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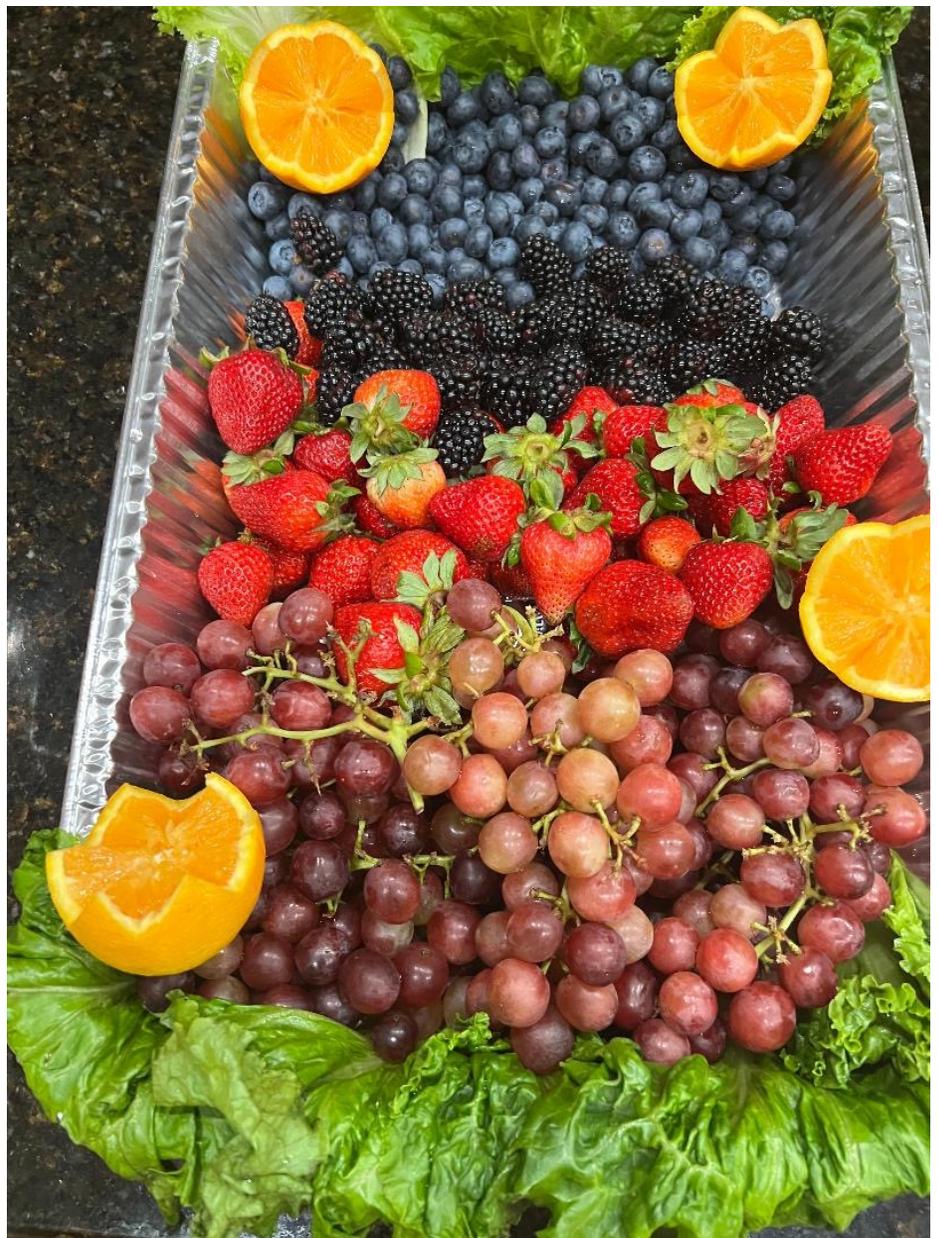


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# Message: from the President of BioNatural Healing College (BNHC)



Greetings!

First and foremost, I am extremely thankful to Almighty God for granting me this opportunity to present the BioNatural Healing College (BNHC), BNHC E-Magazine to our dear readers. Also, I would like to thank you all, especially the dear readers who send us their valuable feedback and support. The information in this magazine is solely for educational purposes.

We hope this BNHC- E-Magazine will be useful to you based on the contribution and dedication of many other respected researchers and colleagues around the globe. Thanking and wish you all the best health and prosperous life.

Best regards,

Dr. Nadir Sidiqi Ph.D.



# BioNatural Healing College

**BioNatural Healing College** Hope you and your loved ones are staying healthy and safe during this pandemic (COVID-19). What we need to do especially during this uncertain time as follows:

1. Vaccination, Sanitation and Isolation from Social Interaction.
2. Positive Attitude will Increase the Power of Mind and Immune System.
3. Healthy Diet and Drink Plenty of Water (Honey with green tea, vitamin D<sub>3</sub>, vitamin C), Get Enough Sleep.
4. Exercise (any type of physical activity for 30 minutes daily).
5. A Lot of Prayer to Almighty God (be patient, calm).

**May Almighty God bless, guide us all (Humanity) and grant us the ability to find a cure for the elimination of COVID-19.**

# By Prof. Rosalie Stafford

## Mercury: A Highly Toxic Heavy Metal



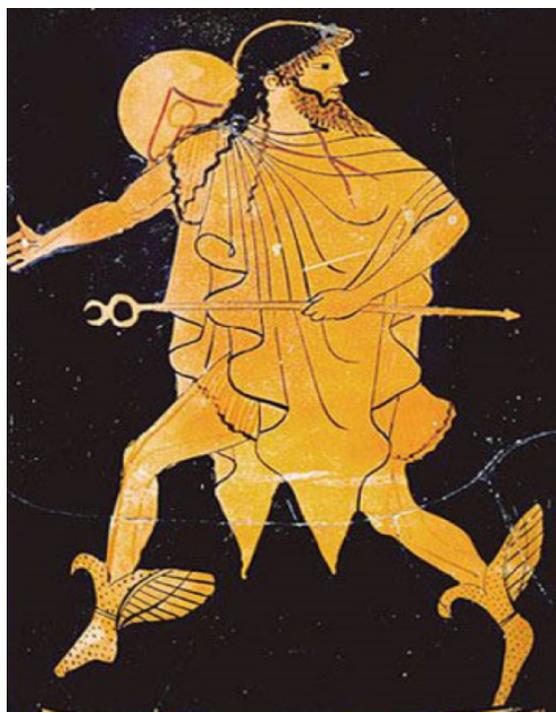
In previous issues of Bio-Natural Healing College's internet magazine, we have looked at various chemical elements which are necessary for optimal health: Salt, Sulphur, Selenium, Iodine, Copper, Zinc. In this issue, we will look at Mercury (Hg), a substance mined for thousands of years and even today prized as an active ingredient in quack concoctions but which is, as we now know, a highly toxic heavy metal.

Mercury is a potent poison which attacks every system of the body, especially the neurological, the respiratory, and the digestive systems, causing severe damage to the brain, the lungs, the kidneys, the skin, and the eyes. Mercury is a fearsome chemical element, bringing misery and death to those unfortunate enough to contact it. Because of our modern way of life, Mercury is ubiquitous, literally all around us. The more we know about Mercury, the better we can minimize our exposure to it, guard against being inadvertently affected by it, and even employ some effective protocols to detox from it.

### **Mercury, or *Quicksilver***

Mercury is named in honor of Mercurius, the wing-footed messenger of his father-god Jupiter, chief of the Graeco-Roman pantheon.

The god Mercury was particularly associated with tradesmen and thieves, financial gain, commerce, eloquence, messages, communication between people and also between this world and the spirit world, travelers, boundaries, luck, trickery and thieves.



## Mercury, the fleet-footed messenger god

Obviously, travelers, communicators, conmen, and merchants are people who have to be quick-witted to survive and thrive. Words such as *merchant*, *merchandise*, *mercantile*, *commerce* all spring from the root-word *merx*, the basis of the word *Mercury*. The swiftly-moving planet Mercury was named for the fleet-footed god Mercury (or possibly vice-versa). The ancients decreed that the planet Mercury rules the astrological sign of Gemini, The Twins, whose attributes include quick-wittedness, agility in communication (nowadays, we would say “a love of tweeting”); love of movement and travel and novelty, the desire to quickly touch on a variety of different topics, ease in multi-tasking. Since the dawn of mass communication, Mercury has been a traditional title for newspapers. Thus we see that, Since the beginning of history, the three — god, planet, and metal — have been linked astrologically and alchemically (“Mercury | Origin”) and the identifying characteristic of all three entities has been the quality of easily and swiftly crossing boundaries, the aptitude of being *quick*. It is indeed ironic that the toxic Mercury attacks the neurological system, easily crossing cell membranes, destroying the swiftly-firing neural connections and its victims’ ability to walk.

*Quick* is the old English word for *alive* or *lively*. (For instance, the living part of your fingernail, next to the cuticle, is called the *quick* of the nail.) The traditional English name for Mercury is *quicksilver*, a reference to the element's silver sheen and its unusual mobility — its *liveliness*. Mercury rolls freely and, even though it appears to be molten metal (like silver straight from the furnace). At room temperature, elemental Mercury remains liquid.

Indian researchers Neeti Rustagi and Ritesh Singh make these points:

Mercury is a heavy silvery-white metal that is found in liquid state at room temperature [and] is the only metal that is liquid at standard conditions for temperature and pressure.

Mercury readily vaporizes and may stay in the atmosphere for up to a year. When released into the air, it is transported and deposited globally. Mercury ultimately accumulates at the bottom of water bodies, where it is transformed into its more toxic organic form, methylmercury, which accumulates in fish tissue.

All forms of mercury are very dangerous, and *methylmercury* (Cl-Hg<sup>0</sup>-CH<sub>3</sub>) in particular has caused much misery in modern times.

### Mercury is a Heavy Metal

Prof. Anne Marie Helmenstein notes that the term *heavy metal* can be defined simply as a chemical element having a “high atomic number, atomic weight, and a specific gravity greater than 5.0 molecular weight” although, in common parlance, often the term *heavy metal* is used to refer to a chemical element which is “toxic in low concentration.” For example, Zinc, Copper, and Mercury all fit within the first parameter: *molecular weight greater than 5.0*. However, of the three chemical elements just noted, only Mercury is *toxic in low concentration*. In the January 2020 issue of Bio-Natural Healing College's internet magazine, we discussed the necessity of ingesting trace amounts of Copper and Zinc for optimal health; however, Mercury, *even in trace amounts*, is toxic.

Mercury fits both parts of the definition of heavy metal:

[1] Mercury has a molecular weight greater than 5.0 and

[2] Mercury is highly toxic.

Mercury, even in small amounts, is more toxic than lead, cadmium, and even arsenic (Eric Davis). Mercury Exists in Three Forms

Health Canada summarizes the three categories of Mercury:

*Elemental mercury* — this silvery, shiny, volatile liquid gives off a colorless, odorless vapor at room temperature;

*Inorganic mercury* — compounds formed when elemental mercury combines with other elements such as Sulphur, Chlorine, or Oxygen to create compounds known as *Mercury salts*;

*Organic mercury* — compounds, such as *methylmercury* [MeHg] that are formed when elemental Mercury combines with carbon.

Note that Mercury in every *category* — elemental, organic, and inorganic — is toxic. Moreover, Mercury in every *form* — whether liquid, vapor, or compounded with other substances — is toxic. Mercury does not degrade— not in the sense of “going away.” Instead, Mercury degrades into the even more toxic form of methylmercury: Approximately one gram of Mercury, the amount in a single fever thermometer, is deposited to a 20-acre lake each year from the atmosphere. This small amount, over time, can contaminate the fish in that lake... As evidenced by fish consumption advisories due to Mercury in over 40 states, over time, this seemingly small annual atmospheric deposition often results in Mercury-contaminated fish that are unsafe to consume on a regular basis. (IMERC)

Mercury vapor or particulates don't cease existing just because they appear to vanish. Mercury is forever: it bioaccumulates and increases in relative toxicity. Mercury in History

Science historian Philip Ball notes that, throughout the ancient world from China to the Mediterranean Sea, the mineral called *cinnabar* (HgS or *mercuric sulphite* or *Mercury Sulfide*) was the source of elemental Mercury. Cinnabar mines in Spain, Italy, China, and other places provided the matrix from which the pure chemical element was obtained.

Historically, the lethal nature of Mercury (or cinnabar) has been known for millennia: British chemist Monamy Beckell writes that, in ancient times, it was common knowledge that cinnabar miners' working life was brief. Roman engineer, Vitruvius (90-20 BC), reported that miners of cinnabar ore quickly showed poisonous effects: tremors, extreme mood changes and loss of hearing progressing to severe mental derangement and death. The Romans solved the problem of toxicity by turning the cinnabar mines into penal institutions for criminals, slaves, and other undesirables. Sparing Rome the need for formal executions, the average life span of the miners before death was three years. Even worse duty was roasting the cinnabar ore to produce the mercury itself. Those working the furnaces usually died in about six months. ("Cinnabar")

There was great demand for the product of the deadly cinnabar mines. Ancient practitioners of both Eastern and Western medicine sought out the red mineral, compounding it in unguents for treatment of skin diseases such as scabies and psoriasis, as well as urological conditions. Danish researcher K. S. Norn notes that the ancient Greek physician Pliny described the use of cinnabar in treating venereal diseases. When syphilis appeared in Europe at the end of the 15th century, treatment included pills and ointments of calomel ( $\text{Hg}_2\text{-Cl}_2$  or *mercurous chloride* or *Mercury Chloride*). As recently as the last century, apothecaries and quacks sold curatives containing "colorful mercurials: calomel, sublimate, cinnabar, oxides of Mercury" (Norn).

Even today, Mercury salts are used by some people as home medical treatments. Mercury salts are found in various patent medicines or home remedies concocted to kill intestinal parasites. Calomel pills sweetened with lactose and sucrose for treating sore throat is readily available (NDA), and cinnabar is still easily available online and in American cities that have a Chinatown or a sizable Chinese population.

The world's first *materia medica* (definition: *substances used in the composition of medical remedies*) dates from ancient China. The reference work contained many recipes for medicines featuring Mercury. For thousands of years, traditional Chinese medicine has specified calomel for skin and genital ailments, especially psoriasis and genital warts; in addition, calomel has long been traditionally prescribed for expelling parasites ("Calomel"). This is not a surprise, as calomel is a purgative, causing the bowels to evacuate as the body attempts to rid itself of the toxic substance. (Beckell notes that bloody diarrhea is a symptom of acute Mercury poisoning.)

Chinese myth tells of legendary Huang An, who ate cinnabar and lived "for at least 10,000 years" (Ball), and history-writer Evan Andrews tells us that Chinese patients were promised "eternal life and the ability to walk on water" if they consumed noxious brews containing poisonous Mercury, sulfur and arsenic. One of the most famous casualties of this diet was the Chinese Emperor Qin Shi Huang, who died after ingesting Mercury pills designed to make him immortal.

We will never know how many patients were, like the Chinese Emperor, killed by the Mercury they drank or rubbed onto their skin, rather than by the disease from which they were seeking relief. Remember: Mercury in any amount, no matter how small, is toxic. Swedish researcher Mats Hanson points out that Mercury is *immuno-toxic* (suppresses the immune-system) and "when poisoning symptoms appeared, they could always be blamed on worsening of the original disease." Traditional Chinese cures containing cinnabar are still on the market, available from brick-and-mortar stores in American Chinatowns. Recently, David Holley, a reporter from the *Los Angeles Times* investigated the illegal sales of cinnabar in Chinatown. He asked an herbalist storekeeper about the medicinal use of cinnabar and was told:

"They put a little of that on a pig's heart, and they put it in a jar with a couple cups of water in there, and they steam it. Then they drink the juice."

Holley was told that China is the source of “most” of the cinnabar. The website *Chinese Herbs Healing Art of Herbal Remedies Revealed* promotes the use of mercury-containing remedies while cautioning: Once the poisoning symptoms occur, you should stop [taking the medicine] immediately or hurry to go to hospital to get the care. I am not a medical doctor; however, I strongly urge you to have nothing to do with any “medicine” containing Mercury in any form: Mercury is poison. Mercury Poisoning in Modern Times

Fatal cases of methylmercury poisoning” writes Julia R. Barrett, “[were] reported in 1865, and ... [after] methylmercury became commercially important as a crop fungicide around 1914, worldwide use was accompanied by worker poisonings and several large-scale food poisoning incidents.” In the 1950s, Japan and Sweden saw *endemic Mercury toxicity*. *Endemic* means that it was commonplace: in parts of Japan and Sweden, Mercury toxicity was the new normal. By the end of the 1970s, researchers had documented many cases of Mercury pollution around the globe: Mercury contamination was a worldwide problem. Various forms of toxic Mercury were detected in bays, lakes, and rivers. And researchers proved that, like most toxins, methylmercury *biomagnifies*, bioaccumulates in the food chain (Barrett). Minamata Disease

It sounds like a horror movie ... it started in 1955, writes Andrew Pollack: cats living in the Minamata Bay region of Japan’s Kyushu Island started “started dancing weirdly and hurling themselves into the sea to die.” Then, in April 1956, reports Prof. Nuriyuki Hachiya, four people—including two little girls, sisters—started experiencing wracking convulsions and other serious symptoms of central nervous system damage, ranging from tremors and tunnel vision to “partial or complete loss of speech, hearing, and vision, numbness of the hands and feet, inability to walk.” (Pollack). What was happening? We now know that the fish of Minamata Bay were contaminated with the organic (carbon-based) compound *methylmercury*. Organic mercury is the most deadly of the mercury compounds, probably due to its ability to enter the cells almost effortlessly. Within the cell it can destroy the various components selectively or in total by releasing lysosomes, damaging DNA and by rupturing the cell membrane. (Davis) Moving as swiftly as the fleet-footed god Mercury, as rapidly as rumor travels or as the planet Mercury in its rotation around the Sun, deadly methylmercury tears through cell walls, shredding DNA, destroying the delicate lacework of the nervous system.

Where did the Mercury come from all of a sudden?

The American Chemical Society notes that normally, some mercury is always being emitted via undersea hydrothermal vents, but a disaster such as seen at Minamata Bay was unprecedented. Wastewater containing inorganic Mercury compounds was being pumped into Minamata Bay by a chemical manufacturer. The afflicted had all ingested fish and shellfish contaminated by methylmercury discharged in wastewater from a chemical plant that manufactured acetaldehyde, a chemical used to make octanol, itself an ingredient in polyvinyl chloride manufacturing (Hachiya). The poison entered the bodies of fish where it was biologically transformed into an organic Mercury: deadly *methylmercury*. Furthermore, the methylmercury in the bodies of the fish bioaccumulated and biomagnified so that people (and cats) that ate the fish ingested a heavy load of the poison. Day after day, as more seafood was eaten, more and more methylmercury was consumed. By the end of 1956, more than fifty cases of the horrific syndrome were documented, and seventeen people had died as a result of what was early on recognized as some sort of heavy-metal poisoning (Hachiya). In recognition of the fact that the afflicted were residents of the Japanese fishing community all living around Minamata Bay, the syndrome was officially named *Minamata Disease*. Minamata was a large-scale ecological disaster site: not the first in the historical record but the first to be scientifically studied in depth.

## Mercury-Caused Neurological Damage

Researcher M. Harada describes the neurological damage inflicted by methylmercury: sensory disturbances (glove and stocking type), ataxia, dysarthria, constriction of the visual field, auditory disturbances and tremor ... [plus] extensive lesions of the brain. Methylmercury toxicity was not unknown to science. In 1943, more than a decade before the tragedy at Minamata, British scientists published a description of the effects of methylmercury poisoning, which includes: [A]n intense and widespread degeneration of certain sensory paths of the nervous system, the peripheral nerves and posterior spinal roots being affected first; the posterior columns and the granular layer of the middle lobe of the cerebellum later. (Beckell) Davis points out that the effects of “organic mercury, the most deadly of the Mercury compounds, upon the neurological and reproductive system have been extensively documented.”

The World Health organization reports that whatever its particular form — elemental, organic, or inorganic — Mercury is always highly toxic, and there is no question but that methylmercury (which killed the people of Minamata Bay) is extraordinarily toxic. Because methylmercury readily passes both the placental barrier and the blood-brain barrier (Greenfact), if ingested during pregnancy, babies develop *Congenital Minamata Disease*. Fetuses which survive mercury poisoning *in utero* are condemned to a lifetime of severe birth defects ... with symptoms including mental retardation, seizures, and impaired motor development (Barrett). Autism is a modern disease, a childhood tragedy that has gone from being a rare condition to an epidemic (Davis). When autism was first noted, psychiatrists claimed it was the result of “bad mothering.” We now know that autism is a form of neurodevelopmental damage that is caused by environmental agents, particularly Mercury (Olmsted and Blaxill; Geier and Geier).

### Mercury Has Caused Countless Deaths Worldwide

Since 1955, more than a thousand Japanese have died as a direct result of the Minamata Bay environmental disaster caused by methylmercury while, in the area around Minamata Bay alone, thousands of chronic sufferers of Minamata Disease endure symptoms of mercury poisoning: severe systemic damage to their nervous, digestive, respiratory, and immune systems, as well as to their skin and eyes.

The effects of Minamata Disease include various incurable deformities (Rustagi and Singh); These terrible afflictions are seen not only in the Minamata region. Minamata Disease is not confined to Minamata Bay alone but is widespread, occurring to a greater or lesser degree all over the world in developing and in already industrialized regions. Undoubtedly, some of victims of Mercury poisoning live in your own neighborhood. GreenFacts notes that

a recent study of 1700 women in the USA found that about 8% of them had Mercury concentrations in their blood and hair exceeding the levels that correspond to the US EPA’s estimated safe dose.

Naturally, Mercury is bound up in mineral form and deposits of Mercury-containing minerals are relatively rare. So where exactly does Mercury pollution come from?

## Forms and Origins

The World Health Organization tells us that Mercury is constantly being released into the environment particularly from coal-fired power stations, residential heating systems, waste incinerators, and as a result of mining for Mercury, Gold, and other metals. Once in the environment, elemental Mercury is naturally transformed into methylmercury that bioaccumulates in fish and shellfish. It was methylmercury in fish and seafood that doomed thousands of Japanese to a painful death or to a lifetime of suffering from Minamata Disease. If you have Mercury amalgam dental fillings, your own personal bodily environment — the ordinary bacteria in your mouth — is constantly converting the mercury in your teeth into methylmercury (Leistevuo *et al*). And, if you have had your government-mandated vaccinations, ethylmercury has been injected into your body. Eli Lilly, the manufacturer of the patented organomercurial salt tradenamed *Thimerosal* (C9-H9-Hg-O-S2-Na) admits that their product is categorized by the European Union as “T+/S60” (*very toxic hazardous waste*). Thimerosal is used in America as a preservative in a range of prescription and over-the-counter drugs (Davis). Mercury as Environmental Pollutant

Mercury in its various forms is ubiquitous, occurring in many items common to modern life: thermometers, manometers, barometers, gauges, valves, switches, batteries, and HID (high-intensity discharge) lamps. OSHA notes that mercury is “also used in amalgams for dentistry, preservatives, heat transfer technology, pigments, catalysts, and lubricating oils.” But that’s not all.

In addition to HID lightbulbs (including metal halide and high-pressure sodium light bulbs), fluorescent light bulbs contain around 5 mg of elemental Mercury regardless of wattage. Sciencing reports that a broken Mercury-containing lightbulb endangers anyone “in close proximity.” Note that while elemental Mercury is toxic in any amount, Mercury is even *more* toxic in its organic and inorganic forms. For instance, ingestion of methylmercury (organic Mercury) can cause death within months while ingestion of mercuric salts (inorganic Mercury) can cause death within hours (Beckell).

The CDC (Center for Disease Control) tells us that inhaling Mercury vapor is extremely hazardous as the toxic chemical passes from the lungs immediately into your entire system; chemical pneumonia can result. Because inhaling Mercury vapor is extremely hazardous, a broken Mercury-containing thermometer or lightbulb qualifies as a small-scale environmental disaster. The EPA gives detailed instructions on dealing with a broken Mercury-containing lightbulb. Here's the checklist: First: Immediately open windows to the outside so that the gas can vent, and evacuate the room for several hours while it airs out. Next, wearing old work clothes and disposable gloves, pick up all debris, using sticky tape to get every last little bit of broken glass. Then thoroughly vacuum everything — floor, furniture, and drapes — using a powerful vacuum cleaner that has disposable bags.

EPA instructions continue: Promptly bag all lightbulb debris and cleanup materials, including vacuum cleaner bags and your clothing, and store outdoors in a lidden trash container or protected area until materials can be disposed of. Avoid leaving any bulb fragments or cleanup materials indoors. Check with your local government about disposal requirements in your area, because some localities require fluorescent bulbs (broken or unbroken) be taken to a local recycling center. How many people have you ever heard of who follow this EPA checklist?

Most people simply pick up the broken bits of glass with their bare hands and toss the shards into their household garbage, probably not even thinking to wash their hands afterward. Very likely, most people would not open the windows to ventilate the room, not knowing that “Mercury vapor is absorbed by the body to approximately 80% when inhaled, and the part of it that adopts ionic form might also become methylmercury” (Hanson).

You might be wondering why the Environmental Protection Agency is so worried about Mercury vapor and broken bits of lightbulbs which contain residual Mercury while the Food and Drug Administration is not at all worried about dental fillings—which are composed of 50% elemental mercury and known to continuously convert to *methylmercury* in your mouth (Drexler and Schaller). Also, you might be wondering why the Food and Drug Administration is not worried about chemical Thimerosal, a patented preservative which is 50% *ethylmercury*. In upcoming issues of Bio-Natural Healing College's internet magazine, we will address this interesting question. Mercury in Fish and Seafood

We have seen how Minamata Disease devastated a fishing community beginning in the 1950s, dealing a death sentence to some and a life-sentence of suffering to others. The people of Minamata Bay experienced an epidemic of mercury poisoning caused by consuming the seafood harvested from Minamata Bay. Sadly, as we have seen, due to modern industrial practices, mercury poisoning is now a global pandemic: organic and inorganic forms of mercury are present to some degree everywhere in all the waterbodies of the world.

Fish can be an important part of your diet — as long as the fish is not contaminated with mercury. The Environmental Working Group offers a free “Tuna Calculator” to help you gauge the amount of mercury in various types of fish. Toxic Free Future offers an easy rule-of-thumb: “Avoid fish high in mercury, such as king mackerel, tilefish, swordfish, orange roughy, and marlin. Limit consumption of tuna, especially steaks and canned ‘white’ albacore.” Dr. Eric Davis, the Australian dentist who specializes in Mercury detox, goes further, warning: “tuna, swordfish and larger predatory species should be consumed only on rare occasions.”

## Mercury Detox

In upcoming issues of Bio-Natural Healing College's internet magazine, we will look into the use of Mercury in current medical and dental practices, and also detox methods and regimens you can employ to remove Mercury from your system. Until then, remember to drink plenty of pure water and to eat a diet rich in colorful fruits and vegetables, always while giving thanks to our Creator Who has given us such priceless health-enhancing natural treasure and the knowledge to partake wisely of the richness of His bounty, to always turn toward the good and the pure.

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**Mission:** BioNatural Healing College is a non-profit public benefit institution that has tax-exempt status under the Internal Revenue Service, Section 501(c)(3) of the United States of America. Our goal is to offer a high-quality education a diploma program as well as holistic health and nutrition conferences, seminars, workshop, and continuing education. The focus of these educational programs is to offer healing and holistic nutrition science through online distance learning. These dynamic online education programs will provide diverse adult learners throughout the world the experience of enhancing their quality of life, their health, and their happiness.

**Vision:** The faculty, staff and management team of BioNatural Healing College are passionately committed to providing the best teaching possible in this field. We seek to encourage, motivate and explain the importance of this field to prospective students so that they may make an informed decision regarding enrollment. We seek an ultimate goal of satisfaction for the student based on responsibility, commitment, respect, awareness and sustainable education for society.

**Accreditation and Recognition:** BioNatural Healing College is based in California. It is an institution that has the goal to deliver on- demand online distance learning around the globe. This education is of high quality and vocational in nature. BioNatural Healing College is a legal business entity that has been approved to operate by the State of California's Bureau for Private Postsecondary Education that set forth in the educational code. BioNatural Healing College is not accredited by the United States Department of Education. BioNatural Healing College is a member of the American Holistic Health Association (AHHA).

