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REPORT

Mercury Amalgam Toxicity

Your next visit to the dentist may not be as innocent as you think

by Jim O'Brien

Page 1 of 3



Charles Williamson, M.D., co-director of the Toxic Studies Institute in Boca Raton, Florida and colleague, Jordan Davis, M.D., sat down with Life Extension magazine for an in-depth interview on the problem of mercury toxicity caused by dental fillings. Unlike past treatments of this subject, the two physicians spoke from a clinical, medical and scientific-not a dental-perspective.

The issue of mercury toxicity is a delicate one. For decades, most people have seen a visit to the dentist and subsequent cavity filling as a necessary and regular procedure. Side effects have not routinely been brought to light, so few have challenged the status quo. Evidence suggests, however, that such an apparently harmless procedure can have detrimental effects.

Charles Williamson, M.D., co-director of the Toxic Studies Institute in Boca Raton, Florida, takes the matter very seriously. "Once mothers realize the fillings in their teeth damage the development of their babies' brains while they're in the womb, and once these women understand this damage can result in low IQ, learning and behavioral problems after birth, then we'll see a public outcry against the use of mercury amalgam."

"I envision something along the lines of the backlash against tobacco, or drunk driving. Imagine a mercury amalgam protest group patterned after M.A.D.D.—Mothers Against Drunk Driving. When that organization came about, we saw results. That's what we desperately need now. Perhaps we could call it M.A.M.A.—Mothers Against Mercury Amalgams."

Dr. Williamson continues: "One of these days, there's going to be a mammoth lawsuit about mercury fillings, similar to one that's already been filed in Canada. It's going to be bigger than what we've seen over tobacco. It's going to hit people like a Mack truck that putting mercury amalgam in their teeth amounts to putting poison in their mouths. Once they realize that in no uncertain terms, they're going to be angry. Part of our job is to educate, inform and disturb them so they'll do something about it."

"Mercury vapor is toxic, period," Dr. Williamson goes on. "The fetus is especially vulnerable to that toxicity, which can cause brain damage. Specifically, mercury vapor can cause learning disabilities, autism and attention deficit disorder in unborn children. How will parents feel when they grasp that?"

Dr. Williamson and his colleague, Jordan Davis, M.D., say toxicity due to mercury amalgams is pandemic in our society—yet hardly anybody understands or appreciates that fact. As it turns out, mercury toxicity could provide a significant explanation for the explosion in learning and behavioral problems, autism and a whole host of other conditions since World War II—that 55-year period corresponds to the introduction and widespread use of mercury amalgam.

"It's an enormous problem," explains Dr. Davis.

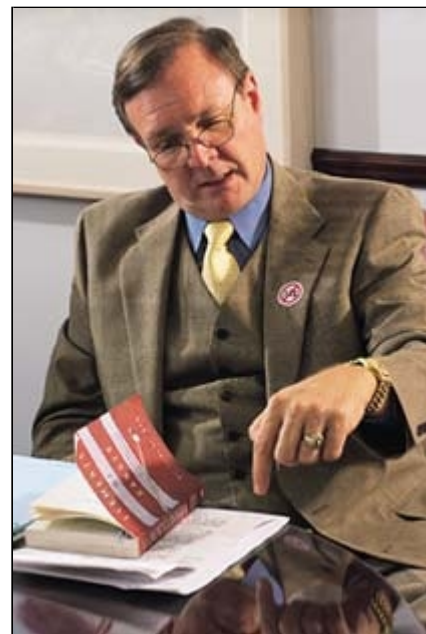
"There are the medical consequences, the symptoms. Mercury is toxic and it harms people. We'll get into the science behind that statement later—there's a ton of evidence to substantiate it."

Dr. Williamson says that the toxicity results in disorders primarily of the central nervous system; the head, neck and oral cavity; the gastrointestinal tract; the cardiovascular, renal and immune systems. "Exposure to mercury fillings results in a chronic toxicity, not acute poisoning," he noted as an aside.

According to Dr. Williamson, the toxicity can manifest in irritability and anxiety, restlessness and emotional instability, loss of memory, inability to concentrate, mental confusion, depression, anti-social behavior, suicidal tendencies, muscle weakness and loss of coordination; bleeding gums and loosening of teeth; abdominal cramps, chronic diarrhea and/or constipation; abnormal heart rhythms and blood pressure (high or low) and unexplained elevations of cholesterol and triglycerides; repeated infections or cancer; and generalized complaints such as chronic headaches, allergies, dermatitis, cold and clammy skin or excessive perspiration, ringing in the ears, joint and muscle pain, unsteady gait, wheezing, heart palpitations, sinus congestion, allergies, loss of appetite or chronic obesity.

Dr. Davis explains that these symptoms have inexplicably been on the rise in the past 50 years, without any unifying explanation. But findings in the past 10 years indicate that mercury toxicity may be the common link between these seemingly unrelated symptoms.

There are specific treatment protocols to detoxify individuals and rid them of their mercury burden. Removing mercury fillings is an obvious step in that process, but surprisingly, it's not the first one. It must be preceded and followed by systemic detoxification. "We'll detail the clinical treatment process later," said Dr. Davis.



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"The pervasive lack of public awareness about this very serious issue is an obstacle to progress. Even scientists and physicians tend to be relatively uninformed." - Jordan Davis, M.D.

must be disposed of according to strict EPA guidelines.

"More importantly," says Dr. Williamson, "there are studies from world renowned institutions that categorically show a cause-and-effect relationship between mercury and disease; this is particularly true of Alzheimer's disease.

"Mercury is a cytotoxin—i.e. it poisons cells. Why wouldn't it make you sick?"

Many researchers have reasoned as much over the years but they never had the scientific ammunition to overcome the arguments of organized dentistry in favor of mercury amalgam. But in 1991, Boyd Haley, Ph.D., a research toxicologist at the University of Kentucky in Lexington discovered some hard evidence that changed the mercury debate for good.

"It was almost accidental," Dr. Haley told Life Extension. "I found out how damaging mercury amalgam is to the brain while studying tissue affected by Alzheimer's disease.

"The basic research I conducted shows the difference between normal and diseased tissue. My own examination of Alzheimer's affected cells told me there had to be a toxicant—a toxic substance that causes it. So I went searching for one. I identified two environmental sources that could be responsible: Cadmium, mainly found in cigarette smoke, and mercury." Dr. Haley published his results. Then, the anti-amalgam lobby got in touch with him and told him that dentists were putting "stuff" in people's mouths that leaks mercury.

"Frankly, I thought they were nuts," says Dr. Haley. "No way would anybody, let alone responsible health care professionals, put people at serious risk by putting a toxic substance in their bodies, I reasoned.

"But I did an experiment. I put mercury amalgam in water. Then, I placed a sample of brain tissue in that water and checked on it over time. After a period of several weeks, I noticed that the exposure to mercury had suppressed the secretion from the brain tissue of tubulin—a major enzyme that performs critical functions in the brain. This finding was consistent both with mercury toxicity and with brain tissue as affected by Alzheimer's disease."

Dr. Haley continues: "From that, I concluded that there's clearly leakage from mercury amalgam—and that there's a strong probability that people who have such fillings in their teeth are being exposed to chronic, low-dose mercury leakage." According to Dr. Haley, having a mouthful of mercury from age 14 until age 65 and beyond would greatly increase risk in anyone susceptible to Alzheimer's disease.

Needless to say, dentists do not welcome Dr. Haley's views. "They insist mercury amalgam is safe, non-toxic and that it doesn't leak. [But the fact of the matter is that] mercury is a neurotoxin. It leeches out of dental fillings, of that there is no doubt. Anybody can measure it. It heightens the risk of Alzheimer's and Parkinson's disease as well as other neurological disorders. Dentists defend their use of mercury amalgam, but it's unjustifiable. I feel like I've been arguing with the town drunk for eight or nine years. My conclusion is simple and direct: mercury is the toxicant behind Alzheimer's disease. It may not be the only one, but mercury's role in the development of Alzheimer's disease is clear."

Dr. Williamson applauds Prof. Haley's impeccable science and says his findings establish a straight cause-and-effect relationship. But from his perspective as a clinician, he believes the Alzheimer's disease connection is only the tip of the iceberg.

The Mercury amalgam problem also works on the level of society as a public health problem—an unrecognized one, at that. "The pervasive lack of public awareness about this very serious issue is an obstacle to progress. Even scientists and physicians tend to be relatively uninformed," says Dr. Davis.

"And there is even organized resistance on the part of dentists who use mercury amalgams. There has been for a very long time because they have a lot to lose. Dentists have pride, reputation, money and liability on the line. To admit that they have mistakenly been using a harmful substance to treat tooth decay for many years is a very difficult confession to make—and it's fraught with extremely serious consequences."

Dr. Williamson is most outspoken about the scientific and ethical issues of the mercury question. "When will dentists reach the point where they'll say, 'We're not going to put poison in people's mouths any longer?'"

The science is blatantly overwhelming that mercury amalgams leak toxic vapors. The irony is that dentists who place the compound in people's mouths do not treat it like a toxic substance. In fact, leftover amalgam

"The list of problems mercury vapor can cause is endless. There is an extremely high incidence of depression, memory loss and behavioral problems including violent outbursts that can be explained by exposure to mercury vapor," Dr. Williamson told Life Extension.

He says that mercury toxicity also produces systemic effects, from foul breath and ringing in the ears to general fatigue or unexplained numbness or burning sensations that may be related. Most disturbingly, Dr. Williamson points out, is the evidence linking mercury vapor exposure to the development of chronic kidney disease and autoimmune disorders such as arthritis, lupus erythematosus (LE), multiple sclerosis (MS), scleroderma, amyotrophic lateral sclerosis (ALS) and hypothyroidism.

"The real point is this: mercury is toxic. And that statement is now beyond debate."

According to Dr. Williamson, The World Health Organization (WHO) states that there is no safe level of mercury in humans that does not kills cells and harm body processes. Florida's environmental regulatory agency notes that one mercury filling from one tooth thrown into a lake is enough to contaminate that lake for fishing and swimming. Dentists have consistently denied that mercury amalgam is dangerous, but, says Dr. Williamson, "that position is simply wrong. We won't spend a lot of time analyzing why dentists have maintained this mistaken position, but mistaken it is.

"The American Dental Association, which for so long has promoted the use of mercury amalgams, has recently divested itself of any culpability with regard to mercury. In a case before the Superior Court of the State of California, lawyers for The ADA and others stated: 'The ADA owes no legal duty of care to protect the public from allegedly dangerous products used by dentists. The ADA did not manufacture, design, supply or install the mercury-containing amalgams. The ADA does not control those who do. The ADA's only alleged involvement in the product was to provide information regarding its use. Dissemination of information relating to the practice of dentistry does not create a duty of care to protect the public from potential injury.' "

Dr. Williamson goes on to make an observation: "Now, an obvious question arises: if mercury were safe, as the dental profession has insisted for years, why would the American Dental Association feel obligated to claim nobody can hold it responsible for the harm it has caused? Their statement is just a way of saying, 'the stuff's dangerous, but don't blame us if it hurts you.' "

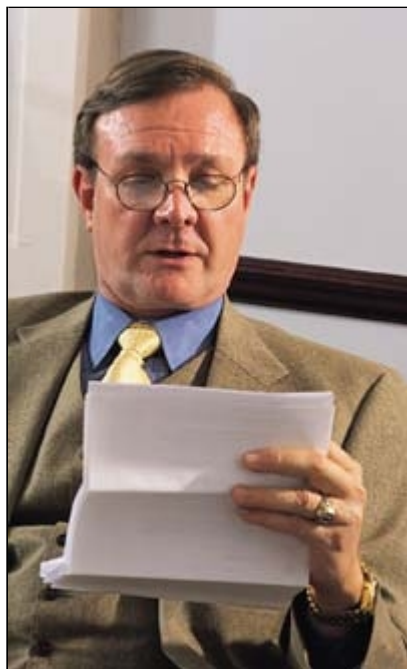


"The list of problems mercury vapor can cause is endless. - Charles Williamson, M.D.

Continued on Page 2 of 3

[Back to the Magazine Forum](#)

In their practice at the Toxic Studies Institute, Drs. Williamson and Davis see every day the ways in which mercury makes people sick. And responsible individuals and organizations are catching on to this fact.



"The American Academy of Pediatrics has called for a moratorium on the use of mercury (Thimerosal) in vaccines," says Dr. Williamson. "The Academy's action is laudable. One local gynecologist is counseling her patients about eating fish during pregnancy. She is rightly concerned about mercury intake from fish, which goes directly to the fetus, and we applaud her for recognizing the hazards mercury poses to the developing fetus. However, mercury-contaminated fish and Thimerosal in vaccinations barely scratch the surface of the overall problem. The great majority of the body-burden of mercury—87%—comes from dental amalgams, which continuously give off mercury vapor."

According to Dr. Williamson, the mercury accumulates in the tissue and leads to increased oxidative damage, mitochondrial dysfunction and cell death. This is toxic to anyone, he says, but especially to mothers-to-be and most of all to the developing fetus via rapid placental transfer. "The fetal pituitary gland—which affects development of the endocrine, immune and reproductive systems—concentrates mercury."

Dr. Williamson says that, most notably, mercury decreases transport to the fetus of oxygen and essential nutrients, including amino acids, glucose, magnesium, zinc and vitamin B12. It also depresses the enzyme Isocitric Dehydrogenase in the fetus. This suppression in turn causes reduced iodine uptake and hypothyroidism, learning disabilities and impairment and reduction in IQ. Mercury is also strongly associated with behavioral disorders, autism and autistic spectrum disorders, including attention deficit disorder. Further, mercury exposure affects levels of nerve growth factor in the brain, impairs astrocyte function and causes brain developmental imbalances.

All of these problems and events can be compounded 10-fold, he says, if a pregnant woman should have mercury amalgam placed in her teeth or removed from them during the first trimester of pregnancy. And dental work of any kind is worse in the first trimester than in the second or third. "The level of mercury in the tissue of the fetus, newborn and young children is directly proportional to the number of amalgam surfaces in the mother's mouth. Inorganic mercury methylated in the mouth by microorganisms to organic mercury is the most acutely neurotoxic form."

"When they go to dental hygienists, mercury amalgams should not be polished. We also recommend against dental appliances such as braces."
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Dr. Williamson adds that mercury from dental amalgams is often stored in breast milk in much greater concentrations than in the mother's tissues—and the amount of mercury in breast milk is likewise directly proportional to the number of amalgams the mother has in her mouth. Heavy metal toxicity in general, and mercury toxicity in particular, can have a very damaging effect on fertility. Mercury amalgams in teeth have been associated with a host of female complaints, but especially difficulty conceiving, outright sterility and spontaneous abortions (miscarriages). Likewise, sperm count and motility in males can be greatly lowered.

Again, Dr. Williamson: "Think of it like this: mercury amalgams are a mere two centimeters away from the pituitary gland. Vapor from these amalgams has an affinity for this gland in high concentrations. The effect of these vapors on this gland can bring about hormonal disruptions and menstrual cycle disorders. When mercury burdens are decreased or eliminated, menstrual cycles normalize and spontaneous pregnancies notably increase."

Dr. Williamson suggests that people who already have mercury amalgams should avoid hot beverages and chewing gum—both of which stimulate the release of mercury vapor. Anybody who has mercury fillings and suffers from bruxism—grinding their teeth in their sleep—should be evaluated for treatment.

“When they go to dental hygienists, mercury amalgams should not be polished. We also recommend against dental appliances such as braces when patients have mercury amalgams in their teeth.”

In addition to intensive detoxification and mercury amalgam removal, there is another protective step people can take, Dr. Williamson noted. “Since we know that mercury is an extremely potent oxidant and serves to damage and kill cells, we recommend individuals make it a point to have high levels of natural mercury chelators or detoxifiers in their bodies. Two very important substances are vitamin C and glutathione: we give these to our patients in very high doses to assist with mercury detoxification. And we also use mercury-free, organic Chlorella.”

On a preventive basis, they strongly urge parents not to have mercury amalgams placed in their children’s teeth. Many safe, bio-compatible materials are available to use for filling cavities in place of mercury amalgams.

“In case anyone still wants to defend the safety record of mercury, let’s consider the harmful effects it has on dentists, dental office personnel and their families—it’s overwhelming,” said Dr. Davis.

“Dentists and dental personnel who work with amalgam are chronically exposed to mercury vapor. Mercury levels in urine of dental personnel average about two times that of controls. Walking into the average dental office can result in a mercury exposure that’s approximately equivalent to having 19 amalgam fillings.”

Dr. Davis points out that mercury’s burden on the body increases with age, and older dentists have median mercury urine levels about four times those of controls, as well as higher brain burdens. Dentists and dental personnel experience significantly higher levels of neurological, memory, mood and behavioral problems, which increase with years of exposure. Female dental technicians who work with amalgam have significantly reduced fertility and lowered probability of conception—and their children have significantly lower average IQ compared to the general population.

Further, the homes of many dentists have been found to have high levels of mercury contamination, probably caused by the dentists bringing it home on shoes and clothes. Autopsies of former dental staff have found levels of mercury in the pituitary gland that averaged more than 10 times greater than that of controls—and also found higher levels in the occipital cortex, renal cortex and thyroid.

And it gets even more grim. Dentists have the highest rate of suicide of any profession. They also suffer a high incidence of depression and memory disorders. According to Dr. Davis, “A large number of dentists wind up being placed on permanent disability—and frequently carry a nebulous diagnosis of non-specific ‘neurological disorder,’ which we believe is mercury toxicity, plain and simple.”

The scientific truth is beginning to register with governments around the world and in the United States. In Sweden, it is against the law to use mercury amalgams. In Canada, Health Canada—the national health insurance system—has urged the nation’s dentists to stop giving mercury amalgam to children, pregnant women and people with kidney disorders.

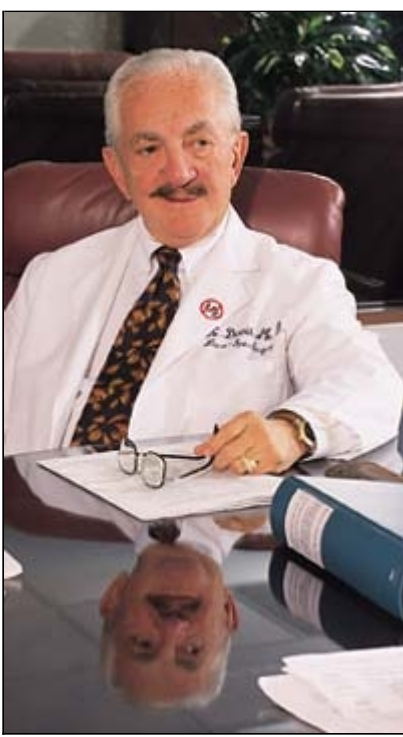
In late 1999, the California Dental Board—the largest in the country—termed the mercury in amalgam “hazardous,” and advised dentists to issue warnings about the reproductive toxicity of mercury and other adverse reactions. And in the summer of 2000, a judge in Maryland ruled that the state agency that regulates dentistry violated the law by prohibiting dentists from discussing the risks of amalgam with their patients.

Finally, if you have mercury fillings and are worried about mercury poisoning, what should you do? The first thing you have to recognize is that you have a medical problem. Says Dr. Davis: “You may carry a traditional diagnosis for your health problem(s) but the diagnosis or diagnoses may have a strong non-traditional link to the mercury in your mouth.”

“The bottom line is that multiple signs and symptoms may be present in multiple organs, the manifestations of which can be overt or occult. This is why a trained medical doctor with special knowledge in heavy metals toxicity should be consulted to thoroughly evaluate your history and each of your body’s organ systems.



"In case anyone still wants to defend the safety record of mercury? dentists and dental personnel who work with amalgam are chronically exposed to mercury vapor. Mercury levels in urine of dental personnel average about two times that of controls." - Jordan Davis, M.D.



“Eventually, you will need a dentist to remove your fillings, but first, you need a medical evaluation to see how much mercury is stored in your tissues, and how much toxicity you’re suffering. You will need to know how well your kidneys are functioning before any treatments or mercury removal may safely take place.”

Dr. Davis points to some of the tests medical doctors use in cases like this, which include The DMPS challenge, which stimulates the binding and elimination of a portion of stored mercury, which is then measured by a urinary excretion count; the creatinine clearance test, to measure kidney function (which mercury can severely compromise). This test can help determine which substances can be safely used for mercury detoxification, or even to tell if the kidneys can safely tolerate mercury detoxification. Other tests commonly employed are the H-Scan, which measures visual reaction time, vibrotactile sensitivity, muscle movement time, decision-making ability and memory function.

Dr. Davis states, “After those tests, you may require a medical detoxification of heavy metals generally, and mercury specifically, both before and after having your mercury amalgams removed. Medical doctors, not dentists, administer medicinal compounds that bind heavy metals and cause them to be eliminated from the body via the renal or fecal routes, separately or together. We use DMPS intravenously and oral DMSA.”

Finding a dentist to perform the procedure can be trying. Chances are your family dentist will volunteer, but odds are he or she will not be suited for the job. Removing amalgams has become a speciality unto itself. Dentists who perform this work often bear the qualifiers, “Mercury-Free,” or “Biologic Dentist.” They have had special formal training in mercury

amalgam removal and have special equipment on hand in their offices to reduce dangerous mercury vapor exposure during the removal process for patients, themselves and other dental personnel. Simply yanking out fillings can release extremely high levels of mercury vapor, which goes directly into tissue, and is stored, or sequestered.

During the removal process, a certain amount of vapor contamination is going to take place. But a properly trained biologic dentist can keep this hazard to a minimum.

Continued on Page 3 of 3 (Mercury Detoxification Protocol)

Resources

More than 900 scientific articles on the subject of mercury toxicity lend evidence to the position of Drs. Williamson and Davis. For access to an extensive bibliography of this scientific literature, go directly to Dr. Boyd Haley’s website: www.altcorp.com

There are several organizations that Drs. Williamson and Davis recommend for education and general information. They are:

- DAMS (Dental Amalgam Mercury Syndrome)
- Talk International.com
- International Academy of Oral Medicine and Toxicology

Drs. Williamson and Davis can be reached at The Toxic Studies Institute, 1905 Clint Moore Road, Suite 309, Boca Raton, FL 33487; (561) 988-8577; email: imi@4u.net.

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Continued on Page 3 of 3 (Mercury Detoxification Protocol)

[Back to the Magazine Forum](#)

REPORT

MERCURY DETOXIFICATION PROTOCOL

Page 3 of 3

To treat patients for mercury overload, doctors prescribe a variety of nutrients and drugs to chelate mercury out of the body and protect cells from the effects of the large amounts of free mercury being released into the bloodstream for urinary excretion. It is especially important to initiate this protocol at least two weeks before mercury dental fillings (amalgams) are to be removed.

What follows is a 33-day mercury detoxification protocol used by many alternative medicine doctors.

For weeks one and two, the following nutrients should be taken:

NUTRIENT	DOSE
N-Acetyl-Cysteine (NAC)	600 mg twice a day
Alpha Lipoic Acid	250 mg two times a day
Glutathione	250 mg twice a day
Glycine	500 mg twice a day
Vitamin C	5,000 to 10,000 mg a day
Vitamin E	400 to 800 IU a day
MSM (methylsulphonyl methane)	1000 mg twice a day
Garlic (high-allyl form such as Pure Gar) Avoid if offensive odor becomes a social problem.	900 mg a day
Cilantro (Chinese parsley) Stop using Cilantro after two weeks or on the day that mercury chelation therapy begins during the third week.	1 drop, rubbed on to the wrist two times a day
Chlorella Chlorella may cause diarrhea, so starting off at the lower dose is important.	1500 to 3000 mg a day for the first 14 days. On days 13-33 increase to 7000 to 8000 mg a day.
Selenium Avoid selenium for the 19 days of Chemet therapy that begins in the third week.	200 mcg
Multi-vitamin	If Life Extension Mix were used, it would provide some of the individual nutrients recommended above.
Note: Health conscious people are already taking many of these natural mercury chelating and glutathione-enhancing nutrients.	

Starting at week three, continue taking all of the above nutrients except selenium and cilantro and initiate treatment with the drug Chemet using the following dose:

First five days

Days six through nineteen

Chemet (DMSA) is a sulfhydryl-containing, water-soluble, non-toxic, orally-administered metal chelator which has been in use as an antidote to heavy metal toxicity since the 1950s. More recent clinical use and research substantiates this compound's efficacy and safety, and establishes it as the premier metal chelation compound, based on oral dosing, urinary excretion, and its safety characteristics compared to other chelating substances. Chemet is a prescription drug.

In lieu of oral Chemet therapy, some doctors prefer to use intravenous mercury chelation therapy which is described later in the protocol.

Blood and urine testing

Before initiating this 33-day mercury detoxification protocol, doctors suggest that a CBC-Chemistry blood test be performed that includes kidney-liver-thyroid function, lipids and magnesium. Of greatest concern is potential kidney toxicity that can occur when the body releases its mercury stores for excretion through the kidneys. Those with underlying kidney disease may not be able to undergo aggressive mercury detoxification therapy.

The only proven method of diagnosing mercury overload in the body is a 24 hour urine collection. This involves a laboratory sending you a urine collection bag for you to urinate in over a 24 hour period. If urine mercury levels are elevated, the 33-day protocol is advised. At the end of the 33-days, another 24-hour urine collection is recommended to verify that sufficient mercury detoxification has really occurred.

Intravenous mercury chelation therapy

Some doctors aggressively treat mercury overload with intravenous therapy designed to specifically chelate mercury from the body. The chelating agent used to remove mercury from the body is called DMPS (dimercapto-propanyl-sulfate). In addition to DMPS, doctors often add ten grams of vitamin C and other nutrients to further help detoxify the body and protect cells during this mercury removal process.

It is important to note that while standard chelation therapy using EDTA (ethylene diamine tetra acidic acid) removes calcium and lead, it does not adequately bind to and remove mercury.

Intravenous therapy using DMPS may involve six monthly visits to the doctor's office until a urine test shows that mercury levels have dropped to the safest possible level.

Drug and supplement availability

Intravenous therapies are available from physicians who specialize in mercury detoxification therapy. Chemet is a prescription drug sold at most pharmacies. Nutrients such as cilantro, chlorella, alpha lipoic acid, etc. are available from The Life Extension Buyers Club.

The need for professional expertise

When undergoing mercury detoxification therapy, using a doctor with particular expertise in this field provides the greatest assurance of a safe and effective outcome. At the end of this article, we have provided contact information for Dr. Williamson's clinic in Boca Raton, Florida. Dr. Williamson expects to practice at the new Life Extension Medical Center (Institute of Anti-Aging Medicine) in Ft. Lauderdale, FL. (1-888-710-5433).

For a list of alternative physicians in your area that may be knowledgeable about mercury detoxification, refer to the "Innovative Physician" section on The Foundation's Home Page at www.lef.org. It is important to note that not all of these doctors have expertise in mercury detoxification.

Undergoing complete mercury detoxification requires strict adherence to an individualized regimen of diet modification, supplements, drugs, multiple physician visits, blood-urine tests, etc. For more detailed information about what is involved in mercury detoxification, refer to the Life Extension Abstracts section.

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