

ALUMINUM AND THE DETOXIFICATION THERAPIES

INTRODUCTION

The connection of Alzheimer's and aluminum storage in the brain has been confirmed many times over and we can henceforth dismiss the denials of those who have some financial interest in aluminum. Given the connection of Alzheimer's and aluminum, one would like to decrease the body stores of aluminum. Do note that Alzheimer's is also associated with mercury, and the two metals together make the worst cases.

The *calcium, at the correct pH* will compete and help transfer the aluminum out of the body. Porphyzime may do some good (I *still* have not analyzed this product for heavy metals: we will not use it again until so studied). DMPS doesn't move it preferentially: but it does move it. There is also a Parcel detox bath. I feel very insecure about this because of the Clorox bleach, but the chloride ion is necessary to us, so *perhaps* this is acceptable. There are reports of several who soaked in Clorox bathes for years to detox, and then beat cancer with non-conventional treatments and are alive and well. However, if the aluminum is very high, we will try everything else first.

A patient brought us the following clipping on airborne aluminum printed July 1995.

"Students, you will recall we have advised you to be aware of large amounts of air borne aluminum that we have been finding in so many of you who come to study, and in many of the products we test. A student from New Hampshire called to tell us about an article regarding our Space Program. He had an article stating that the launch and booster rockets use an aluminum-based fuel and each time one is sent aloft, it dumps tons of aluminum into the environment. He felt that this is one of the chief causes of our findings. A copy of the article is forthcoming and we will report other information as it becomes available." *I never discovered the source of the quotation, but I later heard that there is a lot of Aluminum in ordinary airplane fuel too. Some one who knows planes and fuel should check this out for us.*

Since aluminum is ubiquitous in the earth's crust and is now in the water, soil, and wind, even if it didn't fall from the sky by the gallon, we will always have some exposure. However, we can follow the steps below. The largest source is dietary and the greater amount is absorbed from the GI tract, rather than the lungs!

OTHER SOURCES OF ALUMINUM

Cigarette smoke: first and second hand	Industrial pollution
Processed cheese (some)	Pesticides
Beer (intrinsic in the making, regarding of can or glass bottle)	Aluminum coffee pots / cookware
Aspirin compounds, buffered with Al	Coffee whiteners (artificial cream)
Hot water systems (tank protectors)	Other food additives
Dusts and dirt (especially desert)	Any commercial baked goods made of white flour, mixes, pre-made frozen foods with white flour
Some Herbals grown in some areas	Carbonated, or any drink in aluminum cans
Antacids (some: AlOH & AlPho ₃)	Toothpaste (read P. Kulhman article)
Regular salt (anticaking)	
Aluminated seasonings <i>other</i> than salt	

OBVIOUS THINGS WE CAN DO

(1). Cease cooking in aluminum cookware, and stop using aluminum foil, at least when it will touch food or have liquid dropping back into the food, such as happens while cooking a roast or covering a chicken that is baking, particularly if the fluid is acidic as in tomato juice or sauce, vinegar, wine, etc..

But this also happens with foods that are very alkaline.

(2). Stop drinking from aluminum cans. The acidic soft drinks, including tea and fruit juices dissolve the aluminum off into the fluid. Many paper cartons for drinks are lined with aluminum. Alkaline foods such as cantaloupe will also leach aluminum onto them

(3). Stop using aluminized baking paper, muffin-tin liners, etc..

(4). It is often said we should stop using free flowing salt, but one experimental trial (I think in

Canada) showed that little absorption resulted from that source.¹ If you have a high level, heed anyway. Use Real Salt, the brand from Redman in Utah, or Grand Saline, Texas salt NOT Celtic Salt or Sea-Salt.

(5). Instead the blood levels were up markedly when the subjects ate bakery goods --bagels and donuts, and such. The bakers use self-rising flour, even when yeast is used for the primary leavening and they use the baking powder containing aluminum compounds, because it is a few cents cheaper than the other. Do not eat "store-bought" baked goods! Make bread and etc. at home. No self-rising flour.

(6). For the same reason you should use a baking powder at home that is not based on aluminum, such as Rutherfords. Read the labels on the containers. Sam's Tone brand does not list aluminum.

(7). The alum used to crisp up pickles is aluminum! Eat fewer pickles or use some other recipe. The antiperspirant crystal stone is an alum salt. It states on the label "aluminum free." Decide for yourself.

(8). There is a high level of aluminum in city tap water, as aluminum is used to flocculate the proteins in water filtration, or "purification". This is another reason to use distilled water. But here is the surprise.

(9). The highest source of dietary aluminum is beer. It seems as though it is not made from clear running mountain streams and artesian wells, but from tap water. (if it is from mountain water, that water seems to be contaminated.) Then again, it may be from the tanks, or from hops. Glass or cans - makes no difference!

(10). Antacids such as Tums, Maalox, etc. are buffered with aluminum. Read all labels carefully.

(11). Pharmaceuticals: Many prescription medicines are frequently buffered with aluminum.

(12). Toothpaste: See the website letter attached. Do not use regular commercial types of toothpaste, perhaps not even health food store types. Use plain bar soap - not detergent or deodorant bars.

(13). Since you can not check for **pesticides**, as the "inert" ingredients are part of the formula and not explicit, don't use pesticides.

If we discontinue the use of it in the kitchen altogether, we will not make a tiny dent in the supply, understanding that the very mining of the substance causes the contamination of the earth. I doubt we could send a message to Alcoa and Reynolds, and there are good uses for Aluminum. I would like to think we might replace those uses if it can't be mined safely, and not contaminate the earth, but I doubt we have the energy for a boycott campaign. All we are doing is cutting our personal exposure.

FACTS ABOUT ALUMINUM IN THE BODY:

(1.) Aluminum has no measured biological half-life in humans or animals, **as it never comes out on its own accord.** It sequesters in long lived cells: the longest lived ones are the neurons, i.e. brain cells. It accumulates *continually*.

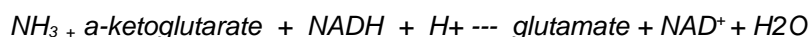
(2). Aluminum is implicated in Alzheimer's. The concentration is highest in the brain at death. Alzheimer patients have high levels in the brain on autopsy and generally have high hair aluminum which represents soft tissue deposition. Remember this is mixed with mercury.

(3). Aluminum is quite often high in the hair minerals of children with behavioral or learning difficulties. (Yes, ADD, ADHD, and other variants of autism.)

(4). Aluminum is often high in the hair of adults with memory impairment and thinking difficulties, even if they have not been graced with the diagnosis of Alzheimer's. This situation occurs in young adults as well.

HOW ALUMINUM CAUSES INJURY TO THE BRAIN:

(1). Aluminum interferes with isocitrate dehydrogenase enzyme, produced in the TCA cycle, which is a main part of the *energy production* cycle. The isocitrate dehydrogenase is in turn used in transamination (transferring a nitrogen-hydrogen group called amine, with goes to ammonia). Nitrogen freed from protein utilization or degradation is toxic, because it leads to the reductive amination (adding an amine group) of a-ketoglutarate in mitochondria (the cells energy packets), catalyzed by glutamate dehydrogenase. The reaction is written thus:



The equilibrium of this reaction is far to the right, so the effect of ammonia is to remove a-ketoglutarate from the tricarboxylic acid cycle (TCA), and cause severe inhibition of respiration in the brain, as well as excess ketone body formation from acetyl-CoA in the liver.

¹ That was one trial. Be safe and use the brand Real Salt ® from Utah, or Grand Saline, Texas mined salt.

In summary, the Nitrogen (N) that should be transferred out of the body through urine, sweat, etc., is formed into ammonia which is known to injure cognition (thought processes of the brain). Ammonia actually dissolves the myelin sheath of the brain and nerves.

(2). Aluminum interferes with phosphorylations, phosphate transfers, "kinase" enzymes and ATP, ADP, and AMP. Note that phosphate and aluminum compete. The phosphates are vital to energy production, as ATP, ADP, etc. are the end molecules that release free energy for use in any cell. Stay

high in phosphate on your hair minerals analysis!

(3). Aluminum follows pathways of increasing phosphate concentration. That is expressed as:

Blood plasma -----	Cytosol of cells -----	Cell nucleus
[PO4] = 2mM/l	[PO4] = 10mM/l	[PO4] = 50 mM/l

low pressure ----- high pressure

This means that in the nucleus of a cell, aluminum binds to phosphorylated RNA and DNA fouling protein replication. RNA and DNA are the protein of genes: interfering with their replication causes extensive trouble: disrepair of tissues, and cancer potential.

IN ALZHEIMER'S DISEASE, THESE ARE FOUND:

- (1). Insufficient acetylcholine (energy cycle necessity for nerve function)
- (2). Excess Beta amyloid protein in the brain
- (3). Neurofibrillary tangles, containing deposition of aluminum mercury and demyelinated curls of nerves
- (4). Alzheimer's Plaques (B-amyloid encased in degenerated, tangled nerve & glial (supportive cells)).

ALUMINUM DETOXICATION

I. AGENTS THAT DECREASE ABSORPTION IN THE GASTROINTESTINAL (GI) TRACT:

- (1). Phosphates and silicates in the GI tract compete with absorption, that is, block the aluminum that is in the food and water from absorbing. *Ref. Lancet 9/31/83.*
Take the colloidal phosphate, Mincol, for the phosphates mentioned above. Cook with it.
Take silicon, such as found in Horsetail herb, or as silica, silicone, as caps (or liquid drops for young children), with meals eaten out or prepared from "convenience or store-bought foods."
- (2). Calcium will compete for absorption. Minerals will move when your pH is right.
Take calcium according to your pH needs. Only enough to effect your pH if you have excess tissue calcium.
- (3). Chelates in the blood stream, (IV treatment) being excreted then through the kidneys. (See number 4, below)
- (4). Perhaps Cellular mechanisms, yet unknown.

ALUMINUM ABSORPTION: EFFECT OF FOOD AND NUTRIENTS

REFERENCES VIA GABY 2002

Domingo JL, et al. *Effect of ascorbic acid on gastrointestinal aluminium absorption. Lancet 1991;338:1467.*

13 healthy volunteers were given 3-day oral courses of aluminum hydroxide (900 mg three times a day) either alone or with 2 g of ascorbic acid. The *ingestion of ascorbic acid (vitamin C) together with aluminum hydroxide caused a significant increase in urinary aluminum excretion, presumably because of enhanced gastrointestinal absorption. In a previous study, ingestion of ascorbic acid plus aluminum hydroxide (compared to ingestion of aluminum hydroxide alone) significantly increased the concentration of aluminum in liver, brain, and bone of rats. {Dr. B.: study shows that acids in the diet increase absorption of aluminum. Vit C does not help}*
Fairweather-Tait 5, et al. *Orange juice enhances aluminium absorption from antacid preparation. Eur.J Clin Nutr 1994;48:71-73.*

In a study of healthy volunteers, co-administration of 200 ml of orange juice significantly increased aluminum absorption from an aluminum-containing antacid. *{Dr. B.: not good}*

Nolan CR, et al. *Influence of calcium acetate or calcium citrate on intestinal aluminum absorption. Kidney Int 1990;38:937-941.*

10 healthy volunteers were given 3-day courses of each of the following drug combinations four times daily:

- 1) aluminum hydroxide gel (5 ml),
- 2) aluminum hydroxide plus calcium acetate (1,330 mg), or
- 3) aluminum hydroxide plus calcium citrate (950 mg).

Compared with baseline, the increments in *plasma aluminum levels* and urinary aluminum excretion were significantly greater with treatment 3 than with treatments 1 or 2. It is concluded that in normal individuals, *calcium citrate markedly enhanced aluminum absorption from aluminum hydroxide.* {Dr. B.: also not good}

{So what would you guess about pickles - made in alum and vinegar... also acid?}

II. AGENTS THAT ENHANCE ALUMINUM MOBILITY FROM TISSUES

(moving it from tissue to tissue, e.g. from brain to liver, brain to kidney, etc.)

- (1). Amino acids, peptides, protein.
- (2). Glycine, the same that we used for mercury binding during DMPS treatments
- (3). Citric acid: drink your lemon water, use potassium citrate, magnesium citrate. etc.
- (4). Porphyzyme ^(Biotics product) is said to chelate aluminum. Cilantro *may* (we could try, see Chelation Pesto).
{But grow it yourself}
- (5). DMPS doesn't move it preferentially, but it does move it, as shown many times on the 24 hour urine collection following the DMPS injection. You will recall here that we said many times that the only thing worse on the brain than mercury is a combination of mercury and aluminum. Both the aluminum and the mercury have to go. Get your folks (and yourselves) free of mercury, and other minerals will begin to move.
- (6). Malic acid, which we use during the Gall Bladder flush to relax the duct, can also help.
- (7). There is also a Parcel detox bath. I feel very insecure about this because of the Clorox bleach contained in it. Try everything else first.

SUMMARY

That is a little of the chemistry (just so you will know it's serious) and then the practical side. How hard is it to give up store-bought baked goods, tap water, aluminum canned drinks and beer of any sort? How many more pills a day can you take to make up for continuing those habits? How can you even think of giving your kids one more handicapped parent to care for in a few more years? Get busy!

HAIR MINERALS INTERPRETATION OF ALUMINUM (Al)

- (1). The value in the hair mineral analysis reflects past or chronic exposure to this element, and current deposition into soft tissues.
- (2). Aluminum can *impair cellular energy* transfer processes by interfering with phosphate and ATP metabolism. One becomes tired, and stays tired after rest. Mitochondrial function diminishes with aluminum that then effects energy - heart failure, etc.
- (3). Neuronal cells are susceptible to long term accumulation of aluminum.
- (4). Aluminum bonding to phosphate can inhibit normal catabolism of neuronal filaments in the CNS.
- (5). Correlation of elevated Al with degenerative dementia and Alzheimer's disease is documented.
- (6). Excessive *dietary aluminum* can also form insoluble aluminum phosphates in the GI tract and may lead to hypophosphatemia. Observe serum chemistries.
- (7). *Symptoms* of elevated aluminum may include: fatigue, headache and signs of phosphate depletion.
- (8). Low level aluminum exposures may not provoke any immediate symptoms: it will be cumulative.

NOTE: Hair is easily contaminated with aluminum from hair treatment and possibly by wash water if it is high in aluminum content. The tap water is suffused with aluminum to precipitate protein matter, so is a source of aluminum if you drink from the tap! The probability of contamination is reflected by the shading of the circle for aluminum on the *Doctor's Data* report. But *Trace Elements Inc.*, washes the specimen to avoid misreadings of superficial contaminants. Another reason Dr. Braun uses T.E.I.

OTHER TESTS WE COULD DO

- (1). 24 hour urine for aluminum excretion: would detect ongoing daily accumulation and excretion, as in

an industrial setting, where exposure is continuing.

- (2). Total Blood aluminum
- (3). Serum aluminum
- (4). Aluminum in urine and stool after a chelation challenge.

ALUMINUM UPTAKE AND PARATHYROID ACTIVITY

Aluminum absorption from the G.I. tract is enhanced by parathyroid hormone. During treatment with parathyroid hormone, intestinal aluminum absorption increases, *resulting in increased aluminum in the brain*. Reduction in parathyroid hormone results in lowered brain concentrations despite continued dietary aluminum intake. If your mineral analysis shows both increased parathyroid activity and aluminum accumulation, carefully examine your exposures and discontinue any vitamin D supplementation until the aluminum levels in the analysis are decreased.

DETOXIFICATION INVOLVES

- (1). Removal of sources.
- (2). Healthy diet and nutrients.
- (3). Dietary silica (horsetail herb or silicon dioxide) *with each meal* to block absorption of dietary sources
- (4). Therapeutic EDTA + Glycine, *after* total DMPS mercury removal.
- (5). Supplementation to aid phosphorylation chemistry:
 - (a). alpha-ketoglutaric acid and
 - (b). Magnesium (use the ATP plus from the gall bladder flush which contains the malic a. below.
 - (c). Malic acid

IS HIDDEN TRUE CAUSE OF ALZHEIMER'S YOUR TOOTHPASTE?

From P. Kuhlman 5-3-03

Hello

I am a truck driver, and have hauled just about everything over the past 13 years.

I read your site's article postulating that naturally occurring aluminum found in water might be the key to Alzheimer's disease. I'll go one better than that.

I once picked up a 44,000 pound load of aluminum dioxide powder in the aptly-named town of Bauxite, Arkansas. Noting that the destination for the load was not a processing plant or a mill, I inquired as to why this load was destined for the Colgate-Palmolive Company. The shipping agent said that the quality of bauxite (Aluminum dioxide) found in Arkansas was too low grade for manufacturing purposes, but was fine for toothpaste.

"Toothpaste?" I inquired. He then went on to explain that common white toothpaste is made largely from Aluminum Dioxide, which is a mildly abrasive, brilliantly white powder. They'll simply add a sudsing agent to make the bubbles, a flavoring agent to make it palatable, perhaps a food coloring agent, some water, and presto - toothpaste.

Go read the ingredients on your tube of toothpaste. It'll list one or two 'active ingredients'... notice the combined total amounts of 'active ingredients' is usually less than 1%. What about the other 99%?

- Were you aware that every day of your life, you are filling your mouth with a gob of nearly pure aluminum dioxide?
- Can you imagine the possible health effects?
- Do you see how this is the number one entry point for aluminum to enter the body?
- Can you guess why the inactive ingredients aren't listed?
- Imagine the outcry from all the millions of health conscious Americans who suddenly discovered that they are being poisoned!
- That's why they aren't listed.

So, if you and your vast readership are concerned about getting too much aluminum in their diets, you can all relax about naturally occurring aluminum in the water, or cooking with pots and pans. These are trivial sources of aluminum compared with the several pounds of aluminum directly swallowed or absorbed through the tissues while brushing our teeth.

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On the bright side, we can all still have a beautiful smile in our old age, if only we can remember how to smile.