Centre for Integrative Medical Training

Intermediate Course in Medical Homeopathy

A Blended Course in Homeopathic Medicine for Healthcare Professionals

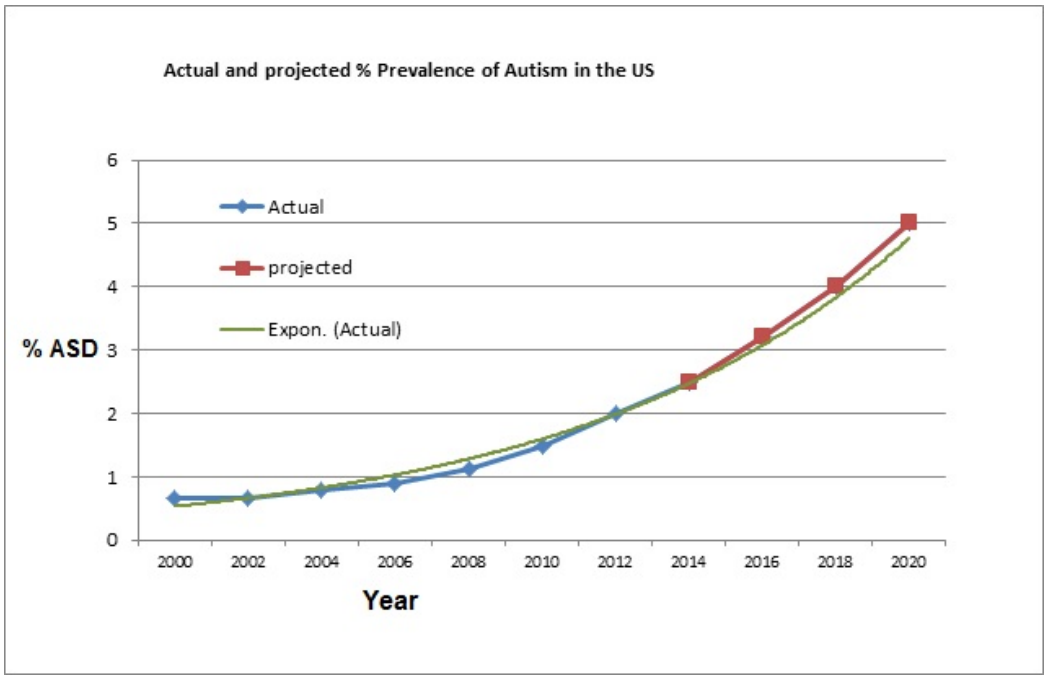
Presentation Notes:
Dr van Rhijn's Seminar on ADHD & Autism
with introduction by
Russell Malcolm

Unit 59

Therapeutic Pointers

Introduction to Therapeutic Pointers Unit 59 - ADHD and Autism

We have dedicated two Course Units on a subject that deserves an entire course in its own right. The incidence of ASD is increasing significantly in developed countries and is a matter of international medical concern.



https://www.autism-adhd.org.au/autism_prevalence

Most homeopaths are faced with, often rather desperate, calls for help by parents of children diagnosed with ADHD/ASD. The available evidence shows that homeopathy is a valid treatment avenue in cases where there are other appropriate agencies in place to support families.

In this booklet you will find the core presentation notes provided in support of Dr Anton van Rhijn's clinical seminar at RLHH / RLHIM in 2004.

There has been a significant expansion in our medical knowledge around ASD in the intervening years, although much remains to be learned about this spectrum of conditions.

Anton's seminar represents the 'State of the Art' of its time, in terms of integrated treatment for these children and, notwithstanding the progress made since then, his pointers for homeopathic treatment remain a valuable resource for today's homeopathic practitioner.

We have decided, therefore, to reprint Anton's support materials unedited and unabridged. After you have familiarised yourself with his main points, concerning diagnostic subcategories categories and the treatment models applied to them, you should then select some of his cases for close study.

You will find Anton's Cases in SUPPLEMENT A and his treatment solutions for each case are contained in SUPPLEMENT B.

At this time the original recordings for Anton's seminar are, unfortunately, not available. His homeopathic analyses are highly detailed and the repertorisations are included for study.

Because of the volume of material in these units, we suggest that you are selective in the sections you examine. Those learners who have a particular professional interest in this subject, can potentially look at one or two cases each week for the rest of the this semester.

Others may choose to 'top and tail' the homeopathic treatment notes and study the range of remedies used by Anton in his cases and get a sense of how his analyses support his treatment choices.

You should look carefully at Anton's rubric choices, so that you are familiar with the repertorisable features in cases of Autism and check to see how specific features in each case is represented in his analyses.

Heiner Frei's landmark research paper is also included for study and we would encourage you to read this to gain insight into the overall potential of homeopathy in ADHD.

Bear in mind that, when you come to treat patients in your own clinical setting, early homeopathic intervention greatly increases the overall quality of patient response and outcome.
Older children with autism, who have lost years of social and neurological development, cannot be expected to rejoin the development trajectory of a normal infant, no matter how good the prescription choices are.

Lost months and years represent an important loss of potential and we should encourage parents to engage with the homeopathic treatment of these children as soon as possible after diagnosis.

RLHH/CIMT & Authors 2004 / 2022

University College London Hospitals
NHS Foundation Trust

The Royal London Homoeopathic Hospital
Academic Departments of Research and Education

Postgraduate Seminar

by

Dr Anton van Rhijn

for

Health Care Professionals

ADHD and Autism Seminar
3 and 4 December 2004

RLHH & Authors

UCL HOSPITALS

UCL Hospitals is an NHS Trust incorporating the Eastman Dental Hospital, Elizabeth Garrett Anderson & Obstetric Hospital, The Heart Hospital, Hospital for Tropical Diseases, The Middlesex Hospital, National Hospital for Neurology & Neurosurgery, The Royal London Homoeopathic Hospital and University College Hospital.

THE ROYAL LONDON HOMŒOPATHIC HOSPITAL

ADHD – Treat or defeat?

"He's not crazy. He has ADHD"

ADHD – Topics of discussion

- Diagnosis
- Nutritional Approach
- Homeopathic Treatment
  Pathognomic vs. Individual

ADHD – A four part problem

- Academic Underachievement
  - Attention / Memory
- Poor Behaviour Control
  - Hyperactivity / Impulsive
- Co morbid Conditions (Dyslexia / CD / ODD) in 40~60 %
- Contribution of Living Environment (Nurture or Hostility)

ADHD - Initial warning signs

- Alarm signals
- Detailed History
- Objective pointers
  (Scales & Tests)
- Niacin Skin patch test

Scales & Tests

- Conner's Teachers & Parents Rating scales
- Acherbach Child Behaviour Checklist
- Barkley & DuPaul Rating Scale
- Edelbrock Child Attention Problem Rating Scale
- Paired Associated Learning Test
- Continuous Performance Test
- Quantitive EEG [Computer analysis of tracings]

ADHD - Statistics

- Described almost 100 years ago (Still 1902) – Better diagnosed
- Affects 2 – 5 % of all children [50% cases referred to Child Psychiatry]
- Incidence approximately the same in most countries & races
- Boys are most often referred (10:1), but the true ratio is 3:1
- Onset: Between 4 – 7 yrs
  - Referral peak age: 8 – 10 yrs
- ADHD is a strongly inherited condition
  - Risk: siblings carry 30 – 40 %
  - Twin carry 90 % risk

ADHD - Differential diagnosis

1. Oppositional Defiant Disorder
2. Conduct Disorder
3. O-C Disorder
4. Depression & Bipolar Affective disorder
5. Tics & Gilles de la Tourette
6. Exclude ADHD 'Look alikes':
   - Normal active pre-school child
   - Under achievers & Intellectual disability
   - Hearing-impaired / Specific learning disabilities
   - Autism & Asperger's
   - Epilepsy (TLE) / Brain injury / Family dysfunction

Criteria of ADHD (DSM-IV 1994)

Inattention

Prevalence ADD = 5-10 %

- Failure attention to details → Careless mistakes in schoolwork / activities
- Difficulty sustaining attention in tasks / play activities
- Failure to listen when spoken to directly
- Failure to follow through instructions – finish schoolwork / chores / duties
- Loses things necessary for tasks / activities (pencils / books / tools)
- Avoid / reluctant to engage in tasks requiring sustained mental effort
- Difficulty organizing tasks & activities
- Easily distracted by extraneous stimuli
- Forgetful in daily activities

Criteria of ADHD (continued)

Hyperactivity-impulsivity

- Fidgets with hands & feet or squirms in seat
- Leaves seat in situations (classroom) where remaining seated is expected
- Runs about or climbs excessively in situations where it is inappropriate
- Difficulty playing or engaging in leisure activities quietly
- 'On the go' or acts as if 'driven by a motor'
- Talks excessively
- Blurts out answers before questions have been completed
- Difficulty awaiting turn
- Interrupts or intrudes on others (butts into conversations / games)

Main features of oppositional defiant disorder (DSM-IV 1994)

A pattern of Negativistic / Hostile & Defiant behavior

- Looses temper
- Argues with adults
- Actively defies / refuses to comply with adults requests & rules
- Deliberately annoys people
- Blames others for his mistakes or misbehavior
- Touchy or easily annoyed by others
- Angry and resentful
- Spiteful and vindictive

Main features of conduct disorder (DSM-IV 1994)

Repetitive and persistent pattern of behaviour, violating:
Basic rights of others / major age-appropriate social norms or rules

Aggression to people and animals
- Bullies, threatens or intimidates others / Initiates physical fights
- Used a weapon that can cause serious physical harm (knife / gun)
- Been physically cruel to animals and / or people / Forced someone into sexual activity
- Stealing while confronting a victim (mugging / extortion / armed robbery)

Destruction of property
- Deliberately engaged in fire setting, intending to cause serious damage
- Deliberately destroyed others' property (other than fire setting)

Deceitfulness or theft
- Broken into someone else's house / building / car
- Lies to obtain goods or favors to avoid obligations ('cons' others)
- Stolen items - nontrivial value without confronting a victim (forgery / shoplifting)

Serious violation of rules
- Truant from school / Stays out at night despite parental prohibitions (before age 13)
- Run away from home overnight at least twice while living in parental home

Behaviour of ADHD

- Parents suspect their child is 'different' form an early age
  - 'Hyper - excitable' – even in the womb
- Infant: Crying / Restless / Colic / Head banging / Rocking / Difficult to comfort
- Common Symptoms: Thirsty / Frequent urination / Dribbling
  - Feeding difficulty / Poor sleep / Touchiness / Obsessional
  - Defiant / Disobedient / Impulsive
- Most children present: Mixture: Hyperactivity & Attention deficit / Distractible
  - Hyperkinesis: Fidgety / Continuous purposeless leg movements
- Poor academic performance / Movement disorders / Procrastinate

Co-Morbidity of ADHD

- Neuro developmental: Dyslexia / Dyspraxia / Autistic trait / Enuresis
- Neurological: Awkward / Clumsy / Break things / Perceptual - motor Δ
  = Poor coordination (shoe laces / aerobics / swimming)
- Psychiatric: Depression / Anxiety / Sleep disorders / Labile
  = Aggressiveness / temper tantrums / low frustration tolerance
  = ODD / CD / PDA
- Atopic: Food intolerances / Hay fever / Catarrh / Asthma / Eczema
- Somatic: Stomach ache / Headaches / Infections / Malaise

Main features of
Pathological Demand Avoidance syndrome

Belong to 'Family' of Pervasive Developmental Disorders

1. Actively Passive
   Early history – increasingly as demands increase
2. Obsessionally Resists Demands
   Use Social manipulation and Control strategies
3. Mood Swings and Panic attacks
   Impetuous & Violent
4. Other:
   Comfortable in role-play and pretending – uses acting skills
   Sociable, but lacks responsibility / obligation / boundaries / identity
   Language delay – pragmatic problem and bizarre content

Social aspects of ADHD

- Children are often a target for bullies
  (Overreact to taunting)
- Poor impulse control
  (Physically & verbally accident prone)
- Children are socially & emotionally immature
  (On par with a child ⅔ their age)
- ADHD children makes parents appear inadequate
  (Good & Competent)
- Children not deliberately malicious /antisocial
  (Loners & outcasts - unwelcome)

Prognosis of ADHD

- Poor prognosis: Long-term condition
  - 50% children will carry traits into adulthood
- Age: Impulsive behaviour mellows
  - Learning / Organizational problems linger
- Ongoing: Personality disorders / Poor social skills
  - Relationship problems / Alcohol & drug abuse
  - Anxiety / Phobia / Depression / Suicidal
  - Poor self esteem / Poor self discipline
  - Underachievement / Feeling a failure
  - Disorganized / Job related problems

Aetiology - Biological

- Minimal Brain Dysfunction
  - Immaturity / Head injury / Asphyxia / Epilepsy
- Neurotransmitter Imbalance
  - Dopamine transporter & Dopamine-4 receptor gene
  - NA [Frontal-midbrain] & Serotonergic

[Cu levels ↑: co-enzyme promote conversion Dopamine – NA & ↓ tryptophan]
- Result: Lack of Self monitoring & Inhibition (Frontal lobes + Basal Ganglia)
- Overload of unnecessary & inappropriate information from auditory / visual input

- Markers on MRI scanning (70 % asymmetry frontal lobes & 100% caudate nucleus)
- EEG abnormalities (Increased β1 activity) [fronto-temporal]
  [Provoking foods do not cause ADHD, but may make it worse]
- Dysfunction demonstrated by SPECT (blood flow frontal lobes)

Aetiology - Endocrine

- Reduced glucose utilization (PET) - [Frontal lobes]
  - Zn & Cr necessary for glucose control
- Sugar ingestion / Hypoglycaemia
  - < behavioural problems
- Thyroid dysfunction
  - α-gliadin fraction in wheat
    = structure as thyroglobulin & Candida
  - Resistance to T_3 & T_4

Aetiology - Toxicological

Neurotoxin Exposure

- Psycho / Behavioural Teratogens
  - "Sensitive Brain" during development (> 800)

- Phenotoine / BDZ / Crack / Industrial solvents / Al / Pb / Hg / Cd
- Additives (Tartrazine: E 102 / Sunset yellow: E 119) → ↓ Zn
- Phosphorus (Fizzy drinks) → affects behaviour / ↓ Ca & ↓ Mg
- Aspartame (Chewing gum)

Food Additives

Colours		Preservatives	
E102	Tartrazine	E210	Benzoic Acid
E104	Quinoline Yellow	E211	Sodium Benzoate
E119	Sunset Yellow	E220	Sulphur Dioxide
E122	Carmoisine	E249	Potassium Nitrite
E123	Amaranth	E250	Sodium Nitrite
E124	Porceau 4R	E282	Calcium Propionate
E127	Erythrosine BS	E221	Sodium Sulphite
Flavour Enhancers		**Anti-Oxidants**	
E621	MSG	E320	Butylated Hydroxy Anisole
E622	MPG	E321	Butylated Hydroxy Toluene
		E310	Propyl gallate

Aetiology - Nutritional

Multi-nutrient Deficiencies & Faulty Enzyme systems

- Vitamins: A / C / B6 / 12 Minerals: Mg & Zn & Δ - 6 desaturase deficiency

- Zn deficiency: - Dysfunction: Serotonin & Dopamine systems = aggression / memory
  - Δ - 6 desaturase co factor: - failure to convert EFA's
    - reduced immunity (Atopic) *
  - Due to: - Early exposure to numerous courses of antibiotics
    - Often seen in acute phase response to various stressors = *

- EFA's deficiency: (EPA = 20:5n –3 & DHA = 22:6n –3 & GLA = 18:3n –6)
  - Neuro - developmental co - morbidity [ADHD / Dyspraxia / Autism]
  - Required for Dopamine production & storage] & polydipsia / polyuria
  - Prostanoids (prostaglandins / thromboxanes) & leukotrienes = immune system
  - Sleep regulation

Nutritional Findings

- Nutritionally very poor and limited diet
  - 'Fussy Eaters' (Δ sensory integration)
- Numerous deficiencies (Zn / Fe / EFA / Vit B & C)
- Lack protein (meat / fish) / Vegetables
- Lots of cheese! & yoghurt (sweetened / flavoured)
- Abundance of refined carbohydrates
  - (cereals & confectionary) / Sweets (Jam)
- Fake fruit juice / Ribena (Black current - Salicylates)
  - milk (strawberry & chocolate shakes)
- Apples / grapes / raisins (Salicylates)

Pyridoxine - Vit B6

- Essential for Protein metabolism
  - Haemoglobin / Neurotransmitter / Myelin sheath
- Required for Niacin (B3) activation / Absorption of Vit B12
- Necessary for Conversion of
  - Tryptophan into Serotonin
- Metabolism of Essential Fatty Acids / Glycogen – Lower need for Insulin
- Diuretic
- Helps PMT/ Nausea in pregnancy
- MSS: Reduce Night Cramps / Spasms / Numbness

DEFICIENCY

- Acne / Alopecia / Poor wound healing / Arthralgia / Anaemia
- Mouth (Crack – corners / Ulcers) / Painful tongue / Conjunctivitis
- Loss Appetite / Weakness / Fatigue; Nausea / Hyperemesis Gravidarum
- Depression / Irritability / Anxiety / Vertigo / Insomnia
- Nerves (Numbness / Paraesthesia / Shocks)

Zinc – Essential for

- Essential co-enzyme for Δ *6-desaturase* / Co-factor to convert *DGLA* into *PG1 (E)*
- Enhances Immune System: Combat Infections / Cancer
  - Helper T-Cells / T-Lymphocytes
  - Antibody production / Interferon Gamma / Interleukin 2
- Required for night vision / Maintain Vit A levels
- Reduce ability to absorb Copper (Balance each other)
- **Antioxidant:** Protect against Free radical damage
  - Metabolise Superoxide / Lipid peroxidation
- Production: Proteins [DNA+RNA] / cell replication - (Skin / Hair / Nails / Wound healing)
  - Hormones: Human Growth Hormone / Insulin-like Growth factor-1
  - Triiodothyronine (T3) / Insulin (storage & secretion)
- Co-factor in Numerous Enzyme reactions: (Gustin - taste) / Detoxifies: CO / Alcohol
- Promote function of amino acids - Neurotransmission
  - Cysteine / Taurine / Tryptophan – Dopamine / NA / Melatonin production

Zinc - Deficiency

- Acne / Alopecia / Nails (Brittle / White spots) / Hyperkeratosis
- Loss: Appetite / Smell / Taste
- Hypercholesterolaemia
- Infections
- Poor growth / Delayed puberty
- Impotence / Prostate hyperplasia / Infertility
- Diarrhea / Fatigue / Night blindness / Amnesia / Paranoia / Senility
- Foetus: Stillbirths / Congenital malformations
  - Intrauterine growth retardation
  - Low birth weight / Primary height growth failure of the foetus

Signs of EFA Deficiencies

- Visual Perceptual problems - [Ω 3]
  - Reading (Blurring / Letter Movement / Page Glare)
  - Visual (Poor night vision / Photophobia)
  - Visuo-motor control / Dyslexia / Dyspraxia
- Poor Attention & Concentration
  - ↓ Dopamine & D2 receptor binding in frontal cortex
- Mood Swings – [Ω 3]
  - Emotional liability / Low Frustration Tolerance
  - Aggression / Anxiety / Depression / Hyperactivity
- Sleep Disorders
  - Poor initiation / Frequent Waking
- Somatic complaints
  - Aches (Head / stomach) / Malaise
- Physical – [Ω 6]
  - Thirst / Polyuria / Eczema / Dandruff / 'Straw-like' hair
  - Infection / Atopy / Brittle nails / Dry & 'Chicken' skin

Essential Fatty Acids & Brain Function

Mainly Structure **(20% dry mass of brain)**

- Arachidonic Acid (AA) – Brain growth
- Docosahexaenoic Acid (DHA) – Synapses & Fluidity

Mainly Function

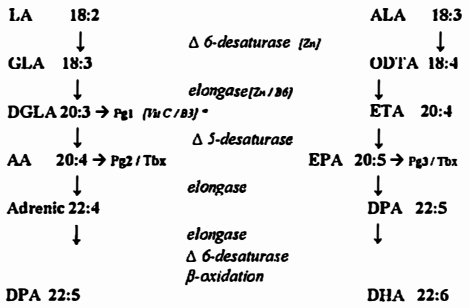
- Eicosapentaenoic Acid (EPA) – Signalling / Pg & Lt & Thx (Attention / Perception / Cognition / Memory / Mood)
- Dihomogamma Linolenic Acid (DGLA)

Conversion of EFA to PUFA's & HUFA's via desaturation & elongation

Conversion: Blocked by: (Inactivation Δ *6-desaturase* enzyme)

- Saturated & hydrogenated fats 'Trans' / Deficiencies (Zn / B3 / B6 / Vit C)
- Coffee / Alcohol / Smoking / Testosterone / 'Stress' hormones
- Viral infections / Asthma & Eczema

Omega-6 - EFA's - Omega-3



Treatment – Nutritional Diet

1. Feingold Diet - Avoid

- Food additives
- Salicylates (aspirin - like compounds)
  - Inhibits conversion of PUFA's into prostaglandins

2. Elimination sugar

3. High protein diets

The Feingold Diet

- Artificial Colours (tartrazine – E 102) / Flavours / Preservatives (nitrates)
- MSG / Anti-oxidants (BHA & BHT) / Sweeteners (Aspartame)
- Exclude foods containing natural salicylates (salicylate radical)
  - Risk: May become deficient in Vit C (No research evidence)

High salicylate containing foods: (g per 100 gr)

- Tomato Sauce [Heinz] (2.5) / Tomatoes (0.13) / Cucumber (0.8) / Broccoli (0.65)
- Almonds (3)
- Raisins (5.8) / Raspberries (5.2) / Apricot (2.6) / Black currents (3)
  Oranges (2.4) / Strawberries (1.4) / Grapefruit (0.7) / Cherries (0.9)
  Grapes (0.9) / Apple & Peach (0.6)
- Tinned Foods – Prunes (6.9) / Cherries (2.8) / Pineapple (1.4) / Plums (1.2)
- Ribena soft drink

Additives in Aspirin Sensitive people & Asthmatics

E212 Potassium Benzoate
E214 Ethyl 4 hydroxybenzoate
E216 Propyl 4 hydroxybenzoate
E219 Methyl 4 hydroxybenzoate
E230 Diphenyl
E232 Sodium Orthophylphenate
E233 Thiabendazode

Sweeteners

E950 Acesulfame / E951 Aspartame
E953 Isomalt / E954 Saccharin
E965 Mannitol / E966 Lactitol / E967 Xylitol

Symptoms of Additive or Salicylate sensitivity

- Hyperactivity & Fidgetiness
- Over-excitability & Impulsiveness
- Short attention span & poor concentration
- Disturbed sleep patterns
- Anti-social behaviour & Self-mutilation
- Auditory & Visual memory deficits
- Disturbance in spatial orientation
- Clumsiness & Motoric awkwardness
- Dyslexia / Dysgraphia / Stuttering

Treatment – Nutritional Supplementation

- Mg / Anti-oxidants / Chromium (glucose control)
- B-Vitamins (3 [spare tryptophan] & 6 [serotonin synthesis])
- EFA's (n-3) to replace deficiencies found in ADHD
- Zn (Reduce Cu & Lead levels / Glucose control / EFA conversion)
- MgSO4 - Damps down exitotoxic amino acids at NMDA receptor
- Amino-acids: L- Glutamine / Dimethylglycine / N-Acetyl L- Cysteine
- Antioxidants: Proanthocyanidins: Flavenoid Pycnogenol (pine bark)
- DMAE - Dimethylaminoethanol – Methyl donor
- SAMe (S-adenosylmethionine) metabolite of aminoacid methionine
  - detoxification & recycling of neurotransmitters = potent antidepressant
  - donate methyl groups for the 'methyl-'stripped' compounds

ADHD Cocktail

- Betaine or trimethylglycine – 750 mg / day
- Folic acid – 1 mg / day
- Vitamin B12 – 30 mcg / day
- Vit B5 – 250 mg / day
- Vit B6 – 25 mg / day
- Calcium – 1 gr / day
- Magnesium – 500 mg / day
- Zinc – 30 mg / day
- Selenium – 200 mcg / day
- 5-Hydroxytryptophan (5-HT) – 75 mg / day
- Tyrosine – 300 mg / day
- Lecithin – 2 gr / day
- Choline – 800 mg / day

EYE q - 500 mg capsules (2)

Eicosapentaenoic Acid (EPA)	186 mg
Docosahexaenoic Acid (DHA)	58 mg
Gamma Linolenic Acid (GLA)	20 mg
Vit E	3.2 mg

EPA – DHA Ratio [almost]: 4 – 1 (Usually 3 – 2)
[Cod liver oil: 2-3]

Fish Source: Sardines / Pilchards / Anchovies

N-Acetyl L-Cysteine (NAC)

- Anti-oxidant (Free radical scavenger)
  - Part of Glutathione peroxidase (Se)
  - Cardio-protective
    - Prevent oxidation LDL / Lowers lipoprotein A (CVD risk factor)
- Detoxifier – Enhances Glutathione
  - Liver protective
    - Neutralizes toxins / metabolic waste
- Remove Heavy metals
  - Pb / Hg / Cd
- Anti-Viral
  - Raising glutathione in virally infected cells
- Mucolytic
  - Aid removal of thick mucus (break bonds)
    - Cystic fibrosis / COAD / Infection

Treatment – Nutritional

Desensitisation

- Neutralisation
- Enzyme Potentiated Desensitisation (EPD)
- Food 'Sarcodes' – Isopathy
  - 6x – 5x – 4x – 3x – 2x – 1x – Ø
  - Dose: 2 drops BD (1 week each stage)

Treatment - Psychotherapeutic

- Standard behaviour programmes are generally ineffective
  - (less responsive to +/- reinforcement)
  - [less reward orientated]
- Cognitive behavioural work / Social skills training Group work / Family therapy
- Imposes Challenges:
  - Lack motivation / Impulse control issues
  - Inconsiderate to long-term consequences
- Understanding / Acceptance / Love / Respect
- Support for whole family

Treatment - Psychologically

- Behaviour Enhancement tips:
  - Routine / Structure & Consistency [Predictability & Framework]
- Get attention [Speak calm, clearly, with good eye contact]
- Chunk down on information
  - Simple instructions [forget / procrastinate / distracted]
- Ignore the unimportant / Avoid arguments & escalations [Avoid debates]
- Token rewards / Star charts & Motivational privileges
- Foster & Promote their talents / strengths / creative abilities ["You are not dumb"]
- Avoid "Put-down": Replace "You always.." ' - ' statements with ' + ' encouragements
- Avoid social stress
- Encourage right hobbies [outdoors = space / freedom] & Sports [Martial arts]
- School & Teachers.....??
- Techniques to promote & develop ability to Read / Spell / Write / Maths

Challenges for Parents

- Stress-damaged (often late diagnosis)
  - Self blame
  - Disappointment / Resentment / Anger
- Discipline difficulties – dictate the household
- Sibling: Different rules / Time division
  - Destroying property & friends
  - Space invasion
- Parents who have ADHD....
  - Severe challenge as a parent

Treatment - Pharmacological

- Tricyclic Antidepressants / Venlafaxine
- Clonidine (α-agonist) / Carbamazepine
- Stimulant medication - Dopaminergic
  - (Methylphenidate & Dexamphetamine)
  - is pivotal in ADHD
- Strattera (atomoxetine Hcl)
  - norepinephrine reuptake inhibitor

Ritalin (Methylphenidate HCl)

Novartis – 1955

- Amphetamine-like addictive psychostimulant
  - mimics the biochemical properties of Cocaine
- Dopamine Agonist (Release Dopamine & Inhibit Reuptake & MAO-I)
- Block more dopamine transporters
  - Give a greater 'rush' if injected iv – surfeit of dopamine in system
- Estimated that its prescribed to 1:7 children in the USA daily
- Fiercest Critic: Dr Peter Breggin (John Hopkins University)
  - www.breggin.com
- Lawsuits pending against Novartis: Claim MPH safe
- Use Multimodal Treatment (MTA) study for marketing
  - Poorly conducted
- NICE (2000) recommendations for ADHD treatment
  - Accepted study without scrutiny

Stimulant Drugs - Breggin

- **First approved – mid-1950's**
  - Behavior control of children
- **Periodic promotion of usage**
  - Early 1970's - ± 100,000-200,000 children
- **EDA (1999) in US warned**
  - Six-fold increase Ritalin production (1990 – 1995)
- **INCB (1995) of WHO deplored**
  - 10 to 12 percent of US boys (6-14 yrs) - diagnosed ADD
  - Being treated with methylphenidate [Ritalin]
  - Board declared (1997) - US uses ± 90% world's Ritalin
- **Currently probably exceeded 15%**
  - 53 million school children - ± 5 million take stimulants
  - JAMA: 3-4 fold ↑ stimulant prescription: 2-4 yrs toddlers

Ritalin – Side Effects

- Sleep problems
- ↓ Appetite & Weight loss / Alopecia
  - Disrupt growth hormone production / ↓ brain circulation
- Nausea
- Headaches
- Vertigo
- Irritability & Mood swings – Depression & Psychosis
- Ticks [Contra-indication] / Tourette's / Convulsions
- Abdominal Pain
- Drug dcpcndcncy (cross rcaction to Cocainc)
- Zombie state & ↑ OC - Traits

ADHD - Homeopathic Study

- **BHJ (2001) 90, 183 – 188 (Frei)**

– 115 children: 75% success
  - Hom Rx as effective as Ritalin

- Lyc / Calc / Sulph / Bell / Caust / Phos / Ign / Nux

– (No: Tub / Verat)

ADHD - Summary

- Diagnosis
- Psychotherapeutic
- Nutritional support
  - Diet
  - Supplementation
- Homeopathic
  - Individualisation

Autism - Statistics

- **Kanner Syndrome (1943)** – *Infantile Autism*
  - 0.05 – 0.15%
- Asperger's = 0.3 – 0.6 %
- ASD Combined = 0.6%
- M:F = 4:1
- Onset – After 2 yrs

Autism

Aetiology

- Multi-factorial origin
  - Polygenic component
    - Identical twins – 36-90% concordance rate
    - Non-identical twins - less than 1% rate
    - Siblings have nearly a 100-fold increased risk
  - Influence of environmental elements - ↑ Risk
    - Maternal
      - Anti-epileptic drugs (valproic acid) / Alcohol / Cocaine
    - Child
      - Vaccines ?

Autism

Pathological Findings

- MRI:
  - Increased subarachnoidal spaces / Moderate ventricular enlargement
  - 20% have megaloencephaly
- PET:
  - ↑ glucose metabolism and ↓ functional links with association cortex
- Pathology: Reduced size of areas
  - Hippocampus / Subiculum / Sections of the amygdala
  - Mamillary bodies / Medial septal nucleus
  - Decreased size of cerebellar hemispheres
    - Posterior vermis / VI VII neocerebellar lobules

Autism

Maternal Pre-natal factors

- Viral infection
  - cytomegalovirus (CMV)
- Gastrointestinal problems
  - Food poisoning and non-specified infection
  - Coeliac disease and Crohn's disease
- Diabetes
- Pre-eclampsia
- Threatened miscarriage

Autism

Pre- & Post natal factors

- Umbilical cord around the child's neck
- Indications of foetal distress
  - Cyanosis (5-min Apgar score < 7)
- Born pre-term
- Aided delivery
  - Forceps delivery / Suction method
- Emergency caesarean section
- Breech birth
- Heart complaints:
  - Irregular heart beat / Heart murmurs
- Other:
  - Infant pneumonia
  - Hypoglycaemia / Hypothyroidism
  - Pulmonary embolism
  - Kidney failure / Liver infection

Autism

Prognosis

- Neurobiological: Life - long disorder
- 70% are mentally retarded
  - 30% mild and the rest moderate and severely retarded
- 25% have convulsions
  - 65% inspecific EGG abnormalities
- Associated conditions: ADHD / Anxiety / Depression
- Evolution:
  - 9-31% live independently
  - 11-50% attend college

DIAGNOSIS AUTISTIC DISORDER

(DSM-IV 1994)

Delays / Abnormal functioning

at least 1 of following areas (prior to age 3 years)

A. Social interaction

B. Language used in social communication

C. Symbolic or imaginative play

Impairments in social interaction

at least 2 of following: Autism A

1. Use multiple nonverbal behaviors:
   (eye-to-eye gaze / facial expression / body posture / gestures)
2. Failure: Develop peer relationships
   (Prefer solitary activities)
3. Lack spontaneous seeking of sharing with others
   (enjoyment / interests / achievements / show objects of interests)
4. Lack of reciprocity social / emotional / participate:
   (social play / games / aloof / empathy / grateful)
   [involve others - "mechanical" aids]

Impairments in communication

at least 1 of following: Autism B

1. Delayed / Lack development of spoken language
   (no compensation via alternative communication modes - gesture / mime)
2. Impairment in ability to initiate / sustain conversation
   (if adequate speech)
3. Stereotyped and repetitive use of language
   (echolalia) / idiosyncratic language
4. Lack varied, spontaneous play
   (make-believe / social imitative / pretend)

Restricted repetitive and stereotyped patterns of behavior, interests and activities: Autism C

1. Preoccupation with one or more stereotyped and restricted patterns of interest
   (Abnormal either in intensity or focus / Interruption cause "meltdown")
2. Inflexible adherence to specific routines or rituals
   (nonfunctional)
3. Stereotyped and repetitive motor mannerisms
   (hand & finger flapping / twisting / rocking / spinning
   complex whole-body movements)
4. Persistent preoccupation with parts of objects

Asperger's Disorder
"High Functioning Autism."

- A. Qualitative impairment in social interaction = Autism
- B. Restricted/ Repetitive / Stereotyped behavior patterns = Autism
- C. Significant impairment in social, occupational & other functioning
- D. No clinically significant general delay in language
- (single words use by 2 yrs / communicative phrases use by 3 yrs)
- E. No clinically significant delay
  - Cognitive development
  - Age-appropriate self-help skills development
  - Adaptive behavior (other than in social interaction)
  - Curiosity about the environment in childhood

Rett's Disorder

(Poorer prognosis)

- Apparently normal prenatal and perinatal development
- Apparently normal psychomotor development through the first 5 months
- Normal head circumference at birth
- Onset of all of the following after the period of normal development:
  - Deceleration of head growth between ages 5 and 48 months
  - Loss of previously acquired purposeful hand skills between ages 5 and 30 months
  - Subsequent development of stereotyped hand movements
    - (Hand-wringing / Hand washing)
  - Loss of social engagement early in the course
    - (Social interaction may develop later)
  - Appearance of poorly coordinated gait or trunk movements
  - Severely impaired expressive and receptive language development
    - Psychomotor retardation

Childhood Disintegrative Disorder

"Regressive Autism"

- Apparently normal development for the first 2 years
  - Verbal & nonverbal communication / social relationships / play / adaptive behavior
- Significant loss of previously acquired skills (before age 10 yrs) - at least 2:
  - Expressive or receptive language
  - Social skills or adaptive behavior
  - Bowel or bladder control
  - Play
  - Motor skills
- Abnormalities of functioning - at least 2:
  - Impairment in social interaction
    - Nonverbal behavior
    - Failure: Develop peer relationships / Lack of social & emotional reciprocity
  - Impairments in communication
    - Delay or lack of spoken language / Inability to initiate & sustain conversation
    - Stereotyped and repetitive use of language / Lack of make-believe play
  - Restricted, repetitive & stereotyped behavior patterns
    - Interests / Activities / Including motor stereotypies & mannerisms

Autism & Diet

Associations

- Parents (non scientists) noticed children
  - Adversely affected by food
- Individual variability - certain products appeared recurrently
  - Gluten / Casein / Citrus fruits / Chocolate / Pigmented foods
  - Paracetamol / Salicylates / Tomatoes / Aubergines
- Early advocates of these interventions
  - Dohan (1966) – Gluten & Schizophrenia [Idea dismissed]
  - Panksepp (1979) - Morphine like substances & Autistic symptoms
  - Reichelt (1981) – Biologically active peptide fractions & Autism
  - Shattock (1991) – Gliadomorphines / Casomorphines & Autism
  - Knivsberg (1995) – Diet & Autism
  - Waring (1999) - Biochemical Parameters (Sulphation) in Autism

Autism – A Metabolic Disorder?

- Elevation in Opioids
  - Gliadomorphins & Casomorphins - ['Exorphins']
- Immunological Abnormalities
  - Infection history & ↑ IgA (gluten / casein)
- Increased Intestinal Permeability
  - Increase of IAG
- Irregularities in CNS
- Abnormal reactions to vaccinations
- Gut Dysbiosis – [Antibiotics]
  - Overgrowth (Candida / Clostridia / Pseudomonas)
- Abnormal Sulphation
- Glutathione deficiency

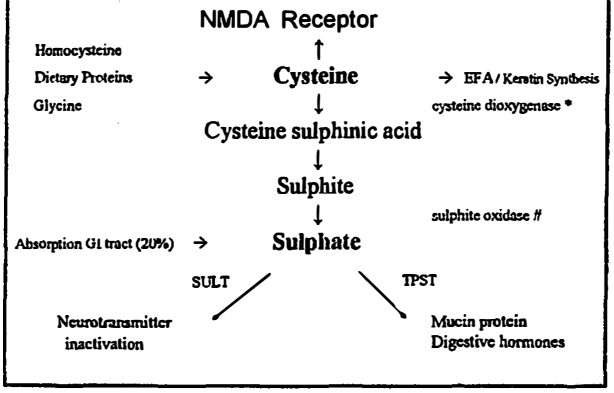
Autism & ADHD – Gut-brain axis I

1. Sulphur & Phenolsulphotransferase-P (PST - P)

– Sulphate deficiency: Insufficient metabolism of catecholamines (Dopamine) via sulphation
  - sulphate: Internal conversion (oxidation) from cysteine [Mo dependent / blocked by TNF-a]

– Decreased activity of sulphotransferase activity: Insufficient metabolism of Amines (phenolic compounds)
  - (serotonoin / tyramine / phenylethylamine) [acting as neurotransmitters]
  - Inhibited by: Flavanoids (broccoli / citrus fruits) / tartrazine Chocolate & Milk
  - Used by: Vanilla

Cystein / Sulphate Metabolism



Insufficient Enzymes Sulphotransferase

- Often Familial: Migraine - 1st degree relatives
- Neurotransmitter Amines - Foods
  - (Serotonine / Tyramine / Phenylethylamine)
    - Bananas / Cheese / Chocolate
- Flavanoids (Fruit & Vegetables) – Inactivate enzymes
  - Citrus fruit / broccoli
- Colorants (Foods & Sweets) – Require enzymes
  - Tartrazine
- Flavourings (Foods & Ice cream) – Substrate for enzymes
  - Vanilla

Disturbed sulphate metabolism

- Compromised integrity of glycosaminoglycans
  - mucin proteins – clumping
- Shortage of sulphated peptide hormones
  - Cholecystokinin [Neuropeptide]
    - ↓ Neuroendocrine & modulate dopamine
    - ↓ Secretin: No stimulation pancreatic digestive enzymes
  - Gastrin
    - ↓ Gastrin + Achlorydria – unbalanced bowel flora & leaky gut
- Shortage of steroidal hormones (DHEA & oestrogen)
- Lack of sulphation of bile acids & ↓ Vits absorption
- Poor detoxification of phenols and amines
- Reduced cell redox potential

Sulphotransferases

SULT

- SULT 1A1/2
  - Phenols
- SULT 1A3
  - Catecholamines
    - Dopamine
- Require adequate sulphation
  - PAPS = 3'-phosphoadenosine-5'-phosphosulphate

Tyrosyl Protein Sulphotransferase
TPST

- Enzyme – sulphates tyrosine protein residues
- Produces Peptides:
  - Glycoproteins in Mucin
    - Protective intestinal layer – Leaky gut!
  - Gastrin
  - Cholecystokinin (CCK)
    - Required for secretin release
    - Stimulate pancreatic digestive enzymes
    - Signal 'Satiety' to hypothalamus

Autism & ADHD – Gut-brain axis II

2. Leaky Gut & Dysbacteriosis

- Increased gut permeability
  [Reduced mucin sulphation due to reduced Tyrosyl Protein ST]
  - Amines from gluten & casein act as neurotransmiters
- Food intolerance Aspartame / MSG
  [dipeptide of aspartic acid & phenylalanine]
  - Aspartic acid & Glutamate: exitotoxic at the NMDA receptor
    [as is Cysteine]
  - Phenylalanine: Precursor for Dopamine & NA
  - Tartrazine reduce Zn levels

Leaky Gut – Increased permeability

- Reduced protective Mucin sulphation
  - Glycosaminoglycans – clumping = gaps
  - Charge change from '-' to become '+'
  - Now attract bacteria / viruses & candida
  - These carry a '-' charge and stick to wall
  - Children susceptible to vaccination effects

Prebiotics

- Prebiotics
  - Inulin – Non-digestible oligosacharides (NDO)
  - Oligofructose – fructo-oligosaccharides (FOS)
    - Plant energy storage compounds - 'Fuel for a rainy day'
- Advantages
  - Long shelf-life / Stable / Inexpensive
  - Survive stomach acid / Long-lasting effect
  - Encourage 'healthy' gut flora
  - Mucosa Hyperplasia = Upregulate brush border enzymes
  - ↑ Fe binding (phytates)/ ↑ Vit B status / ↓ LDL / ↑ HDL
  - Form Acetic & Butyric acid (Butyrate) – [SCFA's]
    - – Inhibit Pathogens / Anti-cancer property / > Ulcerative Colitis
  - Prevent Colo-rectal cancer
  - Metabolized by bacteria to Acids = Anti-oxidants

Probiotics

- Lactobacilli & Bifidobacteria
  - Limited shelf-live / Sensitive to stomach
- Advantages
  - Secrete enzymes - metabolize Prebiotics:
    - Acetic & Butyric acid = Short Chain Fatty Acids
  - Binds Bile acids
    - Prevent cancer in colon & liver
    - ↓ Cholesterol & Triglycerides

L-Glutamine

- Main 'fuel' for repair & maintenance
  - Component of intestinal connective tissue
- Support the immune system
- Muscle repair & Building
  - Repair after intense exercise
- Anti-ulcer agent
  - Promote healing
- Reduce Alcohol craving
- Mental Stimulant
  - Convert to Glutamic acid in CNS

Autism – Gut-brain axis III

3. Opiate Excess Theory

- Incomplete metabolism and excess absorption of Peptides with Opioid activity - (Confound natural transmitters)
  [gliadomorphins & casomorphins] (Gluten & Casein Intolerance - enteropathy)
  - gluten molecule has 15 opioid sequences
  - Also have N-terminal tyrosine
- Disrupting biochemical & neuro-regulatory Processes (affecting many systems)
- Increased Platelet Serotonin
  Reduces effective transmitter in synaptic cleft

High Opioid substances – Peptides

Mimic effects of β-endorphins [encephalins]

- Derived: **Incomplete digestion** of certain foods:
  - Gluten (Cereals [wheat / barley / rye / oats])
    - Gluteomorphins
  - Casein (Dairy produce)
    - Casomorphins
  - Peptides (Short chain Amino-acids)
    - Opioid activity
- Other Factors
  - Peptidase enzymes low / less effective
  - Gut Acidity wrong
  - Insufficient C0-enzyme fractions (Vits / Minerals)
- Leaky Gut

Elevation in Opiate Theory

ASD

- Display β-endorphin effects [= opiate dependence]
  - Reduced pain sensitivity
  - Increased incidence of epileptic-type seizures
  - Modification of sleep patterns
  - Memory & Learning difficulties
  - Reduced Sociability
  - Continuous hunger – No satiety sensation
  - Body temperature irregulation
  - Constipation & Stool abnormalities
  - Suppression of Immune system

Tests - ASD

- Urinary: Peptides (IAG) / Sulphites / Organic acids
- Stool: Parasitology / Yeasts
- Gut permeability test (8 hour urine collection!!)
- Mineral analysis (sweat / hair)
- Bloods: Zinc (WBC) / Magnesium (RBC)
  Rest (Serum) / EFA (RBC) / Ferritin (Hb)
- Allergy: - Cytotoxic test (WBC - Morphology)
  - FACTest (WBC – Leukotriene)
- Gluten intolerance (Predictive value of 99.3% - Coeliac)
  - IgG & IgA: anti - gliadin antibodies (AGA)
  - IgA: class anti - endomysial antibodies (EMA)
  - Tissue Transglutaminase (tTG)

Urinary tests - ASD

- Organic acids: (DHPPA compound)
  – Arabinose / Tartaric acid / Citramalic acid
- Organic acids: (Diagnostic tool – 80% in ASD)
  – IAG [Trans-3-(Indol-3-YL)-Acroylglycine]
    - Urinary metabolite of IAcrA [3-(indol-3yl)-acrylic acid]
- Inorganic Sulphur:
  – Sulphite / Thiosulphate
- β-casomorphine 1-7 (βC1-7)

Laboratories

- The Great Plains Laboratory – USA
  – William Shaw [Organic acids / Stool cultures]
- Biolab – UK
  – John Howard McLaren [EFA's / Minerals]
- Sunderland University - UK
  – Paul Shattock [IAG / Casomorphines]
- Individual WellBeing Diagnostic Lab – Austria
  – James Cook (UK) [FACtest]
- Brampton Scientific - UK
  – Leslie McEwan [Cytotoxic]
- Great Smokies Diagnostic Labs – USA

Diet responders

Autistic children

- Apparently normal development (1-2 yrs) followed by regression into Autism
- Severely disordered language
- Altered bowel habit having illnesses requiring antibiotics
- Excessive thirst
- Cravings for dairy & wheat products
- Pale face with dark shadows under the eyes
- Persistent nasal congestion

Sunderland Protocol - ASD

1. Casein free
2. Gluten free
3. Other foods (Corn / Soya / Tomatoes / Avocado)
4. Testing: Vits / Minerals / Amino-acids / Allergies (IgE & IgG) & Supplement
5. Parasitic; (Yeast / Protozoa / Worms / Bacteria)
6. Sulphation issues (Epsom salts / MSM)
7. Enzyme activity (Betaine Hydrochloride)
8. Fatty Acids (EPO / DHA & EPA)
9. L-Glutamine / Pre & Probiotics
10. Supplements (Bromelain / Seren-Aid / EnZymAid)
11. 5-Hydroxy Tryptophan (5-HTP)
12. Pigment free
13. Salicylate free
14. Mega dose B6 & Mg
15. Dimethylglycine (DMG)
16. Secretin

MSM (Methyl Sulfonyl Methane) [$C_2H_6O_2S$ or $(CH_3)_2SO_2$]

- Organic form of Sulphur – one of the most prominent compounds of the body.
- In various amino acids / Hair / Skin / Nails / Connective & Supportive tissue
- Food Sources: Eggs / Meat & Dairy products (Yoghurt) Sunflower seeds / Garlic / Onions / Lentils / Soybeans
- Much is destroyed by food processing and cooking.
- Physiological Action:
- Cellular dehydration / Detoxification (Metals) / Reduce intracellular pressure
- Restores cellular flexibility (bisulfide bonds) and permeability and softness
- Anti-oxidant / foreign protein and free-radical scavenger – (Glutathione peroxidase)
- Critical for Connective tissue production (Collagen / Keratin) – [Arthritis]
- Intestinal Anti-parasitic action (Giardia / Trichomonas / Worms)
- Essential component of the intestinal mucin layer – Anti food allergen action
- Co-enzyme in numerous enzyme activities / Essential in Hormone balance
- Improves circulation by vaso dilatation / Increase peristalsis
- Required for insulin production

L-Glutathione

- Sulphur-bearing Peptide
- Formed by linking 3 AS's
  - Glutamic acid & Cysteine & Glycine
- Main Function
  - Anti-oxidant - Part of enzyme glutathione peroxidase (& Se)
    - Free radical scavenger
    - Prevent oxidation of LDL cholesterol
  - Detoxifier
    - Free radicals / heavy metals / liver
  - AS transport across cell membranes

L-5-Hydroxytryptophan (5-HTP)

- Anti-depressant
  - Precursor of Serotonin
- Anxiolytic
  - Serotonin
- Tranquilliser
  - Promote sleep (Serotonin precursor of Melatonin)
- Behavioural Disorders
  - Aggression / OC-D / eating Δ

SECRETIN

- Polypeptide hormone [27 amino acid - Pig duodenal mucosa]
  - Involved in regulation of gastric function
  - Released S cells following stomach acid [ph ↓ 4]
- ↑ Secretion of Water & Bicarbonate - (duodenum)
- ↓ Glucagon release & Intestinal mobility / ↓ NA & H_2O uptake
- Stimulates bile secretion / Insulin release / Pepsin
- Stimulates pancreatic enzymes
  - Lipases / Peptidases – metabolize peptides
- Stimulate Gastrin in Zollinger-Ellison syndrome
- Suppressed by:
  - Somatostatin / Cimetidine / Omeprazole
- Structurally similar to:
  - Glucagon / Gastric Inhibitory factor
  - Vasoactive Intestinal Polypeptide / GrowthH-RH

Folic Acid

- ↓ Folate & ↑ tHcy in recurrent miscarriages #
- Prevents birth defects (neural-tube)
- Down's Syndrome [2.6% risk]
  - Gene mutation = methylene tetrahydrofolate reductase
- Support methylation
  - Helps lower DNA damage
  - Reduce homocysteine levels
- Required for DNA / RNA / Protein synthesis
- Depression: Associated with ↓ Transmitters
  - Serotonin / NA / Dopamine (Impaired methylation)
  - tHcy Negative correlation with folate *

Autism

Methyl Donors

- Duo to a prenatal "gene-nutrient" interaction involving folic acid
  - Excess folic acid taken IN pregnancy increase the risk for autism
- "Epigenetic" disease: Unexpected changes in genetic code expression
  - No mutations (Correct spelling), but not "read" correctly = dysfunction
- Mechanism involves the process of "methylation" of DNA
  - Methylated genes are often "turned off" and not expressed
- Abnormal immune system
  - Decreased number of helper T-cells and B-cells
  - Reduced natural killer cell activity
  - Inhibition of macrophage activity and increased interferon levels
- DMG improved all five Aberrant Behavior Checklist scales
  - Irritability / Lethargy / Stereotypy / Hyperactivity
  - Inappropriate speech / Verbal Communications
  - Improved eye contact / Affection
  - Social interaction
  - Seizure reduction

Methyl Donors

Any Substance - Transfer Methyl Group (CH_3)

- Methylation: Transfer methyl groups between biomolecules
  - Essential to life
  - Biochemical step occurring a billion times a second
  - Require a protein catalyst (enzyme)
- Important factor in many biochemical processes
  - proteins / nucleic acids / biogenic amines / Hormones
  - Phospholipids / Lipid metabolism (↑ HDL)
- Activate / Recycle / Detoxify and/or protect molecules
  - Detoxify foreign substances
- Biochemical catalysts
- Methylation: Biochemical reduction (addition of electrons)
  - Opposite of oxidation (loss of electrons)
- Essential – "Can't be made" – Obtain from diet