TREATING AUTISM



DAN! + ATA KINACI PROTOCOL

Dr. Cem KINACI Autism Research Institute, DAN! Healthcare Practitioner

Different research and societies that Dr Kinaci is involved with

- Autism Research Institute, DAN! Healthcare Practitioner
- Autism Society of America
- US Autism and Asperger Association
- National Autism Association
- National Alliance for Autism Research
- Association for Comprehensive NeuroTherapy
- Society for Neurosience
- Treating Autism
- Dads Against Mercury
- Alternative Mental Health
- Undersea and Hyperbaric Medical Society
- European Underwater and Baromedical Society
- American Association for Hyperbaric Awareness
- International College of Nuclear Medicine Physicians
- Asian-Pasific Society of Nuclear Cardiology
- International Society for Infectious Diseases
- Turkish Society of Nuclear Medicine







Recovery from autism is no longer a dream – it is a reality! More progress has been made in the last 3 years than in the previous 3 decades!

Autism IS Treatable! Recovery from Autism IS Possible!

Bernard Rimland, Ph.D. President



- This lecture has been updated with the latest research & from the Treating Autism Conference at february 8–9, 2007 in Bournemouth, UK.
- This needs to be done by a qualified DAN! doctor.

Causes of Autism

There are many theories as to the cause of Autism such as.....

- abnormal cerebral blood flow to areas of the brain,
- high fevers,
- birth trauma,
- brain injury,
- infections,
- reactions to vaccines or
- lack of oxygen before, during or after delivery.

Predisposing Factors for ASD

Genetics Blood Type HLA- Type Family History of Autoimmunity Single Nucleotide Polymorphisms (SNP) causing impaired detoxification



Predisposing Factors for ASD

Heavy Metal Burden

Mom

(amalgams, fish consumption, rhogam, vaccines, environment, occupation, oral contraceptives)

Patient

(immunizations, environmental toxics, antibiotics, immune issues, gastrointestinal permeability)

Predisposing Factors for ASD

 Infectious Agents
 Virus (Measles, HHV6, CMV...)
 Bacteria (Streptococcus, Clostridia, Borrelia...)
 Fungal (Candida)

 Impaired Detoxification
 Undermethylation, Remethylation Defects
 Sulfation Defects (phenolsulfertransferase, sulfite oxidase)
 Cysteine Deficiency
 Glutathione Deficiency (GSH)

Am J Clin Nutr. 2004 Dec;80(6):1611-7 Metabolic biomarkers of increased oxidative stress and impaired methylation capacity in children with autism. James SJ, Cutler P, Melnyk S, Jernigan S, Janak L, Gaylor DW, Neubrander JA.

Heavy Metal Overload – Oxidative Stress
 Thimerosal (Mercury), Arsenic, Lead
 Depletion of Antioxidants, Glutathione, and Metallothionein
 Mineral Deficiency– Zinc, Magnesium
 Mitochondrial Dysfunction

Am J Clin Nutr. 2004 Dec;80(6):1611-7
 Metabolic biomarkers of increased oxidative stress and impaired methylation capacity in children with autism.
 James SJ, Cutler P, Melnyk S, Jernigan S, Janak L, Gaylor DW, Neubrander JA.

Gastrointestinal Dysfunction
 Dysbiosis (Yeast, Bad Bacteria, Virus...)
 Malabsorption
 Maldigestion (enzyme deficiency, IgG food sensitivities, urinary peptides)
 Autistic Enterocolitis/ Lymphonodular Hyperplasia

Am J Clin Nutr. 2004 Dec;80(6):1611-7
 Metabolic biomarkers of increased oxidative stress and impaired methylation capacity in children with autism.
 James SJ, Cutler P, Melnyk S, Jernigan S, Janak L, Gaylor DW, Neubrander JA.

Immune System Dysregulation
 Proinflammatory Cytokines
 Microglial Activation
 Th1 / Th2 skewing
 Decreased Natural Killer Cell
 Increased Autoimmune Markers

Am J Clin Nutr. 2004 Dec;80(6):1611-7
 Metabolic biomarkers of increased oxidative stress and impaired methylation capacity in children with autism.
 James SJ, Cutler P, Melnyk S, Jernigan S, Janak L, Gaylor DW, Neubrander JA.

Children that have tendencies towards autism are **born** with: Weak immune system, Hormonal imbalances, Allergies, and poor uptake of nutrients due to metabolic imbalance.



In the 1980's, many researchers found evidence of food proteins in the urine of autistic children that resemble opioids. Opioids are substances that can cause behavioural changes in people. (An example is the drug morphine, which

is derived from opium).

 Opioid proteins are known to attach to receptors in the brains and guts to create behavioural changes as well as digestive complaints like constipation, diarrhoea and bloating.



"Leaky gut" is common (75–90%) in autism and implies that the intestines are more permeable than normal.

Valicenti-McDermott M., et al. Frequency of Gastrointestinal Symptoms in Children with Autistic Spectrum Disorders and Association with Family History of Autoimmune Disease. Developmental and Behavioral Pediatrics. 2006;27:128-136









Jejunal & Ileal inflammation Capsule Enteroscopy :16 :58 PiliCam[®]SB Pil/Cam[®]SB 230 240 PillCam^{*}SB PillCam^{*}SB Thoughtful House

Colonic aphthoid ulceration and inflammation





What have these studies shown?





This can play a major role in food allergies and in soy, gluten and casein sensitivity.

Soy, gluten and casein can enter the circulation through this "leaky gut" and travel to the brain.

Enzyme disturbances can be caused by the bodies inability to cleanse heavy metals from the system.
There is also an imbalance in intestinal flora.
This can lead to fungal infection in some children.

Candida is the most common.

The normal body can cleanse heavy metals from the system with the help of enzyme Glutathione which is built from Cysteine.

In autistic children the levels of both are far below normal.

Costa LG, Aschner M, Vitalone A, Syversen T, Soldin OP. Developmental neuropathology of environmental agents. Annu Rev Pharmacol Toxicol 2004;44:87–110. Sanfeliu C, Sebastia J, Ki SU. Methylmercury neurotoxicity in cultures of human neurons, astrocytes, neuroblastoma cells.Neurotoxicology 2001;22(3):317–27. Glutathione binds heavy metals and transfers them to the biliary system first and then to the intestinal tract to be eliminated. Cysteine is need for the body to produce glutathione. Due to the low levels of cysteine it results in low levels of Glutathione.



Due to faulty levels of Cysteine and Glutathione, children with tendencies towards autism have toxic levels of mercury, lead and arsenic (to name a few) in their brain, liver, kidneys, intestinal tract, bone marrow and muscles.

Toxic Heavy Metals and their connection to Autism



Biochemical Effects of Toxic Overload

- Destroy cell membranes
- Increase free radical activity
- Deplete sulfur enzymes
- Displace enzyme cofactors
- Oxidize enzymes
- Attack organs (brain, nervous system, kidney)
- Affect gastrointestinal flora and integrity
- Immunotoxic
- Denature proteins
- Carcinogenic
- Mineral deficiency

Anju Usman, Bournemouth 2007

Sources of Mercury

- Auto Exhaust
- Pesticides
- Fertilizers
- AMALGAMS
- Drinking Water
- Felt
- Ear Drops
- Nose Drops
- VACCINES
- Contact Lens Solution
- Fabric Softeners
- SEAFOOD
- Calomel (Talc)
- Cinnabar (Jewelry)
- Cosmetics (Mascara)
- Wood Preservatives
- Floor Waxes / Polishes
- Coal Burning Plants

Neurons Before Mercury Exposure >

Neurons During Mercury Exposure >

Neurons After Mercury Exposure >



Common Symptoms of Autism & Mercury Poisoning IMPAIRMENTS IN SOCIABILITY

Mercury Poisoning	Autism
Social deficits, shyness, social withdrawal	Social deficits, social withdrawal, shyness
Depression, mood swings; mask face	Depressive traits, mood swings; flat affect
Anxiety	Anxiety
Lacks eye contact, hesitant to engage others	Lack of eye contact, avoids conversation
Irrational fears	Irrational fears
Irritability, aggression, temper tantrums	Irritability, aggression, temper tantrums
Impaired face recognition	Impaired face recognition
Schizoid tendencies, OCD traits	Schizophrenic & OCD traits
Repetitive, stereotypic behaviors	Repetitive, stereotypic behaviors

IMPAIRMENTS IN SPEECH AND LANGUAGE

Mercury Poisoning	Autism
Loss of speech, failure to develop speech	Delayed language, failure to develop speech
Dysarthria; articulation problems	Dysarthria; articulation problems
Speech comprehension deficits	Speech comprehension deficits
Verbalizing & word retrieval problems	Echolalia; word use & pragmatic errors
Hearing loss; deafness in very high doses	Mild to profound hearing loss
Poor performance on language IQ tests	Poor performance on verbal IQ tests

Bernard et. al. "Autism: A Novel Type of Mercury Poisoning" Medical Hypothesis 56(4) 462-471 (2001)

SENSORY AND MOTOR ABNORMALITIES

Mercury Poisoning	Autism
Abnormal sensation in mouth & extremities	Abnormal sensation in mouth & extremities
Sound sensitivity	Sound sensitivity
Abnormal touch sensations; touch aversion	Abnormal touch sensations; touch aversion
Impaired visual fixation	Problems with joint attention
Involuntary jerking movements - arm flapping, ankle jerks, circling, rocking	Stereotyped movements – arm flapping, jumping, circling, spinning, rocking
Deficits in eye-hand coordination; limb apraxia; intention tremors	Poor eye-hand coordination; limb apraxia; problems with intentional movements
Gait impairment; ataxia – from incoordination & clumsiness to inability to walk, stand, or sit; loss of motor control	Abnormal gait and posture, clumsiness and incoordination; difficulties sitting, lying, crawling, and walking
Difficulty in chewing or swallowing	Difficulty chewing or swallowing
Unusual postures; toe walking	Unusual postures; toe walking

SIMILARITIES ALSO FOUND IN:

- Unusual Behaviors (Mad Hatters)
- Cognitive Impairments
- Visual Impairments
- Physical Disturbances
- Gastrointestinal Disturbances
- Abnormal Biochemistry
- Immune Dysfunction
- CNS Structural Pathology
- Abnormalities in Neurochemistry
- Neurophysiology
Lead (Pb)

 Allergies, ADD symptoms, constipation, coordination, delinquency, dyslexia, headaches, hyperactivity, hypothyroidism, insomnia, irritability, mood swings, muscle weakness

Cadmium (Cd)

 Glucose dysregulation, flu-like symptoms, poor growth, hyperactivity, aggression, learning disorders, osteoporosis

Arsenic (As)

 Anorexia, allergies, burning pain (abdominal), diarrhea, garlic odor, muscle aches/spasms/weakness, wheezing, throat constriction

Aluminum (Al)

Anemia, poor appetite, odd behaviors, constipation, dry mouth, dry skin, fatigue, hyperactivity, poor memory, numbness, weak muscles Heavy metals prefer a fatty environment.

The brain consists of approximately 60–70% fat.

This high percentage of fat explains the connection between toxic heavy metals and the brain.



- Through life we receive heavy metals from many different sources.
- The more we industrialize,
- the more we are exposed to higher levels of toxic heavy metals.



Pollution from motor vehicles
and our water pipes
contribute to these toxic levels of heavy metals.

Dental fillings which many of us have in our teeth also contribute. Dental amalgams: usually emit 1-10 ug/day; amount of mercury in brain strongly correlated with number of dental fillings; could release much more when first placed or removed.



 Many childhood vaccines used to contain 12.5–25 ug of thimerosal (Preservative),
 so that a fully-vaccinated child could receive up to 237.5 ug of thimerosal injected into them.



TOTAL Hg BURDEN AND AUTISM RATES IN CALIFORNIA 1985-98



 Lotions used under pregnancy to prevent stretch marks and
 some cosmetic products also contribute.







Mercury thermometers that we have in our homes.

Blood Pressure cuffs that are used in hospitals.





Seafood:

Larger fish have most mercury, due to eating smaller fish.



Some purses,

- paints,
- school supplies,
- textile colouring
- and many many more products affect these special children.





Bernard et. al. "Autism: A Novel Type of Mercury Poisoning" Medical Hypothesis 56(4) 462-471 (2001)

They discuss the many similarities between autism and mercury toxicity, including: Psychiatric Disturbances: social withdrawal; repetitive behaviors; anxiety; irritability; poor eye contact

- Speech/Language Deficits: loss of speech or delayed speech; speech comprehension deficits
- Sensory Abnormalities: oral, touch, light and sound sensitivities
- Motor Disorders: flapping motions; poor coordination; abnormal gait
- **Cognitive Impairments:** low intelligence; poor memory; difficulty with abstract ideas **Unusual Behaviors:** self-injurious; sleep difficulties; ADHD
- Physical Disturbances: gastrointestinal disorders
- **Biochemistry**: reduced glutathione; decreased detoxification ability of liver; disrupted purine metabolism;
- Immune System: increased likelihood of auto-immune response, allergies, and asthma

CNS Structure: mercury accumulates in amygdala, hippocampus, basal ganglia, and cerebral cortex, which are damaged in autism; mercury also damages Purkinje and granule cells (seen in autism); disruption of neuronal organization

Neurochemistry: decreased serotonin synthesis; elevated norepinephrine and epinephrine; demyelination

Neurophysiology: abnormal EEGs; abnormal vestibular nystagmus response **Gender bias**: higher sensitivity/occurrence in males vs. females

 Children that are not born with any problems are not affected
 by these things
 because their bodies
 have the ability to cleanse these.





 Because we can't confirm which children are "special",



We need to have preventative procedures for all children. Toxic Heavy Metals are our centuries future biggest problem.





Determining Heavy Metals







The fact that heavy metals are neurotoxic, destroy the nervous system, is a well known fact within medical science.

Toxic heavy metals thrive in a fat rich environment. Studies show that autistic children have high levels of mercury in their blood and tissues, but this is not true for all autistic children. Mercury is not the only heavy metal which can cause autism. Studies often show other heavy metals such as lead, aluminum, nickel and arsenic as a cause for autism.

To examine the levels of heavy metals in the child, hair analysis and urine analysis need to be done.

Hair analysis is an effective way of measuring heavy metals in the body due to the fact that hair grows slowly. Children that are born with tendencies towards autism don't have the capacity to cleanse heavy metals from organs or tissues.

- Instead, heavy metals collect in the body.
- A hair analysis doesn't show excess amounts of these toxic metals.
- Because these heavy metals don't mix with the blood.

HAIR MERCURY OF AUTISTIC VS. CONTROL GROUPS



A hair analysis on a healthy child will show levels of heavy metals.

But on an autistic child the levels are extremely low or nonexistent.

Urine analysis doesn't show any levels either on an autistic child.



 By first administering DMSA in appropriate dosage and then collect urine the following 6 hours will urine analysis show excretion of heavy metals. But we have no way to determine total body burden.

This is called :

DMSA challenge test or

DMSA provocated urine toxic metals profile



Tungsten

Uranium

LAB#: U060918-0471-1 PATIENT: SEX: Male AGE: 6

<

< dl

0.2

CLIENT#: 31281 DOCTOR: N. Cem Kinaci, MD International Medical Center Istikla Cad, Num 254 Mersin, 33110 TURKEY

POTENTIALLY TOXIC METALS RESULT REFERENCE WITHIN VERY METALS µg/g CREAT RANGE REFERENCE RANGE ELEVATED ELEVATED Aluminum < dl < 60 0.2 1.5 < Antimony 38 130 < Arsenic Beryllium < dI < 0.6 Bismuth < dl < 20 Cadmium 0.3 ¢. 2 5 Lead 45 < 5 2.5 < Mercurv Nickel 9.5 < 15 1 Platinum 3.8 < 1.1 0.2 < Thallium 0.5 Thorium < dl < _____ 4.3 < 15 Tin 0.2 < 1.5



LAB#: U060918-0488-1 PATIENT: SEX: Male AGE: 11

POTENTIALLY TOXIC METALS						
METAL 0	RESULT	REFERENCE	WITHIN		VERY	
METALS	µg/g CREAT	RANGE	REFERENCE RANGE	ELEVATED	ELEVATED	
Aluminum	< dl	< 60		-		
Antimony	0.4	< 1.5		-		
Arsenic	91	< 130				
Beryllium	< dl	< 0.6				
Bismuth	< dl	< 20				
Cadmium	0.4	< 2				
Lead	66	< 5				
Mercury	2.7	< 5				
Nickel	7.2	< 15 .				
Platinum	< dl	< 1				
Thallium	< dl	< 1.1				
Thorium	< dl	< 0.5				
Tin	24	< 15				
Tungsten	3.4	< 1.5				
Uranium	< dl	< 0.2				



LAB#: U061003-0585-1 PATIENT: SEX: Male AGE: 5

POTENTIALLY TOXIC METALS						
	PESULT	DEEEDENCE			VERY	
METALS	µg/g CREAT	RANGE	REFERENCE RANGE	ELEVATED	ELEVATED	
Aluminum	12	< 60 -				
Antimony	0.4	< 1.5				
Arsenic	92	< 130				
Beryllium	< dl	< 0.6				
Bismuth	< dl	< 20				
Cadmium	0.5	< 2				
Lead	300	< 5				
Mercury	23	< 5 .				
Nickel	14	< 15				
Platinum	< dl	< 1				
Thallium	0.5	< 1.1				
Thorium	< dl	< 0.5				
Tin	54	< 15				
Tungsten	0.3	< 1.5				
Uranium	0.05	< 0.2				



LAB#: U060717-0536-1 PATIENT: SEX: Female AGE: 5 CLIENT#: 29297 DOCTOR: N. Cem Kinaci, MD International Medical Center Istiklal Cad Num 254 Mersin, 33110 TURKEY

POTENTIALLY TOXIC METALS RESULT REFERENCE VERY WITHIN µg/g CREAT RANGE METALS REFERENCE RANGE ELEVATED ELEVATED Aluminum 44 60 < 1.5 2.2 < Antimony 58 130 < Arsenic < dl 0.6 Beryllium < < dl 20 Bismuth < Cadmium 0.5 < 2 77 5 Lead < 5 5 < Mercury Nickel 21 < 15 Platinum < dl < 1 0.3 1.1 Thallium < 0.06 0.5 Thorium < 76 15 Tin < 0.4 < 1.5 Tungsten 0.2 0.08 < Uranium



LAB#: U051229-0365-1 PATIENT: SEX: Male AGE: 6

POTENTIALLY TOXIC METALS						
METALS	RESULT µg/g CREAT	REFERENCE RANGE	WITHIN REFERENCE RANGE	ELEVATED	VERY ELEVATED	
Aluminum	10	< 60				
Antimony	0.2	< 1.5				
Arsenic	2270	< 130				
Beryllium	< dl	< 0.6				
Bismuth	< dl	< 20				
Cadmium	< dl	< 2				
Lead	16	< 5				
Mercury	11	< 5				
Nickel	4.7	< 15				
Platinum	< dl	< 1				
Thallium	0.1	< 1.1				
Thorium	< dl	< 0.5				
Tin	8.9	< 15				
Tungsten	0.05	< 1.5	-			
Uranium	< dl	< 0.2				



LAB#: U060323-0716-1 PATIENT: SEX: Male AGE: 8

POTENTIALLY TOXIC METALS						
METALS	RESULT µg/g CREAT	REFERENCE RANGE	WITHIN REFERENCE RANGE	ELEVATED	VERY ELEVATED	
Aluminum	< dl	< 60				
Antimony	0.1	< 1.5		•		
Arsenic	19	< 130		•		
Beryllium	< dl	< 0.6				
Bismuth	< dl	< 20		•		
Cadmium	0.1	< 2	-	•		
Lead	36	< 5				
Mercury	54	< 5 .				
Nickel	5.1	< 15				
Platinum	< dl	< 1				
Thallium	0.2	< 1.1				
Thorium	< dl	< 0.5				
Tin	2	< 15				
Tungsten	< dl	< 1.5				
Uranium	< dl	< 0.2				



LAB#: U060130-0485-1 PATIENT: SEX: Male AGE: 5

POTENTIALLY TOXIC METALS						
	`					
METALS	RESULT ua/a CREAT	REFERENCE	WITHIN REFERENCE RANGE	ELEVATED	VERY ELEVATED	
Aluminum	240	< 60				
Antimony	20	< 1.5		•		
Arsenic	37	< 130				
Beryllium	< dl	< 0.6				
Bismuth	< dl	< 20				
Cadmium	< dl	< 2				
Lead	90	< 5 .				
Mercury	11	< 5 .				
Nickel	2.1	< 15 .				
Platinum	< dl	< 1				
Thallium	1	< 1.1				
Thorium	< dl	< 0.5				
Tin	2.2	< 15				
Tungsten	2.9	< 1.5				
Uranium	< dl	< 0.2				



LAB#: U060602-0822-1 PATIENT: Sercan Dagdelen SEX: Male AGE: 4

POTENTIALLY TOXIC METALS						
		1				
METALS	RESULT µg/g CREAT	REFERENCE RANGE	WITHIN REFERENCE RANGE	ELEVATED	VERY ELEVATED	
Aluminum	190	< 60				
Antimony	< dl	< 1.5				
Arsenic	19	< 130				
Beryllium	< dl	< 0.6				
Bismuth	< dl	< 20				
Cadmium	0.3	< 2				
Lead	53	< 5				
Mercury	4.2	< 5		•		
Nickel	15	< 15	•	•		
Platinum	< dl	< 1				
Thallium	0.4	< 1.1				
Thorium	< dl	< 0.5	_			
Tin	< dl	< 15				
Tungsten	0.2	< 1.5	-			
Uranium	1.3	< 0.2				



LAB#: U060713-0518-1 PATIENT: SEX: Male AGE: 3

POTENTIALLY TOXIC METALS						
METALS	RESULT µg/g CREAT	REFERENCE RANGE	WITHIN REFERENCE RANGE	ELEVATED	VERY ELEVATED	
Aluminum	180	< 100				
Antimony	1	< 2				
Arsenic	350	< 200				
Beryllium	< dl	< 0.6				
Bismuth	< dl	< 20				
Cadmium	6.7	< 3			-	
Lead	98	< 5				
Mercury	21	< 5 .				
Nickel	78	< 20				
Platinum	< dl	< 1				
Thallium	< dl	< 1.1				
Thorium	< dl	< 1				
Tin	27	< 20				
Tungsten	170	< 2				
Uranium	< dl	< 0.3				
Mercury and possibly other toxic metals present at high levels in autistic children. Every child with autism should do a DMSA challenge test. For treatment, I only recommend oral DMSA, under guidance of experienced physician, with regular urine testing and kidney/liver function testing (every 2-3 months). Children under 6 will benefit most, children under 12 may benefit, older children/adults have smaller chance of modest benefit.

DETOXING HEAVY METALS



Basic Strategy

- History and Physical Examination
- Laboratory Testing
- Clean Up
 - Environmental Controls
 - Dietary Interventions
 - Address Gastrointestinal Health
- Foundational Nutrients
- Treat underlying Immune Issues and Inflammation
- Support Detoxification Pathways
- Heavy Metal Detoxification
- Hyperbaric Oxygen Therapy

What is CHELATION ?

From Greek *chele*, or claw. Developed for lead poisoning by Army. Sulfur-based agents bind with heavy metals. Use ONLY under doctor's supervision.

Chelation is a method which throws away mercury, lead, arsenic, aluminum and similar heavy metals from the body.

Two main agents currently in use:

DMSA:

 Di-*Mercapto*-Succinic Acid more typically in children, orally
 approved by FDA

 DMPS:
 Di-Mercapto-Propane-Sulfonate Transdermal patch or lotion

- This method can only be recommended for children that don't have problems with their liver, kidneys or bone marrow.
- Every autistic child doesn't get treated with chelation.
- Serious injury can be caused from unauthorized personnel doing treatments.
- It needs to be determined that this kind of treatment is needed.

It's also important to make sure that the glutathione levels are normal prior to starting the chelation procedure.

Glutathione has the ability to bind toxic heavy metals and expel them from the body.

It is scientifically proved that DMSA can detox the body from

- Mercury
- Arsenic
- Lead
- Cadmium
- Aluminum
- Nickel
- Tungsten
- Antimony
- Uranium
- Platinum
- Thallium



DMPS can also be used to help the body detox.

Other methods are CaEDTA and ALA alternating with DMSA and DMPS depending on which heavy metals are present in the body. In most cases, autistic children have mineral deficiency due to poor uptake of nutrients and other unexplainable reasons.

Autistic children often show deficiency in selenium, zinc, magnesium, molybdenum, mangan, chromium and vanadium. Almost twice as much zinc is lost when doing a chelation with DMSA.

It is very important to monitor zinc levels before and during the treatment.

At times it is necessary to take extra levels of zinc to ensure that the zinc level is not to low. DMSA does not effect iron, calcium, and magnesium.

However, copper is heavily affected.

Usually autistic children have to much copper in their bodies so this is only positive.

But it is still very important to monitor copper levels in the body when using DMSA method. If children refuse to take orally, a lotion (transdermal) can be used instead.
It is actually the safest method.

Children that are able to swallow tablets get DMSA orally.

Oral DMSA is preferred due to accessibility, safe and cost.

Children that have liver and gut problems can get DMSA rectally.

- By doing the treatment slowly and using correct dosage, it is possible to monitor the childs essential mineral levels and make adjustments when needed.
- IV chelation is not recommended
 by DANU Use Ith same Dreatition and
 - by DAN! Healthcare Practitioners.
- Reexposure is always a danger;
 - therefore, all children, while on therapy, should be monitored for their blood heavy metal concentrations at mouthly intervals during and after therapy.

Chelation takes to long and it can not be rushed.



Tests are taken before starting the chelation procedure to see how the body's different systems function.

When needed, the body gets treated prior to starting chelation.

The children are given extra vitamins and minerals during the chelation procedure.

WHICH WITAMINS AND MINERALS ?



Copper

- It is important that the supplement doesn't contain copper since it is the only mineral that autistic children usually have to much of.
- Excess can cause erratic behavior, hyperactivity, poor focus, yeast issues.
- Reduces zink and molibdenum
- By administering copper we would make things worse.

Selenium

Has an important role on glutathione metabolism and thyroid metabolism.
Most of the autistic children have low selenium levels in blood.
It should also be handled cautiously.

Zink

Deficiency can cause immune, language, attention/focus issues.

Magnesium

- Deficiency can cause hyperactivity, anxiety, muscle spasms, enuresis.
- Reduces aluminum
- Antagonizes calcium

Calcium

- Excess leads to hyperexitability
- Deficiency leads to poor bone mineralization, rigidity in muscles
- Reduces lead and aluminum

Molibdenum

Deficiency leads to yeast and sulfation issues

Reduces tungsten and copper

Vitamin C

DAN! also recommend large doses of vit C in combination with mineral supplement.
 Vitamin C has an important role on neurotransmitter metabolism.
 Vitamin C can detox mercury, lead, arsenic and some other toxins from the body.

Dolske MC, Spollen J, McKay S, et al. A preliminary trial of ascorbic acid as supplemental therapy for autism. Prog Neuropsycholpharmacol Biol Psychiatry 1993;17:765–74. Rimland B. Vitamin C in the Prevention and Treatment of Autism Autism Research Review International. 1998 ;12 (2):3

Vitamin B6 is found in cystein production, which is needed for glutathione.

Lelord G, Muh JP, Barthelemy C, et al. Effects of pyridoxine and magnesium on autistic symptoms: Initial observations. J Autism Developmental Disorders 1981;11:219–29.
Martineau J, Garreau B, Barthelemy C, et al. Effects of vitamin B6 on averaged evoked potentials in infantile autism. Biol Psychiatr 1981;16:627–39.
Rimland B, Callaway E, Dreyfus P. The effect of high doses of vitamin B6 on autistic children: a double-blind crossover study. Am J Psychiatr 1978;135:472–5.
Rimland B. Vitamin B6 versus Fenfluramine: a case-study in medical bias. J Nutr Med 1991;2:321–2.

Magnesium; if combined with vitamin B6 has therapeutic effects in autism.

Martineau J, Barthelemy C, Garreau B, Lelord G. Vitamin B6, magnesium, and combined B6–Mg: therapeutic effects in childhood autism. *Biol Psychiatr* 1985;20:467–78.

Methylcobalamin is the only compound of the B12 familly which is the most important activator for methionine-homocysteine path.

This path activates the most important detox system in the body.

Vitamin E is also a good antioxidant

- but is not highly recommended, because most Vitamin E is soy based.
- Autistic children have a tendency to be intolerant to soy products.
- Vitamin E which is not Soy based can be used.

Vitamin K

- an anti-oxidant that is more powerful than Vitamin E or CoQ10.
- Vitamin K, is able to potently inhibit glutathione depletion-mediated oxidative cell death.
- Vitamin K is involved in the development of the nervus system.

www.kirkmangroups.com www.barinchildnutritionals.com

KIRKMAN SUPER NU-THERA BrainChild Nutritionals SPECTRUM SUPPORT

are vitamin and mineral supplements
 that can be used to correct the levels of nutrients in the body.

POSSIBLE SIDE EFFECTS OF CHELATION PROCEDURE AND PREVENTATIVE MEASURES,

Which organs can be negatively affected ?

Liver
Kidneys
Bone marrow

- Since DMSA is expelled through the urinary tract,
- kidney function is monitored.
- BUN
 Creatinine
 Uric acid

Liver function is monitored because there is a risk of the liver being negatively affected.

ALT
AST
GGT
ALP

For bone marrow monitoring,

WBCRBCPLT

Oxidative Stress Theory of Autism
- Genetic weakness in antioxidant protection: Metallothionein, Glutathione, APO-E2, etc.
- Incompetent intestinal and blood/brain barriers.
- Toxic amounts of Hg, Pb, Cu, etc. invade the brain, damaging brain cells and disabling MT proteins needed to complete maturation of the brain.

Consequences of Oxidative Stress Mirror Classic Symptoms of Autism

- Hypersensitivity to Hg and other toxic metals.
- Hypersensitivity to certain proteins (casein, gluten, etc)
- Poor immune function
- Disruption of the methylation cycle
- Inflammation of the brain & G.I. tract.
- Depletion of glutathione & metallothionein
- Excessive amounts of "unbound" copper

Free Radicals

Defined as an atom that has lost an electron and as a result, has a net (+) charge.
Free radicals are explosive, chemically reactive species that if not controlled, cause damage to cell membranes by lipid peroxidation.





- Superoxide is used to illustrate the structural nature of a free radical.
- Under the conditions with a sigle covalent bond and a missing electron, a free radical is highly reactive.
- In the lover right corner the electrons are symbolized revolving around the oxygen nucleus.

- ENZYME CROSS LINKAGE DAMAGE

POLYUNSATURATED PHOSPHOLIPIDS

> LIPID PEROXIDATION (Free Radical Pathology) MEMBRANE DAMAGE -+ ORGANELLE DAMAGE -+ CELL DAMAGE -+ DISEASE

OXIDATIVE FREE RADICALS

CAPACITY AND A

Sources of free radicals

- Radiation
- Heavy metals
- Poisons
- Sunlight
- Cooked or rancid fats
- Other toxins (such as candida)
- stress

Free radicals are increased by

Excessive Iron and Copper
 Other inflamatory problems such as allergies.

Free radicals are controlled by antioxidant action.

Antioxidant nutrients include
A beta carotene
C vitamin C
E vitamin E
S selenium



IDENTIFYING BRAIN DAMAGE





Most people are familiar with MRI (magnetic resonance imaging) and CAT (computerized axial tomography) scans, which are superb at depicting structural anatomy.



However, neither is designed for or is capable of measuring the brain activity.



 A specialized tool, the SPECT scan, (single photon, emission-computed tomography) has been proven effective in this task and it is the primary tool IMC Hospital employs to objectively measure the effectiveness of HBOT on patients. Specifically, SPECT scanning show actual brain functioning, in visual terms.

It can help doctors to see

- how blood is flowing through different areas within a patient's brain,
- visualize brain metabolism,
- and make a better diagnosis of his/her condition.

During SPECT scanning, a radioactive "tracer" agent is injected into a vein in the hand or arm.

The tracer localizes in an area of the brain where it can then be "photographed"

Only viable tissue can absorb the tracer, which breaks down harmlessly within a few hours.



A special gamma camera aimed at the head pinpoints the position and energy of photons emitted, as the tracer disintegrates. As inert (dead) cells do not absorb the tracer at all,

 SPECT scanning can distinguish between living and dead (necrotic) tissue.

 SPECT scanning can also identify between recoverable brain cells (referred to as sleeping cells, idling neurons, or the ischemic penumbra).





Case : 8 YO boy with autism has decreased function at left temporal and left frontal areas.





With this method we can see that most autistic children have decreased activity at the temporal and frontal lobes of the brain which has to do with speech and understanding.

The important question is if the area with low activity has the possibility to recover. If the living brain tissue is determined to be recoverable, or in an electrically inactive or idling state,

HBOT may substantially and/or permanently revive them.

Abnormal regional cerebral blood flow on childhood autism

Takashi Ohnishi Hiroshi Matsuda Toshiaki Hashimoto et al Brain 2000;123:1838-1844

Twenty three children with autism and 26 non autistic children were matched for IQ and age and examined using SPECT imaging

There were decreases in regional cerebral blood flow in autistic patients compared with the control group

HYPERBARIC OXYGEN THREAPHY



When treating autistic children, it is not enough to cleanse the brain from toxic heavy metals by using chelation.

Simultaneously the digestive system needs to be treated in order for optimal results.

Areas that have decreased function due to accumulated heavy metals need to be activated.

www.oceanhbo.com www.harchhyperbarics.com

 With "Hyperbaric Oxygen Therapy" it is possible to treat both brain and digestive system.
 This has been used since 1972 by Dr. Richard Neubauer/USA, with excellent results.



Hyperbaric
 Oxygen
 Threaphy
 is breathing
 in oxygen
 under pressure.



 HBOT is NOT to be confused with "hyperoxygenation", which is breathing in oxygen in regular pressure (1 atmosphere)

Inhaling large amounts of oxygen can be damaging to the brain.

Under no circumstances should the child breathe oxygen from an oxygen tube.

Only specialists may treat with "Hyperbaric Oxygen Therapy". Pressure levels:
Length of sessions:
Numbers of sessions:

 are individually adjusted after the childs needs.
 Protocols that are beneficiary for other diagnoses
 are not relevant for autistic children.





The treatment is done in submarine boat like chambers (hyperbaric chambers) that are on land.

By using pressure, SCUBA diving is simulated.

 With the help of special masks and hoods

 it is possible to breathe 100% oxygen.





During modern HBOT, the patient breathes pure, 100% oxygen under increased atmospheric pressure.

The air we normally breathe contains only 19-21% of this essential element;

Via HBOT, the concentration of pure oxygen dissolved into the bloodstream is dramatically increased (up to 2,000%), with virtually no energy expenditure. In addition to the blood, all body fluids (including the vital lymph and cerebrospinal fluids) are infused with the healing benefits of this molecular oxygen.

The hyperbaric chamber enables the brain cells that have very low function in damaged areas to receive these smaller molecules of oxygen. Through these sessions we make sure that the brains inactive cells (idling neurons) develop to normal function.

When the brain cells are able to utilize the molecules of oxygen in the air, the treatment is finished.

To confirm this, a new SPECT is done.

Dr.Neubauer & Dr.Harch's Scan-Dive-Scan Protocol



The positive powers of hyperbaric oxygen are really a modification of God's gift to man."

Dr. Richard A. Neubauer, M.D., Medical Director, Ocean Hyperbaric Neurologic Center, FLORIDA

www.oceanhbo.com

A multiplace chamber unite in Turkey



www.baromed.com.tr

Brain SPECT scan before HBOT



Brain SPECT scan after HBOT


Brain SPECT scan before HBOT



Brain SPECT scan after HBOT



Brain SPECT scan before HBOT



Brain SPECT scan after HBOT



AUTISM AND OXYGEN TREATMENT

James B : CASE PRESENTATION Itistism'

Induced delivery 10 days prior to EDC Normal Apgar score Normal development to 12 months Expressive vocabulary in 2 languages ? Slightly hyperactive - lowered tactility MMR at 15/12 reaction 6/52 later – chickenpox

Dr Philip James MB ChB, DIH, PhD, FFOM Professor of Hyperbaric Medicine at the University of Dundee



AUTISM AND OXYGEN TREATMENT

Eye contact decreased markedly 18-30/12 language slowly reduced to 20 words Behaviour abnormal – spinning with blanket oblivious to parents and calls

By 10 sessions of oxygen steady improvement in coordination, balance stamina and language Learned to tide a bicycle without stabilisers Able to ride a rollercoaster - now very keen! NB Other treatments including chelation

Dr Philip James MB ChB, DIH, PhD, FFOM Professor of Hyperbaric Medicine at the University of Dundee



Hyperbaric oxygen therapy may improve symptoms in autistic children

Daniel A. Rossignol Lanier W. Rossignol

A study of 6 autistic children who had 40 'low pressure' hyperbaric oxygen treatments at 1.3 ata for 1 hour.

- No adverse effects
- More dramatic effects in younger children
- Average improvement on ATEC scores 22.1%

Medical Hypotheses 2006

Have you ever been in a hyperbaric chamber ? No ? Are you sure ?



Diet







<u>3 major food components</u> <u>shown to play a part in autism are</u>

gluten (from grains)
casein (from dairy)
SOY



The GFCFSF diet for autism (gluten-free, casien-free, soy-free diet)

was proposed to correct the imbalance in opioids that was seen in about 80% of these children.

In normal cases, protein breaks down to amino acids in the digestive system.

But in autistic children gluten, casein and soy protein breaks down to peptides called "casomorphin", "gliadorphin".

Dohan FC, Grasberger JC. Relapsed schizophrenics earlier discharge from the hospital after cereal-free, milk free diet. Am J Psychiatry 1973; 130(6): 685-88. **Reichelt K-L, Ekrem J, Scott H.** Gluten, milk proteins and autism: dietary intervention effects on behavior and peptide section. *J Appl Nutr* 1990;42:1-11.

Autistics do not have the stomach enzymes that normally break down the proteins from milk and wheat (and other grains).

This allows undigested foods to travel through the stomach and into the intestines, where they are absorbed through a "leaky gut". By implementing the GFCFSF diet, these proteins will not be absorbed and are unable to cause harm.

It has been noted in many cases that constipation, diarrhoea, self-injurious behaviour and "dazed" sensations have all improved simply by removing soy, gluten and casein from the diet. Treatments are more beneficial when using both Chelation and HBOT.

By implementing a gluten, soy and dairy free diet to this treatments,
 many autistic children have positive effects.

Reichelt KI, Hole K, Hamberger A, Saclid G, Edminson PD, Braestrup CB et al. Biologically active peptide-peptide containing fractions in schizophrenia and childhood autism. Adv Biochem Psychopharmacol 1981; 28:627–43.

One person's focd may be someone else's poison.

Cow milk contains casein A1 and this can breaks down to peptides called "casomorphine", But goat milk contains casein A2. DAN! Practitioners recommend goat milk to autistic children.









Casein-free/Gluten-free/Soy-free Diet Trial for 3-6 months

Avoid sugar and refined starch,

- high protein,
- high fiber diet,
- high good fats,
- maximize antioxidants,
- increase cruciferous veggies,
- blue foods,
- garlic,
- turmeric,
- fermented foods

Limit processed and preserved foods, organic is best

 Avoid <u>excitotoxins</u> (ex. Caffeine, MSG, NutraSweet, red/yellow food dyes, nitrites, sulfites, glutamates, preservatives)

Drink plenty of filtered water

Limit intake of <u>phenolics</u> (apples, grapes, strawberry)

Limit sources of <u>Copper</u> (chocolate, shellfish, tap water, artificial food dyes)

Never microwave in plastics or Styrofoam

Eliminate seafood

Begin meals with raw fruits and veggies

Add good fats (olive, coconut, flax). Avoid hydrogenated and trans fats

 Buy hormone-free, antibiotic-free, organic meat and eggs REMOVE

JUNK FOOD PRESERVATIVES From your childs diet !!!

 Since HBOT treats the digestive system both faster and more extensively compared to diets, these recommendations are not needed.

Diet can be used more as support.

BEHAVIOUR THERAPY



 Special Education should always be included in the biomedical treatments.



ALWAYS FOLLOW THE CHILDS TRAINING.

- Teachers are available to show you how to train your child.
- What the child learns in school or preschool needs to be repeated at home and outside.
- A few hours of training is never enough.
- The child has a difficult time for generalizing.

MONITOR THE CHILDS DEVELOPMENT

All institutes have the responsibility to do
a yearly plan and
a 3 months performance plan.



This way it is easy to establish the childs development and how much he/she learns.

MAKE SURE TO WRITE IT ALL DOWN

The childs vaccinations, sicknesses (especially diarrhoea, constipation, vomiting, infections, fevers and similar), examinations, behaviour reports, developmental charts, etc. Always carry a notebook and pen with you so you can note all behaviour you judge as being important. Otherwise it is easy to forget.

 Most parents could use
 psychological
 support.


There are psychologists at all institutes.

But if the parents don't ask for support it is doubtful that the psychologist can help.

While you're learning how to care for your child, don't forget to take care of your selves.

Say yes to all the support you can get!

Let "the lion in your self" get out !



GIVE A CHANCE TO YOUR SELF AND YOUR CHILD !



GET HELP !

THE LETTER TO AUTISM RESEARCH INSTITUTE FROM THE MINISTRY OF HEALTH OF ITALY Dear Dr Rimland,

The worldwide expansion of autism epidemy is a matter of severe concerne for its social, psychological, economical burdens.

The pioneering experience based on a broad spectrum biomedical approach fostered by ARI-DAN! has made Autism treatable.

I wish to confirm my interest to see the applications of this approach in Italy, both for preventive and treatment purposes.

With my personal wishes for a successful conference.

Chief of Technical Staff of Minister of Health

Prof V. M. Saraceni

SUMPLY

AUTISM IS A NEUROIMMUNE DISORDER INDUCED BY

INFECTIONS DIETARY PROTEINS & PEPTIDS TOXIC CHEMICALS

STARTS IN THE GASTROINTESTINAL TRACT

MANIFESTS IT SELF IN THE BRAIN

Autism is treatable.

Treatment is individual-specific.

Significiant gains are usual.

Temporary setbacks are common.

It's never too late.

PRIMARILY CURE Digestive system.





USE HYPERBARIC OXYGEN THERAPHY FOR HEALLING BOTH THE BRAIN AND THE GUTS.

REMOVE SUGAR JUNK FOOD PRESERVATIVES From your childs diet !!!

REPLENISH with **GOOD FLORA (PROBIOTICS)** ENZYMES NUTRIENTS **ESSENTIAL FATTY ACIDS**

REPAIR with Antimicrobials Antifungals Antivirals Antibacterials Immunotheraphy Detoxification/Chelation

Intensity of Symptoms = Intensity of Treatment

Educational and Behavioral Therapies

Environmental Controls

Dietary Interventions

Nutrient Therapies

Gastrointestinal Health

Immune Issues and Inflammation

Promotion of Natural Liver Detox

Pharmaceutical Chelation and other Drug therapy

Hyperbaric Oxygen Therapy

THERE ARE TWO WAYS TO LIVE YOUR LIFE. ONE IS AS THOUGH NOTHING IS A MIRACLE. THE OTHER IS AS THOUGH EVERYTHING IS A MIRACLE.

ALBERT EINSTEIN [1879-1955]

THANKS TO

All parents who's fighting with autism
My wife Serpilgul Kinaci
Prof. Ahmet Aydin
IMC Hospital, Mersin/Turkey

For all other questions <u>cemkinaci@gmail.com</u> <u>cemkinaci@yahoo.com</u>