

**-Heavy Metal Poisoning, Identification, and Oral Treatment Considerations for Adults-
(Designed for Practitioners and Patients Seeking Alternative Medical Care)**

by

David W. Maloney, Pharm.D, MBA, MA, R.Ph.
(Lt. Colonel, Biomedical Sciences Corps, USAF, Ret.)


PART 1 & 2

-Medical Summary Improvements to 4/30/10-

(three years later) ...

“For myself, my chronic mercury poison problem is improving tremendously. I no longer suffer from balance problems, brain fog or memory problems, (numerous) infections, skin cancer, painful generalized body aches, reduced energy levels, coughing or tremors in my hands or ‘mercury shyness’ because I can now look everyone in the eye again. After thirty-five years of osteoarthritis problems in my hands and multiple body joints (Xray confirmed), the problems are gone. Now my cholesterol problem is on decline, my body hair is growing back, especially in my bald spot, and my skin texture and appearance have also improved with no age spots or deep skin lines resulting in a more youthful look. My TMJ complaint has been resolved and my sinus and allergy problems almost non-existent.”

(-from page 30, *Diary of a Poisoned Pharmacist* by Dr. Maloney**)

URINE TOXIC METALS							
		LAB#: U070222-0009-1	PATIENT: David W. Maloney		CLIENT#: 34210		
		SEX: Male			DOCTOR:		
		AGE: 63				Fresno, CA	
POTENTIALLY TOXIC METALS							
METALS	RESULT µg/g CREAT	REFERENCE RANGE	WITHIN REFERENCE RANGE	ELEVATED	VERY ELEVATED		
Aluminum	< dl	< 25					
Antimony	0.4	< 0.5					
Arsenic	49	= 120					
Beryllium	< dl	< 0.5					
Bismuth	< dl	< 10					
Cadmium	0.5	< 2					
Lead	1.7	< 5					
Mercury	21	< 3					
Nickel	5.1	= 10					
Platinum	< dl	= 5					
Thallium	0.1	< 0.7					
Thorium	< dl	< 0.3					
Tin	2.8	< 9					
Tungsten	< dl	< 0.7					
Uranium	< dl	= 0.5					
CREATININE							
	RESULT mg/dL	REFERENCE RANGE	2SD LOW	1SD LOW	MEAN	1SD HIGH	2SD HIGH
Creatinine	55	43- 225					
SPECIMEN DATA							
Comments:							
Date Collected:	2/18/2007	Method:	ICP-MS	Collection Period:	timed: 6 hours		
Date Received:	2/23/2007	<dl:	less than detection limit	Volume:			
Date Completed:	2/24/2007	Provoking Agent:		Provocation:	PRE PROVOCATIVE		
Toxic metals are reported as µg/g creatinine to account for urine dilution variations. Reference ranges are representative of a healthy population under non-challenge or non-provoked conditions. No safe reference levels for toxic metals have been established.							
11006							
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My first urine test for toxic metals record a chronic seven-fold increase for mercury above the reference range, indicating an extremely toxic situation. I needed help; my immune system is shutting down, too. I got help from my ACAM physician, a board certified internal medicine cardiologist, also a chelating specialist. But I was perplexed at the time. My late December 2006 Complete Blood Count (CBC) reads normal, yet I am totally poisoned by mercury and other heavy metals. At the time, I was on maintenance doses of Lipitor and Prilosec, some Motrin, with prudent fish consumption.

Dr. Maloney's CBC Results of December, 2006

LABORATORY REPORT

WESTCLIFF
MEDICAL LABORATORIES, INC.


DIRECTOR
C.K. CHOW
E. L. NICHOLSON

REQ# G1 63440014 PATIENT: MALONEY, DAVID GROUP: 30490 PAGE: 1
 RECEIVED: 12/10/06 10:24 AGE: 63Y DOB: SEX: M
 REPORTED: 12/11/06 REF. DR.: PHONE:
 AREA/ROUTE: 45 02 PHONE:

COMMENTS: FASTING; COLL: 12/9/06 REC'D: 12/10/06 ADVANTAGE #3200710
 PT FIRM:

TEST	LOW	RESULT	HIGH	NORMAL RANGE
AST/SBOT		26	0	48 U/L
LIPID PROFILE 1413				
CHOLESTEROL		196	FILE 140	200 mg/dL
TRIGLYCERIDES		57	FILE 10	190 mg/dL
HDL		63	FILE 40	80 mg/dL
LDL CALCULATED		122	FILE 66	130 mg/dL
VLDL CALCULATED		11.4	6.0	35.0
LDL/HDL RISK FACTOR		1.9	0.8	3.0 Ratio
CHOL/HDL RATIO	3.11		3.43	4.97
COMMENT	**			
RISK FACTOR CHOL./HDL RATIO CHOL./HDL				
		MALE	FEMALE	
HALF AVERAGE		3.43	3.27	
AVERAGE		4.97	4.44	
TWICE AVERAGE		9.55	7.05	
THRICE AVERAGE		23.99	11.04	
CBC & AUTO DIFFERENTIAL				
WBC		4.8	4.0	11.0 thou/mm3
RBC		4.62	4.20	5.80 mill/mm3
HEMOGLOBIN		15.7	14.0	18.0 gm/dL
HEMATOCRIT		44.6	42.0	52.0 %
MCV		96	80	100 microns3
MCH		34.1	27.0	35.0 pg
MCHC		35.3	31.0	37.0 gm/dL
RDW		13.1	11.5	14.5 %
PLATELET COUNT		193	150	450 thou/mm3
SEG8		67.4	50.0	75.0 %
LYMPHS		20.8	20.0	44.0 %
MONOCYTES		6.6	0.0	10.0 %
EOSINOPHILS		4.9	1.0	7.0 %
BASOPHILS		0.2	0.0	2.0 %
BANDS		0.0	0.0	5.0 %
SEDIMATE AUTOMATED				
MODIFIED WESTERCHEN		4	0	20 MM/HR
Please note updated reference range due to method change				
(Continued on Next Page)				
<small>UNLESS OTHERWISE INDICATED ALL TESTS WERE PERFORMED AT 1821 E. GUYEN RD., STE. 100, SANTA ANA, CA 92705-0700</small>				
WESTCLIFF MEDICAL LABORATORIES NETWORK	A. 1821 E. Guyen Rd., Ste. 100 Santa Ana, CA 92705-0700 (949) 704-0900	H. 2020 N. Wilcox Rd., Ste. A San Bernardino, CA 92404 (909) 470-0900	E. 4074 Terrace Blvd., Ste. 340 Torrance, CA 90503 (310) 940-0900	BIOANALYSTS C. K. Chow E. L. Nicholson PATHOLOGISTS Arthur Williams, M.D. Eugene Prosser, M.D. Pooheena Yellur, M.D.

(My wife's heavy metal tests were within the reference range for her individual urine test.)

URINE TOXIC METALS							
		LAB#: U070524-0231-1 PATIENT: David W. Maloney SEX: Male AGE: 63		CLIENT#: 24210 DOCTOR:			
POTENTIALLY TOXIC METALS							
METALS	RESULT µg/g CREAT	REFERENCE RANGE	WITHIN REFERENCE RANGE		ELEVATED	VERY ELEVATED	
Aluminum	19	< 25	██████████				
Antimony	< dl	< 0.6	██████████				
Arsenic	38	< 120	██████████				
Beryllium	< dl	< 0.5	██████████				
Bismuth	< dl	< 10	██████████				
Cadmium	0.3	< 2	██████████				
Lead	< dl	< 5	██████████				
Mercury	2.3	< 3	██████████				
Nickel	7.2	< 10	██████████				
Platinum	< dl	< 1	██████████				
Thallium	0.2	< 0.7	██████████				
Thorium	< dl	< 0.3	██████████				
Tin	< dl	< 9	██████████				
Tungsten	< dl	< 0.7	██████████				
Uranium	< dl	< 0.1	██████████				
CREATININE							
	RESULT mg/dL	REFERENCE RANGE	2SD LOW	1SD LOW	MEAN	1SD HIGH	2SD HIGH
	28	45 - 225	██████████	██████████	██████████	██████████	██████████
SPECIMEN DATA							
Comments:							
Date Collected:	5/12/2007	Method:	ICP-MS		Collection Period:	timed: 6 hours	
Date Received:	5/24/2007	<dl:	less than detection limit		Volume:		
Date Completed:	5/30/2007	Provoking Agent:	MERCURY		Provocation:	POST PROVOCATIVE	
Toxic metals are reported as µg/g creatinine to account for urine dilution variations. Reference ranges are representative of a healthy population under non-challenge or non-provoked conditions. No safe reference levels for toxic metals have been established.							
V10.30							
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Dr. Maloney's Second Urine Toxic Metal Test, May 2007

Dr. Maloney's CBC Results of June, 2007

Jun 12 07 08:54a Dr.

P.1

06/08/2007 03:37PM SMC (569)450-3126 The info contained in this fax is confidential and for the sole use of the intended recipient. Page 1

 MALONEY, DAVID W (M-1771194) O/P 0928418 LAB
 Spec. Type: BLOOD Collected: 06/08/07 1524 [9695811]
 Result name Result Reference Range
 WBC(thous/mcL): 4.4 4.5-11.0
 RBC(mill/mcL): 4.29 L 4.7-6.1
 Hgb(g/dL): 14.7 14-18
 Hct(%): 41.8 L 42-52
 ✓ MCV(fL): 37.3 H 80-94
 ✓ MCH(pg): 34.2 H 28.0-32.0
 ✓ MCHC(g/dl): 35.1 32.5-35.5
 RDW(%): 12.4 12.5-14.5
 Platelet(thous/mcL): 168 150-400
 MPV(fL): 7.2 L 7.4-10.4
 Lymph - %(%): 23.87 20-43
 ✓ Mono(%): 10.73 H 0-8 + 2.7 %
 Gran(%): 59.01 52-74
 STAT CBC, AUTOMATED DIFFE *FINAL
 Ord Phys: Dr. MALONEY, PATRICK A PRINTED: 03:36 P 1

 MALONEY, DAVID W (M-1771194) O/P 0928418 LAB
 Spec. Type: BLOOD Collected: 06/08/07 1524 [9695811]
 Result name Result Reference Range
 ✓ Eos(%): 5.95 H 0-3
 Baso(%): 0.44 0-1
 Lymph - Absolute(X(10)3): 1.10 1.0-4.7
 Mono(X(10)3): 0.49 0.1-1.0
 Gran(X(10)3): 3.71 2.6-8.2
 Eos(X(10)3): 0.27 < 0.7
 Baso(X(10)3): 0.02 < 0.2
 End of Report:

STAT CBC, AUTOMATED DIFFE *FINAL
 Ord Phys: Dr. C. PRINTED: 03:36 P 2

HAIR ELEMENTS



LAB#: H080911-0236-1
 PATIENT: David W. Maloney
 SEX: Male
 AGE: 64

CLIENT#: 24210
 DOCTOR: |

POTENTIALLY TOXIC ELEMENTS							
TOXIC ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE				
			66 th	95 th			
Aluminum	5.0	< 7.0					
Antimony	0.017	< 0.066					
Arsenic	0.098	< 0.080					
Beryllium	< 0.01	< 0.020					
Bismuth	0.026	< 2.0					
Cadmium	0.035	< 0.15					
Lead	0.08	< 2.0					
Mercury	0.93	< 1.1					
Platinum	< 0.003	< 0.005					
Thallium	< 0.001	< 0.010					
Thorium	< 0.001	< 0.005					
Uranium	0.006	< 0.060					
Nickel	0.02	< 0.40					
Silver	0.01	< 0.12					
Tin	0.09	< 0.30					
Titanium	0.59	< 1.0					
Total Toxic Representation							
ESSENTIAL AND OTHER ELEMENTS							
ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE				
			2.5 th	16 th	50 th	84 th	97.5 th
Calcium	127	200- 750					
Magnesium	11	25- 75					
Sodium	110	12- 90					
Potassium	21	9- 40					
Copper	9.2	1.0- 28					
Zinc	200	130- 200					
Manganese	0.06	0.15- 0.65					
Chromium	0.38	0.20- 0.40					
Vanadium	0.10	0.018- 0.065					
Molybdenum	0.033	0.025- 0.064					
Boron	1.1	0.40- 3.0					
Iodine	0.44	0.25- 1.3					
Lithium	< 0.004	0.007- 0.023					
Phosphorus	187	160- 250					
Selenium	1.1	0.95- 1.7					
Srconium	< 0.01	0.30- 3.5					
Sulfur	50600	44500- 52000					
Barium	0.07	0.16- 1.6					
Cobalt	0.002	0.013- 0.035					
Iron	11	5.4- 13					
Germanium	0.029	0.045- 0.065					
Rubidium	0.023	0.011- 0.12					
Zirconium	0.057	0.020- 0.44					
SPECIMEN DATA				RATIOS			
COMMENTS:		Sample Size:	0.196 g	ELEMENTS	EXPECTED RANGE		
Date Collected:	9/6/2008	Sample Type:	Head	Ca/Mg	11.5		
Date Received:	9/11/2008	Hair Color:	Red	Ca/P	0.679		
Date Completed:	9/13/2008	Treatment:		Na/K	5.24		
Methodology:	ICP-MS	Shampoo:	Dove	Zn/Cu	21.7		
				Zn/Cd	> 999		

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Dr. Maloney's First Hair Test Results of September, 2008

My second urine test for toxic metals on May 30, 2007, tells a different story after many treatments with DMSA, an oral chelating agent designed to remove poisonous metals from my body (extracellular scrub of metals). Mercury is back within the normal reference range. My mercury toxic level dropped from 21 micrograms/gram to 2.3 micrograms/gram creatinine. I am no longer as toxic as before. But now I am showing substantial amounts of aluminum, not recorded in my first urine test. Antimony, lead and tin are not pulled this time; arsenic, cadmium, nickel and thallium are about the same.

My hemoglobin is going lower in my June, 2007, CBC test. My red blood cells (RBCs), hematocrit (HCT), and mean platelet volume (MPV) are all low; while the mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), mean corpuscular hemoglobin (MCHC), monocytes (Mono) and eosinophils (Eos) are all high, pointing to an anemic problem. I looked and felt anemic at the time. Dr. McClure's interpretation of these findings are noted on pages 15/16, and the importance of the amino acid cysteine in our bodies. In my case, adding up my eosinophils, basophils, and monocytes values, and exceeding seven, my gut may be inflamed because of the mercury. At this time I was periodically treated for diverticulitis (inflammation and infection of the lower bowel).

After 18 months with continued DMSA treatments, and improving health as well, I asked my chelation doctor for a hair test to look at my intracellular metal problem. DMSA will do a good job with extracellular (outside the cells) metal poisoning elimination, but not intracellular (inside the cells). Noting the hair test results of September, 2008, I added alpha lipoic acid to my treatment regimen because my total toxic representation is becoming worrisome. Aluminum, arsenic, mercury, and titanium need to be reduced. Mercury dental amalgam is still a persistent problem. Dr. Cutler's hair test interpretation identifies a Rule Four match (heavy metal violation) out of Five Rules possible. Mercury toxicity is over expressing arsenic as the problem source of poisoning, resulting in deranged mineral transport of my essential mineral body balance. My calcium/potassium relationship is pointing to a possible mercury-hypothyroid problem (confirmed by TSH findings.); while my calcium/magnesium relationship to sodium and potassium is suggesting a possible adrenal problem as well. (See *Hair Test Interpretation: Finding Hidden Toxicities* by Andrew H. Cutler, Ph.D.)

Disclaimer*

*The content of this presentation is based on scientific findings and observations, and does not imply a treatment for any specific individual, or any liability for personal injury and personal risk taking, or simple misunderstandings of the contents and literature. Each person is different; chelation (key-lay-shun) may not satisfy each person's total health care needs. Nor does this work endorse any product mentioned associated with treatment considerations. The Food and Drug Administration (FDA) reminds people that chelation products alter blood components and can cause serious harm such as dehydration, kidney failure and possible death even under physician supervision. A physician especially trained in alternative medicine to include heavy metal poisoning and chelation therapy such as the American College for Advancement in Medicine (ACAM), or International Academy of Oral Medicine and Toxicology (IAOMT), plus pediatric physicians treating autism and related disorders, and non-mercury using dentists trained

in biological/ holistic practice should be the primary source of suspected heavy metal and related toxins treatment. Not all practitioners are alike; choose a professional with the same caution reserved for conventional practitioners. (800-532-3688 or ACAM. org to use their web site to locate a physician near you by filtering ‘internal medicine or ADHD/ADD or autism or cardiovascular disease or chelation therapy;’ IAOMT.com website or Dental Amalgam Mercury Solutions (DAMS) and IAOMT Safe Removal of Amalgam Fillings websites or 651-644-4572 ; holistic pediatric physicians in your area; or Mercola.com “How to Find a Biological Dentist That Can Treat You Holistically.”) This is a possible path for holistic health improvements for those poisoned by heavy metals and suffering from certain disease states.

Chelation therapy is a medical treatment to remove primarily heavy metals (arsenic, cadmium, lead, mercury etc.) from the human body with the aid of chelating agents, binding to the heavy metals and excreting them through the kidneys or feces. Drugs used to achieve this effect may include oral (found in our bodies) alpha lipoic acid (ALA), dimercapto-propane sulfonate (DMPS) oral and injectable, oral dimercaptosuccinic acid (DMSA) and injectable ethylenediaminetetracetic acid (calcium disodium versante (CaNa₂-EDTA) to name a select few. Transdermal and suppository formulations exist for some of these products. Natural products to remove metals include oral cilantro and chlorella. When toxic heavy metals are removed from the human body, many disease states improve or disappear. Check with your doctor to see if you are allergic (all contain sulfur) to any of the above listed products before taking them.

Introduction

Fifteen hundred years have passed since Hypocrites informed us that diseases are caused by a lack of purification and elimination. Toxins in our environment (internal and external) contribute to perhaps **90%** of our problem disease states according to Dr. J. Higgensen, Head of Cancer Research, World Health Organization, Geneva, Switzerland. Indeed, Dr. Higgensen simply enforces the thought that this world is a precarious and dangerous place to live. (1) The United Nations and World Health Organization are acutely aware of the earth’s toxins, particularly the main heavy metals of aluminum, arsenic, cadmium, lead, mercury and nickel. Equally important are the hundreds of toxic compounds outside of this list also of great concern, especially the Environmental Working Group and their publication in 2005, *Body Burden: The Pollution in Newborns*. Almost 300 chemicals, pollutants and pesticides were detected from the umbilical cord blood in the random group of infants studied. Many of these linked to development problems and cancer at the very beginning of life. Over **80,000,000** Americans are now at risk with a threatened life span reduction of almost **9 years** because of heavy metal exposure alone. (2)

Twenty-three heavy (five times heavier than water) toxic metals exist in our environment as a result of natural or manufactured pollution. All can target organs and organ systems within our bodies. Aluminum (toxic but not a true heavy metal) is found in our water, cooking utensils, food additives, pharmacy products, antiperspirants, cans etc. It is considered a chief suspect in Alzheimer’s disease, and such neurological conditions such as Parkinsonism and other senile dementia forms, and behavior problems in children. (2)

Arsenic is common in the environment because of natural and manufactured chemicals, glass, pesticides, drinking water, meats (especially poultry, except Tyson's and a few others), and wood preservatives. Because of its plentiful existence, we are subject to exposure more often. It has been linked to skin cancers and atherosclerosis problems (#1 on Agency for Toxic Substances and Disease Registry list (ATSDR) for human exposure). (2)

Cadmium is found in dental amalgam, batteries, PVC plastics, paint pigments, dental alloys, motor oils and auto exhaust, shellfish, tobacco smoke, meats, and agriculture use. Cadmium is linked to high blood pressure, heart attack and strokes (#7 on ATSDR list for human exposure). (2)

Lead is used in pipes and drains, cable coverings, batteries, ammunition, fishing, PVC plastics, and crystal glass production, hair dyes, pewter, pottery, tap water, and tobacco smoke. Houses built before 1940 may still contain lead based paint. Highways throughout the world were constantly stained by lead additive gasoline exhaust before its elimination many years ago. Lead is implicated in neurological problems with children and adults (#2 on ATSDR list). (2)

Mercury is considered the most toxic heavy metal (#3 on ATSDR list). It is produced naturally with volcanic activity. Coal burning boilers and heaters (EPA estimates 5000 lives lost per year in the United States.),³ mining, paper manufacturing, paint products (until 1990), algicides, and dental amalgam (silver fillings containing **50%** mercury), certain fish and shell fish, flu shots, contribute to potential exposure. Three forms exist: elemental, organic (up to 100% absorbed in the gastrointestinal tract and the most toxic as methyl mercury), and inorganic mercury (with 7 to 15% absorbed in the gastrointestinal tract). Mercury is also found in high levels in the central nervous system (CNS). It is another chief suspect in Alzheimer's disease and other neurological problems. (2) New Day Health of Canada mails a free CD demonstrating mercury vapor being emitted with simple rubbing from a molar tooth containing dental amalgam.

Nickel can be found in appliances, buttons, ceramics, cocoa, cold-wave hair permanent, cooking utensils, cosmetics, coins, dental material, jewelry, batteries, tap water, and tobacco smoke. It has been implicated in cancers of the throat and lung. (2)

Guidelines issued in 2004 with the Integrative/Environmental Medicine Standard of Care note just 1 ppb (1 part per BILLION) of arsenic in our water supply will raise our chances for individual cancer by 1 in 1000. Cardiovascular risk is even greatly magnified with minute exposure to cadmium and nickel.

According to the Environmental Protection Agency (EPA), one out of six children of approximately 4 million yearly births within the United States, suffer from neurological problems of autism, attention deficit disorder (ADD), and learning disabilities related to lead or mercury contamination in the mother's womb concentrating in the placenta and cord blood, including breast milk. According to recent figures, at least 673,000 children in the United States suffer from autism alone, or 1 per 100 births. Mercury poisoning affects more people with amalgam (silver) dental fillings as the most common source of exposure states the EPA, with 70% of Americans not knowing this major fact. Even the Center for Disease Control (CDC) scores toxic metal exposure in the U.S. as the number one health hazard in our children. To resolve this, preventive care becomes the key for the health care system of the 21st Century according to the Integrative/Environmental Medicine Standard of Care Guidelines. (2, 4, 5, 6-8)

It is also recognized that low metal toxicity very much exists without our population's knowledge because of accumulative low level toxic metal exposure, which is not seen or seldom felt until later years in an individual's life when toxicity reaches a saturation point within their bodies and/or it disrupts important enzymatic pathways enough to cause disease state symptoms (**chronic poisoning**.) (9) Nor do most health practitioners realize it demands intervention to correct the damage because the metals are strongly bound to the central nervous system (CNS), and inside and outside the cell walls. Conventional laboratory tests by pass this most important problem and the disease state continues unrecognized. Mercury poisoning alone can cause allergies, Alzheimer's, amyotrophic lateral sclerosis (ALS), anxiety, autism, chronic fatigue syndrome, certain digestive problems, some Crohn's Disease, depression, diabetes, emotional and mental problems, headaches, insomnia, Lupus disease, memory loss, multiple sclerosis (MS), rheumatoid arthritis to name only a few. (1,5,11,12,13,14,15,16,17,18)

This little explored area of medicine demands the focus of today's health system. This focus is the key to preventive medicine at its best and health care cost reduction world-wide. This health care prevention will improve and prolong the lives of today's population and the countless future generations to come. It recalls the story and search for the Fountain of Youth with its 'vitality restoring waters,' once sought by the Spanish explorer Ponce de Leon in Florida in the 1500's (10)

-General Heavy Metal Symptoms-

Heavy metal general poisoning symptoms may include, but are not limited to chronic muscle and joint pain, major fatigue, skin reactions, muscle tremors, headaches, brain fog, depression, digestive reactions, weight problems, tingling sensations, insomnia, and forgetfulness/memory loss to name just a few. (19) Dr. William Walsh of *Nutrient Power* adds mental and emotional problems to this list; Dr. Cutler, in *Hair Test Interpretations: Finding Hidden Toxicities*, emphasizes bipolar disorder, schizophrenia, and child development problems as well.

-Heavy Metal Tests-

Another way to determine possible heavy metal exposure is a simple and easy hair test obtained without a medical prescription through Direct Laboratories in Louisiana. Hair test results maybe confusing and difficult to read for the untrained eye. A urine test, with an oral provoking agent such as DMPS or DMSA, can be helpful but available by prescription only through an ACAM or IAOMT provider dose based on kidney, liver, and heart function. A QuickSilver Mercury Tri-Test measuring the heavy metal in urine/blood and hair/blood concentrates is probably the most accurate method to identify methyl mercury/inorganic mercury on board. Also with this test, possible kidney problems can be identified before beginning detox treatment, thus deciding what detox treatment is best for the patient. The Tri-Test is available through QuickSilver Scientific on the net to some states without medical authorization, but California requires a provider authorization. Consult your state providers list to order the test at the Quick Silver web site. For the non-prescription hair test (most ACAM providers can prescribe the hair test for under fifty dollars) do the following:

- 1) Call 800-908-0000 and use “order line.” Patient must be at least 18 years old.
- 2) Tell Direct Labs representative you want to order a heavy metal hair test called “Hair Elements Profile” test showing toxic and essential elements results.
- 3) She will ask your name, address, telephone and date of birth.
- 4) Give her your credit card information over the phone. Cost is \$119.
- 5) Ask her to MAIL you a “hard copy” result or simply download the results.
- 6) Expect envelop for hair analysis to arrive in the mail in 3 to 4 business days.
- 7) Follow directions in hair kit (be sure to give them at least a gram of hair) and mail out in the envelop provided.
- 8) Results will be mailed to your house in 10 days or less, or download your results.

Reading the results of an individual hair test will give you a snapshot of 17 toxic metal possibilities, if found, to compare to a reference standard. Finding some of your values falling into the 68th percentile may be mind relieving if the total toxic representation does not exceed the 68th percentile. Remember, the toxins are additive. A little of aluminum, plus cadmium, added to mercury, lead and arsenic may be a poisonous threat. (20) In addition, twenty two essential body elements are also listed to compare to a standard and percentile range. This will give you the exposure record to given toxins trapped inside your cells suggesting possible derangement of essential elements meeting the body’s needs (See *Hair Test Interpretation: Finding Hidden Toxicities* by Dr. Cutler.). For instance, reduced body zinc levels showing high on hair tests may indicate mercury or another heavy metal is displacing zinc, and reducing or denying overall body metabolism of this important element; or sodium and chloride are low in the presence of mercury. (21,22) Metal and element ratios are also listed at the bottom of the hair test results. In addition, the laboratory will provide you with a report digesting the low and high values you receive on the test, but Cutler’s analysis is far superior in this author’s opinion.

Initial heavy metal poison exposure is normally released from the body via the kidney, fecal routes (**acute poisoning**); sweat glands, and within the hair shaft extending from the hair follicle over time (**chronic poisoning**) sometimes many years. (IAOMT’s *Fundamentals of Biological Dentistry* patient film identifies elemental mercury in amalgam being excreted via the urine; methyl mercury excreted through the liver for natural detoxification, with age and detoxification rates of “fast, moderate, slow” being the limiting steps. Moderate and slow patients, plus geriatric patients reach toxicity levels much quicker.) Exercise, saunas, steam rooms, mineral baths all are ideal methods to promote sweating and heavy metal excretions. But keep in mind the excretion process in the human body for chronic poisoning is not a quick fix or short treatment phase. Lead, attached to bone, for example, has a half life of 20 years (1/2 of the amount of lead is excreted from the body over 20 years.) (23) Inside the hair shaft, the amino acid cysteine is vitally important in binding and conducting the heavy toxic metals to the surface of the skin. Often mercury will not show up in the hair test if the individual is deplete of cysteine, especially if the individual has a mouthful of silver amalgam dental fillings containing

50% mercury. This means the mercury toxins are over whelming the amino acid and leaving it supersaturated and non functional; preventing it from even reaching the hair reference standard, and mercury toxicity reaching critical levels within the individual causing many disease states to appear. A urine toxic metals test with a provoking agent may prove very valuable here. (24)

If your hair test shows positive for heavy metals and substantial amounts of toxins are identified, you should share this with your current medical practitioner. Keep in mind, your physician will most likely be unfamiliar with what is presented to him or her. Most medical practitioners are not trained in this capacity and certain bias may exist against the thoughts and practices of chelating experts. Likewise, in my opinion and personal university survey, a majority of dentists are unaware of heavy metal toxicity simply because they are not taught about the dangers of heavy metals in their training. As an adult, your alternatives for proper treatment and good health should now begin with ACAM and IAOMT physicians, and biological practicing (mercury and fluoride free) dentists remembering that ceramic or zirconium crowns, composite fillings, and zirconium implants are best for now. Pediatric patients, ideally, need to be seen by holistic pediatric practitioners. (25) In my opinion, the heavy metal poisoning/dentist/physician/patient relationship can now be explained: physicians are not trained in chronic heavy metal diagnosis, lacking hair test reading skills/Quick Silver TriTest information, or recognizing mercury anemia, and gut inflammation in the process; dentists are not trained about the toxicities of heavy metals and continue (for over 150 years now) to put tons of mercury and other heavy metals into the mouths of patients every year. Over time, the problem continues to harm many patients producing certain disease states while escalating health care costs. Clearly, one side is not addressing the problems introduced by the other side. Clearly, mercury and other heavy metals problems need to be addressed by the practitioner, the ADA, and the FDA for the health of this nation.

In the meantime, for the rest of us, sweat is good, and if you work your body excreting toxins, weight reduction should follow. To enhance this procedure, especially if you are over weight, try using my Modified Ketogenic Diet. It is less spartan than the true Ketogenic Diet, but still gives you three good meals a day. Besides, it has been found that obese people have an inability to secrete GLP-1 (glucagon-like peptide or protein) properly. Insulin resistance (Type 2 diabetes) is noted in GLP-1 deficient people. (26, 27)

Modified Ketogenic Diet

(Not so much a constraint, but a solid direction.

Check with your physician to see if your condition or specific heavy metal poisoning qualifies you for this diet or any other. Dr. Cutler's Hair Test Interpretation book is another source for diet recommendation associated with heavy metal poisoning.) (28)

Stay away from sugar, and other sources of sugar such as fruit, white bread and carbohydrates (especially high fructose corn syrup or "fructose" marked now on items resulting in 1/3 calories being stored as fat per Mercola: *Obesity is a Biochemical Problem Rooted in Excessive Fructose Consumption*) in general. Bread since the 1970's has been replaced with bromide instead of the original iodine element. Your hair test will identify an iodine shortfall if you have a problem.

And according to Dr. David Brownstein M.D. and his books: *Iodine. Why You Need It-Why You Can't Live Without It*, and *Overcoming Thyroid Disorders*, 70% of people do not get enough iodine in their diet. Iodized salt loses almost 100% of its iodine content 30 days after opening because of evaporation. Brownstein has treated hundreds of breast cancer patients successfully by using iodine therapy, which is another slow and demanding treatment. Lynne Farrow follows Brownstein with her good book *The Iodine Crisis*, protocol and breast cancer successes. (29, 30, 31)

Substitute brown bread instead of white bread for up to two slices daily. Oro-wheat containing double fiber and whole grains without high fructose corn syrup or “fructose” is a good substitute. Gluten free products can be obtained from various local sources or make your own.

Very limited pasta, rice, and potatoes. Yes, this is hard. But with the modified diet you can use one of these in your diet once or twice weekly in small portions. Rice is a real concern; all rice contains arsenic. Buy lesser arsenic containing rice products only, such as Thai Jasmine rice, Indian or Pakistan basmati, or California rice ; my wife and I like Thai Jasmine Rice. According to Consumer Reports, *Arsenic in Rice: A Worry*, and an ABC news broadcast of about 18 months ago, most American produced rice contains arsenic in substantial levels. Why? Because the American rice patties are contaminated naturally with arsenic or perhaps fertilized with chicken manure. Most chickens in the USA (excluding Tyson and a few other chicken producers) are fed arsenic to keep the chickens bacteria free. The arsenic gets into the meat; less in the white meat versus the dark meat. Arsenic exposure can lead to cardiovascular disease. (32, 33)

Avoid hot and cold cereals. That means all cereals! So that is it. Eat until you are satisfied!

-Breakfast: eggs, cheese, meat (two slices brown bread) and coffee (no sugar).

Snack: more of the same, or macadamia nuts, but no bread, unless you skipped breakfast bread and need a sandwich now.

-Lunch: meat, fish, (but not Atlantic salmon (34)) or poultry, leafy greens, vegetables (asparagus, broccoli, cauliflower, kale and spinach). No bread. Use free range meats and eggs only!

-Dinner: follow the lunch plan. Dessert: sugar free Jell-O and some heavy cream. No bread. Be sure to use butter, cheese, hollandaise, mustard and mayonnaise, and tabasco to flavor your food accordingly. For complex carbohydrates use: asparagus, artichokes, broccoli, Brussels sprouts, cabbage, celery, cucumbers, dill pickles, eggplant, fermented vegetables: kimchi and sauerkraut (35), kidney beans, garbanzo beans, lentils, lettuce, navy beans, okra, onions, pinto beans, radishes, soybeans, skim milk, soy milk, spinach, split peas, turnip greens, water cress, and zucchini. Don't forget to drink lots of water per day! Bon Appetite!

Why the diet, especially if I am not too overweight? Dr. Dietrick Klinghardt, MD, PhD, advocates a diet protocol to assist in removing neurotoxins from the body.

-Proteins build the necessary precursors to help in detoxification improvements.

- Minerals replenish the crowding out caused by the neurotoxins such as heavy metals, man-made toxins and food preservatives/fluoride.
- Fats to rebuild the nervous system in general.
- Finally, increase daily fluid intake to flush the complexed metals adequately through the kidneys and other organs. (36)

-Cilantro and Chlorella-

There are two food products currently used to remove heavy metals and other toxins naturally: cilantro and chlorella. (Drugs such as DMSA and Potassium R-Lipoic Acid are used to remove neurotoxins listed at the beginning of this article. DMSA 100mg. capsules can be obtained from GS Nutrients called DMSA Synergy. GeroNova Research manufactures Potassium R-Lipoic Acid Liquid [K-RALA-10], and is available through Amazon.)

Cilantro (Chinese Parsley) is not only a useful seasoning for our food, but a time-tested mobilizer of aluminum, cadmium, lead, and mercury. Dr. Klinghardt embraces cilantro for its intracellular heavy metal mobilizer capabilities. It will pull the offending ions out of the cell to flush toward connective tissue, liver, and intestinal tract, while mostly bypassing the kidneys. The chief danger here is mobilization occurs with the metals, but binding is not achieved to flush the metals out of the system. If the metals are allowed to mobilize without chelation, the offending elements simply re-deposit to other sites to do their damage. Still, Klinghardt has found cilantro to be the best mobilizer of aluminum, an extremely difficult element to remove from bone or most other body areas. (37) *Medical Health Guide listed side effects for cilantro: allergic reactions, skin sunlight sensitivities, skin inflammation and irritations.

Chlorella is the chelator to complex and remove heavy metals from the body. Chlorella is derived from the green algae of *C. Pyrenedosa* or *C. Vulgaris*. The former pulls more metals, but is harder on the stomach; the latter pulls less metals, but is easier on the stomach. It is also a super food in tablet or powder form. Chlorella's porphyrins in chlorophyll bind to the metals and activate the PPAR-receptor (like pioglitazone or Actos used to treat diabetes) on the nucleus of the cell to open the cell wall and improve insulin resistance. Vitamins and minerals are abundant in chlorella, as well as a super saturation of amino acids to build proteins and metallothioneins (rich cysteine amino acid proteins storing copper and zinc; they release zinc to complex with heavy metals and make more metallothioneins), and over 10% lipids content. (38, 39) *Dr. Axe Seven Benefits of Chlorella article listing side effects for chlorella: skin sunlight sensitivities, iodine allergy, fatigue/lethargy, headache, digestive upset, dizziness/shaking, and patients taking warfarin (Coumadin) need to be followed by a physician.

Dr. Mark Hyman, M.D., describes in excellent detail how the metallothioneins alter tissue accumulation and poisoning by heavy metals and other toxins. Mice without metallothionein capability gain more weight over their metallothionein equipped relatives in one experiment. Hyman is suggesting occupied metallothionein sites with heavy metals/other toxins are contributing to our over-weight problem. These same toxins may cause malfunction of the appetite regulating mechanism in the human host as well, while impairing hormone problems with the thyroid, insulin producers, and sex and growth hormones included. Couple this with 20% of our population who have fatty liver problems because of large sugar ingestion, (See

Study Finds High-Fructose Corn Syrup Contains Mercury, 2009) adding to the body's increased insulin demand and insulin resistance at the same time. (40) Extending this same toxin interference, Dr. David Quig, Ph.D., describes disabled mice without metallothionein protection dying within days when cadmium was introduced into their water supply. (9)

Chlorella also helps as a digestive additive and improves bowel flora like fermented vegetables. A good antiviral is another benefit along with its vast chelating features. But vitamin C interferes with its normal activity, so take chlorella 2 or 3 hours before taking the antioxidant vitamin C. If stomach problems occur while taking chlorella, Dr. Klinghardt recommends (1) start with low dose daily or (2) increasing the dose of chlorella because little chlorella doses stir-up more metals, while the larger dose chelates a greater amount of toxins and outnumbers those that are stirred-up. (41) (See Dr. Mercola below for his solution for chlorella intolerance.)

Klinghardt does not stop here, for he prefers three other support products: garlic, fish oil and Selectrolyte (balanced electrolyte solution). He suggests garlic (*Allium Sativum and or Allium Ursinum*) is necessary also in the detoxification process: freeze dried garlic because other sources lose their potency too quickly. Take one to three capsules daily to remove offending bacteria and fungal areas. (42)

Fish oil, he states, supports the red blood cells and oxygen needed for circulation and improved health. Omega 3 should be taken four times daily during the early treatment phase, and reducing to twice daily for maintenance therapy. Twice daily also for bipolar and postpartum depression treated patients. A reduced dose is suggested for malignancies at about 100mg. taken four times daily. Obviously, warfarin (blood thinning) users should be excluded from this approach. (42)

Last on his list, is Selectrolyte or balanced electrolyte solution used to treat autonomic nervous system problems, to aid the expulsion of metals and toxins via the extracellular spaces. High blood pressure patients should avoid this part because some are sensitive to the increased sodium chloride concentrations. For those who can take this preparation, one teaspoonful per cup of water taken once to three times daily during the treatment phases. (42)

Cilantro can be taken in several forms. This author uses the capsule and tincture liquid products. Both forms can be purchased from Amazon at reasonable prices. Vitacost makes a 425mg capsule labeled Cilantro (Coriander); TerraVita a similar product at 450mg per capsule. Natures Formulae (Master Formulae) makes a useable product of cilantro tincture, containing 50mg./drop. The tincture is several times stronger than the capsule formulation. The capsule (taken once or twice before regular meals) or tincture taken just before a meal starting at 2 drops (100milligrams) twice daily for one week, then stop for two or three weeks. Slowly increase the dose up to 10 drops before meals achieved over many months (three times daily). (43)

Applying the tincture externally also works. Klinghardt suggests 5 drops (250mg) rubbed into joints (ankles) below the diaphragm twice daily; the same for above the diaphragm by rubbing into the wrists. All rubbed in and oral doses need to be preceded with chlorella at least 30 minutes before using the cilantro. (43)

A tea, according to Klinghardt, can be made by using 10 to 20 drops of cilantro tincture in a cup of hot water, and slowly drink the preparation to rid the brain of toxins quickly, especially some headaches. Don't forget to take the chlorella preceding the cilantro. (43)

Chlorella can be purchased from Amazon and Dr. Mercola websites in powder and tablet (broken cell wall) form. The powder dissolves in water, but is not the most delectable product for the beginner. Starwest Botanicals and Zokiva produce the powder products available through Amazon. According to Dr. Mercola, about 1/4 teaspoonful = one 500 milligram tablet of chlorella. But up to 30% of people have trouble digesting chlorella, and cellulase may help these individuals, or simply start at a lower dose. The tablets are much more tolerable; Now Foods manufacturer's broken cell wall 500mg tablets. Two tablets (1000 milligrams or 1 gram) need to be taken 30 minutes before the cilantro dose, three times daily. The cilantro is taken just before meals. This arrangement will allow the gall bladder to empty its digestive requirements and set the stage for binding of the toxics and eventual elimination principally through the digestive tract. Do not reverse this procedure! (44, 45)

This author, once chelation dosage is stabilized, suggests taking two 500mg chlorella tablets (1000 mg.) about 30 minutes before each regular meal. Follow up with one 450mg capsule of cilantro just before beginning the meal. Remember to space your vitamin C to 2 or 3 hours after the meal. Try one week of chelation followed by 3 or 4 days of rest, and repeat the cycle for 3 to 6 months. Repeat the hair test to note progress or changes after eight or nine months. Be sure to note how you feel after the lengthy chelation period. A notated calendar helps to clarify where you were vs. where you are now. Note your weekly progress on the calendar. If you use the concentrated cilantro drops, remember to start slow and with lower dosages as recommended by Klinghardt.

Klinghardt suggests the chlorella/cilantro chelation treatments run for one week initially, then go off the treatment for 2 weeks. Gradually increase the dose over several months to three grams (3000 milligrams) with meals (three times daily) for one week, then go off the procedure for 2 weeks as before. Repeat this for about 6 to 24 months, depending upon toxicity levels and repeated hair tests. During the two weeks ON chelation therapy, mineral intake (magnesium, iron, copper, etc.) needs to be restricted. The chelation process is described as "cherry picking," meaning the good elements will be picked as well as the offending heavy metals or toxins. High concentrations of B-complex vitamin tablets, vitamin D-3, 2000 unit tablets, and biotin 1000 micrograms capsule need to be taken daily (one of each), according to this writer, during the one week ON chelation. During the OFF cycle, replenish your vitamin and mineral load with ESential Multi+ Vitamins And MINERALS tablets (available through Everything Spectrum) at two tablets daily, plus an additional tablet of selenium 200 mcg., taken daily. I like the formulation of this particular product. This product does not contain iron, copper, or manganese. Plus mineral formulations containing tin, nickel, and titanium are on the toxic element hair test and should be avoided. Diabetic patients (kidneys) and postpartum women (depression) especially need to avoid additional copper intake because of accumulation, voiced by William

Walsh, Ph.D., in his book *Nutrient Power*. (Alpha Lipoic acid, itself, will retain copper according to Cutler protocol.) (46)

If the chelation user has silver mercury amalgam dental fillings in their mouth, chlorella and cilantro detoxification are safe, meaning the products will not pull offending toxic elements from their teeth. Conversely, DMSA, pulls mercury and other metals from dental amalgam fillings. The person or patient with this dental problem needs to see his or her biological holistic dentist as soon as possible to begin removing the silver mercury amalgam dental fillings safely. Otherwise, all the chelation efforts will be wasted over time. Mercury and other amalgam metals will be pulled from the filling and redistributed to areas previously depleted of heavy metals within the body. Most improvements will be lost. (47) Remember to use the chlorella/ cilantro chelation procedure two days before dental filling removal and two days after the removal, and replacement with composite dental fillings or something comparable. Do not take the chelation therapy on the day of dental treatment. (47)

-See Your Doctor-

See your doctor to get a physical examination and laboratory complete blood count (CBC with diff.), chemistry panel (SMAC-25), including urinalysis. A base line hair analysis test will identify any poisons on board, including essential healthful elements. Follow up later with a provoked urine toxic metals test, if needed (verify with your physician that your kidneys, liver, and heart are functional enough for chelation therapy), because mercury may prove to be allusive since it is tightly bound to the tissues, especially the amino acid cysteine. Remember, the Mercury Tri-Test by QuickSilver Scientific is best to establish kidney function. (McClure has noted chromium, magnesium, manganese, potassium, selenium and zinc may present low in hair analysis because mercury is displacing these good elements.) Cysteine, and the crucial sulfur element within the amino acid, must be present in ample quantities to reach the hair shaft indicator; otherwise it will not show up in the hair test. Klinghardt discusses this in his work on children with autism and similar disorders. Often, he suggests, cysteine levels need to be increased with a high protein diet, whey, or physician dosed supplements, not only to identify the mercury captured by the body, but also to help eliminate it in the detoxification process. Genetic and methylation problems he addresses with chlorella detox and glycine supplementation to build glutathione metabolism needed for cellular respiration. Once again, chlorella seems to do it all, as described in *A Comprehensive Integrative Medical Approach to Mercury Detoxification and Functional Rehabilitation*. (47) Klinghardt cites the need for good nutritional balance and GI health at the same time. Diet and probiotics, such as Florajen-3, will be necessary components of the process.

This author found that biotin use and probiotics became very useful tools during the mercury elimination process. Gut fungi store mercury. To reduce the fungi population and release mercury at the same time during detoxification process, doses of 1000 to 2000 unit capsules of biotin are needed on a daily basis during active chelation to assist this mercury release for adequate chelation to occur and eliminate the mercury in the feces. Chlorella will obviously have some of this activity too. (48) McClure also stresses the need to maintain selenium levels above normal levels for best toxicity removal. The hair test will tell you this. (47)

Regarding the CBC, McClure looks for certain blood patterns. Porphyrin may be signaled with high iron and hemoglobin, showing mercury is binding to the hemoglobin and interfering with oxygen transport. Serum Fe (iron) and ferritin may show normal, but an increase in MCV (mean corpuscular volume) suggests folate, B-6, iron, and B-12 anemia problems with values over 92. MCH (mean corpuscular hemoglobin-weight) increases may parallel this picture, suggesting the metals are impairing the oxygen carrying capability of the hemoglobin, so the body makes more RBCs (red blood cells) to take up the needed body demands for oxygen. (47)

Sodium and calcium may be low; perhaps fluctuating sodium, chloride, calcium, magnesium and phosphorous as well (especially with mercury poisoning). Liver enzymes may all be elevated: alkaline phosphatase, bilirubin, GGT, LDH and SGOT or SGPT. LDH increases may signal heart, liver and kidney problems. And since cholesterol carries mercury away from cellular components, cholesterol levels may also be elevated, as high as 240. McClure advocates non treatment of the cholesterol picture, citing a protective mechanism by the body to compensate for mercury toxicity within the patient. I still prefer treatment of the cholesterol picture with statins until heavy metal scrubs show the proper cholesterol improvements. White blood cells (WBCs) may be elevated or depressed, while low sulfuration stores in the patient may decrease the conversion of xanthine to uric acid leading to gout symptoms (molybdenum may also be deficient). Albumin is usually elevated. If the eosinophils, basophils, and monocytes approach 7 or more, there is a good possibility of bowel inflammation. A C-reactive test will verify this. Mercury, he states, is most likely the cause, realizing the need to eliminate it. This enforces the need for gut detoxification first, and to restore the liver and kidneys function as much as possible. (47)

Detoxification Dose Summary of Oral Chelating Agents for Adults

To get started, Dr. Mercola: *The Three Pillars of Heavy Metal Detoxification* (June 19, 2016) with Dr. Chris Shade, Ph.D., stress the importance of gut detoxification (1st. Pillar) to restore the liver and kidneys, plus adequate zinc body stores to detox heavy metals. Shade reveals high copper levels and low zinc is detrimental to therapy; low magnesium to high calcium levels impedes transporters resulting in inflammation and the need for lithium, molybdenum, and selenium to rebalance, while not forgetting glutathione liposomal improvements (2nd. Pillar) at the same time. Shade recommends his own Intestinal Metal Detox (IMD) first or his charcoal product combination, or if you prefer, chlorella with clay and charcoal to bind gut toxins (NOW manufacturers Chlorella broken cell powder taken orally and dosed at one teaspoonful daily, coupled with Entera Klenz Activated Charcoal with Bentonite Clay dosed at one or two Tablespoons daily.). If constipation results, add magnesium citrate 160mg tablet daily or magnesium malate 142mg. tablet daily. Shade likes goldenrod, milk thistle, and dandelion, too, found in his product of Bitters #9. So another product to consider is Hawaii Pharm's Goldenrod at 20 drops twice daily to bolster kidney and liver detox and functionality. Shade's Quicksilver products of Therasomal Glutathione and Therasomal Vitamin C with R-lipoic acid are a must, and will deal with the inflammation, coupled with sulfur based vegetable products (broccoli seed extract) and freeze dried garlic are also crucial to the protocol for detoxification (3rd. Pillar). Dr. Shade realizes some elemental mercury amalgam, for instance, is being converted in the

body to methyl mercury, with the kidneys naturally trying to excrete the elemental mercury while the liver works to change the methyl derivative for excretion. The problem here is that some patients are quick kidney excreters, while others are slow to very slow excreters of the poisons. Slow excreters magnify the poison activity and the disease states, causing inflammation and damage to the kidneys. The gut detoxification process may take four to six months, with few problems noted, such as moving too fast for the patient, and/or with some fatigue and mild headaches possible. See Quicksilver Scientific/Academy on the net with your practitioner (303-531-0861) to get the gut, kidneys, and liver back to a more functional level before continuing to the chelation therapy. For advanced disease states with heavy metals suspect, review Woolsey on page 20, and her considerations before going on.

-Natural Chelating Agents-

--Cilantro 425 or 450mg. capsules: 1 or 2 capsules just before meals, three times daily. OR use cilantro tincture (50mg. per drop) starting at 2 drops (100mg.) taken in 8 ounces or more of pure drinking water orally twice daily for one week on therapy and stop for two weeks and repeat the cycle, gradually increase the cilantro over several months to 10 drops orally three times daily just before meals.

--Chlorella 500mg. tablets: 2 tablets (1000mg) taken 30 minutes or more before meals, three times daily. "OR"

--Chlorella powder: 1/2 teaspoonful (1000mg) mixed with pure drinking water (8 ounces or more) taken 30 minutes or more before meals.

--Biotin capsules: One capsule of 1000 microgram taken once or twice daily (to reduce gut fungi mercury stores and chelate the spilling mercury with chlorella). (48)

--Florijen-3 or other similar probiotic: one or two capsules orally every other day on empty stomach while chelating.

Take the cilantro/chlorella combination one week on therapy and two weeks off. Gradually decrease the off periods. Continue for 9 to 12 months and recheck with another hair test. Do not take vitamin AND MINERAL tablets during the chelation cycle. Doing so will trap the good minerals with chelation and allow the toxic metal elements to escape. Do not take vitamin C with cilantro; space your vitamin C dose 2 or 3 hours apart (garlic also) from the cilantro dose. Verify with your physician that your kidneys, liver, and heart are functional enough for chelation therapy. Be sure to consider Klinghardt's and McClure's recommendations of fish oil capsules, freeze dried garlic, and selenium with your physician. (49)

-Good Alternative Chelating Agents-

DMSA and Potassium R-Lipoic Acid products are used for patients WITHOUT silver amalgam dental fillings or metal prothesis (hip or knee joint replacements or other metal dental appliances). (49) DMSA is excellent in removing extracellular (outside the cell) heavy metals from the body, but it does not cross the blood brain barrier (CNS) or enter the cell because it is water soluble. The CNS and cell walls are lipid or of fat consistency. Potassium R-Lipoic Acid liquid from GeroNova Research is an excellent extracellular and intracellular (inside the cell)

chelator and crosses the blood brain barrier. (Do not use regular OTC lipoic acid products because they contain a mixture of R and L lipoic acid and reduce the effectiveness of chelation.) Potassium R-Lipoic Acid should NOT BE USED until DMSA has flushed the extracellular body areas after at least EIGHT MONTHS of chelation therapy. Do not use lipoic acid products without DMSA on board at the same time. This is designed to protect vital organs. After EIGHT MONTHS or more of DMSA therapy, Potassium R-Lipoic Acid should start at 5mg doses for three sessions and increase this dose every three sessions (one session/cycle is 3 days on therapy and eleven days off therapy) according to the dose chart on page 21. Gradually get to the full 50mg. strength to be taken every four hours for three days of therapy. Never exceed the 50mg dose of Potassium R-Lipoic Acid at one time! The DMSA purchased from GS Nutrients contains 100mg of DMSA, and 200mg of vitamin C (antioxidant), along with 50mg. of glycine (glutathione builder). This is a good combination treatment chelator. Be aware that both products are acids and could be irritating to the GI tract. To get around this, if needed, take both products with a very small amount of food. The author finds this combination therapy to be most effective. Potassium R-Lipoic Acid can penetrate the CNS and chelate offending toxic metals and flush them out the fecal route and/or out the kidneys. (50) *Web MD listing of DMSA possible side effects: allergies, digestive upset, anemia (rare), nausea, vomiting, diarrhea, loss of appetite, some abnormal liver function (decreased white blood cells).

--DMSA 100mg. capsule: 10mg./2.2 pounds of body weight per “Day,” taken in divided doses every (8) hours. Take for 3 days only. Stop for (11) eleven days, and repeat the session/cycle. (51) (Dr. Cutler’s protocol calls for every four hour dosing [6 times daily] in divided doses.)

Examples

Weight of 100 lbs. = 450mg/day = 150mg. taken 3 times/day (every 8 hours) = 5 approx (100mg) capsules daily.

Weight of 150 lbs. = 700mg/day = 233mg. taken 3 times/day (every 8 hours) = 7 total (100mg) capsules daily.

Weight of 200 lbs. = 900mg/day = 300mg. taken 3 times/day (every 8 hours) = 9 total (100mg) capsules daily.

Take each dose with 8 ounces or more of pure drinking water.

--Biotin capsules: One to two capsules of 1000 micrograms taken daily for three days (to reduce gut fungi mercury stores and chelate the spilling mercury with DMSA and PotassiumR-Lipoic Acid). (48)

--Florijen-3 or other similar probiotic: one or two capsules orally on an empty stomach every other day of chelation.

--Potassium R-Lipoic Acid Liquid: Start use at least EIGHT MONTHS or more after beginning DMSA, with 5mg. dose initially. Gradually increase the dose with each session of three days of chelation therapy with the DMSA and eleven days off therapy over another FOUR MONTHS (Gradual Potassium R-Lipoic Acid additions are designed to protect the kidneys and other vital organs in the chelation process against mobilizing metals. This is extremely important!). Once reaching the 50mg. strength level (if prescribed by your physician) over

TWELVE MONTHS time (MAXIMUM SINGLE DOSE for Potassium R-Lipoic Acid Liquid), you will be taking 10 drops or 50mg. in pure water every four hours for three days ***See dosing chart for Potassium R-Lipoic Acid Liquid on page 21. Remember to take both products together with 8 ounces or more of pure drinking water at the 8 hour intervals. Be sure to take your Potassium R-Lipoic Acid intervals every 4 hours WITHOUT the DMSA dose as directed. Do not take vitamin AND MINERAL tablets during the chelation cycle. Doing so will trap the good minerals with chelation and allow the toxic metal elements to escape. Verify with your physician, once again, that your kidneys and liver are functional enough for chelation therapy. Do take plain vitamin supplements, selenium, freeze dried garlic, and fish oil capsules as directed by your physician. *Web MD listing of R-Lipoic Acid possible side effects: rash, lower blood sugar levels, maintain vitamin B1 (thiamine) levels if alcohol consumed on a regular basis, and may interfere with over and under active thyroid problems.

Your dose spacing at this time will be DMSA every 8 hours, and Potassium R-Lipoic Acid every 4 hours (day and night) for three days of therapy and eleven days off therapy. This author uses 6AM, 2PM, and 10PM for the DMSA plus Potassium R-Lipoic Acid dosing; 2AM, 10AM, and 6PM for only Potassium R-Lipoic Acid dosing alone. If you miss a dose, simply skip that interval and wait for the next. Repeat the cycle sessions for three to six months and recheck with another hair test. Seeing “more pull of toxic metals” and greater quantities indicates good activity. The essential (good) elements should gradually correct themselves over time. CBC tests should improve. Disease states should improve at this time. This is not a quick fix, as some researchers suggest, like Klinghardt suggesting many years of on and off therapy once the problem is identified, or Woolsey personally working with ALS patients.

Woolsey points out that accumulations can develop during cysteine, sulfite and glutamate metabolism in the human body with advanced ALS (amyotrophic lateral sclerosis) disease states. Possible damage by heavy metals to specific enzymes in the formation of glutathione synthase and glutathione reductase may add to sulfite toxicity in ALS patients. Sulfur containing supplement products such as alpha lipoic acid and N-acetyl-cysteine (NAC) may prove detrimental because their added load may add to this accumulation process. Sublingual glutathione also has to be closely monitored to stabilize the patient. (52) Woolsey’s work notes the necessity of going slow and monitoring results in treating advance cases of ALS, and perhaps other disease states as well. Go slow! Go long!

If you are taking the Alternative Chelating Agents, and your urine and hair tests confirm a concerning aluminum problem, magnesium malate can be used to chelate the aluminum over time. Suggested starting dose is 500 mg. tablet taken every 12 hours for three weeks. DO NOT TAKE THIS WHILE CHELATING WITH DMSA AND/OR LIPOIC ACID! Magnesium malate can be inter-spaced periodically during chelation cycles. After several comfortable months, consider raising the dose to 500 mg. tablet taken every 8 hours for three weeks. I use Magnesium Malate 1,300mg. (1/2 tablet dose = about 500 mg. malate) by Nature’s Life available at Amazon. (53) WebMD possible side effects: headache, lightheadedness, diarrhea. Do not take if patient has bleeding disorders or kidney disease.

** Dr. Maloney's struggle with heavy metal poisoning was first printed in Drug Topics magazine on October 8, 2007. p.56.

*** Dr. Maloney's Potassium R-Lipoic Acid Dosing Chart per manufacturer:

Purchase Potassium-R-Lipoic Acid from GeroNova Research. It is called K-RALA-10 (R-Lipoic Acid Liquid). Keep away from children. Use the following drop conversion chart to arrive at your dose level.

1 drop = 5mg. of Potassium R-Lipoic Acid Liquid Dose				
2 drops = 10mg.	“	“	“	“
4 drops = 20mg.	“	“	“	“
5 drops = 25mg.	“	“	“	“
6 drops = 30mg.	“	“	“	“
8 drops = 40mg.	“	“	“	“
9 drops = 45mg.	“	“	“	“
10 drops = 50mg.	“	“	“	“

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About the Author

Dr. Maloney is a graduate of Oregon State University, Corvallis, Oregon, 1967, with a Bachelor of Science degree in Pharmacy. He also holds three master degrees: Master of Public Administration, Golden Gate University, San Francisco, CA 1979; Master of Health Services Management (1987) and Business Administration (1988), Webster University, St. Louis, MO. His doctorate degree in pharmacy is from the University of Arkansas of Medical Sciences (2005), Little Rock, AR., with an emphasis in geriatric medicine.

Serving this nation during the Cold War, Vietnam War and Gulf War, Dr. Maloney was commissioned a second lieutenant in the United States Air Force and served as Chief, Pharmacy Services at many air force installations throughout the world. While on active duty he acquired military degrees from the Air Force Command and Staff College, Air War College, and Air Force Education with Industry serving with National Data Corporation, Atlanta, Georgia. With his last assignment in the service, he and his staff implemented and tested for the air force the new two billion dollar world wide Health Care Composite Computer System which is now found in all pharmacy branches of the armed services, including the Veterans Administration. For his many years of service, Dr. Maloney was awarded two Air Force Meritorious Service Medals, three Air Force Commendation Medals, National Defense Service Medal with Star, Korea Defense Service Medal, and two Outstanding Unit Service Awards. He retired from the United States Air Force shortly after the Gulf War in 1991 as a lieutenant colonel with over 23 years of service to his country. Today he is a registered pharmacist still actively involved in the practice of pharmacy after 50 years, including 20 years in nursing home, hospital, and hospice care. He is a member

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