problems and detoxification
- Variability in genetics and environmental exposure may shorten or extend duration of Rx
 - metabolic disease
 - seizures
 - other brain injury
 - low oxygen and low blood flow to brain
 - brain trauma

Treatment team

- Parents
- Primary care provider, either is DAN! Physician or refers to one
- Nutritionist
- Sometimes allergist, gastrointestinal or immunologist/infectious disease consultant, neurologist or psychiatrist, osteopath if there is mechanical injury
- Community (grandparents, teachers, therapists to observe changes, implement consistent teaching, provide educational and other therapies, ensure adherence to the diet, and to provide respite)



Parents-getting started

1. Read Children with Starving brains by Jacquelyn McCandless/educate self. Parents are the best advocate.
2. Attend next DAN! Conference, Apr 7th, Wash.
3. Do from home before seeing physician
4. Consider obtaining nutritionist
5. Inform PMD want biomedical treatment
6. Obtain DAN! Physician
 - a. Diagnostic testing/
 - b. Genomics
 - c. Diet/nutritionally replete,
 - d. B12 shots
 - e. remove allergens,
 - f. treating infection
 - g. detoxify /
 - h. Seizures?



I. Getting started from home

A. Diet

B. Epsom salt baths

C. (HEPA filter if child has respir allergies)

D. Judicious vaccination


E. Breastfeed as long as possible

F. Multivitamins/multimineral

G. probiotics

H. Remove excessive stimuli –in bedroom, in family room, diningroom

I. If any speech delay, request audiogram and tympanogram (by primary care physician or audiologist)



Getting started from home- DIET- (30-65% efficacy on parent survey)

- Filter water-distilled or reverse osmosis
- Fresh, whole food, organic produce, home grown
- Glass, no tin or aluminum cans, try not to give leftovers (mold)
- Free range, grass fed animals, wild fish (not mercury –laden)
- Pantry-throw out processed, dyed, foods (or give to charity)
- Antiinflammatory diet

Antiinflammatory diet

- Increase prostaglandin E 3 (omega 3, 6, 9 essential fatty acids)

Omega 3 (100 mg/kg) Nordic naturals proomega (concentrated, no heavy metals) (ensure no easy bruising or bleeding disorder)

Omega 6 (nuts), omega 9 (olive oil)

Also avocado, walnuts, grass fed animals

Avoid: dairy, corn or grain fed animals



Diet, general principles:

- Plant based, 5-13 vegetables, rainbow of colors. Vegetables are yummy!!
- Protein (aa deficient), eat protein first
- No concentrated sweets
- Judicious use of starch carbohydrates (only with meals)
- Eat fruit with oil (ie fruit with nuts)
- fluid load in between meals, weighted towards am

Vegetarian- peril in autism

Good=volume of vegetables is good

Risky: amino acid deficiency

essential fatty acid defic (source:
algae)

no vit B12 exacerbates methyl.

defect (if prolonged, causes
sensory neuropathy and blindness)

Gut disease

- Cause of gut disease: mercury, oral Abx
→bacteria, yeast overgrowth→inflammation, food
"allergies", maldigestion, diarrhea, constipation

Ileal lymphoid nodular hyperplasia, increased intestinal permeability, enzyme deficiencies

Treat: remove offending foods that cannot be broken down (DIET), remove toxins, repair gut, reinnoculate with good bacteria (good flora) and critical nutrients

Special diets

- Gluten-free/Casein-free (GFCF) diet
- Specific Carbohydrate diet
- Finegold Diet (tolerable and sometimes intolerable sources of sulfur)
- These diets remove components that are thought to cause or contribute to ongoing problems contending with proteins and/or carbohydrates the gut cannot digest and absorb

Which diet? How start?

- Do general principles
- Depends on the child and the child's medical problems
- If know has food sensitivities, remove food to begin
- Test for food allergies (physician)
- Test for gut infections
- If severe or recalcitrant gut infections, begin specific carbohydrate diet (especially with malabsorption(Leaky gut, across the board allergies)
- If zoned out staring, hand flapping, begin casein-gluten free diet



Special diets: Casein-free

Why do it: IgE (immediate) and IgG (delayed) hypersensitivity to casein.
(blood test to Meridian labs, 179 foods nuts and spices)

(DPPIV)

- Casein → caseomorphin → amino acids (urine for caseomorphin testing)
Great Plains I believe Doctor's Data and Great Smokies labs)
(may need to give DPPIV enzyme alone or with enzymes)
- Effects seen in 1 wk
- If choose to eat any dairy, yogurt is the healthiest, goat products are often better tolerated
- Dairy free 4 months or until off of spectrum especially if see improvement
- ensure supplement with Vitamin D 3 (and sunlight, 10 minutes per day) and calcium. Can check strength of nails



Gluten Free diet

- Problems with gluten

 - IgE and IgG reactions

 - DPPIV ineffective in breaking down
gluteomorphin (spaced out, high pain
threshold)

See effects from 1 wk up to 9 months later

Gluten IgG can damage brain

(Celiac disease, gluten causes occipital seizures)

Harder to implement

Gluten and casein-free diet

- Macrobiotic diet (Japanese), very healthy

Yeast free diet

- Yes: meat, poultry, eggs, fresh nuts (not peanuts or pistacios), fresh fruit (2 /day, not moldy ones, grains brown rice, amaranth, buckwheat , corn
- water, juices (dilute with water or seltzer), fruit or vegetable
- Snacks popped corn in olive oil med high heat with brewer's yeast, celtic sea salt, organic butter or ghee

Yeast free diet

- Foods to avoid
- Sugar, honey, syrup, malt, fructose, corn syrup
- Fermented vinegar in foods (salad dressings, mustard, ketchup, mayo soy sauce, tofu)
- Yeasty foods (beer, wine, bagels, bread)
- Moldy foods coffee tea
- Juices not freshly made

Specific carbohydrate diet

- Starves the bad bacteria and fungi from getting needed carbohydrates. Organisms die → stop toxin damage to intestinal wall, microvilli carbohydrate enzymes recover, carbohydrate digestion and absorption improve, nutrition and health improves .
- Simple carbohydrates (not complex) are absorbed by child. (Only diet that targets malabsorption).
- Proper (able) absorption is restored
- Must read *Breaking the Vicious Cycle* by Elaine Gottschall to learn the stages of the diet.



Specific carbohydrate diet (SCD)

- Allowed: fresh/frozen meats, poultry, fish, vegetables, fruits, all raw nuts and nut butters without additives, vegetable juices, milkshakes with homemade yogurt, fruits/honey-sweetened

Specific carbohydrate diet

Not Allowed

- Canned meats, vegetables, fruits
- Grains (no grains, flour, potatoes, bean)
- No dried fruit glazed with corn syrup or sugar, molasses, jellies
- Roasted nuts
- Milks: cow, goat, soy, rice, canned coconut

Benefits of SCD diet

- Alleviation of "spaciness", generalized fatigue, muscle aches, stiff joints, arthritis, chronic skin rashes, psoriasis
- Healing the gut

Epsom salts

- Provides magnesium and sulfate
- 1 cup magnesium sulfate and 1 cup of sodium bicarbonate (increases solubility and absorption) before bedtime (magnesium causes hypotonia)
- Sulfate needed to produce the melatonin molecule
- 3-7 x/wk

Probiotics- good bacteria

- If chronic diarrhea, known systemic fungal infection (fungal infection in nails, red ring on skin, groin/buttock pinpoint red rash, athlete's foot, "simmer's ear", chronic sinusitis

Consider a) culturelle 30 billion lactobacillus acidophilus /capsule, 1 pill twice a day

b) Klaire Ther Biotic detoxification support

(Wellness 800 227 2627 or Needs pharmacy)

50 billion of bifidobacter and 2 other species)/capsule , 1 pill twice a day

Foods: sauerkraut, kim che, cooked vegetables

Other measures for general health

- Breastfeed for as long as possible (watch mother's diet, ensure good dha intake)

- Good multivitamin and multimineral

Thorne-Children's Basic Nutrients

Douglas

Metagenics –chewable or liquid mycelized

Integrative Therapeutics -child essence Cu free

minerals for detox, children's chewables with Cu

liquid mvi/mmi and liquid cal-mag

Iron- get CBC diff plt, ferritin, serum iron, give iron if anemic

Copper, measure blood level only minimal FDA amount to keep from

Other measures, general health, autism

- If speech delay, obtain audiogram and tympanogram from pediatrician's office or audiologist
- Remove excessive stimuli –in bedroom, in family room, diningroom
- If chronic or intermittent nasal stuffiness/environmental allergens, get a HEPA filter for bedroom and family room

Other measures

- Judicious vaccinations
 - a) start, when child well (no infection for past month)
 - b) Vaccination needed? Hep B age 12, no rubella for boys, check titers first to see if deficient before revaccinating (especially if in recovery period)
 - c) Ensure no thimerosal (check bottle), if influenza, get thimerosal free
 - d) one vaccine at a time, single dose vial without preservative
 - e) If have immunodeficiency, test for ability to even mount immune response (IgG level)

Nutritional supplementation

- Not need DMG
TMG blocks effect of methylB12, blocks progression (Neubrandner, verbal communication March, 2006)

Prevention, next baby

Have

organic, whole foods
prenatal vitamins
B vitamins, Calcium, zinc,
iron
probiotics before conception
Essential fatty acids (DHA)

Avoid

food sensitivities
(gluten, casein)
low carbohydrate
diets
mercury from fish and
elsewhere
Artificial sweeteners
MSG food dyes, toxins
water filtration