Tooth Traitors

An on-line publication authored by Ernie Mezei B.Sc., Eng.

Tooth Traitors

Chapter -1-

The profession of dentistry has been at war with itself since its inception nearly 200 years ago. Now, as then, there are charges that charlatans have invaded the profession, and that they are undermining the scientific standards upon which dentistry is based. Today the American Dental Association charges that any dentist who removes silver amalgam fillings is unethical, since there is no scientific proof that what the dentists have been putting in our teeth for 200 years causes people to be sick. For you see, if you are sick and take out all your amalgams and get better, its not scientific. For those of you who are confused by this argument, this book was written.

Dentists hold a special position of trust in society. In exchange for certain rights and privileges, not the least of which is the ability to regulate themselves, we the people can only go to a licensed dentist for dental work. This arrangement, known as a professional association, was created to protect society at large from dangerous practices.

Dentists have a right to be angry about the mercury controversy. If this material has been around in North America since 1833 and has been in widespread use, how could it possibly be dangerous? But there are other dangers in our society: greed, love of money, desire for riches, cash flow, self-interest, net worth, social standing, and many more. Placed against these dangers, we will see that mercury is dangerous. But for dentists the financial liability resulting from an admission that amalgams are poisonous is even more dangerous.

Mercury is exceedingly toxic, and only radioactive substances are more toxic to life. Look around our society today and try to find someone dying from natural causes. It just doesn't occur that often anymore. We have “traded off” a natural life for the blessings of technology. Meanwhile scientists assure us that if we just give a little more in taxes and donations, all the mysterious illnesses of modern life will be cured, by gene therapy or some other marvelous space-race technology.

Most of us are deservedly dubious of these claims, because we instinctively know that life is hardy, and deep inside we are sure that it is something poisonous in our environment is making us die unnaturally, if only we can find it. So we give to research and keep on giving, and hope. Scientists keep looking at our bodies breaking down, and conclude there must be a defect in nature’s plan. But overlooked is the obvious that poisoning attacks the central nervous system and the immune system, and leaves us defenseless against mental illness, heart disease, cancer, alzheimer’s, multiple sclerosis, and many more.

We are defenseless, and are being given pills and radiation to save us. We are at war (make no mistake, the governments call it a war), and don’t even know who the enemy is because of his low-level exposure. He is hidden, and unmasking him is difficult. In 1899,

Tooth Traitors

Dr. Tuthill tried in his treatise on “Mercurial Necrosis” where he listed dozens of recoveries from having fillings removed. The “New Departure” group that first created amalgam fillings included a quack scientist who said Thomas Edison was a fraud, two crooks working for the Philadelphia Mint who were involved in the biggest Silver Dollar Fraud in History, and a California Gold-Rush dentist who later standardized the mercury filling to make his fortune.

Let’s review the approved history of dentistry, and then we will delve a little bit deeper into the real people and events that were involved in creating modern amalgam.

Cavities in teeth have been filled over the years with a variety of materials: stone chips, turpentine resin, gum, metals;

-Arculanus (Giovanni d' Arcoli) recommended gold-leaf fillings in 1848.

-The renowned physician Ambroise Pare (1510-1590) used lead or cork to fill teeth.

-In the 1700s, Pierre Fauchard (1678-1761), the father of modern dentistry, favored tin foil or lead cylinders.

-Philip Pfaff (1715-1767), dentist to Frederick the Great of Prussia (1712-1786), used gold foil to cap the pulp.

Gold leaf as a filling became popular in the United States in the early nineteenth century;

-Marcus Bull of Hartford, Connecticut, began producing beaten gold for dental use in 1812.

-In 1853 sponge gold was introduced in the United States and England to replace gold leaf.

-This was followed by the cohesive, or adhesive, gold introduced by American dentist Robert A. Arthur in 1855.

-Gutta percha was used for fillings beginning in 1847.

The invention of the power-driven dental drill led to increased demand for fillings and so for an inexpensive filling material;

-Aguste Taveau of Paris, France, developed what was probably the first dental amalgam--in 1816. He used filings from silver coins mixed with mercury.

Tooth Traitors

-When the French Crawcour brothers emigrated to the United States in 1833, they introduced Taveau's amalgam.

-The poor quality of the amalgam led to its condemnation by many dentists , kicking off the so-called "amalgam war," a 10 -year period from 1840 to 1850 of bitter controversy about the merits and deficiencies of mercury amalgam.

-Numerous experiments were made from the 1860s through the 1890s to develop improved amalgam filings materials.

-The Chicago, Illnois, dentist G. V. Black (1836-1915) finally standardized both cavity preparation and amalgam manufacture in 1895.

And that is where it ended.....or did it?

“The day is surely coming .... when we will be engaged in practicing preventive, rather than reparative, dentistry. When we will so understand the etiology and pathology of dental cavities that we will be able to combat its destructive effects by systemic medication.” Dr. G. V. Black 1896

What “Silver” Amalgam Fillings Really Are

An amalgam is a mixture or union of mercury with one or more other metals. Most modern dental amalgams consist of a combination of mercury with silver, tin, copper, and zinc. The word amalgam is of Greek origin, being derived from malagma from malasso, meaning to soften, the melting point of the mixture being lowered and the mass being thus softened by the presence of mercury. (1)

The Recent Historical Classification of Dental Alloys

Year Type Alloy Composition (Alloy is mixed 50/50 with Mercury)

Silver Tin Copper Zinc

1929 High Silver 64-70%, 26-29%, 3-6%, 1-2%

1929 Low Silver 43-48%, 48-58%, 1-2%

1963 Non-gamma-2 40% min 32% max 30% max 2% max (2)

ie. Dispersalloy 70% 17% 11% 2%

n.a. Copper * 100%

Tooth Traitors

All alloys are mixed with mercury, generally in a 1:1 ratio except for *copper which is 30% copper and 70% mercury. Low silver alloys are now practically discarded for filling purposes, since they do not meet the demands of modern dental practice. (3)

The History of Amalgam Filling Development

The first dental silver amalgam was introduced by Bell of England in 1819 and later used by Taveau in Paris in 1826. Dr. D.M.Cattell stated that the first dental amalgam introduced into the United States was by the two Crawcour brothers under the name of "Royal Mineral Succedaneum", the last word meaning a substitute or replacer, in 1833.

Through advertisements these two Frenchmen induced a large number of prosperous people to submit to their operations with this material and incensed many of the better dentists. This was the beginning of the amalgam wars, waged on at least two bases: first, the material was introduced by two Frenchmen who were little better than charlatans; second, the use of amalgam was opposed by some physicians as it was a source of mercury poisoning. (4)

In the beginning, many dentists made amalgams by filing silver coins and mixing the filings with mercury. This produced a harsh mass, which was difficult to mix, hardened very slowly and changed form enormously. These qualities soon brought it into ill repute, and those who used it were classed as quacks and charlatans. However, some began a study of it in an attempt to improve it because of its low cost. (5)

This lead to the addition of tin to the silver, which was accomplished by rubbing tin foil with silver filings. This produced a more plastic mass, which set more rapidly and amalgamated much easier. Later, an alloy of silver and tin was made by melting the metals, which was a marked improvement over mixing the metals in a cold state.

While these developments were occuring, there was very strong opposition to the use of amalgam by the better practitioners, which finally resulted in a crusade against its use. This was the first amalgam war, initiated in 1841, which lasted many years.

Dr. Chapin A. Harris in his opening address to the first class of the Baltimore College of Dental Surgery, founded in 1839 as the first dental college, said about amalgam that "it is one of the most abomidable articles for filling teeth that could be employed." Many cases were reported of systemic effects and even death resulting from the presence of mercury in amalgam. Patients were sent to dentists by physicians with instructions to remove all amalgam fillings and the Onondaga Medical Society of New York adopted resolutions to the effect that amalgam produced depression, nervousness, indigestion, ptyalism, paralysis, and death. (6)

Tooth Traitors

The literature from about 1835 until approximately the time of Black's work in 1895 shows the bitterness of the feeling that was engendered by the introduction of this material (7)

The material introduced by the Crawcour Brothers was known as silver paste and was nothing more than silver coin filings mixed with mercury. In 1855 Professor Elisha Townsend, one of the the best gold-workers of his day, and a very influential man in the profession, gave dentistry the first stable formula for an alloy to be mixed with mercury to fill teeth. It was composed of silver, about 45 per cent, and tin, about 55 per cent.

The introduction of this product was a very significant event in the history of amalgam because of the high professional standing of Professor Townsend. Many who had previously declined to use it began to show some interest in it. (8)

However, previously in 1843 a resolution was passed by the American Society of Dental Surgeons, the first organized dental society in America, declaring the use of amalgam as malpractice. In 1845 the "amalgam pledge" was adopted by this organization. This was a pledge not to use amalgam, and forced the expulsion of all members who refused to sign it. A number were expelled for this cause. This pledge was later rescinded in 1850, ending the amalgam war, but marked opposition to its use continued for many years by prominent members of the dental profession. It is interesting that the ADA today charges that removal of amalgam fillings for health reasons is malpractice.(9)

For you see, no scientific research was made to ascertain whether deleterious effects were produced by mercury; the chief object of the first amalgam war, apparently, was to rid the profession of charlatans and their obnoxious materials. These discussions, which caused so much bitterness among the members of dental societies, led to an enquiry into the scientific analysis of this filling for teeth in 1880 by Dr. Eugene S. Talbot of Chicago. (10)

The startling result was a discovery of a quality in amalgam composition capable of producing salivation and all the other symptoms of poisoning. Dr. Talbot investigated his theory that mercury vapor was the cause, and in a series of groundbreaking experiments in 1880 proved that amalgams constructed at that time "send off vapor of mercury. This has been proved conclusively by chemical tests and the destruction of vegetable and animal life. Mercury poisoning by inhalation of vapor causes much more serious effects than ingestion through the stomach."

This was published in the Ohio State Journal of Dental Science in 1882. As an aside, was your grandfather even born then? Anyway, it is for Dr. Talbot the honor of being the first modern scientist to document the dangers of amalgam.

With such damning evidence of poisoning from amalgam, modern consumers would have expected product liability claims, refunds, apologies, and a total ban. However, in the age

that this research was occuring, someone would try to make money on it instead by trying to make it safer!

When Dr. Black began his investigation in 1895, fifteen years after Talbot's discovery, he found that after reviewing the work of all previous laborers in this field many different formulas had been tried and found wanting. You see, amalgam had not gained universal acceptance since the formula was still crude and the product "flowed". That is, it expanded and contracted, not a good thing since it could break your tooth. He of course found after a long series of tests:

(1) It was necessary to melt the metals composing the alloy in hydrogen gas to produce proper union. (2) That silver 72.5% and tin 27.5% was perfectly balanced with no change in size. (3) Aged metals became softer and easier to used. (4) Copper was necessary to be added at 5% for strength. (5) Exact formulas were not practical, owing to the difficulty at that time of obtaining pure metals. (6) Volume, strength, and other desirable properties could be controlled by proper production methods by the manufacturer and manipulation by the dentist.

What happened to Dr. Talbot's warnings? The economic imperative, and widespread suffering due to dental cavities, was such that if a stable dental filling could be found, the profession of dentistry would be able to expand and treat the tremendous amounts of decay being caused by the increasing amounts of sugar cheaply available to all. This was nirvana. Safe, stable, cost-effective, easy to use amalgam.

So that is where it ended.....or did it?

Systemic Poisoning from Mercury in Amalgams - Some Deadly Disagreements

In his groundbreaking text on Operative Dentistry, Dr. W. McGehee wrote in 1935: "A discussion of the supposed (underlining mine) dangers arising from amalgam has arisen intermittently since the introduction of amalgam, but no scientific proofs have ever been advanced to substantiate the charges of these writers until recently."

As mentioned previously there was a great deal of bitterness in the literature prior to Black's work. However, this statement shows more than that; it shows what can only be described as complete repudiation of the (then) recent literature, bordering on total hatred. For the Ohio State Journal of Dental Science of 1882 was easily available to the profession. There are still 8 copies in the University of Ohio Libraries today.

At a meeting of the American Dental Association (ADA) in Washington in October 1929 Souder and Sweeney, reporting for the Bureau of Standards, stated that there is no danger to the patient from the absorption of mercury from modern (underlining mine), scientifically constructed high percentage silver-tin alloys, properly amalgamated and

manipulated, the chance of minute traces of mercury vapor being eliminated under the circumstances being nil.

As we look back (and in amalgam science it always seems we are looking back), the only thing being eliminated was Dr. Talbot's findings. Talbot clearly stated that amalgam composition had no effect on mercury vapor release. Today, we can measure mercury coming off fillings using the Jerome Portable Mercury Vapor Analyzer. Yesterday or today, it doesn't matter. The truth is the truth, and may the truth free us.

Souder and Sweeny mentioned, however, that there is a possibility of deleterious effects resulting from the presence of many large copper amalgam fillings in a single mouth, owing to their tendency to rapidly disintegrate and eliminate mercury.

Now the concern with these statements is they do not logically add up. If copper amalgams disintegrate fast, and as Dr. Talbot proved in 1880 amalgams also released mercury vapor in dangerous quantities, then the only conclusion is that modern amalgams cannot be verified as safe since they contain all the same substances. The logical conclusion is that they also release mercury vapor, but Talbot was not available to retest the material 50 years later.

Until 1983, the American Dental Association DENIED that any vapor was released from fillings mixed according to Dr. Black's formula. This position was reversed, most publicly on 60 minutes in 1990, and is now been widely admitted by the ADA after nearly 100 years of denial. I leave it to the reader to make up their minds about the logic of the denial. Could it be that no person would want fillings in their mouth that release mercury vapor?

The more vexing question is: among those who protect the public, who read Dr. Talbot's findings in the Ohio State Journal of Dental Science from 1882? The answer is clearly no one who had any influence on amalgam (which seems to be just about everybody), and as a result those 8 copies in Ohio are among the best preserved 1882 journals in America as they have rarely been opened.

Minute mercury vapor release could mean (are you ready?): up to 40-50 YEARS before a dangerous level of mercury accumulates in the human body from a modern high-silver amalgam. Dr. Talbot's old fillings were found to make people sick a lot faster, so in a way Dr. Black did improve amalgam: it takes a lot longer to have an effect if you follow the new formula. But what if there is a mistake in the process of creating a filling? Then you would have a more rapid development of mercury poisoning. So we need to consider a "safety margin". Let's just consider getting rid of the stuff instead!

Half a century after you were a child, and had fillings placed, corresponds to the same time as the onset of old age for many people, so how can we moderns tell what the real cause of Alzheimer's, Cancer, Heart Disease, etc.. is given this supressed information.

Tooth Traitors

These diseases did not exist a few generations ago. The answer is that we cannot tell, as mercury vapor is the wild card that has been overlooked since it has been around too long.

Now the ADA says that mercury vapor from amalgams is released in such minute quantities that is not enough to make anyone sick. As an open minded reader of this article, what conclusions can be drawn from this statement given by dentists (as opposed to medical doctors who specialize in what really makes people sick). A reasonable suggestion is that Liability is what they fear. One estimate is that their exposure could be $5 Trillion (yes, trillion) dollars for amalgam replacements and monetary damages for the sick and injured.

More to the point, the ADA takes pains to point out that properly prepared and placed amalgams are safe. In other words, the design of the product is safe if used as directed. This leaves a hole big enough to drive an ambulance through if you consider that there are many steps between mining the materials in amalgam and placing it in your mouth. What if there are occasional flaws in this process? In computer chip production, they call it yield: the number of chips you have to make to get, say, 80% success.

The ties between industry and dentistry also cannot be overlooked. The Ohio State Journal of Dental Science, that Dr. Talbot published his mercury poisoning results in, was owned and published by Ransom and Randolph. Who was this publisher, an academic press associated with the University interested in advancing the causes of science? Well, not exactly. Ransom and Randolph, formed in 1866, is today the ceramic materials division of Dentsply International, the world's largest amalgam manufacturer. Ransom and Randolph in 1880 was an amalgam manufacturer. If they cared little about Talbot's work, it was because they would have had to close down the company to comply with his findings. They changed the name of the journal soon after to the Ohio Journal of Dental Science.

If you are starting to get a cold sweat from reading this, remember asbestos and DDT. Certified as safe, used for many years, and deadly. They had effects that could more readily be measured. But due to Dr. Black's work, silver fillings are so stable now that leakage may have to be calculated over 50 YEARS, not something that a scientist is about to spend his entire career doing. The evidence is buried, so to speak, in the modern amalgam. Mercury vapor measurements in patients mouths do tell us that many people exceed the government safety limits for workplace exposure, by factors of 3 or more, in their own mouths.

The dental profession is extremely prospereous, as nearly everyone is their repeat customer. Picture each family spending $1000/year at General Motors. This starts to focus the picture. And GM has very high costs, while your traditional dentist pays about $1 for each amalgam he places, and the procedure is billed at $150. Good economics for a substance known to be release "minute" quantities of toxic mercury vapor. I spoke

about trust at the start of this book. Now we see clearly the true meaning of trust in dentistry: Trust Fund.

Chapter -2-

Dental "Psychology"?

Siblerud (11) studied urinary mercury levels and the mental status of 50 college student volunteers with amalgams and 51 with no dental fillings. The reported mean level of mercury, for the amalgam group was 201 percent higher than the mean level for the nonamalgam group. The mercury value reported for hair samples from the amalgam group was 26.5 percent higher than the comparable for the non-amalgam group. Both differences were statistically significant.

Among those with amalgams, the number of fillings correlated with both urinary mercury and hair mercury, supporting results previously reported. Because hair reflects dietary intake of methylmercury, its analysis will not likely provide a very useful tool in evaluating exposure to mercury vapor from amalgam dental restorations.

The students were also given a health questionnaire to complete at home and another to complete while waiting for the laboratory testing. Responses to the first questionnaire showed amalgam subjects significantly less happy and having less "peace of mind" than the non-amalgam group. On the second questionnaire, the amalgam group reported more emotional symptoms and a lifestyle involving greater consumption of sweets, cigarettes, alcohol, and coffee.

In a supplementary survey, Siblerud sent one of his questionnaires to nearly 300 patients (average age, 40.4 years) whose amalgams had been removed. The 86 who responded were asked to list mental health symptoms for the year before the amalgams were removed and to evaluate the symptoms after their removal. Most of the patients were

pleased with the results; they indicated improvement in emotional factors such as depression, irritability, and anger, and in general health status.

Sibelrud has written several other scientific reports on amalgam, covering blood pressure, smoking, and other health factors. The conclusions drawn are that people with amalgams smoke TWICE as much as people without (smoking is an anti-depressant), they have significantly higher blood pressure, and are generally in worse health than subjects who are amalgam-free.

These reports will be included in the book if Dr. Sibelrud gives permission. They can be viewed at any University Medical Library and the abstracts are available on Internet Grateful Med.

Sibelrud Study Details to follow here.....

Chapter -3-

Trust Me

Let's take a closer look at the ethics of modern dentistry. As you will see in this article, for the majority of dentists it is all about money and little about the cavities, since cavities have declined dramatically in the last 20 years. This article from Reader's Digest sets the tone for what comes later in this book. Suffice to say that you will find dentists' credibility poor when they tell us to trust them, their dental association, or the dental industry. Of course there are good dentists out there, but you will see that the majority cannot agree on the simplest diagnosis, so they surely must be ignored in their statements about the safety of amalgam.

From behind a door comes the whine of a high-speed drill. When my name is called, I am ushered into an examining room and welcomed with a nutcracker handshake by the dentist, a graying-at-the-temples man.

Soon I am staring toward the cork ceiling while my teeth are probed, poked, tapped and tugged. The numbers of my teeth are called out to an assistant, who jots the information on a chart: "No. 11, crown; No. 13, M-O-D; No. 14, M-O ..." A few minutes later comes the verdict: I need 11 crowns, plus other work. It will cost $8347.

Tooth Traitors

"Do this and you will have no worries about your teeth for the next 30 years," the dentist purrs. Somehow I doubt that. Then he adds, "You and I are going to become great friends."

Somehow I doubt that too. I was there in Dayton, Ohio, as part of an assessment of the consistency and fairness of American dentistry. Since Americans spend about $42 billion a year on their teeth, it seemed like a reasonable assignment: visit 50 dentists, show them your teeth and a set of X rays, and ask each what needs to be done.

Four months, 50,000 miles and 50 exams later, I concluded that going to the dentist is nothing to smile about. Dentistry is a stunningly inexact science. Even expecting that different dentists would have different, yet valid, opinions did not prepare me for the astounding variation in diagnoses I received. Some wanted only $500 to bring me up to good dental health. Others wanted ten, 20, even 50 times that amount. Surely they could not all be right.

I randomly selected the dentists from the Yellow Pages in 28 states and the District of Columbia. At each of the offices I told the same story: I was moving to the area and wanted to become a patient; I had recently come through successful gum surgery; my dental expenses were covered through a direct-reimbursement program with my employer; I was interested in maintaining good oral health and was satisfied with the appearance of my teeth. Because I said I was in a direct-reimbursement program, I got a written treatment plan and a cost-estimate from each dentist.

Before embarking on my journey, I went to the Lebanon, Pa., office of Warren Daugherty, my personal dentist for the past 15 years, and a man I trust. "You look really good," he said after examining me and my X rays, "but I want to put a crown on No. 30."

"Roughly how much money are we talking about?" I asked.

"Under $500."

I asked several other dentists, who had no financial interest in my teeth, to assess their condition so that I would have a basis for comparison with what I found on the road. Joining Daugherty on my panel were Dr. John Mayes of Hershey, Pa., a fellow of the Academy of General Dentistry, who took the X rays; Dr. John Dodes of Woodhaven, N.Y., a practicing dentist and the dental expert for the National Council Against Health Fraud; and Dr. Alvin Morris of Pawleys Island, S.C., the former dean of the University of Kentucky's College of Dentistry and recipient of the Distinguished Service Award from the American Dental Association in 1985.

All agreed that my oral health was good and I had only one immediate problem, the No. 30 tooth, a molar that needed a cap or a filling. Each panelist said there was room for

disagreement on tooth No. 18, but that the total should not exceed $1500 if two crowns were recommended.

I began my odyssey in Madison, Wis., where my grave-faced examiner informed me that I needed five teeth crowned, including No. 30, plus additional work. The estimated cost was $3110.

The next day I visited Davenport, Iowa, where the verdict was the same: five crowns. But one tooth was different from those singled out in Madison. The cost was a little lower: $2555. Then this dentist volunteered, "Your dental work is lousy."

In Moline, Ill., however, I received reassuring news: "Whoever's been working on your mouth really knows his stuff."

Dr. Pacita Pumilia in Rockford, Ill., agreed that I needed only No. 30 crowned. But in Dayton, Ohio, a dentist wanted to crown six teeth--Nos. 6 through 11 in the upper front--for cosmetic improvements. Moreover, he missed No. 30 entirely.

Americans' dental health has improved dramatically since 1945, the year cavity-fighting fluoride was first added to local water supplies. Traditional dental practice--drill, fill and bill--has fallen off dramatically. According to the National Institute of Dental Research, the number of children with cavities in their permanent teeth dropped by more than half between the early 1970s and early 1990s. Meanwhile the population of dentists has grown by 50 percent.

"The decline in the incidence of cavities has led to increased competition among dentists," says Dr. Dodes. "Dentists, in turn, are seeking ever more ways to make money from their patients." His role with the National Council Against Health Fraud is to help protect patients against overcharging, over-treatment and outright quackery.

In Indianapolis the practitioner said through his blue mask, "I want to take some pictures of your mouth. These are not X rays. It's an intra-oral camera."

He placed a wandlike device in my mouth, which sent an image to the chair-side television monitor and gave me a full-screen view of my mouth in living color. He took four photographs. "These pictures are so we can show you where the problems are," he explained. "You can take them home with you."

There was no charge for the photographs. Later I learned why: the camera is considered a selling device for dentists, and manufacturers claim it will pay for itself in a few months in the form of additional work. "Patients need to be sold TWICE--in the office and when they get home," goes one bit of sales advice.

Tooth Traitors

I was handed two estimates. One was for "necessities": four crowns, not including No. 30, at a cost of $2617. A separate listing for cosmetic work came to $8665. The total: $11,282.

"If it's covered, you may as well get the whole job so it's done right," my examiner said, lowering his voice.

It is an attitude I encountered a dozen times. Under the direct-reimbursement program I claimed to be in, my employer would pay claims directly from an established company fund. Dentists like direct reimbursement because they get paid quickly and there is no third party, such as an insurance company, questioning their work.

In Philadelphia I was told: "Tell me what your insurance limits are, and we'll proceed from there."

Heading south, I hit one comforting practitioner in Marion, Ark., Dr. Henry Wah, who recommended $700 worth of work. Just a few miles away, in Memphis, Tenn., my examiner said I could squeak by with a bare-bones approach, "with absolutely no guarantees for the future," at a cost of $5000. But what I really ought to do, he said, would be to crown all 28 teeth. (My four wisdom teeth have been extracted.) Total cost: $13,440. He could, he assured me, do most of the job in a single day--with a ten-percent discount if I paid cash on that day.

In Salt Lake City, the dentist informed me solemnly, "You need a full-mouth reconstruction." Cost: $19,402. Nothing, I thought, could top this. Alas, I was wrong.

At a dental school, I heard about a newsletter, The Profitable Dentist, and became a subscriber. From this newsletter I discovered that there's a whole business devoted to telling dentists how to build up the "million dollar practice." Dentists are flocking to courses on how to generate more profits by maximizing the use of hygienists, extending credit, stepping up collection practices and persuading patients to accept expensive restoration work instead of fillings.

Not that dentists are near the poverty line. According to the American Dental Association (ADA), the average income for dentists in private practice for 1994, the last year for which figures are available, was $117,610.

Unfortunately, high fees and quality dentistry don't always go hand in hand. Indeed, 15 of the 50 dentists who examined me missed my problem No. 30 entirely. And three of those dentists assured me that I had no problems whatsoever.

A good example of the inconsistencies I encountered was on the issue of jagged edges, also called margins. These are tiny spaces between the crown and the tooth surface, and in my case they were exposed as a result of gum surgery.

Tooth Traitors

Above downtown Seattle in a high-rise overlooking Puget Sound, the dentist had a 15-minute look in my mouth, and when done he was somber. "Some of your crowns have jagged edges and need immediate attention. They will trap food and cause decay." He wanted to do 17 crowns--though he missed No. 30--and other work at a cost of $13,774.

A few weeks after the urgency in Seattle, I was in Cambridge, Mass. "The downside of gum surgery is that you have a lot of exposed roots," the dentist said. "It's not necessary to change all the crowns if you keep them clean and practice a good daily routine." She recommended one crown and four fillings at a cost of $1220. In Washington, D.C., the margins were a $5275 problem. They were not a problem in Cody, Wyo., and Lahaina, Hawaii. They were a problem in Albuquerque and Omaha.

The panelists? None of them thought the margins posed an immediate threat to my dental health.

There were signs of consistency and fairness in American dentistry. In humble office in Burlington, Vt., I was checked thoroughly by Dr. David Blanck. The exam included an oral-cancer and periodontal screening and a request to consult with my home periodontist. (My panel says all three should be part of a proper new-patient exam.) He was among a dozen practitioners whose treatment plans were substantially the recommendations of my panel.

However, only nine of the 50 wanted to consult with the periodontist who performed my gum surgery; only 21 conducted the ADA-recommended oral-cancer screening, and only 14 did the ADA-recommended periodontal screening. The cost of my exams ranged from $20 to $141, and the cost of a porcelain crown ranged from $329 to $1150.

My final stop was on Park Avenue in New York City, a stone's throw from Grand Central Terminal. A revolving door chopped rush-hour crowds into people. Smooth as mercury, an elevator whisked me up the high-rise, where I entered an impressive office--handsome furniture, art on the walls, oriental carpets on hardwood floors. Baroque music wafted from invisible speakers. The dentist was a trim, athletic man, and as he examined my teeth, he shook his head in displeasure. Finally he sighed and invited me to a private conference room.

"The news is not good, and you're lucky you have insurance," he said. He handed me a treatment plan that said I needed 21 crowns and veneer on six lower front teeth.

It would cost $29,850.

I decided to get one extra exam. This one wouldn't be from a dentist in private practice but from a dental-school student whose principal impetus would be to get it right rather than to get rich. A week later I was sitting in the clinic of the Creighton University School of Dentistry in Omaha. My examiner was Larry Tran, a 25-year-old Californian in

his third year of the four-year program. He did the oral-cancer exam, the periodontal screening and checked my bite. Then he proceeded, slowly, painstakingly. After about 30 minutes, he said: "You're in good shape. You need a crown on No. 30, and I'd like to crown No. 18. The cost will be $460. Now I need to find my instructor."

A minute later he was back with Dr. John Thurmond, the chairman of oral diagnosis and radiology, who also examined me. "You got it right," he said to Tran.

I asked the American Dental Association how the dentists I saw could draw such different conclusions from the same set of facts. They put me in touch with Dr. Leslie Seldin, a New York dentist and a consumer adviser for the ADA. He said he was not surprised by the inconsistencies. "Dentistry is an art based on scientific knowledge, and what's most important to all of us is that we each use our professional judgment to design what we believe is the best solution for the patient."

But Dr. Morris, the former dean, said my findings are "disturbing" and notes that guidelines are needed to assist dentists in providing quality care. "Some doctors say we don't need standards in dentistry because they already exist for who gets into dental school, who graduates and who is admitted to practice. The problem with most measures, however, is they inevitably reach a minimally acceptable level, requiring not that one be good but that one not be bad." (Following this reasoning, Amalgams aren’t good, they just aren’t really that bad for most people!)

The ADA recently developed a set of nonbinding treatment parameters. My panel's Dr. Dodes calls them "mostly nebulous generalities that do little to guarantee patients adequate treatment." (Following this reasoning, safe treatment as well!)

What, then, can Americans do to protect themselves from over-treatment and overcharging? Says the ADA's Dr. Seldin, "We encourage patients to seek out--certainly if there's a lot of work to be done--second or third opinions so they can have comfort with the practitioner's recommendations."

“ I got 50 opinions, and I am not comforted.” William Ecenbarger, winner of the George Polk Award for Investigative Journalism, is a Reader's Digest staff writer.

It is up to the reader to determine if we as a society still wish to “negotiate” the dangers of amalgam with dental trade organizations such as the American Dental Association. A close parallel would be negotiating the dangers of silicon breast implants with Dow Corning, a corporation now bankrupt because of the sale of its deadly product.

Appendix

Tooth Traitors

Following are the locations of selected dentists and a description of their recommendations and estimates. Six dentists listed thought Ecenbarger needed 11 or more crowns, including 4 dentists who thought he needed 21 or more.

Location of dentist / Number of crowns (C) and/or fillings (F) / Total estimate

Madison, WI 5C, 3F $3,110

Davenport, IA 5C $2,555

Moline, IL 4C $1,980

Tarrytown, NY 2C, 1F $1,952

Dayton, OH 6C, 2F $3,410

Englewood, OH 11C, 5F $8,347*

Indianapolis, IN 4C $2,617*

Memphis, TN 3C $1,735*

Hernando, MS 3C $1,395

Memphis, TN 28C $13,440

Seattle, WA 17C $10,735

Albuquerque, NM 22C $14,445

Salt Lake City, UT 28C $19,402

Washington, DC 7C, 4F $5,275

Philadelphia, PA 3C, 1F $2,540

Cambridge, MA 1C, 4F $1,220

Lansing, MI 2C, 1F $1,197

St. Louis, MO 5C $4,550

Minneapolis, MN 2C, 1F $1,240

Tooth Traitors

New York, NY 21C $29,850

*Includes additional miscellaneous charges.

Chapter -4-

A Poison is A Poison

Tooth Traitors

“It’s a bizarre conversation: Here we are discussing if a poison is a poison.” Dr. Alfred P. Zamm, M.D., Allergist and Dermatologist, Board Certified in Environmental Medicine

.Signs & Symptoms of Mercury Vapor Exposure from Mercury Amalgam Dental Fillings (12)

1. Psychological Disturbances (erethysm):

Irritability, Nervousness, Fits of Anger, Memory Loss, Lack of Attention, Depression, Low Self Confidence, Anxiety, Drowsiness, Shyness/timidity, Decline of Intellect, Insomnia, Low Self Control.

2. Oral Cavity Disorders

Bleeding Gums, White Patches - Mouth, Stomatitis, Bone Loss Around Teeth, Loosening of Teeth, Ulcers of Gums- Palate- Tongue, Excessive Saliva, Burning of Mouth, Foul Breath, Gum Pigmentation, Metalic Taste.

3. Gastrointestinal Effects

Abdominal Cramps, Colitis, Gastrointestinal Problems, Diarrhea.

4. Systemic Effects

Cardiovascular, Irregular Heart Beat, Changes in Blood Pressure, Feeble or Irregular Pulse, Pain or Pressure in Chest

5. Neurologic

Chronic or Frequent Headaches, Dizziness, Ringing or Noises in Ears, Fine Tremors (Hands, Feet, Eye Lids, Tongue)

6. Respiratory

Persistant Cough, Emphysema, Shallow or Irregular Breathing.

7. Immunological

Allergies, Asthma, Rhinitis, Sinusitis, Swollen Lymph Nodes in Neck

8. Endocrine

Tooth Traitors

Subnormal Temperature, Cold Clammy Hands & Feet, Excessive Perspiration, Muscle Weakness, Fatigue, Hypoxia, Edema, Loss of Appetite, Loss of Weight, Joint Pain.

An on-line publication authored by Ernie Mezei B.Sc., Eng.

Tooth Traitors

Chapter -5-

From Paralysis to Fatigue

This part of the book is the most horrific. As you are now well versed in the amalgam wars, controversies, dental ethics, and mercury poisoning symptoms, it is worthwhile reviewing how the general public, rather than the American Dental Association and its predecessors, has been feeling during the past two centuries. The truly frightening parallels alluded to in the introduction are reviewed here in detail.

Although hysteria has existed throughout human history, there has been an enormous increase in so-called psychosomatic illness during the last 2 centuries. The development of the asylum and mental hospital attest to this fact. However, a comprehensive review of patients symptoms during this explosion of cases has rarely been documented until recently.

In the Nineteenth Century, doctors viewed the body system differently from today. The emphasis was on the body's reflexes and motor system. During this time, psychosomatic symptoms took the forms of hysteria, paralysis, and convulsive fits. At the same time amalgam was of poor quality, and a handful of doctors sent patients to dentists to have amalgam removed because of poisoning symptoms. However, the majority that had amalgams were unaware of this fact.

As the medical model of organic disease emerged, patients' complaints shifted from spasms and paralysis to sensations of pain in the head, chest, and stomach, as well as fatigue and nauseau. This happened towards the end of the last century, at the same time that amalgam science was producing more stable compounds.

As the psychological model of illness - which denies an organic cause to psychosomatic symptoms - took hold in the twentieth century, psychic distress complaints assumed yet another shape. Unable to attribute their illness to anything physically wrong, patients looked to environmental stress and poisons as the causes of such media-popularized diseases as "chronic fatigue syndrome", "fibrositis", and "total allergy syndrome".

In doing so, they turned away from physicians to nutritionists and alternative healers for relief. This coincides with the development of alloys such as non-gamma-2, high-copper amalgams with no tin-mercury phase. They have been proven to release 50 times the mercury vapor of old amalgams.

Tooth Traitors

In the social history of medicine there is no more striking phenomenon than the disappearance of classic hysteria. The fits and paralyses found in human societies since the Middle Ages - spreading almost epidemically in the nineteenth century - virtually came to an end by the 1930s. Many people worked directly with heavy metals frequently before this time. If diagnosing heavy metal poisoning, such as mercurialsim, is so difficult today, how can we expect that 2 centuries ago it was even considered in hysteria.

The major source of information about symptoms is doctors' reports. The hysteria of the nineteenth century was so striking that it is inconceivable that doctors suddenly became blind to it. The convulsing housewife, the young woman bedridden with paralysis: The doctors were saying that they no longer saw these patients. Just as changing fashions will probably erase chronic fatigue syndrome and its cousins, so around 1900 changing medical paradigms overcame classical hysteria, according to reviewers of this issue.

This is extremely interesting: A model for psychosomatic illness, factually based, proposing changing fashions as the cause of symptomatic changes. What else was changing? Why amalgams of course. These changes parallels the development of amalgams science. The rise and then disappearance of classic hysteria follows the same timeline as Dr. Black's development of modern amalgams.

At the psychiatric hospital in Florence, Italy, for example, grave hysteria declined from 4 percent of admissions in 1898-1908 to 0.1 per cent in 1938-1948. The total number of patients diagnosed as hysterical at Cery Hospital, the univerisity psychiatric clinic of Lausanne, did not change between 1910-29 and 1970-80, but the symptoms hysterical patients presented did alter significantly:

*81 percent of all hysteria patients in the former period displayed muscular tetany and agitation; only 27 percent did so in the latter.

*Fainting declined from 47 to 31 percent of all patients, and lump in the throat from 13 to 5 percent.

*By contrast, general fatigue rose from 4 to 13 percent, while sexual frigidity rose from 0 to 22 percent (all women).

Giovanni Mingazini, professor of psychiatry in Rome, said in 1926:

Whoever compares the noisy, theatrical manifestations of hysteria forty years ago with the very modulated forms of the present day will surely be surprised. The four classic stages of the hysterical fit, which are recorded in all neurological textbooks and which really did appear in the years 1880 to 1900 in epidemic form, not just in France but in all of Europe, are no longer seen.

Tooth Traitors

Chronic fatigue blanketed the world of the private nervous clinic before World War I came in Central Europe. By the 1940s, weakness and fatigue were common in primary care offices. Frank Allan, an internist at the Lahey Clinic in Boston, said in 1944: “One of the problems most frequently encountered by the general practioner and the internist is a complaint variously described as:

1) Weakness

2) Fatigue

3) Loss of Ambition

4) Low Vitality

5) Weak Spells

Of 300 cases they had investigated extensively, only 60 or 20% were caused by a physical disorder, such as a chronic infection, diabetes, anemia, or heart disease.

The other 80 percent were “nervous”.

These finding have not changed substantially, and today your chances are 4 in 5 of being told you are simply nervous if you complain of weakness, fatigue, loss of ambition, low vitality, or weak spells, as we shall see below!

The psychosomatic symptoms of the 1990s are not very different from the 1920s. Now as then, pain and fatigue continue to be the most common physical complaints. But there are two significant differences between patients in the 1990s and 1920s. Sufferers today are more sensitive to signals their bodies give off and are more likely to attribute them to an organic disease. Again, this parallels the change from conventional to high-copper amalgams higher in vapor.

This next statement is difficult to believe were it not true:

People today are highly symptomatic. After reviewing various studies, one scholar writes: “Only 5 to 14 percent of the general population do not experience any symptoms in a given two-week period. The average adult has four symptoms of illness on one out of every four days.” She concludes “There are probably too many people with vague symptoms in search of a diagnosis.”

As a potential member of the 85-95% who do experience symptoms, what do you think of this author’s statement? It means the world is looking for help, and that the decline of

happiness in our Western Society can be directly linked to this statement. For how can people have a stable society if their bodies are not stable? There is more:

Various household-interview surveys of a random sample of the American population asked how many episodes of “illness” respondents had had over the previous months. Whereas those polled in 1928-31 reported 82 episodes of illness from all causes per 100 population, those polled in 1981 had 212 episodes of illness per 100. The represented an increase of 158 percent, despite the enormous improvements in heath care, antibiotic therapy and nutrition over the past 50 years.

In the 1980s in a psychosomatic medicine clinic, a skilled tradesman was admitted, entirely well until six years previously. “I was a Rock of Gibraltar,” he said. Then, out of the blue, began sudden feelings of fatigue and dizziness. The following year, groin pain set in, spreading over the next twelve months down his entire left leg and into his left abdomen.

Thereafter he experienced multiple hospitalizations for his pain, signing himself most recently our of a psychiatric hospital, furious that the doctors had not been able to find anything wrong! Currently he has pain in urinating, in defecating, a burning in the pit of his stomach, and pain in his perineum and left leg. The pain has made him impotent. His preoccupation with his symptoms has resulted in a marital separation. His children are angry with him because of his illness. Aside from various appointments with physicians, he is socially isolated.

He wrote the clinic staff a note:

To whom is may concern, I have extreme, uncontrolled, severe extkruchting, unbearable, shaking, radiating, cutting pains, 24 hrs. day, 7 days a week, progressively getting more severe and intense and spreading to my abdomon, lef and right, stomach, hips, buttocks, lower back, kidney, groin, testicles, bones, muscles. In legs, ankles, feet and arms. Chest pains. Symptoms. Sharp jarring pains when urinating in lower abdomin, testicles, groin, lower extremities. Pain full bowl movements, diarrea, feeling nausseated, head pressed. Facts. Diverticulitis, spastic colon, severe back problems, kidney problems, stone, prostitis, mono! Nephritis. The truth. I have been used and abused, misdiagnoses, drugged by the medical field.

Now how would you feel if you felt like this and no one believed you? You would say exactly the same thing!

For this patient in the 1980s there was no believing in doctors as was the case in the 1960s. Mistrust of the doctor and refusal to accept his or her reassurance gives psychosomatic illness at the end of the 20th century its particular stamp.

Tooth Traitors

It is little wonder, given that doctors tell patients that these devastating symptoms do not exist! However, high vapor amalgams do exist and mercury poisoning is misdiagnosed because of the enormous difficulty in identifying it as the cause for many patients. We shall discuss this a bit later in more detail.

In addition to pain, fatigue is the other great symptom at the end of the twentieth century. Many individuals who are chronically tired believe there is something physically wrong with them. We are talking about fatigue as an illness instead of just being tired at the end of the day. From their physician or some other source, they acquire the label of chronic fatigue syndrome.

The sympom of fatigue is omnipresent. After reviewing literature, two researchers concluded that “There is no doubt that 20 to 40 percent of people in the community ... have significant fatigue lasting more than a few weeks.” Since this number exactly parallels the number of patients with more than 8 amalgam fillings, it is not suprising but rather expected!

Finally, let’s compare a patient with multiple bodily symptoms from 1900 to one from today. In 1904, at the age of 52, Franz K. was admitted to the Austrian asylum of Kierling-Gugging. His first physical complaints had begun a year earlier, and now he was showing signs of psychotic depression. He had first started to experience a “pulling” sensation in his armpits and back. His hands seemed to go to sleep at work. He started having the feeling:

as though hot water was climbing along his spine to his head and then shooting into his chest and through his arms, where it races back and forth in a flickering kind of fire, finally shooting into his middle finger and causing soreness. He says also that there are knots in his arms and the rest of his body, for which rhe receives relief from massage and sulphur baths. He has had therapeutic success with a laxative tea, which has given some relief and even lets him blow his trumpet.

Franz K., though highly symptomatic and filled with therapeutic beliefs about healing teas and the like, clung to no particular disease cause. “Around Christmas 1903 he read a lot of medical textbooks and imagined that he had turberculosis or neurosyphilis. But he did not persistently believe in these diagnoses. Subjects like Franz K. around this time would have had conventional amalgams, poisonous and causing severe pains and knots.

One contrasts Franz K. with Mrs C., a patient from the psychsomatic medicine clinic of today. A woman of thirty-odd years witha history of marital and emotional tumult, she has been highly symptomatic for about 6 months. She has 17 chief complaints which the admitting physician records:

1. Anorexia with a weight loss from 135 lbs to 118 lbs.

Tooth Traitors

2. Sweating, “rivers of sweat run down my pits”

3. Muscle spasms in her right leg, armpit, and ribcage which increases when she walks.

4. Shakes of her body and she notes she is not a drinker/drug user.

5. Waves of sickness which come over her and are accompanied by light-headedness, nausea, dizziness, and high fever.

6. Waves of energy and heat which radiate throughout her and are unpleasant.

7. Problems with shaking inside here spinal column and in her eye sockets which produces a buzzing, shaking quality and “violent images” when she closes her eyes.

8. Stomach constantly upset, “its cooking all the time”.

9. Abnormal bowel movements, fluctuating between “diarrhea, small little lumps, sawdust and only 1 or 2 normal stools.”

10. Worry about her tongue which she thinks is coated with white “yuck” and has a lesion on the left side which she feels is cancerous.

11. Unquenchable thirst.

12. Skin on fire.

13. Bruising easily. “I have little bruises all over my body”, “Sometimes it looks like there has been an explosion of blood vessels under the skin but I know nothing has burst.”

14. A pulsing senstation in her head like blood is trying to get through, which is accompanied by her ears ringing, a vice-like grip sensation around her head and a “weird pain” on the top of her head.

15. The experience of her intestines rising up in her abdomen anf feeling like a “banana”

16. Abnormal sensory experiences such as colors jumping out of paintings at her and brown rice vibrating on a plate.

17. Her period is now regular, however she is upset about this as in the past it was always irregular.

Tooth Traitors

She attributes these symptoms to a number of diseases: AIDS, Herpes, Rabies, Lassa Fever, Swine Flu, Multiple Sclerosis, Epstein-Barr Virus. Patients with high vapor amalgams such as non-gamma-2 would be very multi-symptomatic, having symptoms very similar to Mrs. C.

If Franz K. was a typical patient of his time, symptomatic but essentially willing to accept the analysis of his physicians that he was depressed, Mrs. C. was a patient for our own time.

She scored heavily on three attributes of today's hypochrondria:

(1) amplification of bodily symptoms so that movements of gas became "bananas" rising up inside her;

(2) disease phobias, instructing here physicians to test for the Epstein-Barr virus;

(3) the fixed, quasi-delusional conviction that she had a given disease, at one time multiple sclerosis, at another, rabies.

Negative blood tests did not reassure here, and she believed that here physicians were quacks because they did not accept the possbility of hidden rabies.

As famous scholars have said throught history, the people are usually right. For when immigrants came to North America, they found opportunities not available back home. So they created a society of free-thinkers, unafraid to seek happiness and challenge those who would deny that right. If Mrs. C. and millions like her think their doctors are quacks, can we help them prove it? The answer is yes, but as we suspect it is not the medical doctors who are quacks!

And now for our conclusion, helped to full circle by Dr. Shorter's gathering of two centuries of "mental case" symptoms. For, gentle reader, the term quack is derived from the German, qvaksalver. In English it means quicksilver or .....Mercury. The term was actually meant for Dentists who first used mercury fillings and were called quacks.

The symptoms described by all the unfortunate sufferers here are very real, and parallel mercury poisoning so well that one wonders why a such diagnosis was not ruled out. To explore this lack of diagnostic consideration, let's review the main symptomatic areas of mercury poisoning:

1. Psychological Disturbances (erethysm):

2. Oral Cavity Disorders Bleeding Gums

3. Gastrointestinal Effects

4. Systemic Effect

5. Neurologic

6. Respiratory

7. Immunological

8. Endocrine

Do these parallel the general symptoms of the carpenter, and Franz, and Mrs.C? Is there any doubt? Can persons without mercury have these symptoms in so many affected areas? Possible but not as likely.

All the features of psychosomatic illness that have no organic cause can be explained by this single cause. Whether the cases mentioned here actually had amalgam fillings is unknown, as they were presented to show that REAL suffering is still met with incredulity and denial by medical science.

There are hundreds of examples of recovery from amalgam fillings, several discussed in detail in the next chapter, but that has never convinced anyone in history that mercury is the culprit. So it is time to take a different tack, to promote fear instead by using insects and plants. Change the ground rules, so to speak, away from mice and monkeys and towards smaller lifeforms that can be killed by mercury fillings more easily:

In 1880, Dr. Talbot constructed a series of amalgam experiments on roaches. He placed roaches in test tubes of mercury, scrap amalgam, amalgam 2-10 yrs old, and amalgam 14 yrs old. In each of the 4 tubes he placed a roach. The roaches died in the order 1,2,3,4. This is all the proof necessary, not case upon case of suffering humans treated as mental patients, for the killing power of amalgam.

The fact that science does not readily diagnose mercury poisoning can be explained as follows: In the “Bible” of Pharmacology, Goodman and Gilman, it states that “mercury poisoning is extremely difficult to diagnoses as it comes in different phases. One has headaches, the other fatigue, one rashes, one pain. Doctors can rarely make a confirmed diagnosis of mercury poisoning.”

In Japan in the late 1950s, hundreds of people ranging from children to seniors suddenly appeared in doctors’ offices. They had difficulty walking and breathing, and showed nervous symptoms of depression and anxiety. Doctors were mystified by this sudden breakout of disease, and studied the symptoms carefully but were unable to make a

diagnosis. Finally a team of physicians was assigned to the problem, and worked for 11 months to identify the cause.

The cause was eventually identified as mercury poisoning, and resulted in a search for the source which was traced to the leakage of mercury from a manufacturing plant into Minimata Bay. The disaster was called Minimata Disease, and is classically considered as the worst case of mercury poisoning in history. Now if took a Team of Doctors 11 months to diagnose Hundreds of People with Disabling Symptoms and dozens of resulting birth defects from pregnancies from around the time of the disaster, what chance does the average person have of being diagnosed with Mercury Poisoning: The answer, of course, is Zero, as confirmed in Goodman and Gilman.

The change in psychosomatic illness, moving from paralysis to fatigue, is easily explained if one considers that when amalgam compounds became more stable, mercury vapor and corrosion was greatly reduced in the late 19th century. Severe mercury poisoning has paralysis as one of its main symptoms. Micro-mercury poisoning has fatigue as one of its main symptoms. The roaches of the world are happy that we are not testing this more, if not anyone else.

On behalf of the people of world still suffering from wrongly-diagnosed psychosomatic disorders , I desire to update the meaning of quack for the 1990s. I propose that the emblem of the American Dental Association be changed to .....Donald Duck!

Chapter -6-

It's Not Gonna Cause A Problem

The following is a transcript from CBS Television. 60 Minutes did an expose on the amalgam controversy in 1990. The conclusions that can be drawn from this work are: the lawyers have taken over within the American Dental Association (witness their denials of any negative amalgam studies), and the wagons have circled to force anti-amalgamists to “prove” that mercury fillings cause illness and disease. However, as Dr. Zamm points out in the interview, as consumers we have to protect ourselves, since a poison is a poison, and nothing with a question should be put in our bodies.

The ADA representative, Dr. Simmons from Alabama, has such an easygoing drawl that he gets the credit for the title of this chapter (from a statement made by him). For after

all, he implores us to trust him, as he in not on a witch-hunt to expel anti-amalgam dentists from the profession. He is just trying to uphold the scientific standards upon which dentistry is based; a completely hilarious statement for readers of this book given the true history and facts we have discussed at length regarding Dental Non-Science and Non-Ethics.

Non-Science: If amalgam had not been invented, dentists would have been forced to use gold fillings for the last 100 years. Gold would have limited the expansion of dentistry. How many parents in families making $20,000 to $60,000 per year walk around with pure gold, enough to fill a family of four's teeth, on their person? The answer, of course, is zero. Maybe the public hold some blame for amalgam's widespread use because of low cost. Maybe, but then we were never told about the side-effects.

Non-Ethics: When scientists introduce any new technology, there are side-effects. But then how many of these technologies are implanted in the general population? Only one, amalgam. Whenever there is a question of ethics, one asks the obvious: who benefits? Have you looked at the ADA's income statement lately?

There are numerous examples included of very sick patients cured by having their fillings removed. Called "anecdotal" evidence by dentists, the clinicians who are astounded by these recoveries are challenging the dentists, by asking whether a D.D.S. ever does a real medical exam of a patient.

This transcipt is disturbing, not in the least because few individuals have the resources of 60 minutes to open doors and get answers to questions about something as complex as the amalgam issue. It is clear that Morley Safer, the host of this segment, feels for the patients who have recovered, and questions the American Dental Association's motives and protectors (ie the Food and Drug Administration) who are more interested in covering their legal positions rather than taking the lead in helping the many sufferers of amalgam poisoning.

60 Minutes, Originally Aired December 16, 1990

Is there poison in your mouth?

Produced by Patti Hassler

Hosted by Morely Safer

Safer:

"This is the kind of story we approach with some caution. The question is: "Is there poison in your mouth?". The American Dental Association says there isn't. But some of

its members say there is, and have stopped using it. “It” is a filling, a silver amalgam filling, the dentists’ filling of choice for more than a century.

More than a hundred million of them were put into American mouths last year. What you probably don’t know is that these so-called silver fillings are 50% mercury, and mercury is more poisonous than lead or even arsenic. Because it’s been around so long, and because it was assumed that the mercury was made stable when mixed with other metals, amalgam fillings were never tested for safety. One of those remedies that the Food and Drug Administration automatically approved.

But now a growing number of scientists, doctors, and dentists are saying that silver amalgams should be banned.”

(Cut to Dentist’s Office)

Dentist:

“Open wide.”

Safer: “Last summer the EPA banned mercury from indoor latex paint because of mercury vapor. The vapor level in this patient’s mouth after chewing for 10 minutes is 92 times higher than the mercury vapor level in a newly painted room. Three times higher than the U.S. government allows in the workplace.

(Cut to Close-up)

This is a silver amalgam filling. It is made of silver, copper, tin, and zinc, and....mercury. Half of it is mercury. No specific disease has yet been directly linked to mercury from fillings, but now a number of medical schools are looking at the relationship between mercury vapor in the mouth and a whole variety of diseases: Alzheimers, Arthritis and Colitis, have all been linked to mercury poisoning.

Mercury in the workplace has produced kidney damage, brain damage, birth defects, and symptoms of multiple sclerosis.”

(Cut to Dr. Vimy Interview)

Vimy:

“There is no safe threshold for mercury exposure. None! And there isn’t someone, somewhere, who may not have a very violent reaction even to the lowest amounts of mercury.”

Tooth Traitors

Safer:

“Dr. Murray Vimy is a scientific consultant to the World Health Organization’s Committee on Mercury in the Environment. He’s a researcher at the Unversity of Calgary Medical School, and he’s a dentist. He got rid of mercury in his own practice 8 years ago, when he learned that mercury vapor routinely escapes from amalgam fillings.”

Vimy:

“When I measured mercury coming off of fillings, that was reasonable doubt in my mind. It was enough reasonable doubt that I made a clinical decision for my patients to stop using it.”

(Cut to Dr. Heber Simmons ADA Interview)

Simmons:

“You will get some mercury vapor, there’s no doubt about that.”

Safer:

“Dr. Heber Simmons speaks for the American Dental Association. Even though more and more American dentists have serious doubts about amalgam, the ADA, which sets standards and approves products, says it is perfectly safe. Up until 7 years ago, the ADA said no vapor at all was released from fillings.”

Simmons:

“But the amounts that we are seeing are far below any levels that could cause a problem, and the levels we are seeing are simply not clinically significant.”

Safer:

“So you concede that there is a constant release of mercury vapor?”

Simmons

“Oh we, we don’t dispute that at all. But, but the amount that is being release when you chew, is such of a small amount, and a miniscule amount, that it is not gonna cause a problem.”

(Cut to Dr. Murray Vimy)

Tooth Traitors

Vimy:

“This issue is, chronic exposure - low dose, to a heavy metal. And our laboratory is the entire human population in the Western World who has had amalgams. And no one has ever really looked at that aspect of mercury exposure. A great deal is known about acute exposures: One time, two time, large exposures. But this is something that people have day after day after day. And we’re just at the beginning of that trail of investigations.

(Cut to Fay Doris Interview)

Fay Doris:

“Dr Vimy took a mercury test of the mercury vapor in my mouth, and at that point it was the highest of anybody he’d tested. I had ten teeth with massive mercury fillings in them, and uh, as he said at the time, if I was a building I would have been condemned (laugh), the reading was so high!

Safer:

“Fay Doris and her husband are patients of Dr. Vimy. She was crippled by arthritis, suffered from fatigue, colitis, and memory loss. Her doctor told her back in 1985 at the age of 35 that within 6 months she’d be confined to a wheelchair. After reading about a connection between mercury and arthritis, Dave Doris talked to Dr. Vimy about removing his wife’s fillings.

Dave Doris:

“And I said, go ahead and do it, what have we got to lose. The prognosis is she’s going to be in a wheelchair by Christmas for the rest of her life, which was scary for me.”

Fay Doris:

“I was mercury free by, I think by the 21st of August of that year, and 3, within 3 weeks later I didn’t have to use a cane, and all my symptoms started going away. I had more energy, my tremor stopped in my hands, I could do things again it was just marvelous.

Dave Doris:

“And noticeably the swelling in the joints of her hands, uh, started to go down, but the biggest thing was , it wasn’t painful on her feet to walk.

Safer:

Tooth Traitors

“And have, have, have any of those symptoms returned?”

Fay Doris:

“On the whole, I’d say 95% of it is gone away.”.

(Cut to Dr. Murray Vimy)

Vimy: “That’s clinical evidence. That’s not scientific evidence, but clinical evidence is where science has to start. Science starts with observation.”

Safer:

“The kind of evidence Dr. Vimy is talking about is what scientists call anecdotal. Reports of recoveries that have not been monitored under strict laboratory conditions. There are thousands of anecdotal stories, all over Europe and the United States. This group in Illinois reported relief from symptoms of manic depression, chronic fatigue, and migraine headaches; from multiple sclerosis and anemia.”

(Cut to Nancy Yost interview)

Safer:

“Last May, Nancy Yost, from San Jose, was told by her doctors that she had multiple sclerosis. It was confirmed by Magnetic Resonance Imaging, an MRI scan, incurable. She’d worked in the dental industry, and heard reports that some patients showed improvement after having amalgam fillings removed.

Yost:

“And I was cautioned by the doctors always: You’ve got your hopes too high, get real here (laugh). If you are better its going to be a long period.”

Safer:

“Ohhhh”

“As a last resort, she had her 5 amalgam fillings taken out. She left the dentist’s office using a cane and leaning heavily on the arm of a friend.”

Yost

Tooth Traitors

“The next morning, when I presented to my physician, I threw my cane at him, and said look!”

Safer:

“It was that quick?”

Yost:

“It was that quick.”

Safer:

“What did your doctor say?”

Yost:

“Well, he was incredulous. He knew it would be a benefit, but no one expected it would be instantaneous! Or so dramatic. My voice came back, my ability to walk and hold a pencil came back. It was there! That night, I ended up going to dinner in San Francisco and actually dancing 2 dances. And I hadn’t been walking since May (laugh)!

Safer:

“Next day.”

Yost:

“Friday evening, the next day.”

Safer

“Are there any lingering effects?”

Yost:

“Yes.....yes. There are lingering effects if I get overtired, or cold, or under a great deal of stress.”

(Cut to Dr. Heber Simmons, ADA)

Simmons:

Tooth Traitors

“The National Multiple Sclerosis Society states that this is a cruel hoax on these people, to take the fillings out in hopes that its gonna cure the MS, and it does not happen in those cases, it simply does not happen.

Yost:

“I think it’s a rather strange position to take, because according to all the doctors I talked to, they said Multiple Sclerosis has no....no known cause, and there is no known cure. Well if we don’t know what causes it, why not look at possibilities. Might it be.....mercury poisoning? They have no better answer!”

Safer:

“There’s no suggestion that all MS patients will recover if their fillings are removed. But there are enough recoveries or partial recoveries to raise questions. There are alternatives to amalgams. Composites like Dr. Vimy’s placing in this patient’s mouth. Porcelain and gold. They’re all more expensive than amalgam, and except for gold, not as durable. Amalgams are also easier for dentists to use.

While the ADA publicly advocates the safety of amalgam, it cautions dentists to use a no-touch technique when handling the material, and to store the scrap, the leftovers that have not gone into a patient’s mouth, under liquid in a tightly closed container.”

(Cut to Dr. Heber Simmons, ADA)

Safer:

“If it’s so volatile, so dangerous in a dentist’s hands, how on earth can it be safe in our mouths?”

Simmons:

“Morely, you’ve got to understand, uh, how amalgam really works. If it’s in a free form, the mercury that is in amalgam is dangerous. But it, when it forms with the copper, the tin, the zinc, and the silver that, that make up the amalgam filling, it becomes a stable compound at that time. Once it is mixed and placed in a patient’s mouth, it is a stable compound and it is not does not constitute a risk.

Safer:

“Once it hardens.....”

Simmons:

“Correct”

Safer:

“It’s safe”

Simmons:

“Right”

Safer:

“What do you do with your scrap amalgam?”

Simmons:

“What we do in our own practice, is we keep it in a jar, that has glycerine in the jar, we pull the scrap in there put a top on it, so it is not exposed in any way. It’s in an airtight jar all the time.”

Safer:

“Why, given that.....?”

Simmons:

“That is the recommended way of taking care of it in a dental office. That is what’s been recommended by the scientists so that’s the way we do it.”

Safer:

“But if its so perfectly safe in this combined state.....”

Simmons:

“But Morely, you’ve got to understand when we, uh, when we’re saving this stuff, we, we’ve got a big jar of it. You’ve got to realize I’m in that office 5 days a week, with this material. I do not want to go in there with an open container like that. I want to be as safe as I can.

(Cut to Dr. Joel Berger interview)

Safer:

Tooth Traitors

“The ADA is adamant that mercury in a patient’s mouth is safe. So adamant that in 1986 it changed its code of ethics. It became a violation of that code for any dentist to recommend the removal of amalgam because of mercury. Almost immediately Dr. Joel Berger, a visible and vocal anti-amalgam dentist, was charged with fraud by the New York State dental authorities. The ADA provided an expert witness to testify against him. His license was revoked.”

Berger:

“I never told a patient that they would get healthier or better. I told them that we could remove a known risk, a poison, a toxin, a carcinogen, from their bodies if they eliminate the source of mercury from their mouths. It was their risk decision to do it or not to do it.”

Vimy:

“Dr. Joel Berger should never have lost his, uh, dental license. He was a very conservative dentist. You couldn’t even consider him a fringe dentist.”

Safer:

“Dr. Vimy testified as a scientific expert for Joel Berger. He says the change in the code of ethics has had a profound effect.”

Vimy:

“The effect has been that it’s really, in the United States, taken away the constitutional rights of dentists and the rights of patients. They have, they no longer have freedom of choice, and they no longer have freedom of expression. A dentist can no longer say that he is against dental amalgam, so it’s a fear tactic, it’s a witch hunt.

(Cut to Dr. Simmons, ADA)

Simmons:

“But I can tell you that we are not on a witch hunt. That I personally am not. That’s a personal choice that the dentist has to make.”

Safer:

“Why did you change the code of ethics regarding amalgams.”

Simmons:

Tooth Traitors

“Because is has not been proven that taking amalgams out will help any of these conditions. And there were people that were taking amalgams out, saying that that was gonna help MS and other conditions. It has never been scientfically proven that this will happen.

(Cut to Dr. Murray Vimy)

Safer: “What’s the position of the Canadian Dental Association?”

Vimy:

“Exactly the same. The Americans sneeze, the Canadians bring their Kleenex. So they have changed their code of ethics too.”

(Cut to Dr. Simmons)

Safer:

“How do you account for those people who have, whose health has improved after the removal of amalgam fillings?”

Simmons:

“I would have to say that it was, it was anecdotal. I’m delighted that the people are better.”

(Cut to Dr. Alfred Zamm interview)

Zamm:

“The word anecdote doesn’t mean it’s not true. It means it its an observed clinical observation by a clinician, and that’s my job. I’m a clinician. And I saw the patient got better, what am I supposed to do, report that he didn’t get better?”

Safer:

“Dr. Alfred Zamm is an allergist and dermatologist in Kingston, New York. He’s reported that hundreds of his patients have recovered from a variety of diseases after having fillings removed. He’s in the process of filing those cases with the Food and Drug Administration. One case, a 32 year old woman who was crippled by arthritis.”

Zamm:

Tooth Traitors

“And I had her seen by a board certified rheumatologist, whose really a good physician, he really knows what he’s doing. And he said ‘there’s a limit to what I can do’ and he gave her some anti-inflammatory drugs and aspirin, and so forth.”

Safer:

“Dr. Zamm arranged for her fillings to be removed. Within a month, she was no longer on crutches.”

Zamm:

“The rheumatologist was astounded. Not only was her arthritis better, but you could see she looked like a different person. She was healthy. She no longer was poisoned.’

(Cut to Dr. Simmons, ADA)

Safer:

“Do you totally dismiss the anecdotal evidence?”

Simmons:

“No, I do not totally dismiss it. But I just say on the basis of the facts that we have today, they’re insignificant. They’re clinically insignificant.”

Zamm:

“How could they know that? Do they examine the patient 3 or 6 months later? How many dentists have done a rectal on you, just to be ridiculous. They don’t know anything about you!”

Simmons:

“You’ve got to remember, we’re, we’re looking at, at, really a long time use. You know there have only been 50 cases reported in the literature of amalgam allergy, of true allergy to amalgam in the last 85 years.”

Zamm:

“That’s an obfuscating statement. They use the word allergic. It’s not allergy, it’s poisoning of critical immune processes. If someone dies of cancer, and you ask the specialist ‘why does he have cancer?’, he says ‘I don’t know’. If someone dies of heart disease, ‘why did this one get heart disease and the other one didn’t’, ‘I don’t know.”

Tooth Traitors

There's a lot of things we don't know. But I do know that it's not safe to put something in somebody's mouth that has a question."

Safer:

"Dr. Zamm has charted symptoms of diseases, patients who've had fillings removed, and the results. He points to Joe Seveski as a prime example. For years, he suffered with allergies to certain foods. Then 5 years ago, he began getting serious infections. It went on for 4 years.

Zamm:

"I sent him to a board-certified internist who was a specialist in blood disease who could find nothing. "

Safer:

"Finally Dr. Zamm had Joe's fillings removed. Within a month the infections were gone."

Zamm:

"His unexplained rashes of 20 years had disappeared. Now he can eat foods that he couldn't eat before. His immune system is working again."

Safer:

"Nothing wrong with his blood?"

Zamm:

"Board-certified specialist, could not find a thing."

Safer:

"No other change in his environment that could account for this?"

Zamm:

"Zero, no change whatsoever. We're just arguing here, or discussing, whether a poison is a poison. It's a bizarre conversation , you know, when you think about it. To try to justify if a poison is a poison."

Tooth Traitors

Safer:

“If the mercury in amalgam fillings is as poisonous as you say it is, why hasn’t the medical community jumped on it and banned it.?”

Zamm:

“Goodman and Gilman is the Bible of Pharmacology. When you go to medical school, you use Goodman and Gilman.”

Safer:

“According to Goodman and Gilman, there have been epidemics of mercury poisoning that were misdiagnosed for years. The reason for the tragic delays, says this textbook, include vagueness of early clinical signs and the medical profession’s unfamiliarity with the disease.”

Zamm:

“It says clearly: ‘doctors very rarely make a diagnosis of mercury poisoning because of the difficultness of it.’ It comes in different phases: one has headaches, one has tiredness, one has this, one has that. It’s a very difficult diagnosis to make, especially when it’s micro-mercurialism. Very small amounts. That’s why you don’t have a lot of doctors jumping in. But they will!”

(Cut to Calgary Medical School operating rooms)

Safer:

“The first full-scale investigation into the effects of amalgam on general health is taking place in Calgary. Dr. Vimy and Dr. Fritz Lorscheider, the Chief of Physiology at the medical school, and a team of other scientists began with sheep. They found that mercury from the fillings travelled throughout the body, and in pregnant sheep into the fetus.

The ADA says the Sheep Studies are seriously flawed. The World Health Organization says the results are valid, and so do a number of scientific journals. But the research that was most compelling was presented to the American Physiological Society in Orlando last October. It showed that on average, all six sheep used in the experiment lost half their kidney function within 30 days of receiving fillings.

When they moved on to monkeys, a much closer relative of man, Vimy and Lorscheider found the same concentrations of mercury had occured. They also found that the mercury

had a bacteriological effect on monkeys. It attacked their immune system. The kidney and bacteriological studies are now being reviewed by the scientific community.

In all the experiments, Dr. Vimy used the same amalgam used in dentist's offices. The amount was determined by the animal's body weight. The preliminary result of human experiments showed no radical differences between humans and animals. Drs. Vimy and Lorscheider have joined a growing number of dentists, doctors, and scientists calling for a total ban on amalgam. In this country, a ban would have to be imposed by the Food and Drug Administration.

(Cut to outside shot of FDA offices in Washington)

So what about the FDA, what does it have to say about silver fillings? Well , it refuses to be interviewed. Suprising, given the widespread use of the product, and the confidence that Americans, indeed most of the world has, in both its caution and its expertise. The FDA did send us a brief statement, that says: 'The Canadian Sheep Study raises some preliminary questions about the safety of dental amalgams, but leaves important questions unanswered. The FDA remains confident in the value of amalgams in dental care.' It says it could ban them, but it won't do that until it is satisfied there is a health risk."

(Cut to Dr. Murray Vimy interview)

Safer:

"Why has the FDA been so slow?"

Vimy:

"That's interesting, because what you see when you look into the FDA, you see that the FDA's dental division has been platooned full of American Dental Association people. The entire committee is made up of people from dental institutions, practicing dentists, and people from the dental industry who make the dental materials. There's virtually no medical input, or basic science input from medicine, on that committee. And so anything the ADA wants they pretty much can get through the FDA. That's what's called effective lobbying."

(Cut to Dr. Simmons)

Simmons:

"The dental trade industry, the American Dental Association, and the dentists of this country; their primary interest is doing what is best for that patient. And to making sure it

is safe and effective and it does the job at hand. You got to remember, Morely, I work with this material every single day. I still place it in patients teeth. I'm a pediatric dentist in Jackson, Mississippi.

Safer:

"Do you have any scientific evidence that it is safe?"

Simmons:

"Absolutely, there are numerous studies that have been done."

(Cut to off-camera scientist)

Safer:

"But the ADA's top scientist, who was present at the interview, says the effects of mercury vapor on health have not yet been well researched. There is barely a scientist who would disagree."

(Cut to Louise Hurbeck interview)

Safer:

"Louise Hurbeck was disabled and in acute pain for 9 years. Her doctor had diagnosed multiple sclerosis. She had her fillings removed after seeing a report on amalgam on the CBS Evening News. Within 6 months, almost all her symptoms were gone. Her doctor says the most likely explanation was spontaneous remission."

Hurbeck:

"I wasn't just sitting here, when one day oh suddenly it was all gone. I did something specific that made it happen. And that is by removing the mercury from my teeth."

Safer:

"Louise has become an activist on the amalgam issue. She wants the law changed."

Hurbeck:

"I think dentists should be made to tell the people what they're putting in our mouth. If you get a prescription drug now from a doctor, you have the right to know what that drug is, and what its side-effects are.

Tooth Traitors

Safer:

“That right to know is called informed consent. But the ADA is fighting it, urging state dental associations to fight any legislation to make dentists explain the possible risks.”

(Cut to Dr. Simmons, ADA)

Simmons

“If there’s no risk involved, why do you have to have informed consent? We do not mind talking about it at all, we’re delighted to talk about it. We’re fully open....”

Safer:

“But don’t volunteer it, that’s what you’re telling your people.

Simmons:

“Oh, no I’m not volunteering it. I mean, I not saying that, I did not say that at all. You put words in my mouth.

Safer:

“You tell people about this controversy about amalgam?”

Simmons:

“If they ask, I will tell them (Safer laughs), I do not go out and volunteer. Absolutely right, because in my opinion there is no risk involved with it.”

Safer:

“What I don’t understand, though, is why you’re so tough on dentists who might say: ‘You know, I’m not comfortable with this mercury stuff.’ You cut him off at the knees if he even suggests it.”

Simmons:

“No we don’t. We just say that its not backed up by sound, scientific evidence.”

Safer:

“And you regard it as unethical behaviour.”

Tooth Traitors

Simmons:

“Absolutely. Absolutely.”

Safer:

“So that’s called cutting him off at the knees.”

Simmons:

“No, not in my terminology it’s not. You may think it is, but its not. Morely, I want to say.....”

Safer:

“You spread the word that your local dentist is unethical, how many people are going to go to him.”

Simmons:

“I can’t answer that question. I have no answer for that.”

Safer:

“But you know the answer.”

Simmons:

“But I can say this, I look upon it as us trying to uphold the scientific standards on which this profession is based.

(Cut to Dr. Murray Vimy interview)

Vimy:

“If you took amalgam off the market tomorrow, a good 40% of American Dentists who belong to the American Dental Assocations would have to be retrained. Because in their practices, the prime thing that they use is dental amalgam.

(Cut to Dr. Zamm interview)

Zamm:

Tooth Traitors

“As consumers, Morely, we have to protect ourselves. We can’t wait until the last I is dotted and the last T is crossed. The evidence is here. And we should say, if it’s not reasonably safe, if there’s a question, I’m not going to put it in my child’s mouth.

Safer:

“So what are you saying to the rest of us? Go out and have your fillings removed, is that what you’re saying?”

Zamm:

“(Smiles) Absolutely. Absolutely.”

(Cut to Safer’s closing comments)

Safer:

“Not everyone involved in the call for a ban on amalgam feels Dr. Zamm’s sense of urgency. Dentists who’ve stopped using amalgam suggest careful consultation before having any fillings removed. Some of them, still members of the American Dental Assocation, have filed a class-action suit against their own organization, charging it has fraudulently misrepresented the amalgam issue to its members. It’s been suggested that if the ADA did concede there were risks, dentists might be sued by their patients.

The FDA will review the safety of amalgam fillings in March. Just last month in Sweden, the government passed a law allowing its citizens to have amalgam fillings removed under the national dental plan. And in Germany, legislation to ban amalgam has been introduced. A total ban is expected within the year.

Author's Update. The United States Armny Dental Investigation Service (DIS) has declared amalgam to be Toxic Waste and all U.S. Army Dentists must dispose of it as such. This information is published on the DIS Website for all to see at http://www.brooks.af.mil/DIS/HOT/scrap.htm. Here is the webpage:

UPDATE ON AMALGAM SCRAP

Recent analytical tests performed by DIS and others have indicated that scrap dental amalgam meets the Environmental Protection Agency (EPA) definition of a hazardous waste. The test used is called a Toxicity Characteristic Leaching Procedure (TCLP) and is

intended to measure the potential for a given solid waste to leach environmentally-harmful substances (such as mercury and silver) into the environment. The TCLP uses highly-concentrated acids to accelerate leaching of its constituent compounds.

These results in no way suggest that amalgam scrap poses an occupational risk to healthcare workers or that silver amalgam poses a toxic hazard to patients. TCLP tests are done with strong acids are not relavant to oral conditions. (Comment: Do you want Toxic Waste in Your Mouth?)

In accordance with AFMOA/CC & HQ USAF/SGD policy (dated 17 Sep 1996), scrap amalgam should be turned-in to your local hazardous waste manager and should not be disposed of in the regular trash. Pevious guidance from InControl#5, repeated below, for disinfection of scrap amalgam are still applicable. Individual dental clinics should not enter into recycling agreements with commercial refiners due to the many regulatory requirements that must be complied with.

Dental clinics may be required to have a TCLP done on the scrap amalgam being turned-in for disposal or recycling. For Air Force clinics, base bioenvironmental engineers should assist in submitting the samples for testing. Guidelines for sanitization of amalgam scrap and dry storage published in InControl #5 are still acceptable.

Text from InControl #5

Revised Procedures For Decontamination of Scrap Amalgam for Recovery or Disposal (from Updated from Infection Control #5)

1. Previous guidance (SGD Memorandum dated 13 Jun 94) discussed disposal of amalgam scrap as regulated medical waste. Since most regulated medical waste is incinerated, this may not be a prudent option. Recovery and turn-in of amalgam scrap is preferred over disposal. Amalgam scrap intended for turn-in should be sanitized or disinfected and stored dry in a sealed container.

2. Amalgam scrap may be sanitized using the following procedure.

a. Use a commercial vacuum line cleaning solution according to the manufacturer's instructions to clean the vacuum line and amalgam trap.

b. Flush lines with approximately 100 cc (4 to 5 ounces) of water to rinse cleaning solutions from scrap amalgam.

c. Remove lid from amalgam trap and allow air to pass through the trap until the contents are dry (usually not more than 5 minutes).

d. Inspect trap and remove tissue or large tooth fragments with a pair of cotton forceps. Place tissue debris in a "red bag" container for disposal.

e. Empty the contents of the amalgam trap onto a paper towel and transfer to a sealed amalgam storage container. Discard or replace amalgam trap.

Comment: Try Doing This with the Amalgam in Your Head!

3. [Paragraph deleted - refer to guidance above for turn-in instructions.]

4. Although decontamination procedures described above will protect waste handlers from the risk of exposure to disease, some hazardous waste managers may require that scrap amalgam be disinfected. The following alternative procedure can be used to disinfect the contents of the amalgam trap.

a. Prepare a solution of 1:10 sodium hypochlorite or other hospital-grade tuberculocidal cleaner/disinfectant such as a phenolic detergent or iodophor. Do not use glutaraldehydes or products containing high levels of alcohol.

b. Place approximately 100 cc of disinfectant into a container. Either place the trap into the container with the disinfectant allowing the trap contents to contact the disinfectant, or draw disinfectant into the HVE line using intermittent technique (this will avoid damaging suction equipment). Turn off the HVE when almost all of the liquid has been drawn into the system so that contact with trap contents is assured. Let stand for the contact time listed on the disinfectant label.

c. Flush the system with 100 cc of clean water to rinse the scrap. Complete procedures 2(c-e) listed above.

5. Scrap amalgam remaining in amalgam wells does not require treatment unless it is visibly contaminated with blood or other infectious material.

6. [Paragraph deleted - refer to turn-in instructions above.]

Last modified 11/4/99, by Lt Col James Kane, USAFSAM/AFD, Brooks AFB TX DSN 240-3502, Commercial (210) 536-3502

Chapter -7-

Charlatans and Obnoxious Materials

Tooth Traitors

If by now you have not been completely frightened by the scientific controversy swirling around innocent citizens in the Western World, who are watching their society separate into haves and have-nots, this is the final blow against your skepticism.

Uncovered by diligent researchers determined to save the world from amalgam poisoning, shown here is true science, not ADA Non-Science; proof from the last century that amalgam poisoning was covered up. We now know that Black tried and failed to create a stable amalgam, as Dr. Vimy and others have proven amalgams release vapor in our present day, while the findings you are about to see proved amalgams gave off vapor in 1880, 118 years ago.

Shown here are tests on animals and plants that prove the killing power of dental amalgam, which the Author plans to repeat in this century and give to the media. A voice from the past, over 100 years ago, that speaks with great clarity to those of our generation looking for answers. We introduce Dr. Eugene Talbot, a Chicago-area dentist and author of several textbooks on operative dentistry:

The chemistry and physiological action of mercury as used in amalgam fillings

by ES Talbot

From OHIO STATE J DENT SCI, 2(1):1-12 (Jan. 1, 1882)

Read before the Illinois State Dental Society, held at Rock Island, May 10, 1881

The name Mercury was given by the ancients in honor of Mercurius, the messenger of the gods, whose volatile character mercury is supposed to typify. It is seldom found in the native state, but is usually combined. The most important as well as the most abundant combination is the sulphide of mercury, or cinnabar. It is found united with silver, forming an amalgam. The largest and richest mines are found in California. The process of obtaining pure mercury from the sulphide is very simple. The ore is mixed with one-half its weight of lime, and then distilled in iron retorts. The mercury is extracted and the lime remains in the retort.

It is a heavy fluid metal, odorless, tasteless, of a whitish color, and when free from other metals it does not tarnish, and its globules roll freely over white paper without leaving a streak or losing their form. It is liquid at ordinary temperatures. It boils at 662 degrees F., and solidifies at -40 degrees F. into a malleable mass of octahedral crystals. It is volatile at all temperatures, evaporation being much accelerated by the application of heat. The symbol is Hg, atomic weight 200. Mercury combines with other elements and radicals in two proportions. Those compounds in which the LESSER acidulous radicals are united are termed mercurous. The higher mercuric -- thus, calomel (HgCl) is mercurous chloride; while corrosive sublimate (HgCl2) is mercuric chloride.

Tooth Traitors

Mercury combines with chlorine, iodine, bromine, lead, oxygen, phosphorous, sulphur, arsenic, bismuth, etc., forming compounds, some of which are used medicinally. The metal itself, rubbed up in confection of roses, licorice or suet until globules are not visible to the unaided eye, is used in medicine.

Amalgams were introduced into this country as fillings for decayed teeth in 1833. Since that time unlimited discussion has arisen among the general practitioners of medicine as well as the dentists, in regard to the practicability of utilizing this material in dentistry. The first amalgams were composed of pure silver and mercury, manufactured by M. Taveau. Later, Dr. Evans combined pure tin with a small quantity of cadmium, and Dr. Townsend formed an amalgam with four parts of silver to five parts of tin.

Following these compositions came numerous others made from gold, silver, platinum, and tin, until to-day we have more than a hundred varieties in the market, varying slightly in metals and proportions, that each manufacturer may rightly claim an original preparation. These different metals are melted in a crucible in their proper proportions by weight, and poured into ingots.

These are filed or cut into minute particles, ready for use. When the cavity in the tooth is prepared, a sufficient quantity of filings is rubbed up with mercury into a paste, the surplus mercury squeezed out, and the filling is inserted into the tooth.

From its first application as a filling the better class of dental practitioners waged war against it on general principles; not alone on account of the deleterious effects of the mercury in its composition, but because of its unsightly appearance and demoralizing effects upon the dental profession. The manner in which it was introduced into the country called forth the censure of all having a regard for professional etiquette: "Two adventurers, without skill or any claim to the title of dentist, suddenly appeared in New York and began dental practice amid such a shower of advertisements, a profusion of display, and a metaphorical flourish of trumpets, as caused our staid and dignified dental ancestry to bound with surprise and indignation". [vide History of American Dentistry]

From that time onward the use of amalgam has increased, until now tons are consumed yearly in filling teeth. Dr. Harris, in his opening address to the first class of the Baltimore College of Dental Surgery, in 1840, says: "It is one of the most objectionable articles for filling teeth that can be employed, and yet from the wonderful virtues ascribed to this pernicious compound by those who used it, thousands were induced to try its efficacy".

At the meetings of the dental societies this subject was spiritedly discussed with strong arguments against its use. The first official act in the matter was the appointment in 1841 of a committee by the American Society of Dental Surgeons to report on the use of lithodeon -- mineral paste, and all other substances of which mercury is an ingredient, for stopping teeth. They reported in substance that the use of all such articles was hurtful to the teeth and every part of the mouth, and that there was no tooth in which caries in it

could be arrested and the organ rendered serviceable by being filled, in which gold could not be employed. This report was unanimously adopted. [vide American Journal of Dental Science]

At a meeting of the same society July 20, 1843, the use of amalgams was declared to be malpractice, and a committee appointed to further investigate the subject. They referred the matter to the Medical Society of the county of Onondaga, New York. The report of the medical committee was to the effect that no care in the combination or the use of the paste will prevent its occasional bad effects.

In 1845, the Mississippi Valley Association of Dental Surgeons resolved that the use of Amalgam fillings was unprofessional and injurious, and would not be countenanced by its members. Theca tions of the various societies had very little effect; amalgam forced its way into the offices of the majority of dentists in the country. Many excellent practitioners were expelled, and others resigned from the societies to which they belonged.

In 1850, a resolution was passed unanimously by the American Society of dental Surgeons to rescind the pledge made by the same society previously. Thus ended the so-called amalgam war. It will be observed that no scientific researches were made to ascertain whether deleterious effects were produced by mercury; the chief object of the disturbance was, apparently, to rid the profession of charlatans and their obnoxious materials.

These discussions, which have caused so much bitterness and enmity among the members of societies, have latterly aroused a feeling of enquiry into the scientific analysis of this filling for teeth, resulting in the discovery of a quality in its composition ccapable of producing salivation, and all other symptoms of poisoning. Many able practitioners of dentistry have experimented with all the different acids with no satisfactory results. When we consider that nitric acid dissolves mercury at 60 degrees F.; concentrated sulphuric acid dissolves mercury only when heated; hydro-chloric acid does not affect it at all -- how can we expect the weaker acids of the mouth, diluted by saliva, to cause a chemical change?

If past experiments have proved unsatisfactory, it does not discourage me in the attempt to discover, if possible, by experiment and by the careful study of the subject of mercury in its every particular, some clue to this perplexing question. Having satisfied myself that the poisonous effects are not produced by the chemical changes in the mouth, I have entirely ignored this theory, and have looked about for a more simple and direct cause. In commenting upon mercurial poisoning, the idea has been advanced that the vaporization of mercury takes place only during the hardening process, and, that being consummated so quickly, no deleterious effects can occur.

Tooth Traitors

In the construction of an amalgam two changes take place, the first being the mechanical, or mixing together of the ingredients, the second the chemical, or hardening of the composition. My first experiment was to place metallic mercury in a four ounce glass-stoppered bottle, and submit it to the gold test, by suspending a piece of gold foil in the centre of the bottle, taking care that it did not come in contact with the sides, and cementing the stopper. I placed it under different temperatures, of from 20 to 130 degrees F. In about thirty-six hours the surface of the gold became coated with mercury, giving it a gray color. This proved the evaporation of the metal.

I then mixed a quantity of the Chicago Refining Co.'s amalgam, according to their formula, three parts of mercury to eight parts of filings, and subjected it to the same test. The reagent was not sufficiently delicate to produce any perceptible change. Wishing to bring the highest chemical skill to bear upon the experiments, I consulted Prof. Haines, of Rush Medical College, who kindly assisted me. At his suggestion, I procured two delicate reagents, the ammonio-nitrate of silver, and the chloride of platinum. In preparing the ammonio-nitrate of silver, I allowed thirty grains of nitrate of silver to the ounce of water, and put a small quantity of the solution in the test tube. This was heated, and aqua ammonia added until a precipitate formed. Increasing the aqua ammonia until the precipitate cleared up, I took a quill and, with this liquid, wrote upon white paper. After putting the substance to be tested in the bottle, the strip of paper was placed across the mouth of the bottle, and the stopper cemented.

Should a vapor arise, the liquid would become black. Leaving the bottle for ten minutes, I examined it again, and found the writing in plain black coloring. The chloride of platinum produced the same results, but required more time to accomplish it. The rapidity with which the evaporation of mercury takes place depends upon the amount of heat and the surface exposed, and not upon the quantity of mercury contained in the fillings.

Thus a jar containing one quart of water would evaporate the same quantity as a jar of like surface containing a gallon, the latter taking four times longer to empty.

In the following experiments, I attached a thermometer to a water bath, and heated to the temperature of the body, 98 degrees to 100 degrees F., to maintain an even temperature. I conducted these experiments in the dark, as the rays of light decompose the ammonio-nitrate of silver. The strips of paper containing the reagent were placed in the mouths of all the bottles, including an empty bottle, which was used in each experiment, to prove there was no mistake.

Experiment No. 2 -- Three bottles were prepared. In the first was placed an amalgam filling made from Chicago Refining Company's amalgam, according to their formula. In the second was placed an amalgam filling of like size, containing five grains more of mercury. In the third bottle there was nothing. After a lapse of ten minutes I examined the bottles and found the writing on the paper across the mouth of bottles Nos. 1 and 2 was black, while there was no discoloration of paper in the third bottle.

Tooth Traitors

Experiment No. 3 -- A repetition of No. 2, with the exception of the reagent chloride of platinum being substituted for the ammonio-nitrate of silver. The results were the same in both. The time required for the latter being ten hours, while but ten minutes were required for the ammonio-nitrate of silver. In conducting the remainder of the experiments the ammonio-nitrate of silver was employed, it being the more delicate reagent, consequently producing a more marked impression, and also consuming less time than chloride of platinum.

Experiment No. 4 -- Two bottles were prepared. In the first bottle were placed scraps of amalgam six months old. In the second there was nothing. In ten minutes the writing on the paper was black in the first bottle, and uncolored in the second.

Experiment No. 5 -- Bottle No. 1 contained amalgam fillings which had remained in the teeth from two to ten years. Bottle No. 2 was empty. The results in both being the same as in Experiment No. 4.

Experiment No. 6 -- In bottle No. 1 I put an amalgam filling which had been in the mouth sixteen years. In bottle No. 2 there was nothing. At the end of twenty-four hours I found the paper discolored in the first, and not in the second.

Experiment No. 7 -- To demonstrate that nothing in the composition of the fresh filings could cause the discoloration I allowed some filings to remain sealed in the bottle for twenty-four hours. At the end of that time discovered no signs of color on the paper.

Experiment No. 8 -- I procured four preparations of mercurious vivus.

No. 1 contained 1/10 gr. mercury to 1 gr. of sugar of milk.

No. 2 " 1/100 " " " "

No. 3 " 1/1000 gr. " " " "

No. 4 " 1/1000000 " " " "

A small quantity of each of these preparations was placed in bottles marked 1, 2, 3, 4. In No. 5 there was nothing save the reagent. The effect was alike in each of the four bottles containing the mixture. Those having the greatest quantity of mercury caused the deepest color to the paper and required less time. As before, No. 5 was unaffected.

In order to determine the difference, if any, in weight after evaporation, I obtained strong glasstubes one-half inch in length, and one-fourth inch in diameter, and packed them carefully with amalgam fillings. Allowing twenty-four hours for hardening, I weighed them, and at the end of three months I again weighed them, finding in some no change at

all, and in others an increase in weight. This is accounted for by the fact that oxydation and accumulation of moisture on the amalgam equaled in some and exceeded in others the loss of weight by evaporation.

I am in possession of numberless cases of poisoning from mercury in amalgam fillings. I will mention but one, and report one case from my practice.

The Dental Register, January, 1872, has the following case of poisoning from mercury in a tooth filling: "John T. Smith died from salivation, caused from having a tooth filled with amalgam. Dr. Sprague attended the case, and afterwards called Drs. Davis and Buffin, all of whom agreed that he was suffering from the effects of mercury present in the amalgam used in filling one of his teeth. The filling had salivated the unfortunate man, and, as the inside of his mouth, throat, and windpipe swelled, respiration was hindered, and finally ceased altogether.

Dr. Davis made the post-mortem examination in the presence of the coroner and jury of inquest, opening the chest, taking out the lungs, and extracting the filled tooth. No signs of diseases were found, except that caused by the mercury, and it was made clear to the jury by the Doctor that this caused his death. The jury returned a verdict that the deceased came to his death by suffocation, caused by inflammation of the glands and infiltration of the tissues of the neck, producing closing of the traechea by pressure thereon; 'and we further believe that the above causes were brought about by the action of mercury, used in filling the second

A case in practice: A lady from one of the towns in Illinois came to Chicago for treatment, having been troubled with dyspepsia and nervous debility for two years. While under the physician's care she complained constantly of a peculiar feeling and taste in her mouth. The doctor suspected the trouble might arise from a rubber plate which she had worn for four years, and advised her to consult me. Upon examination, I found a full upper plate, composed of rubber, and on the lower jaw the molars were gone, except the second and third upon the left side. In the crown of the wisdom tooth was a large amalgam filling, and also one in the crown and posterior approximal surface extending to the free margin of the gum in the second molar.

These had been inserted about two years previous. I noticed that the gums and the mucous lining of the mouth and salivary glands were quite tender. There was a strong metallic taste in the mouth, and a metallic odor to the breath. She had a peculiar paralyzed sensation in the left side of the tongue, which she had experienced for two years. She also informed me that the saliva flowed so freely that at night her clothing and pillow were saturated, and estimated the loss of saliva each night to equal one pint. I suggested the removal of the amalgam fillings and rubber plate, and substitution of gold. She assented to the proposition, and as early as possible I undertook the operations.

Tooth Traitors

Upon removing the amalgam fillings and applying the rubber dam, the saliva flowed in streams, completely saturating several towels. After refilling the teeth, and inserting a gold plate, the unpleasant sensation in the tongue and metallic taste disappeared. At the end of two weeks the glands were greatly improved, and the soreness under the tongue (of which she had complained at her first visit) was healed.

It is the accepted opinion of physicians generally, that mercury uncombined has no constitutional effect. Dr. Atkinson said before the meeting of the American Dental Association in Boston, August, 1880: "You must combine the molecules of mercury with some other agent before they can have any affinity for the body at all. One who is familiar with the old method of making looking-glasses, with tin foil and mercury, knows that the workman would be literally saturated with it, so that he could not be capable of handling a gold or silver watch without its becoming amalgamated, and all this, too, without his health being compromised by the mercury so long as it remains in a metallic state".

The correctness of this theory may be questioned, as it has been proven that these workmen have been affected by the vapor of mercury, when not protected by a veil over the mouth and nose.

Dr. Bartholow, in his work on Therapeutics, p. 177, says: "As used in the mechanical arts, by gilders and others, the fumes of mercury cause wasting, ptyalism, necrosis of bones, trembling, impaired intellect, and, in women, abortion". "Walter Pope mentions a workman who for six months had not handled mercury; yet he rendered a piece of copper as white as silver by rubbing it between his fingers". Parish says that long trituration of calomel increases its power to salivate. This is also applicable to all preparations of mercury used with an excipient, medicinally.

The homeopaths divide and subdivide particles, according to the required preparations, some of the radical members of the school claiming best results from the highest potencies, while the more conservative practitioners prefer a middle ground. They rub up pure mercury with sugar of milk into six different grades, the first containing one-tenth gr. of mercury to one gr. sugar of milk; the second, one one-hundredth gr. of mercury to one gr. sugar of milk, etc., as before mentioned in this paper. These are the finest forms in which mercury is prescribed, and yet the severest cases of salivation and constitutional symptoms have been produced by these agents, on account of their being so readily taken up by the blood.

Is it not a reasonable supposition that, if poisonous symptoms are produced in proportion with the subdivision of the particles of mercury, that the system will be more severely affected by the vapor of mercury, which is finer than any mechanical subdivision can be? Dr. Somers recalls an instance of a lady patient becoming completely salivated, the gums and mucous lining of the mouth inflamed and teeth loosened, by taking a second bath, in

which forty grains of the black oxide of mercury were used. He thinks she could not have absorbed one-twentieth of the amount in the form of vapor.

As a forcible illustration, I quote the experience of the sailors on board the man-of-war "Triumph", which, in April, 1810, took from the wreck of a Spanish ship thirty tons of quicksilver, contained in bags of fifty pounds each.

In the course of a fortnight some of the bags decayed and burst, the quick-silver mixing with the bilge water, the emanations from which coated all the metal about the ship. Nearly all of the crew were salivated.

In order to ascertain the effect of the vapor of mercury, I have employed it in a series of experiments upon plants and animals.

Experiment No. 1 -- While conducting my experiments in the laboratory I was frequently visited by a family of roaches, who appeared to take an interest in my operations. Suddenly they all disappeared, and it immediately suggested itself to my mind that their sudden departure argued favorably in the question of utilizing them in my experiments. I took four two-ounce bottles and put in No. 1 pure mercury; No. 2, amalgam scraps six months old; No. 3, fillings from two to ten years old; No. 4, fillings sixteen years old. After placing a roach in each bottle, I tied a piece of cloth over the mouth in order that the air might circulate. Evidently the bugs were not fond of mercury, for they clung to the tops of the bottles as long as life lasted. Roach in No. 1, containing pure mercury, died in three days; roach in No. 2 was next to follow; roach in No. 3 lived a few days longer; and in No. 4 outlived them all by several days.

Experiment No. 2 -- I prepared three bottles. The No. 1 contained ten grains of pure mercury; No. 2 contained an amalgam filling three months old; No. 3 was an empty bottle. In each of the bottles I put two roaches. In two days one in the bottle containing pure mercury died; the remaining one in the same bottle lived nine days from the time it was put in. In the bottle containing the amalgam filling one roach died in four days, while the other one died in eleven days; while those in the empty bottle lived fifteen and sixteen days.

Experiment No. 3 -- On February 9th I placed an amalgam filling at the base of a sensitive plant. On examination, about the fourth day, I discovered that the extremities of the leaves had changed color and were dry and brittle, like the leaves in early Autumn; gradually the whole leaf was affected, and at the end of ten days the plant was dead, notwithstanding the care and nourishment it received.

Experiment No. 4 -- In a four-quart glass jar I put about four ounces of mercury, and made a platform of wire gauze, fastening it two inches from the bottom of the jar. I placed a Guinea pig in the jar, and covered the top with gauze. Twice each day I removed him for exercise and nourishment. He thrived well for ten days, but at the end of that time

he commenced to droop, and refused food and water. He became emaciated and trembling; the body and limbs were cold. He lingered along for two weeks and died.

Experiment No. 5 -- I administered six grains of mercurius vivus, first trituration, to a dog with his supper, and repeated the dose next morning with his breakfast. The blood and liver were examined under the microscope in the evening and found to contain globules of mercury.

It is the opinion of many eminent scientists that mercury inhaled into the lungs produces a greater effect than when taken into the stomach. Among this number Prof. Stille in his Therapeutics, Vol. 2, page 789, says: "Of the several modes by which mercury is made to enter the body, inhalation most speedily produces the specific influence of the medicine". Claude Bernard, late Professor in "Le College de France", makes the statement in one of his lectures. This is readily understood when we consider that the drug taken into the lungs in the form of vapor is distributed over a large surface and brought in direct contact with oxygenated blood, and thus carried to all parts of the body.

Mercury taken into the system in small quantities, long continued, manifests itself in a variety of ways. One of the first symptoms noticeable is an increased flow of the secretions of the body -- salivation being the most striking -- the glands becoming inflamed and the mucous membrane tender. The gums tumefy and change in color to a dark rose tint; the tongue is swollen; the patient not only experiences an unpleasant metallic taste, but the breath becomes impregnated also. Sometimes extensive ulcers attack the throat, gums and cheeks; oedema of the glottis, with difficulty in breathing and swallowing.

The digestive apparatus is involved, with loss of appetite, nausea and vomiting, and frequently pain and tenderness of the stomach; the bowels loose, and often bloody stools. The fatty constituents are removed, and the patient becomes emaciated; no part of the body is more affected by mercury than the nervous system; the body trembles; sometimes one limb, and again both limbs contract. A sense of coldness and occasional chills are experienced; often neuralgic pains are felt, particularly around the motor nerves; mental debility and loss of memory. These are some of the many symptoms caused by the inhalation of the vapor of mercury.

RESUME

There are in the market many varieties of amalgams. Evaporation does not depend upon quality or age, but all amalgams will send off the vapor of mercury. This has been proved conclusively by its destruction of animal and vegetable life, and by chemical tests. Evaporation is facilitated by an increase of surface, consequently a greater amount of vapor would arise from several small fillings than from one large filling.

The facility with which mercury is taken into the lungs by continued inhalations and the rapidity with which it enters the blood, requires less mercury to produce systemic effects than when taken into the stomach. In order to produce systemic effects from metallic mercury, it must be rubbed up with an excipient,to reduce the particles to a size capable of entering the capillary system, or it must be taken into the lungs in the form of vapor.

Author's Note: Dr. Tuthill did the only AMALGAM SAFETY TESTING ever done, against insects, and AMALGAM FLUNKED THE TEST IN 1881. If you are still wearing amalgams after getting to this point in the book, YOUR HEALTH WILL FLUNK OUT TOO, if not in middle age then look forward to a costly retirement filled with visits to endless specialists. Look around you, the doctor's offices are filled with senior citizens and what they have in common is they all wear amalgams. The seniors without amalgams are too busy enjoying life, and a study to this effect will be coming out later this year.

Chapter -8-

Don’t Blink or You’ll Miss It.

The following Material Safety Data Sheet on Mercury was placed on L.D. Caulk’s World Wide Web Site to comply with the German Government’s mercury labeling requirements. As you can see, mercury is a deadly toxin that causes harmful central nervous system effects. Since the steps involved in making amalgam are so intricate, the smallest quality control error means that the substance is not as stable and more vapor will be released. As Dr. Vimy demonstrated on 60 minutes, in some patients the mercury level in the mouth exceeds 3 times the goverment standard for workplace safety or more.

This document caused such a world-wide controversy, that after a few months it was quietly taken off the web. Later L.D. Caulk admitted that only Germany requires this information, so they would find a way to get it to Germany without the rest of the world being exposed to it. So much for informed consent of patients, to know what they are getting from dentistry. Again, we let the facts speak for themselves, but remember that someone didn’t want you to see this:

Mercury

Tooth Traitors

MATERIAL SAFETY DATA SHEET

1.1 Product Trade

Name: DISPERSALLOY® DISPERSED PHASE ALLOY Tablets, Powder and Capsules

1.2 Part (Item) Number:

SECTION I

1.3 Division Name: Dentsply Caulk
1.4 Address: 38 West Clarke Avenue
: Milford DE 19963-0359
1.5 Emergency phone number
: (800) 424-9300 (Chemtrec)
1.6 Phone number for information
: (302) 422-4511
1.7 Date prepared
: 9/20/95 Dated Revised 9/24/97

SECTION II - Hazardous Ingredients/Identity Information

Hazardous Components

	OSHA PEL	ACGIH TLV	Other limit
: Silver	: 0.1 mg/m(3)	: 0.1 mg/m(3)	:
: Tin	: 2 mg/m(3)	: 2 mg/m(3)	:
: Copper	: 1 mg/m(3)	: 1 mg/m(3)	:

Tooth Traitors

SECTION III - Physical/Chemical Characteristics

3.1 Boiling point: N.A.
3.2 Vapor pressureN.A.
3.3 Vapor densityN.A.
3.4 Solubility in water: Not Soluble
3.5 Appearance and odor: A metallic grayish free flowing powder with no odor.
3.6 Specific Gravity: 8.0 g/cm(3)
3.7 Melting point approximately 1000ºC
3.8 Evaporation rate: N.A.

SECTION IV - Fire and Explosion Hazard Data

4.1 Flash point (method used) N.A.
4.2 Flammability (explosive limits): N.A.

LEL: N.A.
UEL: N.A.

4.3 Extinguishing media: Use dry powder extinguishing media.
4.4 Special fire fighting procedures: Firefighters should wear full protective clothing
including self contained breathing apparatus.
4.5 Unusual fire and hazards: Large quantities of metal powder in air may cause a
fire or explosion hazard due to dusting. Molten metal can ignite combustibles.

SECTION V - Reactivity Data

5.1 Stability :
Unstable:
Stable: X
5.2 Conditions to avoid (stability)
: Prolonged exposure to heat greater than 60ºC. Contact with strong mineral acids will release flammable hydrogen gas.
5.3 Incompatibility (materials to avoid)
: Acetylene, hydrogen peroxide, ethylenimine or
mineral acids.
5.4 Hazardous decomposition or byproducts
: None

Tooth Traitors

5.5 Hazardous polymerization
May occur:
Will not occur:X
5.6 Conditions to avoid (polymerization)
: None

SECTION VI - Health Hazard Data

1 Route(s) of entry:
: Inhalation?: Yes Skin?: Yes
Ingestion?: Yes
6.2 Health hazards (acute and chronic)
: Mercury poisoning, usually chronic, see attachment.
6.3 Carcinogenicity
NTP?: Not listed IARC monographs?: Not listed

OSHA regulated?: Yes
6.4 Signs and symptoms of exposure
: See attachment.
6.5 Medical conditions generally aggravated by exposure
: Known sensitization to metals, persons with chronic respiratory disease, nervous system disorders, and kidney disease.
6.6 Emergency first aid procedures
See attachment.

SECTION VII - Precautions for safe handling and use

7.1 Steps to be taken in case material is released or spilled

7.2 Waste disposal methods
: Do not incinerate, return to reclamation centers. Dispose of in accordance with Federal, State and Local regulations.
7.3 Precautions to be taken in handling and storage
: Always keep mercury stored in a sealed container away from heat.
7.4 Other precautions
: Superfund Amendments and Re-authorization Act (SARA) has established a 1 lb. reportable quantity for spills of this material.

SECTION VIII - Control Measures

Tooth Traitors

8.1 Respiratory protection
: Should be NIOSH-MESA certified. Fire fighters should wear self-contained breathing apparatus with a full face piece operating in pressure-demand or other positive pressure mode.

8.2 Ventilation
Provide local exhaust or general dilution ventilation to meet permissible exposure limits.

8.3 Protective Gloves
: Must be worn.

8.4 Eye protection
: Safety goggles.

8.5 Other protective clothing or equipment
: Wear appropriate protective clothing to prevent any possibility of skin contact with this substance.

8.6 Work/Hygienic practices
: Observe normal care when working with chemicals.

Health affects and first aid Inhalation:

Acute: Inhalation of a high concentration of mercury vapor can cause almost immediate dyspnea, cough, fever, nausea and vomiting, diarrhea, stomatitis, salivation, metallic taste, gingivitis, and cardiac abnormalities. Respiratory irritation may occur with chest pain and tightness. Symptoms may re solve or may progress to necrotizing bronchiolitis, pneumonitis, pulmonary edema, pneumothorax, interstitial fibrosis, and death. Acidosis and renal damage may also occur. Allergic reactions that may occur in previously exposed persons include dermatitis, encephalitis, and death. Metal fume fever, an influenza-like illness, may occur due to the inhalation of freshly formed metal oxide particles sized below 1.5 microns and usually between 0.02-0.05 microns. Symptoms may be delayed 4-12 hours and begin with a sudden onset of thirst, and a sweet, metallic or foul taste in the mouth. Other symptoms may include upper respiratory tract irritation accompanied by coughing and a dryness of the mucous

membranes, lassitude and a generalized feeling of malaise. Fever, chills, muscular
pain, mild to severe headache, nausea, occasional vomiting, exaggerated mental
activity, profuse sweating, excessive urination, diarrhea and prostration may also
occur. Tolerance to fumes develops rapidly, but is quickly lost. All symptoms
usually subside within 24-36 hours.

Inhalation: Chronic: Inhalation of mercury vapor over a long period may cause
mercurialism which is characterized by fine tremors and erethism. Tremors may
affect the hands first, but may also become evident in the face, arms, and legs.
Erethism may be manifested by abnormal shyness, blushing, self-consciousness,
depression or despondency resentment of criticism, irritability or excitability,
headache, fatigue, and insomnia. In severe cases, hallucinations, loss of memory,
and mental deterioration may occur. Concentrations as low and 0.03 mg/m3 have
induced psychiatric symptoms in humans. Renal involvement may be indicated by
proteinuria, albuminuria, enzymuria, and anuria. Other effects may include
salivation, gingivitis, stomatitis, loosening of the teeth, blue lines on the gums,
diarrhea, chronic pneumonitis and mild anemia. Repeated exposure to mercury and
its compounds may result in sensitization. Intrauterine exposure may result in
tremors and involuntary movements in the infants. Mercury is excreted in breast
milk. Paternal reproductive effects and effects on fertility have been reported in
male rats following repeated inhalation exposures. First Aid: Remove from
exposure area to fresh air immediately. If breathing has stopped, give artificial
respiration. Maintain airway and blood pressure and administer oxygen if
available. Keep affected person warm and at rest. Treat symptomatically and
supportively. Administration of oxygen should be performed by qualified
personnel. Get medical attention immediately.

Skin contact: Acute: Direct contact with liquid may cause irritation and redness.
Small amounts of mercury may be absorbed through intact skin. Allergic reactions

that may occur in previously exposed persons include dermatitis, encephalitis, and
death. Subcutaneous introcuction, from handling broken thermometers, may result
in local inflammation, granulomatous skin reactions, and slight signs of mercury
poisoning including digestive disorders, metallic taste in the mouth, and
neuropsychic disorders. Skin contact: Chronic: prolonged or repeated exposure
may result in dermal sensitization and systemic effects as detailed in chronic
inhalation exposure. Skin contact: First aid: Remove contaminated clothing and
shoes immediately. Wash affected area with soap or mild detergent and large
amounts of water until no evidence of chemical remains (approximately 15-20
minutes). Get medical attention immediately. Eye contact: Acute: Direct contact
with liquid may cause irritation and redness. Animal studies indicate diffusion and
absorption of mercury into the tissues of the eye may occur. No clinical signs of
conjunctivitis or inflammation occurred.

Eye contact: Chronic: Mercury exposure from inhalation ingestion, or skin contact
may be indicated by mercurialentis, discoloration of the crystalline lens, on slit
lamp examination of the eye. First aid: wash eyes immediately with large amounts
of water or normal saline, occasionally lifting upper and lower lids, until no
evidence of chemical remains (approximately 15-20 minutes). Get medical attention
immediately.

Ingestion: May cause burning of the mouth and throat, thirst, nausea and
vomiting. Metallic mercury is not usually absorbed sufficiently from the
gastrointestinal tract to induce an acute toxic response. Rarely, a large single dose
may result in sign and symptoms of chronic inhalation is sufficient amount of
mercury are retained in the body. Chronic: Repeated ingestion of small amount of
mercury may result in the absorption of sufficient amounts to product toxic effects
as detailed in chronic inhalation exposure. First Aid: Remove by gastric lavage or

emesis. Maintain blood pressure and airway. Give oxygen if respiration is
depressed.. Do not perform gastric lavage or emesis if victim is unconscious. Get
medical attention immediately (Dreisbach, Handbook of Poisoning, 11th ed.).
Administration of gastric lavage or oxygen should be performed by qualified
medical personnel. Antidote: The following antidote had been recommended.
However, the decision as to whether the severity of poisoning requires
administration of any antidote and actual dose required should be made by
qualified medical personnel. Mercury poisoning: Give dimercaprol, 3mg/kg (or 0.3
ml/10kg) every 4 hours for the first 2 days and then 2mg/kg every 12 hours for a
total of 10 days if necessary. Dimercaprol is available as a 10% solution in oil for
intra muscular administration. Hemodialysis will speed the removal of the
mercury-dimercaprol complex. Penicallamine is also effective. Give up to 100
mg/kg/day (maximum 1 gr/day) divided into 4 doses for no longer than 1 week. If a
longer administration period is warranted, dosage should not exceed
40/mg/kg/day. Give the drug orally half an hour before meals. A chelating agent
should be continued until the urine-mercury level falls below 50µg/24 hours
(Dreisbach, Handbook of Poisoning, 12th ed.). Incompatibility with Acetylene,
acetylinic compounds, aluminum, amines, ammonia+moisture, boron
diiodphosphide, bromine, 3-bromopropyne, calcium, chlorine, chlorine dioxide,
copper and alloys, ethylene oxide + traces of acetylene, lithium, methyl azide,
methylsilane + oxygen, nitric acid + alcohols, oxalic acid, oxidants, peroxyformic
acid, rubidium, silver perchlorate + 3-hexyne, silver perchlorate + 2-pentyne,
sodium, sodium carbide, sulphuric acid (hot), tetracarbonylnickel+ oxygen.

Tooth Traitors

Chapter -9-

Null and Void

This chapter reviews in detail the modern scientific controversy about amalgam. We have previously delved into the history of amalgam non-science, and proven that mercury poisoning was covered up through secrecy and outright misrepresentation.

An experiment similar to Dr. Talbot's is described, where amalgam fillings were placed in sealed containers and the resulting vapor release measured. These experiments, while scientifically valid, have never influenced the ADA to consider a ban on amalgam.

This section was written by Gary Null. It is frustrating to see how well documented this analysis is, with 114 separate references, and still amalgam is being placed at a rate of 1 Million fillings/day in North America. But one has to remember that the victims of Minimata needed a team of doctors working 11 months to figure out that hundreds of affected people had mercury poisoning, and their symptoms were clear cut.

He describes how dental amalgam was declared a toxic waste by the U.S. Environmental Protection Agency in the 1980s. It was this very ruling that prompted 60 Minutes to do their investigation and call the episode "Is there poison in your mouth?" Evidently the EPA thinks so, otherwise amalgam could be disposed of through normal channels.

In the material in this book, you have been told by dentists and regulators themselves that scrap or removed amalgam must be stored in your dentist's office in a sealed jar, disposed of as toxic waste, and not touched by human hands. Therefore the only safe place for it is in your mouth!

Mercury Dental Amalgams

- Analyzing the Debate -

by Gary Null

Townsend Letter for Doctors August/September 1992

Over the past few decades, Americans have been besieged by a series of health epidemics with one common denominator: all were man-made. With each of these epidemics, the government and its watchdog agencies routinely assured us that a danger did not exist. Since they would not allow harmful foods, chemicals or drugs on the market, the reasoning went, the very fact that the products were in use assured us of their safety.

Tooth Traitors

When overwhelming evidence proved the contrary, government and industry only begrudgingly removed these products from the shelves. The epidemics in question? Diethylstilbesterol, which harmed millions of Americans; Oraflex, the anti-arthritic drug, DDT, the pesticide; and the Dalkon shield, to name just a few of more than 200 such items that got an official stamp of approval over the years.

Now the battle line has been drawn over yet another "safe" substance, the mercury silver amalgam used in dental fillings. On one side of the battle are the scientists, holistic dentists and health activists who believe mercury amalgams are a biological time bomb ticking away in our mouths. They point to scientific evidence showing that chronic mercury exposure from dental fillings puts most people at risk for serious health disorders.

On the other side stands the dental establishment, led by the American Dental Association, which claims that mercury amalgam has adverse effects only on people who are hypersensitive to it. The ADA pegs this group at 1% of the population. For the rest of us, it says, amalgams pose absolutely no harm.

But the ADA has yet to offer scientific proof of mercury's safety, leading health advocates to call for a ban on its use. The Toxic Element Research Foundation (TERF) claims that the cumulative effects of mercury amalgam poisoning make it one of the most insidious health hazards facing Americans today.

"The true impact of amalgam poisoning is similar to that of the Chernobyl tragedy," states the organization. "The magnitude of the crisis is not the few who have died from massive exposure, but rather it is the millions whose health will be eroded by the ongoing, small-dose poisoning."1

Considering that 19 out of 20 Americans suffer from dental cavities, the stakes are indeed high. More than 200 million people - some 85% of the population - already have at least one cavity filled with mercury amalgam.2 Little wonder, then, that Americans are demanding a much more persuasive answer to the fundamental question: Are mercury amalgams safe?

A History of Ill Effects

Mercury has a long history of extreme toxicity, which makes its deliberate use in people's mouths all the harder to comprehend. Consider the bare facts: One of the oldest of all recognized poisons - a metal more toxic than lead and even arsenic - is the main ingredient in today's most common dental amalgam, which American dentists place in about 1 million fillings per day.3,4 Disinfectants, antiseptics, pesticides and insecticides contain this same ingredient because it is hostile to life.5

Tooth Traitors

Tales of mercury's damaging effects date to ancient Roman and Spanish history, when imprisoned slaves who worked in mercury mines suffered from acute symptoms of fatigue, dyspnea and epigastric pain on their first day. As time passed, they developed other highly common symptoms of mercury poisoning. These included lesions of the nervous system such as erethismus mercurialis (moodiness and other mental disturbances) and tremor mercurialis (involuntary, choreatic shaking movements).

These slaves were condemned to death in the mines, and they eventually wasted away in the terminal stages of mercury poisoning. By contrast, the small doses of mercury released by dental amalgam cause a chronic mercury poisoning that manifests, for the most part, as mental symptoms. That makes it especially difficult to diagnose.6

A more recent example of mercury's dangers comes from the British hatmaking industry of the late 19th century. At the time, the expression "mad as a hatter" characterized workers who used mercury compounds in the shaping of felt hats. The workers exhibited unusual shyness, mood swings and a dwindling intellect, all symptoms of severe mental retardation.7 But these dangers were recognized for three-quarters of a century before the use of mercury in the U.S. hatmaking industry was banned in 1941.8

Mercury got its start in the dental industry in 1826, when a Paris dentist combined it with silver, copper and other metals to create a paste. Seven years later, two brothers in New York City with no dental training began to promote mercury as a cheap alternative to gold fillings.9 By the end of the 1830s, mercury amalgam's use was commonplace in the U.S.10 Not only was the material cheap and durable, but it also required less time and skill to place than the trickier gold fillings.1l, l2

Still, traditional dentists were appalled by the very idea of using a known poison in the body.13 In the 1940s, the American Society of Dental Surgeons required its members to sign a pledge not to use the substance in their practices. But many members refused to sign because they believed mercury's low cost would benefit the poor. The debate caused such a schism in dentistry that the Society eventually folded.

When the American Dental Association formed in 1859, it took a very different stance on the mercury issue. The ADA defended the use of mercury amalgam, helping to establish it as a popular dental filling by the end of the 1800s.14 The organization's staunch defense of mercury continues to this day.

The Dangers of Mercury

Increasingly, however, the ADA's pro-mercury position flies in the face of scientific evidence proving amalgam's dangers. As far back as 1980, the World Health Organization identified elemental mercury vapor (the form leached by amalgam) as one of the two most hazardous types of mercury to human health.15 And research has shown that chronic exposure to small amounts of mercury can lead to a long list of ailments,

affecting everything from the nervous and immune systems to brain and kidney functioning.

The symptoms linked to habitual mercury exposure include the following: anemia, anorexia, colitis, depression, dizziness, drowsiness, headaches, hormonal disturbances, hypertension, impaired coordination, impaired hearing/ vision, insomnia, intestinal problems, irritability, joint pains, kidney damage, memory impairment, metallic taste, numbness, peripheral neuritis, psychoses, tremors and weakness.16, 17

One recent study of 1,320 mercury-toxic patients shows just how prevalent these symptoms can be: 73% suffered from chronic irritability; 72% had chronic depression, with about one-third of these demonstrating suicidal tendencies; and 67% had numbness and tingling in the hands and feet.18

Even small amounts of the potent mercury can trigger adverse effects. At exposure levels of only 10 to 30 micrograms per day, researchers have reported changes in body functions such as thyroid uptake, liver function, heart EKG, adrenal gland activity and immunologic responses. One study noted changes in conditioned reflexes at mercury concentrations as low as 2 to 5 micrograms per day.19 Meanwhile, a newly placed, multi-surface filling in a molar can contain 750 to 1,000 milligrams of mercury.20

In essence, mercury is one of multiple stressors that can build up in the body and contribute to disease, says Dr. Robert Rowen, a member of the Academy of Environmental Medicine and the American College for the Advancement of Medicine. Along with malnutrition, allergens, electromagnetic fields and environmental pollutants, mercury will take its toll on the body systems.21

But despite the severity of its effects, mercury toxicity can be extremely difficult to diagnose with a simple blood test. The mercury leaches into the bloodstream in very small amounts, but it only stays there for a short time before depositing in the body tissues, says Dr. Sandra Denton, a board member of the International Academy of Oral Medicine and Toxicology. "Instead of looking at the symptoms of mercury (poisoning), the doctors are looking for the mercury and therefore are missing the diagnosis," she says.22

In addition, the symptoms themselves can be so diverse that a diagnosis of mercury poisoning remains quite difficult, says Dr. Hal Huggins, a dentist in Colorado Springs, Colorado and the director of the Huggins Diagnostic Center. The lack of an easy and accurate diagnosis lulls the public into underestimating the dangers of mercury amalgams.

"If we knew that (mercury) went to the same place every time, it would be easy to get a verdict against it," says Huggins. "But in one person (it can cause) mental problems, another person may have neurological problems and another may have problems with the

heart beating fast. There are so many things that can happen, that it's very difficult to tell what is the diagnosis of mercury toxicity.23

The Evidence Against Mercury

Still, the scientific research proving mercury's toxicity has been piling up for years. And while a diagnosis itself may be elusive, the realities of mercury poisoning are hard to ignore when study after study shows that the mercury released from dental amalgams can wreak havoc on the body.

What follows is a description of various studies and reports that have explored the link between mercury amalgams and health disorders. As a body of work, these reports offer a comprehensive view of mercury's ability to enter the body and cause serious damage to physical and mental functioning:

The mechanism of mercury leaching. According to organized dentistry, amalgams do not pose a long-term threat because the mercury becomes inert after a filling has set for several days. But a number of studies prove that mercury continues to leach from fillings due to the ongoing deterioration of the amalgam.

A variety of factors contribute to the corrosion of fillings, including the physical stress of chewing, the acidity and temperature of foods and beverages and the electromagnetic potential of other metals in the mouth. Dental amalgam contains not only mercury (52% by weight), but also silver, tin, copper and zinc. Crowns and bridges may contain these elements as well as aluminum, beryllium, gold, iridium and nickel.24 Even the simple act of brushing your teeth can release mercury from amalgam, according to a 1985 report by J.E. Patterson.25

In a 1983 study, Hakon Hero and other researchers at the Scandinavian Institute of Dental Materials stated: Amalgam restorations tend to deteriorate at their margins after some time in service. The mechanism by which the degradation takes place is not fully understood. However, both electrochemical corrosion and particle release must be expected to occur.26

Indeed, microgram amounts of mercury leach from fillings daily. Researchers generally agree that each surface of a dental filling (an amalgam can consist of several layers) leaches one microgram of mercury per day.27

Consider the results of in vitro experiments that measured mercury leakage: When amalgam pieces weighing one gram were sealed in a glass tube for less than a month, they gave off up to 30 milligrams of mercury in total. That's about 1 milligram (1,000 micrograms) of mercury per day.28

Tooth Traitors

To follow through on the logic, consider that an amalgam has an initial weight of about one gram, and that mercury comprises about half of that weight, or 500,000 micrograms. If the amalgam corrodes by 50% over its 10-year life, then half of the mercury it initially contains -or 250,000 micrograms - has vanished.29 And many studies have shown that the mercury content of some five- to 10-yearold fillings is indeed reduced to only 25 to 35%.30

Mercury vapor in expired air. Other studies have analyzed the expired air of humans to determine how much mercury leaches from amalgams. In a 1985 study by Drs. Vimy and Lorscheider of the University of Calgary (Canada), 35 subjects with amalgams chewed gum for 10 minutes and released "quite substantial" amounts of mercury vapor into intra-oral air, about six times more vapor during chewing than before. Meanwhile, the intra-oral air of control subjects contained insignificant levels of mercury vapor, and the act of chewing did not alter those levels.

The researchers concluded: "The results demonstrate that the amount of elemental mercury released from dental amalgam exceeds or comprises a major percentage of internationally accepted threshold limit values for environmental mercury exposure. It is concluded that dental amalgam mercury makes a major contribution to total daily dosage."31

This study confirmed the findings of a similar experiment conducted in 1981 by C.W. Svare at the University of Iowa College of Dentistry and Environmental Chemistry. When researchers analyzed the mercury content in the expired air of 40 people with amalgams and eight without fillings, those with amalgams released 15.6 times more mercury vapor after chewing, while the expired air of the other subjects remained unchanged.32

The route of mercury vapor. Once an amalgam releases mercury vapor, the inhaled fumes can travel throughout the body and into the brain. The mercury fumes also settle on the mucous membrane of the nasal cavity, an especially dangerous location since the mercury is then transported directly to the pituitary gland and, again, the brain.33

A study released in 1989 followed the route of mercury vapor in the bodies of five pregnant sheep. Dr. Vimy, a consultant to the World Health Organization, placed amalgams in the sheeps' molars during the middle of their pregnancy. The researchers then used a radioactive isotope to isolate the amalgam mercury from other sources and trace its course. They noted the following effects after the amalgam placement:

Day 3: Mercury build-up was evident in the maternal and fetal blood, the amniotic fluid and the maternal urine and feces.

Day 16: Maternal mercury levels were highest in the kidneys, liver, gastrointestinal tract and thyroid. Fetal levels peaked in the pituitary gland, liver, kidneys and placental cotyledon.

Day 33: Most fetal tissues of the newborn sheep had higher mercury levels than did the maternal tissues, specifically in the liver, epiphysial bone, bone marrow, bile, blood and brain.

Day 73: Mercury levels in the mothers' tissues continued to rise in the kidneys, liver, parotid glands, lungs, pancreas, gastrointestinal tract, adrenal glands, pituitary gland, urine, bile, brain and thyroid gland.

Based on these results, the researchers concluded not only that the mercury released from fillings accumulates in maternal and fetal tissues, but also that "dental amalgam is most probably the major source of chronic mercury exposure in humans."34

The formation of methylmercury. Common organisms of the mouth and intestines can convert elemental mercury into methylmercury, an organic form of the metal that attacks the nervous and immune systems, the intestinal functioning and the allergy-triggering mechanism.35, 36 Methylmercury can be particularly devastating: It is absorbed through the intestinal wall 45 times more rapidly than mercury and is retained in the body longer.37

Methylmercury is 1,000 times more potent in causing genetic damage than colchicine, the next most powerful agent known, according to Swedish professor Claes Ramel. In experiments with fruit flies and onion root cells, extremely low doses of Methylmercury - 0.1 ppm or less -inhibited mitosis and caused chromosome breakage. Sublethal doses also decreased the fertility rate in mice, and increased the rates of litter resorption and stillborn fetuses in pregnant mice.38

The effects of methylmercury.

Methylmercury can cause harm to every part of the body. It leads to bleeding and bone loss, a loss of muscle coordination, impaired vision and sense of smell, and kidney and glandular dysfunction. It is 100 times more toxic to the nervous system than is elemental mercury.39

Methylmercury can permanently damage the brain and nervous system, in fact. Following a large exposure, high levels of methylmercury can lodge in the brain for 10 years or more.40 Unlike elemental mercury, which touches the outside of a cell and hinders its ability to interact with others, methylmercury actually penetrates the cell. That means it can disrupt the cell's metabolism, break its DNA and, with the addition of a few more mercury molecules, kill the cell.41

Tooth Traitors

Methylmercury even passes the bloodbrain and placental barriers, says Dr. Huggins. "There is virtually no barrier in the body to methylmercury. It can go to every cell in the body."42 When it passes the placental barrier, it accumulates in the fetal brain and blood, thereby increasing the fetus's level of red blood cells to 30% above that of the mother.43

Indeed, pregnant women who show no signs of mercury poisoning can give birth to a child with neurological disorders caused by either mercury or methylmercury.44 The effects of mercury exposure on children include: extensive changes to the brain that affect the entire cortex, including the frontal lobe; a 26% to 55% reduction in brain weight; and a heavy loss of neurons. In cases where the neuron loss exceeded 50%, decortication syndrome developed.45

Mercury's accumulation in the brain. The link between dental amalgams and the presence of mercury in brain tissue was established in a 1987 study conducted by Dr. David Eggleston of California in conjunction with Dr. Magnus Nylander of Sweden. The study found a direct correlation between the number of occlusal molars and the amount of mercury accumulated in the brains of 83 cadavers.46 The subjects with five or more amalgams had an average of three times more mercury in the brain than those with no amalgams.47 Likewise, autopsies performed at the Karolinska Institute in Sweden, whose board of governors selects the recipient of the Nobel Prize for Medicine, found that people with amalgams had three times more mercury in the brain and nine times more in the kidneys than those with no amalgams.48

One of the nation's leading toxicologists, Dr. Louis Chang, also has found a direct connection between dental amalgams and mercury concentrations in the brain. "Mercury levels tend to be higher in those people that have the amalgams, and mercury levels increase as the number of amalgams increases," reports Chang, director of interdisciplinary toxicology and experimental pathology and a professor of pathology, pharmacology and toxicology at the University of Arkansas.49

The link with neurological disorders. Occupational and environmental exposure to mercury is known to cause neurological disorders, including syndromes that mimic multiple sclerosis and amyotropic lateral sclerosis, says Dr. Douglas Swartzendruber, chairman of the department of biology at the University of Colorado at Colorado Springs. As a result, it's reasonable to consider that the mercury from amalgam may have a similar effect.

"Much of the controversy concerning mercury is the possible relationship between mercury released from dental amalgams and multiple sclerosis," states Dr. Swartzendruber. While the controversy has not yet been addressed by a controlled clinical trial, he says, several studies provide evidence of a causal relationship. In one such study, he explains, researcher E. Baasch demonstrated in great detail that "facts concerning the geographical and age distribution, pathological development and

symptomatology of multiple sclerosis are all consistent with amalgams as the primary cause of the disease."50

The effects on immune functioning. Not everyone who has dental amalgams will develop highly visible reactions that demand medical attention. But even in cases where no easily identifiable disease occurs, mercury will diminish the effectiveness of the immune system. As the accumulation of mercury depletes a person's ability to resist the slightest challenge, the patient reaches a "threshold" point at which he or she succumbs to an illness or disease that appears to be a minor final "cause."51

Mercury is considered to be a strong immune depressant because it alters the number of T-cells. The cells decrease in number when amalgams are placed in the mouth and increase when the fillings are removed.52 The other metals contained in amalgam can affect the immune system as well. One recent study found the following immune reactions in 1,000 subjects: 90% to mercury; 87% to copper; 83% to zinc; 56% to tin; and 45% to silver.53

In his study of mercury amalgam's effect on immunomodulatory reactions, Dr. Swartzendruber of the University of Colorado found that intra-oral heavy metals altered the quantity and quality of lymphocyte subset distributions. While functional analyses were not performed on the altered lymphocytes, he states, "The consistent finding of recurrent and intercurrent infections strongly suggests that the symptomatic patients are immuno-compromised." The reactive patients also experienced a serious loss of mononuclear cell viability.

Given these results, says Dr. Swartzendruber, amalgam's impact on immunity should be carefully studied. "It is possible that such individuals may also be susceptible to other systemic effects of heavy metal, particularly since in the rat it is clear that heavy metals can induce autoimmune disorders. Heavy metals should be carefully considered as possible etiological agents in human diseases thought to have an autoimmune component."54

The relationship to depression. Because mercury is so soluble, it can go through the roof of the mouth to within less than an inch of the posterior pituitary gland, which has much to do with our outlook on life. When these glands do not function properly, depression may result. As Dr. Huggins says, "It's not the stress that gets us; it's how we interpret the stress."55

Mercury intoxication also has been linked to mental symptoms such as psychasthenia, which affects one's ability to make trivial decisions, resolve doubts, resist compulsions or phobias and perform simple intellectual tasks. Other symptoms include a lack of self-confidence and extreme timidity; a self-effacement that can cause severe depression; moodiness, rage and anxiety; and an irrational fear of death. And in other cases, mercury exposure causes an extreme form of fatigue that overwhelms its victims and confines

them to bed because they no longer have the physical and mental strength for everyday activities.56

General health problems - and particularly those related to mental health - were 45% greater in patients with amalgams in a study conducted by Dr. Robert Silberud of Colorado State University. Among the common symptoms were sudden unexplained anger, irritability, anxiety and depression. One year after 86 of the test subjects had their amalgams removed, 70% of the recorded symptoms had either decreased or disappeared.57

The effects on kidney functioning. The impairment of kidney functioning from mercury amalgam may be even more severe than previously thought, according to another study by Drs. Filmy, Lorscheider and others. Again, the researchers placed amalgams in the teeth of sheep (whose weight and chewing mechanism compare well with those of humans). Within 30 days, the sheep lost half of their kidney function, and beyond that point the functioning remained low. Meanwhile, the average amalgam lasts 8 to 10 years, allowing for extensive mercury exposure.58, 59

The effects on blood and bone cells. Preliminary studies at Colorado University indicate that blood and bone cells may be highly sensitive to mercury. Researchers found that mercury in a ratio of less than 40 parts per billion was lethal to white blood cells. Another study found that mercury concentrations of less than 0.4 parts per million killed bone cells. Yet it is estimated that at least 700 times more mercury than this amount rests in the gum tissue next to amalgam fillings.60

Miscellaneous findings.

In 1991, two new studies identified other damaging effects of mercury amalgam. Medical researchers at the University of Kentucky established a probable relationship between mercury amalgam exposure and Alzheimer's disease and cardiovascular disease. Meanwhile, microbiologists at the University of Georgia found that mercury from fillings inhibits the effectiveness of antibiotics.61

The ADA Controversy

How great is the danger from mercury amalgam? That question stirs hot debate between those who question its use and those who promote amalgam as a safe and effective compound.

By conservative estimates, the average adult American has 10 fillings of three surfaces each piece. If each of these surfaces leaches one microgram of mercury per day (the generally accepted figure), then the average adult faces potential exposure to 30 micrograms of mercury a day from amalgams alone.62 The Food and Drug

Tooth Traitors

Administration cautions against any increase in the daily mercury exposure rate from food of 2.89 micrograms.63

The Toxic Element Research Foundation estimates that people with 13 or more amalgams exceed the World Health Organization's daily mercury limit of 42.9 micrograms. Says TERF: "The compelling fact about this data is that it does not include the mercury exposure received from all possible sources, such as the altogether different categories of food, air and saliva".64

Other experts agree that even low doses of mercury exposure deserve careful investigation. "It is tempting to summarily conclude that such exposures result in no adverse effects since there is no readily identifiable, general affliction associated with the use of amalgam and stainless steel in dentistry," states Dr. Swartzendruber of the University of Colorado.

"However, low-dose, chronic exposure to any substance tends to have insidious and often highly complex sequelae which may be multifactorial and interactive," he explains. "Also, recent innovative experiments demonstrate that low-dose mutagenesis is significantly greater than previously purported."65

Despite these concerns, the American Dental Association claims that amalgam is unsafe only for the 1% of Americans that it estimates to be hypersensitive to mercury. While offering no proof of amalgam's safety, the ADA insists that "the continuous use of dental amalgam as a restorative material does not pose a health hazard to the nonallergic patient."66

The results of other research, however, call the ADA's estimate of mercury hypersensitivity into question. Studies cited by the Journal of the Massachusetts Dental Society indicate that the level of hypersensitivity is 10 times higher. One study of 1,538 people found 9.6% to be hypersensitive; another study of 1,000 subjects put the number at 11.3%.67

And what if the ADA's estimate were accurate, asks TERF. Even that 1% is 1,000 times greater than the level of exposure considered adequate grounds for a recall in the auto industry. In one instance, says TERF, more than 100,000 vehicles were recalled because of a single non-fatal injury caused by a hazardous automobile material.68

In its staunch support of amalgam, the ADA claims that "when mercury is combined with the metals used in dental amalgam, its toxic properties are made harmless." As a result, it says, "For most patients...dental amalgam remains a safe and effective material for filling cavities."69

But when it comes to the cold, hard facts, the ADA's defense of mercury stands on shaky ground. The ADA no longer maintains that amalgam's safety has been scientifically

proven, says the Academy, and it offers no certification of the safe and effective use of mixed amalgam. In fact, the ADA says amalgam cannot be certified because it is mixed by individual dentists who must take responsibility for the material's safety.70, 71

The ADA relies heavily on amalgam's widespread use over the past 150 years as evidence of its safety. The organization suggests that "the most convincing support we have for the safety of dental amalgam is the fact that each year more than 100 million amalgam fillings are placed in the U.S."

This rationale offers little comfort to those who question amalgam's use. "This is a chilling thought,. says the International Academy of Oral Medicine and Toxicology, Calgary. "It should be a cause for concern that approximately 72 million tons of mercury are used annually in dentistry, much of it being placed into the teeth of Americans."72

The ADA also has claimed that people are exposed to more mercury from fish than from dental amalgams, a statement the Academy challenges because the scientific evidence proves otherwise. Says the Academy: "Autopsies of people with fillings confirm that the amount of exposure to dietary mercury is apparently much less than that from dental amalgam mercury. Authorities in the field of metal toxicology have concluded that this chronic exposure from dental fillings makes the predominant contribution of human exposure to mercury."73

The ADA's position may be best illustrated by its response in 1983 to a study that measured mercury in the expired air of humans. The ADA stated: "We wish the public to be as certain as we are that dental amalgam is safe, and we will pursue this matter until that certainty is assured."74 Note the wording, "until that certainty is assured." A scientific study does not set out to "assure" any one viewpoint, but to conduct an open inquiry that not only recognizes new information but follows that evidence wherever it may lead. In 1984, the ADA did alter its position slightly to admit that mercury does indeed escape from amalgam. But it still maintained that the amounts in question were too small to cause any damage to the body.75

But the ADA continues to deliver its flawed argument through the popular press. One recent Reader's Digest editorial, which was adapted from the ADA News, reports that "about 0.7 nanograms of mercury were in each gram of blood in people with silver fillings, compared to 0.3 nanograms in those without fillings."

Since the FDA considers 20 nanograms per gram of blood to be safe, says the editorial, "researchers calculate that it would take 100 fillings to reach this level - to reach the lowest toxic level of mercury, a person would require 1,000 fillings." The article ends with the standard ADA conclusion: "Silver fillings do not pose a health hazard to the nonallergic patient."76

But again, this argument conveniently overlooks some basic facts about how mercury is stored in the body. As Dr. Huggins explains: "The logic is based on the erroneous assumption that blood mercury levels for subacute exposures are indicative of actual mercury contamination. The fact that the blood mercury levels are not good indicators of total body burden is well-established in literature."

Thirty years ago, a study reported that mercury is rapidly cleared out of the blood after an intravenous injection, says Dr. Huggins. In 1972, researchers Friberg and Vostals found that mercury concentrations in blood were "hardly suitable" in evaluating retention.77 And in 1980, Phelps and Clarkson found that "a low mercury level in blood may falsely imply that significant mercury exposure has not occurred when, in fact, a dangerously high target tissue exposure may have existed."78

While the ADA defends the use of mercury amalgam, the Environmental Protection Agency has defined it as a hazardous substance. On behalf of the EPA, the U.S. Justice Department brought a lawsuit in 1988 against a group of New England dentists and dental companies for damages caused by the faulty disposal of scrap amalgam. All parties involved eventually signed consent decrees that required them to reimburse the EPA a total of roughly $350,000 for its clean-up costs.79

According to a 1989 issue of the ADA News, when the EPA was asked whether it considered dental amalgam to be a hazardous substance, it replied that "any substance that contains a listed hazardous substance is itself a hazardous substance," provided that there is "a release, or threatened release, of a hazardous substance into the environment and where the government has incurred response costs."

In addition, the EPA sent a letter to one of the dental supply firms in 1988 that specifically refers to amalgam as a hazardous substance: "The term 'hazardous substance' shell have the same definition as that contained in Section 101(14) of CERCLA and includes scrap or waste dental amalgam and any mixture of such hazardous substances with any other substances."80

The Food & Drug Administration, for its part, has neatly skirted the issue of amalgam safety over the years. When 1976 legislation required the FDA to classify all medical and dental devices, the agency "grandfathered" its approval of the long used amalgam fillings under the GRAS (generally recognized as safe) category, according to Joyal W. Taylor, DDS, who founded the Environmental Dental Association to spearhead a movement for informed consent legislation concerning amalgam's use.81

One decade later, in 1987, the FDA's Classification of Dental Devices was published in the Federal Registry. Dental amalgam, it turned out, was not even listed as a dental device, based on the rationale that amalgam is a reaction product. Instead, the FDA classified the components of amalgam, which means that amalgam itself has never been approved as a dental device, says the Environmental Dental Association. "Thus, amalgam

has never been subjected to the rigorous biocompatibility testing required of all other medical implant devices."82

In early 1991 the FDA clarified its position on mercury amalgam. After "reviewing" the subject, the agency announced that the use of amalgam could not be condemned based on current evidence. It recommended that more studies on the subject be conducted. At the same time, the FDA's Dental Products Panel of the Medical Devices Advisory Committee held a public meeting and, again, declared that the evidence against dental amalgam was not sufficient to prove its harm. This panel also said that amalgam should be researched further.83

The National Institutes of Health has taken the same stance on the amalgam issue. The NIH's mid-1991 conference on the "Effects and Side Effects of Dental Restorative Material" reached the following conclusion: "There is no scientific evidence that currently used restorative materials cause significant side effects. Available data do not justify discontinuing the use of any currently available dental restorative materials or recommending their replacement." Interestingly, however, the NIH did recommend that dentists could "reduce environmental contamination" by installing devices in their offices to recover waste amalgam residue for recycling.84

Questions of Liability

The ADA's position on mercury carries considerable weight. Since state dental boards operate as the long arm of the ADA, its philosophy trickles down to the local level. In fact, dentists who malign mercury as hazardous are threatened with expulsion from the ADA in four states.85 And the dental leadership in several states threatens to censure dentists who inform patients that amalgam contains mercury.86

What's more, the ADA systematically harasses dentists who place alternative fillings. Those who remove amalgams, even at the patient's request, may face blacklisting in the dental and business communities. In states that require dentists to have liability insurance, the dental boards can exert some influence on the insurers, perpetuating the myth that it's dangerous to remove amalgams. If an insurance company then cancels a dentist's policy, the state dental board may suspend his or her license for failing to maintain insurance.87

The attempts at censorship continue to this day. A case in point: In late 1991, the Washington Dental Disciplinary Board proposed legislation that would make it unethical for dentists to replace "clinically serviceable" amalgam fillings for health purposes, reports the Environmental Dental Association. The proposal, which would have made replacement work a punishable offense, did not pass at that time.

Several months later, the board dropped its final proposal to regulate amalgam replacement. This move followed the demand of anti-amalgam advocates that two of their experts be allowed to testify. As a result, the board withdrew its previous statement

that the safety of amalgam has been scientifically proven. Had the proposal passed, it would have required dentists to inform patients of the scientific difference of opinion regarding amalgam before removing serviceable fillings. The board dropped this idea when it realized that dentists would have to inform patients of the same schism before they placed fillings.88 The ADA also vehemently opposes any legislation that seeks to inform patients of dental amalgam's contents. This position, of course, appears to contradict its argument that amalgam does not cause harm. But the ADA has managed either to lessen the impact of informed consent legislation at the state level (such as Alaska's 1989 initiative to inform patients of the content of various dental fillings) or to defeat it entirely. The end result is that dental patients remain ignorant of amalgam's contents and do not have a choice of using alternative materials.89

In New Mexico, for example, such legislation was voted down by the very committee that had unanimously passed the same legislation one week earlier, according to the Environmental Dental Association. And in Illinois, the House of Representatives passed a Right-to-Know, Informed Consent Resolution in 1991 that eventually backfired. The resolution directed the State Department of Health to examine the amalgam issue and report its findings to the General Assembly. The position paper resulting from this directive took the ADA's position that mercury dental amalgams are safe.90

As recently as early 1992, however, one state offered a ray of hope in getting such legislation on the books. The California State Assembly became the first to pass an informed consent bill that requires dentists to tell patients about mercury exposure before placing fillings. Although the bill (SB 934) awaits final approval, says the Environmental Dental Association, "it represents a significant victory in the process to provide dental patients with their due rights."91

Indeed, the ADA's relentless support of mercury may come back to haunt it when the organization can no longer hold back the tide of evidence at its gate. Already, in late 1991, a large group of dentists filed a class-action lawsuit against the ADA, charging the organization with fraud and negligence, among other things, in its promotion of amalgam as a safe material despite evidence to the contrary. The plaintiffs claim that their reliance on the ADA's misrepresentation of the facts regarding amalgam's adverse effects has harmed the doctor-patient relationship and the public health.92

What's more, the public sector has been galvanized in recent years regarding the amalgam issue. Since 1988, a grassroots movement of Dental Amalgam Mercury Syndrome (DAMS) patient support groups has taken hold; and in one six-month period in 1991, more than 500 "Amalgam Adverse Reaction Reports" were filed with the FDA. Also in 1991, the first product liability lawsuit related to mercury poisoning was filed against a dental amalgam maker in Tennessee.93

In the coming years, then, patients who are harmed by mercury amalgam may begin to bring lawsuits against the dentists who placed toxic substances in their mouths without

the patient's knowledge or informed consent and those who purposely concealed facts about the filling's content.94

It's no great stretch, after all, to question whether the ADA has covered up information about amalgam's dangers. As Dr. Huggins says, there's no logical reason for the ADA's refusal to recognize amalgam as a problem. At this point, thousands of patients have responded favorably to its removal. "There's been an active effort to keep the information from getting out," he says.

Dr. Huggins, for one, used to spend a great deal of time lecturing to dental associations on the topic of dental amalgam. But then the engagements came to a screeching halt. "I used to lecture 100 days a year to dental groups, and all of a sudden I was told that if I were on a dental program, there would be no postgraduate credit given for that program," he says. "And there's never been an invitation since. Approximately 18 months of bookings were canceled in one week."95

Dr. Sam Ziff, an author and researcher who has studied this topic for years, believes that a political power play is at work, with the issue of legal liability lurking in the background. "I think what they're really hoping for is that the problem will just slowly fade away as more and more of the alternative materials are used and the use of amalgam is stopped" says Ziff.

He points to a similar situation that took place in Sweden several years ago. A special commission declared amalgam to be an unsuitable dental filling, says Ziff, but the medical and dental establishment applied political pressure until the commission recanted its statement publicly.

When scientists took the commission to task on national television, says Ziff, the Swedish Social Welfare and Health Administration made an historic about-face and supported the original statement against the use of amalgam. As this case illustrates, says Ziff, "There is a lot of political pressure being brought to bear. They've been using it for 150 years, and nobody likes to admit they've been wrong for that long."96

That's exactly what the Swedish agency did, however, when it declared amalgam to be "an unsuitable and toxic dental filling material which shall be discontinued as soon as suitable replacement materials are produced," according to a Swedish newspaper. An official said: We now realize that we have made a mistake. This has caused people to suffer unnecessarily."97

In 1991, Sweden announced that the use of amalgam will be banned. And in early 1992, Germany's Department of Health followed suit by prohibiting the sale of "conventional" (gamma-2) amalgam. (The agency maintained that non-gamma-2 amalgams are safer than the banned variety, a position the Environmental Dental Association questions.) Much like the ADA, the German Dental Association had claimed all along that mercury

cannot escape from amalgams. This position, of course, was in direct contrast to the scientific evidence on the subject."98

Amalgam Removal

Fortunately, the many problems created by amalgam respond to a simple solution: removal of the offending fillings. Indeed, the symptoms that abate with the removal of amalgam parallel those created by its use. These include seizures, muscle tremors, chronic fatigue, memory loss, depression, headaches, menstrual disorders, joint pains, intestinal problems and irregular heartbeat.99

All of these disorders, and more, have been cured by amalgam removal. And to date, approximately 1,500 dentists in the United States advocate the removal of amalgam and replacement of the filling with alternative materials.100

At the Huggins Diagnostic Center, 85% of patients who have their amalgams removed respond positively. Over the years, Dr. Huggins has used several dozen tests to monitor the effects of removal. "A frightening observation is that we (are) able to find affirmative changes in all of those tests after amalgam removal in the majority of patients observed," he says.101

What follows are a few examples of disorders that improved following amalgam removal:

Decreased white cell count. When amalgams were removed from three patients, their number of T-lymphocytes (white cells) increased, according to a 1984 report by Dr. David Eggleston in the Journal of Prosthetic Dentistry. These cells, which combat invaders such as viruses, bacteria and parasites, decreased again when the amalgams were put back in the patients' mouths.102

Seizures. In his book, It's All In Your Head, Dr. Huggins tells of an 11 year-old girl who was having seizures every 15 minutes, which prevented her from walking, standing or talking. Neurologists had failed to diagnose or treat her problem. The girl had three fillings removed, and her seizures stopped five days later. Two years later they still had not returned.l03

Lupus erythematosis. A 48 year-old woman with 38 amalgams was suffering not only from lupus but also from vision disorders, gastrointestinal problems and skin rashes, says Dr. Sam Ziff. The fillings were removed over a three-month period, and a follow-up examination five months later found her to be symptom-free.104

Multiple sclerosis. When a commercial pilot began to have trouble seeing and walking, he was diagnosed as having multiple sclerosis. His level of functioning became so poor that his pilot's license was in jeopardy. At the Huggins Diagnostic Center, he had 15

amalgams removed The man experienced rapid improvement in his vision, balance and ability to walk. Today, he is still a fully competent pilot.l05

But here's the interesting part: According to the ADA's Code of Ethics, any dentist who removes a serviceable amalgam filling from a nonallergic patient for the purpose of removing toxic substances (such as mercury) from the body is acting unethically. The ADA's 1987 edict specifies that the treatment is improper when it is "performed solely at the recommendation or suggestion of the dentist."106

In an accompanying statement, the ADA said, "There is no scientifically documented evidence of a cure or improvement of a specific disease or malady due to removal of amalgam restorations from a nonallergic patient." While some dentists may have a "good faith disagreement with the established scientific position on the issue," said the statement, that belief does not justify the removal of amalgam given the lack of credible evidence.107

A Challenge to the ADA

A lack of credible evidence? Experts on the topic would beg to disagree. The Academy, for one, issued this response in mid-1990 to the ADA's then-recent statement of confidence in amalgam: "Given the inconsistencies between the scientific facts and the American Dental Association Special Report, the (Academy) has serious concerns regarding the ADA's lack of scientific rigor and the tendency to misinform the dental profession and, thereby, the public at large regarding the established scientific facts about amalgam safety."

"We hereby call to task the ADA for failure to adequately support their position on dental amalgam with hard scientific data. This failure has resulted in inadequate protection to the public and inadequately protects the membership of the ADA from personal harm due to amalgam usage."108

Likewise, researchers at the University of Calgary reached this conclusion following their 1989 study of amalgam: "Our findings are at variance with the anecdotal opinion of the dental profession, which claims that amalgam fillings are safe. Experimental evidence in support of amalgam safety is at best tenuous. From our results, we conclude that dental amalgam can be a major source of chronic mercury exposure."109

Today, the burden of proof regarding amalgam's safety lies with those who defend its use, says Dr. Penzer. Its advocates must offer convincing support of their position, given the many studies that show a substantial danger in using mercury amalgams. "Only valid scientific evidence of safety could possibly justify the continuation of amalgam use in dental practice," he says.110

Tooth Traitors

As the debate heats up, many scientists have questioned the continuing use of mercury amalgam or have called for an outright ban on its use. "There is no safe level of mercury at all," say" Dr. Jay Dooreck.111 Toxicity experts such as Thomas Clarkson of the University of Rochester Medical School - and Lars Friberg of the Karolinska Institute also argue against the notion of a "safe" level of mercury exposure.112

Dr. Huggins, for his part, says the immune suppression caused by mercury exposure "may well prove to be the most invasive disease of our time."113 And Dr. Vimy has stated that the use of dental amalgam "should be banned immediately."114

Correspondence:

Gary Null P.O. Box 918 Planetarium Station New York, NY 10024 212-721-6044

References

1. Report of ICBM (International Conference on the Biocompatibility of Materials) 1988, 44.

2. Interview by Gary Null, September 1989.

3. Correlation of Dental Amalgam with Mercury in Brain Tissue, Journal of Prosthetic Dentistry
(December 1987).

4. Hal Huggins, DDS, Medical and Legal Implications of Components in Dental Materials, 4.

5. Null, interview.

6. Patrick Stortebacker, MD,PhD, Direct Transport of Mercury from the Oro-Nasal Cavity to the
Cranial Cavity As A Cause of Dental Amalgam Poisoning, Swedish Journal of Biological
Medicine (March, 1980): 19.

7. Huggins Diagnostic Center, The PAR Booklet (Proper Amalgam Removal), September 1989,
12.

8. The Harvard Medical School, Harvard Health Letter (September, 1990).

9. Saving Your Teeth, Natural Living Newsletter, No. 11.

10. Huggins, Medical and Legal, 4.

11. Huggins, Mercury in My Molars (1989), 4.

12. Two Studies Suggest Risk from Silver Fillings, Chicago Tribune August 15, 1990.

---

13. Silver (Mercury Amalgam) Dental Fillings Natural Living Newsletter, No. 32.

14. (Author unknown), Regulations of Mercury and the Politics of Amalgam Fillings, (article, date unknown).

15. Environmental Dental Association, A History of the Amalgam Controversy, 1992.

16. Null, interview.

17. Colorado Act concerning the use of mercury amalgam for dental fillings, and obtaining informed consent from patients prior to treatment.

18. Null, interview.

19. Huggins Diagnostic Center, The PAR Booklet 14.

20. Leezek Hahn et al. Dental Silver Tooth Fillings: A Source of Mercury Exposure Revealed by Whole-Body Image Scan and Tissue Analysis, FASEB Journal (December1989): 2641.

21. Null, interview.

22. Ibid.

23. Ibid.

24. Huggins, Medical and Legal, 1-2, 19.

25. J. E. Patterson et al. Mercury in Human Breath from Dental Amalgam, Bull Environ. Contam. Toxicol, 34, 459-468.

26. Hakon Hero, Surface Degradation of Amalgams in vitro during Static and Cyclic Loading 1983.

27. Huggins, Medical and Legal, 3.

28. Stortebacker.

29. Ibid.

30. Silver, Natural Lining Newsletter, No. 32.

31. M. J. Vimy and F.L. Lorecheider, Serial Measurements of Intra-Oral Air Mercury: Estimation of Daily Dose from Dental Amalgam, Journal of Dental Research (August 1985).

32. C.V. Svare, The Effect of Dental Amalgams of Mercury Levels in Expired Air, 1981.

33. Stortebacker.

34. Vimy, Abstract of vital new mercury amalgam research, 1989.

35. Huggins, Mercury, 9.

36. Amalgam Toxicity: Grand Deception, Journal Mass. Dental Society (1986): 58-63.

37. M. Peaker and J. L. Linzell, Biosynthesis and Degradation of Methylmercury in Human Feces
Nature (February 6,1975): 462-464.

38. Thomas Eyl, Methylmercury Poisoning in Fish and Human Beings, Modern Medicine
(November 16, 1970): 135-141.

39. Ibid.

40. Silver, Natural Living Newsletter, No. 32.

41. Null, interview.

42. Ibid.

43. Eyl, Methylmercury Poisoning

44. D. O. Marsh et al. Fetal Methylmercury Poisoning, Clinical and Toxilgical Data on 29 Cases,
Ann. Neurol.(1980) 348-363.

45. M. J. Inskip and J.R Piotrowaki, Review of the Health Effects of Methylmercury, Journal of
Applied Toxicology (1985); 113-133.

46. Eggleston and Nylander, Correlaton of Dental Amalgam with Mercury in Brain Tissue, Journal
of Prosthetic Dentistry (December 1987): 704-707.

47. Ibid.

48. Newsweek, October 15, 1990, 80.

49. Report of ICBM conference, 3.

50. Douglas E. Swartzendruber, PhD, letter of information to ALS Society, University of Colorado,
Department of Biology.

51. Huggins Diagnostic Center, The PAR Booklet, 17.

52. Silver, Natural Living Newsletter, No. 32.

53. Huggins, Mercury, 12.

54. Douglas E. Swartzendruber, PhD, Adverse Immunomodulatory Effects of Heavy Metals in
Dental Materials, Int. J. of Biosocial Med. Research, Vol 12(2),1990, 134.

55. Null, interview.

56. Stortebacker, 19-21.

57. Robert Silberud, Report of International Conferenee on the Biocompatibllity of Materials,
Colorado Stato University, 1988, 21.

58. Hahn et al., 2644-2645.

59. Chicago Tribune article.

60. Huggins Diagnostic Center, The PAR Booklet, 7.

61. Environmental Dental Association.

62. Huggins, Medical and Legal, 3.

63. Toxic Element Research Foundation (TERF), Mercury's Effects in Human and Animal Biological
Syatems, July 16,1990, 125.

64. TERF, Micromecurialism: Environment and Responsibility, July 1987.

65. Swartzendruber.

66. (Author unknown), Regulation of Mercury and the Politics of Amalgam Fillings, 4.

67. Report of ICBM conference, 44.

68. Ibid.

69. ADA News, January 2,1984.

70. John W. Stanford, PhD, Secretary CDMIE, letter to the ADA, May 22, 1986.

71. International Academy of Oral Medicine and Toxicology (IAOMT), A Scientific Response to
the ADA Special Report and Statement of Confidence in Dental Amalgam.

72. Ibid.

73. Friberg et al., Mercury in the Central Nervous System in Relation to Dental Amalgam, 1988.

74. ADA news release.

75. Environmental Dental Association.

76. H. Huggins and C.R. Kaiser, It's Not in the Blood, (article), October 28,1987.

77. Friberg and Vostals, Mercury in the Environment, 1972.

78. Phelps and Clarkson, Interrelationships of Blood and Hair Mercury Concentrations in North
American Populations Exposed to Methylmercury, 1980.

79. U. S. Justice Department legal action regarding amalgam.

80. EPA (Environmental Protection Agency) acting regional director's letter to Ott Dental Supply
Co., January 26,1988.

81. Environmental Dental Association.

82. Ibid.

83. Ibid.

84. National Institutes of Health, Technology Assesment Conference Statement, Effects and Side
Effects of Dental Restorative Materials, August 26-28,1991.

85. Huggins, Mercury, 4.

88. Huggins Diagnostic Center, The PAR Booklet, 8.

87. (Unsigned), ADA Harassment of Dentists (article undated.)

88. Environmental Dental Association.

89. Regulation of Mercury.

90. Environmental Dental Association.

91. Ibid.

92. Superior Court of the District of Columbia, Civil Divison, Class Action Complaint, September
12, 1991.

93. Environmental Dental Association.

94. Regulation of Mercury.

95. Null, interview.

96. Ibid.

97. Newspaper article, Svenska Dagblodet (Sweden), May 20,1987.

98. Environmental Dental Association.

99. Commentary accompanying Colorado Act.

100. Newsweek.

101. Huggins, Mercury, 18.

102. S.F. Barrister, It is More Probable Than Not that We Wlll Soon Become as Mad as Hatters,
(Article), 12.

103. Silver, Natural Living Newsletter.

104. Ibid.

105. Huggins Diagnostic Center case studies.

106. Newsweek.

107. ADA News, September 7,1987.

108. IAOMT, A Scientific Response to the ADA Special Report.

109. Hahn et al.

110. Penzer.

111. Nine Broadcast Plaza, television program, WOR-TV, Secaucus, New Jersey, Octobor 17,
1990.

112. Newsweek.

113. Silver, Natural Living Newsletter, No. 32.

114. Newsweek.

Tooth Traitors

Chapter -10-

It's Time for a Change

Here we present the American Dental Associations own timeline for their organization. Comments are made at certain dates that correspond to the information presented in this book. As you can see, every effort was made to be factually accurate in this book, and the information corresponds exactly to the ADA timeline presented on their world wide web site. The web address is given at the end of this chapter so the reader can verify that this is indeed the ADA's own document.

ADA Timeline

1859-1880

1840: First dental college, the Baltimore College of Dental Surgery; American Society of Dental Surgeons established.

We have discussed in detail this fact. At the opening lecture for this school, amalgam was described as the "most abomidable article for filling teeth."

1859: 26 dentists meet in Niagara Falls, NY, to form a professional society. This meeting was held because the previous dental society had self-destructed because of the amalgam controversy.

Tooth Traitors

1860: The first ADA Constitution and Bylaws adopted.

1880: 28 dental schools established by this year.

1881-1917

1890: Almost 100 dental societies established by this year.

1897: ADA merged with the Southern Dental Association to form the National Dental Association.

1899: Fewer than 250 NDA members; membership policies revised to attract members.

By this time, Dr. Black's work on amalgam had developed a more stable compound. However, amalgam had not yet taken off.

1900: 57 dental schools by this year; Federation Dentaire Internationale (FDI) formed.

1901: National Bureau of Standards (NBS) established.

1908: NDA publishes the first patient dental education pamphlet; beginnings of the tripartite membership structure.

1910: Dental faculty organizations merged to form the Dental Education Council of America (DECA), and becomes a tripartite organization with the NDA.

1913: NDA adopts a new Constitution and Bylaws, establishing the House of Delegates and Board of Trustees; The Journal of the National Dental Association first published under title Bulletin of the National Dental Association; NDA Relief Fund aids San Francisco earthquake victims.

1918-1928

1920s: ADA Relief Fund activities continue; group life insurance established.

1922: NDA renamed the American Dental Association.

1923: American Association of Dental Schools established.

1926: The Gies Report on dental education impacts the profession.

1928: ADA affiliates with the NBS; National Board of Dental Examiners established.

Tooth Traitors

1929: ADA has 30,000 members; one-third of members' dues earmarked for dental research; the Journal is the leading publication in dental literature.

Amalgam has taken off.

1929-1945

1929: Annual Session meets in Washington, DC, just 20 days before stock market crash.

It was at this session that Sweeney and Souder presented their belief that no mercury vapor was released by amalgams, which is now known to be false. What were they afraid of? With 30,000 members, the answer is obvious: to much invested for amalgam to be banned. This was 1929, inexpensive composites are 40 years in the future. Is there a link between amalgam and the hysteria in the stock market during 1925-29? Mercury causes erethrism, a dangerous nervous condition. Circuit breakers have been installed in the present because People Cannot Be Trusted Anymore with their stocks.

1930s: More than 36,000 ADA members, representing about half of the U.S. dentists; ADA has 85% market share by the end of the 1940s.

1931: ADA headquarters on north side of Chicago, then moved to a larger building in 1943.

1934: ADA adopts policies of social principle; ventures in a project with the U.S. Public Health Service to give dental examinations to 1.5 million children in 26 states; ADA president Dr. C. Willard Camalier addresses political and military issues, and he recommends the establishment of a Washington D.C. office.

1936: ADA Council on Dental Education formed.

1940s: 22,000 dentists serve in World War II; ADA secures preferential purchase of automobiles, gasoline and dental supplies for civilian dentists.

1941: Under Roosevelt's "Good Neighbor" policy, ADA extends Annual Session invitations to Latin America, Mexico, and Canada; the Cleveland Dental Society establishes National Children's Dental Health Week.

The U.S. Army takes Auschwitz Death Camp from the Nazis. They discover that millions of teeth containing Gold Fillings have been removed from Jewish Victims sent to the camps. Gold is a safe filling material. How many Jewish scientists and engineers contributed to the Allied Victory by developing the mathematics, physics, and nuclear science necessary to win WWII? It is a matter of historical record,

there were far more scientists from this community per capita than any other. Again, a piece of the puzzle that no one wants to see. Take a trip to Poland and look at the camp in Auschwitz, see the mountains of teeth left behind by the Nazis.

1946-1962

1946: The Council on Dental Education evaluates and accredits 38 dental schools.

1948: ADA revises Constitution and Bylaws; Annual Session Reference Committees formed; 19 ADA Councils established; the National Institute of Dental Research (NIDR) established.

1950: ADA works with Congress to proclaim February 6 as National Children's Dental Health Day; ADA endorses fluoridation.

1954: ADA/NBS research team develops the turbine contra-angle handpiece.

1955: ADA expands NCDHD to National Children's Dental Health Week; develops TV advertisements and scripts; lobbies the World Health Organization (WHO) to establish a dental unit.

1956: ADA/NBS research team develops panoramic x-ray equipment; develops glass-filled resin composites, revolutionizing dental restorative materials.

1957: The Social Security Act amended to include dentists who were covered under a federal insurance program.

1950s: ADA establishes accreditation programs for postgraduate training, dental laboratory technicians (1951), dental hygienists (1952), and dental assistants (1962).

1960s: ADA enhances members' insurance programs; 2 out of 3 communities in the U.S. do not have fluoridated water supplies.

1963-1992

1963: ADA lobbies in support of the Health Professions Education Assistance Act; one-third of the funds are reserved for dental education activities.

In this year, the non-gamma-2 amalgam is invented in Canada. It is now known to release 50 times the mercury vapor compared to old-style amalgams. Chronic Fatigue Syndrome would be described 10 years later, with no known cause.

1964: ADA Health Screening Program developed.

Tooth Traitors

1964: ADA produces the first color television Public Service Announcement by a non-profit health agency; resolves to move NBS testing and certification programs to the headquarters building in Chicago; two floors of the new building devoted to laboratory facilities for the Research Institute.

1965: ADA headquarters building on Chicago Avenue is completed; dedicated in 1966.

1966: ADA Council on Dental Materials and Devices established (name changed in 1979 to the Council on Dental Materials, Instruments, and Equipment).

1960s: ADA lobbies on public health issues including Medicaid and Medicare; develops a plan to deal with the Cuban exile issue.

1970: ADA News first published.

1977: Court battle with Federal Trade Commission (FTC), ADA revises Principles of Ethics relating to advertising.

1978: Reorganizes the Council structure; Council on Dental Practice established.

1979: ADA budgets for national print and television test marketing; the Commission on Dental Accreditation is established; ADA proposes to acquire a permanent location for its Washington, D.C., office.

1980: The Division of Membership and Marketing Services formed; ADA Health Foundation receives first royalty payment for the use of the patent on composite material.

The ADA is now hoping that amalgam will quietly disappear one day. This is 25 years after composites were invented, and yet royalties are only coming in now. But by 1990 only 60% of American Dentists can use composites, an abysmal failure to penetrate this new technology because amalgam is so darn CHEAP. Do these guys need to be stopped or what?

1982: An ADA for-profit subsidiary established.

Enough said.

1984: Washington Office purchase agreement signed.

1987: ADA Commission on the Young Professional formed.

Tooth Traitors

Around this time, the ADA makes it unethical to remove amalgams without a doctor's permission. Patients' rights are being violated as they do not know amalgams contain a poison.

1989-Present

U.S. Patent Number 4859453 granted in 1989. For "A Method of Preventing Mercury Poisoning from Dental Amalgam using a Selenium Toothpaste." In this patent is the answer to the whole mercury mess. Mice injected with selenium and mercury don't get sick, mice injected with mercury and then given selenium One Hour Later get mercury poisoning. Selenium protects you from mercury vapor from amalgam fillings, and this is why poor diet, stress, and processed foods low in selenium will CAUSE mercury poisoning from amalgams.

1991: First woman ADA president, Dr. Geraldine Morrow; Dues Equity Plan revises the membership dues structure; ADA implements an Association-wide Quality Improvement Program.

December 15, 1990. 60 Minutes broadcasts "Is There Poison in Your Mouth". Millions of Americans rush to the dentist to get their fillings removed, and feel Sicker because the ADA doesn't use protection. Many who have 10 fillings or more removed end up in wheelchairs, and launch lawsuits. These dentists are Idiots, so much so that when the EPA charges them with dumping mercury in the waste-water flowing out of the offices they say "Our Professors told us Mercury was Safe". They can't think for themselves, and are so Greedy that no one can believe it when they launch a $50 Million Pro-Amalgam campaign against 60 Minutes. A quick search of Lawsuits shows all the apple growers in Oregon LOST THEIR HOUSES when 60 Minutes broadcast "A is for Apple" about the Alar Pesticide in 1989, ONE YEAR EARLIER. Alar causes cancer in lab animals, mercury doesn't. Do Dentists want to lose their houses? You know the answer. On this single diffence in lab rats did the ADA put its whole organization to work, saying no one can "prove" amalgam makes people sick, and that taking fillings out and getting better is "non-scientific". Tell your dentist to go **&^&^$(&)&*) himself or herself, and ask for a refund. The only thing they really want to fill is their wallets!

1992: Strategic Planning Committee tackles a variety of issues; leadership addresses needs of women and minority dentists; ADA sponsors a Licensure Conference.

1992: ADA continues aggressive legislative/legal efforts against Occupation Safety and Health Administration (OSHA) regulations, and the National Practitioner Data Bank.
 Document address: http://www.ada.org/p&s/history/timeline.html

---

Tooth Traitors

Chapter -11-

You Have Lost the Right to Remain Silent

Tooth Traitors

With all the controversy surrounding Health Canada's refusal to ban amalgam, this chapter presents the truth about the inner workings of this department of the Canadian Government. The facts speak for themselves.

The first segment addresses cover-ups at Health Canada about drug testing. Once we have established that similar to the dental associations, Health Canada's credibility is damaged, we will then present facts gathered under the "freedom of information act" concerning Health Canada's ignorance of its' own scientists stands against amalgam.

Then we will present the Centrepiece of the Amalgam Cover-up: Actual emails from Health Canada imploring a Canadian Businessperson not to sell amalgam jewelry in Canada because it contains Mercury, A Known Toxic Heavy Metal. If our civil servants weren't so dumb, they could steal the country while no one was looking.

Toronto Sun: Top Stories
Friday, October 23, 1998

The (drug) truth is out there

Scientists 'pressured, coerced' to approve hormone

By ANNE DAWSON, OTTAWA BUREAU

OTTAWA -- Two scientists yesterday told a tale of bribery, conspiracy, coverups and a suspicious car accident that seemed more fitting for an episode of The X Files than a Senate committee hearing.

Health Canada scientists Shiv Chopra and Margaret Hayden say the federal government is pressuring them to suppress the truth about a genetically engineered bovine growth hormone that boosts milk production in cows, but whose long-term effects are unknown.

Chopra, Hayden and others are investigating the drug's safety.

The government, Chopra says, puts money ahead of public safety.

Yesterday the scientists revealed they were afraid to testify until they were assured by the feds they wouldn't be fired for what they said.

They told the committee they fear the drug could have long-term effects on humans, particularly children, but that due to the fact it's approved for use in the U.S., they're being pressured to approve it.

Tooth Traitors

"We have been pressured and coerced to pass drugs of questionable safety including the (bovine growth hormone)," Chopra told the Senate's agriculture committee. "There's a lot of sinister happenings in the department of health."

Chopra testified his wife, a retired government scientist, endured similar harassment when she raised concerns about breast implants more than 10 years ago.

"She was removed from her job. She was harassed. She got hit by a car in this whole process ... and she had to take medical retirement. That hit me and destroyed my family," said Chopra, who says he's under a "gag order" not to talk about it.

Hayden said her files, which included 10 years of her research on the drug, were stolen from her office; the next weekend, some of them were mysteriously returned.

Hayden also said officials from Monsanto, the drug manufacturer trying to get government approval to sell its product in Canada, tried to bribe her and other government officials with "an offer of $1 million to $2 million" at a 1989 meeting. She said her director at the time vowed to report this to superiors, but she never heard anything about it again.

Monsanto VP Ray Mowling said he knew nothing about the meeting.

Liberal Senator Herbert Sparrow was shocked with the allegations and fears they are wider spread.

"It seems to me that there's something ... very sinister going on," he said. "It appears there's a cancer in the department itself -- stopping scientific studies coming forward and being made available to the department or to the public."

In the Commons, NDP Leader Alexa McDonough called for an inquiry, but Health Minister Allan Rock brushed it off, saying the drug won't be approved until the department is satisfied it's safe.

The committee continues its hearings next week.

February 20, 1997

INDEX

Transcript of Statement of Dr. Richard Riley To All Canadians From News Conference for Canadians For Mercury Relief

Tooth Traitors

My wife taped a passage by Rosalie Abella on our refrigerator door, and it seems so appropriate for the situation I find myself in with respect to the amalgam issue. I have taken the liberty to paraphrase the passage for you, as follows: "As an informed Canadian Dentist, I have lost the right to remain silent in the face of injustice to the Canadian Public. As a member of 'the Healing Arts Profession', I must exercise my right to fight for justice so that Canadians are fully informed of the potential risks and dangers associated with dental amalgam."

To that end I refer all Canadians to the Health Canada document entitled " THE SAFETY OF DENTAL AMALGAM". (This document is available at the automated fax - on - demand service at Health Canada - (416) 362-8329).

This is the first step in fully informing yourself. Take the time to read the material. I'm sure you will find as I did, many contradictory and confusing statements. The more you read the more it becomes obvious that the tittle of the document is obfuscating. This document, could just as easily have been entitled "Dangers & Risk of Dental Amalgam".

Because this document is a study in contradiction you will need a "Cookbook" version to help extract the entire story, the UNTOLD VERSION that says "Any Canadian Citizen with amalgam dental fillings is "BEING UNNECESSARILY EXPOSED TO TIME RELEASED POISONING BY A TOXIC HEAVY METAL."

Author's Comment: This Study was produced by the Dental Division of Health Canada, by a committee made up in the majority by dentists and dental material manufacturers. The minority on the committee resigned in protest after the report was released. This is a matter of record and can be viewed on Health Canada's Website by searching on "Dental Amalgam" and downloading the PDF file relating to this report.

Dr. Pierre Blais 'then with the Division Of Medicine, Bureau of Medical Devices Branch of Health Canada', stated in one of his many internal memorandums to the Chief of Medicine that " Unlike other Mercury sources, Dental Amalgam is an insitu contribution to metallic injection-

IT IS THE ONLY INSTANCE WHERE A KNOWN TOXIC METAL DEVOID OF THERAPEUTIC VALUE, IS IMPLANTED INTO MORE THAN 85% OF THE NORTH AMERICAN AND EUROPEAN POPULATION."

Many other documents obtained through the Freedom of Access To Information Act, were equally disturbing. .. Blais in a 1976 memo to Dr. R.W. Campbell, Chief, Division of Medicine stated...."yet the potential hazards associated with the products (Dental Amalgam) are so transparently obvious that we cannot even appear to ignore it, without attracting ridicule."

BUT IGNORE IT THEY DID....

An on-line publication authored by Ernie Mezei B.Sc., Eng.

Tooth Traitors

Blais went on to say - "The Mission of the Health Protection Branch is to promote and preserve the most strategic of all of our national resources - Our Health - . Yet without the support and cooperation of the Health Professions, this aim is unattainable. It seems that Dental Amalgam Hazards are real and that they have long been recognized within the Profession."

Blais goes on to say that , "Historically the safety of Dental Amalgam has frequently been questioned by the health professions. Cases of acute systemic poisoning due to grossly unstable Amalgam composition or faulty restorative techniques are frequently cited in the literature until about 1940. This date correlates with the discard of copper containing amalgams....It is of considerable interest that high copper content alloys are currently enjoying a renaissance amongst manufacturers in the Western Hemisphere."

After describing some of the hazards associated with amalgams (amalgam means mixed with mercury) of reactive metals, Blais continues by saying "More worrisome, however is a currently emerging pattern of findings which suggest that low levels of the metal &mercury act as a ballast on the affected individual's well being and may have learning rate and behavioral effects in children. With such a frame of reference, sub-clinical or clinical occult symptoms in large segments of the population exposed to heavy metal ingestion are easily misinterpreted or discarded as normal; these are often described in vague terms such as early senilism, viral influenza, irritability, inatrocrality, loss of memory and other complaints frequently classified as psychosomatic."

The foregoing material was extracted from a 20 Page manuscript entitled: "Dental Amalgam and The Public Health - A View from the Health Protection Branch" Bureau of Medical Devices Government of Canada August 31, 1976. It is very clear from this documentation, that contrary to the date given as 1992 in Health Canadaís 1996 document, that Medical Devices Bureau actually began a study of the issue as early as 1976! Many of the concerns that Blais raised at that time have taken more than 20 years to be heeded, affecting amongst others our greatest resource and most vulnerable segment of our population - Our Children's health, as well as women attempting to conceive and at various stages of pregnancy or lactation.

In 1976 a "Product Deficiency Report For Amalgam Dental Restorations" was authored by Pierre Blais and C. Miron of Health Canada. In this document they stated that....."current ongoing studies confirm that the metallurgy of the finished amalgam is slightly different and perhaps more reactive in the mouth..." "The extent of the defect and the number of batches which have been involved are not known with precision. Spot checks revealed that faulty batches have been distributed country wide." It goes on to say that "Dealing with the other similar products (amalgam) however, is more difficult and the frequent release of deviant batches suggests that the problem will recur."

This latter information became available when a more thorough investigation regarding "MODERN" dental alloys was carried out between June & September 1979. This

prompted Dr. A.K. Das Gupta, Director of Bureau of Medical Devices to write a memorandum to Dr. E. Somers, Director General, Environmental Health Directorate, Government of Canada. The context of that memo included the following: " The attached draft alert letter addresses a concern which has beset the dental community for many years. It has no obvious solution other than increases in vigilance on the part of the user and their recognition that the alloys have unique problems. If not properly used the alloys (Dental Amalgam) constitute a significant hazard to the Canadian Population because of accelerated heavy metal releases in the mouth, premature disintegration of restoratives and eventual loss of teeth."

Other material obtained in our access to information request included a Manuscript by Dr. Joseph Karor entitled "The Possible Immunopathologic Effect of Mercury Released From Dental Amalgams". (31.5.93) His conclusion was that....."Mercury emitted from dental amalgams presents a potential risk to the immune system...". In an other document "Cadmium & Lead in Dental Amalgam" by Pierre Blais, with RESTRICTED DISTRIBUTION, printed under the title, Blais states that "Mercury which is approximately at the 50% level in common alloys overwhelms the toxicology of anything else that may be put in and that includes, bismuth, beryllium, lead, cadmium, indium and perhaps even thallium." In conclusion, all of this material disturbed both myself and my partner, Dr. Jim Jenkinson to such an extent that we sent a letter to Justice Minister Allan Rock in May of 1996. In this letter we outlined our concerns including those which I have shared with you today.

On August 1, 1996 when we finally did receive a reply from the Attorney General of Canada, on the issue of potential liability Mr. Allan Rock stated that "On the issue of potential liability, as Minister of Justice and Attorney General of Canada, one of my responsibilities is to provide legal advise to the Federal Government, itís departments and agencies. As such, I trust you will appreciate that I am not in a position to provide legal advise to members of the public. A lawyer in private practice may be in a better position to assist you." Ladies and gentlemen, and it is on that very advise from Mr. Allan Rock, our Minister of Justice, that we are here before you today. Thank you ....

October 3

INDEX

DENTAL MERCURY POISONING

Canadian News Wire

HOUSTON, Oct. 3 /CNW/ - At the 11th Annual Meeting of the International Academy of Oral Medicine and Toxicology (I.A.O.M.T.), information was presented raising serious concerns regarding potential illegal and improper behaviour on the part of Health Canada officials. Information I.A.O.M.T. gathered via Access to Information indicates

that Health Canada was aware of a large body of scientific research and risk information that clearly identifies potential health risks posed by dental silver/mercury fillings. Despite this knowledge, Health Canada, after private meetings with the C.D.A., failed to inform dentists, physicians, and medical and dental patients regarding the full extent of these risks for over 20 years!

FACT: As early as August 31,1976, Dr. Pierre Blais (at that time an employee of Health Canada, Medical Devices Bureau) raised serious concerns about mercury exposure from dental ``silver/mercury fillings'' in an internal government document. Dr. Blais stated that ``the potential hazards with the product (silver/mercury fillings) are so transparently obvious that we (Government of Canada) cannot even appear to ignore it without attracting ridicule...''. Yet ignore it they did for 20 years, even though 4 subsequent internal Health Canada documents raised similar strong concerns! (Chawla & Karov: July 10, 1991; Karov, May 5, 1993; Sinclair, July 15, 1994 and Richardson, August 18, 1995.) Given these Government scientific reports and the considerable published medical research evidence indicating that ``silver/mercury'' fillings are not suitable for human use, its odd that Health Canada officials have rejected the proper course of action - phasing out the use of this material in Canada. These Health Canada officials have also ignored the conclusions of the Swedish Expert Medical Committee, which has recommended and proceeded with the phase out of silver/mercury fillings in Sweden.

FACT: On October 7, 1982, the Privy Council enacted Amendment No. 3105-1982, which directed the Department of Health to require pre-market review of all materials to be implanted into the human body for more than 30 days. Tooth filling materials, including silver/mercury fillings, obviously qualify in this category. But . . . In 1985, Health Canada bureaucrats entered into private agreements with the Canadian Dental Association (C.D.A.) and the Dental Industry Association of Canada to exempt all dental restorative materials from pre-market review (see Health Canada Information Letters, No. 608, 625, 638 and 696; CDA Dental Materials & Devices Document; from Dr. D.W. Jones, May 17, 1985 to the Health Protection Branch; and the CDA Journal, January 1986 News Update, p.6). In doing so, the laws of the House of Commons of Canada were apparently arbitrarily violated by government employees after being influenced by dental trade organizations! Between 1982 and 1994, when the Privy Council officially changed the law (January 13, 1994: Amendment 1994-18), dental restorative materials, regardless of chemical composition, were allowed, uncontrolled, into Canada for human use. This policy continues to this day!

FACT: According to government officials, dental silver/mercury fillings have never been officially approved in Canada by the Department of Health/Health Canada! Moreover, Health Canada officials recently had to inform the C.D.A. on the issue of misinforming the public on issues concerning silver/mercury filling safety. (Letter: from Richard S. Tobin, Ph.D., Director, Medical Devices Bureau, Health Canada to Dr. James Brookfield, past President, CDA, February 27, 1996.). Given these disturbing facts, the I.A.O.M.T. wishes to inform the people of Canada of this grave situation. Further, we call upon the

present Government Ministers of Health, Justice and Taxation and the RCMP to investigate the circumstances surrounding these facts to ensure that illegal acts by government officials have not occurred and to ensure that the Canadian Dental Association and the Dental Industry Association of Canada have not improperly influenced Health Canada for their professional and corporate advantage at the expense of the public health.

For further information: Dr. Michael Ziff, Executive Director, I.A.O.M.T., (403) 290-9670, Fax: (407) 299-4149

Summary:

For those X-Files afficionados, “The Truth is Out There.”

.

NOW FOR THE COVER-UP PROOF.

Why you are reading this book is about to make perfect sense forever:

Recently a Canadian Entreprenuer contacted Health Canada to enquire about importing amalgam into Canada for the purpose of making inexpensive shiny amalgam jewellery and then childrens toys . Below, is the correspondence between the writer and Health Canada.

Original Letter to Health Canada

I am looking at introducing a new product for sale in Canada. I was wondering how to get verification of its safety. Here is an overview of the product:

Product Description: Amalgam Jewelry

This product is a shiny, long lasting amalgam composition that will be made into rings, earings, bracelets, and wristbands as a low-cost competitor to silver jewelry.The composition of this product is as follows:

Mercury: 50%
Silver: 30%
Tin: 10%
Zinc: 10%

This is a stable compound that has been used for 150 years. I do not anticipate any regulatory hurdles as it is a common formulation that has been approved for use with

human beings previously. I will be moving residences in the next few days, so please send any correspondence to

xxxxxxxxxxxxxxx

Regards,

Response from Health Canada

-----Original Message-----
From: Christine_Leckie@hc-sc.gc.ca
[mailto:Christine_Leckie@hc-sc.gc.ca]
Sent: December 8, 1999 2:35 PM
To: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Subject: Amalgam Jewellery

Dear XXXXXXX
I apologize for not responding to your request earlier. There was a mis-communication of who would be sending a response. Please find below an answer to your question that was originally sent to Kunnath Subramanianon November 18, 1999.
Please do not hesitate to call me directly at (416) 952-1297 if you have any further questions.
Christine Leckie, Product Safety Inspector

Dear XXXXXXX
Thank you for your e-mail dated 11-18-99 concerning the sale of amalgam jewellery in Canada and I am happy to take this opportunity to respond to your query. Please be advised that, in Canada, jewellery is an unregulated product and therefore, the sale of various types of jewellery products is unrestricted.

However, retailers of products are required to ensure that the products that they distribute are safe. Mercury is a known toxic heavy metal that is not only harmful to human health, but also an environmental concern. Therefore, Health Canada would strongly discourage you from importing amalgam jewellery products (containing 50% Hg) into Canada. In the past, Health Canada has discouraged other organizations from both importing into Canada and selling other consumer products that contain this toxic heavy metal.

-Jonathan Williams, Product Safety Officer

To: christine_leckie@hc-sc.gc.ca
Date: Tuesday, December 14, 1999 9:57 PM
Subject: Fw: Amalgam Jewellery

Tooth Traitors

Christine,
Thank you for your reply regarding the view of the Government of Canada on the sale of my product in Canada.I have large plans to import several tons of this product, and plan a very competitive push against silver and gold jewelry. The price of amalgam is extremely low, and I foresee a time when literally millions of Canadians can wear amalgam jewerly with pride, knowing they paid much less for a product which is safe and durable. Your position is quite clear, that there is nothing the government can do to stop the sale of large amounts of amalgam jewelry.

I am requesting a final confirmation in writing before proceeding with importing my first 5000 pounds of amalgam, that the Government of Canada will not engage in any legal action against me for pursuing a lawful business. This is a tremendous money-making opportunity for me, and I can speak confidently that this product will return extremely high profits. I also have no plans to label this material, as it is a safe and effective compound. Just think of the benefits to society, with nearly everyone able to afford low-cost jewelry! Also, I am looking at other markets where a low-cost, safe and effective replacement for silver (such as formal dinnerware utensils) would also warrant investment. I get excited just thinking about how much money I can make with amalgam! I am now at my new residence, and my email address is xxxxxxxxxxxxxxx

Regards,

Xxxxxxxxxxx

Now Toys

To Health Canada
To: Jonathan Williams
cc: Christine Leckie
Subject: Amalgam Toys

Jonathan and Christine,

I am now changing my original business plan for amalgam to take advantage of the Christmas Season. I am planning to go into a medium scale production of amalgam-based toys, that is small kid's toys that have amalgam as either a coating or the major component of the toy.I would like approval in writing from your department that this is Safe to do. I have decided that jewelry is the wrong product for this type of material, and that toys would benefit from amalgam's shiny surfaces. After all, children growing up in Canada have a right to shiny new Christmas Toys that are of low cost, so their parents can save for college instead!

Please respond to my new email address -xxxxxxxxxxx

Tooth Traitors

Regards,

Xxxxxxxxxxx

To: xxxxxxxxxxxxxx
Date: Thursday, December 16, 1999 10:04 AM
Subject: Re: Amalgam Toys

Thank you for your e-mail dated Dec 15. I understand that you have spoken to Product Safety Inspector Mike Gvildys and that he has answered your queries
Yours truly,
Jonathan Williams

To: Jonathan Williams
Subject: Re: Amalgam Toys

No, he referred me back to you about the question below. If I make toys for children with amalgam surfaces can I have a letter stating this is legal. This is very important and I don't want to be run around on this simple question.

Xxxxxxxxxxxx

From: Jonathan_Williams@hc-sc.gc.ca
Date: Thursday, December 16, 1999 1:38 PM
Subject: Re: Amalgam Toys

I am sorry, but we cannot provide you with such a letter. For your reference, pleased find attached copies of the Hazardous Products Act and the Toy Regulation.

99/12/16 10:15:39 AM - to H.C.

Thanks for your reply. From the Act, it appears it is definitely illegal to sell children's toys containing amalgam, as amalgam is 50% mercury. Would you agree with this statement? If you cannot agree (although again it is a simple question and clearly stated in the Act) then can you tell me the reason why you cannot put this agreement in writing? I attach here a copy of the relevant section of the HPA Act. I interpret section 9(d) below to mean ANY COMPOUND OF MERCURY. Am I missing something?

9. Toys, equipment and other products for use by a child in learning or play that have applied to them a decorative or protective coating that contains any of the following substances:
(a) lead pigments;
(b) more than 0.5 per cent weight to weight of lead in the total solids contained in such

coating;
(c) any compound of antimony, arsenic, cadmium, selenium or barium introduced as such if more than 0.1 per cent of such compound dissolves in five per cent hydrochloric acid after stirring for ten minutes at 20?C; or
(d) any compound of mercury introduced as such.

This is a matter of great importance to Canadians. If my interpretation is correct, then it is illegal to sell to children ANY amalgam containing product they would be in direct contact with. If I receive another non-specific reply, I will move to have this answered in Federal Court.

Regards,
XXXXXXXXXX

.

IF you think that you can trust Health Canada, then one last blow to your complacency. The DOCTORS OF CANADA were asked for their position on Dental Amalgam Safety. Here is their reply:

-----Original Message-----
From: watkit@cma.ca
To: XXXXXXXXXXXXXXX
Date: Thursday, January 06, 2000 4:17 PM

Dear XXXXXXXXXX

Thank you again for sharing your concerns about this issue. It is obviously one that you feel strongly about and have dedicated much time and effort.

In response to your initial request (Dec. 18th, 99) for our "official position on the safety of the use of dental amalgam in human beings for the resoration of teeth" - **we do not have a policy or position on this issue.**

However, I will keep your comments and concerns on file.

You may wish to contact the Canadian Dental Association given their direct relevance to this issue.

My Best Regards

Tooth Traitors

W. Todd Watkins BSc. MD, CCFP
Associate Director, Medical Services
Canadian Medical Association

There you have it. Health Canada's position is that Amalgam is Safe, the DOCTORS OF THIS COUNTRY HAVE NO POSITION. WE HAVE ALREADY PROVEN THAT HEALTH CANADA'S POSITION WAS WRITTEN BY DENTISTS, NOT DOCTORS. ENOUGH SAID, GET YOUR FILLINGS REMOVED.

Chapter -12-

Stop the Insanity!

Scientists Alarmed, Want to Halt Amalgam Tests

In the largest scientific study done to date on mercury exposure from dental fillings, 20,000 people had the mercury level in their saliva recorded. The results were so disturbing that the scientists in Germany wanted to stop the tests, due to the obvious poisoning of the “subjects”. Once again, people who were never informed that a toxic substance was implanted in their bodies are finding out that they are being slowly poisoned.

January 28, 1997

Tooth Traitors

INDEX

Amalgam Ban Demanded In Germany

The following Press Release From Germany has been translated by Mats Hanson,
Ph.D. of Sweden.
BUND, Friends of the earth. The Association of Environment and Environmental
Protection,Germany. Dunanstrasse 16, D-79110 Freiburg.

Review/Background Information

Presentation of the results of the largest trial on mercury release from
dental amalgam fillings in world demands: No respite for amalgam -
Amalgam ban overdue. Amalgam has been the dental filling material of
choice since 150 years. The criticism of this debated material has now
been further strengthened after the current results of the Tübingen
amalgam tests.

The largest test in the world on mercury release from amalgam fillings into
the saliva was initiated in summer 1995 by BUND and carried out by the
department of environmental analysis at the university of Tübingen. After a
few hundred tests at the BUND- Environmental exhibition ÖKO-95 in
Ulm had shown a mean of more than four times higher mercury levels in
the saliva than the Bundesgesundheitsamt had reported, BUND decided
to act because of apparent governmental inactivity. Funded by the
MOMO- Children Foundation, we engaged the environmental analytical
group at the university of Tübingen for the scientific realization of the
largest experiment in the world on mercury release from dental amalgam
fillings. The analysis of the data have been completed and sent to the
Bundesinstitut für Arzneimittel und Medizinprodukte for publication.

Part 1: Mercury concentration In saliva from amalgam fillings.

Tooth Traitors

In the first part of the study mercury levels in the saliva were measured in 20,000 persons and related to the number of amalgam fillings. The aim was to evaluate whether and to what degree there was an exposure to mercury from amalgam fillings. The second part of the study examined the relation between the levels of mercury In saliva and a special spectrum of symptoms.

Mercury levels strongly elevated.

The more than 4-5 times higher mercury levels in saliva compared to the levels reported by the former Bundesgesundheitsamt in 1984 (now Bundesinstitut für Arzneimittels und Medizinalprodukte) caused alarm, both among the public as well as among professionals. The continuation of the analyses were increasingly made more and more difficult for the scientists at the University of Tübingen, a sign of the alarming nature of the results. In addition to a great deal of irrelevant criticism, it was also reported that WHO had distanced itself from interpretations of the Tübingen study, which also proved to be false. Especially the exceeding of the established tolerable limits caused worry: The total tolerable weekly uptake of mercury (including the vapor phase) of WHO was exceeded. About 43 % of the test persons had higher, often several fold, exposure than the permissible intake. Since it has already been demonstrated that the mercury in the saliva is dissolved but not particulate, one has to calculate with a much higher absorption and mercury load than previously supposed. Of importance is that in the 20-39 year old group (including women in the fertile ages) the tolerable levels were especially often exceeded. This can be explained by the fact that the number of fillings in this group is especially high with 9-11 fillings, compared to a mean of 8 in

the general German population. The tolerable intake was also often exceeded for children with fewer fillings because of their lower body weight.

Mercury load from amalgam fillings.

As a further statistical result the study established that the mercury concentration in saliva (before and after chewing) depends on the number amalgam fillings. The exposure to mercury from amalgam fillings has been scientifically debated, The results from the Tübingen study clearly show an increased mercury load from amalgam fillings.

Saliva test a method to establish the mercury load.

The criticism of the Tübingen amalgam study concentrated on the question whether saliva was a better medium than for instance blood and urine to evaluate mercury exposure. Recent research confirms the advantages of the saliva test. The load on the oral cavity and the gastrointestinal tract can be estimated better with the saliva test than with any other available method. Hg can be present in both the oral cavity and the gastrointestinal tract without being detectable in blood or urine. It is clear that blood and urine do not reflect the Hg-concentration in the oral cavity/upper airways and in the gastrointestinal tract. In addition, it was not possible to obtain a certification/standardization for either blood (Dtsch Ges für Arbeitsmed) or urine (Dtsch Ges für Klin Chem) in the exposure range relevant for amalgam fillings. In contrast, a standardization test by the State Medical Dept of Stuttgart confirmed the excellent reproducibility for the saliva test; laboratories which processed the samples with the same method obtained consistent results;the standard error between the 10 laboratories was less than 15 %.

Part 2. Measured levels In saliva and disease symptoms.

Tooth Traitors

Every saliva test was accompanied by a questionnaire In which the persons were asked for 30 symptoms. The analytical group at Tübingen university evaluated 17500 completely answered questionnaires. The question was whether there was a significant relation between report of a symptom and the measured level of Hg in the saliva after chewing.

It has to be stressed that the established relation has a direct mathematical and statistical character and should not be causally interpreted. A statistically significant difference does not automatically mean a medical or biological relevance. Not even multi variance analysis can decide which relations are caused by chance and which by a casual relation.

Relation between symptoms and mercury concentrations in saliva after chewing.

The Tübingen amalgam study could establish in the especially examined group of 21-40 year old persons a statistically significant relation between mercury levels in saliva and symptoms. Only symptoms which are characteristic of subacute or chronic mercury exposure in the low-level range were studied.

The set of symptoms are often called micromercurialism in the literature.

There was a significant relation between the measured mercury concentration and the following symptoms:

1. Mouth-oral cavity: Bleeding gingiva, metal taste, burning tongue.

2. Central nervous system: Concentration difficulties, impaired memory, sleep disturbances, lack of initiative, nervousness.

3. Gastrointestinal tract: not specified; further research is needed to

establish the diseases which are covered by the non- specific label gastrointestinal problems.

Plausibility and explainability of the demonstrated symptoms.

In addition to high levels of mercury in saliva there has also been demonstrated high levels in gingiva, pulp, oral mucosa, dentine, roots and jaw bone. Amalgam fillings, as described in the literature, lead to increased inflammation of the gingiva. In addition the oral cavity will be affected by the Hg-vapor released by the fillings. Experiments with cell cultures demonstrated that the Hg-levels measured in the oral tissues (up to 8000 ng/g in the mucosa) can lead to damage to human cells. It has also been described that unpolished amalgam fillings can damage nearby cells more than polished ones. Also for the gastrointestinal tract it has been demonstrated that there are high levels of mercury in the intestinal wall, intestinal lymph nodes and in feces. The cause of this is that the mercury which is swallowed with the saliva is only absorbed to 10% and the rest remains in the gastrointestinal tract.

For both these body parts it has been established that blood and urine levels are unsuitable to evaluate the mercury load. The symptoms from the central nervous system show a remarkable similarity with the classical mercury symptoms described in the literature. For instance, effects of mercury on memory and concentration has been repeatedly described in the literature.

The Tübingen group for environmental analysis stress that some aspects of the study require further examination. For instance, the relationships between mercury exposure to metal allergy,or loss of hair, or the relationship to involuntary infertility. In each of these considerations,

tendencies were noted, however, extensive and expensive further questionnaires are required. It should be stressed that the results are statistical and do not establish a causal relation for single cases for any symptom.

After the statistical relations found in the study, persons who complain over problems with amalgam must not further be dismissed a "Ecochondriacs" or "Hypochondriacs," and furthermore a possible Hg-load must be take into account in the anamnesis, especially when the patients exhibit the described symptomatology.

Amalgam is with certainty not the material for the future, the Tübingen group stress, however they also warn for exaggerated panic reactions. As in medicine in general, in every single case one must together with the treating doctor evaluate whether an amalgam removal is necessary and if yes, how rapidly a removal should take place.

The relations found, which as stated above, should not be causally interpreted, however clearly prove that humans will be exposed to a continuous load of mercury from amalgam fillings. The filling material amalgam is thus suspected of being able to cause damage to health. This should be sufficient for health policy measures and at last start to end the amalgam era.

Demands by BUND as a consequence of the amalgam study:

¥ BUND demands that minister of health, Seehofer, immediately acts on the basis that: Amalgam,as an additional risk factor, does not belong in the oral cavity.

¥ The amalgam ban should not only be restricted to pregnant women and children but should immediately be general for dentistry.

¥ The university dental clinics must immediately remove the technique of

amalgam placement from their educational agenda, as has already happened in renowned dental clinics in Switzerland.

¥ Teaching and education on amalgam problems, safer removal techniques for amalgam filling and on plastic alternatives for molar teeth.

¥ Further studies are indicated by the amalgam study. The Minister of Health Seehofer must not further burden environmental organizations with the expense.

¥ BUND demands that the Minister of Health release funds for follow-up studies at the University of Tübingen.
- After an overdue amalgam ban the costs for alternative materials must be taken over by the insurance system.

Dental metal test can be mediated by all pharmacies. BUND can, in cooperation with the environmental analytical group at Tübingen, offer under the name SALIVAGAM a dental metaltest. This can be mediated by all pharmacies. In addition to mercury levels in saliva all other dental metal are analyzed. Further information in all pharmacies and from BUND- Umweltlabor, Tel: 0781/9383-21, Fax-11.

For answers to scientific matters please contact Dr E Roller, Dr. HD Wolss, KH Maier, AK Umweltanalytik, Univ. of Tübingen, Postfach 210352, D-72026 Tübingen, tel 07071/2984802. Interested journalists can obtain detailed information from BUND, Dunanstrasse 16. D-79110 Freiburg, Tel: 0761/885955-0, Fax-90

Tooth Traitors

Chapter -13-

Casualties of War

Is a collection of Victim Accounts currently being assembled & reviewed. If you would like your experiences considered for inclusion please forward your story by e-mail to communications@talkinternational.com

Tooth Traitors

Chapter -14-

We The People

This web page was taken off the U.S. Government's Public Health Service site. It is cold comfort to know that not even the government has any idea what to do about amalgams. Having allowed them for 150 years, you know what the result would be if all of a sudden the Food and Drug Administration said "Oops, we made a mistake about amalgam, it's bad." Total financial annihilation of the dental industry.

The government's conclusion is that there is a dearth of "scientific" studies. As we have said, if you remove amalgams and get better, it's not scientific according to the ADA. Unless as consumers we band together to have proper studies done, it is up to each of us individually to "unscientifically" get our amalgams removed to prevent serious illness or disease.

Amalgam Risks

http://web.health.gov/environment/amalgam1/ct.htm

Mercury is a toxic substance. For high exposures, observed mostly in occupational settings, the severity of response correlates with the duration and intensity of the exposure. The relationship between the severity of response and the duration of exposure has, however, not been quantified at levels of exposure associated with dental amalgam restorations. In addition, subtle signs and symptoms of chronic mercury intoxication may not be found through routine physical examinations. The subtle changes previously described require special tests not commonly used in routine examinations—that is, nerve conduction studies, measurement of alterations in EEG, and measures of psychomotor functioning.

In studies in which investigators have measured the mercury concentration in intraoral and exhaled air among small populations of people with and without amalgams, estimates of human uptake of mercury vapor released from dental amalgams have ranged from 1.24 to 29 µg/day. Measurements of mercury in blood among subjects with and without

amalgam restorations (61) and subjects before and after amalgams were removed (64,71) provide the best estimates of daily intake from amalgam dental restorations. These values are in the range of 1 to 5 µg. The blood mercury levels attributed to dental amalgams range from 0.4 1µg/L to 1.13 µg/L. Urine mercury levels are reported to be threefold to sixfold higher for those with amalgam fillings than for controls. Concentrations in tissue for those with amalgam fillings compared with those without amalgams are reported to be twofold to threefold higher in brain tissue and ninefold higher in kidney tissue.

Most data suggest that the daily mercury dose is 1 to 5 µg higher for subjects with 7 to 10 amalgams than for persons with no amalgams. Although specific data on subjects with recently placed fillings are scant, results of studies have shown that among these people levels of mercury in fluid spike after the fillings have been placed. No controlled clinical studies of health consequences have been conducted in association with the placement or removal of amalgam. Similarly, investigators have not looked for the subtle neurological and behavioral changes that have been demonstrated in some studies of occupationally exposed populations.

In low-level occupational exposures, the subclinical effects detected have occurred in groups with mean tissue mercury levels that are only tenfold higher than those of the general population; however, the relationship between the observed effects and the tissue levels is not clear.

Available data are not sufficient to indicate that health hazards can be identified in non-occupationally exposed persons. Health hazards, however, cannot be dismissed. Because there are no scientifically acceptable studies with sensitive, standardized measurements for physiological and behavioral changes in non-occupationally exposed populations, we cannot, at present, determine whether such changes observed in persons with low-level occupational exposure to mercury also occur as a result of exposure to mercury from dental amalgams.

The margin of safety may, however, be lower because of sensitivity to mercury or because body burdens of mercury are already high as a result of exposure to other sources; some persons may perhaps respond adversely to the incremental exposure to mercury derived from dental amalgams.

At the mercury doses produced by amalgam fillings, the evidence is not persuasive that the wide variety of non-specific symptoms attributed to fillings and "improvement" after their removal are attributable to mercury derived from the fillings. Conversely, the threshold levels may be lower because of sensitivity to mercury or because body burdens of mercury are already high as a result of exposure to other sources; some persons may perhaps respond adversely to the incremental exposure to mercury derived from dental amalgams.

Tooth Traitors

The evidence is not persuasive that the potential for toxicity at the levels attributable to dental amalgams should be totally disregarded. The potential for effects at levels of exposure produced by dental amalgam restorations has not been adequately studied.

Research Recommendations

After review of the literature, the committee recommends that the following research be undertaken to clarify the effects of long-term, low-level mercury exposed from amalgam dental restorations.

•In all studies investigators should analyze and report the species of mercury (i.e., organic, inorganic). This is especially important for measurements in blood. In some cases analyzing the erythrocytes and serum separately will yield very useful information for interpreting the data when total blood mercury results yield no intelligible relationship.

•Research should be conducted to more precisely define the potential effects from the low levels of mercury exposure due to amalgam dental restoration. Alternative materials should be tested for safety and effectiveness in animals and humans.

•Studies should be conducted to obtain prospective data on blood and urine mercury after amalgam restorations are placed.

•Studies should be conducted to evaluate neurological and behavioral changes associated with the placement and removal of amalgam restorations.

•Verification cohort studies should be conducted to evaluate nerve and brain exposure to mercury; nerve conduction studies should be included.

•The potential for children to have increased sensitivity to the adverse effects of mercury should be characterized and evaluated.

•With sensitive tests the effects on renal and testicular function should be evaluated among occupationally exposed persons and in relation to the number of amalgams.

•Animal studies should be conducted to relate clinical signs to elemental mercury exposure and tissue levels.

•Studies should be conducted to identify sensitive and specific biomarkers of mercury exposure and effects.

Dental amalgam can release minute amounts of elemental mercury, a heavy metal whose toxicity at high intake levels (such as in industrial exposures) is well-established. Under

the aegis of the PHS Committee to Coordinate Environmental Health and Related Programs, the Subcommittee on Risk Assessment performed a comprehensive review of existing information on the uptake of mercury from dental amalgam. (For details, consult the Evaluation of Risks Associated with Mercury Vapor From Dental Amalgam in Appendix III) The Subcommittee concentrated on the toxicity of mercury, looking in particular for evidence of biological effects from the low doses to which patients might be exposed from amalgam.

It is clear from the Subcommittee's review that a fraction of the mercury in amalgam is absorbed by the body; people with amalgam have higher concentrations of mercury in various tissues (including blood, urine, kidney and brain) than those without amalgam. Also, a small proportion of individuals may manifest allergic reactions to these restorations.

Mercury is absorbed from many sources, including food and ambient air. Thus, it is not known whether the vast majority of people with amalgam experience any clinical effect from this small additional body burden of mercury—and this is the key question which must be answered in order to resolve the issue of whether amalgam poses a public health risk.

Part of the reason for the dearth of information on whether there are health effects from the mercury in amalgam is that the few human studies that have investigated this issue have been too small or flawed in design to detect an effect. To add to the difficulty, if there were long-term effects from the mercury in amalgam, it is likely that they would be subtle in nature—slight neurological or behavioral changes, for example—and thus would be very difficult to detect and assess in human populations.

An alternative approach would be to extrapolate from the effects known to occur after high doses of mercury (such as those received from poorly controlled occupational exposure) in order to predict whether biological effects might occur after low doses (such as those received from dental amalgam). But the nature of the dose-response relationship for mercury toxicity is not well enough understood to permit this.

In the absence of adequate human studies, the Subcommittee on Risk Assessment could not conclude with certainty whether or not the mercury in amalgam might pose a public health risk. On the one hand, there is no (scientific) evidence at present that the health of people with amalgam is compromised in any way. Likewise, there is no (scientific) evidence that removing amalgam has a beneficial effect on health, despite anecdotal reports of "improvement" after amalgam removal in patients with certain chronic illnesses. (It should also be noted that the removal process itself may expose the patient to additional mercury, and that alternative dental restorative materials could have long-term toxicity problems of their own.)

On the other hand, given that the evaluation of potential health effects from dental restorative materials, including dental amalgam, will be an ongoing process, the possibility that these materials could pose health risks cannot be ruled out.

As we have said all along in Tooth Traitors, the mechanism of mercury poisoning was proven in the U.S. Patent Number 4859453 "A method of Preventing Mercury Poisoning from Dental Amalgams", and you get it from amalgam fillings if your selenium level is low. Has the U.S. Government bureaucracy heard of Selenium? Of course not, that would mean walking down to the Patent Office instead of the Donut Shop.

Chapter -15-

Not Worth The Risk

In the two years that I have been writing this book, I have come across so many threads in the amalgam story that I felt I had to link it into a coherent story, to illustrate how we got to the position where dentists and doctors are so rich while most of the rest of us struggle to get by. Clearly, by putting mercury in the mouths of almost all citizens in the Western World, we have set up a system where a few will profit over the health concerns of the many.

My belief is that the mercury obstacle is the last one to be overcome before we can make peace in this world. Using mercury for thousands of years as a Technology has allowed us to invent Money, Chemistry, Dentistry, Medicine, and much more. Of course, today mercury is banned or being eliminated in almost every aspect of society, because modern scientists know how dangerous it is.

However, dentistry is protected by self-regulation, is outside of any control by governments, and is so profitable that it is difficult to question openly what dentists are doing. The average dentist in the U.S. has an income over $130,000, which is even higher

if you consider they are self-employed and enjoy tremendous tax advantages compared to the rest of us.

Mercury was present when oxygen was discovered, radium was found, electricity was created, on the first trip around the world, and even our first spacecrafts were named after it. It is a noble element, which has allowed us to conquer the darkness that man emerged from after millions of years of evolution. Today on the Internet, it is well known that we should not use Mercury in human beings, and the story is told in thousands of Web Pages put up by doctors, scientists, dentists, and concerned citizens.

In other words, the earth is round, not flat. We know a great scientific truth today which is holding many of us back from achieving our potential, and instead is making us reliant on big government and big medicine. To a person, those who remove their amalgams become more independent, harder-working, and self-directing. In other words, all the things the experts say we need help with. The great tragedy of mercury poisoning is that many children born to mothers with amalgams will not develop properly, and will suffer allergies and developmental issues. This is manifested in lower scores we see today on intelligence tests and other testing vehicles like the SAT's in the U.S. But the hope is that Their Children will be Mercury-Free, and don't forget that the majority of mankind has never had a mercury filling. So the future is bright, and we need to help those who can't help themselves.

And now, onto the final chapter which outlines how we got into this mess in the first place, and how to get out of it before we harm ourselves and the planet any more

. The subject of this chapter is a risk we are taking that has made men mad, sick, ill, and desperate for thousands of years. However, most of us are blissfully unaware of the seething controversy that has been going on for the past two centuries over the mercury fillings in our teeth, and assume that if people are getting sick, tired, or mentally ill that somehow it is their own fault or bad luck. It is not, and the answer can be found right under our noses, literally.

The history of mankind is our history of discovery. From the first uses of fire to the invention of the wheel, from the electric light to space flight, man is on a journey that in many ways we no longer control. There is a feeling today that many of the chronic illnesses we see around us are symptoms of modern life, but no link has yet been found. The reason for this can be found in a secret lurking below the surface of our collective consciousness, and it can be easily exposed by a thorough review of the history of mercury and modern regulations of mercury in industry and healthcare. Let's begin, as they say, at the beginning.

The first uses of mercury were religious. People were fascinated by the "liquid metal" nearly five thousand years ago, and used it for worship because of its magical properties. It is a metal that is liquid at room temperature. What could have been more fascinating to

us? More recently, two hundred years ago scientists found it can conduct electricity; how many liquids conduct electricity? Only mercury, and that is why it is still used in all types of electrical switches. It forms amalgams with gold and silver, solid substances that still have vapor pressure.

Mercury was the foundation of alchemy, the search for turning lead into gold, and all of our modern society is based on alchemy. Alchemy led to chemistry, and chemistry lead to the modern age. So in many ways, mercury is the foundation for all of our understanding in science and technology that we take for granted today. Magellan carried two thousand pounds of Mercury with him while circumnavigating the globe in 1510; Mercury represented the height of technological achievement, which he could share with less-developed societies he would encounter.

As a society, we are equally fascinated by our wealth as by our scientific progress. Above nearly everything else, wealth has been important to all human societies, and this was well documented by the Romans, Greeks, and Egyptians among others. We admire gold and silver, the elements that money was first made from. Even though our dollars today are no longer backed by gold, these elements are important forms of wealth, and are stored by governments and individuals in event of future problems where paper money may not be accepted. But where do gold and silver come from? For thousands of years, when the ore was extracted from a mine, it was mixed with Mercury and the gold or silver amalgam removed. The amalgam was then heated, and the mercury boiled off and what was left was gold or silver metal. As of 1895 Arsenic has been used, because it is SAFER than Mercury. Go Figure. This property of mercury-silver amalgam led to development of the modern silver dental filling, as we shall see.

Millions of pounds of Mercury have been mined annually since pre-history, for wealth production. A comment in an 1835 English Journal says that the natives of Yugoslavia had no idea how lucky they were to have the world’s largest mercury mine, as they did not know that mercury was paramount for refining silver and gold. So we can see that Mercury was the key element for producing wealth throughout history, and therefore its role was not a small one but in absolute terms the most important asset of any society.

The first industrial hygiene laws were passed in 1654 for workers in Mercury Mines, who were dying from the vapor released during mining. The workers were prisoners and convicts, of course, as innocent men were not willing to work in such hazardous conditions. Slaves were used in instead of convicts Roman Times for mercury mining, but the results were the same: the average lifespan of a mercury miner in the past was only 3 years, due to the invisible, odorless vapor that killed them. The search for Great Wealth despite these known risks was the reason for Magellan carrying two thousand pounds of mercury around the world: to refine Gold and Silver in large quantities, and show primitive societies how wealthy they could be (and perhaps keep some for himself). He was eaten by cannibals on his record-setting trip, perhaps not an unfitting end for someone spreading the poisonous mercury technology to savages.

Tooth Traitors

Joseph Priestly discovered Oxygen using mercury. Oxygen, the stuff of life, which led to the discovery of respiration. Without mercury, we would not have known about oxygen for perhaps a century more. The first photographs were done by Daguerre in 1840, using silver plates coated with iodine. After exposing the plate in daylight, the amazing picture was developed over a bath of mercury vapor. This invention took the world by storm, and millions of Daguerreotype photographs were made between 1840 and 1870. Daguerre was given a lifetime pension by the French Government, for his “contribution to mankind”, which included thousands of citizens heating baths of mercury to emit vapors for film developing. How many died or were driven insane we will never know, but the French were using mercury in this way long before we had laws that would have stopped it. In the Smithsonian Museum in Washington are thousands of these photos, truly beautiful works of art with their metallic sheen, and the process to create them was deadly.

Doctors used mercury from the 16th century onward to treat rashes and syphilis, as it kills bacteria. The Arabs used it for controlling rodents and insects, a kind of pest poison. Michael Faraday used it in his electrical experiments, as the cathode in his first batteries. Electricity and Mercury. Did you know that Faraday ended up insane, and he was the greatest experimental scientist ever born? Newton’s body was discovered to contain massive amounts of mercury, and he was the greatest theoretical scientist to ever live, having invented the Calculus and discovered Grativy. But he was also head of the English Mint, and looked for ways to create gold inexpesively (perhaps from lead). The link to mercury was there even 200 years ago. This is the type of information we uncover again and again as the secret is revealed.

What is the poisonous form of Mercury? Well, simply put the vapor of mercury is the most deadly, as it is breathed into the lungs and transferred to the bloodstream instantly. It deposits in the brain and organs quickly. Other forms of mercury can kill more easily, but they have to be touched or ingested. Mercury vapor only has to be breathed in, and this vaporization property is unique among metals as mercury evaporates at room temperature. The health effects of mercury poisoning are so varied that there is almost no point in trying to characterize them. Any symptom of ill health can be created by mercury poisoning.

The main areas are neurological (headaches, chronic fatigue, tremors, depression, etc..), rashes, blurred vision, weight gain or loss, joint pain, tremors, stomach aches, diarrhea and constipation. In short, almost anything. Since 80% of visits to the doctor have no organic cause, why not look at mercury poisoning? Goodman and Gilman, THE reference for pharmacology, states that mercury poisoning is rarely diagnosed as it is too difficult to determine. Tests are inconclusive, and epidemics were misdiagnosed for years. Goodman and Gilman also now say in their Ninth Edition that amalgam is the major source of mercury exposure in the general population, a major shift in medicine’s view of the dental filling. For years it was assumed the mercury was locked in the filling.

Tooth Traitors

What is the safe level of Mercury vapor? A detailed search of the scientific literature reveals the following: We Don't Know. We Just Don't Know. There have been industrial poisonings from mercury vapor for centuries, in mines and with hat makers among many others, and so the current level based on these incidents is 0.05mg/m3 over a 40 hour week for North America. But in Russia and Sweden the level is set at 0.01mg/m3, based on experiments with rabbits and guinea pigs. The truth is, there is no safe level, since any amount of mercury vapor is transferred into the body through the lungs. What we really have is a "politically correct" level in North America for Industry, not a safe level. In comparison, amalgam fillings are in your mouth 24 hours a day, 7 days a week, for life.

Hat makers used mercury in felting, which would prevent fur hats from rotting with age. This is because mercury is hostile to all life forms, and would kill any molds or fungus trying to attack the fur. This led to the phenomenon of the "Danbury Shakes", where Connecticut hatmakers developed tremors from constant exposure to mercury vapor. Based on this data, in the 1920s the American Association of Industrial Hygienists developed the 0.05mg/m3 exposure limit. In earlier times, Lewis Carol wrote about the hatters in Alice in Wonderland. The Mad Hatter was based on these hatmakers and their curious afflictions.

Although people have known about the poisonous effects of mercury for millenium, they have basically ignored this fact in favor of economic opportunity or scientific applications. For centuries, mercury was the only cure for syphilis and gave rise to the saying "The Cure is Worse than the Disease". Syphilis was contracted by European explorers in the Far East and New World, and was the curse of the Middle Ages. Doctors devised numerous alternative cures, but none worked, so men continued to endure the mercury treatment for syphilis by rubbing it all over their bodies, with many dying from the "cure". Scientists who starting using mercury in the 1700s and 1800s in experiments to turn alchemy into chemistry also ignored the risks because of mercury's usefulness, and ended up poisoning themselves. In this century, talking to people about dental amalgam usually brings up a response like "I played with mercury as a child, so it can't be that bad". The truth is, on a scale of 0 to 1900, Plutonium is rated at 1900 for toxicity to life, and Mercury is at 1600, according the University of Texas.

In Ontario, dentists are even exempted from the 0.05mg/m3 mercury vapor level in the workplace, in the Revised Regulations of Ontario Controlled Substance Law #844: Mercury. Why? Because they can't meet it when preparing amalgam fillings, which are 50% mercury with the balance being silver, copper, tin, and zinc. The reason for the exemption is effective lobbying. This puts dentists in a unique position, as all other industrial workers and facilities must comply with the bylaw. Let's review the origin of the modern dental filling, which evolved from metallurgy and is the exact same substance as is retrieved during silver mining after mixing the silver ore with mercury. The filling in your mouth is also "doped" with copper, tin, and zinc to control expansion, much like silicon is doped with arsenic or germanium to create integrated circuits.

An on-line publication authored by Ernie Mezei B.Sc., Eng.

Tooth Traitors

The first amalgams were created in 1819 by Dr. Bell in England, and were introduced in New York City in 1833 by the Crawcour Brothers, two entrepreneurs who advertised it as the “Royal Mineral Succadeneum” which translated means Gold Replacement. Without amalgam, dentistry would have been a cottage industry, since gold was the only alternative until composites came into use in the 1980s. Gold fillings were hammered into place, while amalgams are plastic during the setting process and allow dentists to make a hole in your tooth that is bigger at the bottom than in the middle. Thus when the amalgam sets, it cannot fall out and has a very tight fit.

The Medical Schools in 1845 prohibited Dentists from using the material due to poisoning concerns, and hence was formed the American Dental Association by the uneducated entrepreneurs who continued to use the material and ran the medical doctor-dentists out of business, as the doctor's material was gold, not mercury. Amalgam's safety has never been proven, and instead the device is "grandfathered". This is why doctors and dentists attend separate schools to this day, and this is how entrepreneurial dentists, not doctors, created a multi-billion dollar industry. What should be the result of not meeting the workplace safety level in the 1990s? All workers who are over this level must wear gas masks. How many people would go to a dentist who wore a gas mask respirator?

In the 1970s, the ADA was asked to submit amalgam for safety testing. Instead, the ADA submitted Mercury as a Class 1 Medical Device, and the Alloys as a Class 2 Medical Device. This is because Amalgam, a Class 3 Medical Device – Implant did not pass safety tests and so would have been banned. Recall that in 1881 Dr. Talbot tested amalgams with insects, and they all died in order of the age of the filling they were exposed to. When Thomas Jefferson said “The first thing we do is *&$*%&# all the Lawyers” he could have been talking about the amalgam issue. Fear of losing their livelyhoods from being sued and outcast from the profession is what keeps dentists in line. What could an expelled dentist do? Perhaps sell used cars with some training.

Over 85% of people in the Western World have these amalgam fillings in their mouths. Tooth Decay is the most common disease known to mankind, and amalgam fillings are the most routine treatment of any medical procedure. There is no argument whether these amalgam fillings release mercury vapor. They do. The dental unions had denied it for over 100 years so as not to panic people, but the portable mercury vapor meter appeared in the 1980s, and low and behold, there it was. When you chew for 10 minutes, the mercury vapor level over the fillings goes up to 0.20 mg/m3, 4 times the safe limit. The level subsides after half an hour. The mercury vapor is over the fillings and not in the entire room, says the American Dental Association, so the results are meaningless. As a reader who has reviewed the history of mercury to date, can the word “meaningless” be applied to mercury, a substance upon which so much of our history depends. Toxic Mercury Vapor? In Your Mouth? Every Time You Chew? In Small Amounts? Didn’t We Know?

Tooth Traitors

We knew. In 1881, Dr. ES Talbot of Chicago exposed amalgam fillings to Silver Nitrate in a darkroom. The small amounts of vapor coming of the fillings turned the silver test paper black. Talbot took the experiment further. During the initial stages, a few roaches that had been present in the laboratory disappeared when he began the mercury experiments. Reasoning that they had a dislike of mercury vapor, he placed some of them in test tubes with fillings of different ages. The roaches died in the same order as the age of the fillings. Talbot published his results in the first edition of the Ohio State Journal of Dental Science in 1882, and the data was completely ignored.

So were the slaves in the Roman Mercury Mines two thousand years earlier, but someone knew the truth about what was making them so sick they would die in three years. Maybe not that the colorless, odorless, tasteless mercury vapor was killing them, but that something was cutting their lives short. Dr. Talbot, on the other hand, was a scientist, and knew mercury vapor was poisonous. The only explanation for his being ignored is the same reason over and over again: mercury's usefulness in economic and scientific areas is unparalleled, and there is no cost-effective substitute.

When you chew, much more mercury vapor is produced than what Talbot saw. But the dentists have a point, not everyone in society is sick. OK, the divorce rate is only 50% (could be higher) and Viagra is more popular than the Beatles for the Baby Boomers, and we have kids killing each other and crime and poverty and psychiatric hospitals and tons of police and prisons and….. But wait a minute, we also have science and technology, and that couldn't come about from people being sick.

For the definitive answer, we need to turn to U.S. Patent Number 4859453 granted in 1989. For "A Method of Preventing Mercury Poisoning from Dental Amalgam using a Selenium Toothpaste." Wait a minute. A patent on this, how is this possible? Has no one challenged this patent? After all, when you think a patent is wrong, you challenge it. The dental industry challenged 60 Minutes in 1991 after their show "Is There Poison in Your Mouth?" aired. They fought tooth and nail to avoid informed consent, to avoid telling their patients amalgams contain 50% mercury. They fought to keep amalgam on the market.

After all, the raison d'etre of the American Dental Association (ADA) is amalgam. The ADA was formed after the American Society of Dental Surgeons, who used gold for fillings, banned amalgam in 1845 and lost its members by 1855. The ADA was formed as the "alternative" dental society in 1859 to say amalgam was safe. It fought in 1929 in Washington at a crucial meeting of the Bureau of Standards 3 months before the stock market crash, where Souder and Sweeny said it was safe and all was well. Society itself had a "Great Depression" shortly thereafter, and the ADA sure as hell wasn't about to give in in 1989.

In fact, to understand the ADA, you must understand the following statement: "I am a dentist. I am not a medical doctor who did not want to use mercury, but an entrepreneur.

Tooth Traitors

Mercury in amalgam is Safe and I have used it for 150 years. I will use it to fill your teeth. Mercury amalgam is cost effective and allows me to run a very profitable business, and it is easier to use than gold (or composites). I am your dentist and I know what is good for you. I don't care that the doctors kicked us out of medical school in 1850 over amalgam. No one can prove it is dangerous". This philosophy was first espoused in 1819, and it hasn't stopped yet.

The ADA didn't fight the four Swedish scientists who patented this toothpaste, because it knew there was a chance it would lose. No point in putting the whole profession at risk, when it has managed to sneak under the mercury vapor workplace law through effective lobbying. For you see, in the Patent is the study that answers the whole question about mercury vapor and why some people get sick from it. A mouse was injected with a large amount of mercury and equivalent dose of selenium together, and did not get poisoned. A second mouse was injected with mercury, and an Hour Later given selenium. It died. Too late, the selenium had to be there, standing on guard against the mercury, and to put some in afterwards didn't make a difference. There it is, the whole dirty secret of the past 150 years revealed. Our Selenium levels protect us against mercury poisoning from the low levels given off by dental amalgam.

In conversations with government officials, the following information is readily available: In Ontario, the Ministry of the Environment regulates mercury vapor in the atmosphere and on land, but not in our mouths, as people's bodily cavities are not governed by environmental regulation laws. The Ministry of Labor regulates mercury vapor in factories and other workplaces, but dentists and dental personnel are exempted, and also does not regulate mercury in our mouths because we are patients and not employees. The Ministry of Health regulates every drug product and medical procedure available, but has no regulation on mercury in our mouths.

The Ontario Ministry of Health refers people with questions about amalgam to the Royal College of Dental Surgeons of Ontario, who are self-regulating about what the Health Ministry calls "mercury hygiene". So if you believe your government has the slightest interest in this issue, think again. The dental lobby has been extremely effective in controlling regulation of this issue, to the point that they are exempt from laws and regulations governing every other medical or industrial occupation in Ontario regarding Mercury and Mercury Vapor. This is not a small achievement.

The Ontario Ministry of Health also cites Health Canada about the amalgam issue. Ontario's statement was as follows: Health Canada tells us amalgam is safe, BUT also advises that "Dental Amalgam should not be used in children under 6 years of age, pregnant women, and people with kidney problems." This should be a surprise to anyone reading this article, as there have been no media advisories of this fact in any newspaper, television, or radio segment in recent memory. That statement looks innocent on the surface, but closer examination reveals the following: ANY drug with potential side-effects should not be used in children under 6, pregnant women, and people with kidney

problems. So Health Canada in reality is now classifying mercury dental amalgam fillings as a Drug, with potential side effects. What are the “side-effects” of mercury vapor? Poisoning. Since 90% of Canadians have at least one amalgam filling, should we start to worry about this? You bet.

A quick check of children under six years of age shows many with amalgam fillings. This is because Health Canada’s warning is an “advisory”, and your dentist can still “prescribe” amalgam fillings if he wants to, just like any medical professional can give out a drug with side-effects to any patient. However, the side-effect in the case of amalgam is “poisoning”. Clearly, the regulator and regulatee do no agree. After 150 years of doing whatever they want, dentists do not take kindly to being “advised” what to do. The gross profit margin on an amalgam filling is 97%, as the material costs $1 and the procedure is billed at $150 before salaries and overhead. Not a bad deal for the dentists of this land.

Attempts to sell amalgam in December 1999 as jewelry and toys received this reply from Health Canada:

“Retailers of products are required to ensure that the products that they distribute are safe. Mercury is a known toxic heavy metal that is not only harmful to human health, but also an environmental concern. Therefore, Health Canada would strongly discourage you from importing amalgam products (containing 50% Hg) into Canada. In the past, Health Canada has discouraged other organizations from both importing into Canada and selling other consumer products that contain this toxic heavy metal.”

We will have more to say about this disgraceful reply later.

Mercury levels in amniotic fluid track to the number of amalgams in pregnant women. Mercury is also a known tetrogenic agent. That is, it is known to cause birth defects. This fact alone worries scientists at Health Canada, but as we have seen their “advisories” have a limited effect on dentists.

The Hospital for Sick Children, the Toronto Hospital, Children’s Hospital of Eastern Ontario, The Ottawa General, Women’s College Hospital, Sunnybrook Hospital. These are some of the outstanding hospitals in Ontario. While they have many things in common, one thing you may not know is that they and all the other hospitals in Ontario have signed a Memorandum of Understanding (MOU) to Eliminate Mercury in the Hospital Setting. There are millions of dollars available to purchase non-mercury blood pressure machines and thermometers, non-mercury drugs and reagents, non-mercury fungicides, and eliminate mercury waste. Just the forms to fill out to have mercury-based equipment and chemicals in the hospital requires full-time staff because of regulations by the Ministry of Labor and Environment. The bottom line is this: Mercury is being eliminated in every inch of the hospital today, except in the Patient!

Tooth Traitors

The price of mercury has fallen 95% in real dollars since the 1960s, because it has been banned in batteries, pesticides, and paints. In batteries, mercury caused a warning not to discard these devices in household garbage; today's batteries have little of no mercury in them. In paints, mercury was added to prevent mildew during drying; children were developing mercury poisoning in newly painted rooms so a ban was introduced in the early 1990s. In pesticides, mercury is used as it kills any life-form, so is a wide-spectrum antibiotic; its use has been curtailed because it is too dangerous. There are no more privately owned mercury mines in the world, only government mines, and the major source of mercury supply is from recycling.

Why is all this occurring? Because mercury is the most toxic, non-radioactive substance known to human life. To be more dangerous to life, you must turn to Uranium or Plutonium. This fact has caused tremendous change in Industry and Hospital settings, except for the Dental Office. San Francisco has banned mercury in the City, including amalgam. The smartest people in the world live and work in Silicon Valley outside of San Francisco. Get it?

While all this activity goes on unnoticed in the media, what we do hear is this: We are somehow making Ourselves sick from our poor diet, high stress lives, pollution, from too much TV and endless other faults. It is Our Own Fault that we are sick in record numbers. But recall the Scientific Fact about mercury poisoning: Developing any form of mercury poisoning is based on Selenium levels. Selenium is also a mineral, a metal, and is found only in the food we eat. It cannot be created in the body, so has a Recommended Daily Allowance but only in trace amounts. Too much Selenium is as dangerous as too little, providing the perfect opportunity for low-level mercury vapor to attack the body. These fillings are in our mouths 24 hours a day, 7 days a week, for life, giving off mercury vapor in large amounts every time we chew or brush, or even while we sleep (at lower levels).

What can affect our Selenium levels? Well, processed foods are low in it. Dieting reduces the level. Heavy exercise reduces it. Smoking does. Doesn't this sound familiar? Don't eat processed foods, eat a balanced diet, exercise moderately, don't smoke. This sounds exactly like the recommendations of the American Cancer and Heart Disease societies. Since 250 Million of us in North America alone have at least one amalgam filling (or more accurately, mercury lozenge) in our mouths, there is a potential time bomb waiting to go off. A poor diet, a crash diet, too much exercise, gradually aging, and suddenly! The amounts of mercury chronically given off in your mouth for decades have no corresponding selenium protection in the body.

How many people can possibly be affected by this? Taking the approach that a marketing study would use for a new product, let us assume we are a non-profit agency charged with improving general health by educating the general population, and stimulating the removal of mercury from industry, hospitals, AND people. What would our target market be in this simulation? A quick check of statistics shows that while there are 250 Million

people with amalgams, there are also 130 million North Americans suffering chronic illness in the form of Heart Disease, Mental Illness, Cancer, Stroke, Alzhiemers, Multiple Sclerosis, Diabetes, Chronic Fatigue, Tremors, Arthritis, Birth Defects, etc…. Also, the revenues from pharmaceuticals are higher than the budgets of most third world countries.

Viewed through this angle, more than half of us appear to have the weight of mercury pressing on our lives. Psychological tests done in the 1980s by Dr. Sibelrud of the University of Colorado on 100 University Students showed that the half without amalgams were significantly happier and more stable than the half with amalgams. Other studies by Sibelrud showed amalgam-bearers to smoke 2.5 times as much as non-amalgam subjects (he states smoking works like an anti-depressant), and also showed that blood pressure was higher. But in our super-competitive society, people really don't matter as much as machines and profits. Just think about the last person you know who got sick. Wasn't it "their" fault? Aren't they "costing us too much" in health care support. But mercury can also make you like that, angry and insensitive. It's called Erethrism, a highly charge nervous system that can't calm down.

Health Canada nonetheless granted approval to a request to manufacture jewelry out of amalgam, as we have seen, while begging that it not be done. Now this is nuts, allowing jewelry that is 50% mercury to be sold with no labeling requirements, but it proves the point that unless Specifically Prohibited by Law, you can do or sell anything you want in this country, including poisoning people for profit. And how do you get the law changed? Well, if your children are killed by drunk drivers or young offenders, you lobby the Federal Government. If your children are being poisoned by mercury, you run to your doctor for more pills instead of getting involved. But after reading this, you will write your political representative and tell them to take mercury out of dentistry, right? Right.

There is too much politics involved in mercury fillings. The first Patent on Amalgam was given in 1873. In the decade around this date, Patents were also granted for Pasteurization, the Telephone, the Internal Combustion Engine, the Phonograph, and the Light Bulb. It is part of our history. As more and more persons could afford dental work, with money derived from the productivity given to us by the telephone, light bulb, car etc…, people spent their money at the dentist on amalgam for their teeth. There is nothing wrong with this, except we were not told of the risks. Not everyone gets sick from amalgams, but there is a tremendous risk. In Toxicology, there is the concept of risk assessment in developing various types of poisoning. Everyone does risk assessment unconsciously. When you get up in the morning, you know the risks of crossing the street and going to work. But you Know. With mercury fillings, You Didn't Know because No One Told You.

IN SUMMARY BEFORE WE WIND THIS UP

There is an old saying: Those who do not understand History are doomed to repeat it. In the health field, mercury's ill effects have been known for over 2000 years. The problem

is that while people have known about the dangers of Mercury for this long, they have also for the most part been forced to ignore them because of Mercury's unique properties and low cost. We have been putting it in nearly everyone's teeth who was born between 1850 and 1995 for this reason, while denying to ourselves it is making us sick. Just like every other group of people throughout history who were either too greedy or too far along to stop using Mercury until they were really sick.

Our legacy today is no longer science and technology, but the 130 Million people in North America who are chronically sick and kept alive by technology; this is no way for human beings to live, but we are trapped and can't stop using mercury. Paradoxically, Hospitals are eliminating mercury completely in instruments, laboratories, and fungicides because of all the hazardous control forms they have to fill out for government agencies. There are memorandums of agreement between the Ontario Ministry of the Environment, the EPA, OSHA, Hospitals, and Health Supply Companies that the average person is not aware of that limit mercury in health care everywhere except dentistry. Mercury is being phased out in batteries, pesticides, and paints because it is too toxic. If it is being eliminated in the hospitals, then why not in the patients in the hospitals? People seem to have fewer rights than machines.

The answer can be found in the raison d'etre of the ADA, who will NEVER change their position on amalgam. As medical consumers, it is up to us to protect ourselves from dangerous and questionable practices. If you were a hospital administrator, you would be forced to buy a mercury-free blood pressure meter. But as a dental patient, you may not have been aware of mercury in dental amalgam until now.

Mercury Silver Amalgam Fillings are a tremendous risk for the people of the Western World who can afford modern dental care. The ADA has fought tooth-and-nail to shout down all comers, and claims there is No Risk Involved in amalgam. The risk comes from the fluctuating selenium level in many people, which is the key factor in the development of mercury poisoning from low-level mercury vapor created by chewing with amalgam fillings. No one knows if they will be affected by these fillings, and factors such as age, diet, overall health, and stress are certainly important. Other factors are filling composition, since many fillings on the market with low silver levels release much higher levels of mercury vapor, and exposure to other heavy metals and toxins in the environment. Selenium is the wildcard, and if you have read this entire book then you know the risks.

Health Canada advises Dentists not to use amalgam fillings in children under the age of 6, pregnant women, and people with kidney problems. Come to think of it, ANY DRUG has this warning. So amalgam is a DRUG. Why use it at all if this is the case? To have this warning, a product must have dangerous side effects, but there has been little publicity about this issue. The American and Canadian Dental Associations are not happy about Health Canada's warning, as they have been used to self-regulation for over 150 years and will not stop using amalgam. There are still many children in Canada under the

age of 6 who are receiving amalgam fillings, because this is an Advisory. This is clearly a war, with consumers caught in the middle and not knowing whom to believe. We know this: a dentist is not a doctor, and a doctor doesn't know what mercury poisoning looks like, so the end of this war is not in sight for some time.

To summarize, amalgam fillings are a tremendous risk that are not needed anymore, and you should have your fillings removed and replaced with composites over the next few years. If you are feeling sick (or have no energy) and cannot find a cause for your condition, have your fillings taken out faster, but only go to a qualified dentist who uses a rubber dam and gas masks. If you have a disease (as opposed to feeling sick), removing amalgams may help, but it is probably too late. If your troubles are primarily psychiatric in nature (depression, anxiety, chronic fatigue) your best bet is to have your fillings removed.

Amalgam use is dropping, but not because of dentists. With fluoride added to our water supply, fewer and fewer children are having large amounts of cavities. Fluoride was discovered to protect teeth in miner's children in Colorado early in this century, where tooth decay became non-existent and the water was found to have high fluoride levels. The invention of composite fillings was driven by cosmetic reasons, and many dentists still refuse to place them as they are harder to work with and more expensive than amalgam. There were still 110 Million amalgam fillings placed last year in North America, so while it appears that amalgams are being phased out, they will still be used for decades to come.

There have never been any clinical trials comparing amalgam removals to drug therapy, and it appears there will never be as long as powerful financial and medical interests continue to make tremendous amounts of money from "conventional" medical care, which is designed to mask symptoms of illness. Amalgam removals allow the healing power of the human body to take over and health can be restored naturally, usually after about a year due to the 70 day half-life of mercury in the body. (Every 70 days the level of mercury in the body is reduced by half if you are amalgam-free.) But freedom of choice in this area is under attack as it is "unethical" for ADA and CDA dentists to remove amalgams for health reasons.

Taking mercury out of a hospital or a battery is applauded by governments and environmentalists, but dentists are unethical for removing it from your mouth; go figure. What a bunch of *$#*%#@ dentists are, when you really look at the big picture. Your tax dollars are spent by environment groups to remove mercury from everywhere, and the dentists put it in you. Like I said, what a bunch of Greedy *#$#%*#$(..**

On their website (www.tekran.com), Tekran (Toronto, Ont.) has published mercury level background monitoring results from tradeshows where they sell their ultra-sensitive mercury measurement equipment. During coffee breaks, the background mercury level in

the room Doubles from 8 part-per-million to 16 ppm. This is due to the emissions of mercury from amalgam fillings caused by hot coffee stimulating release of mercury vapor. The room level returns to normal after 30 minutes. Persons blowing into the machine have readings of 500 ppm from their breath, which is low because the sample is done every 5 minutes and people blow for only 5-10 seconds on average. Many people have left their business cards after taking the breath test. These are people from the EPA, Ministry of Environment, Occupational Health and Safety Administration, Universities, Hospitals, and more. Remember how long it took to get smoking recognized as a health hazard?

With all these experts, how many of them do you think would have a career if they even thought about saying “Amalgam is Bad”? It is up to the citizens of this country to make this change happen, as even the professionals are too afraid to say anything even when the evidence is right in front of them.

And the reason I did the research for this paper, more than any other: don’t let your children have amalgam fillings. Don’t expose them to the risk. Our future depends on them.

FINAL CONCLUSION

Amalgam fillings release mercury vapor, which can be measured in the mouth. After chewing, this level is often 3X or more higher than the occupational safety limit. It took a team of doctors 11 months to diagnose mercury poisoning in hundreds of people with overt symptoms in Minimata, Japan in the 1950s. Western doctors are unfamiliar with the disease and cannot diagnose micromercurialism, especially over a long exposure.

The American Dental Association denied for almost 100 years that fillings released mercury vapor. The ADA has now revised that statement and says that the levels are too low to make anyone sick. They also state that there is no scientific proof that removing amalgams will make anyone better. But if you are sick and remove your amalgams and get better, that is called non-scientific by scientists. In 1882, Doctor Talbot proved that mercury escapes from fillings and is hostile to animal and plant life. This was published in the Ohio State Journal of Dental Science, so the ADA is liable for their denials and cover-ups.

Why is removal of fillings and subsequent recoveries called non-scientific? One reason is that the ADA fears bankruptcy from their estimated $5 Trillion liability for harm done by amalgam and replacement costs for composites.

Anyone can make jewelry out of amalgam and sell it. Children were poisoned by lead jewelry this way a few years back, and no one went to jail for it. But Health Canada warns that “Importing Mercury is strongly discouraged for making jewelry, as it is a toxic

heavy metal and should not be brought in Canada for this purpose". Enough said, can you spell "double standard?".

As fewer and fewer people are dying from natural causes, society has turned to natural healing and away from conventional medicine, which is unequipped to deal with low level, chronic mercury poisoning. But only amalgam removals will cure the widespread symptoms and illnesses caused by this poison. In summary, as consumers we have to protect ourselves!

Just think about this. Would a dentist put an amalgam filling in themselves? A simple question, but do you want to know the real answer? Of course they don't put amalgams in their own mouths, dentists use gold or recently composites (since the 1960s even though the rest of us didn't get composites until the 1990s). Just ask your dentist what type of filling they have, when you see the answer RUN to a mercury-free dentist immediately!

Consider going to your dentist and having your amalgam fillings replaced, safely. Only a properly trained dentist can prevent you from being poisoned by mercury vapor during amalgam removal. There are risks in any dental work, but in this case the benefits should far outweigh the risk. Under no circumstances should you allow your children to have amalgams. Publicize this issue to your friends and neighbors. Reclaim our society from the mad scientists who live off our labors and laugh at those who are suffering.

Bibliography

(1) Operative Dentistry, W. McGehee D.D.S., M.D. P. Blackiston's & Co.
Philadelphia. 1935
(2) Instability of Amalgams, Ulf Bengtsson, 1996
(3) Operative Dentistry, W. McGehee D.D.S., M.D. P. Blackiston's & Co.
Philadelphia. 1935
(4) Operative Dentistry, M. Ward, D.D.S. Lea and Febiger, Philadelphia, 1940
(5) Operative Dentistry, W. McGehee D.D.S., M.D. P. Blackiston's & Co.
Philadelphia. 1935
(6) ibid
(7) Operative Dentistry, M. Ward, D.D.S. Lea and Febiger, Philadelphia, 1940
(8) ibid
(9) Operative Dentistry, W. McGehee D.D.S., M.D. P. Blackiston's & Co.
Philadelphia. 1935

(10) Ohio State Journal of Dental Science 2(1):1-12 Jan 1, 1882 The chemistry and
physiological action of mercury as used in amalgam fillings. ES Talbot.
(11) Siblerud R.L (1989): The relationship between mercury from dental amalgam and
mental health Am J Psychother XLIII:575-587.
(12) Canadians for Mercury Relief
(13) Shorter, E. (1992) From Paralysis to Fatigue. Macmillan. 419 pages.

Appendix A

Occupations Safety Guidelines for Mercury Exposure.

OSHA Chemical Sampling Information

NAME : Mercury (Vapor) (as Hg)

SYNONYM : Quicksilver; Mercury, Inorganic (as Hg) prior to 9/1/89

IMIS : 1631

CAS : 7439-97-6

NIOSH : RTECS OV4550000

DOT : 2024 53; 2025 53; 2809 60

DESCRIPTION :

Silvery, mobile, odorless liquid.
MW: 201
BP: 674 F
VP: 0.0012 mm
MP: -38 F

Exposure Limits

OSHA GENERAL INDUSTRY STANDARD : 0.1 mg/m3 TWA (Z-2) (see Directive CPL 2-2.6)

OSHA CONSTRUCTION STANDARD : 0.1 mg/m3 TWA (Skin)

Tooth Traitors

THRESHOLD LIMIT VALUE : 0.025 mg/m3 TWA (Skin) Appendix A4 (Not Classifiable as
a HumanCarcinogen)

RECOMMENDED EXPOSURE LIMIT : 0.05 mg/m3 TWA (Skin)

Health Factors

SYMPTOM : Coughing, dyspnea, chest pain, bronchitis pneumonitis; tremors;insomnia; irritability, indecision; headaches; fatigue, weakness;stomatitis; salivation; GI disturbances, anorexia, low-weight;proteinuria; eye, skin irritation

HEALTH EFFECTS : Acute and Cumulative CNS damage (HE7)Gastrointestinal effects/Gingivitis (HE3)

ORGAN : Skin, respiratory system, CNS, kidneys, eyes

Monitoring

SLC1 :

MEDIA: Hydrar or Hopcalite tube (200 mg) SKC brand with a. prefilter/cassette
MAX V: 96 Liters MIN V: 3 Liters MAX F: 0.2 L/min (TWA)
ANL 1: Atomic Absorption Spectroscopy; AAS/Cold vapor.
REF: 2 (OSHA ID-140)
SAE: 0.16
CLASS: Fully Validated
NOTE: A prefilter, consisting of a mixed cellulose ester filter in apolystyrene
cassette, is used with the active sampler. The prefilter assembly should be
connected to the sampling tube with theminimum amount of Tygon tubing necessary. The filter of the samplerwill be analyzed separately and reported as
(Aryl and Inorganic)(as Hg) IMIS Code M111 based on the collection of particulateMercury. The Hydrar or Hopcalite sorbent material will be analyzedand reported as Mercury (Vapor) (as Hg) IMIS Code 1631. Thesetwo
results could then be combined to evaluate the transitional limitof TWA total
Mercury, 1 mg/10m3, (Vapor and particulate). MEDIA: Passive Dosimeter (SKC)
SAMPLING TIME: 240 to 480 minutes (TWA)
ANL 1: Atomic Absorption Spectroscopy; AAS/Cold vapor.
REF: 2 (OSHA ID-140)
SAE: 0.16
CLASS: Fully Validated

SECONDARY SAMPLING/ANALYTICAL METHOD (SAM2) :

Tooth Traitors

```
DEVICE: Instrumentation COMPANY: Arizona Instruments
PART #: Jerome Analyzer RANGE: 0-0.5 mg/m3
CLASS: Mfg DEVICE: Instrumentation COMPANY: Bacharach
PART #: Model MV-2 RANGE: 0-1.0 mg/m3
CLASS: Mfg DEVICE: Detector Tube COMPANY: MSA
PART #: 83089 RANGE: 0.05-2.0 mg/m3
CLASS: Mfg DEVICE: Detector Tube COMPANY: Kitagawa
PART #: 142S RANGE: 0.1-10 mg/m3
CLASS: Mfg DEVICE: Detector Tube COMPANY: Draeger
PART #: CH 23101 RANGE: 0.1-2 mg/m3
CLASS: Mfg DEVICE: Detector Tube COMPANY: Sensidyne
PART #: 40 RANGE: 0.05-13.2 mg/m3
CLASS: Mfg
```

Appendix B

Regulations of Ontario

OCCUPATIONAL HEALTH AND SAFETY ACT

DESIGNATED SUBSTANCE-MERCURY R.R.O. 1990, Reg. 844

DESIGNATED SUBSTANCE-MERCURY R.R.O. 1990, Reg. 844

Revised Regulations of Ontario, 1990, REGULATION 844

Amended to O. Reg. 520/92

This is the English version of a bilingual regulation.

1.

1. In this Regulation,

"joint health and safety committee" includes a joint health and safety committee established under section 9 of the Act, a committee of like nature and the workers or their representatives who participate in an arrangement, program or system conforming to subsection 9 (4) of the Act; ("comit mixte sur la sant et la sécurité")

Tooth Traitors

"mercury" means elemental mercury, inorganic compounds of mercury and organic compounds of mercury. ("mercure") R.R.O. 1990, Reg. 844, s. 1. 2.

2. Mercury is prescribed as a designated substance. R.R.O. 1990, Reg. 844, s. 2.

3.(1)

3. 3.(1) Subject to subsection (3), this Regulation applies to every employer and worker at a workplace where mercury is present, produced, processed, used, handled or stored and at which the worker is likely to inhale, ingest or absorb mercury.

3.(2)

3.(2) Subject to subsection (3), an employer to whom this Regulation applies shall take every precaution reasonable in the circumstances to ensure that every worker who is not an employee of the employer but who is working in the workplace of the employer and is exposed to mercury and whose health is likely to be affected thereby is protected and the worker shall comply with the requirements of the employer.

3.(3)

3.(3) Subsection (2) and sections 4 to 17 of this Regulation do not apply to,

(a)a constructor, an employer who is carrying out a project or a worker working on or at a project *(AUTHOR'S NOTE: As they work in the open air, construction workers are exempt from most Ontario Chemical regulations. Dentists work in a closed environment, which makes the next paragraph such an outrageous exemption. The only conclusion that can be drawn is that dentists and construction workers have something in common!)*; or

(b)an employer who is engaged in the practice of dentistry as defined in the Health Disciplines Act or a worker who works in the office of such an employer. R.R.O. 1990, Reg. 844, s. 3.

4.(1)

4.

4.(1) Every employer shall take all necessary measures and procedures by means of engineering controls, work practices and hygiene practices and facilities to ensure that the time-weighted average exposure of a worker to airborne mercury, except alkyl mercury compounds, shall not exceed 0.05 milligrams mercury per cubic metre of air, and in the case of exposure to alkyl mercury compounds 0.01 milligrams mercury per cubic metre of air.

Tooth Traitors

4.(2)

4.(2) Despite subsection (1), an employer shall ensure that the maximum concentration of exposure to airborne mercury shall not exceed 0.03 milligrams mercury per cubic metre of air in the case of alkyl mercury compounds and 0.15 milligrams mercury per cubic metre of air in the case of mercury other than alkyl mercury compounds provided that the exposure of a worker to such maximum concentration,

(a)shall not exceed fifteen minutes at any one time;

(b)shall not occur more than four times in a work day; and

(c)shall not occur until at least sixty minutes have elapsed from the time of the last previous exposure to such concentration.

4.(3)

4.(3) Subject to section 5, every employer shall comply with subsections (1) and (2) without requiring a worker to wear and use respiratory equipment.

4.(4)

4.(4) The time-weighted average exposure of a worker to airborne mercury shall be calculated in accordance with the Schedule and the result of the calculation of the exposure may be certified by an inspector.

4.(5)

4.(5) Every worker shall work in compliance with the work practices and hygiene practices in accordance with the provisions of the mercury control program.

4.(6)

4.(6) On a prosecution for a failure to comply with subsection (1), it shall be a defence for an employer to prove that the employer has complied with subsection (1) and that a breach of subsection (1) occurred solely because a worker failed to work in compliance with the work practices and hygiene practices in accordance with the provisions of the mercury control program and the employer has taken every precaution reasonable in the circumstances to require the worker to do so. R.R.O. 1990, Reg. 844, s. 4.

5.(1)

Tooth Traitors

5. 5.(1) Where the strict duty imposed by subsection 4 (1) or (2) cannot be complied with because,

(a)an emergency exists; or

(b)the measures and procedures necessary to control the exposure of a worker to airborne mercury,

(i)do not exist or are unavailable,

(ii)are not reasonable or practical for the length of time or frequency of exposure or the nature of the process, operation or work, or

(iii)are not effective because of a temporary breakdown of equipment, the employer shall provide a worker with respiratory equipment which shall be used by the worker.

5.(2)

5.(2) Where respiratory equipment is provided by an employer and used by a worker, the respiratory equipment shall be appropriate in the circumstances for the type and the concentration of airborne mercury and shall meet or exceed the requirements set out in the Code for Respiratory Equipment for Mercury dated the 16th day of November, 1981, and issued by the Ministry.

5.(3)

5.(3) The employer shall provide training and instruction to a worker in the proper care and use of respiratory equipment provided by the employer. R.R.O. 1990, Reg. 844, s. 5.

6.(1)

6. 6.(1) Every employer to whom this Regulation applies shall cause an assessment to be made in writing of the exposure or likelihood of exposure in a workplace of a worker to the inhalation, ingestion or absorption of mercury.

6.(2)

6.(2) In causing the assessment to be made, the employer shall consider and take into account such matters as,

(a)the methods and procedures used or to be used in the processing, use, handling or storage of mercury;

(b)the extent and potential extent of the exposure of a worker to the inhalation, ingestion or absorption of mercury; and

(c)the measures and procedures necessary to control such exposure by means of engineering controls, work practices and hygiene practices and facilities.

6.(3)

6.(3) In causing the assessment to be made, the employer shall consult thereon with the joint health and safety committee and the committee may make recommendations with respect to the assessment.

6.(4)

6.(4) A copy of the assessment made by an employer shall be given by the employer to each member of the joint health and safety committee. R.R.O. 1990, Reg. 844, s. 6.

7.(1)

7.

7.(1) Where the assessment discloses or would, if made in conformity with section 6, disclose that a worker is likely to inhale, ingest or absorb mercury and that the health of the worker may be affected thereby, the employer shall develop, establish, put into effect and maintain measures and procedures to control the exposure of the worker to mercury and shall incorporate the same into a mercury control program.

7.(2)

7.(2) The mercury control program shall include provisions for,

(a)engineering controls, work practices and hygiene practices and facilities to control the exposure of a worker to mercury;

(b)methods and procedures to monitor the concentrations of airborne mercury in the workplace and the exposure of a worker thereto;

(c)personal records of the exposure of a worker to mercury at the workplace including the time-weighted average exposure of the worker and of the concentrations of mercury and the times in which such concentrations were taken to be representative of the exposure of the worker and used in calculating the average exposure to be maintained by the employer;

(d)medical examinations and clinical tests of a worker; and

(e)records of medical examinations and clinical tests of a worker to be maintained by a physician who has examined the worker or under whose direction the examinations and tests have been performed.

7.(3)

7.(3) In developing the measures and procedures mentioned in subsection (1) and the mercury control program, the employer shall consult with the joint health and safety committee and the committee may make recommendations with respect to the same. R.R.O. 1990, Reg. 844, s. 7.

8.

8. Where a change is made in a process involving mercury, or in the methods and procedures in the use, handling or storage of mercury and the change could result in a significant difference in the exposure of a worker to the inhalation, ingestion or absorption of mercury, the employer shall cause a further assessment to be made forthwith and the provisions of sections 6 and 7 apply to the further assessment. R.R.O. 1990, Reg. 844, s. 8.

9.(1)

9.

9.(1) Where disputes arise between an employer and a joint health and safety committee, as to an assessment required under section 6 or 8 or as to the measures and procedures mentioned in subsection 7 (1) or the mercury control program or its provisions required under section 7 or 8, the employer, a member of the joint health and safety committee or the committee may notify an inspector thereof who shall investigate and give a decision in writing to the employer, the member or committee.

9.(2)

9.(2) Nothing in subsection (1) applies so as to affect the power of an inspector to issue an order for a contravention of this Regulation. R.R.O. 1990, Reg. 844, s. 9.

10.(1)

10.

10.(1) A copy of the mercury control program put into effect by the employer shall be given by the employer to each member of the joint health and safety committee and the employer shall acquaint every worker affected by the mercury control program with its provisions.

10.(2)

10.(2) A copy of the mercury control program put into effect by the employer shall be made available by the employer in English and in the majority language of the workplace. R.R.O. 1990, Reg. 844, s. 10.

11.

11. Subject to section 17, the procedures for monitoring, sampling and determining the concentrations of airborne mercury in the atmosphere of a workplace and the exposure of a worker thereto shall be those set out in the Code for Measuring Airborne Mercury dated the 16th day of November, 1981, and issued by the Ministry. R.R.O. 1990, Reg. 844, s. 11.

12.

12. The results of monitoring the concentrations of airborne mercury in the workplace and the exposure of a worker thereto as provided by the mercury control program shall be,

(a)posted forthwith by the employer as soon as the results are available, in a conspicuous place or places at the workplace where they are most likely to come to the attention of the workers affected thereby, for a period of at least fourteen days;

(b)furnished to the joint health and safety committee; and

(c)kept by the employer for a period of at least five years. R.R.O. 1990, Reg. 844, s. 12.

13.(1)

13. 13.(1) A worker shall, at the expense of the employer, undergo the medical examinations and clinical tests required under the mercury control program.

13.(2)

13.(2) The medical examinations and clinical tests required under the mercury control program shall make provisions for,

(a)pre-employment and pre-placement medical examinations to include,

(i)a medical history,

(ii)a physical examination, and

(iii)clinical tests including analysis of blood or urine or both as required by the examining physician; and

(b)periodic medical examinations and clinical tests consisting of the items prescribed by clause (a).

13.(3)

13.(3) Subject to section 17, the concentration of mercury in the blood or urine of a worker shall be determined in accordance with the Code for Determination of Mercury in Blood and Urine dated the 16th day of November, 1981, and issued by the Ministry.

13.(4)

13.(4) The medical history, physical examination and clinical tests shall meet the provisions of the Code for Medical Surveillance for Mercury dated the 16th day of November, 1981, and issued by the Ministry. R.R.O. 1990, Reg. 844, s. 13.

14.(1)

14. 14.(1) The records of the exposures of each worker to airborne mercury at the workplace to be maintained as provided by the mercury control program shall identify the worker, including his or her date of birth, his or her jobs or occupations at the workplace, the results of monitoring for exposure to airborne mercury in his or her work area and the use by the worker of respiratory equipment and its type.

14.(2)

14.(2) The employer shall provide a copy of the records of the exposures of the worker to airborne mercury as provided by the mercury control program to the physician who examines the worker and under whose supervision the clinical tests of the worker are performed. R.R.O. 1990, Reg. 844, s. 14.

15.(1)

15. 15.(1) The records of medical examinations and clinical tests of a worker obtained and made under this Regulation and of the exposures of the worker to airborne mercury

furnished by the employer under subsection 14 (2) shall be kept in a secure place by the physician who has conducted the examinations and tests or under whose supervision the examinations and tests have been made for the longer of,

(a)the period of forty years from the time such records were first made;

(b)the period of twenty years from the time the last of such records were made. R.R.O. 1990, Reg. 844, s. 15 (1).

15.(2)

15.(2) Where the physician is no longer able or willing to keep the records, the records shall be forwarded to the Provincial Physician, Ministry of Labour, or to a physician designated by the Provincial Physician and the provisions of subsection (1) shall, with necessary modifications, apply thereto. R.R.O. 1990, Reg. 844, s. 15 (2); O. Reg. 520/92, s. 1.

16.(1)

16. 16.(1) The physician conducting the physical examination or clinical tests or under whose supervision the examination or tests are made shall advise the employer, who shall act thereon, and the worker whether the worker is fit or because of a condition resulting from the inhalation, ingestion or absorption of mercury is fit with limitations or unfit, without giving or disclosing to the employer the records or results of the examination or tests, and in advising that the worker is fit with limitations or unfit, the physician shall be governed by the provisions of the Code for Medical Surveillance for Mercury referred to in subsection 13 (4).

16.(2)

16.(2) Where a worker is removed from exposure to mercury because a physical examination or clinical test discloses that the worker may have or has a condition resulting from the inhalation, ingestion or absorption of mercury and suffers a loss of earnings occasioned thereby, the worker is entitled to compensation for the loss in the manner and to the extent provided by the Workers' Compensation Act.

16.(3)

16.(3) Upon receiving the report of the analysis of a sample of urine or blood taken under the mercury control program, the physician shall advise in writing upon a confidential basis the joint health and safety committee of the concentration of mercury in the urine or blood of a worker and in giving such advice shall indicate his or her opinion as to the interpretation to be placed thereon.

Tooth Traitors

16.(4)

16.(4) Copies of the exposure records and the records and results of physical examinations and clinical tests of a worker shall be given by the physician conducting the examinations or tests,

(a)to the worker or the worker's physician upon a request in writing of the worker; and

(b)in the case of a deceased worker, to the next of kin or personal representative of the worker, upon the request in writing of such next of kin or personal representative, and any authorization of another person by the worker or the worker's next of kin or personal representative is of no effect. R.R.O. 1990, Reg. 844, s. 16 (1-4).

16.(5)

16.(5) Where the physician advises the employer that a worker, because of a condition resulting from exposure to mercury, is fit with limitations or is unfit, the physician shall forthwith commmunicate such advice to the Provincial Physician, Ministry of Labour. R.R.O. 1990, Reg. 844, s. 16 (5); O. Reg. 520/92, s. 2.

17.

17. For the purposes of this Regulation, the methods and procedures that may be used or adopted may vary from the Codes issued by the Ministry if the protection afforded thereby or the factors of accuracy and precision used or adopted are equal to or exceed the protection or the factors of accuracy and precision in the Codes issued by the Ministry. R.R.O. 1990, Reg. 844, s. 17.

SCHEDULE

The time-weighted average exposure of a worker to airborne mercury shall be calculated for a forty-hour week and an eight-hour day as follows:

1.The average concentrations of mercury to which a worker is exposed shall be determined from analyses of air samples representative of the exposure of the worker to mercury during work operations as set out in the Code mentioned in section 11.

2.The results of the analyses are the concentrations expressed as elemental mercury in milligrams per cubic metre of air.

3.The concentrations shall be multiplied by the time in hours to which the worker is taken to be exposed to such concentrations.

4.The weekly exposure shall be calculated as follows: C1T1 + C2T2 +...+ CnTn = cumulative weekly exposure, where C1 is the concentration found in an air sample and T1 is the total time in hours to which the worker is taken to be exposed to concentration C1 in a week.

5.The weekly time-weighted average exposure shall be calculated by dividing the cumulative weekly exposure by 40.

6.The daily exposure shall be calculated as follows: C1T1 + C2T2 +...+ CnTn = cumulative daily exposure, where C1 is the concentration found in an air sample and T1 is the total time in hours to which the worker is taken to be exposed to concentration C1 in a day.

7.The daily time-weighted average exposure shall be calculated by dividing the cumulative daily exposure by 8.

R.R.O. 1990, Reg. 844, Sched.

Appendix C: **Health Questionnaire**