

INTEGRATIVE MEDICINE OF CT
WARREN M. LEVIN, MD - FAAFP, FACN, FAAEM

31 E 28th STREET
NEW YORK, NY 10016
PHONE: 212-679-9667
FAX: 212-679-9730

13 POWDER HORN HILL @
WILTON, CT 06897
PHONE: 203-834-1174
FAX: 203-834-1175

WEBSITE ADDRESS: WARRENMLEVINMD.ORG

MERCURY TOXICITY
SOURCES, SYMPTOMS, EFFECTS AND TREATMENTS

SOURCES OF MERCURY

Mercury occurs naturally in the earth's crust. Prior to the mining of mercury ore, only trace amounts of mercury were found in the soil, water, and air. Mining of mercury ore has greatly increased the amount of mercury in the environment. In 1968, the US alone consumed over 5.7 million pounds of mercury.

Man has found many uses for mercury. Industry uses mercury in the manufacture of mercury batteries, alkaline energy cells, mercury lamps, mercury switches, and scientific instruments. Mercury is used by chemical plants in the production of chlorine, caustic soda, metal amalgams, and as a catalyst in the production of plastics and many other chemical products. Wastes from these chemical and industrial plants are an important source of environmental mercury pollution. Mercury pesticides and fungicides are widely used in agriculture.

Some everyday products containing mercury are listed below. The mercury found in many of these products is added as a preservative.

Water-based paints
Paper
Pesticides
Antiseptics
Camera film
Chemical fertilizer
Felt
Clothing
Cosmetics
Diaper services
Fabric softeners
Floor waxes
Pharmaceuticals
Wood preservative
Fluorescent lamps

Dental fillings
Furniture polish
Air conditioner filters
Toothbrushes
Cellulose sponges
Wall plaster
Neon Lights
Newsprint
Treated seed
Plastics
Thermometers
Mattress inner components
Rope
Adhesives,
and many more

One way or another, the mercury in these products and the mercury used to manufacture these and other products will eventually enter the environment. Unfortunately, mercury pollution appears to be a very long-lasting type of pollution; return to the ore deposits occurs very slowly, if at all. Aside from occasional industrial accidents, mercury contamination of water and food is the greatest threat to man.

Mercury Toxicity:
Sources, Symptoms, Effects & Treatments

WHAT IS MERCURY SENSITIVITY/TOXICITY?

HOW DOES IT RELATE TO "SILVER" DENTAL FILLINGS?

Mercury sensitivity/toxicity is the individual reaction a person has when exposed to mercury. Absolutely everyone will be poisoned by getting an excessive amount of mercury into the system -- the amount required to cause damage is small and, therefore, mercury is considered a toxic substance. However, small amounts of toxic substances are tolerated by most people, even though the ideal situation would be to have none in the healthy body. However, in addition to the toxic effects of cumulative amounts of mercury, there are some people who react in a supersensitive way to minute quantities of mercury -- we call this mercury allergy or hypersensitivity. In this case we can see specific reactions to the common dental silver-mercury filling. A "silver" filling contains approximately 50% mercury -- only 20% to 30% silver. Reactions to mercury are as individual and overlapping as your genetic inheritance.

Reactions to mercury leaching out of fillings have been categorized into five divisions:

1. Neurological: (referring to the nervous system) which is divided into two subdivisions.
 - a. Emotional: especially depression, irritability, suicidal tendencies, inability to cope.
 - b. Motor: such as multiple sclerosis, seizures, facial twitches, muscle spasms.
2. Cardiovascular: alterations of heart performance such as unidentified chest pains or rapid heart beat.
3. Collagen Diseases: problems with the cementing substances of the cells such as lupus, scleroderma, fibrositis, myositis, arthritis, bursitis.
4. Immunological: how well your body's defense mechanisms are working for you. Your immune system produces antibodies to destroy invaders that try to degenerate your cells. It also produces white blood cells to fight off bacterial infections. Interference here gives you more susceptibility to catch whatever disease is "going around", and increases the likelihood of allergic, autoimmune diseases, illnesses and cancer.
5. Allergies: foods, airborne, universal reactors. Mercury in combination with what you are "allergic to" will rupture white blood cells and can precipitate what is called an allergic reaction. Elimination of one of the two factors can help control the situation.

Mercury Toxicity:
Sources, Symptoms, Effects & Treatments

SYMPTOMS AND EFFECTS OF MERCURY POISONING

In general, the most characteristic symptom of mercury poisoning is damage to the central nervous system, ranging from irritability to brain damage.

The symptoms, effect and the severity of the damage observed depend upon the chemical form in which mercury enters the body. Ingestion of metallic or elemental mercury (like that found in thermometers) is not a threat to health. However, inhalation of mercury vapors* causes tremors, general irritability, and inflammation of the gums. In cases of heavy exposure to mercury vapors, severe lung damage may sometimes result in death. Ingestion of mercury salts (occasionally used for suicides and homicides causes severe abdominal cramps, corrosion of the intestinal tract (bloody diarrhea), kidney damage, and possibly death due to kidney failure. Inhalation of mercury salt dust causes symptoms similar to inhalation of mercury vapor. Most poisonings from these forms of mercury occur in industrial or laboratory workers due to working conditions with high background levels of mercury or to accidental exposure to mercury. This type of mercury poisoning is generally reversible with treatment.

The most dangerous and the most environmentally important form of mercury is methyl mercury. Methyl mercury is found in foodstuffs, especially in fish. Recent research has shown that metallic mercury and mercury salts found in lakes, rivers, and other bodies of water can be converted to methyl mercury by microorganisms present in bottom sediments. The methyl mercury formed tends to be concentrated in higher forms of aquatic life, such as fish. Seed eating game birds and wildlife may also show elevated levels of methyl mercury due to eating seeds treated with mercury fungicides. All foodstuffs, though, are potential sources of methyl mercury, because both plants and animals are able to concentrate mercury from the environment.

Methyl mercury is extremely toxic and can result in permanent brain damage. The earliest symptoms of methyl mercury poisoning are vague psychological complaints, including fatigue, headache, and forgetfulness. These are followed by numbness and tingling of the lips, hands, and feet. Later symptoms include weakness progressing to paralysis, loss of vision, hearing difficulties, speech disorders, loss of memory, incoordination, emotional instability, and general brain dysfunction. In severe cases, the victim may become comatose and die. Methyl mercury is also a threat to unborn children. Pregnant women exposed to methyl mercury may show no observable symptoms of poisoning, yet the child may be born grossly mentally and physically defective. Unborn children are apparently very sensitive to methyl mercury poisoning.

*PLEASE NOTE: Elemental mercury vaporizes at room temperature, so take care with thermometers.

Mercury Toxicity:
Sources, Symptoms, Effects & Treatments

DIAGNOSIS AND TREATMENT

The most important and immediate aspect of treatment must be the identification and elimination of the source of exposure to mercury. In the case of metallic or mercury salt poisoning, removal of mercury can be increased by the use of certain chemical agents such as BAL (British Anti-Lewisite, 2,3-dithiopropanol), EDTA (ethylenediaminetetraacetic acid), and penicillamine which increase the urinary excretion of mercury. Such treatment is usually effective unless the exposure is extremely severe or of long duration. In the case of methyl mercury poisoning, these agents are not effective unless given before damage to the nervous system results. Methyl mercury is excreted in the urine much more slowly than metallic mercury or mercury salts, further complicating such treatment.

Several new studies offer hope for improved treatment of methyl mercury poisoning. Polythiol resins, mercaptodextran, and selenium compounds have all been shown to be beneficial in treating laboratory animals poisoned with methyl mercury. Studies on humans remain to be made.

Metallic mercury or mercury salt poisoning can be treated; however, at present, there is no absolutely effective treatment for methyl mercury poisoning.

AN EXAMPLE OF ENVIRONMENTALLY CAUSED MERCURY POISONING

In 1953, Japanese fishermen and their families living near the city of Minamata on the island of Kyushu began to fall ill with strange mental disorders, including paralysis; incoordination; weakness; visual, audio and speech difficulties; and, sometimes, stupor, coma and death. Similar symptoms were also seen in local cats and other domestic animals that ate seafood. Authorities were mystified until it was finally diagnosed as methyl mercury poisoning. The victims had eaten large quantities of fish and shellfish (three times a day) from Minamata Bay. The source of the mercury was found to be a nearby factory using mercuric chloride as a catalyst. Wastes from the factory were dumped into Minamata Bay. Between 1953 and 1970, more than 121 poisonings were reported in the area, with 46 deaths.

Comment

From the above example, it is obviously wise to moderate fish consumption in the diet, especially fresh water fish or any fish from areas of known industrial contamination. Unsprayed fruits, vegetables, and grains are preferable. Avoid eating seeds or grains used for agricultural purposes; they are often pre-treated with mercury fungicides.

Mercury Toxicity:
Sources, Symptoms, Effects & Treatments

WHERE DOES THE MERCURY COME FROM?

Fillings are small batteries. Copper, silver, tin and mercury become a battery when bathed in saliva. An electrical current is generated. The chemical reaction that generates electricity produces mercury vapor as a bi-product. Fillings five years old have been shown to have 28% mercury. This means that nearly half the mercury has been released into the body.

WHERE DOES THE MERCURY GO?

Mercury vapor from the fillings goes into the nasal sinus where axonal transport takes it into the brain accounting for Divisions 1 and 2. Vapor is also inhaled into the lungs from which it directly enters the blood stream accounting for Divisions 3, 4, and 5. If a female is pregnant, the baby protects the mother from mercury! His red blood cell count is often as much as 30% higher than his mother's. In anyone, the white blood cells can elevate but the red blood cells have a high affinity for mercury. We have recently identified a very important mechanism whereby the hemoglobin and hematocrit are elevated while oxygen transport is reduced. The resultant blood test looks energy packed, but the patient is on the verge of fatigue. This condition can be greatly improved within two weeks of amalgam removal.

WHY HAVEN'T I HEARD ABOUT IT BEFORE?

During Amalgam War I of 1840, the dental association of that time was destroyed due to heavy argumentation about mercury safety. Amalgam War II was doing well from the scientific standpoint until World War II took precedence. Today the technology is available to prove things like changes in EKG, EEG, blood, cells, the retina of the eye and psychological conditions, etc. These are necessary to prove the facts. The biggest problem, though, has been the bizarre reactions to mercury. Everyone reacts differently. If it gave everyone a cold, it would have been found out 150 years ago.

WHAT ARE MY CHANCES OF GETTING BETTER IF I HAVE MY AMALGAMS REMOVED?

The single most important factor for success in the mercury toxic patient is the sequential removal of amalgams. Negative fillings must be removed first, followed by the high current positives and finally the low current positively charged fillings. Biochemical coverage prior to initiating amalgam removal is next in importance. When these two parameters are followed, chances for a successful outcome are in the vicinity of 80%. When they are violated, chances drop to about 10%. So don't just run out and have all of your amalgams removed indiscriminately.

Reprinted with courtesy of Hal A. Huggins, D.D.S., P.O. Box 2589, Colorado Springs, CO 80901, (303) 473-4703

In the controversial world of mercury fillings, even those who believe them to be a serious problem have doubts about this aspect of the issue! However, since there is no harm in doing it this way, I say "Why Not?"

....Warren M. Levin, MD