AUTISM ENIGMA
COMPLEMENTARY & NEW TREATMENTS

Necip Cem KINACI MD
DIRECTOR OF NUCLEAR MEDICINE DEPARTMENT OF GISBIR HOSPITAL - TURKEY

Who is Dr. KINACI

- Senior Nuclear Medicine Physician & Researcher in Nuclear Neuroscience

- DAN Physician Autism Research Institute - USA
- Member Medical Academy of Pediatric Special Needs - USA
- Adviser Autism Treatment Plus Edinburg/Manchester/London - UK
- Director Nucl. Med. Dept. Universal Camlica Hospital - Turkey
- Director Nucl. Med. Dept. Gisbir Medical Center - Turkey
- Consultant Merkezi Klinika Baku Hospital - Azerbaijan
- Consultant Union Health Terapijski Centar - Serbia
- Consultant HBOT Dept. HBOT Clinic Aymed Tirana – Albania
- Co Founder Society of Aerospace Medicine - Turkey
- Member Undersea and Hyperbaric Medical Society - USA
- Member European Underwater and Baromedical Society – UK
- Member American College for Advancement in Medicine - USA
- Member Institute for Functional Medicine - USA
- Member Society for Neurosience - USA
- Member MS Society - UK
- Member International College of Nuclear Medicine Physicians - Mexico
- Member Turkish Society of Nuclear Medicine - Turkey
- Member Turkish Medical Association - Turkey

Medical Academy
of Pediatric Special Needs

AUTISM RESEARCH INSTITUTE
Autism is Treatable

THE INSTITUTE FOR
FUNCTIONAL
MEDICINE®

- This presentation is based on the book
  "Otizme çözüm var"
  (Autism have the solution)
  written by
- Prof Dr Ahmet Aydin
  Head of Department of Metabolism & Nutrition in Pediatry, Cerrahpasa Medical Faculty in Istanbul University
- Dr Cem Kinaci
  Head of Department of Nuclear Medicine in Universal Camlica Hospital / Istanbul

- ISBN: 978-605-5181-30-7
- 2013 First Edition

A new look to an old story

DEFEAT AUTISM NOW!

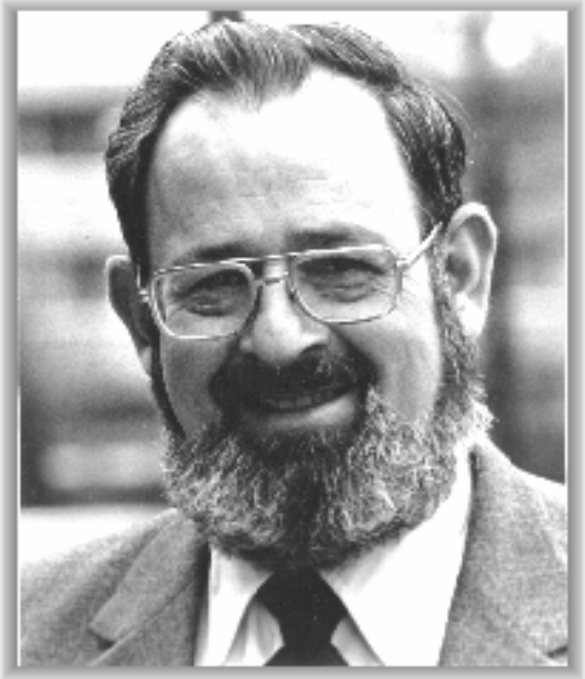
AUTISM RESEARCH INSTITUTE

Autism is Treatable

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!

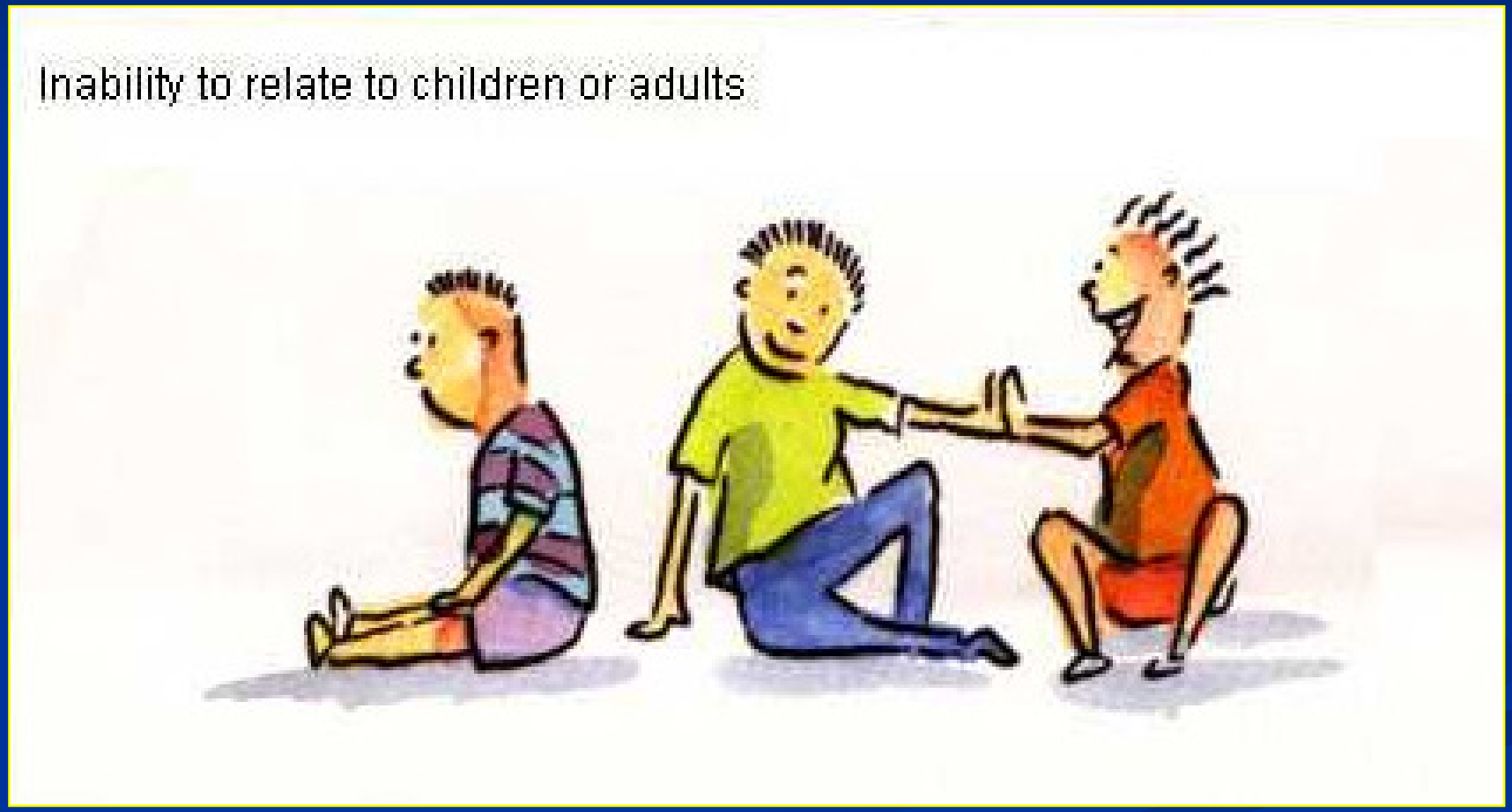
Autism IS Treatable!
Recovery from Autism IS Possible!

Bernard Rimland, Ph.D.
President

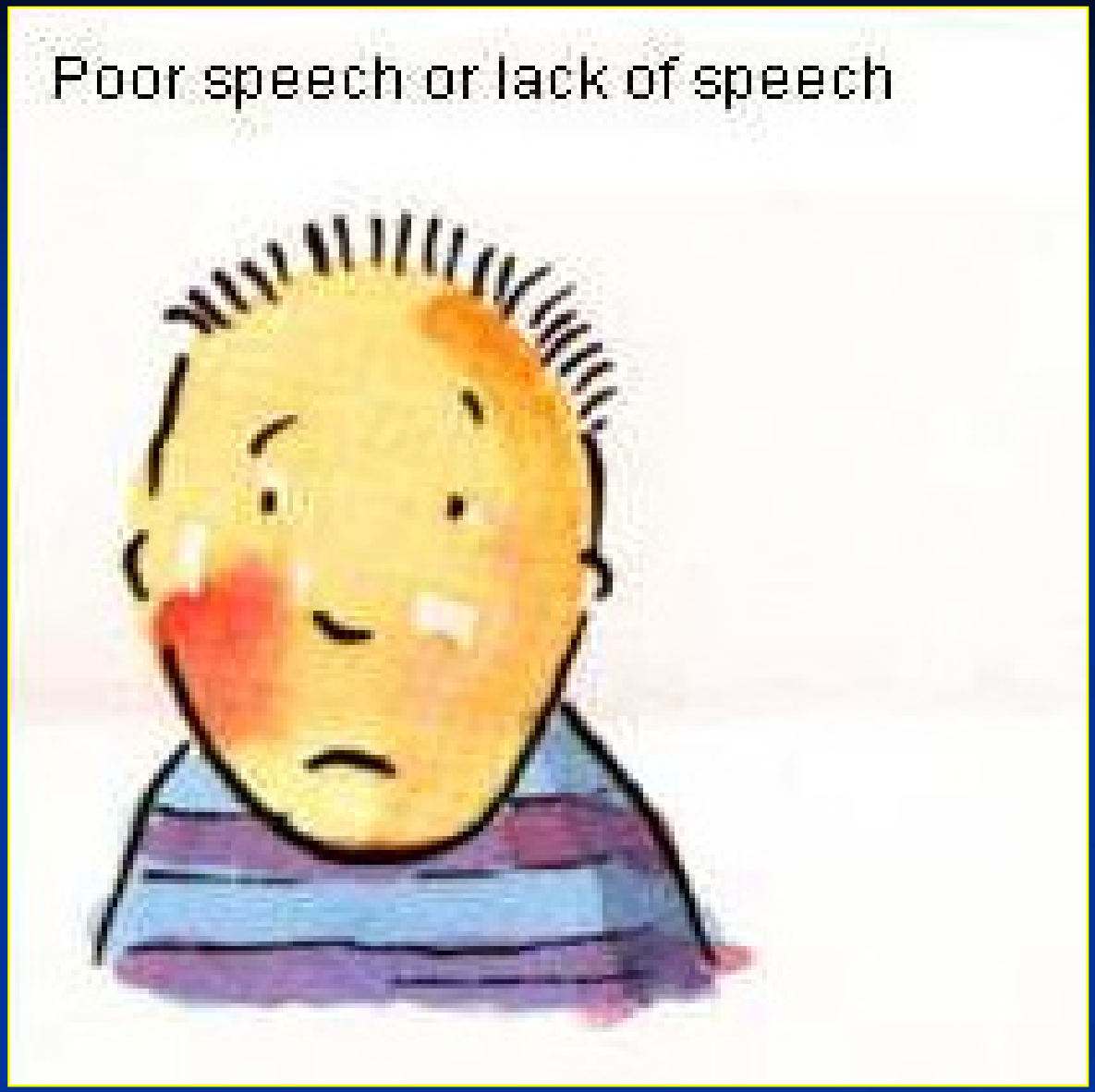


1928 - 2006

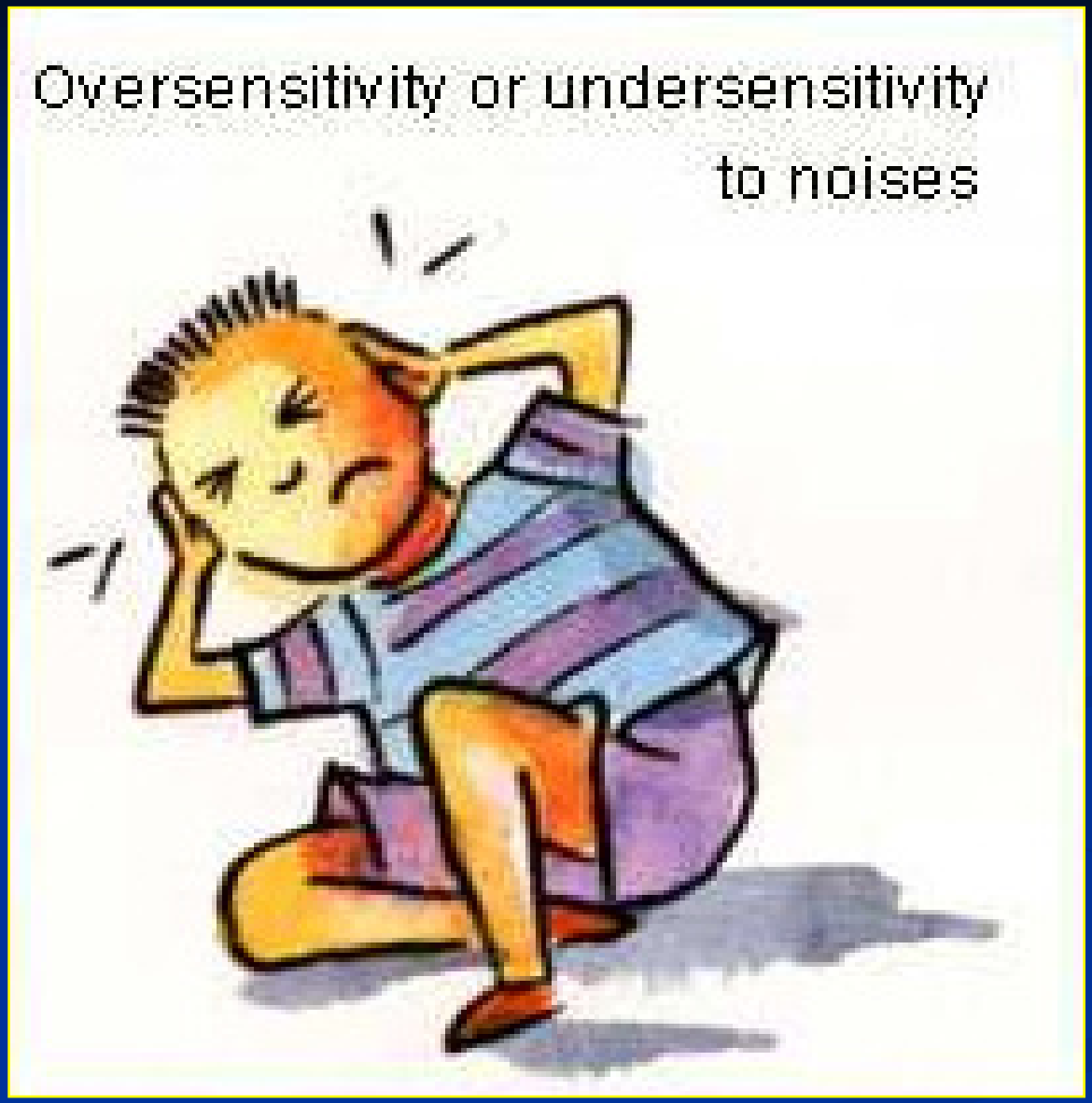
Recognizing Autistic Tendencies



Inability to relate to children or adults



Poor speech or lack of speech

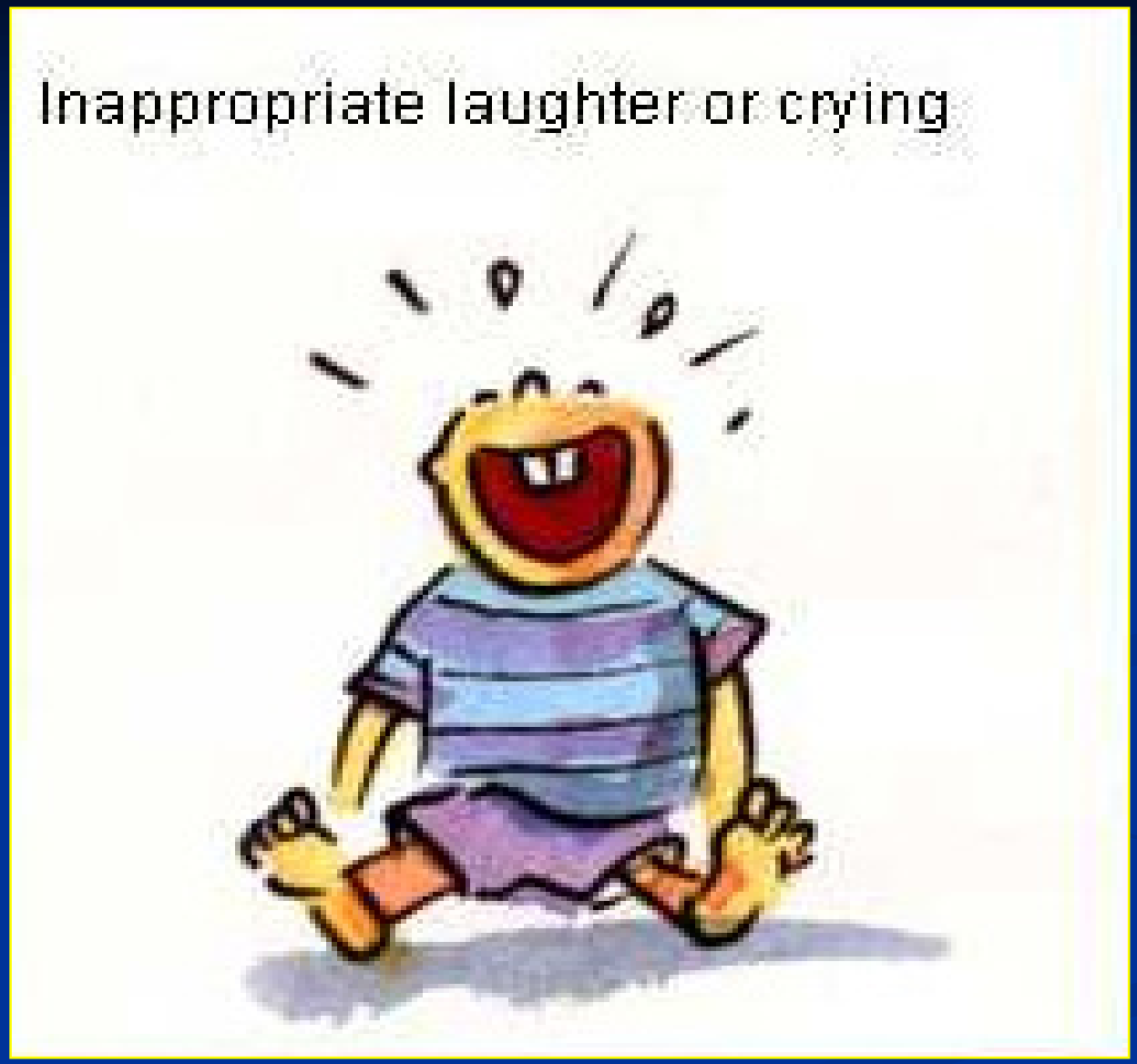


Oversensitivity or undersensitivity to noises

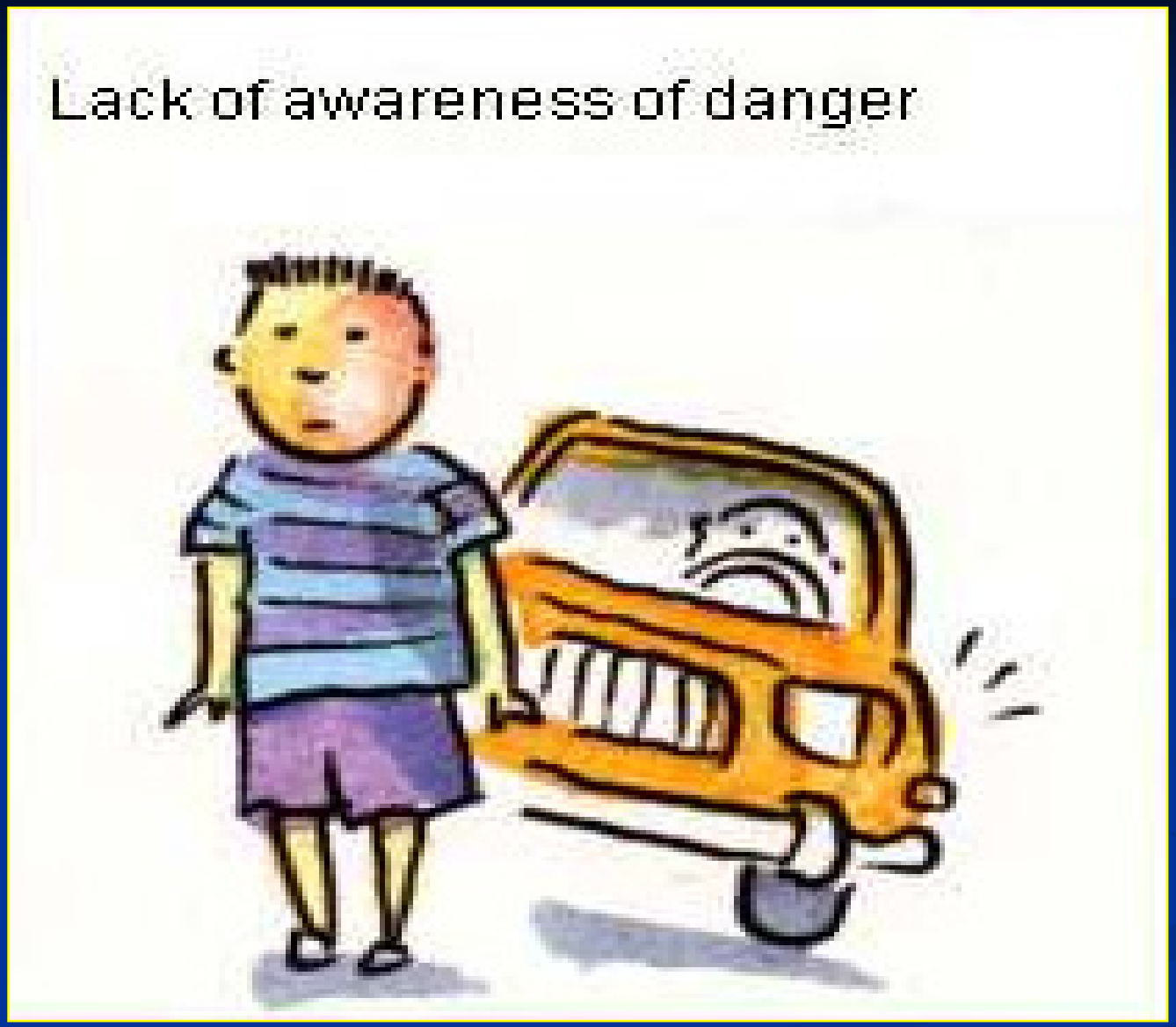
Inappropriate toy play

Difficulty dealing with changes in routine

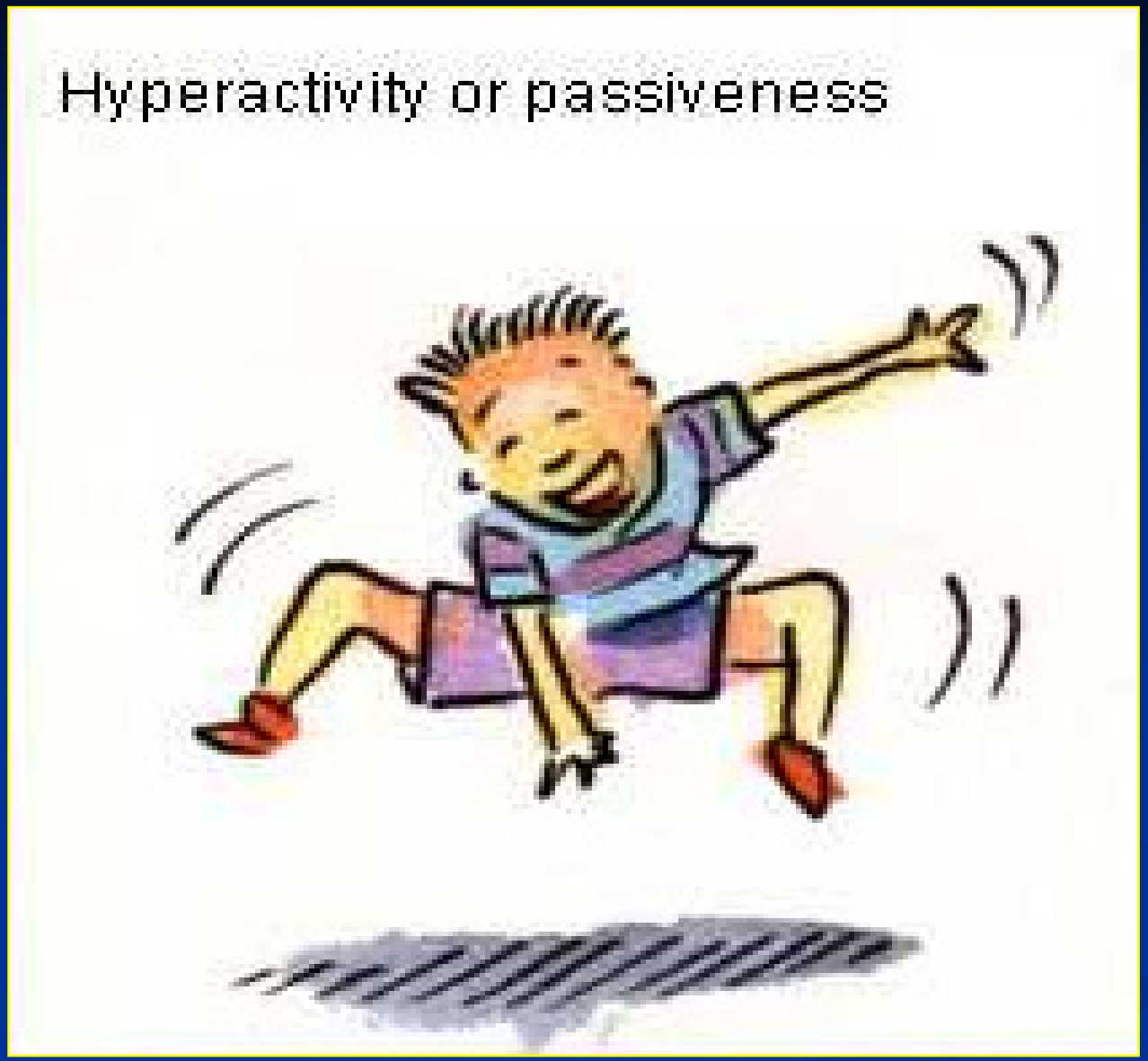
Difficulty dealing with changes in routine



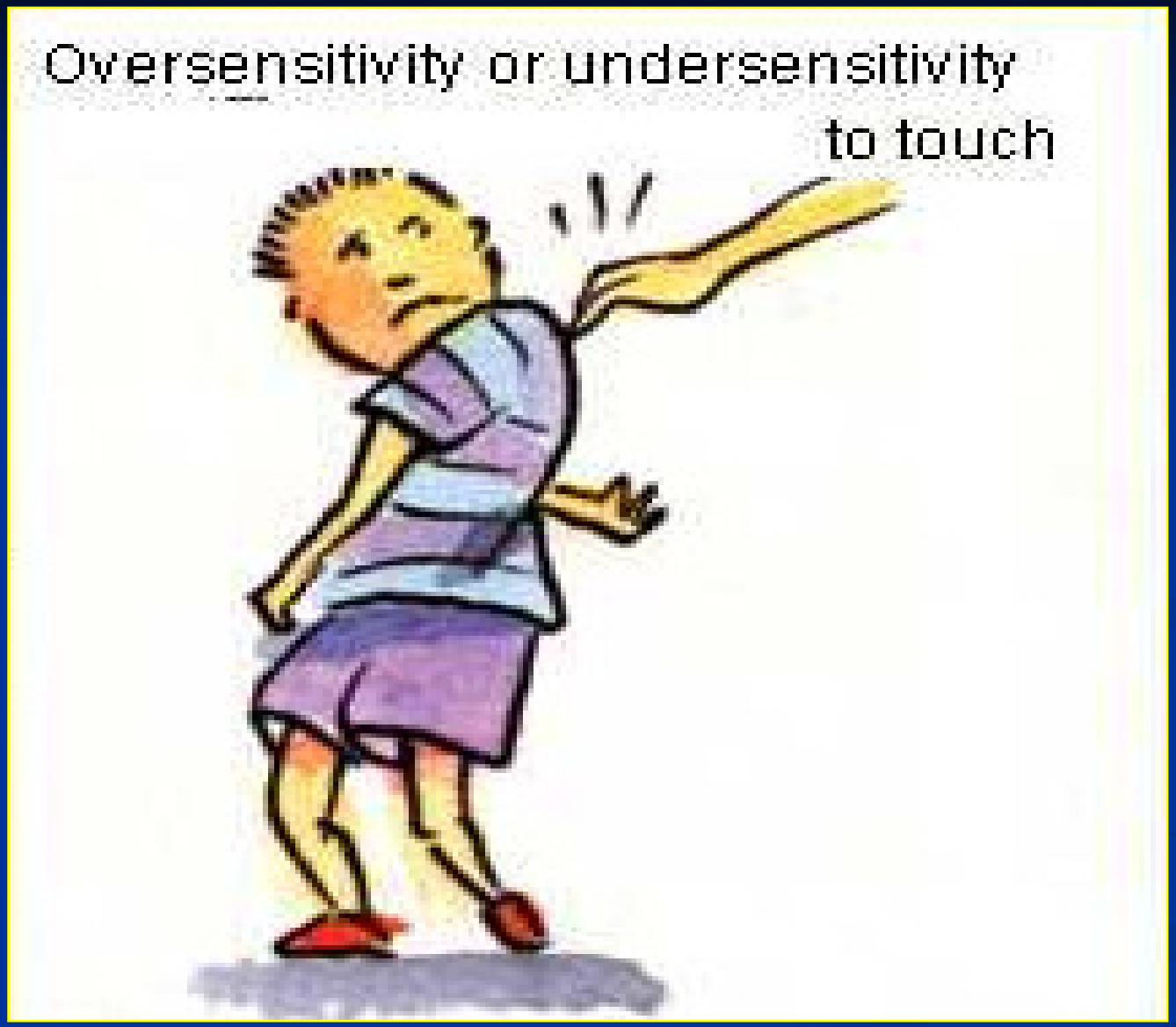
Inappropriate laughter or crying



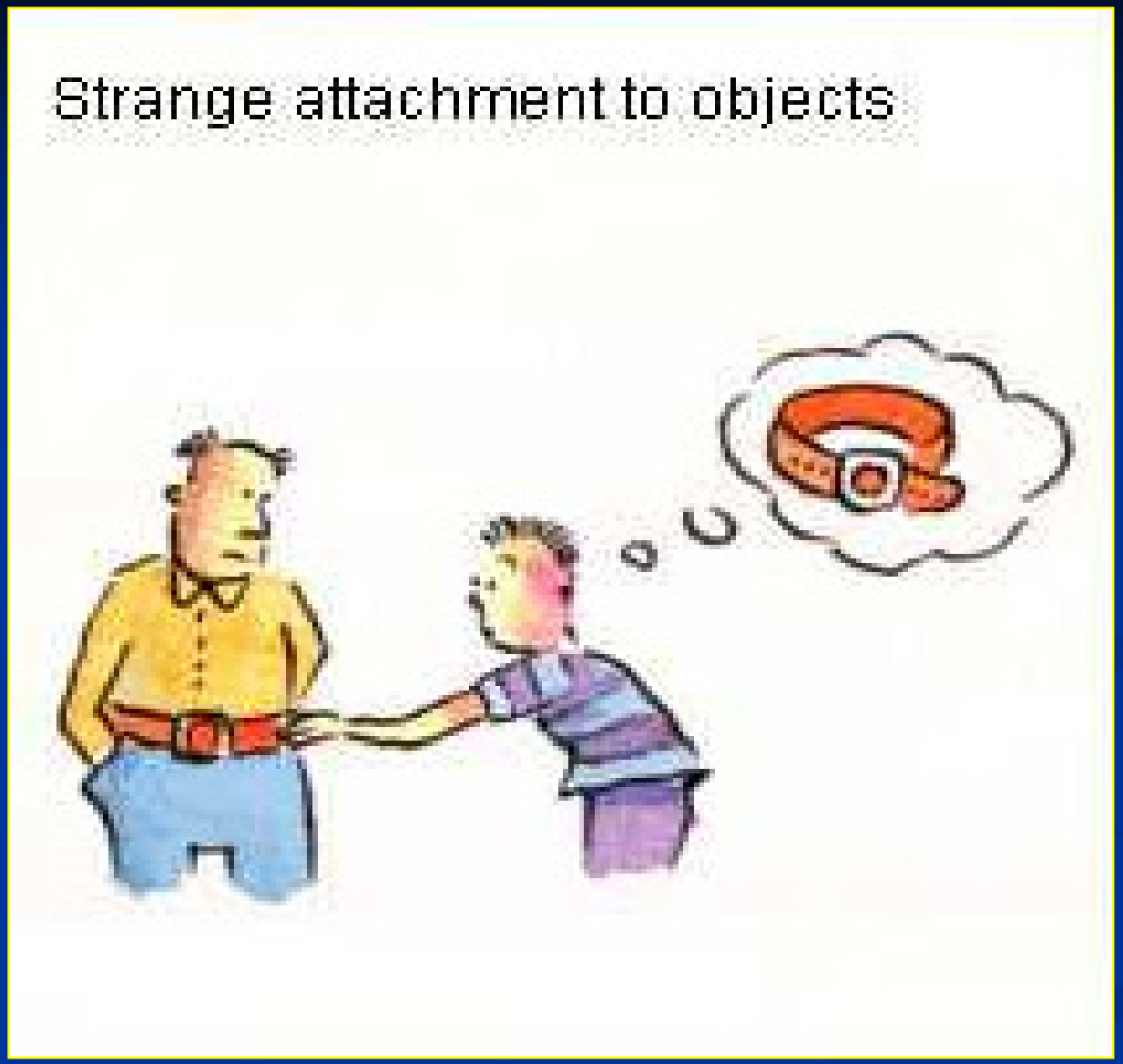
Lack of awareness of danger



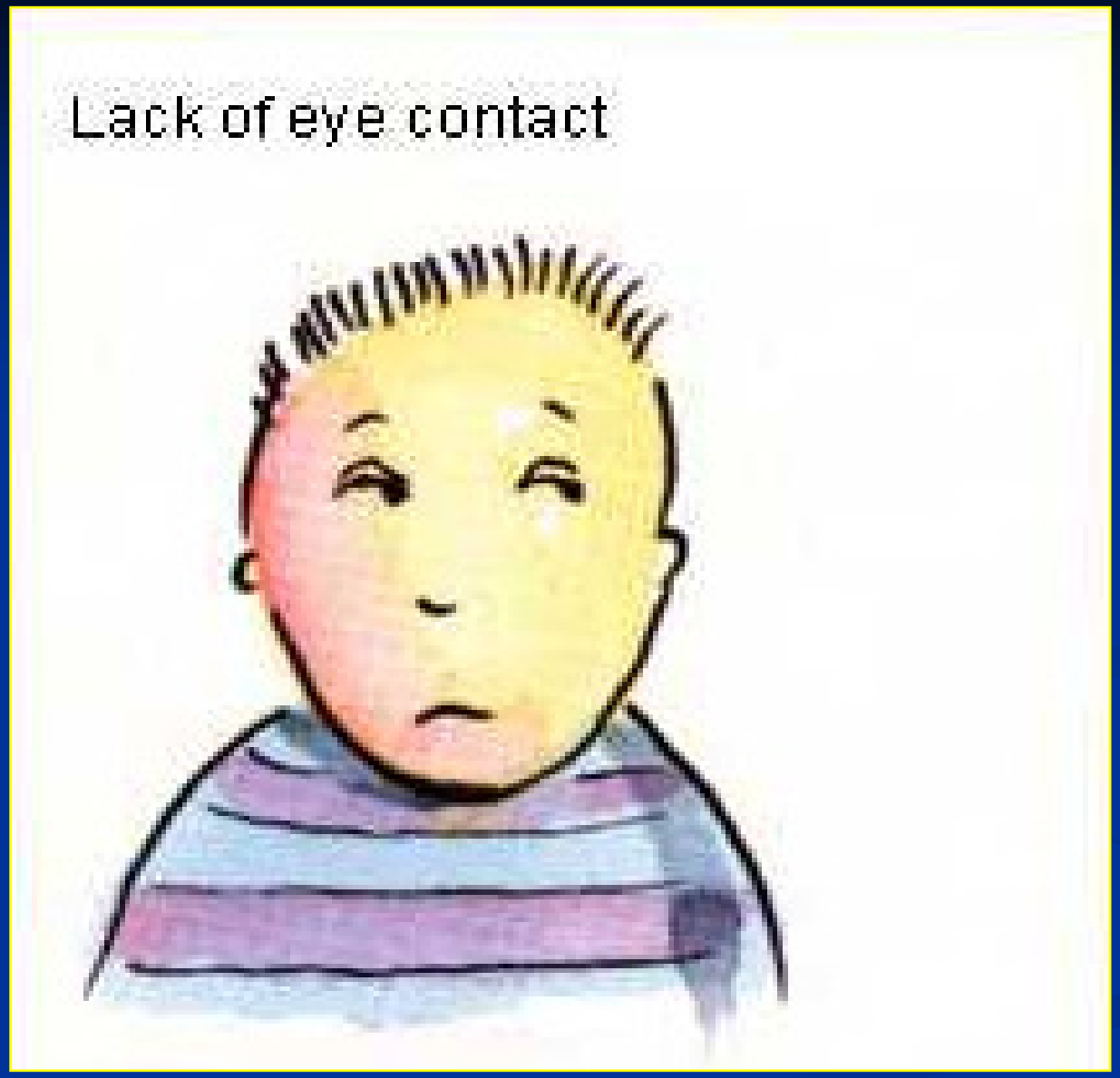
Hyperactivity or passiveness



Oversensitivity or undersensitivity to touch



Strange attachment to objects



Lack of eye contact

Causes of Autism

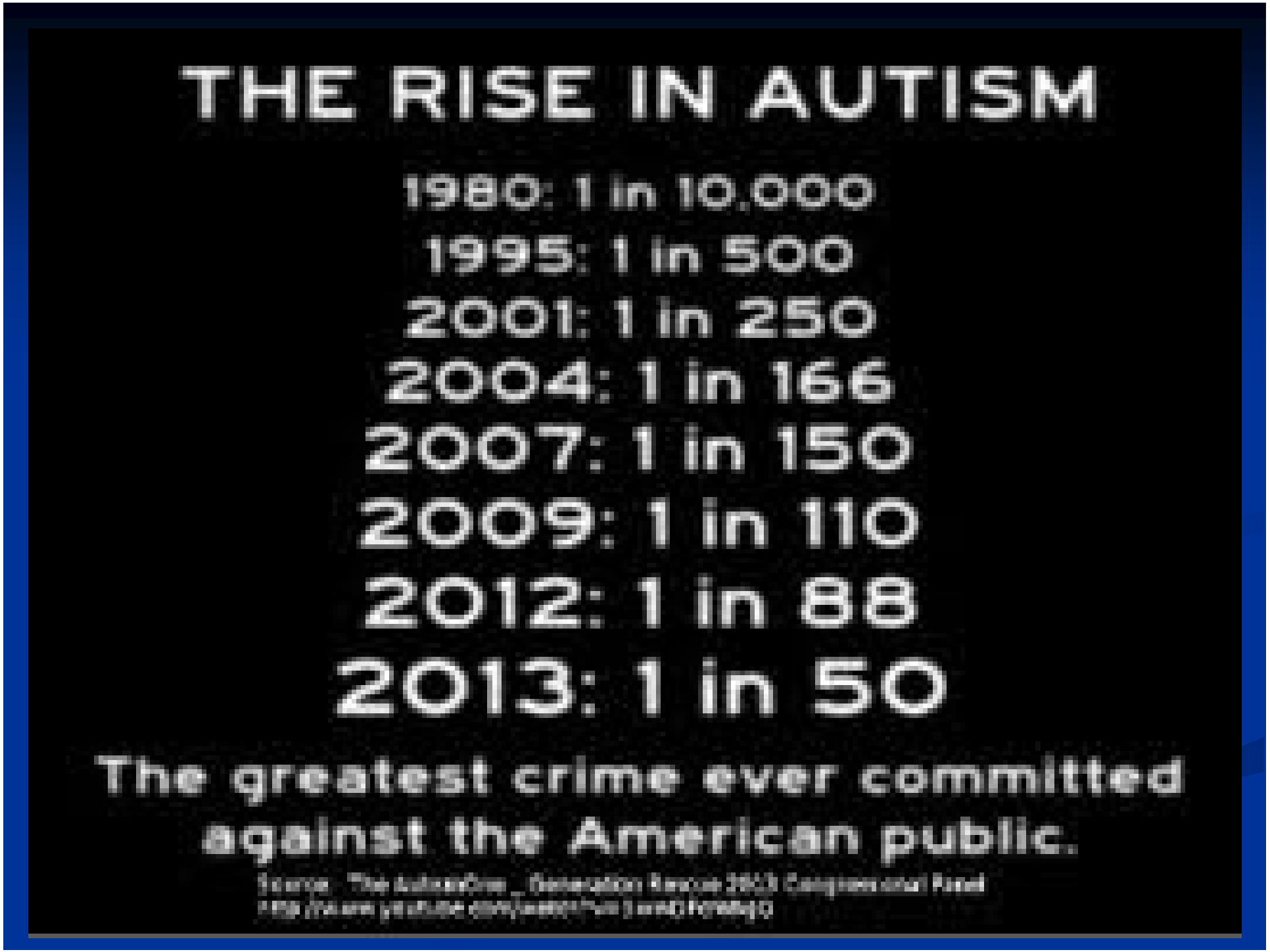
- There are many theories as to the **cause of Autism** such as……

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

How common is autism ?

- Baird G, Simonoff E, Pickles A, Chandler S, Loucas T, Meldrum D, Charman T.
- Prevalence of disorders of the autism spectrum in a population cohort of children in South Thames: The Special Needs and Autism Project (SNAP) Lancet 2006;368:210-215

1 in 86 (UK)
1 in 50 (USA)


THE RISE IN AUTISM
1980: 1 in 10,000
1995: 1 in 500
2001: 1 in 250
2004: 1 in 166
2007: 1 in 150
2009: 1 in 110
2012: 1 in 88
2013: 1 in 50
The greatest crime ever committed against the American public.

Predisposing Factors for ASD

- **New Genetics**
- Human genome can be affected by nutrition.
- There is an interplay between genes and environment.
- Genes can be turned on and off.
- Single Nucleotide Polymorphisms (SNP) are a slight variation in the genetic code resulting in abnormal protein or enzyme production.
- SNP's are common in the population.
- 98% of children with ASD have a SNP in their MTHFR gene (J Am Phys Surg 2004;9:106-108.)

Predisposing Factors for ASD

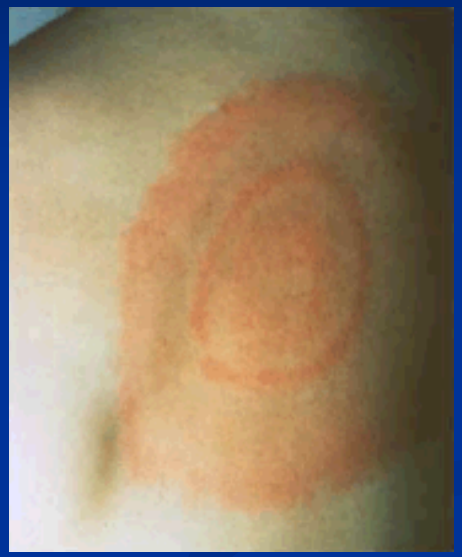
- Heavy Metal Burden

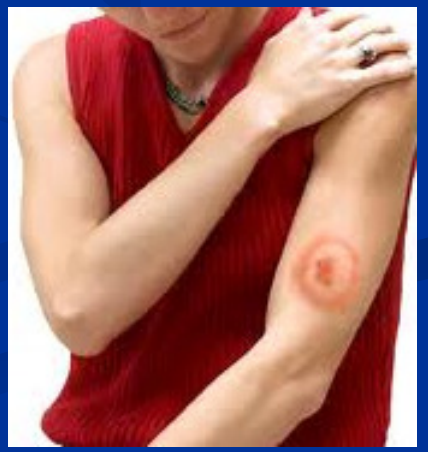
Mom
- amalgams
- fish consumption
- rhogam
- vaccines
- environment
- occupation
- oral contraceptives

Patient
- Immunizations
- environmental toxics
- antibiotics
- immune issues
- gastrointestinal permeability

Predisposing Factors for ASD

- **Infectious Agents**
  - Virus
    - Measles
    - HHV6
    - CMV
  - Bacteria
    - Streptococcus
    - Clostridia
    - Borrelia
      (LIA Conference 2008 Fort Lee, NJ)
  - Fungal
    - Candida





Biochemical Aftermath in ASD

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

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

Biochemical Aftermath in ASD

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

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

Biochemical Aftermath in ASD

- **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.

Biochemical Aftermath in ASD

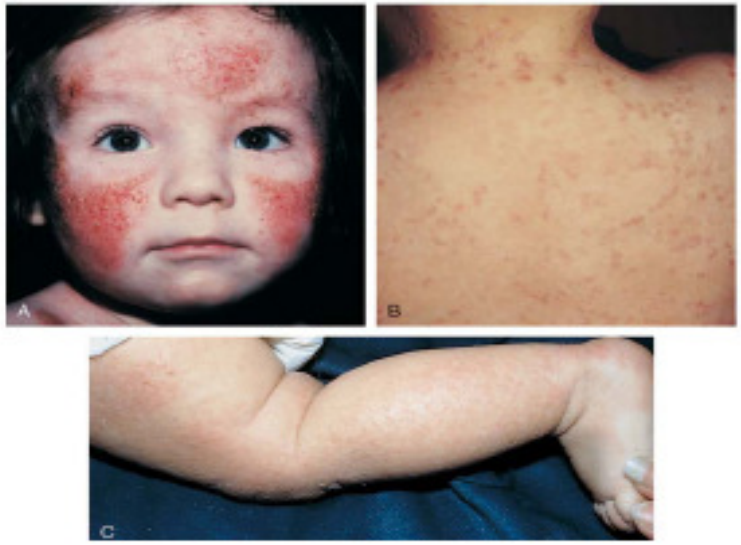
- **Immune System Dysregulation**
  - Proinflammatory Cytokines
  - Microglial Activation
  - Th1/ Th2 skewing
  - Decreased Natural Killer Cell
  - Increased Autoimmune Markers

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

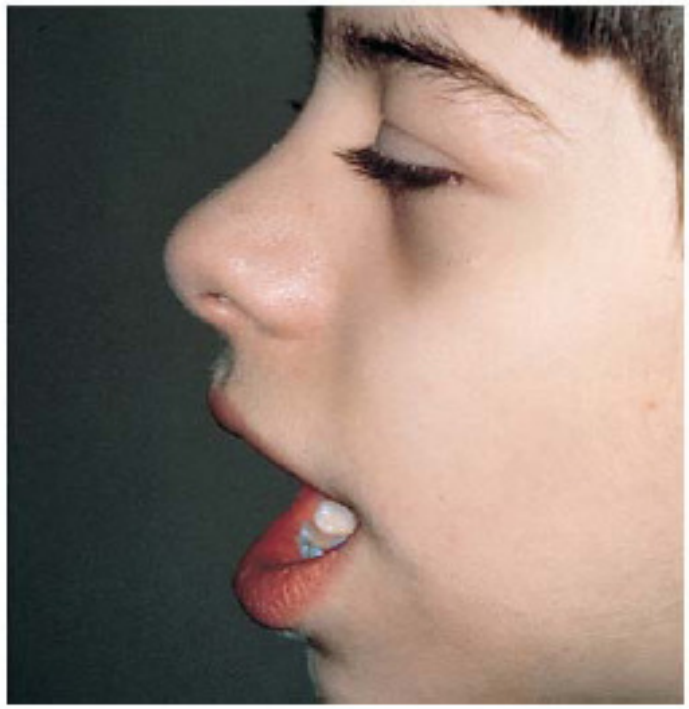
- Children that have tendencies towards autism are **born with**:

- Weak immune system,
- Hormonal imbalances,
- Allergies,
- Poor uptake of nutrients due to metabolic imbalance.

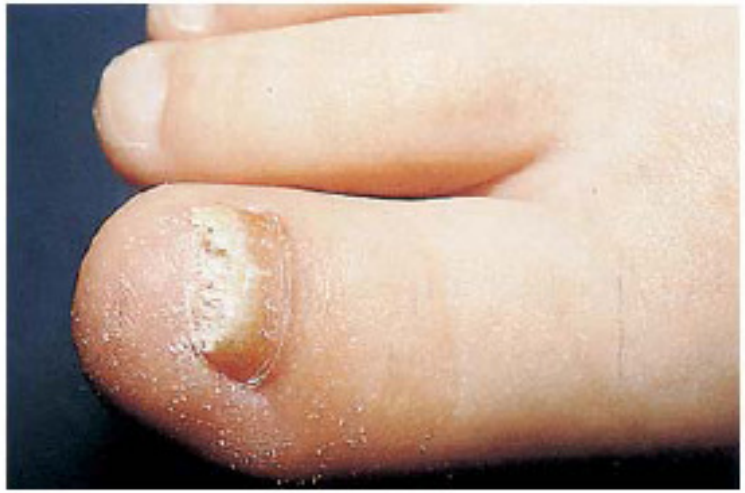
Immune signs and symptoms in autism



Eczema



Allergic Facies



Onychomycosis

- 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.

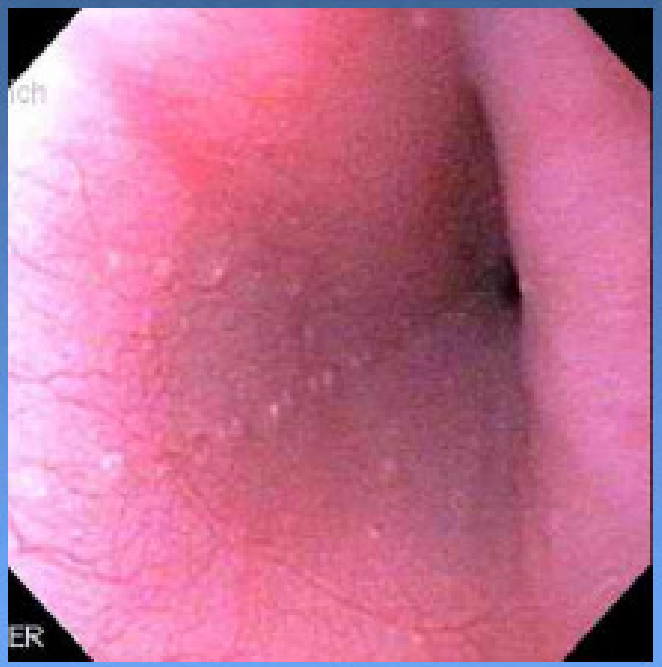
The size of the problem

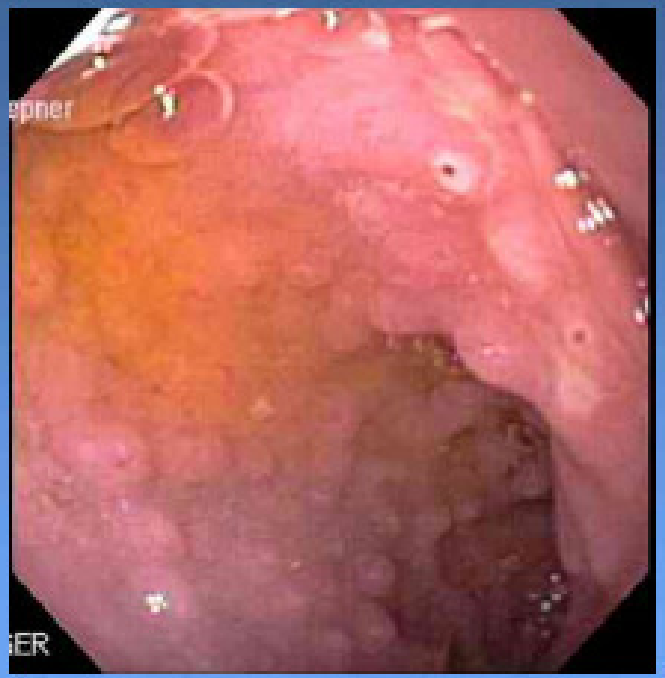
- How common is intestinal inflammation in autistic children with GI symptoms?

• Wakefield AJ, Anthony A, Murch SH, et al. Enterocolitis in children with developmental disorders. *Am J Gastroenterol* 2000;95:2285-2295.	88%
• Krigsman A M. et al. Frequency of histologic enterocolitis and lymphonodular hyperplasia in autistic children presenting for ileocolonoscopy. International Meeting for Autism Research (IMFAR), UC Davis, Ca. 2004; www.icdrc.org/imfar_abstract.html	76%
• González L., et al. Endoscopic and Histological Characteristics of the Digestive Mucosa in Autistic Children with Gastrointestinal Symptoms. Preliminary Report. G.E.N. Suplemento Especial de Pediatría-Nº 1, 2005; pp41-47.	100%
• Balzola F., et al., Autistic enterocolitis: confirmation of a new inflammatory bowel disease in an Italian cohort of patients. Gastroenterol. 2005;128:Suppl.2;A-303	100%

Andrew Wakefield,MBBS, FRCS, FRC Path Executive Director Thoughtful House, Texas

Esophageal disease



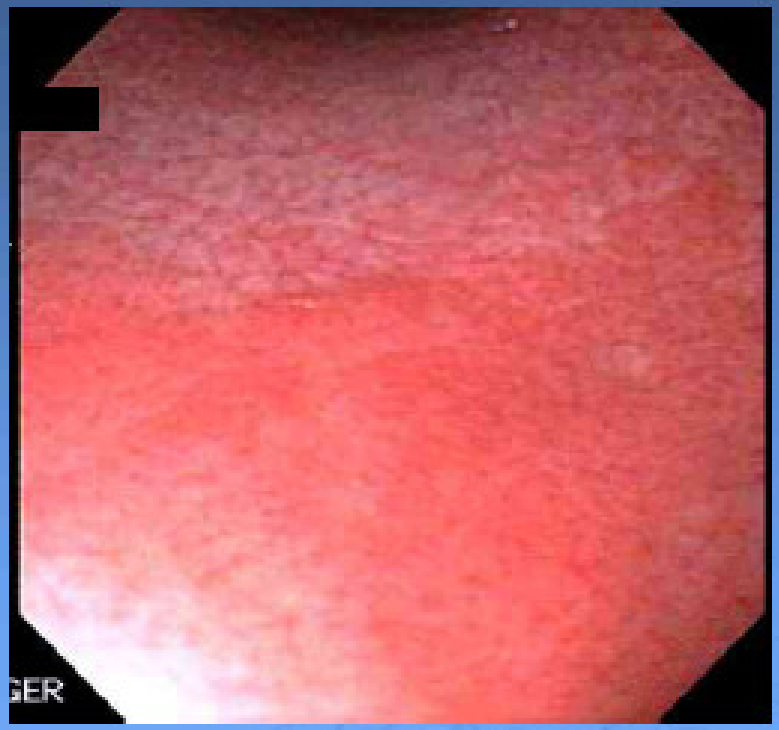


Thoughtful House
Center for Children

www.thoughtfulhouse.org

Andrew Wakefield,MBBS, FRCS, FRC Path Executive Director Thoughtful House, Texas

Gastritis

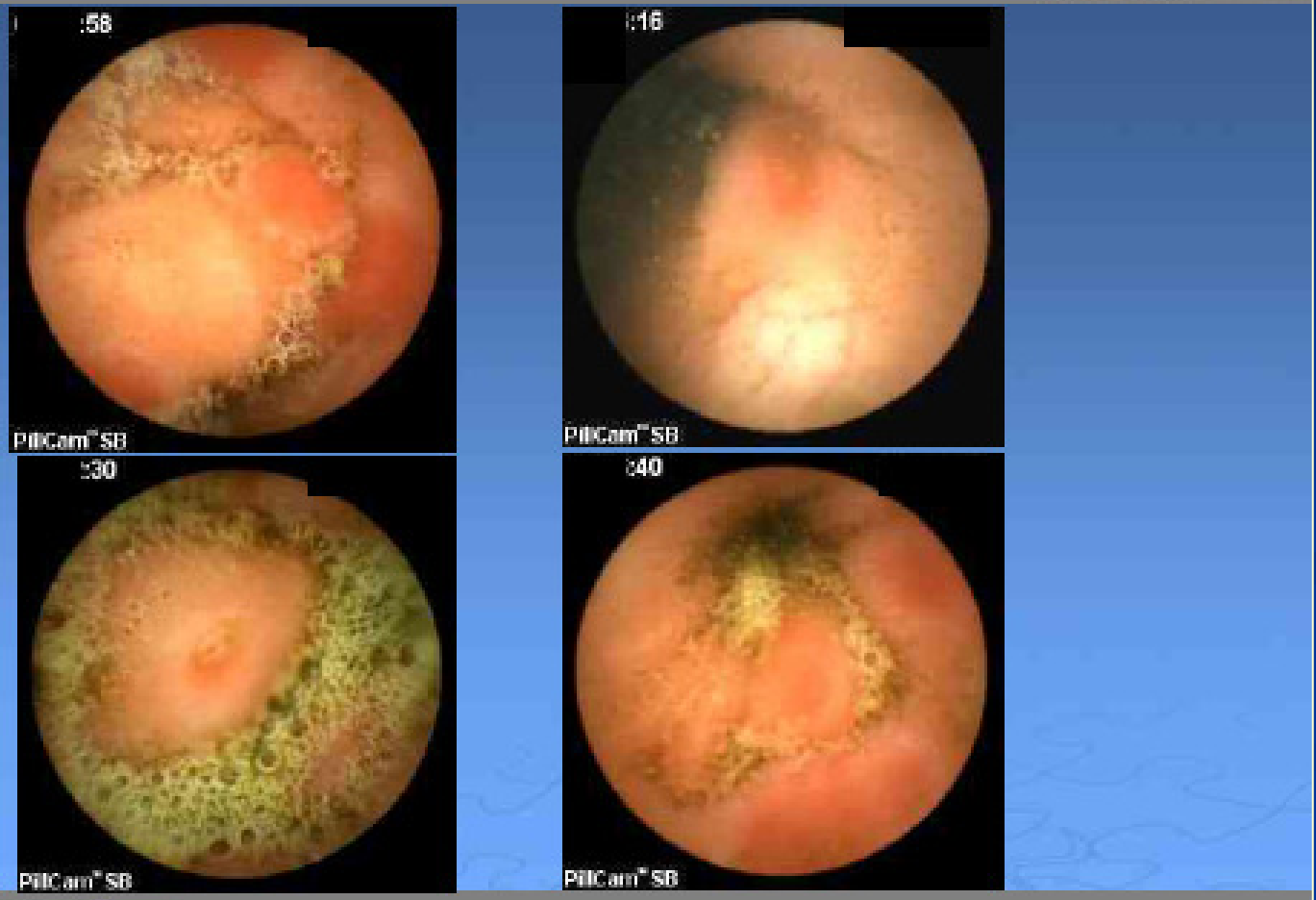


Thoughtful House
Center for Children

www.thoughtfulhouse.org

Andrew Wakefield,MBBS, FRCS, FRC Path Executive Director Thoughtful House, Texas

Jejunal & Ileal inflammation
Capsule Enteroscopy

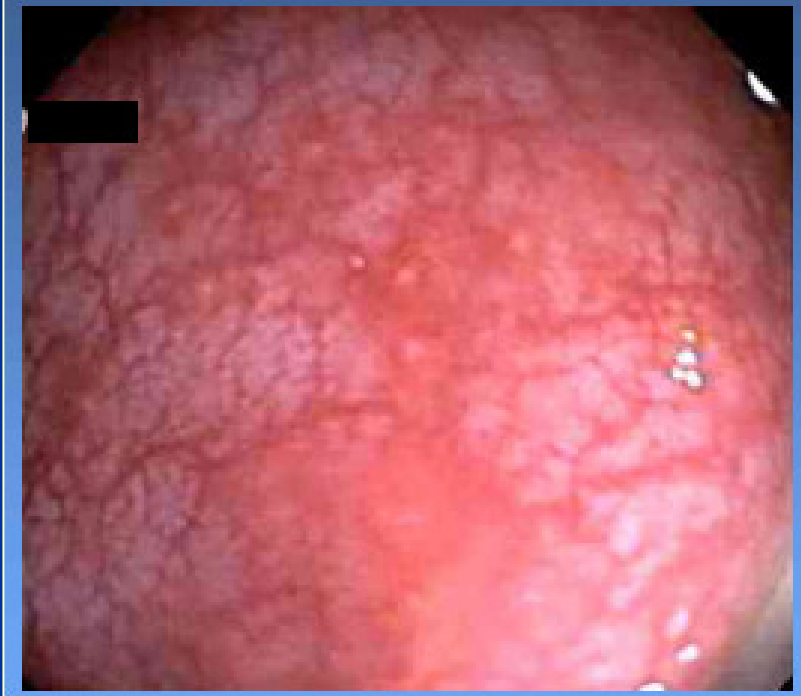


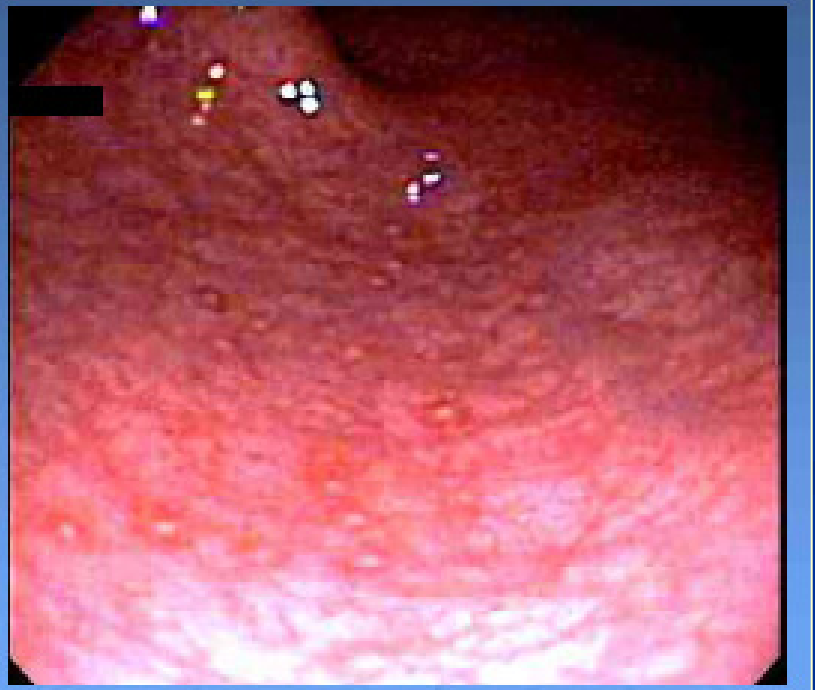
Thoughtful House
Center for Children

www.thoughtfulhouse.org

Andrew Wakefield,MBBS, FRCS, FRC Path Executive Director Thoughtful House, Texas

Colonic aphthoid ulceration and inflammation



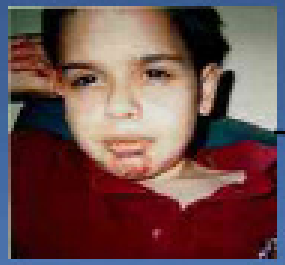


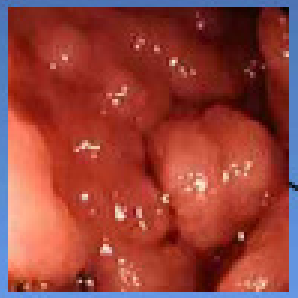
Thoughtful House
Center for Children

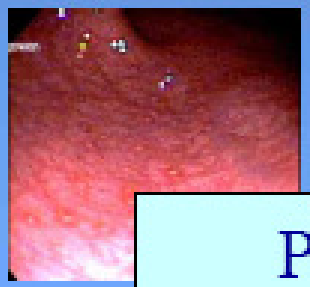
www.thoughtfulhouse.org

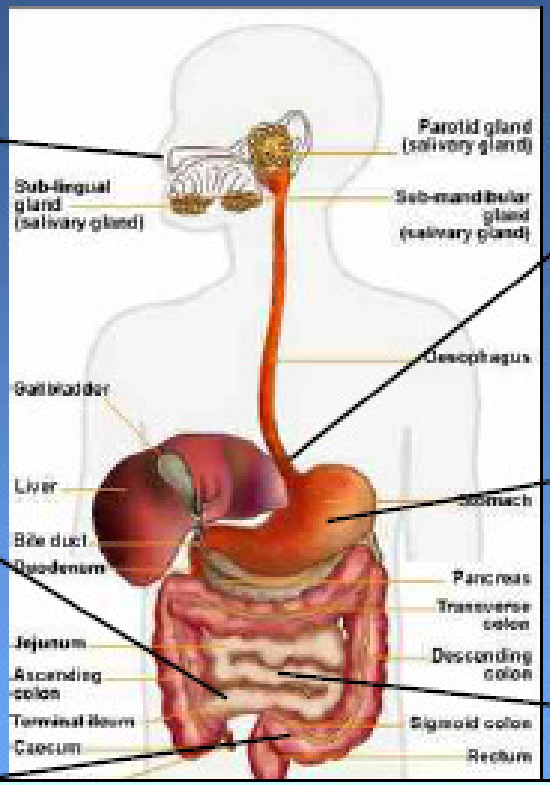
Andrew Wakefield,MBBS, FRCS, FRC Path Executive Director Thoughtful House, Texas

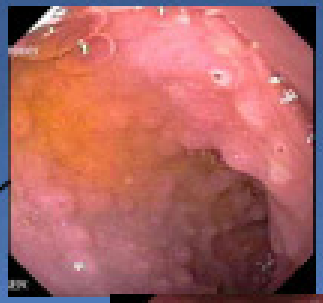
What have these studies shown?

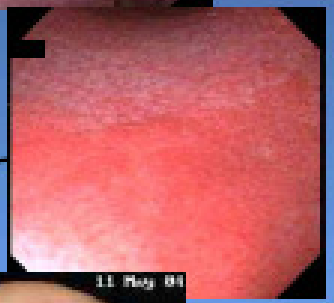


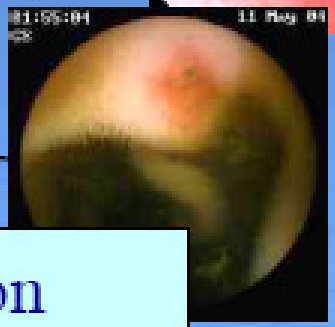












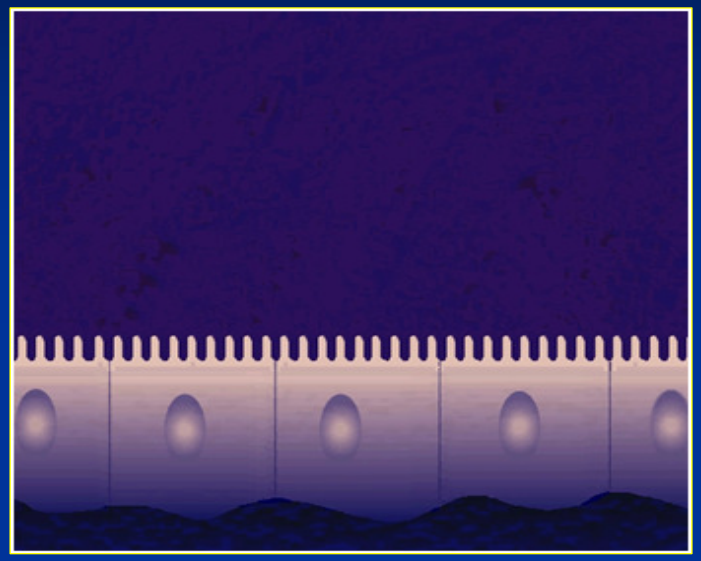
Pan-enteric inflammation

Thoughtful House
Center for Children

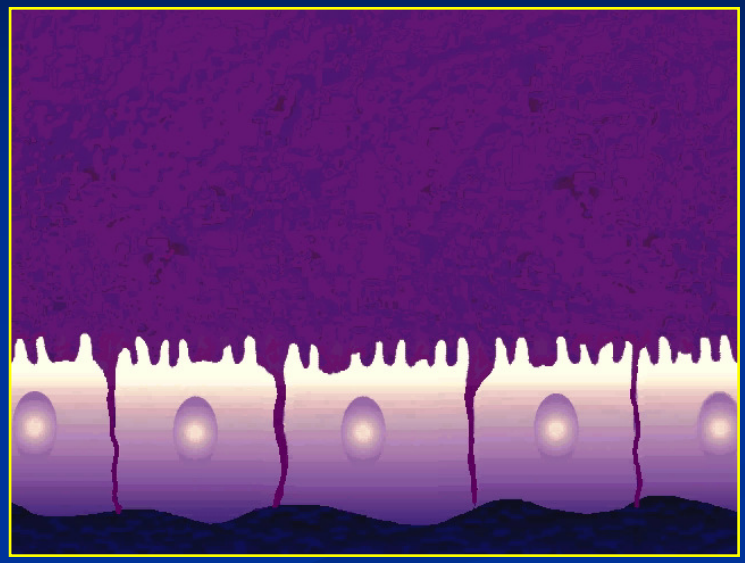
www.thoughtfulhouse.org

Andrew Wakefield,MBBS, FRCS, FRC Path Executive Director Thoughtful House, Texas

- "Leaky gut" is common in autism and implies that the intestines are more permeable than normal.



Healthy Gut

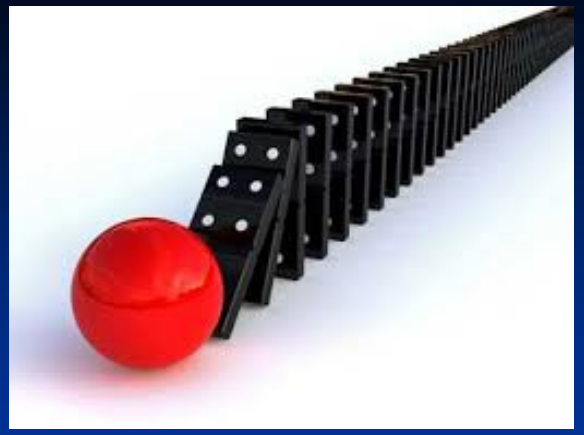


Leaky Gut & Malabsorption

- 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.

Causes of "Leaky Gut" ?



- Overuse of antibiotics, steroids
- Poor diet high in refined foods and sugars
- Nutritional deficiencies
- Incomplete digestion
- Heightened exposure to environmental toxins
- Stress

Gastrointestinal Symptoms in Autism

Abdominal Pain

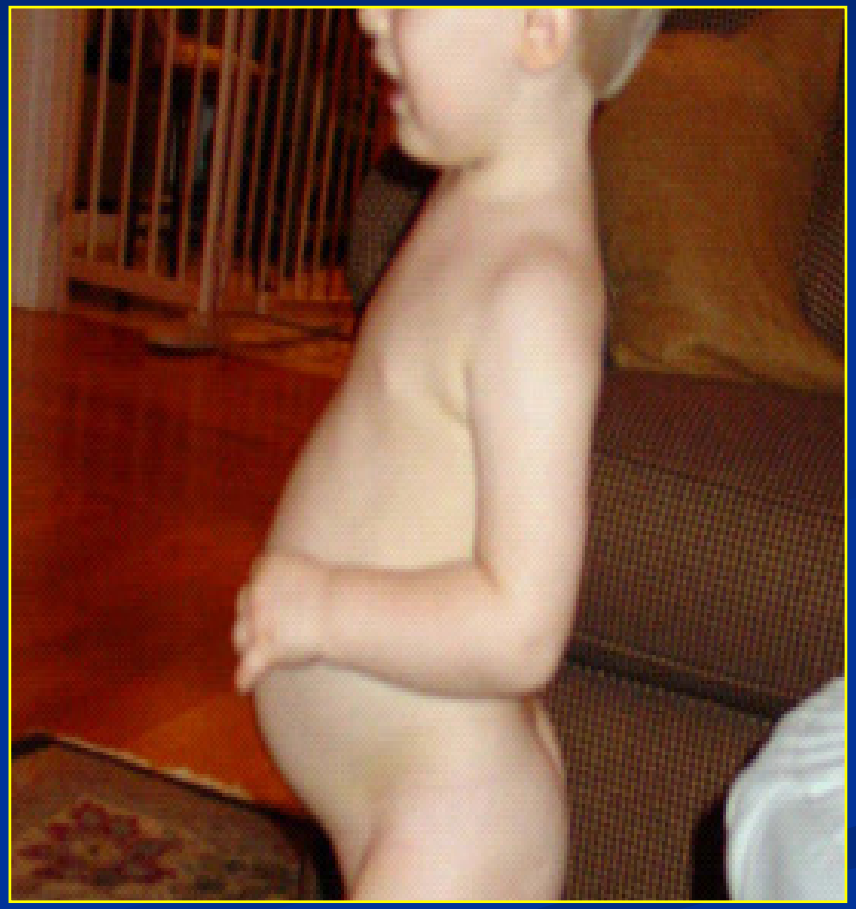
Chronic Diarrhea

Constipation

Gaseousness/Bloating

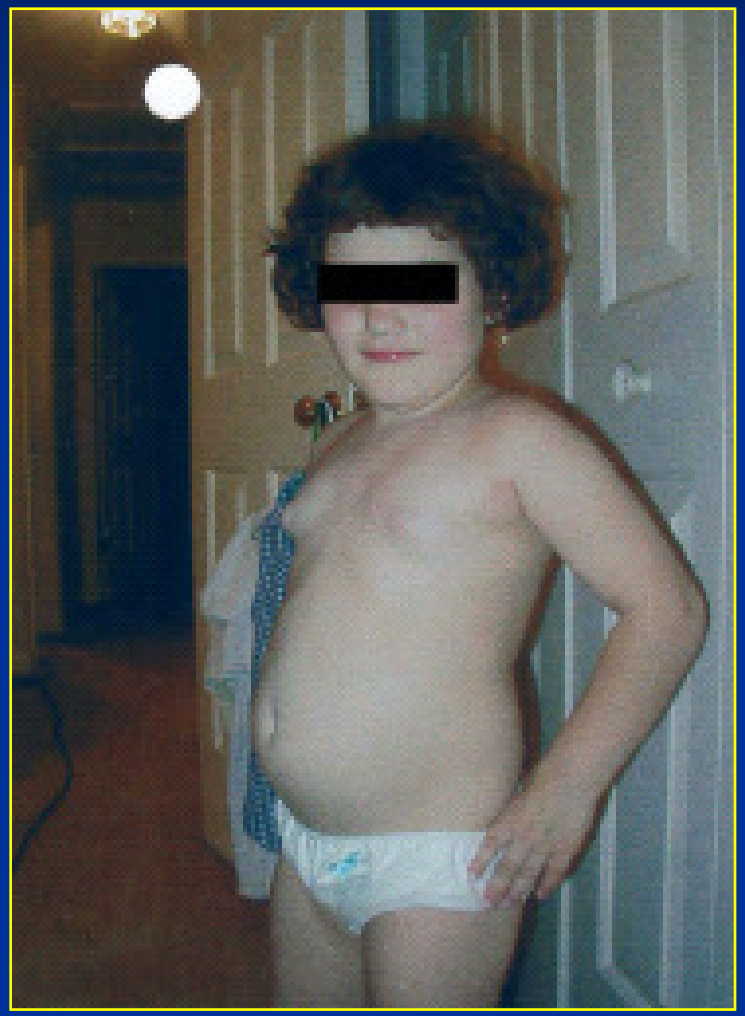
Nighttime Awekening

Unexplained Irritability

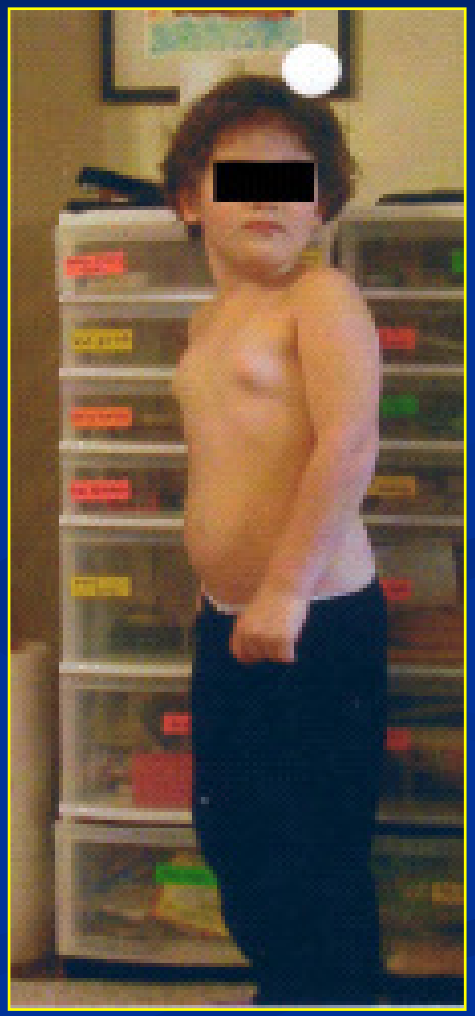


ABDOMINAL PAIN

BEFORE

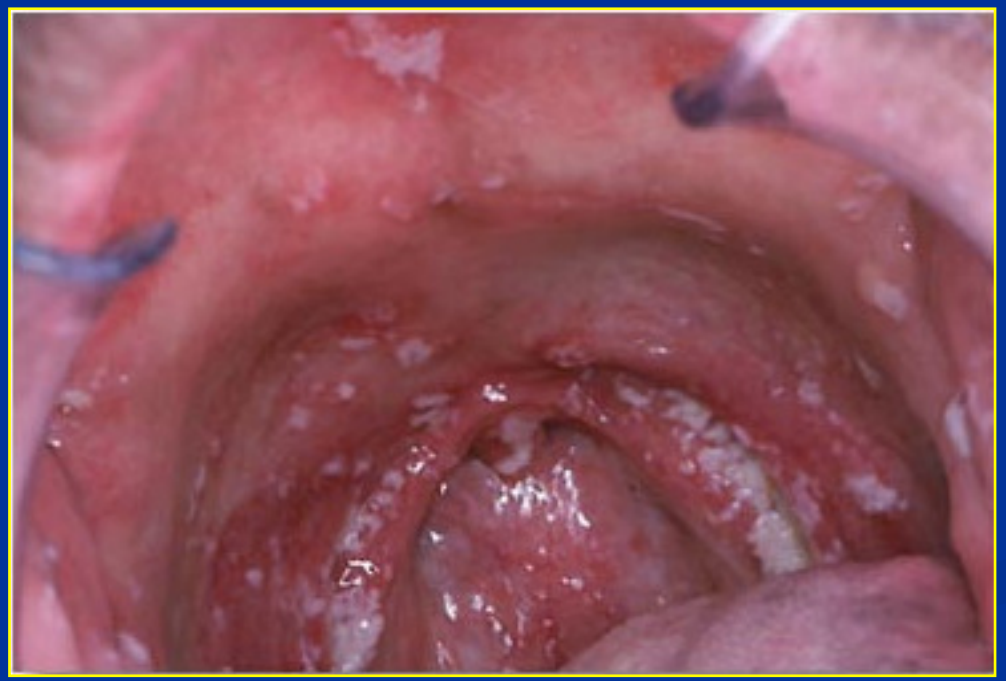


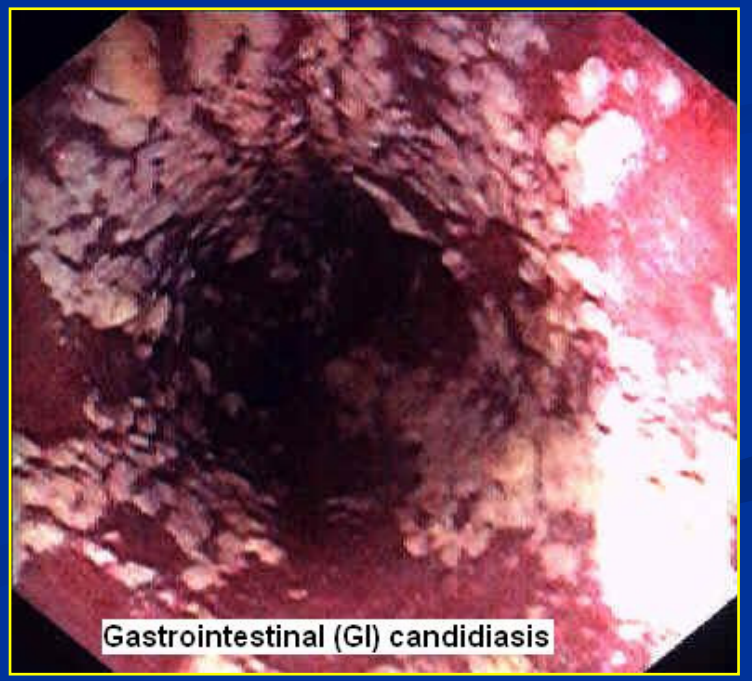
AFTER



What is broken, can be fixed !

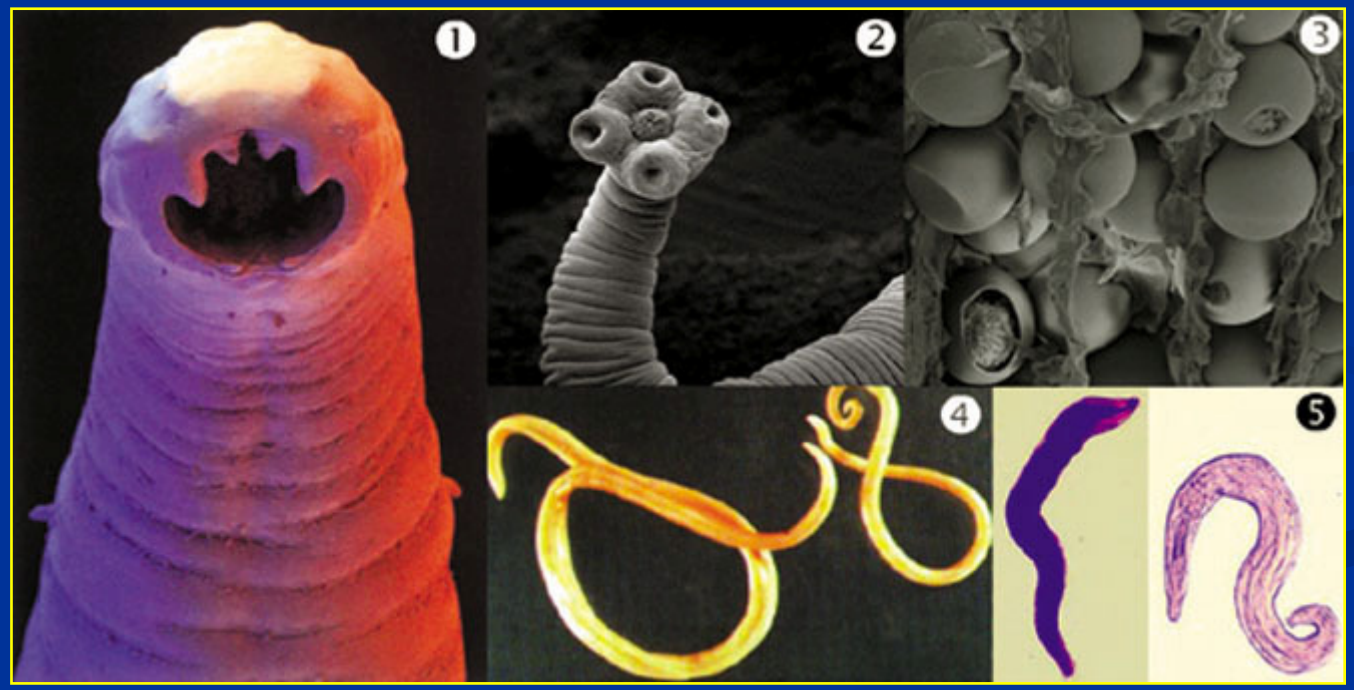
- There is also an imbalance in intestinal flora.
- This can lead to fungal infection in some children.
- **Candida** is the most common.





- **Parasites :**

  What may keep you and your child up at night
- Protozoa: Amoebas, Giardia
- Nematodes: Round worms, Pinworms, Hookworms
- Cestodes: Tapeworms
- Trematodes: Flukes



- The normal body can cleanse heavy metals from the system with the help of enzyme **Glutathione** which is built from **Cysteine**.
- 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.
- In autistic children the levels of both are far below normal.

- 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.

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.

Detoxification

- Two of the healty body's natural means of ridding itself of toxic substances :

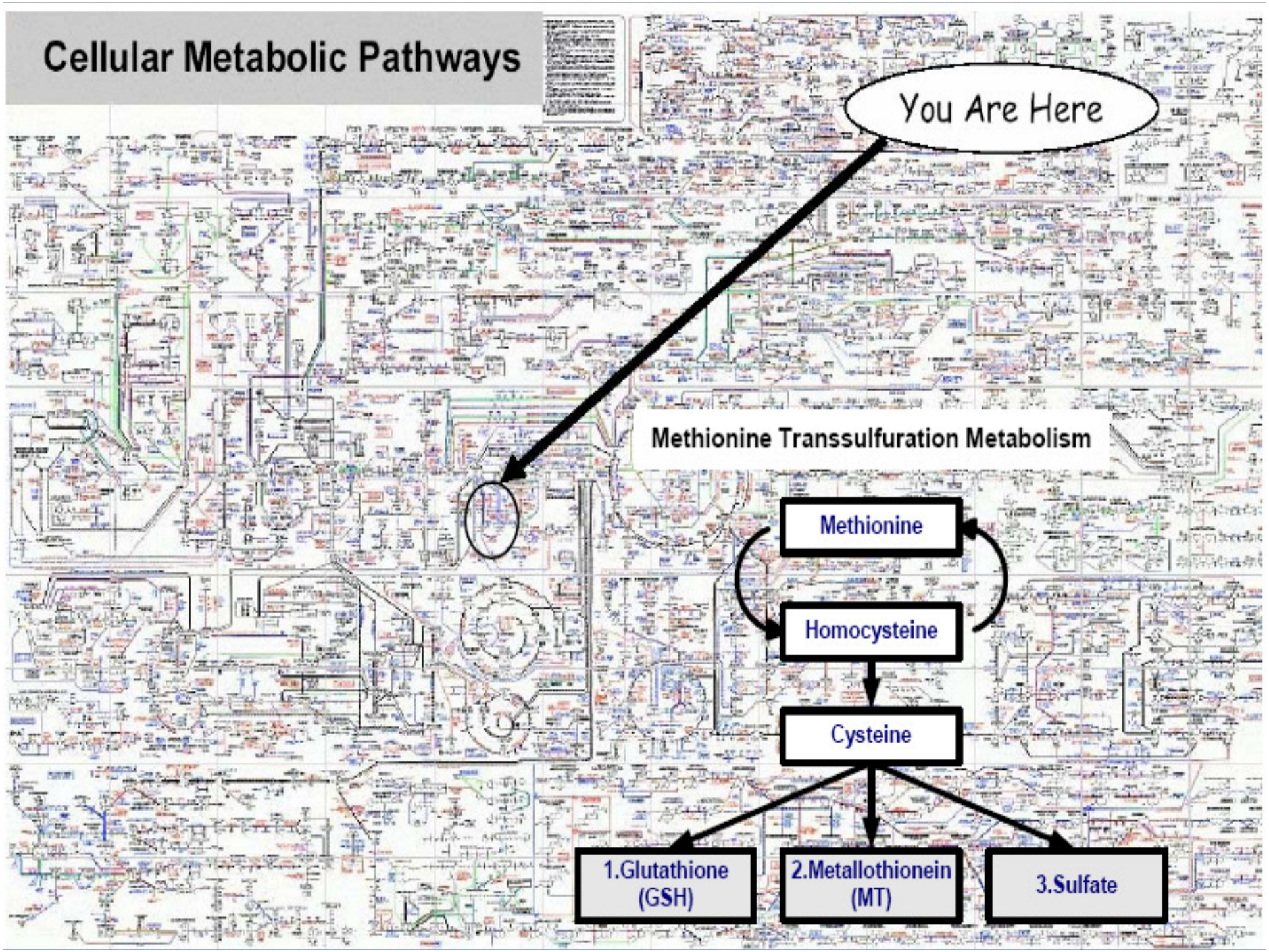
- **Methylation**
- **Sulfation**

Important chemical events in the body are made possible by methylation

- Detoxification
- DNA formation
- RNA formation
- Neurotransmission
- Switching genes off and on

- Methylation is an important part of
  - Folic acid pathway
  - B6 metabolism
  - B12 metabolism
- Sulfation is to convert into a sulfate
  - is an important part of the detoxification process in liver, including heavy metal detoxification.

Detoxification Pathways


Cellular Metabolic Pathways
You Are Here
Methionine Transsulfuration Metabolism
Methionine
Homocysteine
Cysteine
1.Glutathione (GSH)
2.Metallothionein (MT)
3.Sulfate

Toxic Heavy Metals and their connection to Autism

Biochemical effects of toxic overload

- Destroy cell membranes
- Increase free radical activity
- Deplete sulfur emzymes
- Displace emzyme cofactors
- Oxydize enzymes
- Attack organs
- Effect gastrointestinal flora and integrity
- Immunotoxic
- Denature proteins
- Carsinogenic
- Mineral deficiency

Sources of Mercury

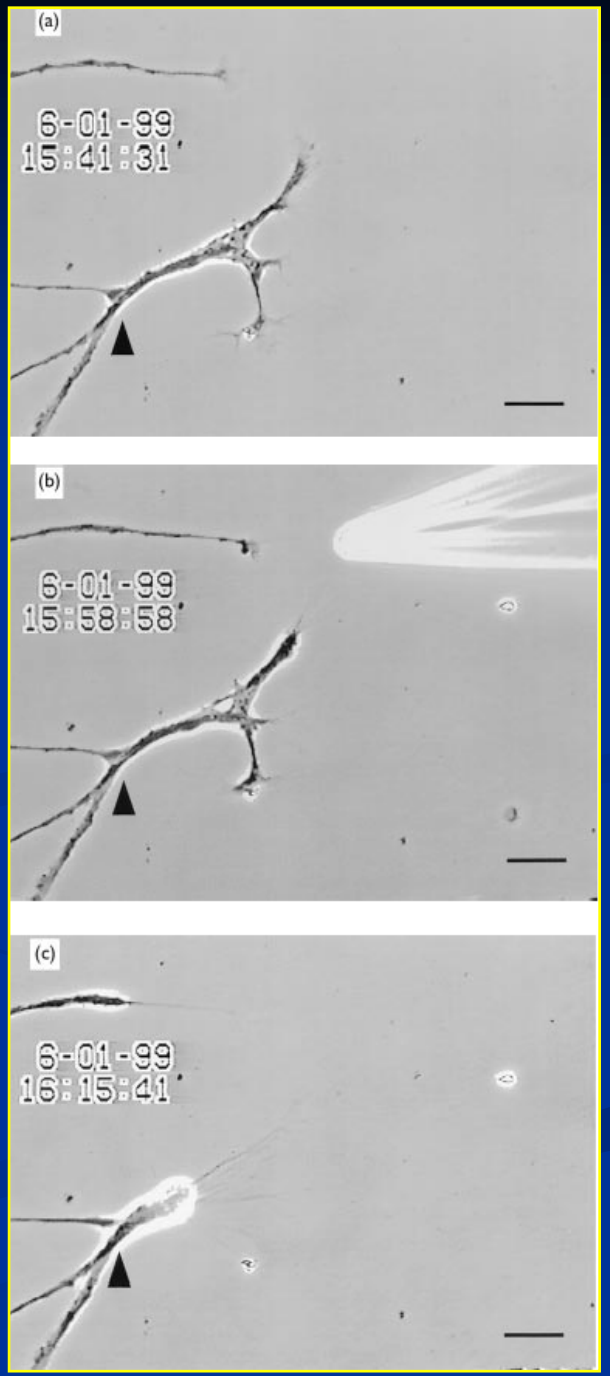
- Auto Exhaust
- Pesticides
- Fertilizers
- Amalgams
- Drinking Water
- Felt
- Ear Drops
- Nose Drops
- Vaccines
- Contact Lens Solution
- Fabric Softeners
- Seafood
- Calomel (Talc)
- Cinnabar (Jewelry)
- Cosmetics (Mascara)
- Wood Preservatives
- Floor Waxes/Polishes
- Coal Burning Plants

UNIVERSITY OF CALGARY

Faculty of Medicine

Dept. of Physiology & Biophysics

- 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

Common Symptoms of Autism & Mercury Poisoning
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)

Common Symptoms of Autism & Mercury Poisoning
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

Other Heavy Metal Effects

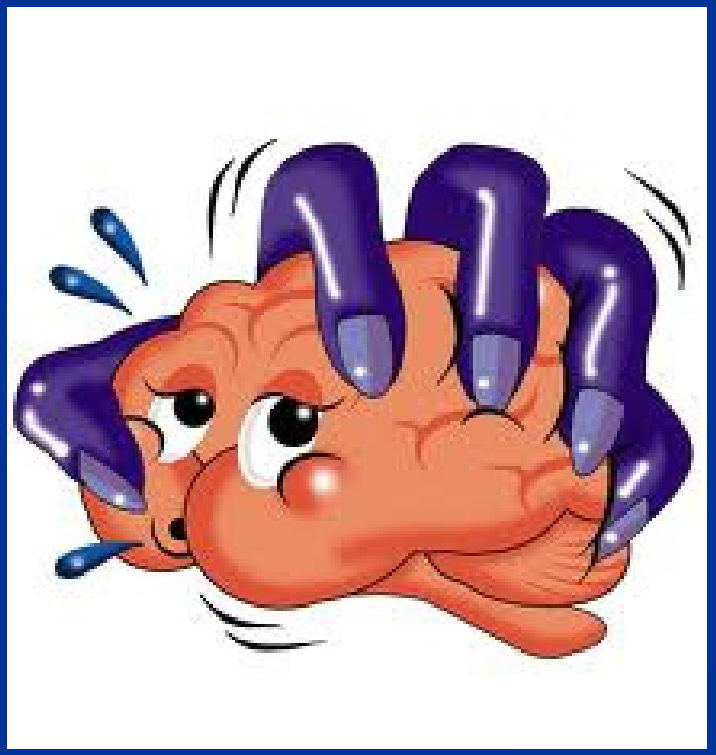
- Lead (Pb)
  - Allergies,
  - ADD symptoms,
  - constipation,
  - coordination delinquency,
  - dyslexia,
  - headaches,
  - hyperactivity,
  - hypothyroidism,
  - insomnia,
  - irritability,
  - mood swings,
  - muscle weakness
  - Lead primarily deposits and accumulates in the aorta, liver, kidneys, adrenal and thyroid glands, bones and teeth.
- Cadmium (Cd)
  - Glucose dysregulation,
  - flu-like symptoms
  - poor growth,
  - hyperactivity,
  - aggression,
  - learning disorders,
  - osteoporosis

Other Heavy Metal Effects

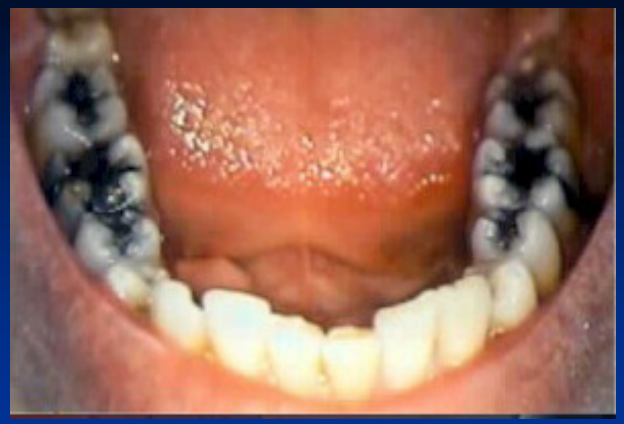
- Arsenic (As)
  - Anorexia,
  - allergies,
  - burning pain (abdominal),
  - diarrhea,
  - garlic odor,
  - muscle aches/spasms/weakness,
  - wheezing,
  - throat constriction
- Aluminum (Al)
  - Anemia,
  - poor appetite,
  - odd behaviors,
  - constipation,
  - dry mouth,
  - dry skin,
  - fatigue,
  - hyperactivity,
  - poor memory,
  - numbness,
  - weak muscles

- Heavy metals prefer a fatty environment.
- The brain consists of approximately **60% 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 amalgam fillings which many of us have in our teeth also contribute mercury.

- **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.

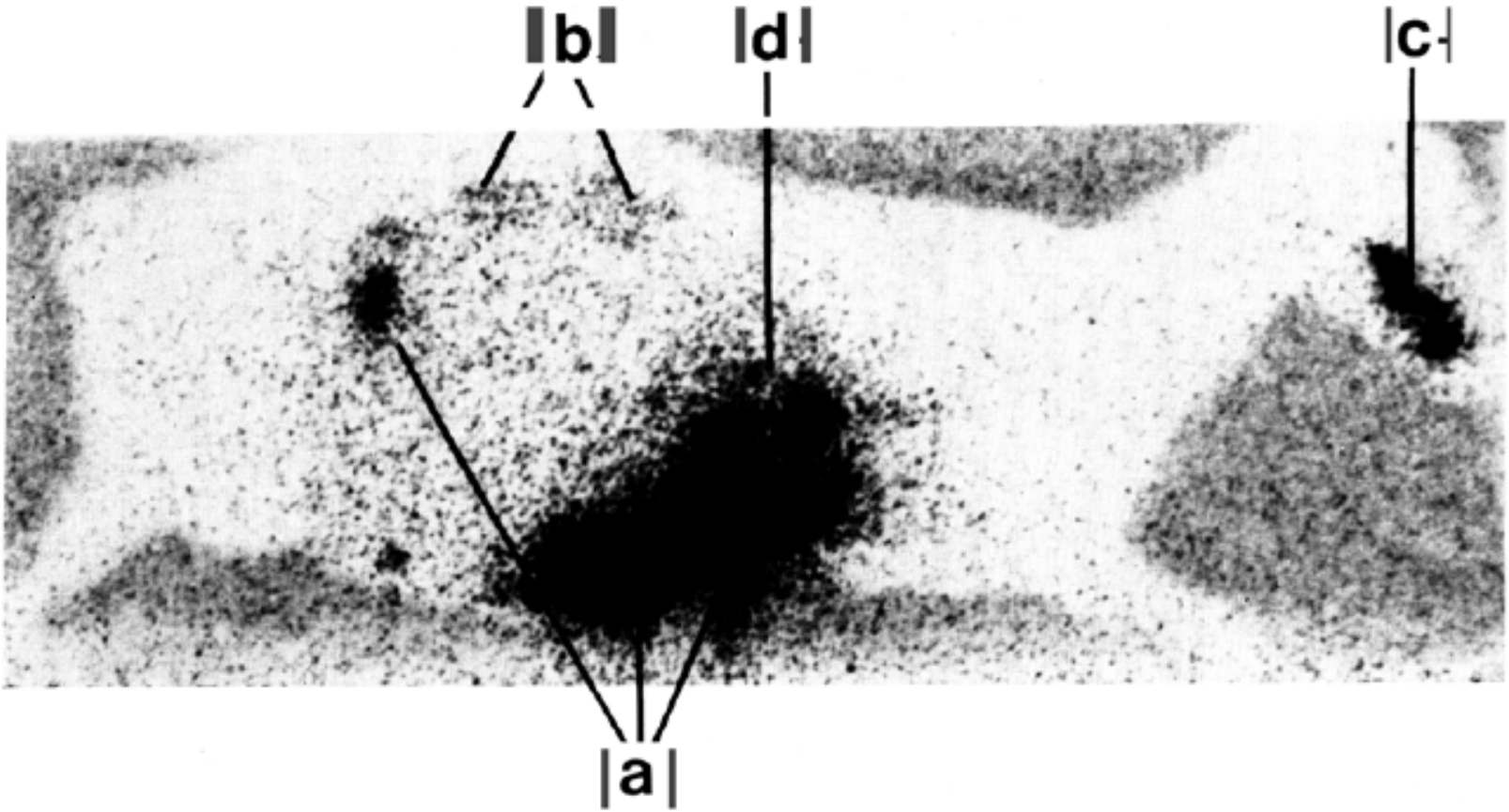
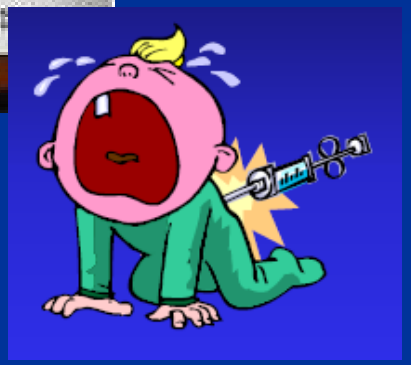


Figure 3 – Full body scan of a sheep 29 days after placement of 12 occlusal amalgams labeled with ^{203}Hg. The fillings were removed prior to the scan. (a) digestive tract. (b) kidneys. (c) gums and alveolar bone. (d) liver, partially obscured by the digestive tract. (From Hahn, et. al., 1989)

Dental "silver" tooth fillings: a source of mercury exposure revealed by whole-body image scan and tissue analysis
Hahn, LJ, Kloiber R, Vimy MJ, Takahashi Y & Lorscheider FL FASEB J 3 1989 2641-6



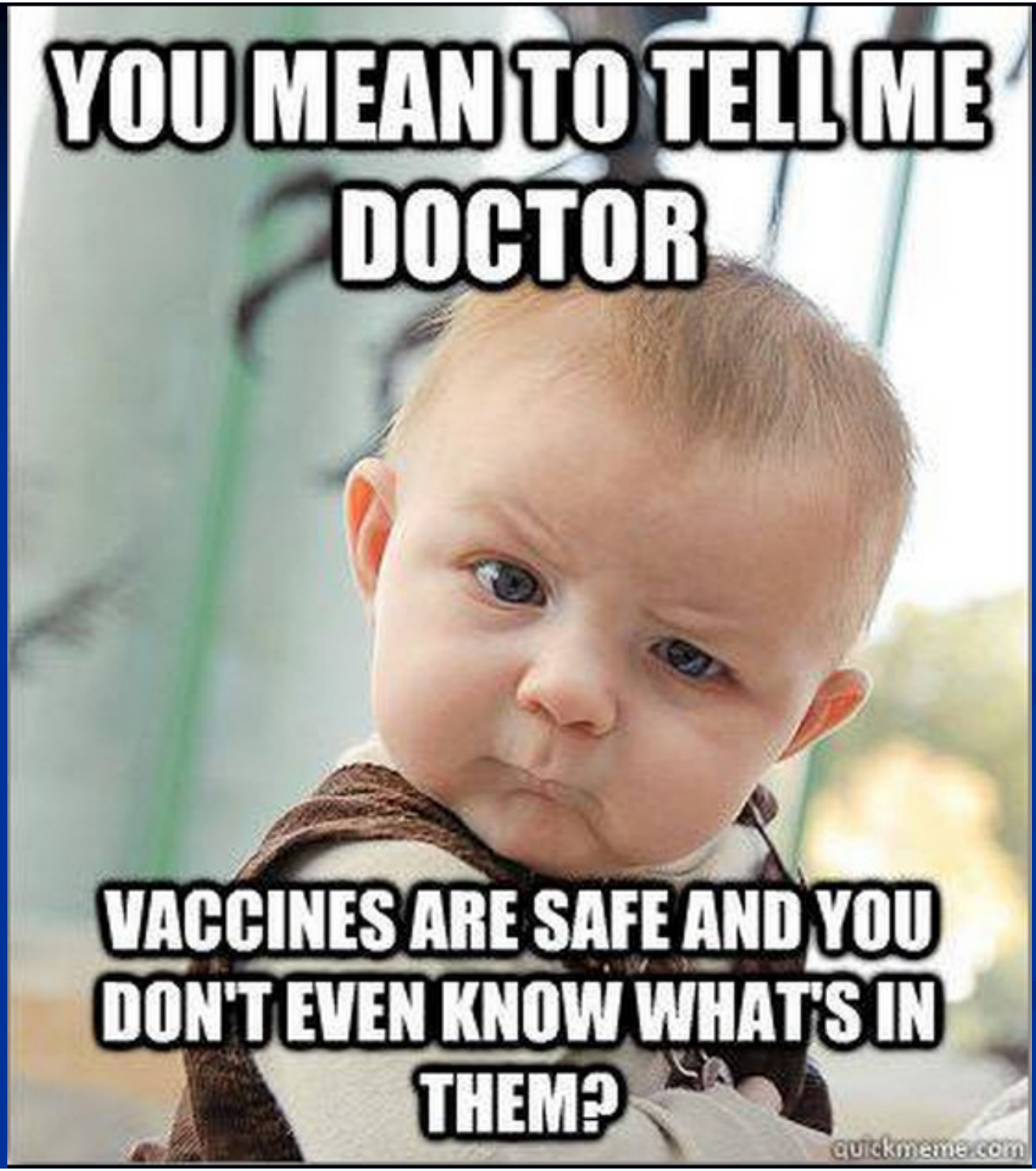
- Many childhood vaccines used to contain 12.5-25 ug of thimerosal (Preservative),
- so that a fully-vaccinated child could receive up to 237.5 ug of thimerosal injected into them.

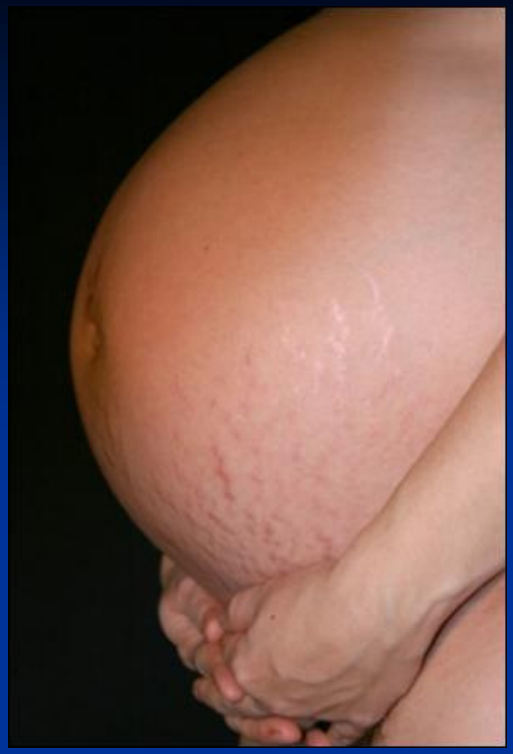
Thimerosal Induces DNA Breaks, Caspase-3 Activation, Membrane Damage, and Cell Death in Cultured Human Neurons and Fibroblasts

David S. Baskin,[1] Hop Ngo, and Vladimir V. Didenko

Department of Neurosurgery, Baylor College of Medicine, 6560 Fannin Suite 944, Houston, Texas 77030; and Veterans Affairs Medical Center, Houston, Texas 77030

Received February 10, 2003; accepted April 18, 2003

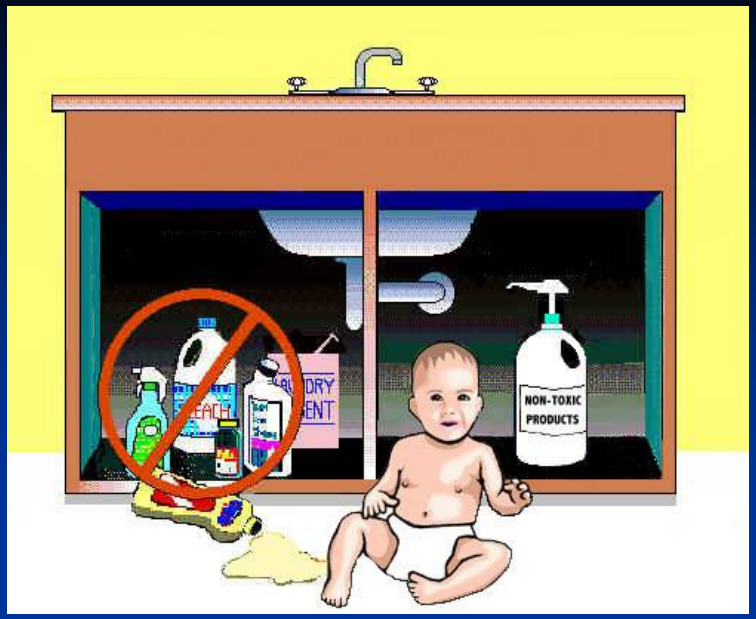

YOU MEAN TO TELL ME DOCTOR
VACCINES ARE SAFE AND YOU DON'T EVEN KNOW WHAT'S IN THEM?
quickmeme.com



- Lotions used under pregnancy to prevent stretch marks
- some cosmetic products
- **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. In order to decrease the risk of heavy metal poisoning, small fishes must be preferred.

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



- 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 !

Our Toxic World

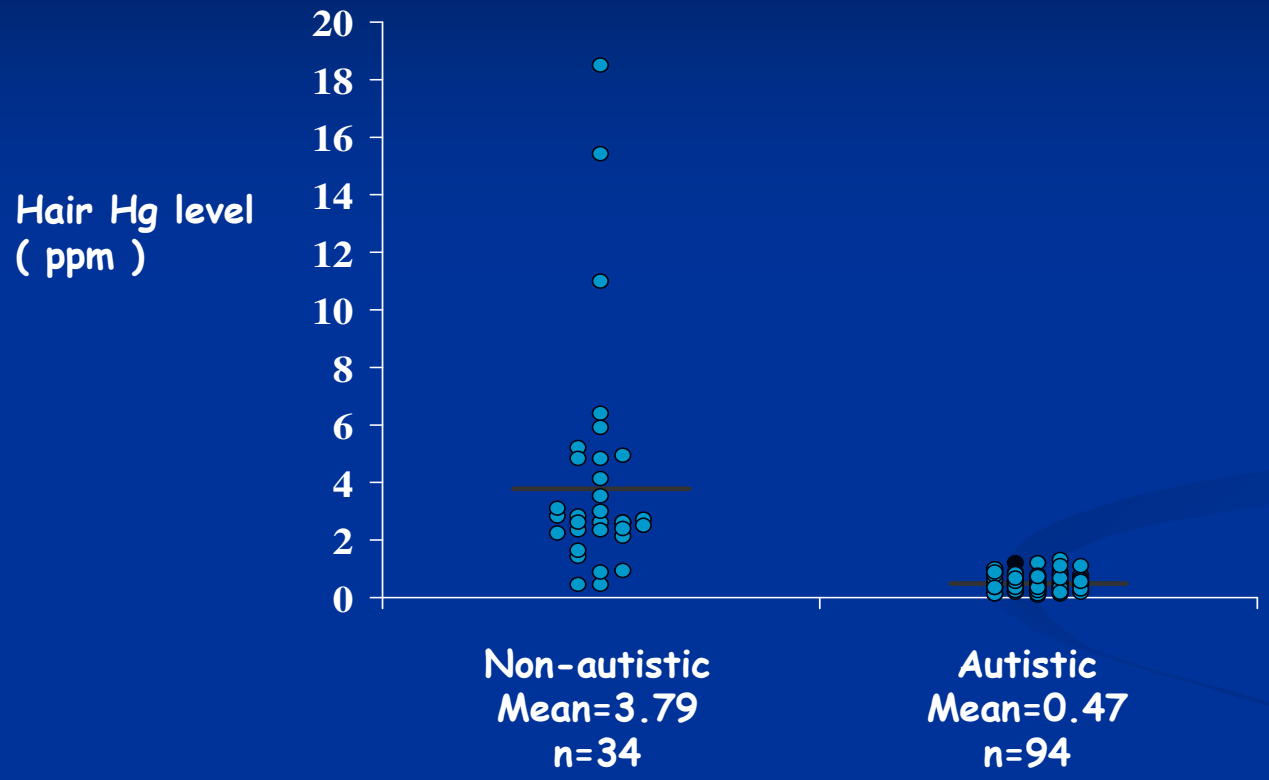
Determination of Heavy Metals

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

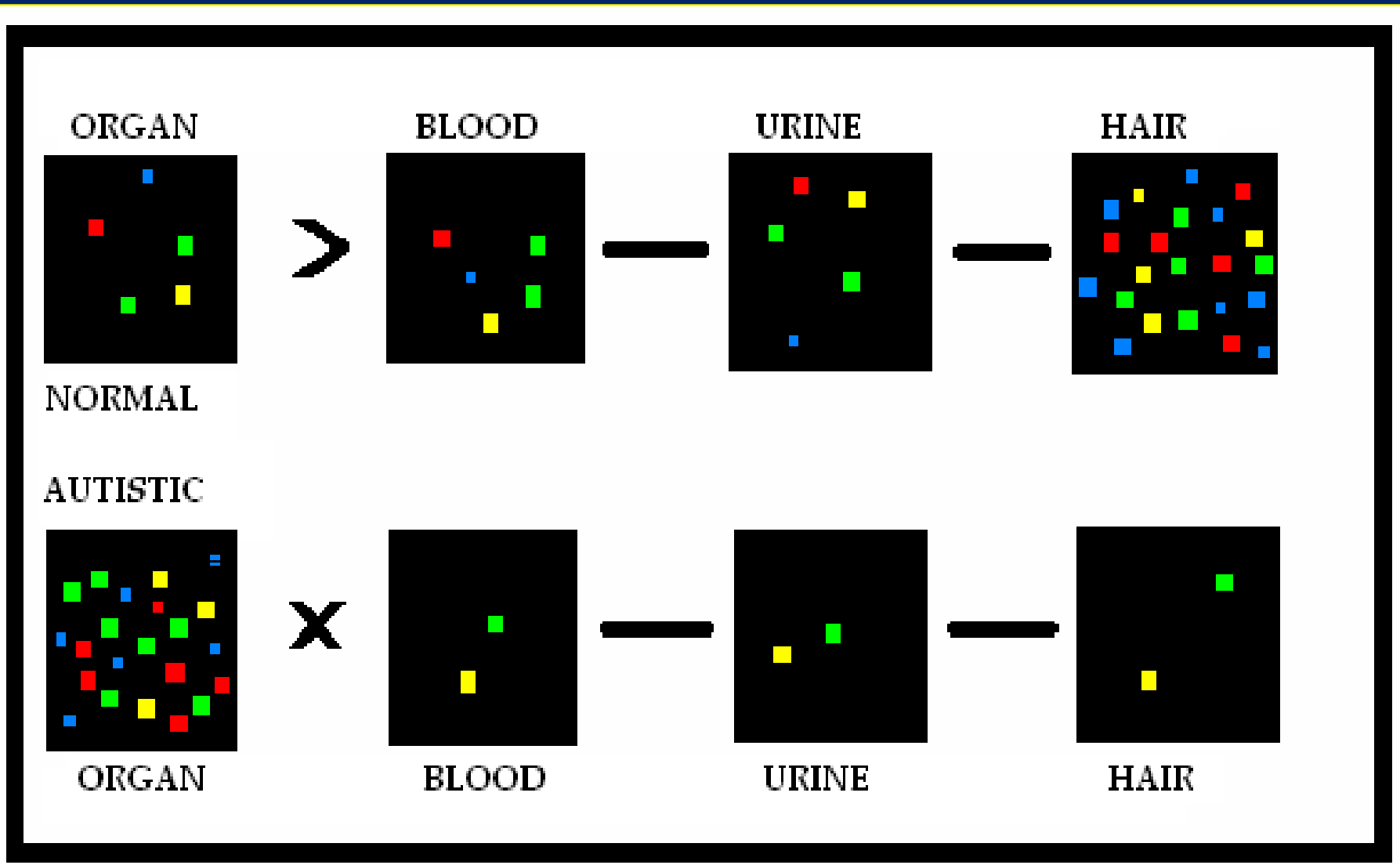
- Children that are born with tendencies towards autism don't have the capacity to cleanse heavy metals from organs or tissues.
- Instead, heavy metals collect in the body.
- A hair analysis doesn't show excess amounts of these toxic metals.
- Because these heavy metals don't mix with the blood.

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

  (DMSA provocated

  urine toxic metals profile)

URINE TOXIC METALS

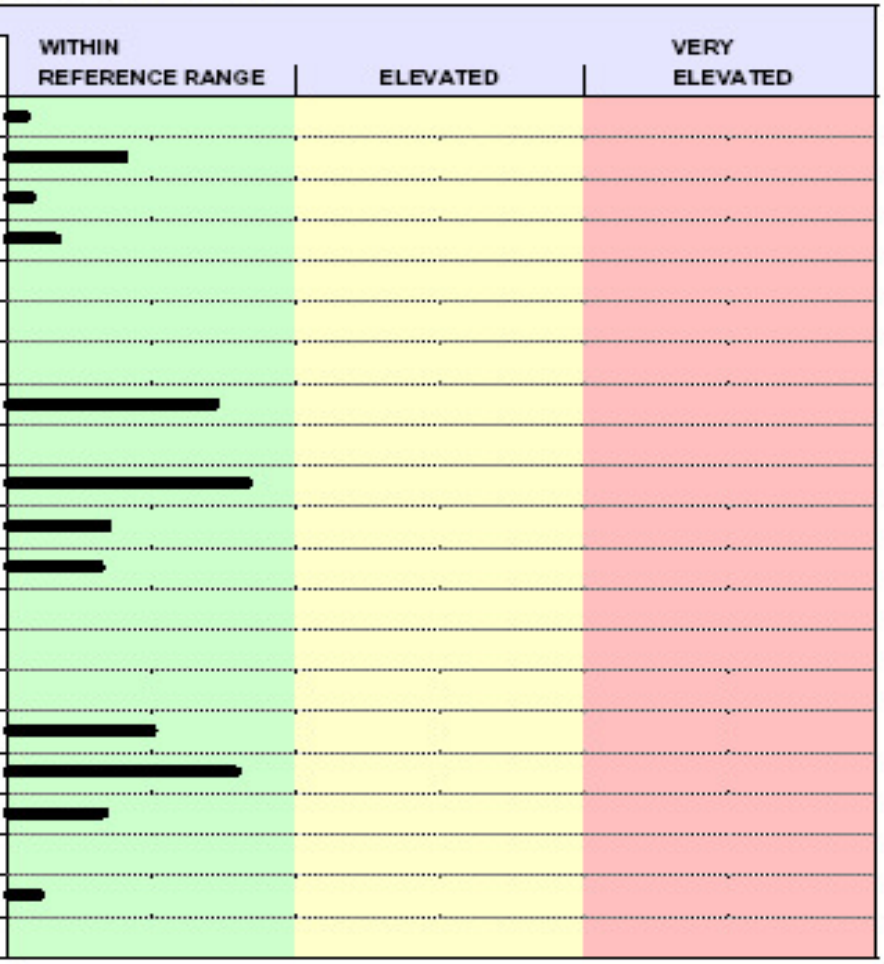
DOCTOR'S DATA INC

LAB #: U100401-2980-1
PATIENT: [redacted]
ID: [redacted]
SEX: Male
AGE: 11

CLIENT#: 31281
DOCTOR: N. Cem Kinaci, MD
Alman Hastanesi- Camlica - Universal Hospitals
Emniyet Mahallesi, Yunus Emre Sokak Num 6 K
Uskudar - Istanbul, 34433 TURKEY

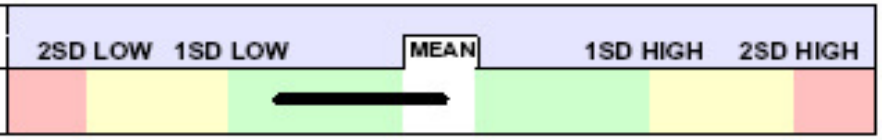
POTENTIALLY TOXIC METALS

METALS	RESULT µg/g creat	REFERENCE RANGE
Aluminum	2.9	< 60
Antimony	0.2	< 0.5
Arsenic	7.9	< 117
Barium	1.1	< 7
Beryllium	< dl	< 0.6
Bismuth	< dl	< 20
Cadmium	< dl	< 0.5
Cesium	8.7	< 12
Gadolinium	< dl	< 0.4
Lead	4.2	< 5
Mercury	1.7	< 5
Nickel	4.7	< 15
Palladium	< dl	< 0.3
Platinum	< dl	< 1
Tellurium	< dl	< 0.3
Thallium	0.4	< 0.8
Thorium	0.04	< 0.05
Tin	4.9	< 15
Titanium	< dl	< 15
Tungsten	0.06	< 0.6
Uranium	< dl	< 0.04



URINE CREATININE

	RESULT mg/dL	REFERENCE RANGE
Creatinine	66.6	25 - 180



URINE TOXIC METALS

DOCTOR'S DATA INC

LAB#: U090806-2540-1
PATIENT: [redacted]
SEX: Male
AGE: 8

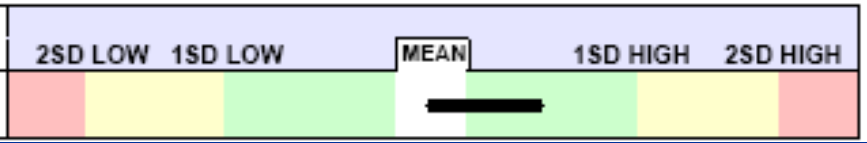
CLIENT#: 31281
DOCTOR: N. Cem Kinaci, MD
Alman Hastanesi- Camlica - Universal Hospitals Gr
Emniyet Mahallesi, Yunus Emre Sokak Num 6 Kisil
Uskudar - Istanbul, 34433 TURKEY

POTENTIALLY TOXIC METALS

METALS	RESULT µg/g CREAT	REFERENCE RANGE
Aluminum	99	< 60
Antimony	0.1	< 1.5
Arsenic	19	< 130
Beryllium	< dl	< 0.6
Bismuth	< dl	< 20
Cadmium	0.4	< 2
Lead	42	< 5
Mercury	1.4	< 5
Nickel	5.5	< 15
Platinum	< dl	< 1
Thallium	0.3	< 1.1
Thorium	< dl	< 0.5
Tin	5.2	< 15
Tungsten	0.1	< 1.5
Uranium	< dl	< 0.2

CREATININE

	RESULT mg/dL	REFERENCE RANGE
Creatinine	126	25 - 180



URINE TOXIC METALS

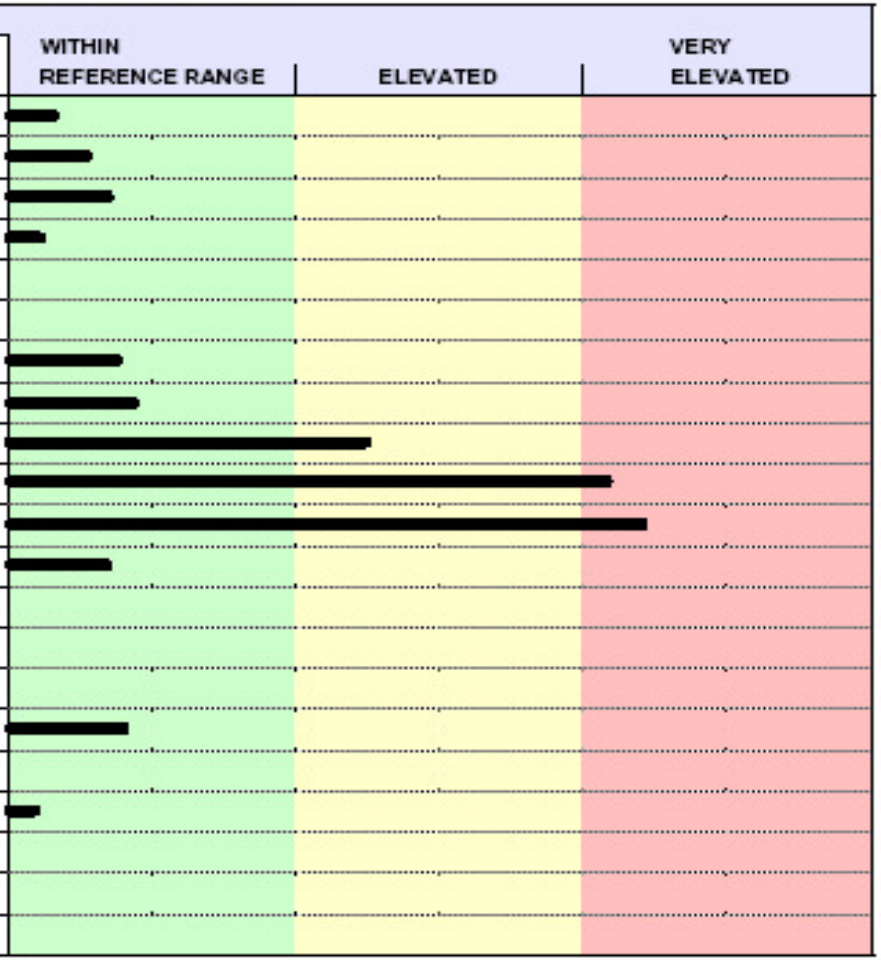
DOCTOR'S DATA INC

LAB #: U100401-2976-1
PATIENT: [redacted]
ID: [redacted]
SEX: Male
AGE: 39

CLIENT#: 31281
DOCTOR: N. Cem Kinaci, MD
Alman Hastanesi- Camlica - Universal Hospitals
Emniyet Mahallesi, Yunus Emre Sokak Num 6 Ki
Uskudar - Istanbul, 34433 TURKEY

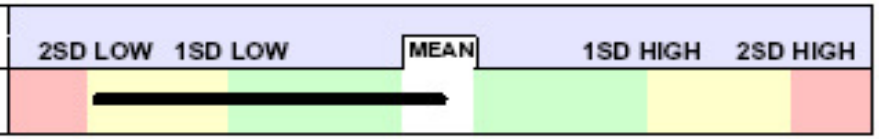
POTENTIALLY TOXIC METALS

METALS	RESULT µg/g creat	REFERENCE RANGE
Aluminum	3.7	< 25
Antimony	0.08	< 0.3
Arsenic	37	< 109
Barium	0.7	< 7
Beryllium	< dl	< 0.5
Bismuth	< dl	< 10
Cadmium	0.3	< 0.8
Cesium	3.9	< 9
Gadolinium	1	< 0.3
Lead	11	< 2
Mercury	11	< 3
Nickel	3.4	< 10
Palladium	< dl	< 0.3
Platinum	< dl	< 1
Tellurium	< dl	< 0.3
Thallium	0.2	< 0.5
Thorium	< dl	< 0.03
Tin	0.7	< 9
Titanium	< dl	< 15
Tungsten	< dl	< 0.4
Uranium	< dl	< 0.03



URINE CREATININE

	RESULT mg/dL	REFERENCE RANGE
Creatinine	46.3	45 - 225



URINE TOXIC METALS

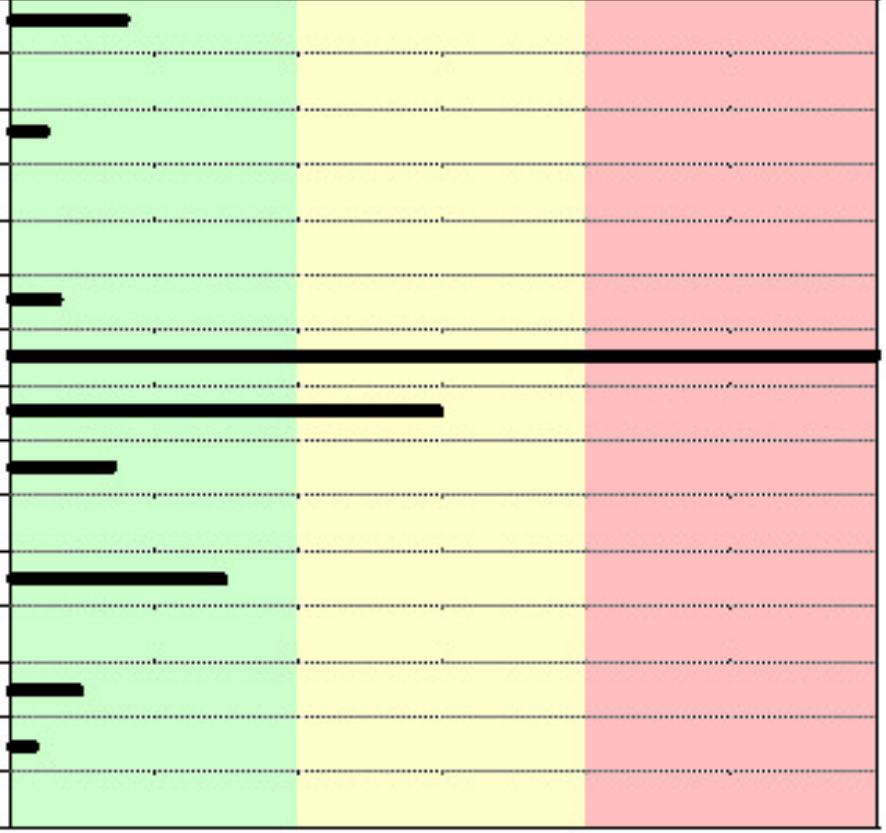
DOCTOR'S DATA INC

LAB#: U091103-2528-1
PATIENT: [redacted]
SEX: Female
AGE: 6

CLIENT#: 31281
DOCTOR: N. Cem Kinaci, MD
Alman Hastanesi- Camlica - Universal Hospitals
Emniyet Mahallesi, Yunus Emre Sokak Num 6 Ki
Uskudar - Istanbul, 34433 TURKEY

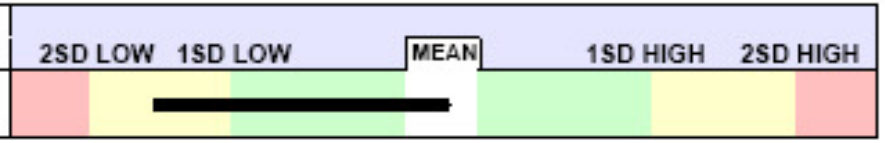
POTENTIALLY TOXIC METALS

METALS	RESULT µg/g CREAT	REFERENCE RANGE
Aluminum	23	< 60
Antimony	< dl	< 1.5
Arsenic	14	< 130
Beryllium	< dl	< 0.6
Bismuth	< dl	< 20
Cadmium	0.3	< 2
Lead	53	< 5
Mercury	9.9	< 5
Nickel	5.1	< 15
Platinum	< dl	< 1
Thallium	0.8	< 1.1
Thorium	< dl	< 0.5
Tin	3.4	< 15
Tungsten	0.1	< 1.5
Uranium	< dl	< 0.2



CREATININE

	RESULT mg/dL	REFERENCE RANGE
Creatinine	39.0	25 - 180



URINE TOXIC METALS

DOCTOR'S DATA INC.

LAB #: U100401-2977-1
PATIENT: [redacted]
ID: [redacted]
SEX: Female
AGE: 32

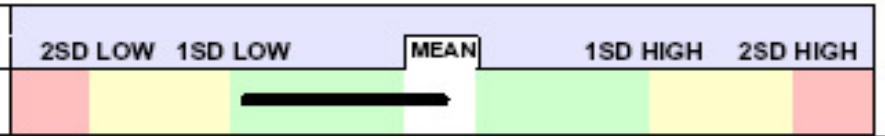
CLIENT#: 31281
DOCTOR: N. Cem Kinaci, MD
Alman Hastanesi- Camlica - Universal Hospitals G
Emniyet Mahallesi, Yunus Emre Sokak Num 6 Ki
Uskudar - Istanbul, 34433 TURKEY

POTENTIALLY TOXIC METALS

METALS	RESULT µg/g creat	REFERENCE RANGE
Aluminum	5.9	< 35
Antimony	0.1	< 0.4
Arsenic	10	< 117
Barium	1.1	< 7
Beryllium	< dl	< 0.6
Bismuth	< dl	< 15
Cadmium	< dl	< 1
Cesium	2.3	< 10
Gadolinium	< dl	< 0.4
Lead	32	< 2
Mercury	4.9	< 4
Nickel	3.5	< 12
Palladium	< dl	< 0.3
Platinum	< dl	< 1
Tellurium	< dl	< 0.3
Thallium	0.06	< 0.5
Thorium	0.01	< 0.03
Tin	0.8	< 10
Titanium	< dl	< 15
Tungsten	0.3	< 0.4
Uranium	< dl	< 0.04

URINE CREATININE

	RESULT mg/dL	REFERENCE RANGE
Creatinine	76.5	35 - 225



URINE TOXIC METALS

DOCTOR'S DATA INC.

LAB#: U090917-2577-1
PATIENT: [redacted]
SEX: Male
AGE: 6

CLIENT#: 31281
DOCTOR: N. Cem Kinaci, MD
Alman Hastanesi- Camlica - Universal Hospitals
Emniyet Mahallesi, Yunus Emre Sokak Num 6 Ki
Uskudar - Istanbul, 34433 TURKEY

POTENTIALLY TOXIC METALS

METALS	RESULT µg/g CREAT	REFERENCE RANGE	WITHIN REFERENCE RANGE / ELEVATED / VERY ELEVATED
Aluminum	21	< 60	
Antimony	0.4	< 1.5	
Arsenic	34	< 130	
Beryllium	< dl	< 0.6	
Bismuth	< dl	< 20	
Cadmium	< dl	< 2	
Lead	47	< 5	
Mercury	5.4	< 5	
Nickel	12	< 15	
Platinum	< dl	< 1	
Thallium	< dl	< 1.1	
Thorium	< dl	< 0.5	
Tin	7.6	< 15	
Tungsten	0.5	< 1.5	
Uranium	< dl	< 0.2	

CREATININE

	RESULT mg/dL	REFERENCE RANGE	2SD LOW / 1SD LOW / MEAN / 1SD HIGH / 2SD HIGH
Creatinine	37.0	25 - 180	

URINE TOXIC METALS

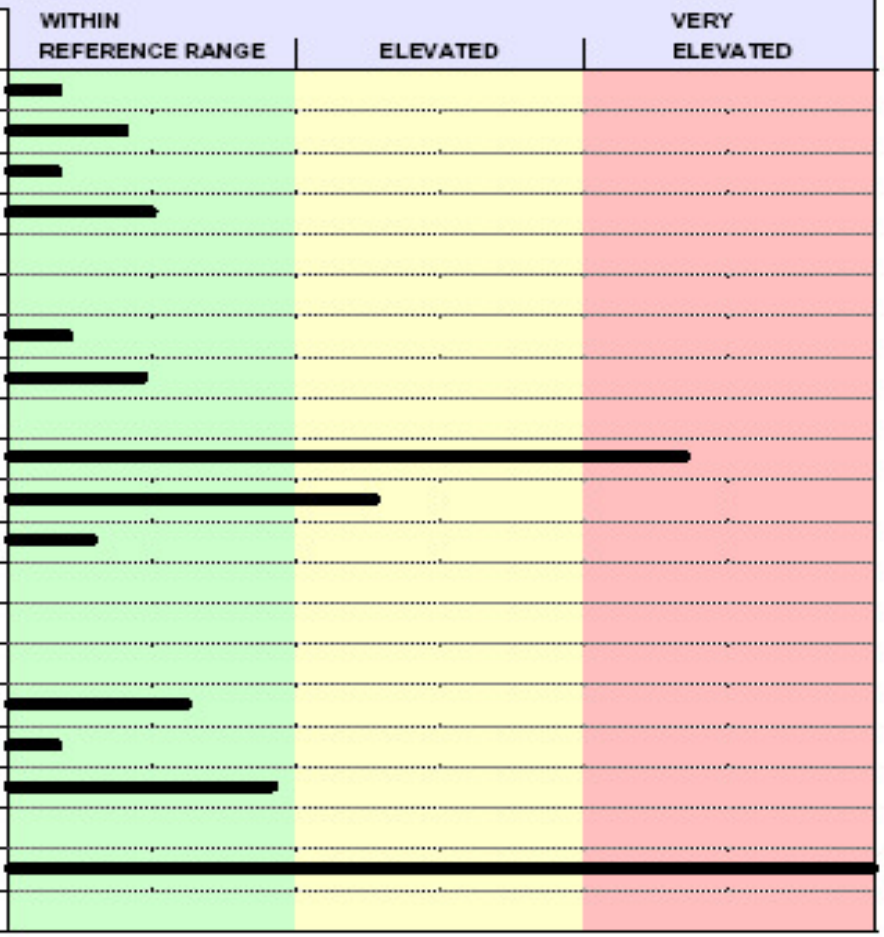
DOCTOR'S DATA INC.

LAB #: U100226-2498-1
PATIENT: [redacted]
ID: [redacted]
SEX: Male
AGE: 8

CLIENT#: 31281
DOCTOR: N. Cem Kinaci, MD
Alman Hastanesi- Camlica - Universal Hospitals
Emniyet Mahallesi, Yunus Emre Sokak Num 6 Ki
Uskudar - Istanbul, 34433 TURKEY

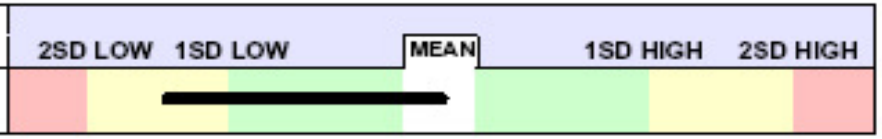
POTENTIALLY TOXIC METALS

METALS	RESULT µg/g creat	REFERENCE RANGE
Aluminum	9.8	< 60
Antimony	0.2	< 0.5
Arsenic	19	< 117
Barium	3.5	< 7
Beryllium	< dl	< 0.6
Bismuth	< dl	< 20
Cadmium	0.1	< 0.5
Cesium	5.6	< 12
Gadolinium	< dl	< 0.4
Lead	34	< 5
Mercury	7.9	< 5
Nickel	4.3	< 15
Palladium	< dl	< 0.3
Platinum	< dl	< 1
Tellurium	< dl	< 0.3
Thallium	0.5	< 0.8
Thorium	0.008	< 0.05
Tin	14	< 15
Titanium	< dl	< 15
Tungsten	25	< 0.6
Uranium	< dl	< 0.04



URINE CREATININE

	RESULT mg/dL	REFERENCE RANGE
Creatinine	41.5	25 - 180



URINE TOXIC METALS

DOCTOR'S DATA INC.

LAB #: U100401-2986-1
PATIENT: [redacted]
ID: [redacted]
SEX: Male
AGE: 7

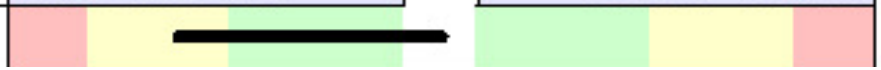
CLIENT#: 31281
DOCTOR: N. Cem Kinaci, MD
Alman Hastanesi- Camlica - Universal Hospitals
Emniyet Mahallesi, Yunus Emre Sokak Num 6 Ki
Uskudar - Istanbul, 34433 TURKEY

POTENTIALLY TOXIC METALS

METALS	RESULT µg/g creat	REFERENCE RANGE
Aluminum	51	< 60
Antimony	0.4	< 0.5
Arsenic	16	< 117
Barium	5.2	< 7
Beryllium	0.2	< 0.6
Bismuth	0.05	< 20
Cadmium	1.1	< 0.5
Cesium	6.6	< 12
Gadolinium	< dl	< 0.4
Lead	77	< 5
Mercury	0.9	< 5
Nickel	9.5	< 15
Palladium	< dl	< 0.3
Platinum	< dl	< 1
Tellurium	< dl	< 0.3
Thallium	0.2	< 0.8
Thorium	0.02	< 0.05
Tin	58	< 15
Titanium	6.9	< 15
Tungsten	1.4	< 0.6
Uranium	0.1	< 0.04

URINE CREATININE

	RESULT mg/dL	REFERENCE RANGE
Creatinine	44.2	25 - 180



URINE TOXIC METALS

DOCTOR'S DATA INC.

LAB#: U090707-2456-1
PATIENT: [redacted]
SEX: Male
AGE: 7

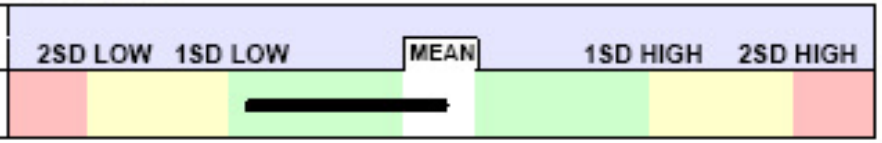
CLIENT#: 31281
DOCTOR: N. Cem Kinaci, MD
Alman Hastanesi- Camlica - Universal Hospitals
Emniyet Mahallesi, Yunus Emre Sokak Num 6 K
Uskudar - Istanbul, 34433 TURKEY

POTENTIALLY TOXIC METALS

METALS	RESULT µg/g CREAT	REFERENCE RANGE
Aluminum	8.1	< 60
Antimony	0.3	< 1.5
Arsenic	200	< 130
Beryllium	< dl	< 0.6
Bismuth	0.2	< 20
Cadmium	0.4	< 2
Lead	41	< 5
Mercury	45	< 5
Nickel	3.9	< 15
Platinum	< dl	< 1
Thallium	0.4	< 1.1
Thorium	< dl	< 0.5
Tin	5	< 15
Tungsten	0.2	< 1.5
Uranium	< dl	< 0.2

CREATININE

	RESULT mg/dL	REFERENCE RANGE
Creatinine	60.0	25 - 180



URINE TOXIC METALS

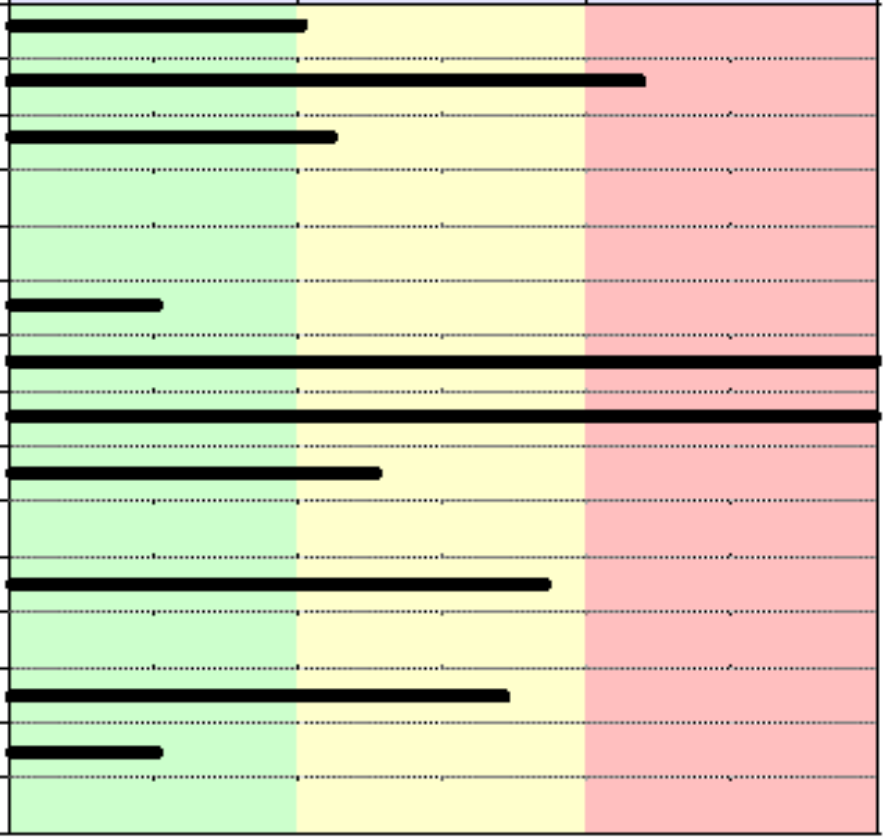
DOCTOR'S DATA INC.

LAB#: U090917-2574-1
PATIENT: [redacted]
SEX: Male
AGE: 13

CLIENT#: 31281
DOCTOR: N. Cem Kinaci, MD
Alman Hastanesi- Camlica - Universal Hospitals
Emniyet Mahallesi, Yunus Emre Sokak Num 6 K
Uskudar - Istanbul, 34433 TURKEY

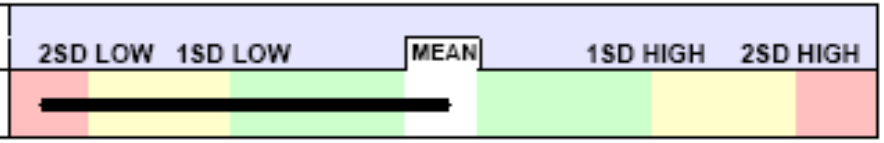
POTENTIALLY TOXIC METALS

METALS	RESULT µg/g CREAT	REFERENCE RANGE
Aluminum	36	< 35
Antimony	3.6	< 1
Arsenic	190	< 130
Beryllium	< dl	< 0.5
Bismuth	< dl	< 15
Cadmium	1	< 2
Lead	98	< 4
Mercury	29	< 4
Nickel	25	< 12
Platinum	< dl	< 1
Thallium	1.5	< 0.8
Thorium	< dl	< 0.3
Tin	39	< 10
Tungsten	0.5	< 1
Uranium	< dl	< 0.2



CREATININE

	RESULT mg/dL	REFERENCE RANGE
Creatinine	17.0	45 - 225



- Mercury and possibly other toxic metals present at
  high levels in autistic children.
- Every child with autism should do a
  DMSA challenge test.

- For chelation treatment, I 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.

Autism Neuroscience Conference

hosted by the Autism Research Centre (ARC), University of Cambridge

6th and 7th October 2008, The Royal Society, London, UK

PERFUSION CHANGES SECONDARY TO HEAVY METAL INTOXICATION DETECTED BY BRAIN PERFUSION SPECT IN CHILDREN WITH AUTISM

Cem Kinaci, Serpilgul Kinaci
Dept. of Nuclear Medicine, German Hospital, Istanbul – Turkey

Results: (683 patients)
All of them have elevated or very elevated lead and 21.38% of them have elevated or very elevated mercury and some other toxic heavy metals such as nickel (14.05%), aluminum (6.00%), tin (3.51%), thallium (3.51%), arsenic (2.78%), tungsten (2.64%), uranium (2.49%) on their DMSA provocated urine toxic metal analyses.

All of the patients had abnormal SPECT scans revealing focal areas of decreased perfusion.
Decreased perfusion of temporal (45.66%), frontal (29.91%), primary motor cortex (8.20%), primary somatosensorial cortex (3.88%), basal ganglia (4.08%), parietal (5.02%), occipital (2.01%) and cerebellar (1.21%) areas were noted on brain SPECT.

By contrast all patients had normal MRI findings.

CLEANING HEAVY METALS FROM THE BODY

What is CHELATION ?

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

Chelation is a method which eliminates 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:

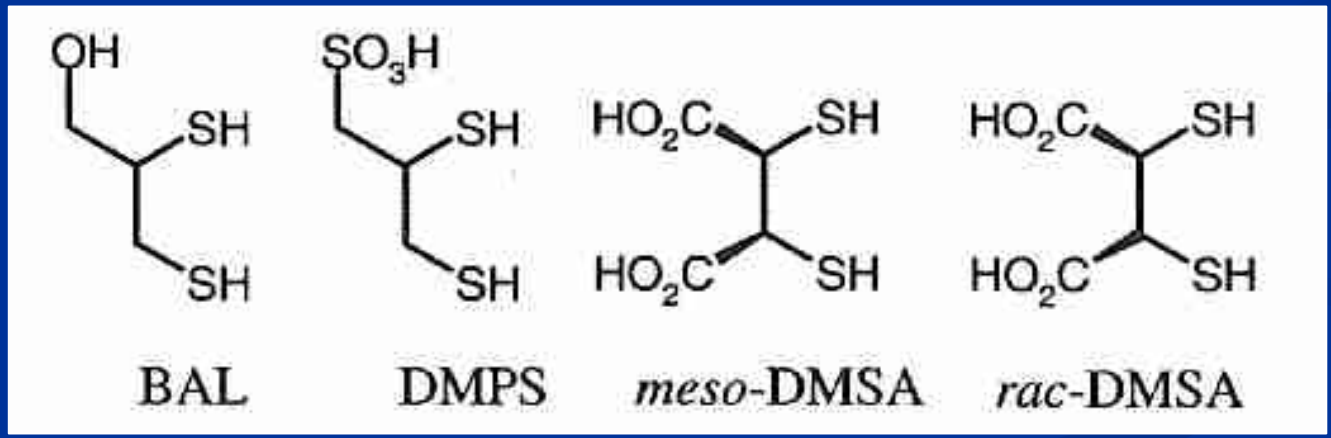
- Di-Mercapto-Propane-Sulfonate
  Transdermal patch or lotion
  can also be used to help the body detox.

- Other methods are CaEDTA and ALA alternating with DMSA and DMPS depending on which heavy metals are present in the body.

DMSA and Brain Metals

DMSA decreased brain Pb, Hg in:

- Rats, mice, and guinea pigs pre-loaded with Hg or Pb
- Rats pre-loaded or with ongoing Pb exposure



Toxicol 89 (1994) Toxicol Appl Pharm 133 (1995)
Free Radic Biol Med 21 (1996) Pharm Toxicol 80 (1997)
Chem Res Toxicol 1 (1996) Toxicol Appl Pharm 144 (1997)

- 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.

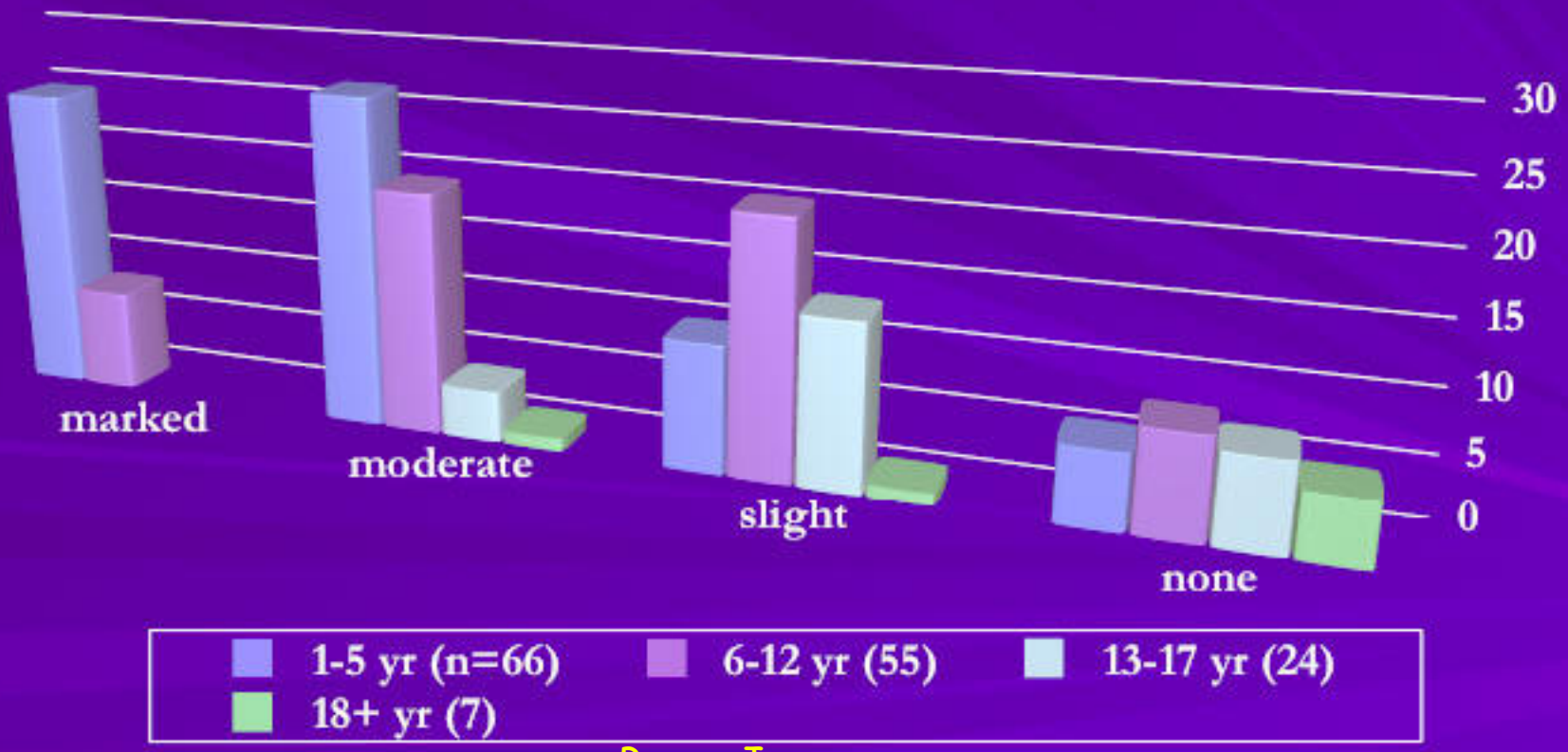
- Glutathione has the ability to bind toxic heavy metals and expel them from the body.

- It is scientifically proved that DMSA can detox the body from……

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

Chelation results

Improvements in 152 patients with DSMIV Autism after at least 4 months of LA/DMSA after DMSA



Bryan Jepson


CHELATION
WORKS!

- 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
- vanadium

- 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.
- 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 too low.

- 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 recomended !

- 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 too 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.

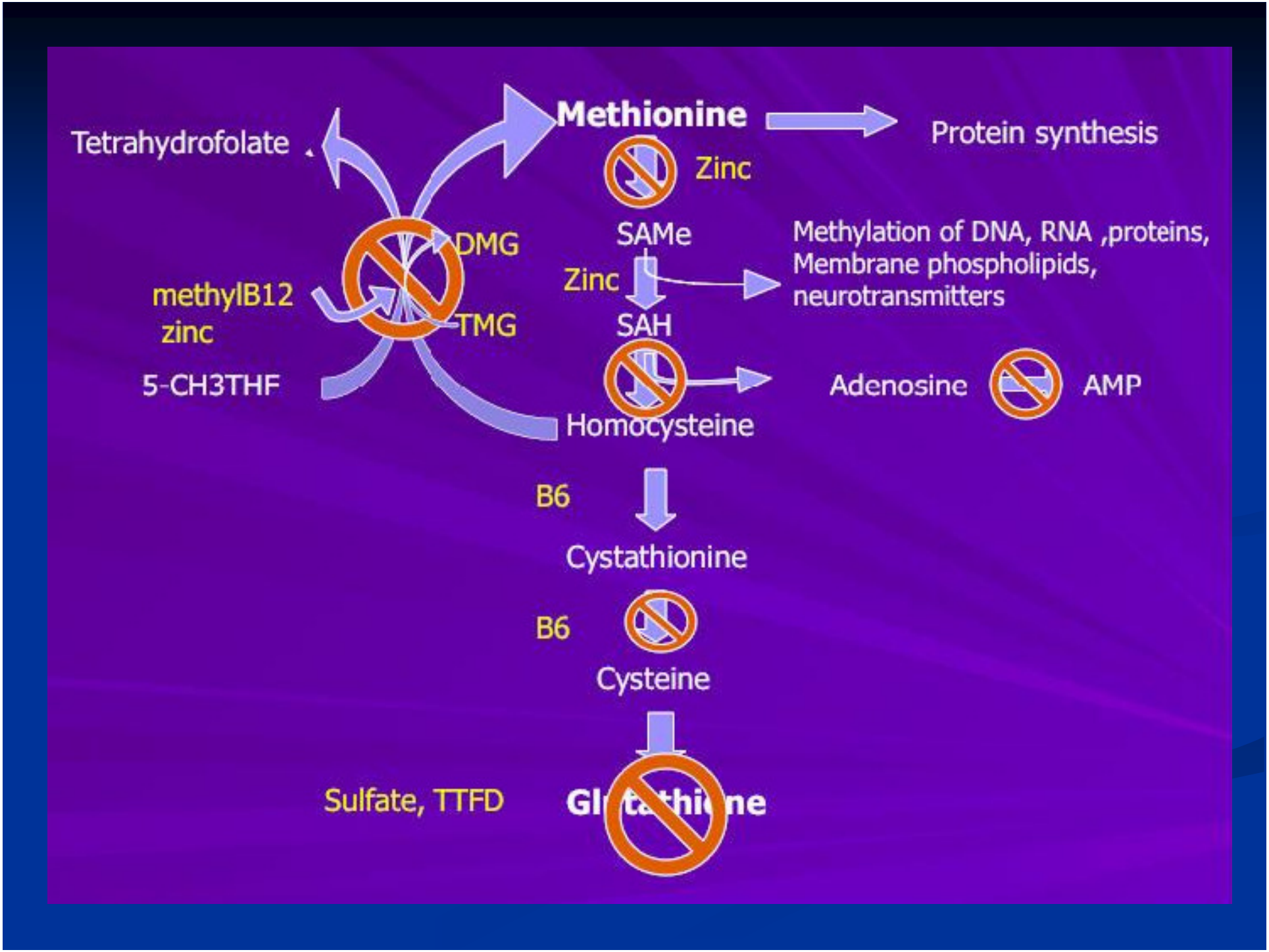
VITAMIN AND MINERAL SUPPORT

- 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.

- Molibdenum
- Deficiency leads to yeast and sulfation issues
- Reduces tungsten and copper

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


Methionine
Protein synthesis
Tetrahydrofolate
Zinc
SAMe
DMG
Methylation of DNA, RNA ,proteins,
Membrane phospholipids,
neurotransmitters
methylB12
zinc
Zinc
TMG
SAH
5-CH3THF
Adenosine
AMP
Homocysteine
B6
Cystathionine
B6
Cysteine
Sulfate, TTFD

- 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

- Vitamin C
- 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

- 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 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.

- 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.

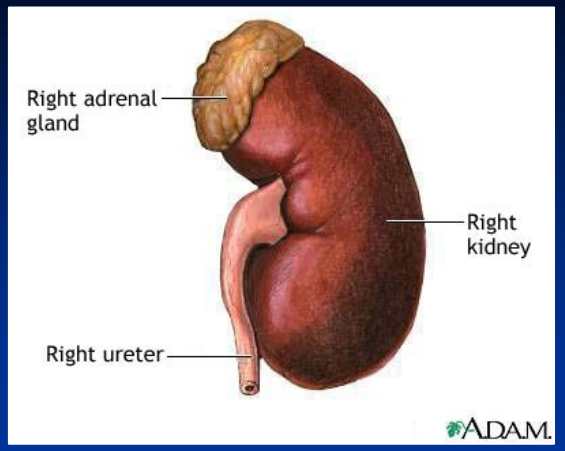
- Vitamin K
- an anti-oxidant that is more powerful than Vitamin E or CoQ10.
- Vitamin K, is able to potently inhibit glutathione depletion-mediated oxidative cell death.
- Vitamin K is involved in the development of the nervus system.

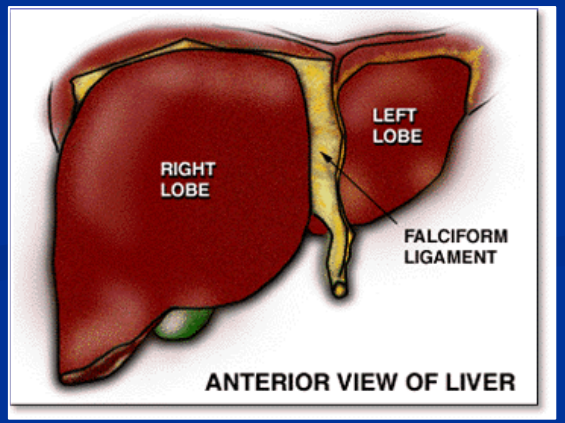
- # Vitamin D
  - Many patients with chronic inflammatory diseases like ASD are deficient in 25-hydroxyvitamin-D
  - Vitamin D has a role to decrease oxidative stress in brain.

- # Vitamin D Receptor gene
  - 92.5% of ASD patients in our study group have genetic mutations of VDR Taq and/or VDR Fok
  - VDR affects transcription of at least 913 genes and impacts processes ranging from calcium metabolism to expression of key antimicrobial peptides.
  - Many of these genes have long been associated with autoimmune diseases and cancers.

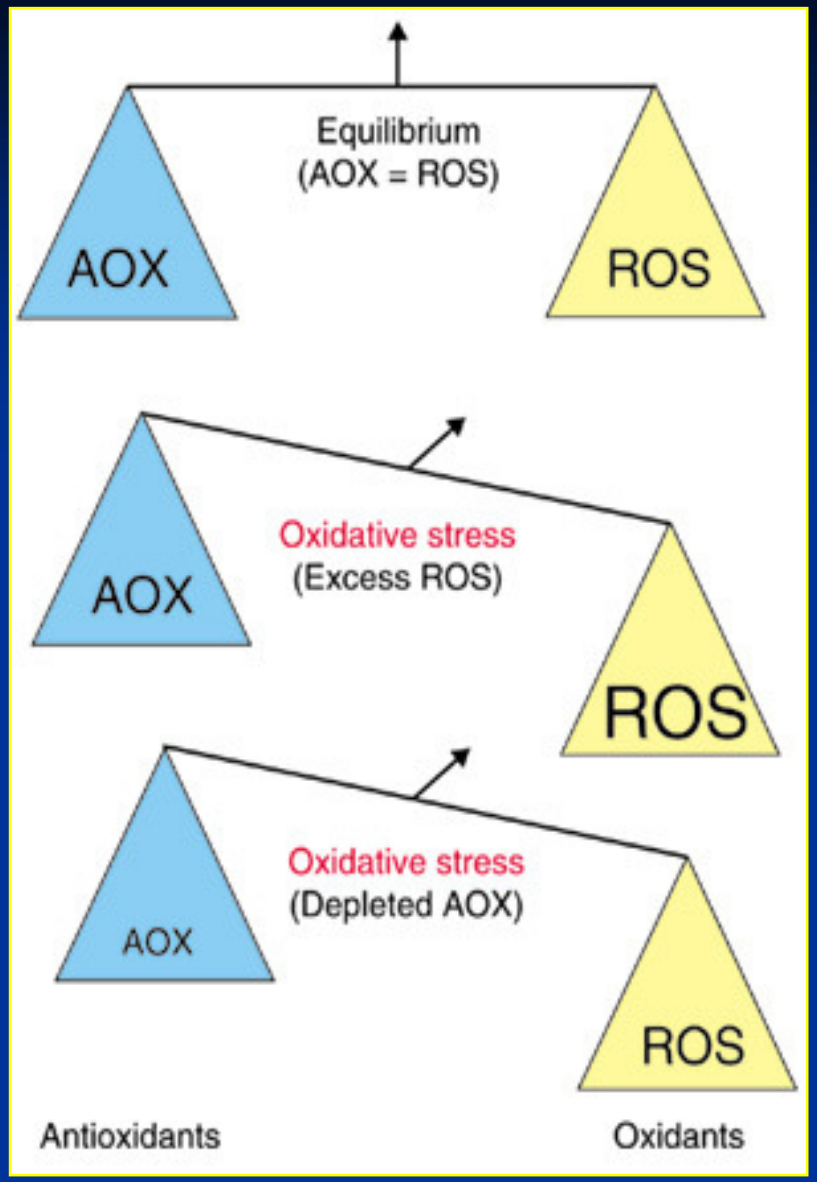
POSSIBLE SIDE EFFECTS OF CHELATION PROCEDURE AND PREVENTATIVE MEASURES.

- 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,
  - WBC
  - RBC
  - PLT





Oxidative Stress Theory of Autism



- Oxidative stress
  is a state of imbalance
  in which oxidants overwhelm
  the antioxidant defense, causing excess physical damage and
  impaired function in biomolecules.

- Genetic weakness in antioxidant protection: Metallothionein, Glutathione, APO-E2, etc.
- Incompetent intestinal and blood/brain barriers.
- Toxic amounts of mercury, lead, copper etc. invade the brain, damaging brain cells and disabling MT proteins needed to complete maturation of the brain.

Metabolic biomarkers of increased oxidative stress and impaired methylation capacity in children with autism[1,2]

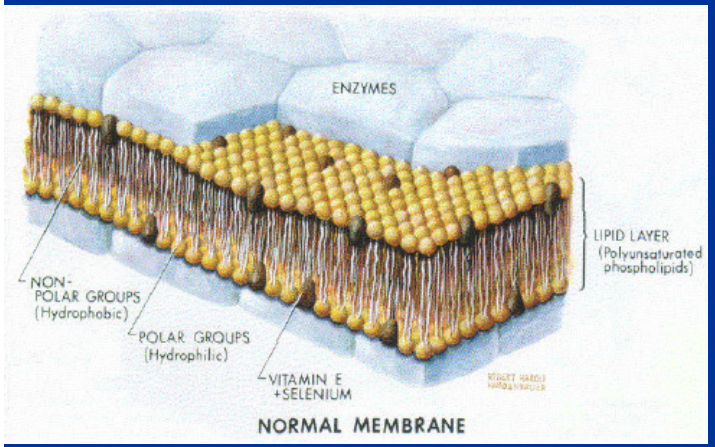
S Jill James, Paul Cutler, Stepan Melnyk, Stefanie Jernigan, Laurette Janak, David W Gaylor, and James A Neubrander

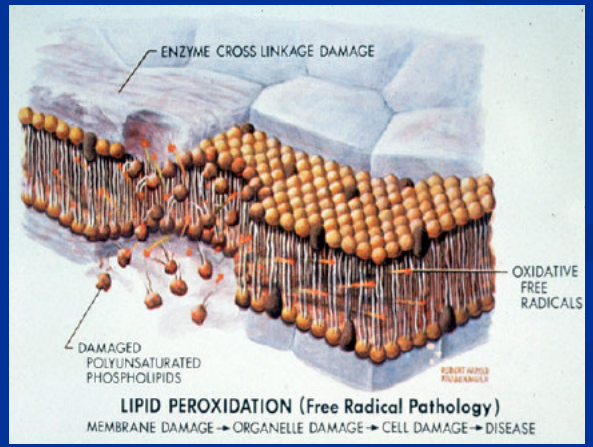
Consequences of Oxidative Stress Mirror Classic Symptoms of Autism

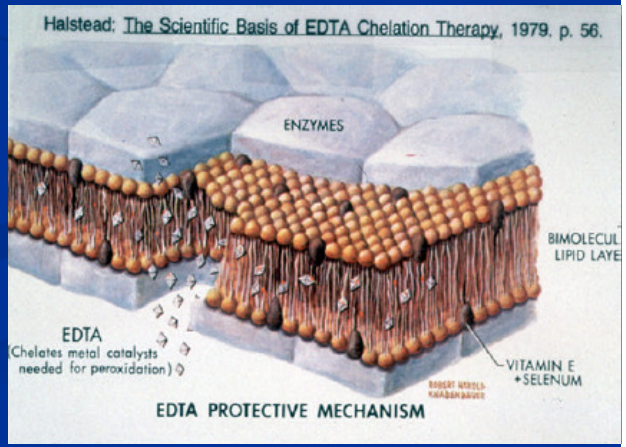
- Hypersensitivity to mercury and other toxic metals.
- Hypersensitivity to certain proteins (casein, gluten, etc)
- Poor immune function
- Disruption of the methylation cycle
- Inflammation of the brain & G.I. tract.
- Depletion of glutathione & metallothionein
- Excessive amounts of "unbound" copper

Free Radicals

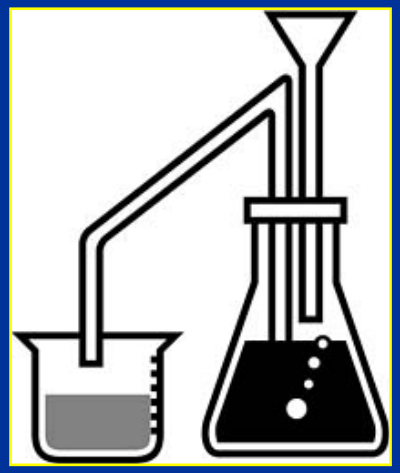
- Defined as an atom that has lost an electron and as a result, has a net (+) charge.
- Free radicals are explosive,
- chemically reactive species that if not controlled, cause damage to cell membranes by lipid peroxidation.



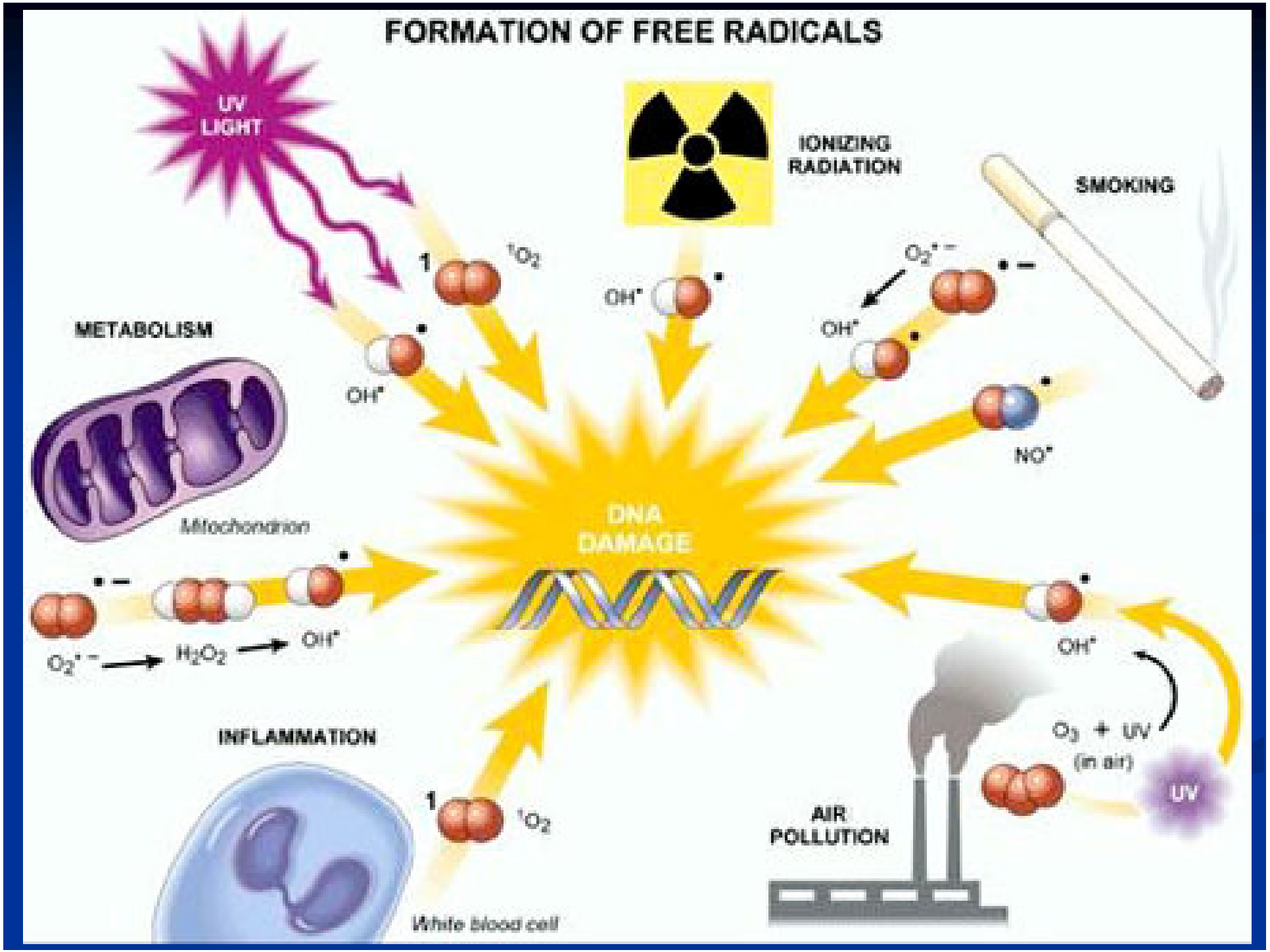




Sources of free radicals



- Radiation
- Sunlight
- Pollution
- Cooked or rancid fats
- Chemicals
- Heavy metals
- Insecticides
- Herbicides
- Halothane
- Chlorine
- MSG
- Aspartame
- Food color
- Cu and Fe
- Allergies
- Stress
- Infections (such as candida)


FORMATION OF FREE RADICALS
UV LIGHT
IONIZING RADIATION
SMOKING
METABOLISM
Mitochondrion
DNA DAMAGE
INFLAMMATION
White blood cell
AIR POLLUTION
(in air)
UV

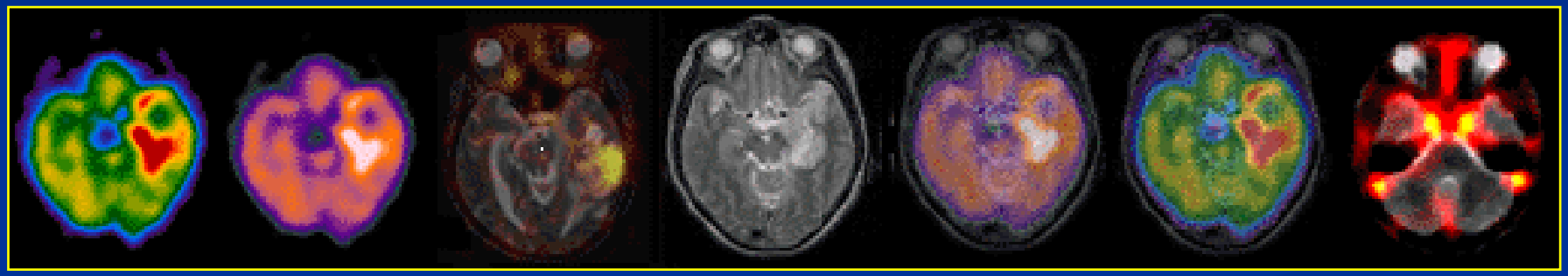
Free radicals are increased by

- Excessive Iron and Copper
- Other inflamatory problems such as allergies.

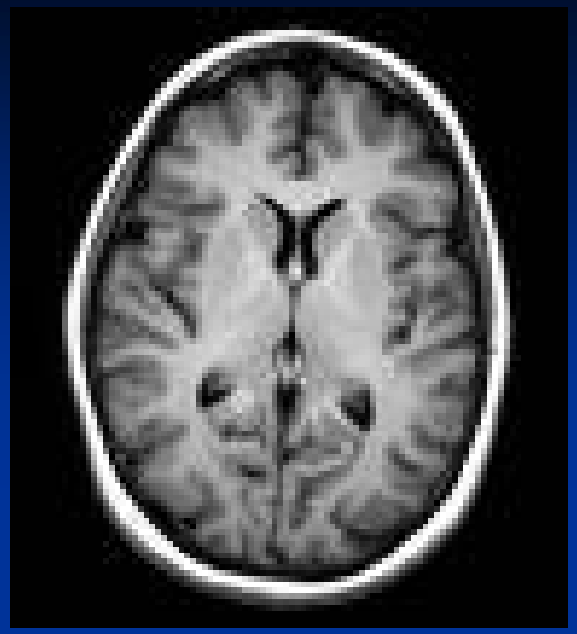
Free radicals are controlled by antioxidant nutrients

Vitamin C	Zinc
Vitamin E	Carnosine
Vitamin A	Carnitine
B vitamins	CoQ10
Selenium	DHA
Magnesium	Vanilla

DESCRIPTION OF BRAIN DAMAGE



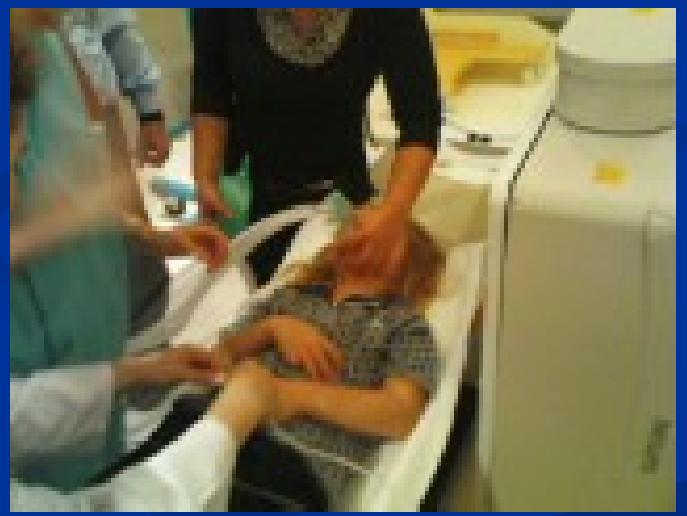
SPECT



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,
  (**S**ingle **P**hoton **E**mission **C**omputed **T**omography)
  has been proven effective in this task
  and it is the primary tool to objectively measure
  the effectiveness of HBOT on patients.



- Specifically, SPECT scanning show actual brain functioning, in visual terms.

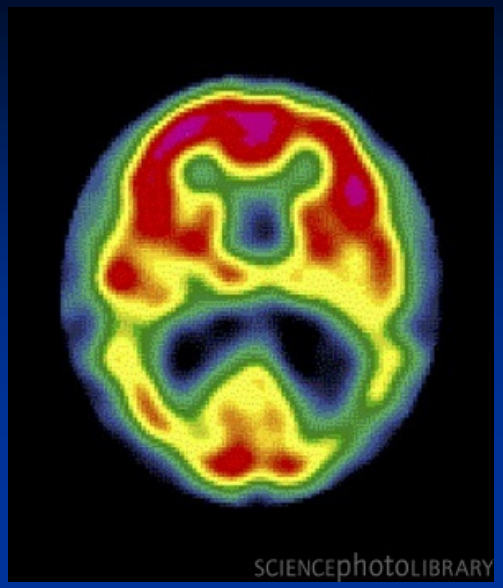
- It can help doctors to see
  - how blood is flowing through different areas within a patient's brain,
  - visualize brain metabolism,
  - and make a better diagnosis of his/her condition.

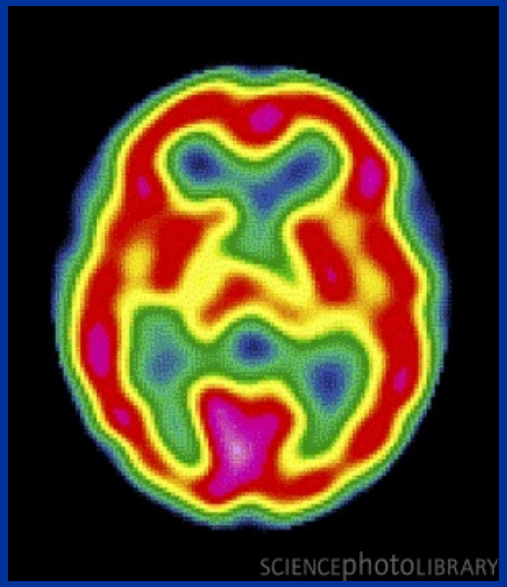
During SPECT scanning, a radioactive "tracer" agent is injected into a vein in the hand or arm.

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.



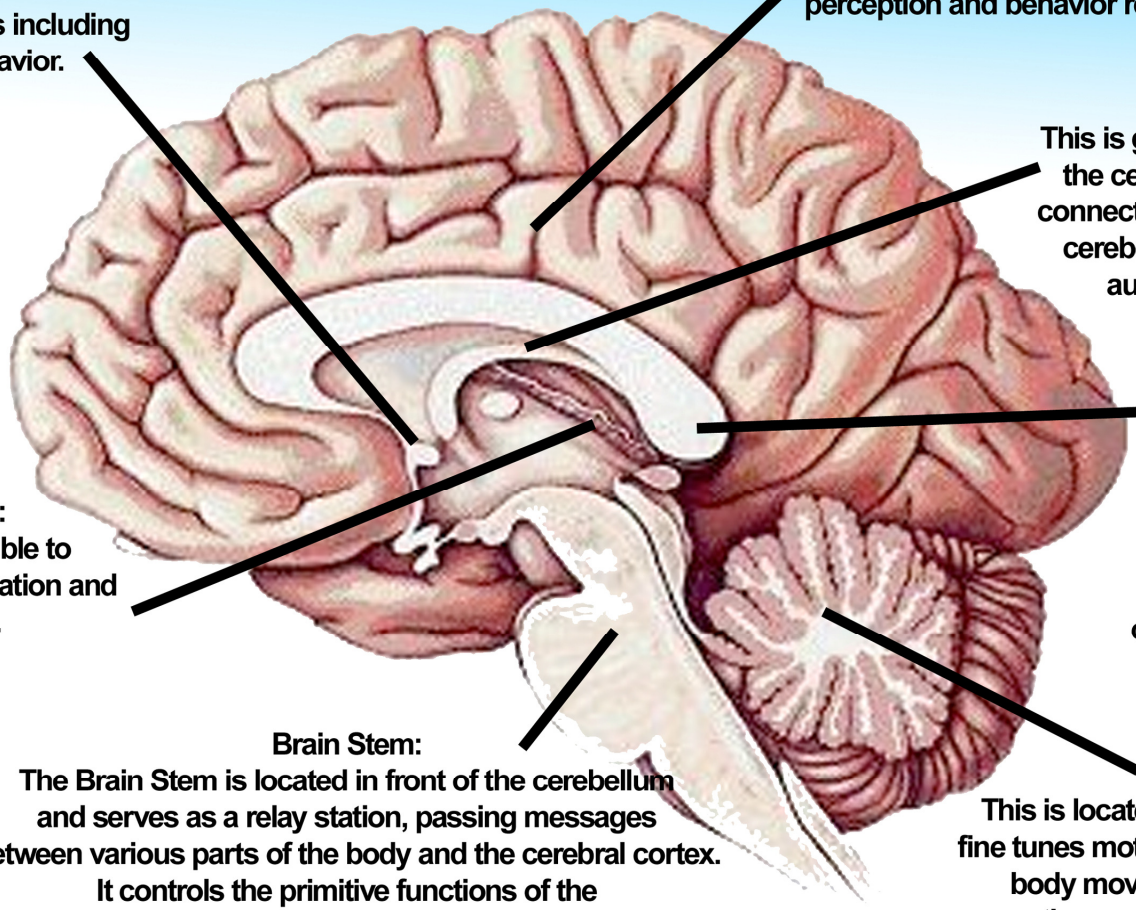


- As inert (dead) cells do not absorb the tracer at all,
- **SPECT** scanning can distinguish between living and dead (necrotic) tissue.
- **SPECT** scanning can also identify between recoverable brain cells (referred to as sleeping cells, idling neurons, or the ischemic penumbra).

Parts of the Brain Affected by Autism

Cerebral Cortex:
A thin layer of gray matter on the surface of the cerebral hemispheres. two thirds of this area is deep in the tissues and folds. this area of the brain is responsible for higher mental functions, general movement, perception and behavior reactions.

Amygdala:
This is responsible for all emotional responses including aggressive behavior.



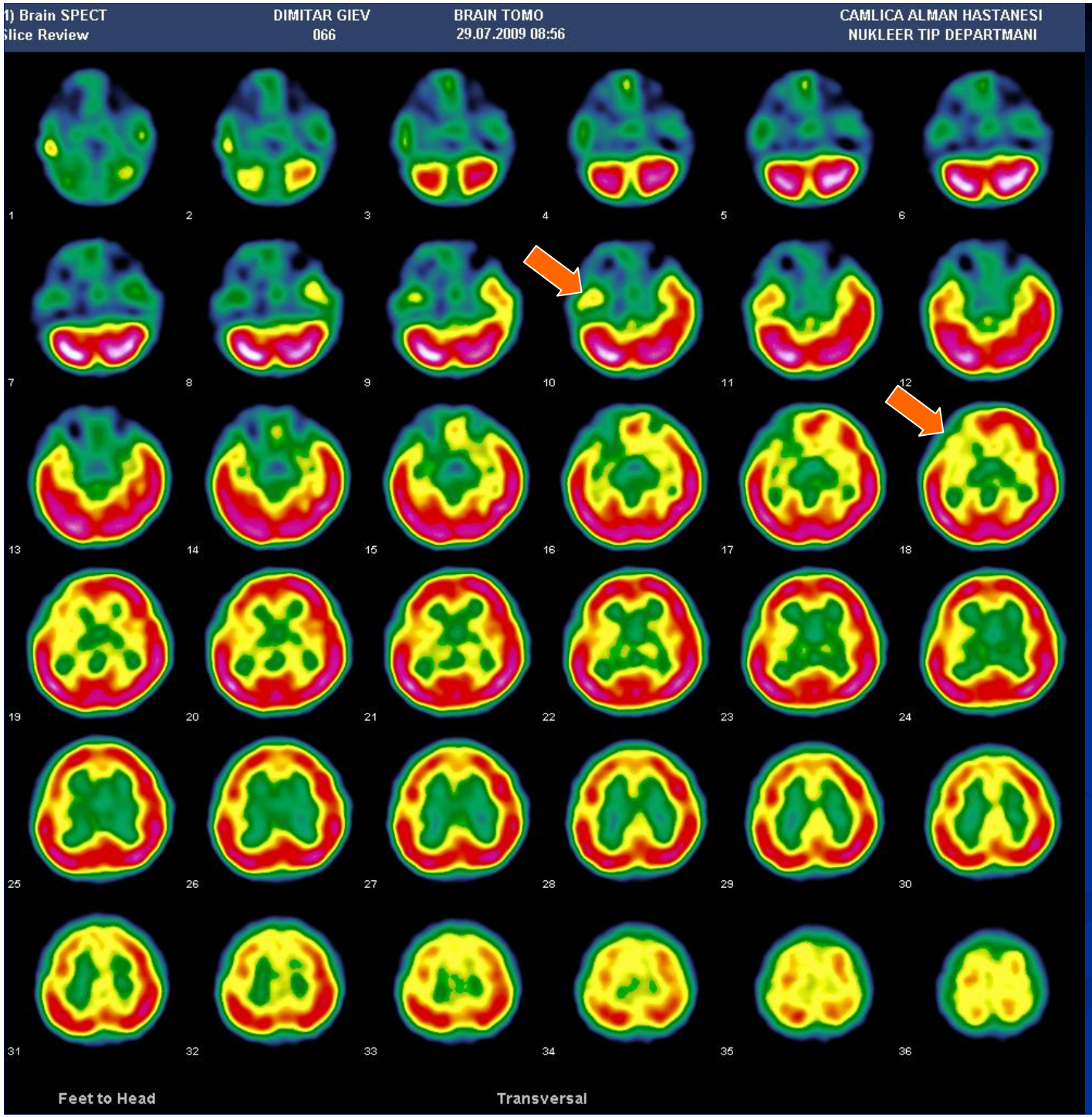
Basal Ganglia:
This is gray masses deep within the cerebral hemisphere that connectes the cerebrum and the cerebellum. It helps regulate automatic movement.

Corpus Callosum:
This consists of closely packed bundles of fibers that connect the right and left hemispheres of the brain and allows them to communicate with one another.

Hippocampus:
This makes it possible to remember new information and recent events.

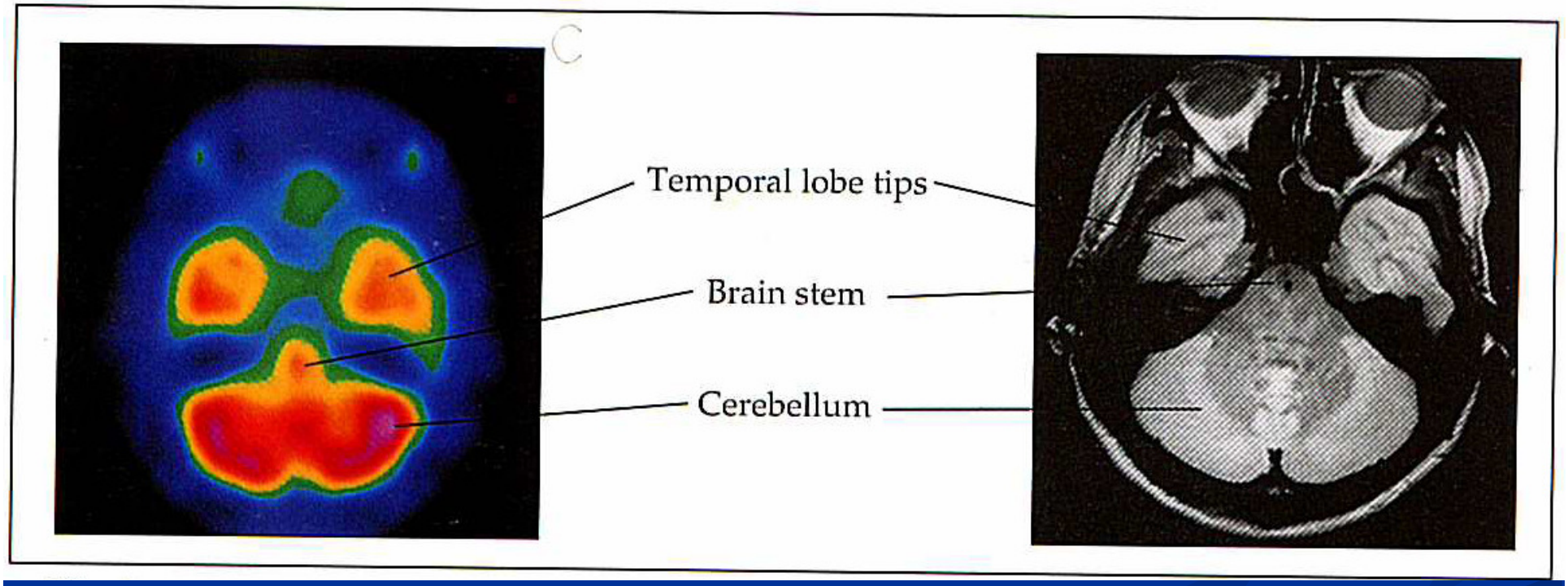
Brain Stem:
The Brain Stem is located in front of the cerebellum and serves as a relay station, passing messages between various parts of the body and the cerebral cortex. It controls the primitive functions of the body essential to survival including breathing and heart rate.

Cerebellum:
This is located at the back of the brain. It fine tunes motor activity, regulates balance, body movements, coordination and the muscles used for speaking

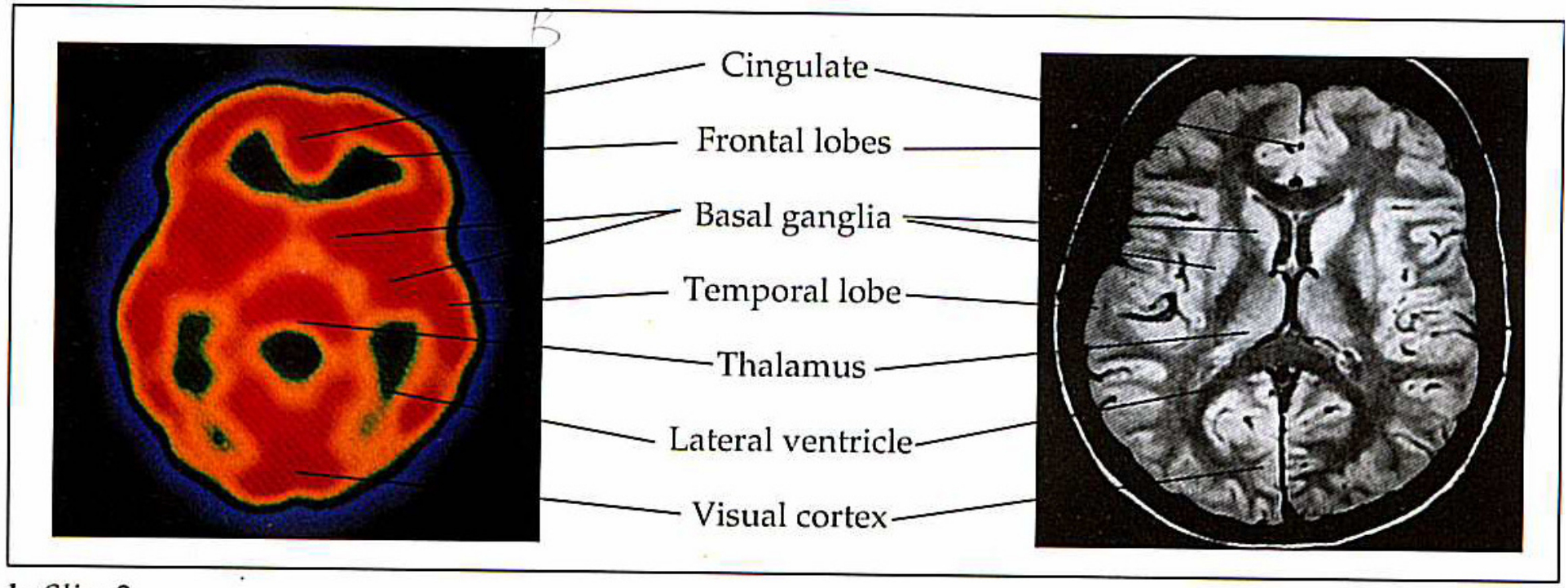


Case :
8 YO boy with autism has decreased function at right temporal and right frontal areas.

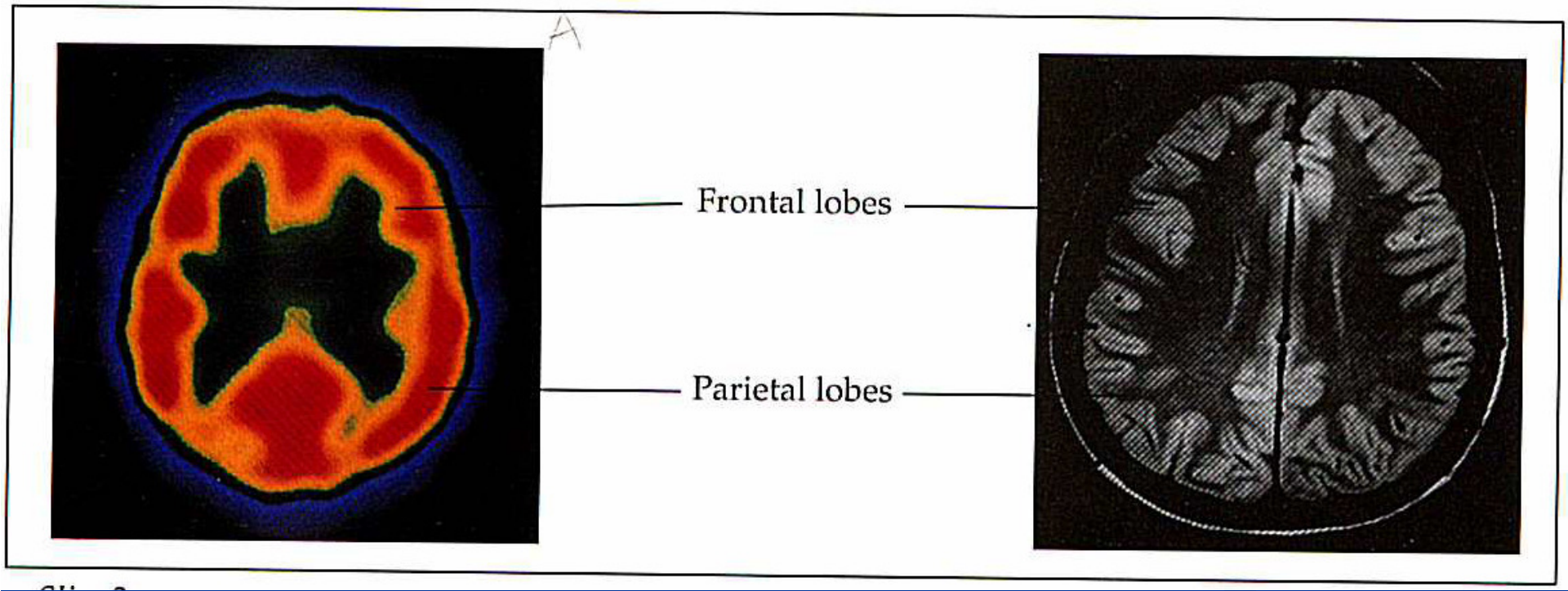
Normal cerebral perfusion in Tc99m HMPAO Brain SPECT Scan



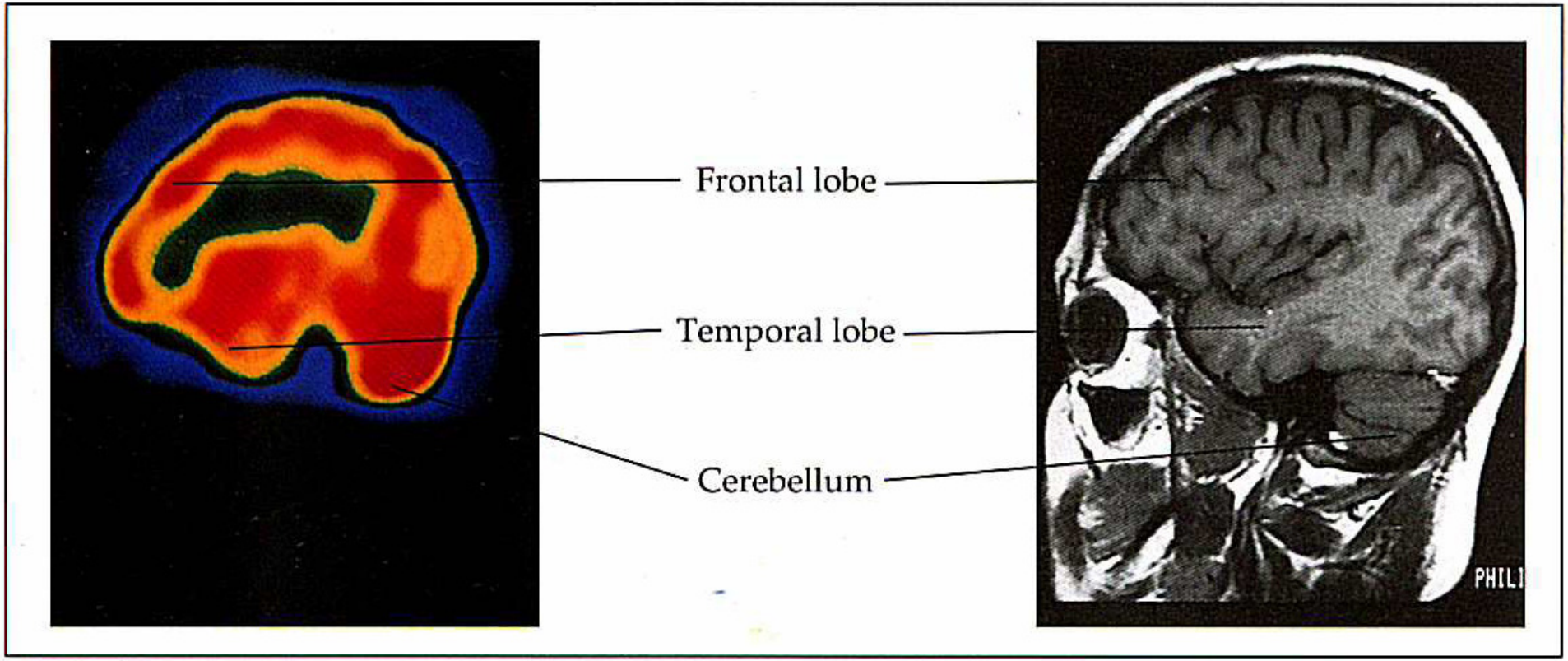
Normal cerebral perfusion in Tc99m HMPAO Brain SPECT Scan



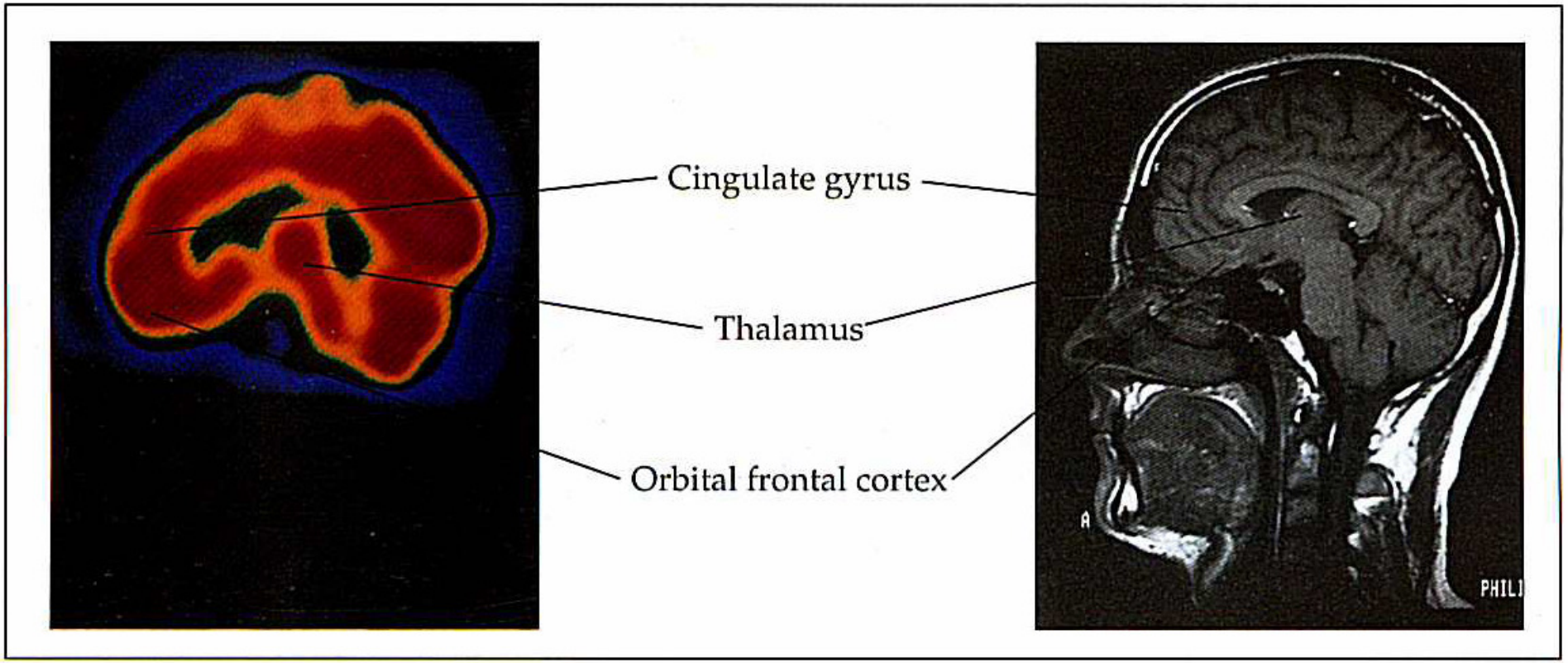
Normal cerebral perfusion in Tc99m HMPAO Brain SPECT Scan



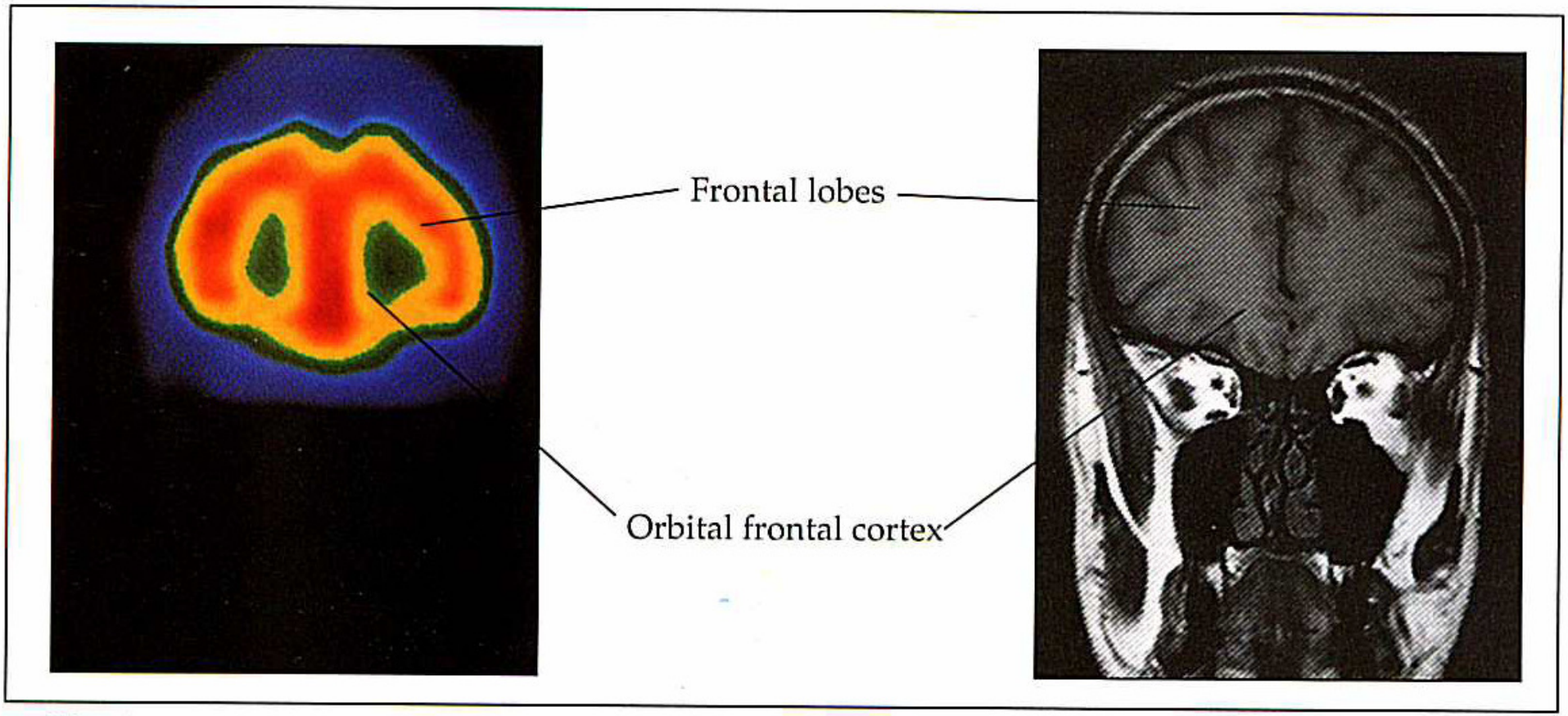
Normal cerebral perfusion in Tc99m HMPAO Brain SPECT Scan



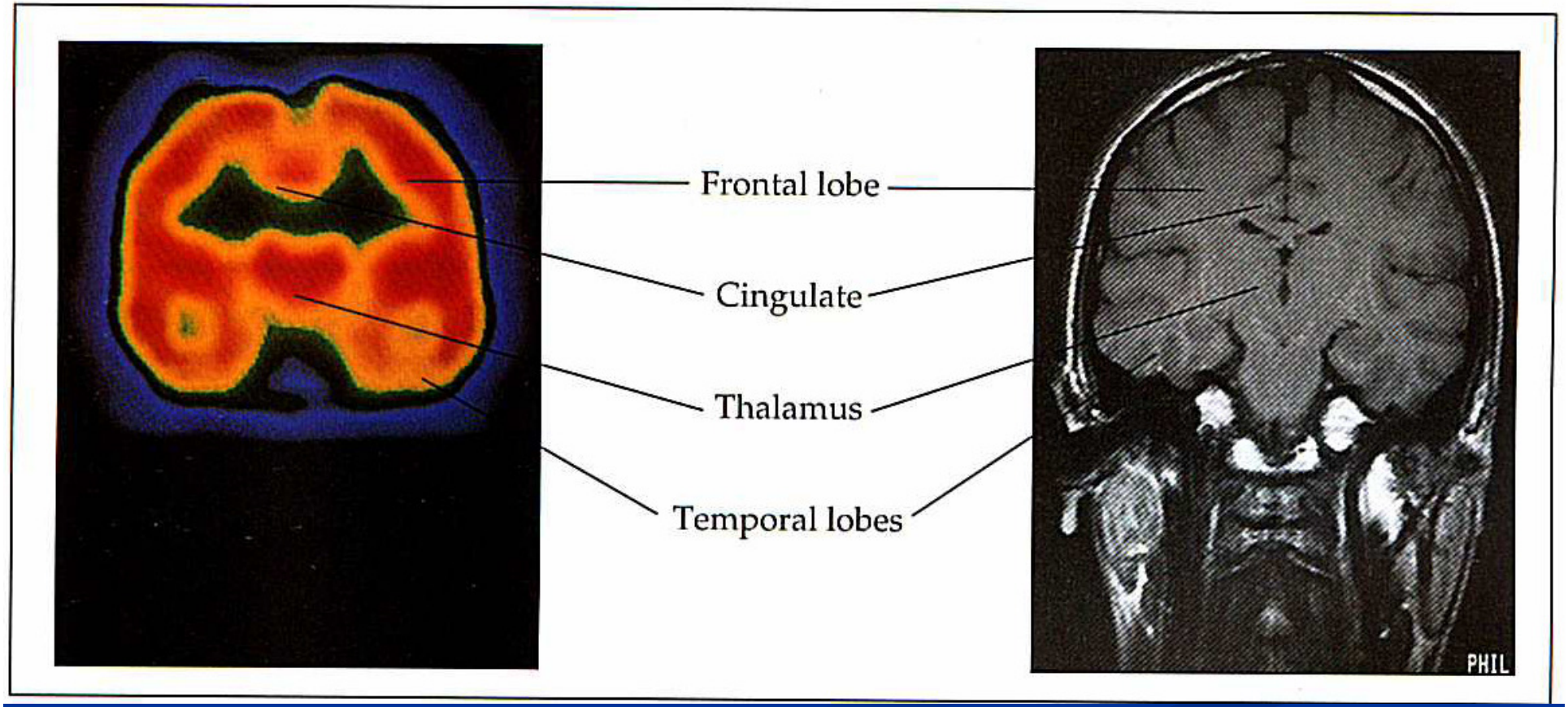
Normal cerebral perfusion in Tc99m HMPAO Brain SPECT Scan



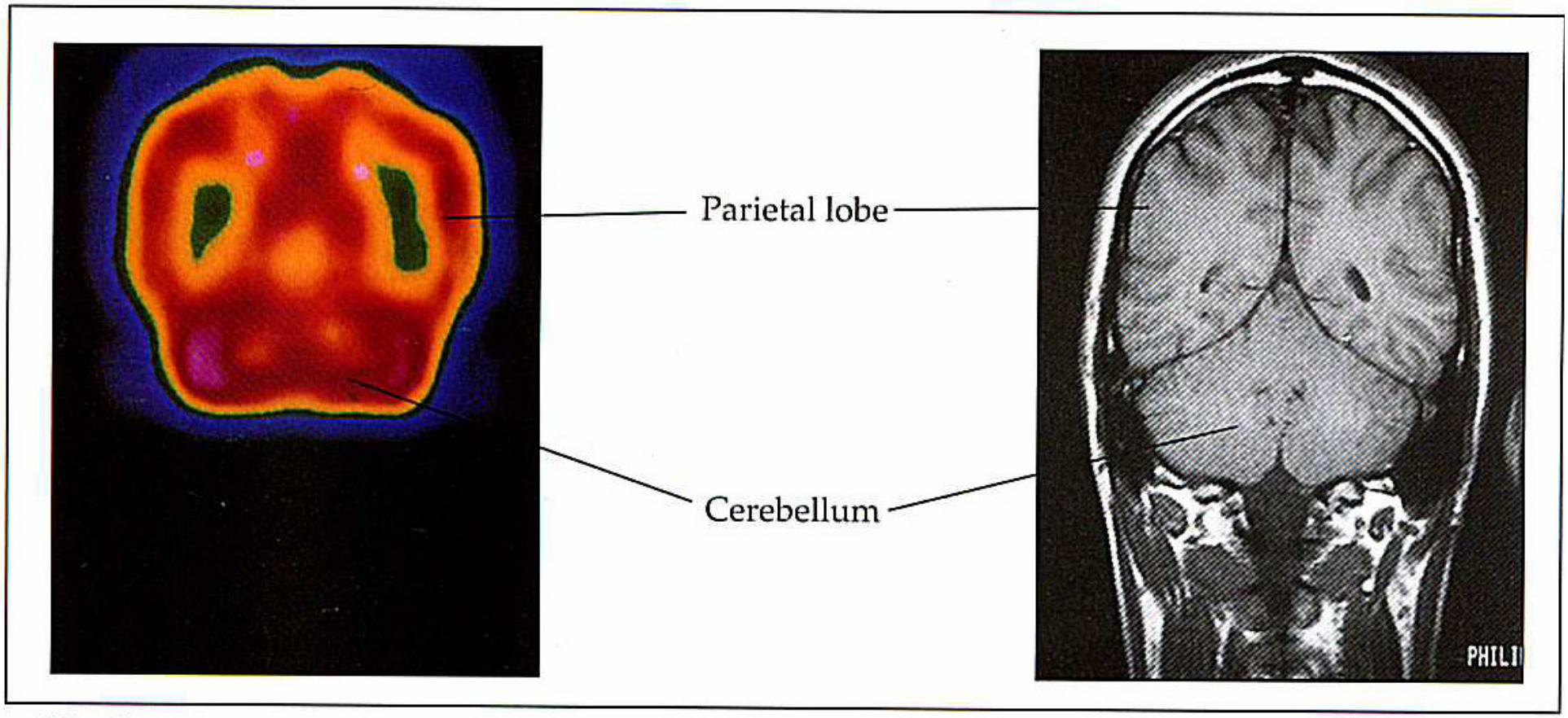
Normal cerebral perfusion in Tc99m HMPAO Brain SPECT Scan

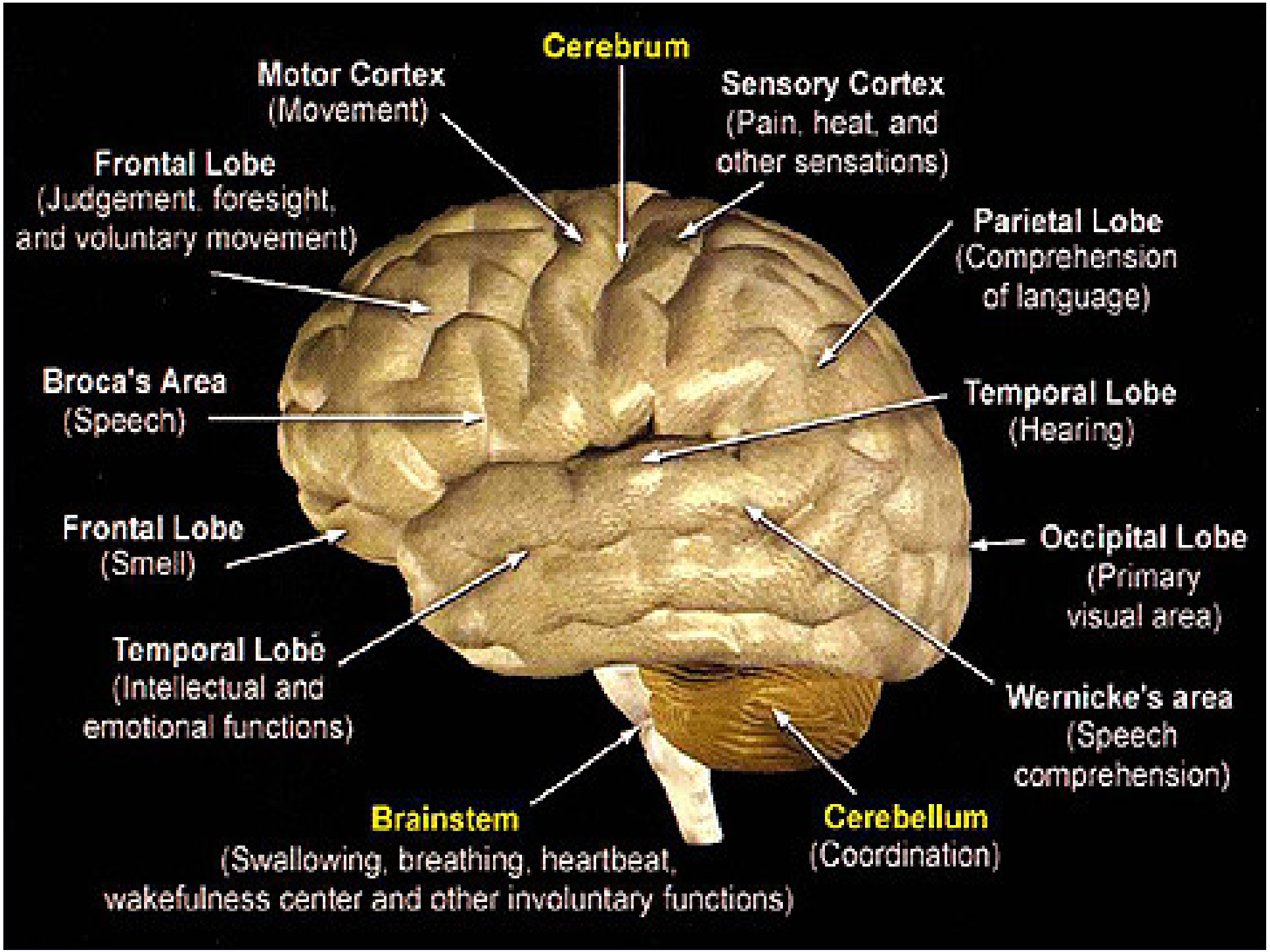


Normal cerebral perfusion in Tc99m HMPAO Brain SPECT Scan

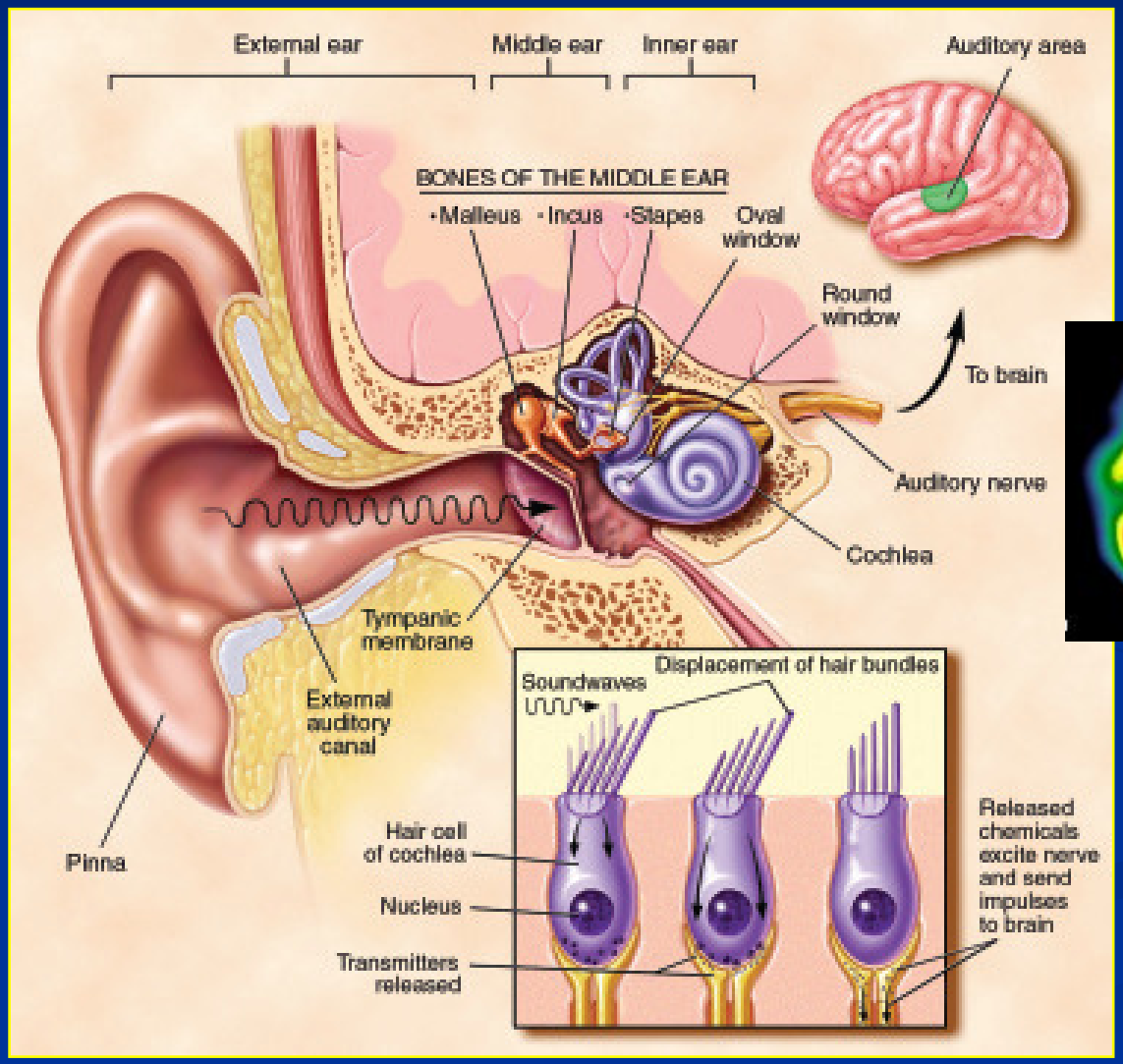


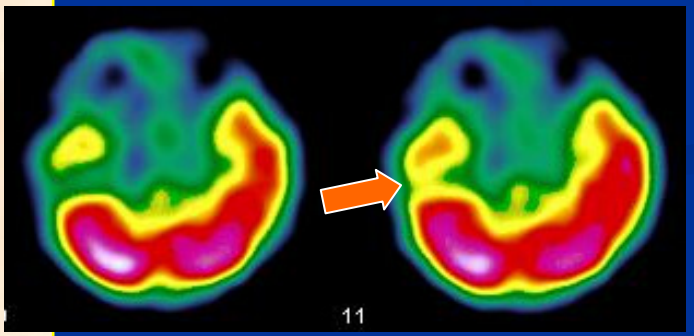
Normal cerebral perfusion in Tc99m HMPAO Brain SPECT Scan




Cerebrum
Motor Cortex
(Movement)
Sensory Cortex
(Pain, heat, and
other sensations)
Frontal Lobe
(Judgement, foresight,
and voluntary movement)
Parietal Lobe
(Comprehension
of language)
Broca's Area
(Speech)
Temporal Lobe
(Hearing)
Frontal Lobe
(Smell)
Occipital Lobe
(Primary
visual area)
Temporal Lobe
(Intellectual and
emotional functions)
Wernicke's area
(Speech
comprehension)
Brainstem
(Swallowing, breathing, heartbeat,
wakefulness center and other involuntary functions)
Cerebellum
(Coordination)

WE NEED THE AUDITORY AREA IN THE BRAIN AS WE NEED EARS AND NERVES

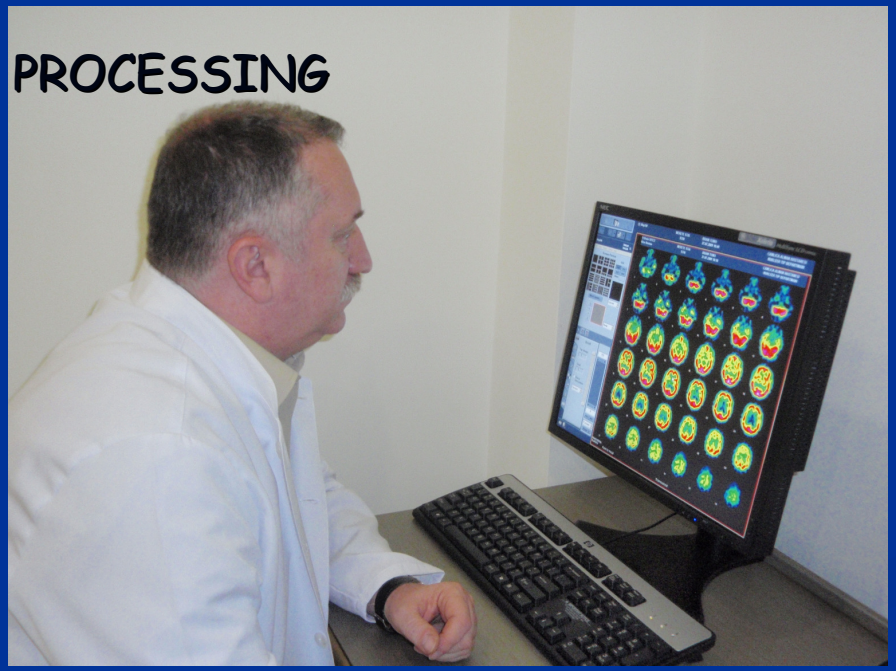




SCANNING

RECOVERY

PROCESSING



DISCUSSION

UNIVERSAL CAMLICA HOSPITAL Nuclear Medicine Department - ISTANBUL

- 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.

Cerebral Hypoperfusion in Autistics has been Correlated Clinically with:

- Repetitive, self-stimulatory, and unusual behaviors including resistance to changes in routine and environment have been correlated with decreased blood flow to the thalamus
  - Starkstein S. E., Vazquez S., Vrancic D., et al.
    SPECT findings in mentally retarded autistic individuals.
    J Neuropsychiatry Clin Neurosci 2000; 12: 370-375.

- "Obsessive desire for sameness" and "impairments in communication and social interaction" have been correlated with decreased blood flow to the temporal lobes
  - Ohnishi T., Matsuda H., Hashimoto T., et al.
    Abnormal regional cerebral blood flow in childhood autism.
    Brain 2000; 123: 1838-1844.

Cerebral Hypoperfusion in Autistics has been Correlated Clinically with:

- Impairments in processing facial expressions and emotions have been correlated with decreased blood flow to the temporal lobes and amygdala
  - Critchley H. D., Daly E. M., Bullmore E. T., et al.

    The functional neuroanatomy of social behaviour: changes in cerebral blood flow when people with autistic disorder process facial expressions.

    Brain 2000; 123: 2203-2212.

- Trouble recognizing familiar faces
  - Pierce K., Haist F., Sedaghat F., Courchesne E.

    The brain response to personally familiar faces in autism: findings of fusiform activity and beyond.

    Brain 2004; 127: 2703-2716.

Cerebral Hypoperfusion in Autistics has been Correlated Clinically with:

- Decreased language development
  - Wilcox J., Tsuang M. T., Ledger E., Algeo J., Schnurr T.
    Brain perfusion in autism varies with age.
    Neuropsychobiology 2002; 46: 13-16.

- and auditory processing have been correlated with decreased blood flow to Wernicke's and Brodmann's area.
  - Boddaert N., Zilbovicius M.
    Functional neuroimaging and childhood autism.
    Pediatr Radiol 2002; 32: 1-7.

- Decreased IQ
  - Hashimoto T., Sasaki M., Fukumizu M., Hanaoka S., Sugai K., Matsuda H.
    Single-photon emission computed tomography of the brain in autism: effect of the developmental level.
    Pediatr Neurol 2000; 23: 416-420.

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

1st Balkan Congress of Nuclear Medicine
April 5-7, 2012 - ANTALYA

DOES BRAIN PERFUSION SPECT MAY PLAY A ROLE TO PLAN THE TREATMENT OF NEUROINFLAMATION IN THE CHILDREN WITH AUTISM SPECTRUM DISORDERS ?

KINACI Cem[1], ALAN Mustafa[2], KINACI Serpilgul[3]

[1]Nuclear Medicine Physician, Acibadem/Sistina Hospital, Skopje, Macedonia.
[2]Aerospace Medicine Physician, Hiperox Hyperbaric Oxygen Theraphy Center, Antalya, Turkey.
[3]Advicer, Acibadem/Sistina Hospital, Skopje, Macedonia.

- If we agree that mental disorders and aberrant behaviors are related to functional brain problems, and that SPECT imaging is a reliable measure of regional cerebral blood flow and thus activity patterns,
- How can we not take advantage of this valuable tool when faced with complex and unresponsive patients?
- How can we evaluate brain function unless we look?
- Otherwise, we are left to deduce or guess what may be going on in our patients' brains.
- In experienced hands, SPECT scans can be helpful in numerous problems that commonly present to psychiatrists.

- A SPECT scan can show brain areas implicated with specific clinical problems, such as the prefrontal cortex with impulsivity and the hippocampus with memory issues.
- SPECT frequently uncovers unexpected findings that may be contributing to presenting problems, such as toxicity or brain trauma.
- Before and after SPECT can also show the effects of prescribed medication to give guidance on how to adjust treatment.

SISTINA | affiliated with ACIBADEM HOSPITALS GROUP

BRAIN PERFUSION SPECT FINDINGS OF HEAVY METAL INTOXICATION IN CHILDREN WITH PERVASIVE DEVELOPMENTAL DISORDERS

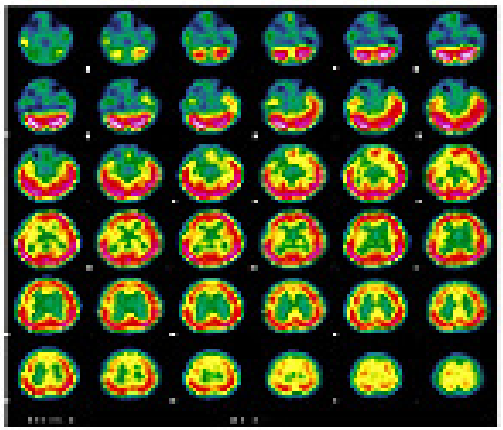
Cem KESKİN, Serpil KESKİN, Department of Nuclear Medicine
ACIBADEM / SISTINA HOSPITAL - SKOPJE - MACEDONIA

Purpose: We aimed to demonstrate the brain perfusion SPECT scan can be a part of diagnosis and planning the treatment in PDD secondary to heavy metal intoxication.

Introduction: Autism is a very complex neurodevelopmental disability characterized by impairments in social skills, language and behavior. It is in fact an "autism spectrum" which describes a continuum that reflects the severity of impairments and is also known as Pervasive Developmental Disorder (PDD). Many cases of PDD today are, in fact, cases of gut-brain inflamation secondary to toxic heavy metal poisoning.

Subjects: We performed a retrospective review between 2004-2008 in search of toxic heavy metals in Dimercaptosuccinic acid (DMSA) provocated urine, magnetic resonance imaging (MRI) and common functional abnormalities with brain perfusion SPECT of 683 children (537 male, 146 female, between 1-18 years old) with PDD.

Methods: Tc99m HMPAO brain perfusion SPECT imaging were performed under monitored sedation. An intravenous line was inserted, and ^{99m}Tc-HMPAO maximum 15 mCi was administered a few minutes later. SPECT imaging was performed within 30 - 60min after intravenous administration of the radiotracer. A rotating, large-field of view gamma camera interfaced to a dedicated computer system was used. During a 360° rotation using a low-energy, high-resolution collimator 64 frames of images with a 128x128 matrix were acquired within 33 min. Total counts of 3.6-4 million were collected for each study. After image backprojection, image reconstruction was performed using a Butterworth filter (cut-off frequency 0.3).



Results: All of them had elevated or very elevated lead and 21.38% of them had elevated or very elevated mercury and some other toxic heavy metals such as nickel (14.05%), aluminum (6.00%), tin (3.51%), thallium (3.51%), arsenic (2.78%), tungsten (2.64%), uranium (2.49%) in their DMSA provocated urine. All of the patients had abnormal SPECT scans revealing focal areas of decreased perfusion. Decreased perfusion of temporal (45.66%), frontal (29.91%), primary motor cortex (8.20%), primary somatosensorial cortex (3.88%), basal ganglia (4.08%), parietal (5.02%), occipital (2.01%) and cerebellar (1.21%) areas were noted on brain SPECT. By contrast all patients had no significiant MRI findings.

Videos about brain SPECT

- www.youtube.com/watch?v=DvoC0CZxtnE
- www.youtube.com/watch?v=f9tIY7cZRjI
- www.youtube.com/watch?v=AEoVwFLErIE

HYPERBARIC OXYGEN THERAPY

HBOT

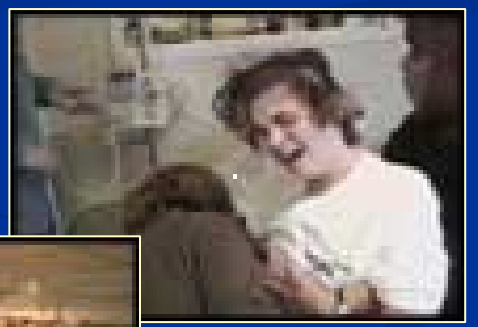
- When treating autistic children,
  it is not enough to cleanse the brain from toxic heavy metals by using chelation.

- 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 Therapy is a medical treatment that uses the administration of 100 % oxygen at controlled pressure (greater than sea level) for a prescribed amount of time usually 60 to 90 minutes.

- HBOT is NOT to be confused with "hyperoxygenation", which is breathing in oxygen in regular pressure (1 atmosphere)
- Inhaling large amounts of oxygen in regular pressure can be damaging to the brain.
- Under no circumstances should the child breathe high dose of oxygen from an oxygen tube.
- 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.
- Only specialists may treat with "Hyperbaric Oxygen Therapy".

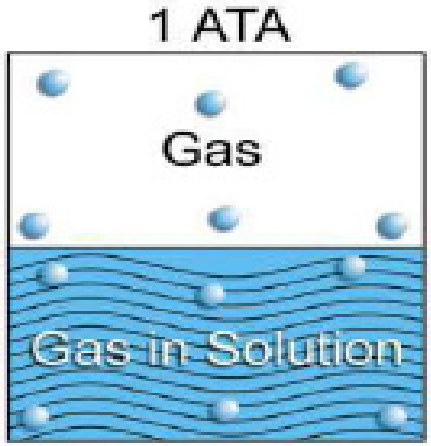
- The treatment is done in submarine boat like chambers (hyperbaric chambers) that are on land.
- By using pressure, SCUBA diving is simulated.

- With the help of special masks and hoods
- it is possible to breathe 100% oxygen.

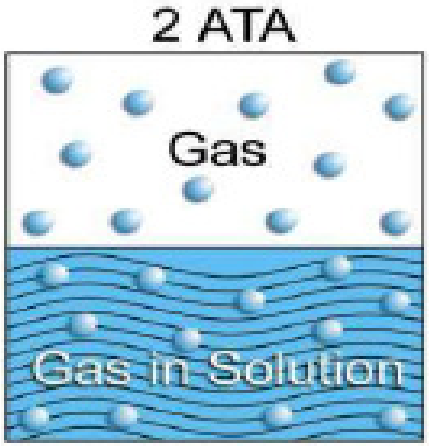
- During modern HBOT, the patient breathes pure, 100% oxygen under increased atmospheric pressure.
- The air we normally breathe contains only 19-21% of this essential element;
- Via HBOT, the concentration of pure oxygen dissolved into the bloodstream is dramatically increased (up to 2,000 %) with virtually no energy expenditure.

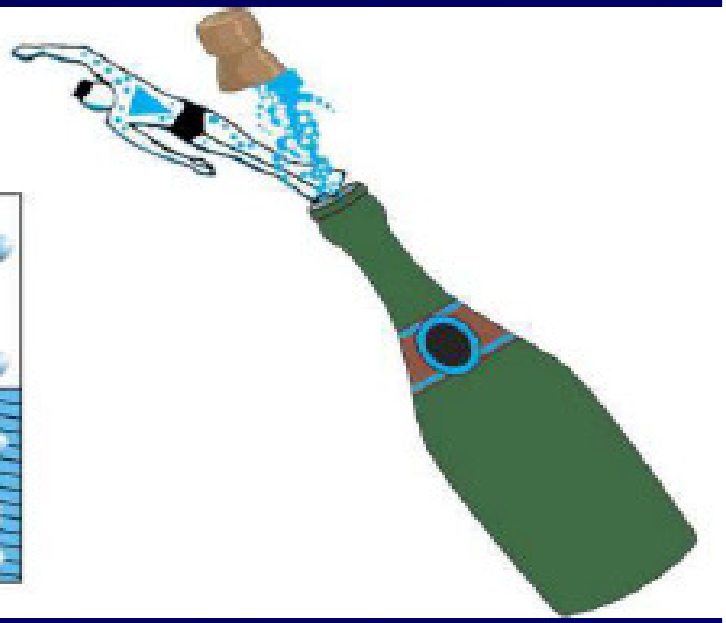
Without changing the temperature,
when you increase the pressure, you can get more gas in solution

Henry's Law



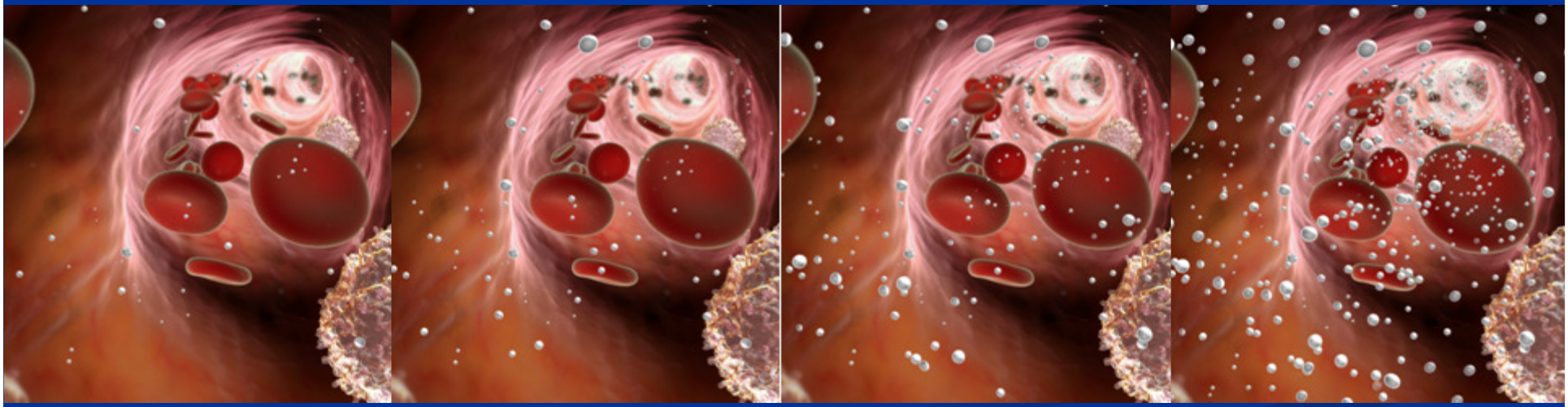
Equilibrium





Barratt, Harch, Van Meter. *Neurologist* 2002;8:186-202

- 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.



> >> >>> >>>>

BENEFICIAL EFFECTS OF HBOT

- Angioneogenesis from the addition of O2.
- Angioneogenesis from the removal of O2.
- Increases in blood flow independent of new blood vessel formation.
- Decreasing levels of inflammatory biochemicals.
- Up-regulation of key antioxidant enzymes and decreasing oxidative stress.
- Increased oxygenation to functioning mitochondria.
- Increased production of new mitochondria
- Bypassing functionally impaired hemoglobin molecules secondary to abnormal porphyrin production.
- Improvement of the immune system and the autoimmune system.

BENEFICIAL EFFECTS OF HBOT

- Decreasing the bacterial and yeast load systemically and in the gastrointestinal system.
- Decreasing the viral load found systemically and the viral load in the gastrointestinal mucosa.
- Increases in the production of stem cells in the bone marrow with transfer to the central nervous system.
- Increases direct production of stem cells by certain areas in the brain.
- Increased production and utilization of serotonin.
- The possibility that oxidation may help rid the body of petrochemicals (theoretical only).
- The possibility that oxidation may help rid the body of mercury and other heavy metals (theoretical only).

- Hyperbaric oxygen treatment which now being used for autistic children is to address the neuroinflammatory component of the disorder.
- There is emerging evidence of chronic blood-brain barrier dysfunction in these children.
- The use of high dosage oxygen is based on the latest research into its role in the control of inflammation.

Professor of Hyperbaric Medicine, P B James MB ChB DIH PhD FFOM

Oxygen and the inflammatory cell.
Nature 2003 vol 422 675-676. Carl Nathan

UNIVERSITY OF DUNDEE

JOHNS HOPKINS
MEDICINE
Department of Neurology

Neuroglial Activation and Neuroinflammation in the Brain of Patients with Autism

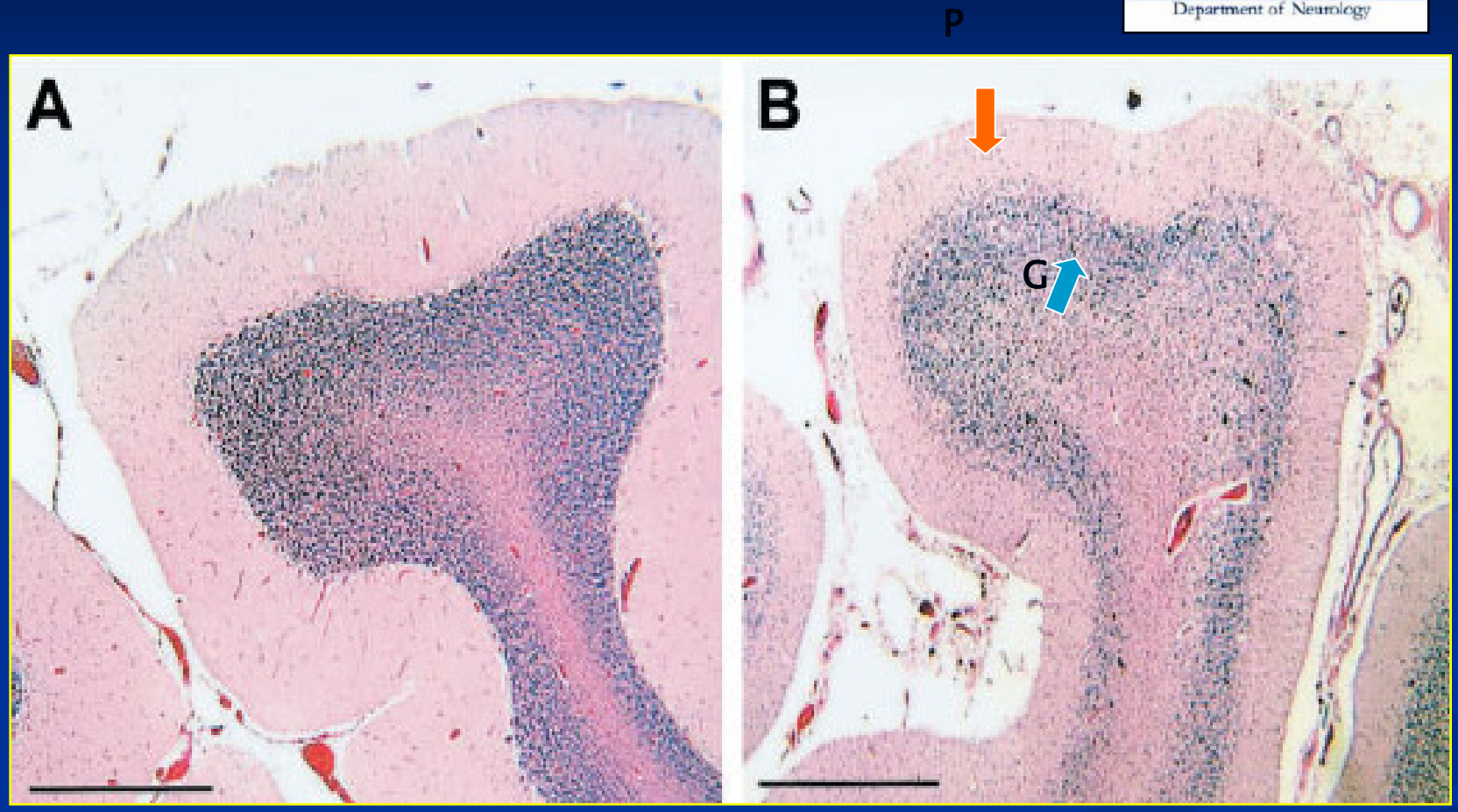
Diana L. Vargas, MD,[1,2] Caterina Nascimbene, MD,[1–3] Chitra Krishnan, MHS[1]
Andrew W. Zimmerman, MD,[1,4] and Carlos A. Pardo, MD[1,2,5]

Autism is a neurodevelopmental disorder characterized by impaired communication and social interaction and may be accompanied by mental retardation and epilepsy. Its cause remains unknown, despite evidence that genetic, environmental, and immunological factors may play a role in its pathogenesis. To investigate whether immune-mediated mechanisms are involved in the pathogenesis of autism, we used immunocytochemistry, cytokine protein arrays, and enzyme-linked immunosorbent assays to study brain tissues and cerebrospinal fluid (CSF) from autistic patients and determined the magnitude of neuroglial and inflammatory reactions and their cytokine expression profiles. Brain tissues from cerebellum, midfrontal, and cingulate gyrus obtained at autopsy from 11 patients with autism were used for morphological studies. Fresh-frozen tissues available from seven patients and CSF from six living autistic patients were used for cytokine protein profiling. We demonstrate an active neuroinflammatory process in the cerebral cortex, white matter, and notably in cerebellum of autistic patients. Immunocytochemical studies showed marked activation of microglia and astroglia, and cytokine profiling indicated that macrophage chemoattractant protein (MCP)–1 and tumor growth factor–β1, derived from neuroglia, were the most prevalent cytokines in brain tissues. CSF showed a unique proinflammatory profile of cytokines, including a marked increase in MCP-1. Our findings indicate that innate neuroimmune reactions play a pathogenic role in an undefined proportion of autistic patients, suggesting that future therapies might involve modifying neuroglial responses in the brain.

Ann Neurol. 2005 Jan;57(1):67-81

Autism and Neuroinflammation

JOHNS HOPKINS
MEDICINE
Department of Neurology



A – Normal control cerebellum

B – Autistic brain with loss of Purkinje cell layer (P) and granular cell layer (G)

Vargas et al., 2005

HYPERBARIC OXYGEN THERAPY INCREASES STEM CELLS BY EIGHT-FOLD

Perelman School of Medicine
University of Pennsylvania

- A scientific study completed at the University of Pennsylvania School of Medicine reports that HBOT is a safe and effective way to mobilize stem cells.

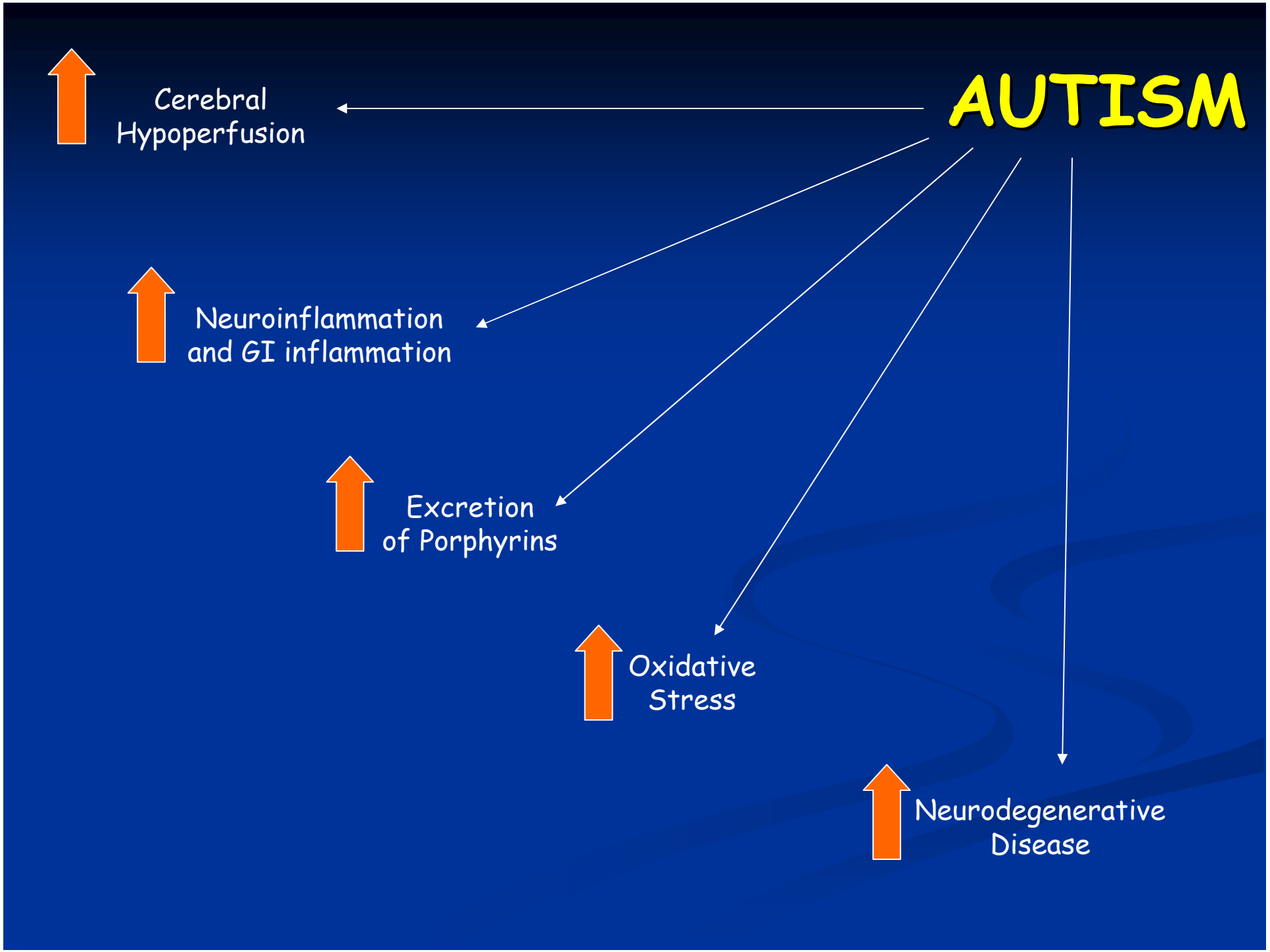
- Stem cells, also called progenitor cells, are crucial to the repair of injured tissues and organs.

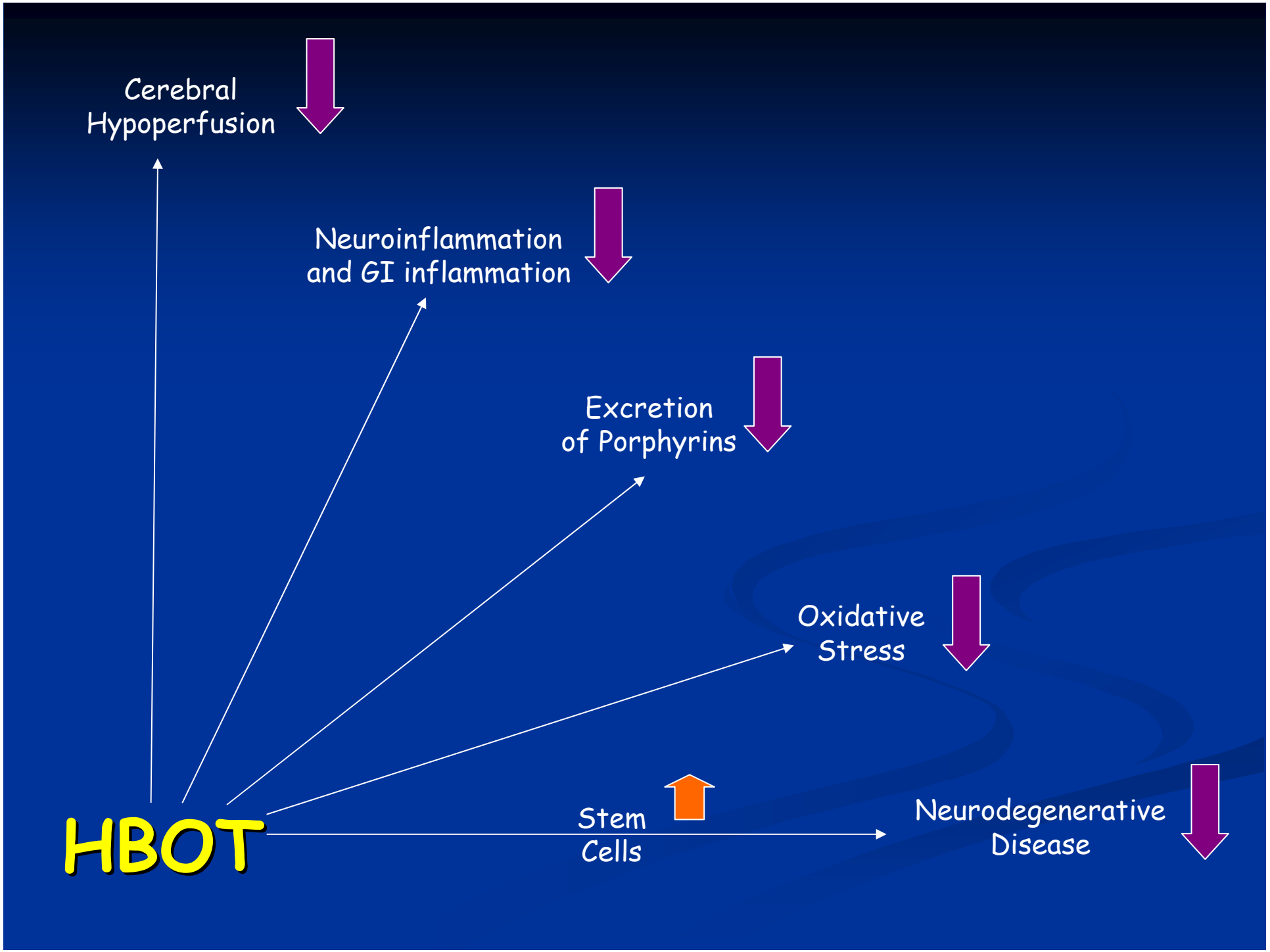
- HBOT increase by eight-fold the number of circulating stem cells throughout the body.

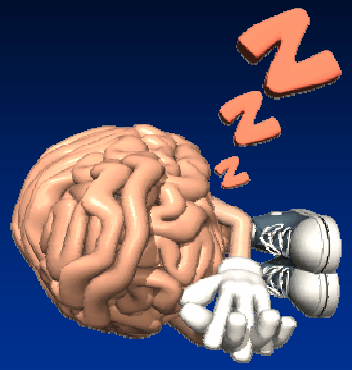
- Healthy recovery of injured and diseased tissues is the ultimate goal and stem cells play an essential role.

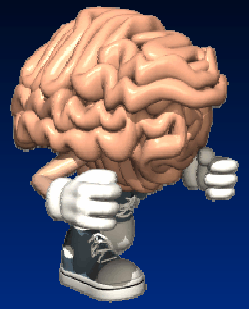
STEM CELL MOBILIZATION BY HYPERBARIC OXYGEN

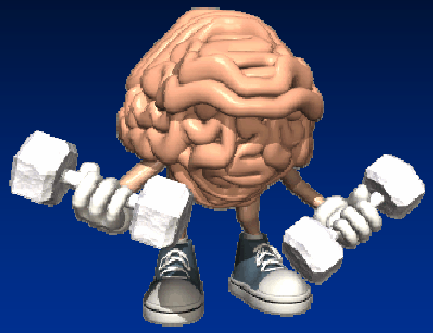
Stephen R. Thom[1,2], Veena M. Bhopale[1], Omaida C. Velazquez[3], Lee J. Goldstein[3], Lynne H. Thom[1], Donald G. Buerk[4]


AUTISM
Cerebral Hypoperfusion
Neuroinflammation and GI inflammation
Excretion of Porphyrins
Oxidative Stress
Neurodegenerative Disease

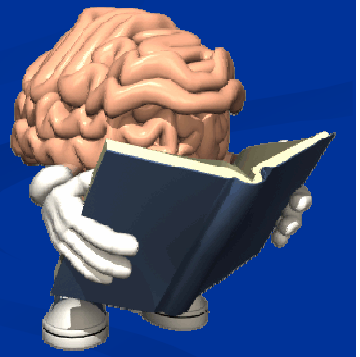

Cerebral Hypoperfusion
Neuroinflammation and GI inflammation
Excretion of Porphyrins
Oxidative Stress
HBOT
Stem Cells
Neurodegenerative Disease





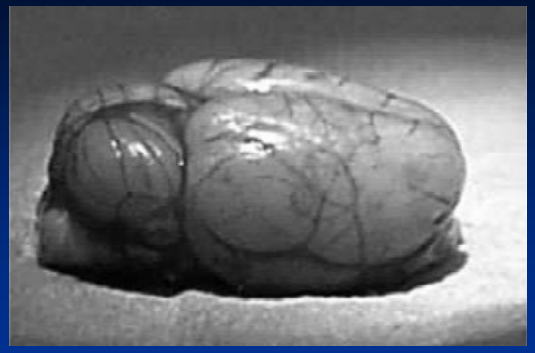


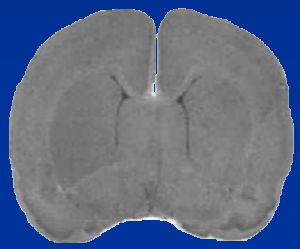
- Through these sessions we make sure that the brains inactive cells (idling neurons) develop to normal function.
- When the brain cells are able to utilize the molecules of oxygen in the air,
  the treatment is finished.
- To confirm this, a new **SPECT** is done.
  (Dr.Neubauer & Dr.Harch's Scan-Dive-Scan Protocol)



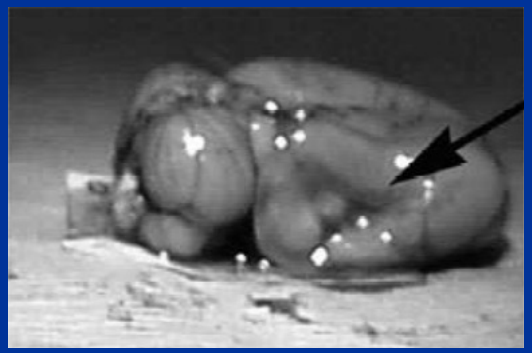
Effects of HBOT

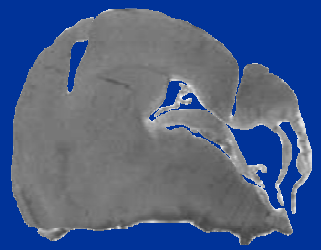
Control Rat Brain



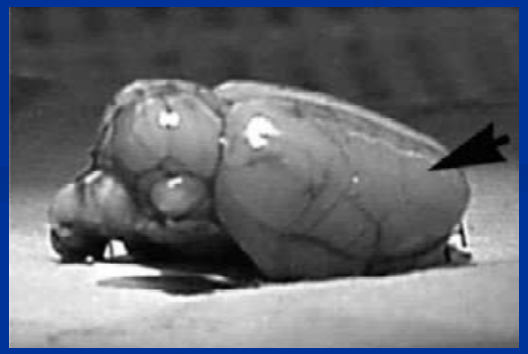


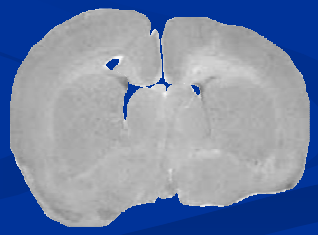
Hypoxia Ischemia





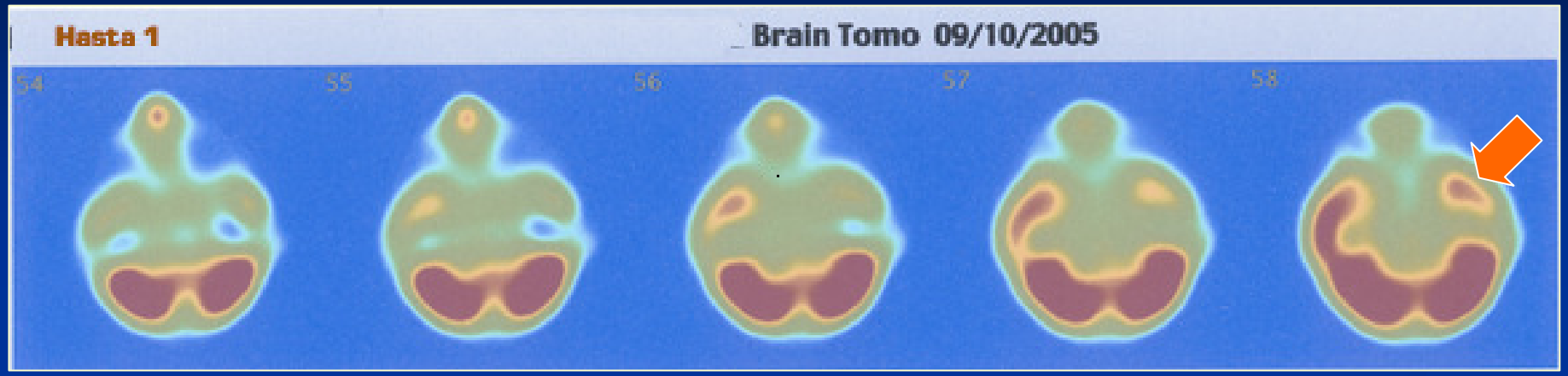
Hypoxia Ischemia + HBOT



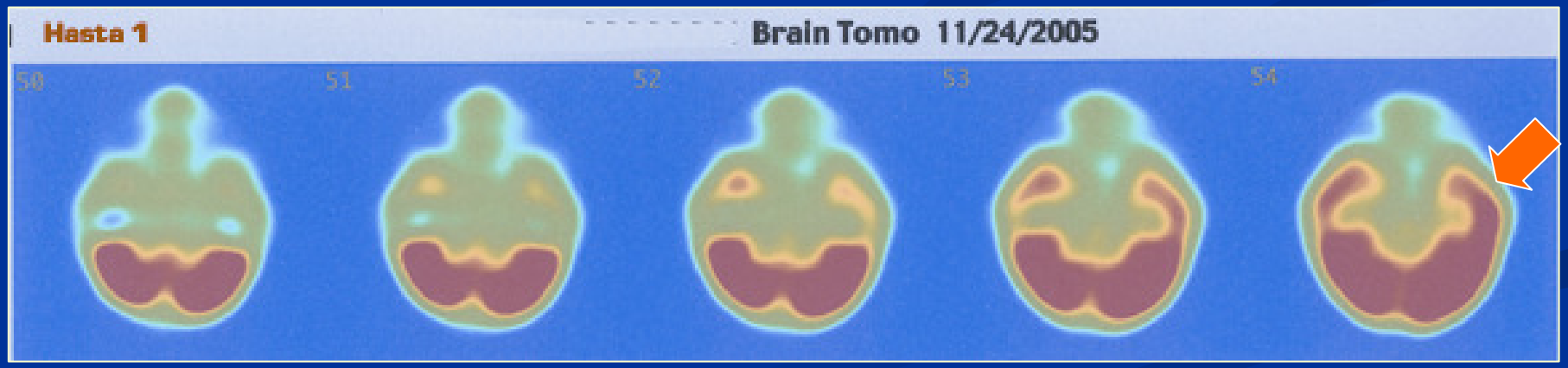


Calvert et al., 2002

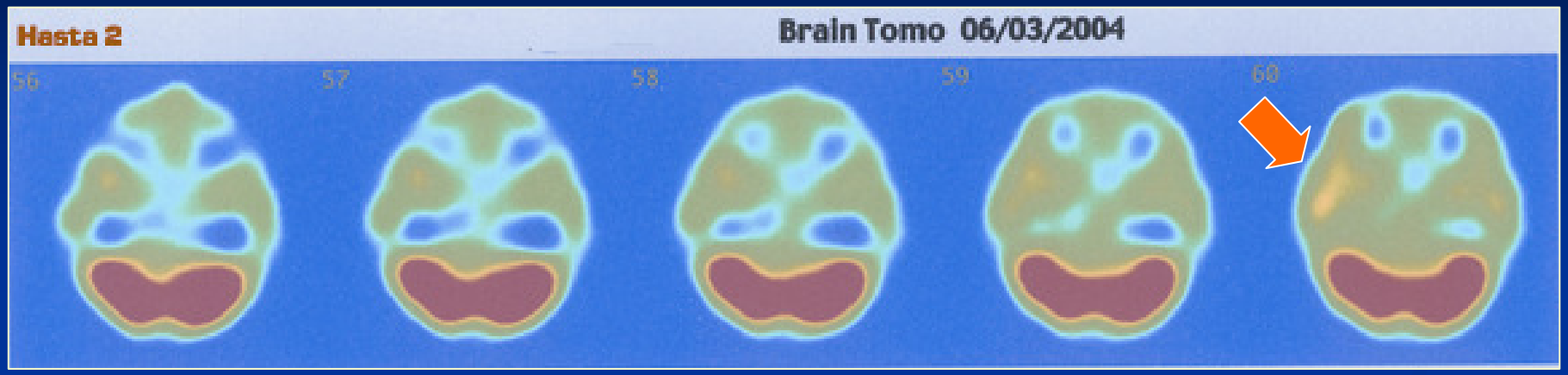
Brain SPECT scan before HBOT



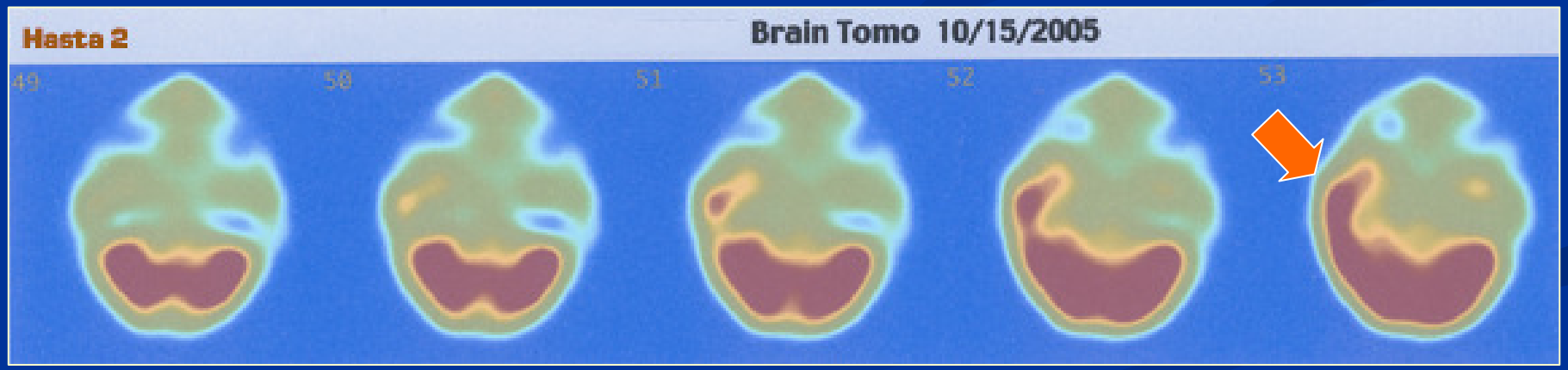
Brain SPECT scan after HBOT



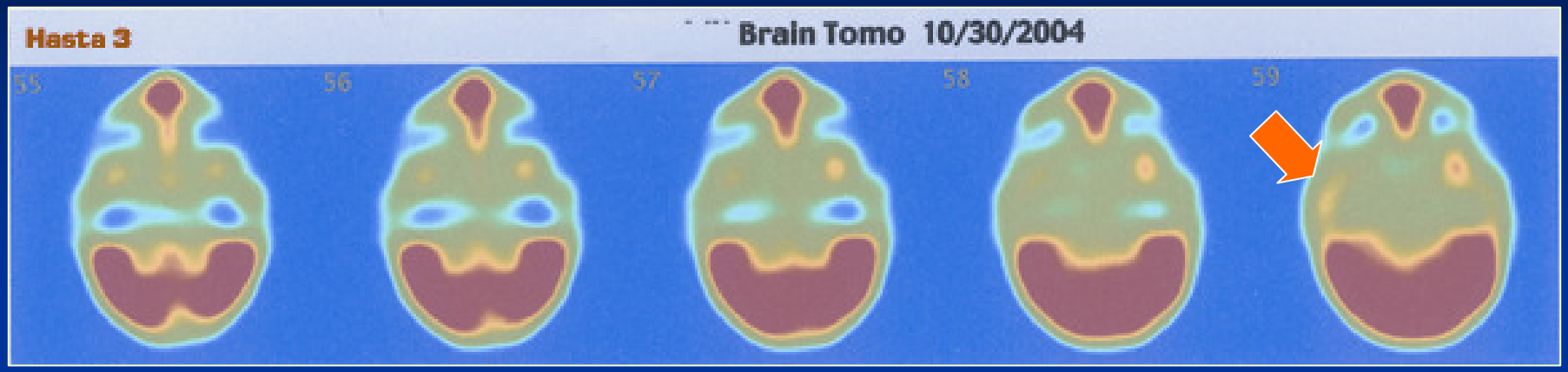
Brain SPECT scan before HBOT



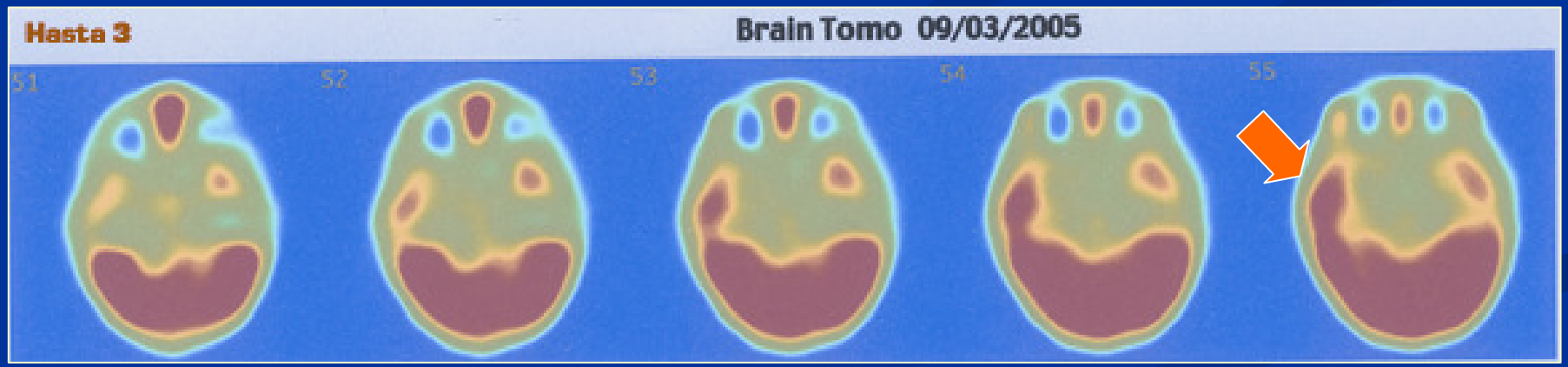
Brain SPECT scan after HBOT



Brain SPECT scan before HBOT

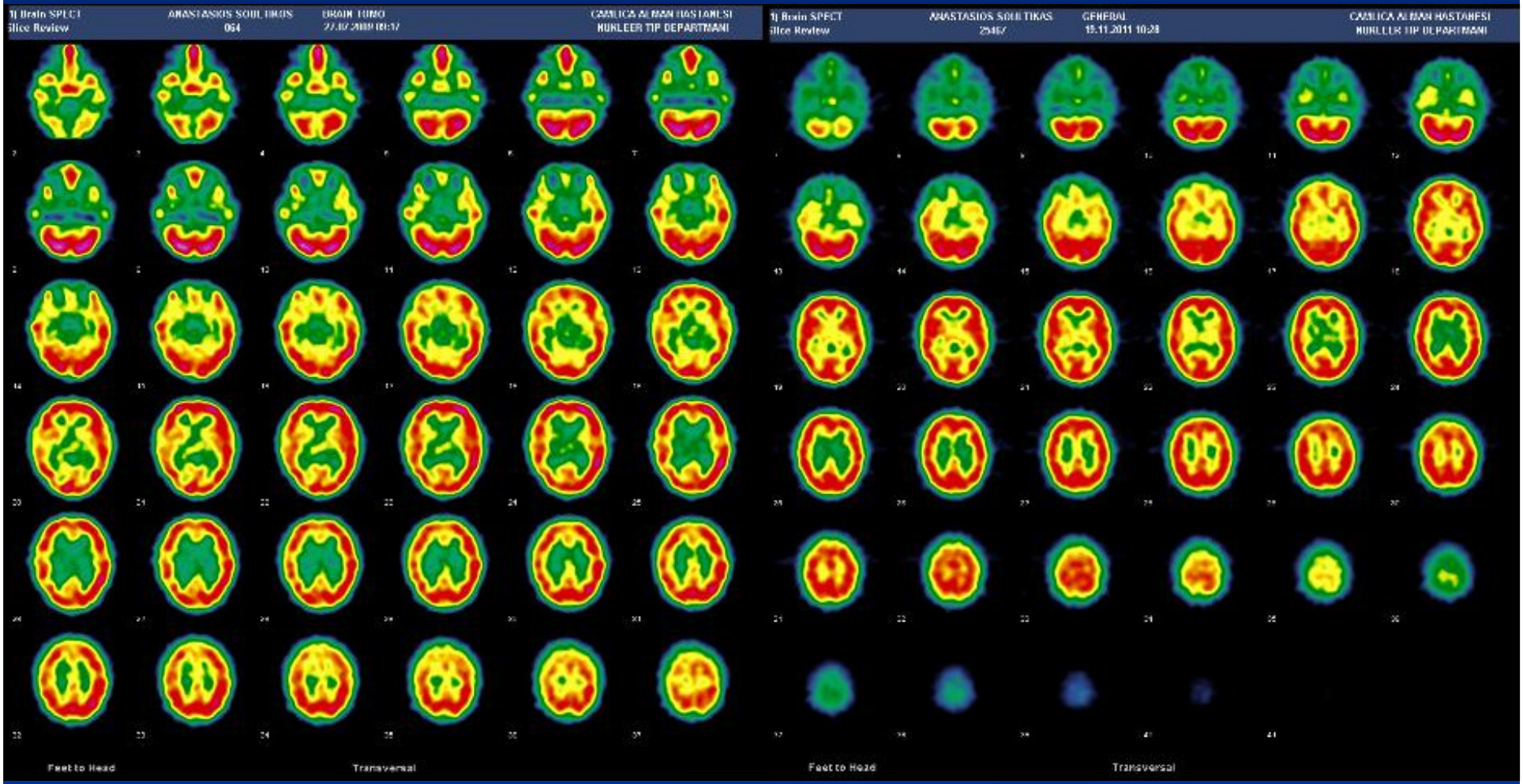


Brain SPECT scan after HBOT

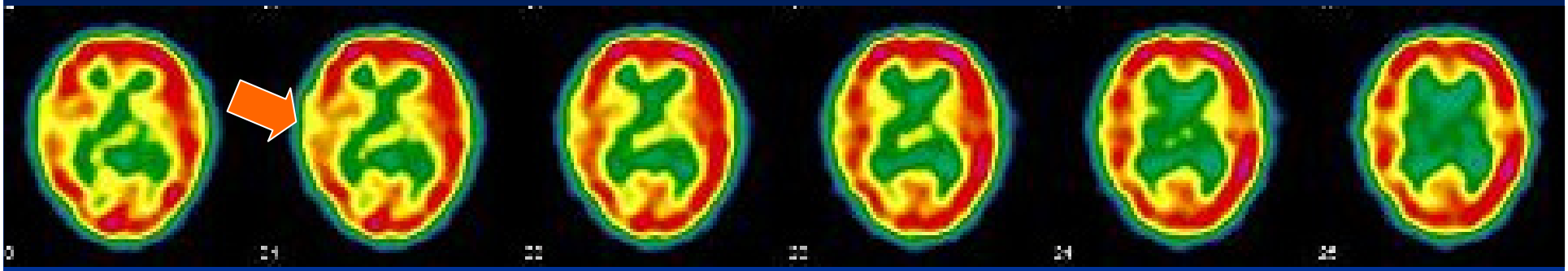


Brain SPECT scan

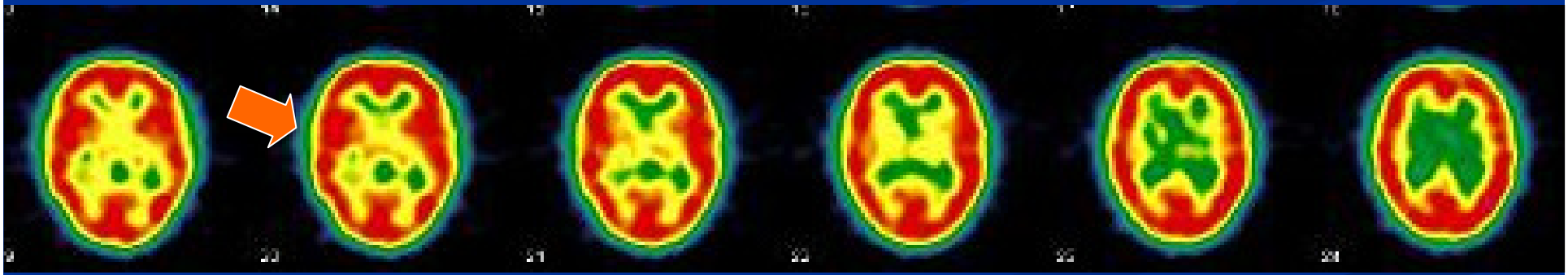
BEFORE AND AFTER 90 SESSIONS OF HBOT



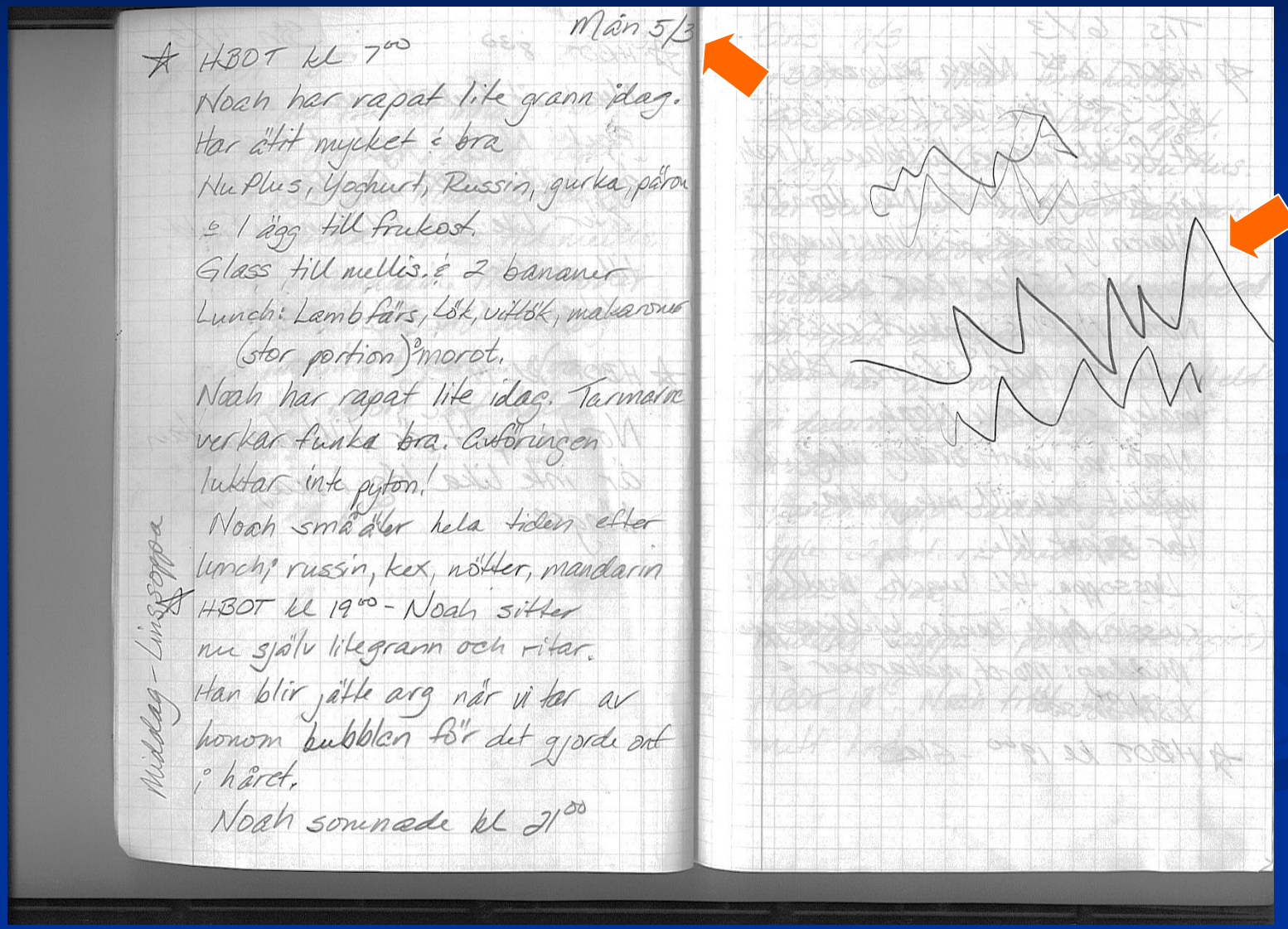
Brain SPECT scan before HBOT (A.S. 7 YO Boy)



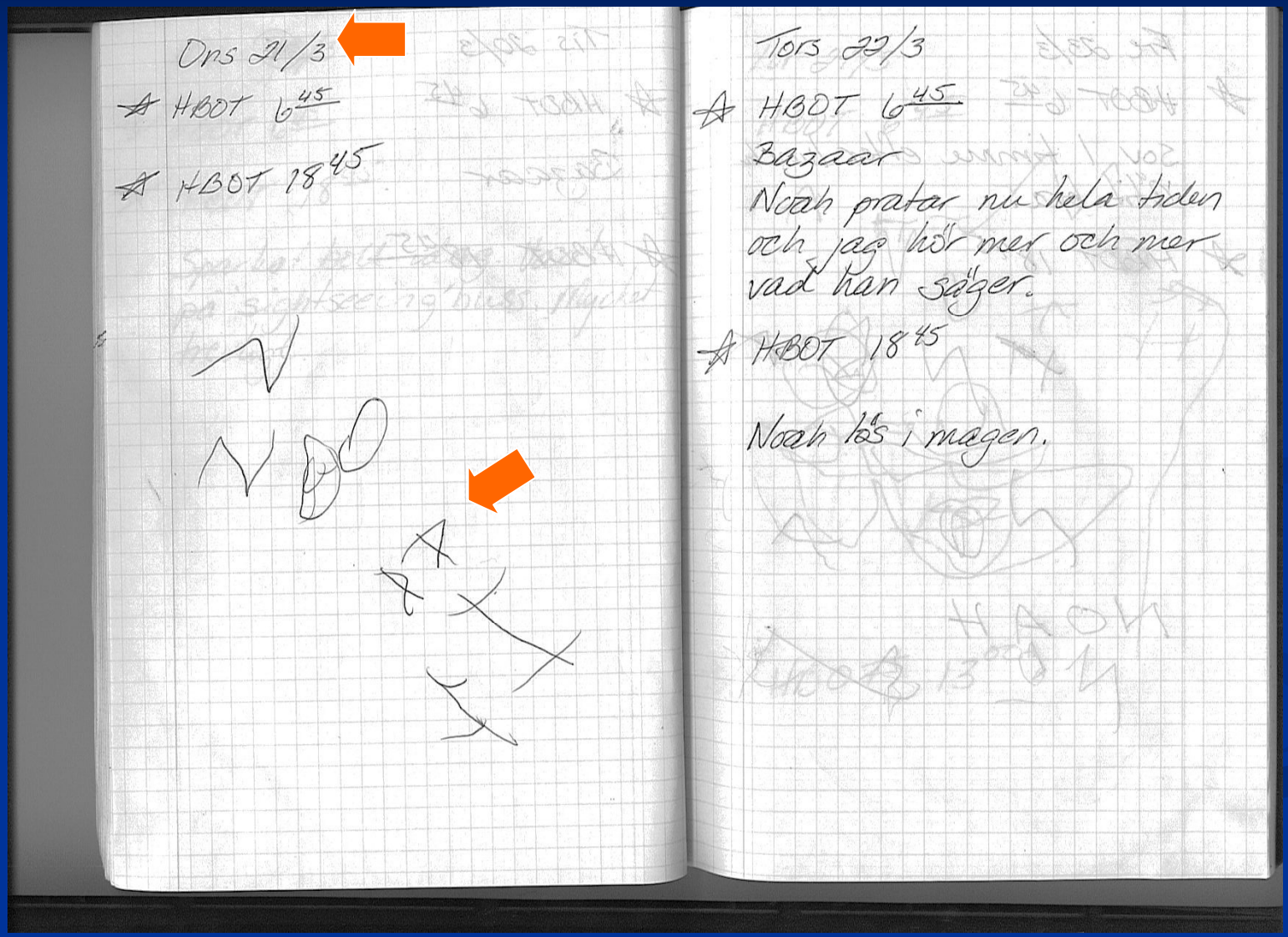
Brain SPECT scan after 90 sessions of HBOT



N.L.'S HANDWRITING BEFORE HBOT

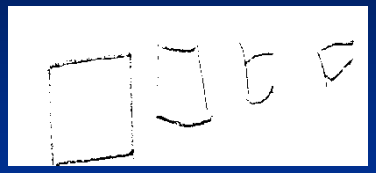


N.L.'S HANDWRITING AFTER HBOT

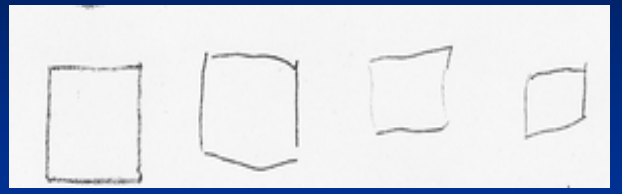


Some examples from N.V, 5 year old boy

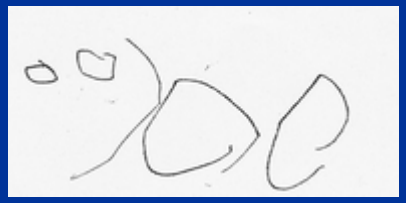
- HBO and Stimulative treatment for psychomotor development



Before HBO

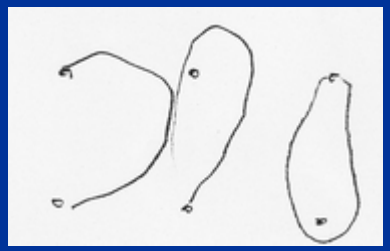


After 10 HBO session and stimulative program for psychomotor reeducation



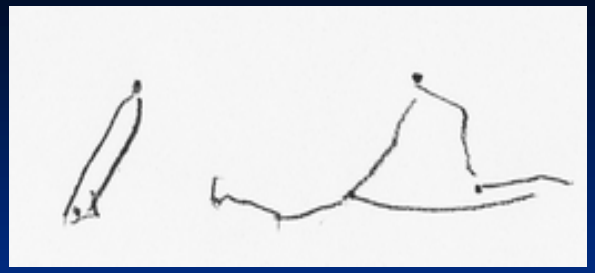
Before HBO

After 13 HBO session and stimulative program for psychomotor reeducation

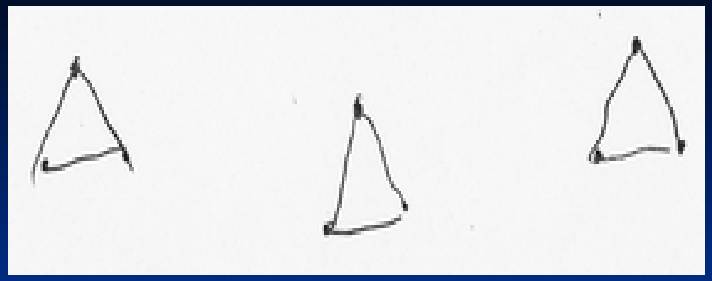


Before HBO

After 20HBO session and stimulative program for psychomotor reeducation



Before HBO



After 36 HBO session and stimulative program for psychomotor reeducation

Drawing before HBO

Draw and color after 80 HBO session and stimulative program for psychomotor reeducation

33rd Annual Scientific Meeting of the
European Underwater and Baromedical Society
on Diving & Hyperbaric Medicine
September 8th - 15th, 2007 Sharm el-Sheikh, Sinai, Egypt

EUBS
SHARM EL-SHEIKH • EGYPT • 2007

- **BRAIN PERFUSION CHANGES AFTER HYPERBARIC OXYGEN THERAPHY IN THE CHILDREN WITH AUTISM.**

KINACI Cem[1], ALAN Mustafa[2], HATIPOGLU Kadir[3]

[1] DAN! Practitioner and Nuclear Medicine Physician, IMC Hospital, Mersin, Turkey.

[2] Aerospace Medicine Physician, Baromed Hyperbaric Center, Ankara, Turkey.

[3] Diving Medicine and Pulmonary Disease Physician, Gulhane Military Medical Academy, TSK Rehabilitation Center, Ankara, Turkey.

- Materials/Methods: This study shows the brain perfusion changes secondary to brain inflamation and effects of HBOT in 108 children with autism.

- Conclusions: After HBOT, extensive perfusion improvements involving the brain were found in this study. SPECT scans may be more sensitive in reflecting the pathophysiology of autism than MRI.

2009 UHMS ANNUAL SCIENTIFIC MEETING 25th – 27th June, Las Vegas, NV, USA

THE EFFECTS OF HYPERBARIC OXYGEN THERAPHY IN THE CHILDREN WITH AUTISM SPECTRUM DISORDERS

KINACI Cem[1], KINACI Serpilgul[1], ALAN Mustafa[2], ELBUKEN Emin[3]

[1]Department of Nuclear Medicine, German Hospital-Camlica-Universal Hospitals Group, Istanbul, Turkey.
[2] Department of Aerospace Medicine, Baromed Hyperbaric Oxygen Theraphy Center, Ankara, Turkey.
[3] Department of Underwater and Hyperbaric Medicine, 2001 Hyperbaric Oxygen Theraphy Center, Istanbul, Turkey.

Table 1: Hypoperfusion areas detected by Brain SPECT Scans (effected by toxic heavy metals) in children with ASD and improvements after HBOT.

Hypoperfusion area	Number of patients	Increased perfusion after HBOT	Not changed	% Improvement
Temporal	108	89	19	82.40 %
Frontal	95	81	14	85.26 %
Other areas	66	50	16	75.75 %

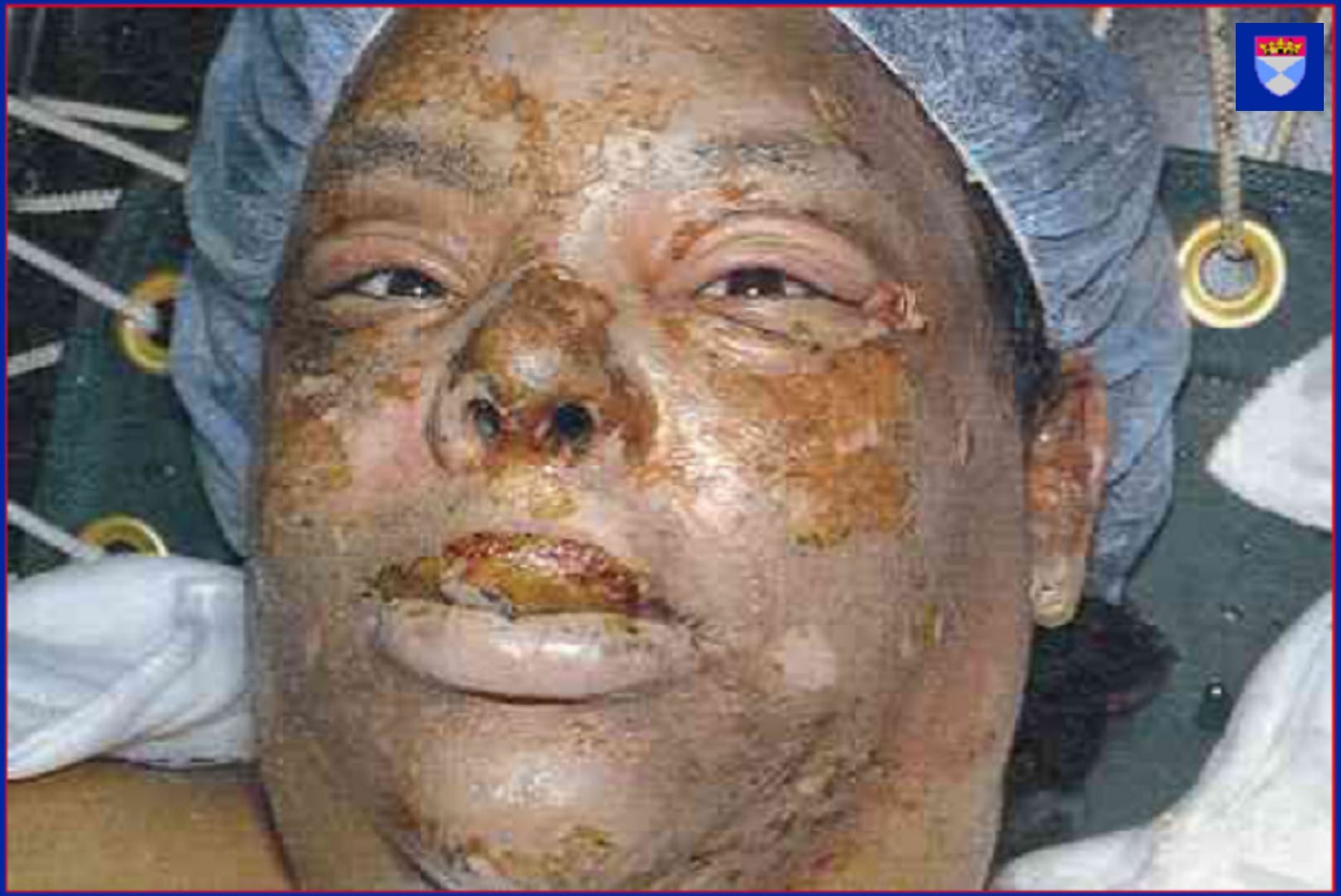
TABLE 2: Results of behavioral and physical changes in 54 patients with ASD after HBOT

Results	Speech	Comminication Issues	Comprehension Issues	Gross Motor Skills	Fine Motor Skills	Sleeping Issues	Constipation /Diarrhea	Seizures	Behavioral Issues	Bed-Wetting /Wets Pants/Diapers
Got better	36	40	47	21	16	10	13	3	26	6
Not changed	7	14	7	4	4	4	2	2	3	2
Got worse						1			1	
Without related issue	11	0	0	29	34	39	39	49	24	46

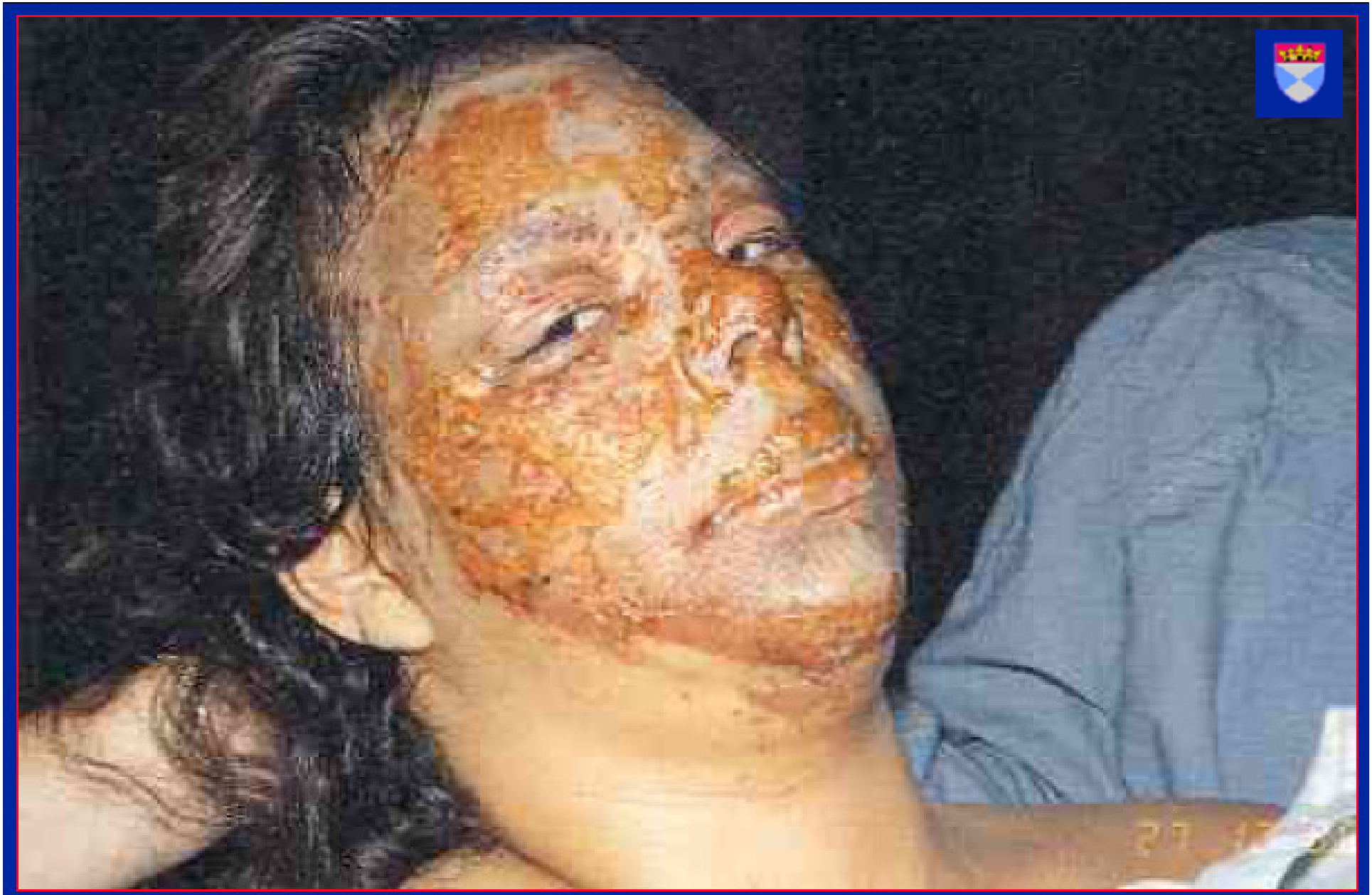
TABLE 3: Percentage of behavioral and physical changes in 54 patients with ASD after HBOT

Results %	Speech	Comminication Issues	Comprehension Issues	Gross Motor Skills	Fine Motor Skills	Sleeping Issues	Constipation /Diarrhea	Seizures	Behavioral Issues	Bed-Wetting /Wets Pants/Diapers
Got better	84	74	87	84	80	67	87	60	87	75
Not changed	16	26	13	16	20	26	13	40	10	25
Got worse						7			3	

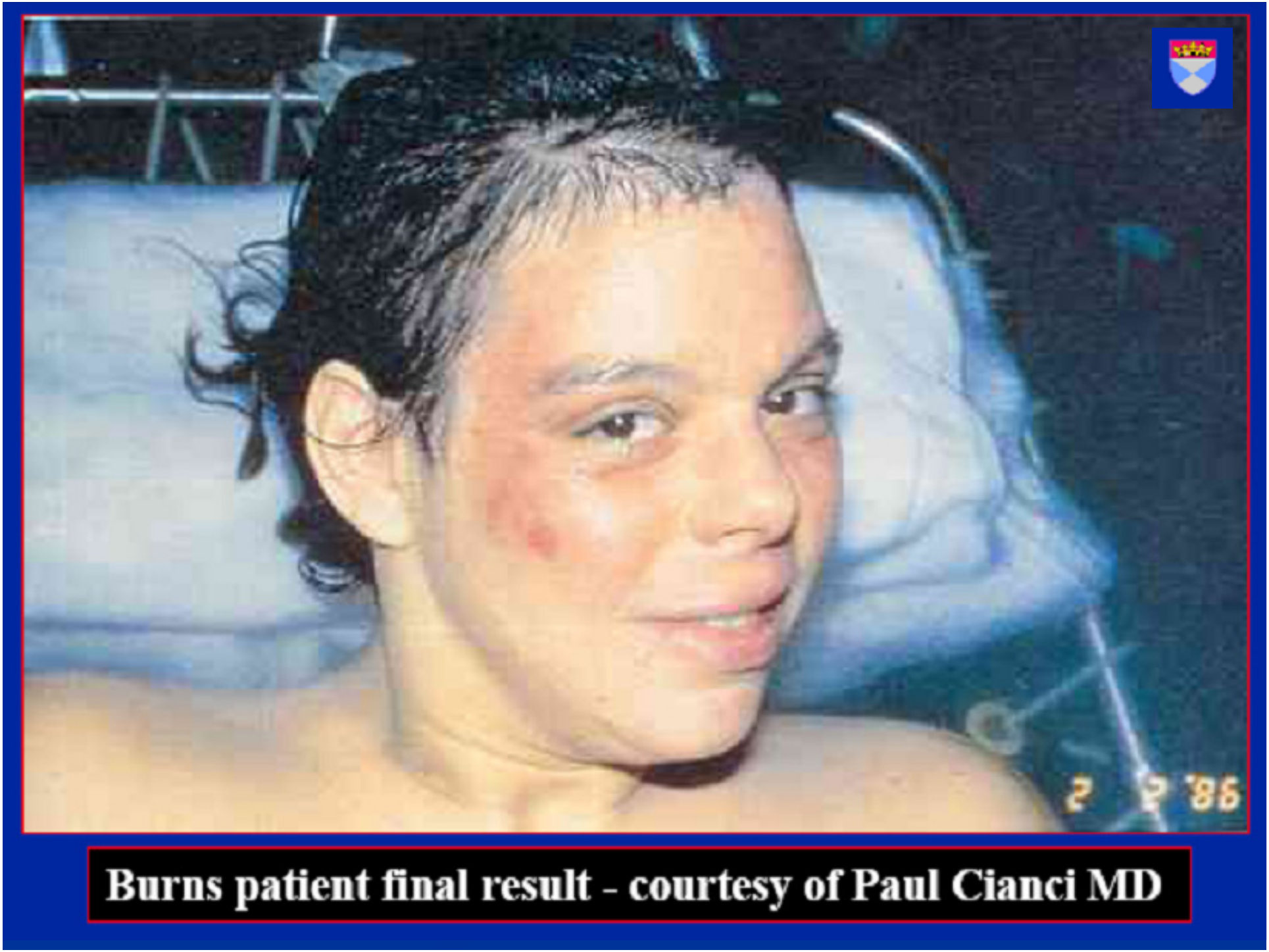
Burns patient treated for CO poisoning at 3 hours



Burns patient after 2 treatments 24 hours later



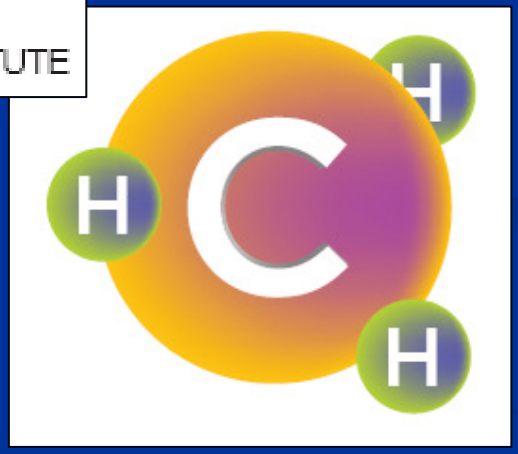
Burns patient after 6 treatments 72 hours later



Burns patient final result - courtesy of Paul Cianci MD

BIOMOLECULAR NUTRIGENOMICS

NRI
NEUROLOGICAL RESEARCH INSTITUTE

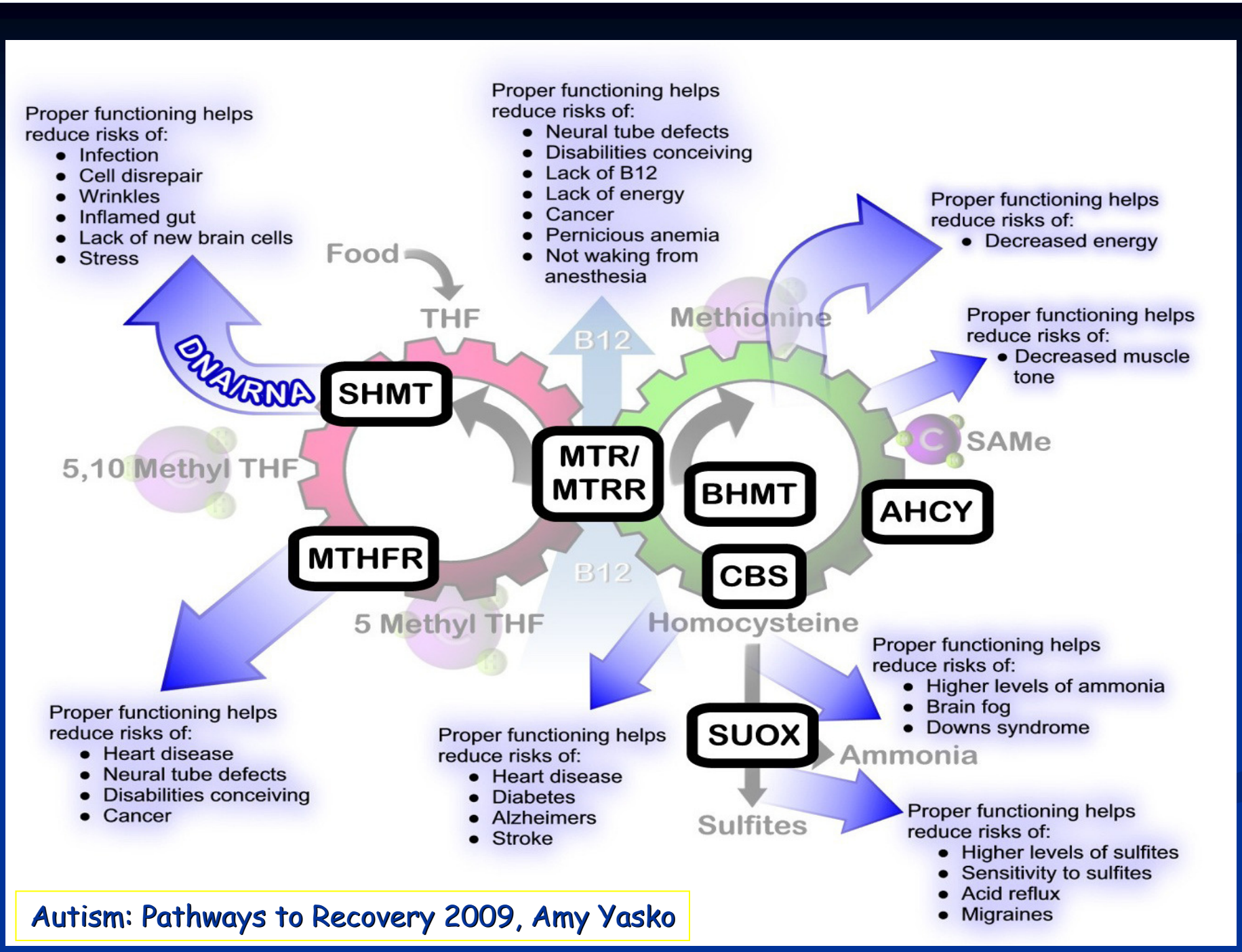


BY-PASSING THE GENES

NUTRIGENOMICS

- Nutrients can turn on gene activity favorable to health, and turn off unfavorable activity.
- The companion science of Nutrigenomics helps us to determine the specific nutrients needed to prompt healthy gene expression in certain key genes, so that people can thrive.
- By knowing what gene changes are present in each child, we can target nutritional support to his or her specific combination of genes.

Autism: Pathways to Recovery 2009, Amy Yasko



Autism: Pathways to Recovery 2009, Amy Yasko

NUTRIGENOMICS

- Using specific nutritional support, we optimize that child's gene expression to improve the body's ability

  to derive nutrients from food,
  to produce a balanced immune response,
  to detoxify,
  to balance mood and calm neurological activity

Autism: Pathways to Recovery 2009, Amy Yasko

NUTRIGENOMIC DNA TESTING

CHILD

Gene Name	Variation	Result	Call
COMT	V158M	+/+	A
COMT	H62H	+/+	T
COMT	61	-/-	G
VDR	Taq	+/-	Hetero
VDR	Fok	+/-	Hetero
MAO A	R297R	+/+	T
ACAT	1-02	+/-	Hetero
ACE	Del16	+/+	DELETION
MTHFR	C677T	+/+	T
MTHFR	3	-/-	C
MTHFR	A1298C	-/-	A
MTR	A2756G	-/-	A
MTRR	A66G	+/-	Hetero
MTRR	H595Y	-/-	C
MTRR	K350A	-/-	A
MTRR	R415T	-/-	C
MTRR	S257T	-/-	T
MTRR	11	+/-	Hetero
BHMT	1	+/-	Hetero
BHMT	2	-/-	C
BHMT	4	-/-	A
BHMT	8	-/-	C
AHCY	1	+/-	Hetero
AHCY	2	-/-	T
AHCY	19	-/-	A
CBS	C699T	+/-	Hetero
CBS	A360A	-/-	C
SUOX	S370S	-/-	No Support Needed
SHMT	C1420T	+/-	Hetero
NOS	D298E	-/-	G

MOTHER

Gene Name	Variation	Result	Call
COMT	V158M	+/-	Hetero
COMT	H62H	+/-	Hetero
COMT	61	-/-	G
VDR	Taq	+/-	Hetero
VDR	Fok	+/+	T
MAO A	R297R	+/-	Hetero
ACAT	1-02	-/-	G
MTHFR	C677T	+/-	Hetero
MTHFR	3	-/-	C
MTHFR	A1298C	+/-	Hetero
MTR	A2756G	-/-	A
MTRR	A66G	+/-	Hetero
MTRR	H595Y	-/-	C
MTRR	K350A	-/-	A
MTRR	R415T	-/-	C
MTRR	S257T	-/-	T
MTRR	11	+/+	A
BHMT	1	-/-	A
BHMT	2	+/-	Hetero
BHMT	4	+/-	Hetero
BHMT	8	+/-	Hetero
AHCY	1	+/-	Hetero
AHCY	2	-/-	T
AHCY	19	-/-	A
CBS	C699T	-/-	C
CBS	A360A	-/-	C
SUOX	S370S	-/-	No Support Needed
SHMT	C1420T	+/-	Hetero
NOS	D298E	-/-	G
CBS	N212N	-/-	C

FATHER

Gene Name	Variation	Result	Call
COMT	V158M	+/-	Hetero
COMT	H62H	+/-	Hetero
COMT	61	-/-	G
VDR	Taq	+/+	T
VDR	Fok	-/-	C
MAO A	R297R	+/+	T
ACAT	1-02	+/-	Hetero
MTHFR	C677T	+/-	Hetero
MTHFR	3	-/-	C
MTHFR	A1298C	-/-	A
MTR	A2756G	-/-	A
MTRR	A66G	+/+	G
MTRR	H595Y	-/-	C
MTRR	K350A	-/-	A
MTRR	R415T	-/-	C
MTRR	S257T	-/-	T
MTRR	11	-/-	G
BHMT	1	+/-	Hetero
BHMT	2	-/-	C
BHMT	4	-/-	A
BHMT	8	-/-	C
AHCY	1	-/-	A
AHCY	2	-/-	T
AHCY	19	-/-	A
CBS	C699T	+/-	Hetero
CBS	A360A	+/-	Hetero
SUOX	S370S	-/-	No Support Needed
SHMT	C1420T	-/-	G
NOS	D298E	-/-	G
CBS	N212N	-/-	C

RNA - BASED NUTRITION

- The field of **nutrigenomics** is the study of how different foods can interact with particular genes to decrease the risk of diseases.
- **Biomolecular nutrigenomics** takes this concept a step furter, analyzing the molecular signaling pathways that are affected by spesific single-site base changes, and than utilizes combinations of nutrients, foods and natural RNA's to by-pass mutations and restore proper pathway function.
- **Genetic By-pass** provides that understanding.

Gc-MAF THERAPY IN AUTISM

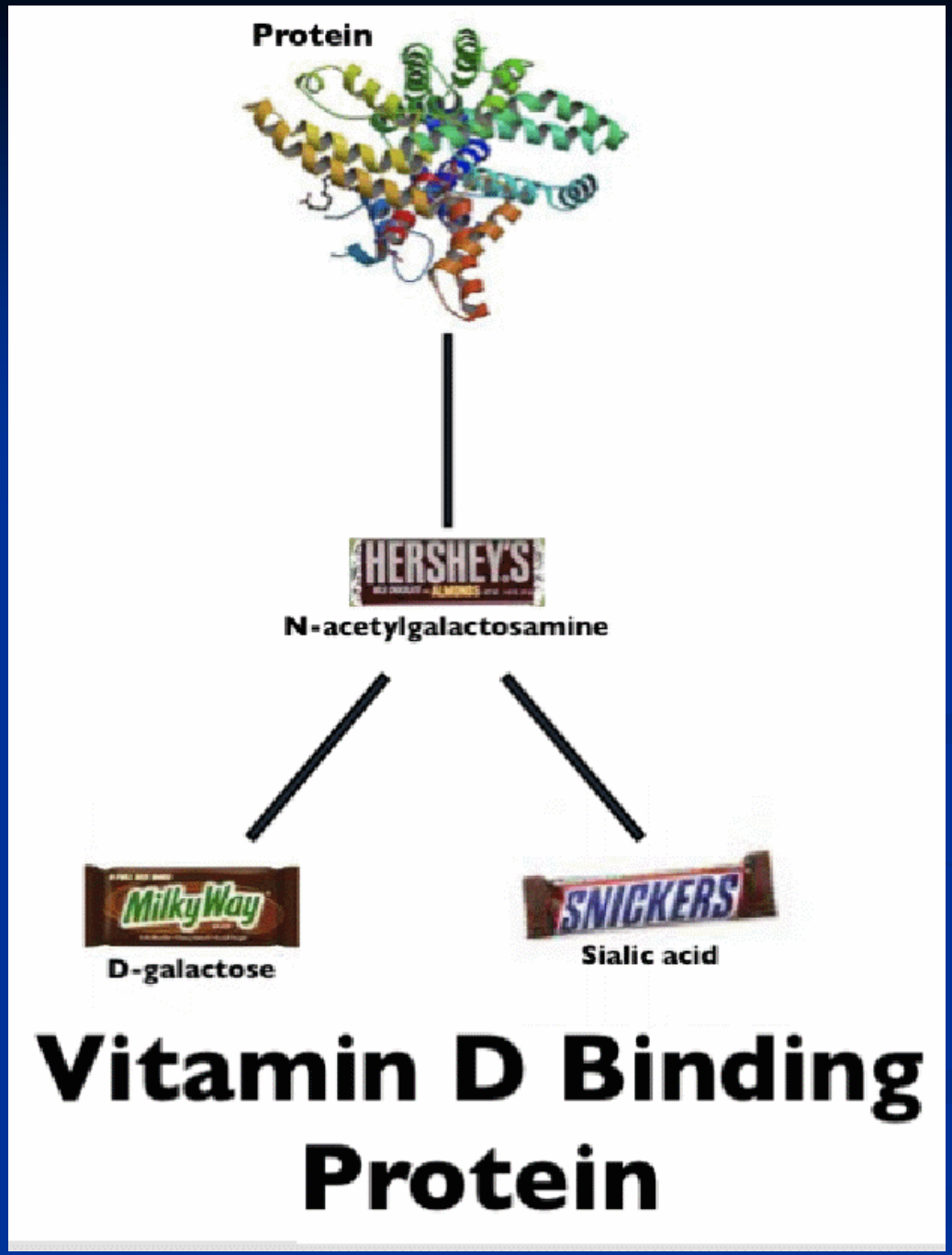
GcMAF & NAGALASE : TWO AMAZING PROTEINS

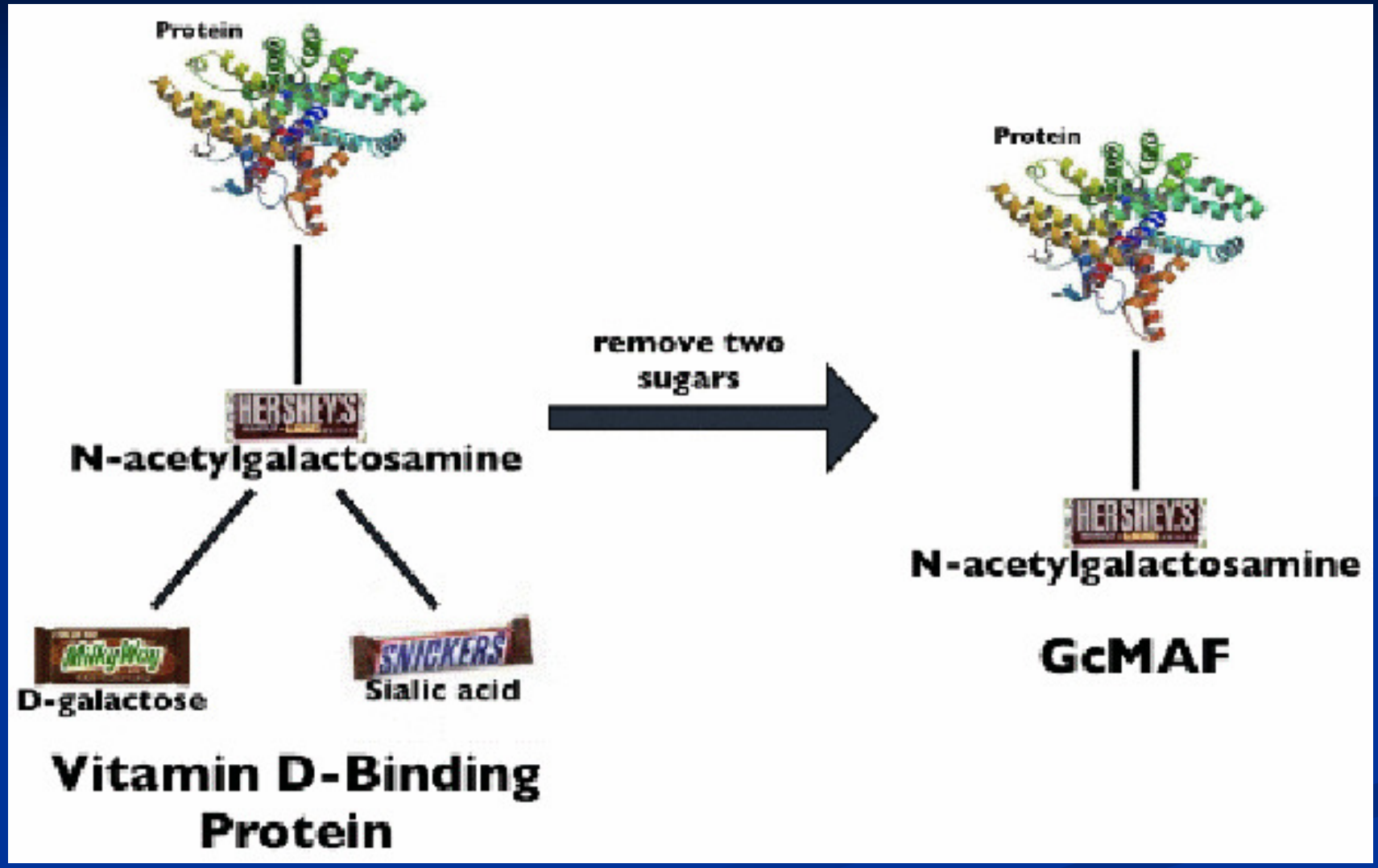
- GcMAF
  (glycoprotein macrophage activating factor)
- Nagalase
  (alpha-N-acetylgalactosaminidase).

How does GcMAF work ?

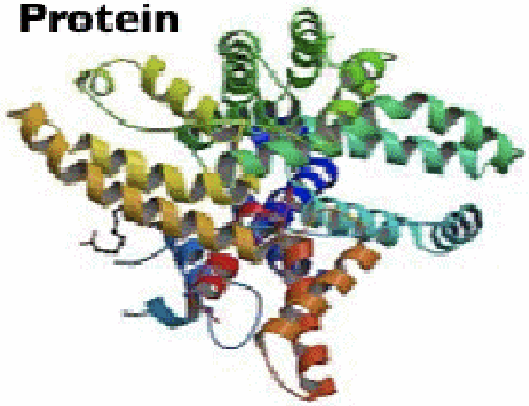
- In a healthy person your GcMAF acts as a "director" of your immune system, and also instructs macrophages in your bloodstream to kill malignancies.

- But viruses and malignant cells like cancer send out an enzyme called Nagalase that neutralises your GcMAF; so the macrophages never get the message to go into action – in this way diseases become chronic by suppressing the immune system, and cancer cells grow unchecked.


Protein
HERSHEY'S
N-acetylgalactosamine
Milky Way
D-galactose
SNICKERS
Sialic acid
Vitamin D Binding Protein

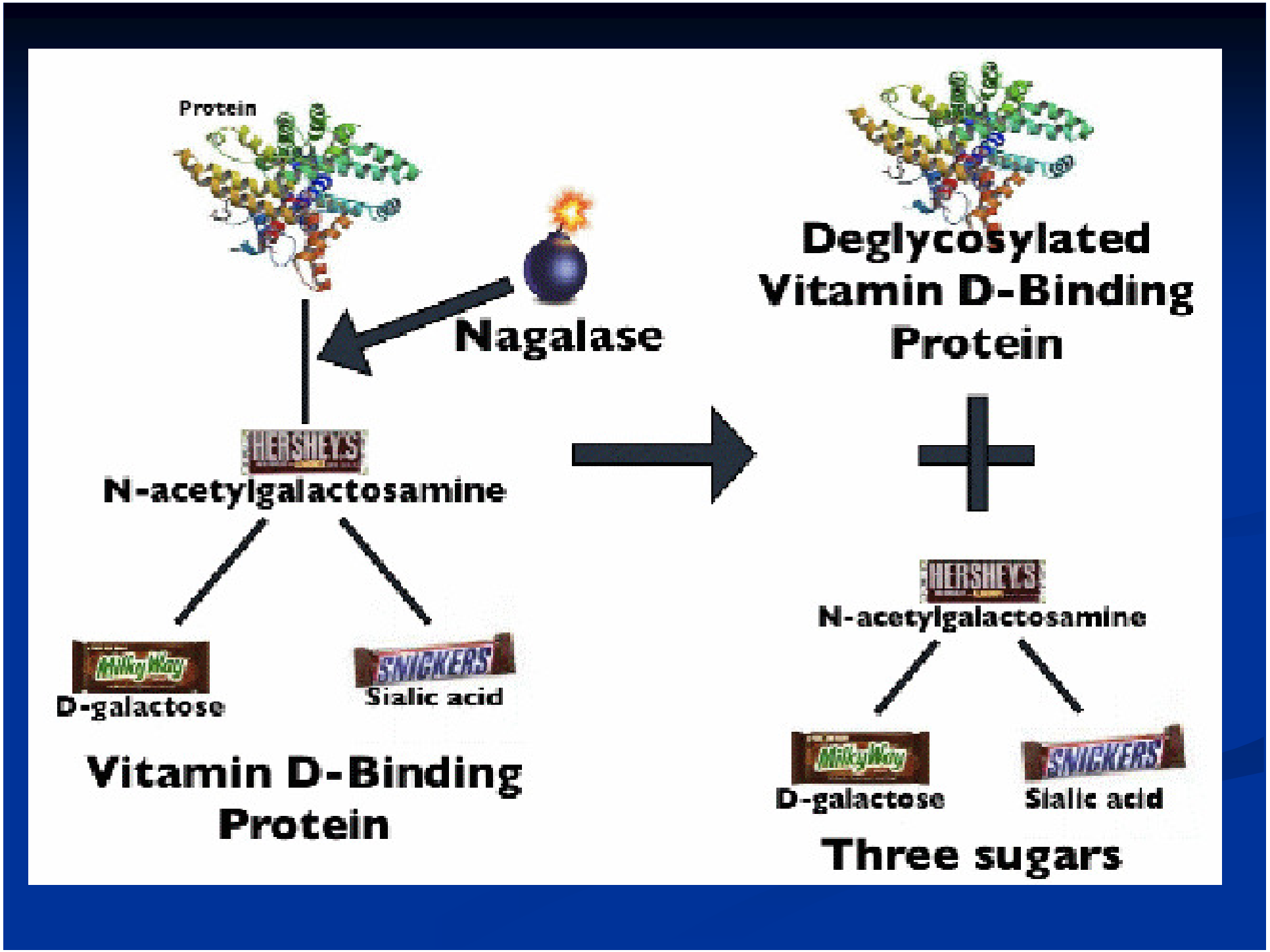

Protein
HERSHEY'S
N-acetylgalactosamine
Milky Way
D-galactose
SNICKERS
Sialic acid
Vitamin D-Binding Protein
remove two sugars
Protein
HERSHEY'S
N-acetylgalactosamine
GcMAF

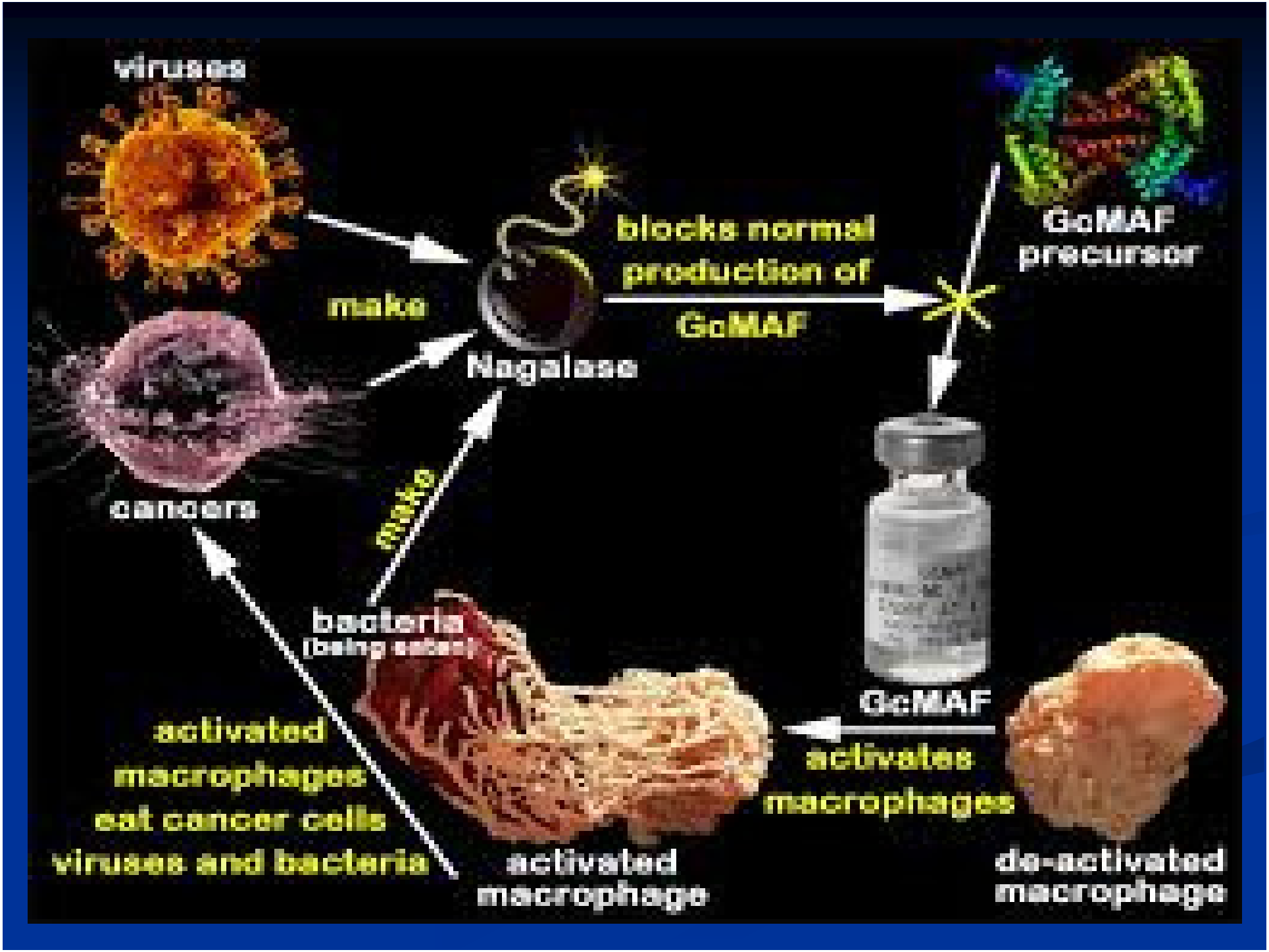
Protein



N-acetylgalactosamine

GcMAF


Protein
Nagalase
Deglycosylated Vitamin D-Binding Protein
HERSHEY'S
N-acetylgalactosamine
Milky Way
D-galactose
SNICKERS
Sialic acid
Vitamin D-Binding Protein
HERSHEY'S
N-acetylgalactosamine
Milky Way
D-galactose
SNICKERS
Sialic acid
Three sugars


viruses
make
Nagalase
blocks normal production of GcMAF
GcMAF precursor
cancers
make
bacteria
(being eaten)
GcMAF
activates macrophages
activated macrophages eat cancer cells viruses and bacteria
activated macrophage
de-activated macrophage

Effects of vitamin D-binding protein-derived macrophage-activating factor on human breast cancer cells.

- Anticancer Res. 2012 Jan;32(1):45-52.

- Pacini S, Punzi T, Morucci G, Gulisano M, Ruggiero M.
- Source
- Department of Anatomy, Histology and Forensic Medicine, Viale Morgagni 85, University of Firenze, Italy.

- Abstract
- BACKGROUND:
- Searching for additional therapeutic tools to fight breast cancer, we investigated the effects of vitamin D-binding protein-derived macrophage activating factor (DBP-MAF, also known as GcMAF) on a human breast cancer cell line (MCF-7).
- MATERIALS AND METHODS:
- The effects of DBP-MAF on proliferation, morphology, vimentin expression and angiogenesis were studied by cell proliferation assay, phase-contrast microscopy, immunohistochemistry and western blotting, and chorioallantoic membrane (CAM) assay.
- RESULTS:
- DBP-MAF inhibited human breast cancer cell proliferation and cancer cell-stimulated angiogenesis. MCF-7 cells treated with DBP-MAF predominantly grew in monolayer and appeared to be well adherent to each other and to the well surface. Exposure to DBP-MAF significantly reduced vimentin expression, indicating a reversal of the epithelial/mesenchymal transition, a hallmark of human breast cancer progression.
- CONCLUSION:
- These results are consistent with the hypothesis that the known anticancer efficacy of DBP-MAF can be ascribed to different biological properties of the molecule that include inhibition of tumour-induced angiogenesis and direct inhibition of cancer cell proliferation, migration and metastatic potential.

Immunotherapy for Prostate Cancer with Gc Protein-Derived Macrophage-Activating Factor, GcMAF.

- Transl Oncol. 2008 Jul;1(2):65-72

- Yamamoto N, Suyama H, Yamamoto N.
- **Source**
- **Division of Cancer Immunology and Molecular Biology, Socrates Institute for Therapeutic Immunology, Philadelphia, PA 19126-3305, USA.**

- **Abstract**
- Serum Gc protein (known as vitamin D(3)-binding protein) is the precursor for the principal macrophage-activating factor (MAF). The MAF precursor activity of serum Gc protein of prostate cancer patients was lost or reduced because Gc protein was deglycosylated by serum alpha-N-acetylgalactosaminidase (Nagalase) secreted from cancerous cells. Therefore, macrophages of prostate cancer patients having deglycosylated Gc protein cannot be activated, leading to immunosuppression. Stepwise treatment of purified Gc protein with immobilized beta-galactosidase and sialidase generated the most potent MAF (termed GcMAF) ever discovered, which produces no adverse effect in humans. Macrophages activated by GcMAF develop a considerable variation of receptors that recognize the abnormality in malignant cell surface and are highly tumoricidal. Sixteen nonanemic prostate cancer patients received weekly administration of 100 ng of GcMAF. As the MAF precursor activity increased, their serum Nagalase activity decreased. Because serum Nagalase activity is proportional to tumor burden, the entire time course analysis for GcMAF therapy was monitored by measuring the serum Nagalase activity. After 14 to 25 weekly administrations of GcMAF (100 ng/week), all 16 patients had very low serum Nagalase levels equivalent to those of healthy control values, indicating that these patients are tumor-free. No recurrence occurred for 7 years.

Immunotherapy of metastatic breast cancer patients with vitamin D-binding protein-derived macrophage activating factor (GcMAF).

- Int J Cancer. 2008 Jan 15;122(2):461-7.

- Yamamoto N, Suyama H, Yamamoto N, Ushijima N.
- Source
- Division of Cancer Immunology and Molecular Biology, Socrates Institute for Therapeutic Immunology, Philadelphia, PA 19126-3305, USA. nobutoyama@verizon.net

- Abstract

- Serum vitamin D3-binding protein (Gc protein) is the precursor for the principal macrophage activating factor (MAF). The MAF precursor activity of serum Gc protein of breast cancer patients was lost or reduced because Gc protein was deglycosylated by serum alpha-N-acetylgalactosaminidase (Nagalase) secreted from cancerous cells. Patient serum Nagalase activity is proportional to tumor burden. The deglycosylated Gc protein cannot be converted to MAF, resulting in no macrophage activation and immunosuppression. Stepwise incubation of purified Gc protein with immobilized beta-galactosidase and sialidase generated probably the most potent macrophage activating factor (termed GcMAF) ever discovered, which produces no adverse effect in humans. Macrophages treated in vitro with GcMAF (100 pg/ml) are highly tumoricidal to mammary adenocarcinomas. Efficacy of GcMAF for treatment of metastatic breast cancer was investigated with 16 nonanemic patients who received weekly administration of GcMAF (100 ng). As GcMAF therapy progresses, the MAF precursor activity of patient Gc protein increased with a concomitant decrease in serum Nagalase. Because of proportionality of serum Nagalase activity to tumor burden, the time course progress of GcMAF therapy was assessed by serum Nagalase activity as a prognostic index. These patients had the initial Nagalase activities ranging from 2.32 to 6.28 nmole/min/mg protein. After about 16-22 administrations (approximately 3.5-5 months) of GcMAF, these patients had insignificantly low serum enzyme levels equivalent to healthy control enzyme levels, ranging from 0.38 to 0.63 nmole/min/mg protein, indicating eradication of the tumors. This therapeutic procedure resulted in no recurrence for more than 4 years.

Immunotherapy of metastatic colorectal cancer with vitamin D-binding protein-derived macrophage-activating factor, GcMAF.

- Cancer Immunol Immunother. 2008 Jul;57(7):1007-16

- Yamamoto N, Suyama H, Nakazato H, Yamamoto N, Koga Y.
- Source
- Division of Cancer Immunology and Molecular Immunology, Socrates Institute for Therapeutic Immunology, 1040, 66th Ave, Philadelphia, PA 19126-3305, USA. nobutoyama@verizon.net

- Abstract
- Serum vitamin D binding protein (Gc protein) is the precursor for the principal macrophage-activating factor (MAF). The MAF precursor activity of serum Gc protein of colorectal cancer patients was lost or reduced because Gc protein is deglycosylated by serum alpha-N-acetylgalactosaminidase (Nagalase) secreted from cancerous cells. Deglycosylated Gc protein cannot be converted to MAF, leading to immunosuppression. Stepwise treatment of purified Gc protein with immobilized beta-galactosidase and sialidase generated the most potent macrophage-activating factor (GcMAF) ever discovered, but it produces no side effect in humans. Macrophages treated with GcMAF (100 microg/ml) develop an enormous variation of receptors and are highly tumoricidal to a variety of cancers indiscriminately. Administration of 100 nanogram (ng)/ human maximally activates systemic macrophages that can kill cancerous cells. Since the half-life of the activated macrophages is approximately 6 days, 100 ng GcMAF was administered weekly to eight nonanemic colorectal cancer patients who had previously received tumor-resection but still carried significant amounts of metastatic tumor cells. As GcMAF therapy progressed, the MAF precursor activities of all patients increased and conversely their serum Nagalase activities decreased. Since serum Nagalase is proportional to tumor burden, serum Nagalase activity was used as a prognostic index for time course analysis of GcMAF therapy. After 32-50 weekly administrations of 100 ng GcMAF, all colorectal cancer patients exhibited healthy control levels of the serum Nagalase activity, indicating eradication of metastatic tumor cells. During 7 years after the completion of GcMAF therapy, their serum Nagalase activity did not increase, indicating no recurrence of cancer, which was also supported by the annual CT scans of these patients.

- Chronic inflamation,
- Bacterial and viral infections,
- Autism,
- Chronic Herpes,
- Chronic Acne,
- CFS,
- XMRV,
- Lyme disease,
- AIDS, HIV,
- Fibromyalgia (all of which we've had success with ourselves),
- Osteoporosis,
- Hodgkin's,
- Lupus,
- MS,
- Parkinson's,
- and various types of Immune dysfunction.

GcMAF can reverse diseases that attack the immune system

Diet in Autism

History

- Especially in the last 50-100 years increased consumption of unnatural food products and food additives, solid fats like margarines and pressed oil like sunflower and corn oil led to a decrease in fresh fruit & vegetable and food prepared in saucepan consumption.
- Our gene structure and subsequent chemical reactions does not have the complete ability to deal with these unnatural foods.
- The discordance between genes and foods leads to extreme increase in chronic diseases like obesity, diabetes, hypertension, stroke, ulcer, asthma, rheumatoid diseases, chronic tiredness, cancer and osteoporosis.

Traditional diet	Modern diet
Low glycemic index	High glycemic index
Food rich in vitamins and minerals	Food poor in vitamins and minerals
Rich productive soil fruit and vegetable	Poor unproductive fruit and vegetable
Natural manure	Artificial manure, fortifiers, hormones
Much organ meat, less red meat	Much red meat, less organ meat
Animal fat	Vegetable oil
Low in trans eneoic fatty acids	Rich in trans eneoic fatty acids
Low omega-6/omega-3 ratio (<4:1)	High omega-6/omega-3 ratio (>20:1)
Food products of free wandering animals	Food products of artificial fodder fed animals
Natural food with no additives	Additives
Raw and/or fermented milk and milk products	Pasteurized homogenized milk and milk products
Soaked or fermented cereals and legums	Refined or extracted cereal and legums.
Unrefined salt	Refined salt
Fermented vegetables	Conserved vegetables
Fermented drinks	Coke, colored drinks, carbonated soft drink
Slow cooking	Fast cooking (microwave)
Earthenware and copper kitchen cooking utensils	Teflon, aluminum
Native seeds	Hybrid seeds, bioengineering through genetic modification

Major Food Components Shown to Play a Part in Autism

- gluten (from grains)
- casein (from dairy)
- soy

The GFCFSF diet for autism

(gluten-free, casein-free, soy-free diet)

Grandma knew best

was proposed to correct the imbalance

in opioids that was seen in about 80%

of these children.

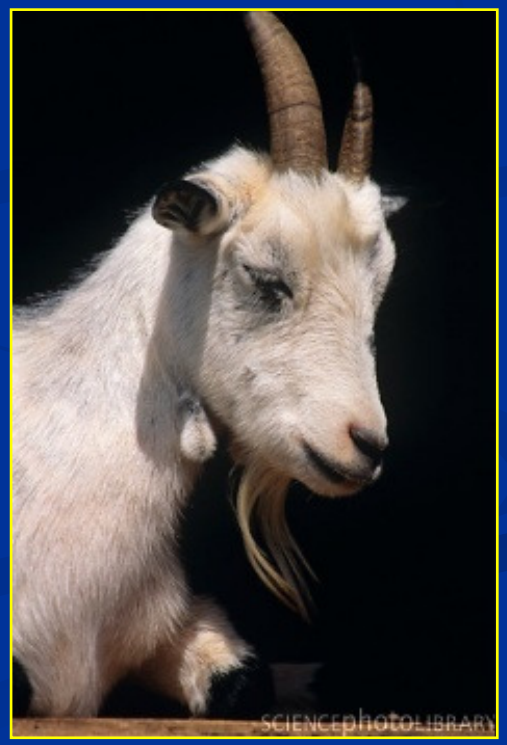
- Autistics do not have the stomach enzymes that normally break down the proteins from milk and wheat (and other grains).
- This allows undigested foods to travel through the stomach and into the intestines, where they are absorbed through a "leaky gut".
- In normal cases, protein breaks down to amino 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.

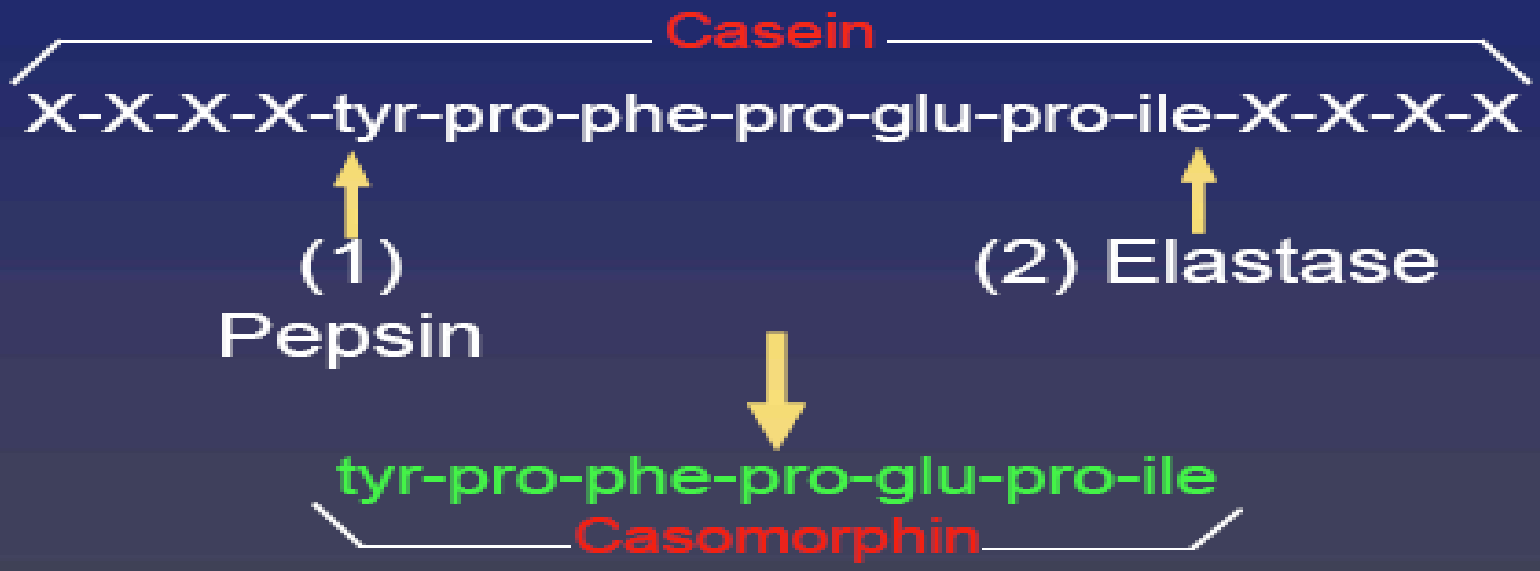
- By implementing the GFCFSF diet, these proteins will not be absorbed and are unable to cause harm.
- It has been noted in many cases that constipation, diarrhoea, self-injurious behaviour and "dazed" sensations have all improved simply by removing soy, gluten and casein from the diet.
- Treatments 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.

- Cow and sheep milk contains casein A1 95% and this can breaks down to peptides called "casomorphine",
- But goat milk contains casein A2 95%. (horse, donkey and camel milk is same with goat milk)
- Human milk contains casein A2 98% and casein A1 2%
- I recommend goat milk to autistic children.



ENZYMATIC FORMATION OF CASOMORPHIN FROM CASEIN



TYPE	HUMAN	GOAT	CAMEL	HORSE	COW	BUFFALO	SHEEP
CASEIN A1	2%	5%	5%	5%	95%	95%	95%
CASEIN A2	98%	95%	95%	95%	5%	5%	5%

Soy

- It is not as healthy as it is claimed to be.
- It decreases both the protein digestion and absorption of calcium, iron and zinc (phytates).
- Impairs thyroid hormone synthesis.
- Can lead to precocious puberty, menstrual irregularities and sterility.
- Vitamin D deficiency
- Osteoporosis
- Indigestion
- Immune deficiency
- Dementia
- Cancer
- Myocardial disease

Diet Trial for 3-6 months

- Casein-free
- Gluten-free
- Soy-free
- Sugar-free

Clean up the Diet

- Avoid sugar and refined starch
- Add
  - high protein
  - high fiber diet
  - high good fats
  - blue foods
  - garlic
  - fermented foods
  - turmeric
- maximize antioxidants
- increase cruciferous veggies

Avoid Sugar

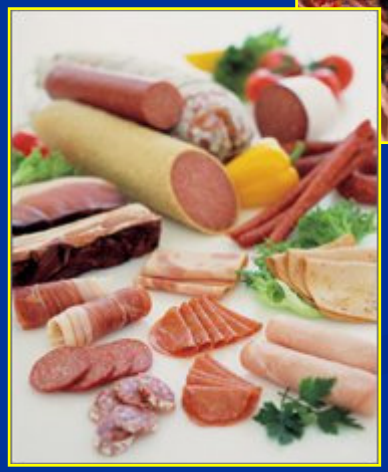
- Refined sugar (fructose included) and food containing refined sugar (jam, marmalade, cake, biscuit, pastry, wafer etc) are forbidden.
- Corn syrup, brown-sugar fructose and other sweeteners are not better alternatives.

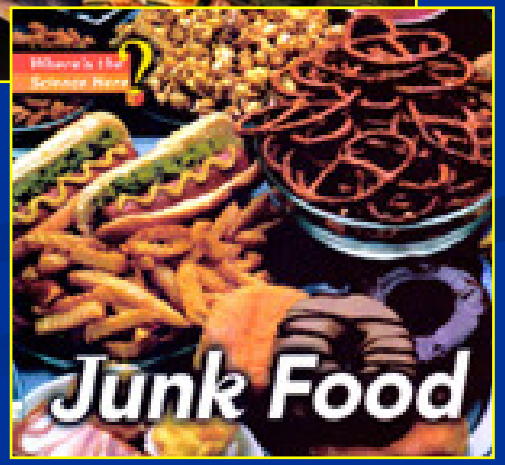
Honey is natural

- Natural honey gives health.
- Can be consumed up to 1-2 teaspoon a day.
- Unnatural honey which contains refined sugar is strictly forbidden.

Remove Junk Food & Preservatives

- Limit processed and preserved foods,
- Organic is best





Avoid Excitotoxins

- Caffeine,
- MSG,
- NutraSweet,
- red/yellow food dyes,
- nitrites,
- sulfites,
- glutamates,
- preservatives

Fried Food

It harms the human cells.
If must be consumed, must be prepared with
butter or hazelnut oil.

In order to lessen the harmful effects of fried foods, eat yoghurt with garlic and green vegetables with them.

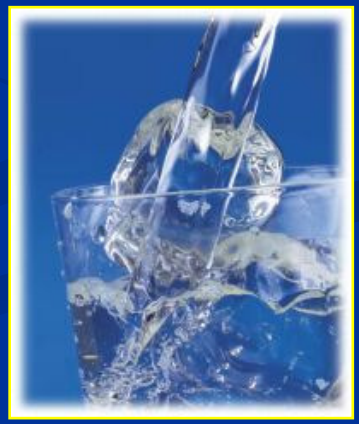
MOST OF THE FAST FOOD CONTAINS PRESERVATIVES

McDonald's fries Cheap diner fries

Diner fries McDonald's fries

Drink Plenty of Filtered Water

- Drink 6-8 glass of water a day.
- You can drink water half an hour before or after your meals.
- You must drink 1-2 glasses of water before going to sleep.



Limit Intake of Phenolics

- Red apples,
- Red grapes,
- Strawberry

Limit Sources of Copper

- chocolate,
- shellfish,
- tap water,
- artificial food dyes

Cooking Styles

- Foods must be cooked slowly with their own water.
- Besides traditional cooking like stewing, turbo ovens can be used. This will prevent the loss of the nutritional ingredients.
- Fast cooking styles (like microwave), lead to loss of the nutritional ingredients and could also lead to cancer. Never microwave in plastics or Styrofoam
- Try not to consume frozen food products.
- Try not to consume conserved food also.
  (Unless they are homemade !).

Eliminate Sea Food

- Eliminate seafood
- Give fishoil

- Fish oil
- Source of life!
- Contains much omega-3 fatty acids.
- From infancy to adulthood, every human being must consume fish oil.
- At least 300-500 mg/day active metabolites (EPA+DEHA) must be taken. In chronic illnesses the dose can be up to 2000-4000 mg/day (Under doctor control)
- Fat oil does not make you fat!
- Can be used both in winter and summer.
- But cod liver oil must not be used with caution in summer months because of its high vitamin D content.

Frequency of the Meals

- At the start of the diet you must eat frequently because of the risk of hypoglycemia.
- Your insulin will be trained in 1-2 weeks and eating 3 times a day (4-5 times for children) will be enough.
- Begin meals with raw fruits and veggies
- Chew every morsel !!!

Add Good Fats

- olive
  - The perfect oil!
  - Rich in monounsaturated fatty acids
  - True olive oil congeals by freezing.
  - Virgin type olive oil must be preferred.
  - Riviera type is the second choice (hot pressed).
- coconut
- flax

Avoid Hydrogenated and Trans Fats

- Seed oils
- Sunflower oil, cotton oil, corn oil, soy oil consist polyunsaturated oils rich in omega-6.
- They disturb the Omega-6/omega-3 balance by increasing omega-6.
- They also have a degenerative (hot pressed, degenerative trans-fatty acids! free radicals) effect on human organism.
- Do not use them !

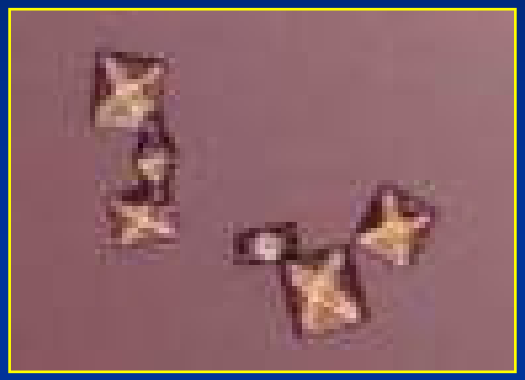
Buy Organic Meat and Eggs

- hormone-free,
- antibiotic-free,

- Red Meat
- Must not be overcooked.
- Must not be fat free.

- Egg
- The highest quality protein source.
- 1-4 eggs per day can be eaten.

Low Oxalate Diet for Autism



- What is oxalate?
- Oxalate = 2 carbons + 4 oxygen atoms
- Plants use oxalate:
  - To sequester and store excess calcium.
  - To make crystals that catch light for photosynthesis.
  - To form sharp edged crystals to defend themselves from predators.

Susan Costen Owens, MAIS - LWO@iadfw.net

Oxalate's structure makes it a chelator of minerals.

- Calcium
- Zinc
- Cobalt
- Iron
- Magnesium
- Manganese

It also binds minerals that are toxic:

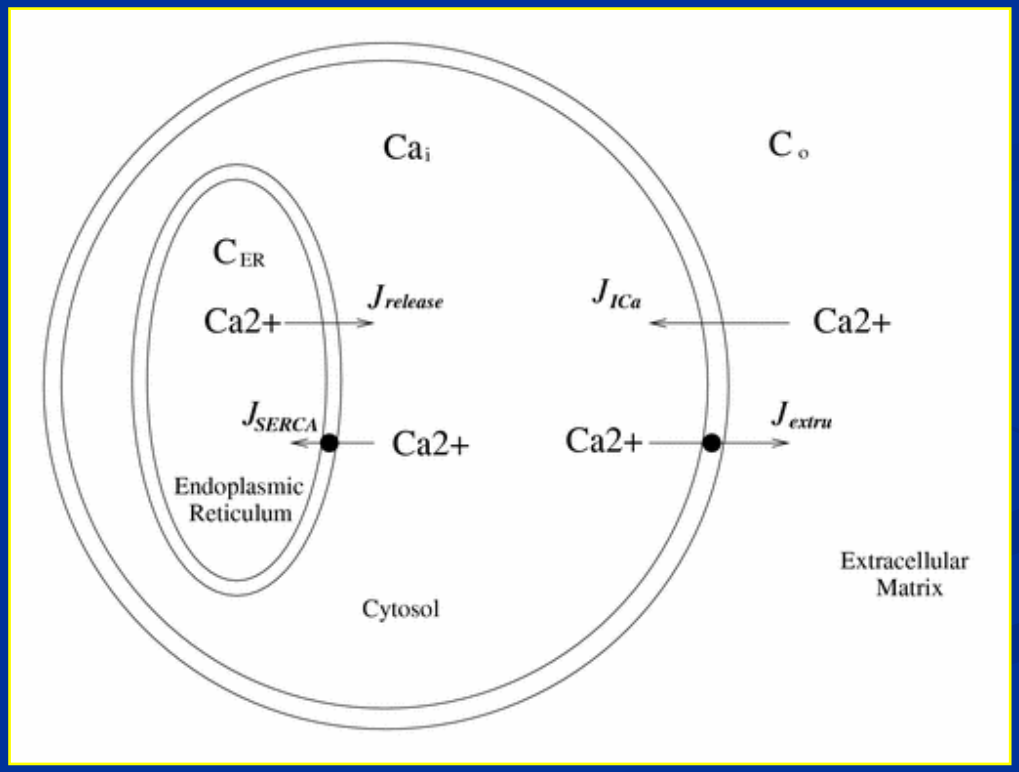
- Aluminum

The strongest bonds are to

- Mercury
- Lead

- If the levels of oxalate in tissues becomes excessive, then those tissues may retain toxic metals.
- Excess oxalates may also bind and change the nutritional availability or the function of necessary minerals.

- Oxalate in small amounts is normal to our cells.
- The only positive role known for oxalate is its regulation of the level of calcium that is stored in the endoplasmic reticulum.
- This storehouse of calcium can be used in cell signaling or in managing the life cycle of the cell.



What Happens When Oxalate Levels Excess ?

- When oxalate levels within cells becomes excessive, then this can lead to two processes of cell death:

- APOPTOSIS
- NECROSIS

- When this happens in epithelial cells, like the gut or the lining of the bladder, the result is a hole in the surface where the cell was, and this can make the tissue fail as a barrier.

- This is how the death of intestinal cells can be part of the reason behind the leaky gut.

How does this work ?

Excess oxalate's disruption of calcium levels can harm the performance of cells that don't get enough oxalate inside them to die, but they do get enough to affect cell chemistry.

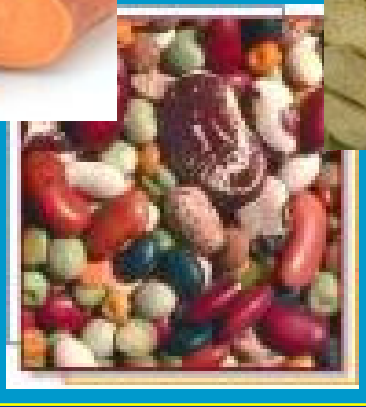
The calcium that oxalate binds might have been used to regulate the process of making vesicles that collect and then will release from the cell substances that were produced inside the cell.

How does this work ?

This effect of calcium may be

- why those with genetic disease with excesses of oxalate don't release enough growth hormone and require replacement therapy and
- why when oxalate collects in the thyroid, the thyroid won't release enough hormone to the body, causing a need for thyroid replacement therapy.

HIGH OXALATE FOODS

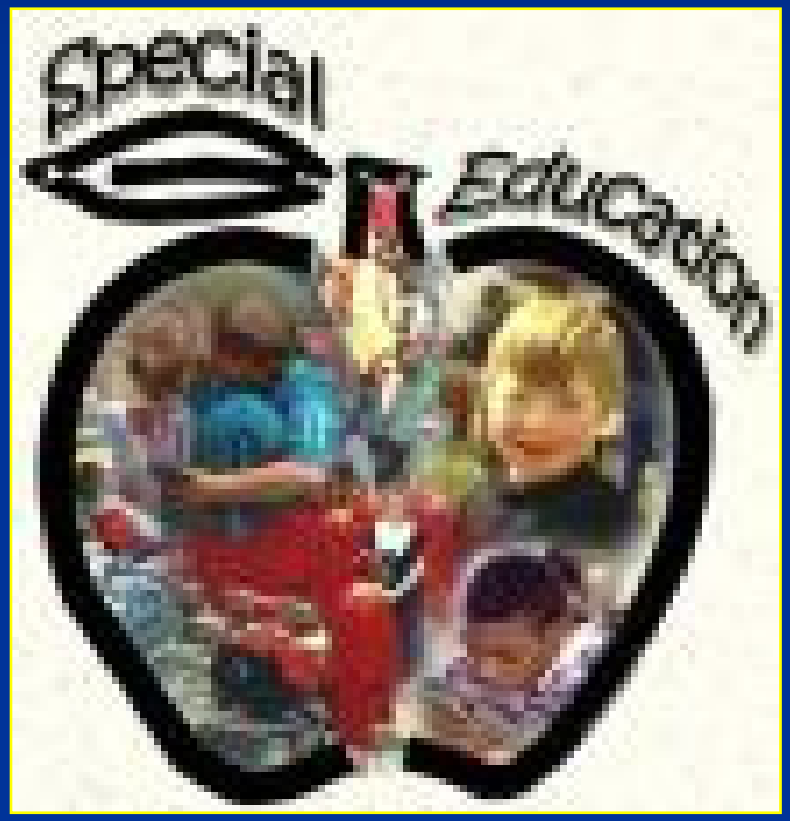


10 months of
diet
&
4 months of
chelation
27 years old

METALS	RESULT µg/g CREAT	REFERENCE RANGE	WITHIN REFERENCE RANGE	ELEVATED	VERY ELEVATED
Aluminum	15	< 25			
Antimony	0.6	< 0.6			
Arsenic	46	< 120			
Beryllium	< dl	< 0.5			
Bismuth	< dl	< 10			
Cadmium	0.4	< 2			
Lead	35	< 5			
Mercury	2.1	< 3			
Nickel	12	< 10			
Platinum	< dl	< 1			
Thallium	0.3	< 0.7			
Thorium	< dl	< 0.3			
Tin	1	< 9			
Tungsten	0.4	< 0.7			
Uranium	< dl	< 0.1			

METALS	RESULT µg/g CREAT	REFERENCE RANGE	WITHIN REFERENCE RANGE	ELEVATED	VERY ELEVATED
Aluminum	< dl	< 25			
Antimony	0.05	< 0.6			
Arsenic	11	< 120			
Beryllium	< dl	< 0.5			
Bismuth	< dl	< 10			
Cadmium	0.2	< 2			
Lead	18	< 5			
Mercury	0.5	< 3			
Nickel	3.5	< 10			
Platinum	< dl	< 1			
Thallium	0.2	< 0.7			
Thorium	< dl	< 0.3			
Tin	0.6	< 9			
Tungsten	0.09	< 0.7			
Uranium	< dl	< 0.1			

EDUCATIONAL & BEHAVIORAL THERAPIES



ABA

- Applied Behavior Analysis is
  - A series of techniques that help change behavior!
- Everything we do is Behavior
  - Swallowing a pill is behavior
  - Eating food is behavior
  - Hitting people to get away from a shot is behavior
  - Crying to avoid an HBOT chamber is behavior
- Behaviors can be good, bad or neutral
- The way we classify behaviors is subjective!
- Goal is to teach behaviors that are adaptive!

Occupational Therapy

- Occupational therapists help individuals with an autism spectrum disorder improve both fine and gross motor skills plus address sensory processing concerns.

- An occupational therapist will work with an autistic person to develop skills for handwriting, shirt buttoning, shoe tying, and so forth Occupational therapy is a part of the autism treatment plan and is provided by an registered and licensed occupational therapist (OTR/L) or a certified occupational therapy assistant (COTA).

Sensory Integration

- Sensory integration therapy is a type of occupational therapy (OT) that places a child in a room specifically designed to stimulate and challenge all of the senses.
- Many autistic individuals have sensory problems, which can range from mild to severe. These problems involve either hypersensitivity or hyposensitivity to stimulation
- Sensory integration focuses primarily on three senses
  - vestibular (i.e., motion, balance),
  - tactile (i.e., touch),
  - proprioception (e.g., joints, ligaments).
- Many techniques are used to stimulate these senses in order to normalize them.

Sensory Integration

- A sensory integration room is designed to make the child want to run into it and play .
- During sensory integration therapy, the child interacts one-on-one with the occupational therapist and performs an activity that combines sensory input with motion.

- Examples of such activities include:
  - Swinging in a hammock (movement through space)
  - Dancing to music (sound)
  - Playing in boxes filled with beans (touch)
  - Crawling through tunnels (touch and movement through space)
  - Hitting swinging balls (eye-hand coordination)
  - Spinning on a chair (balance and vision)
  - Balancing on a beam (balance)

Speech Therapy

- This may be beneficial to many autistic children, but often only 1-2 hours/week is available, so it probably has only modest benefit unless integrated with other home and school programs. sign language and PECS may also be very helpful in developing speech.

- Speech therapists should work on helping the child to hear hard consonant sounds such as the "c" in cup. It is often helpful if the therapist stretches out and enunciates the consonant sounds.

Floortime

- Floortime is a treatment method and a philosophy for interacting with autistic children.

- It is based on the premise that the child can increase and build a larger circle of interaction with an adult who meets the child at his current developmental level and who builds on the child's particular strengths.

Floortime

- The goal in Floortime is to move the child through the six basic developmental milestones that must be mastered for emotional and intellectual growth such as
  - self regulation and interest in the world
  - intimacy or a special love for the world of human relations
  - two-way communication
  - complex communication
  - emotional ideas
  - emotional thinking
- The autistic child is challenged in moving naturally through these milestones as a result of sensory over- or under-reactions, processing difficulties, and/or poor control of physical responses.

Berard Auditory Integration Training

- Berard Auditory Integration Training was designed to normalize hearing and the ways in which the brain processes auditory information.
- For example, an individual tests as hypersensitive to the frequencies of 1,000 and 8,000 Hertz while perception of all other frequencies falls within the normal range.
- The individual becomes overstimulated, disoriented or agitated in the presence of sounds at 1,000 and 8,000 Hertz.
- Therefore, Berard AIT works to normalize the hearing response across all frequencies within the normal hearing range.

Berard Auditory Integration Training

- In another example, an individual's hearing is asymmetrical (significantly different between the two ears).
- When the right and left ears perceive sounds in an extremely different way, problems with sound discrimination can occur.
- Again, Berard AIT works to normalize the hearing of both ears.

- 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.
- Accept, all the support you can get!


LATEST NEWS!

FDA Requires Warning for Fluoroquinolone Drugs (Cipro, Levaquin, Avelox, Floxin)

- On August 15, 2013, the FDA put out yet another Safety Announcement concerning fluoroquinolone drugs such as Levaquin, Cipro and Avelox which states that these drugs will now be required to contain a warning for severe, permanent and disabling peripheral neuropathy.

- The FDA Safety Announcement also indicates that damage can occur in the very beginning of treatment with fluoroquinolone drugs and the damage can be permanent or last for years after treatment is stopped.

WHO warning about Lead Poisoning

- An estimated 143,000 deaths per year result from lead poisoning, with lead paint a major contributor.
- Lead paint, a major source of potential poisoning for young children that causes some 600,000 new cases of intellectual disabilities each year, according to the World Health Organization.
- Lead paint can be found in the home, on toys, furniture and on other objects.
- Decaying lead paint on walls, furniture and other interior surfaces creates lead-contaminated dust in the home that young children easily ingest.

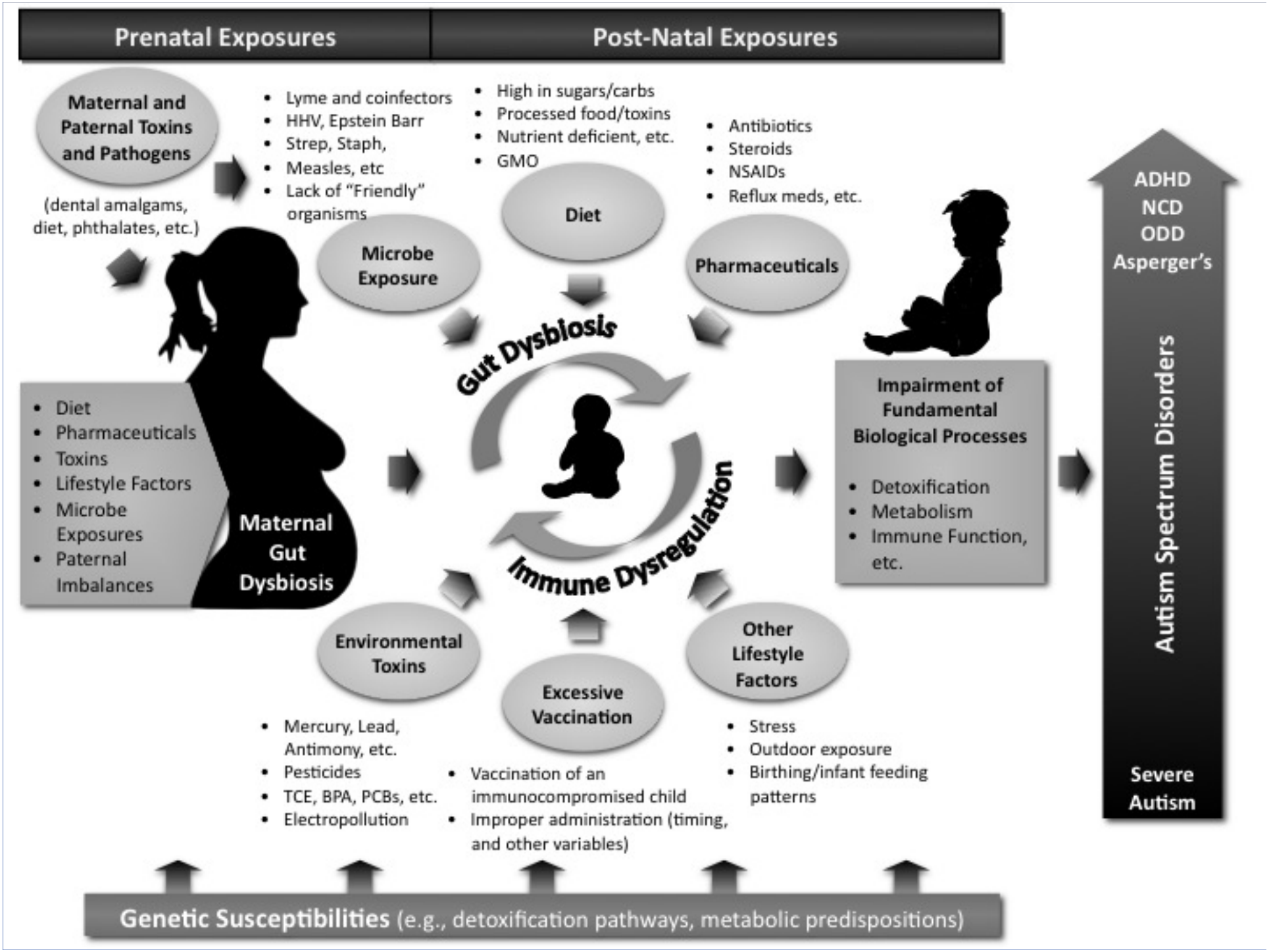
WHO warning about Lead Poisoning

- Young children are also exposed to lead by putting lead-painted toys and other objects in their mouths.
- The sweet taste of lead paint means that some children even pick off and swallow small chips of paint.
- At high levels of exposure, lead affects brain development in children, resulting in reduced IQ, behavioral changes such as shortening of attention span and increased antisocial behavior, and reduced educational attainment.
- These effects are believed to be irreversible.
- Adults are at increased risk of kidney disease and raised blood pressure

New research claims use of acetaminophen / paracetamol correlates with Autism and ADHD diagnosis rise

- The in-depth research conducted by Dr William Shaw PhD looks at the build up of toxicity of acetaminophen and it's effect on development of a specific enzyme which is deficient in autistic people and is responsible for catalysing desulfation pathways in the brain.
- Low levels of this catalyst lead to over production of the toxic by-product of the pathway, namely the chemical N-acetylp- benzoquinone imine (NAPQI).
- A small amount of this chemical is usually broken down by the liver, but large amounts (as in paracetamol overdose) causes permanent liver damage.

SUMMARY


Prenatal Exposures
Post-Natal Exposures
Maternal and Paternal Toxins and Pathogens
(dental amalgams, diet, phthalates, etc.)
Lyme and coinfectors
HHV, Epstein Barr
Strep, Staph,
Measles, etc
Lack of "Friendly" organisms
High in sugars/carbs
Processed food/toxins
Nutrient deficient, etc.
GMO
Antibiotics
Steroids
NSAIDs
Reflux meds, etc.
Diet
Microbe Exposure
Pharmaceuticals
Gut Dysbiosis
Immune Dysregulation
Diet
Pharmaceuticals
Toxins
Lifestyle Factors
Microbe Exposures
Paternal Imbalances
Maternal Gut Dysbiosis
Impairment of Fundamental Biological Processes
Detoxification
Metabolism
Immune Function, etc.
ADHD
NCD
ODD
Asperger's
Autism Spectrum Disorders
Severe Autism
Environmental Toxins
Excessive Vaccination
Other Lifestyle Factors
Mercury, Lead, Antimony, etc.
Pesticides
TCE, BPA, PCBs, etc.
Electropollution
Vaccination of an immunocompromised child
Improper administration (timing, and other variables)
Stress
Outdoor exposure
Birthing/infant feeding patterns
Genetic Susceptibilities (e.g., detoxification pathways, metabolic predispositions)

- Autism is treatable.
- Treatment is individual-specific.
- Significiant gains are usual.
- Temporary setbacks are common.
- It's never too late !

REMOVE

- SUGAR
- JUNK FOOD
- PRESERVATIVES

From your childs diet !

REPLENISH

with

- GOOD FLORA (PROBIOTICS)
- ENZYMES
- NUTRIENTS
- ESSENTIAL FATTY ACIDS

REPAIR

with

- Antifungals
- Antivirals
- Antibacterials
- Immunotheraphy
- Detoxification/Chelation
- HBOT

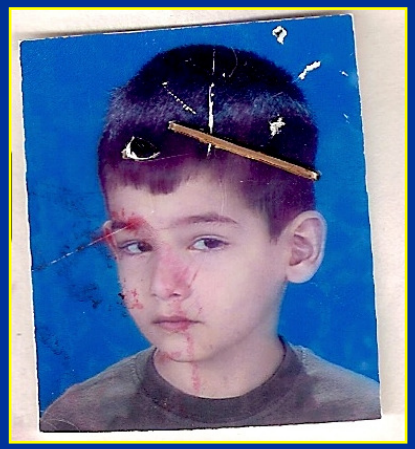
Intensity of Symptoms = Intensity of Treatment

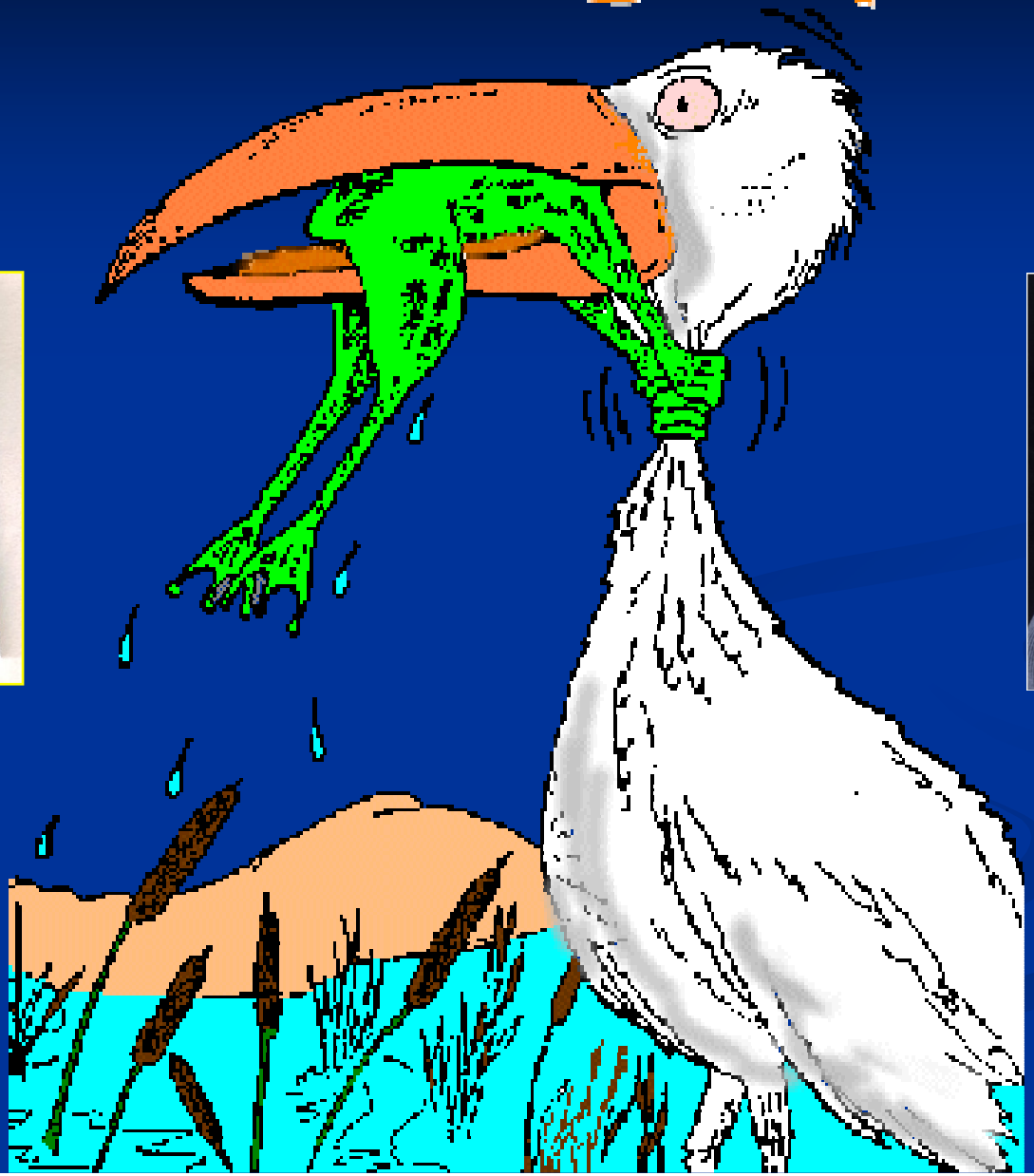
Anju Usman, TREATING AUTISM CONFERENCE FEB 2007 - UK

videos about biomedical aproach

- http://www.youtube.com/watch?feature=player_embedded&v=70KNAIQObcE
- http://www.youtube.com/watch?feature=player_embedded&v=IJe9ZqEmumw
- www.youtube.com/watch?v=bXZ0wv5gekI

Never ever give up!





Bitola – Macedonia 2012


12/20/2008
Kemo
ATA KINACI
PROTOKOL
GREECE
19-12-2008
THANKS A
LOT TO
OUR DAN
DOCTOR
DR.CEM
KINACI

THANKS TO

- My wife Serpilgul (Vural) Kinaci
- Autism Research Institute
- Medical Academy of Pediatric Special Needs
- All Defeat Autism Now! Physicians
- Prof Dr Ahmet Aydin

GISBIR Healthcare Center Hospital – TURKEY
Nuclear Medicine Department
Evliya Çelebi Mah. Sahil Yolu No:2,Tuzla 34944 Istanbul
+90 507 247 49 46 (Contact to Nazire Kasap)

“Mərkəzi Klinika” Bakı Ambulatoriyası – AZERBAIJAN
Zərifə Əliyeva küç. 5, AZ1005 Baku
+994 12 492 10 92 (Contact to Kemala Allahverdiyeva)

Unionhealth Terapijski Centar – SERBIA
Dalmatinska 17, 11000 Beograd
+381 1 3292 172 (Contact to Danijela Helc)

HBOT Clinic Aymed Tirana – ALBANIA
Rr.”Reshit Petrela” Kompleksi Usluga, Kula e Xhamit, KL-1, Tirane
+355 6730 18627 (Contact to Dr Taulant Qyrdedi)

cemkinaci@gmail.com