9-20-11 R-16

Testimony by David Kennedy DDS in favor or mercury prohibitions
Long Beach City Council 9/20/2011

Central Contra Costa Sanitary District www.CentralSan.org

Claim: The mercury in amalgam isn't like other mercury and can't be converted as easily to a toxic form, so why control the mercury from dentists?

A: After mercury enters the District treatment plant with sewage, it settles out in the biosolids that are then incinerated. This process converts almost all the mercury to bio-available forms that are removed from the flue gas by wet scrubbers. This scrubber water is then recycled back into the sewage treatment process. As a result, by the time the mercury is discharged to Suisun Strait from the treatment plant, most of it is available to be converted by bacteria in the aquatic environment into a toxic form. This cycle is why it's better to remove as much mercury as possible before it becomes mixed with sewage in the sanitary sewer.

Q: Why doesn't the District just treat the scrubber water or effluent, given the current influent mercury and the anticipated permit limit?

Answer: According to studies by the Sanitation District of Los Angeles County and ADVENT, the estimated cost of removing mercury from wastewater would be $1.90 annually for every gallon per day of flow. The average flow of the District's treatment plant is over 45 million gallons per day, which translates to almost **$90 million per year**—about four times the current operating cost of the treatment plant.

What the Dentists in favor of mercury will say:

1. Amalgam is not mercury
    a. Not true
    b. See Central Contra Costa Sanitary District above
2. Poor children need cheap mercury fillings (fear mongering)
    a. Not True
    b. Not taught in Japan
    c. Not allowed in Sweden, Norway, Denmark
    d. Not used in Germany children and many others
    e. Not even recommended by the amalgam manufacturers
3. The bay is polluted anyway so why worry (bandwagoning)

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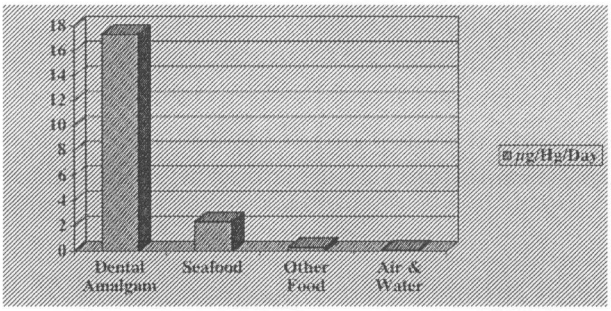
USC Clinical Associate Professor David Eggleston, and LA County Chief Medical Examiner-Coroner Dr. Kornblum, et al., J Prosthetic Dentistry 58:704-7, 1987

Correlation of dental amalgam with mercury in brain tissue

In this study, as part of routine autopsy procedures at the LA County Coroner's Office dental examinations were performed and specimens of brain and kidney were measured for mercury. Data from this project demonstrate a positive correlation between the number of occlusal surfaces of dental amalgam and mercury levels in the brain. Graph from WHO Criteria document 118



Role of Mercury Toxicity in Hypertension, Cardiovascular Disease, and Stroke

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Mercury has a high affinity for sulfhydryl groups, inactivating numerous enzymatic reactions, amino acids, and sulfur-containing antioxidants (N-acetyl-L-cysteine, alpha-lipoic acid, L-glutathione), with subsequent decreased oxidant defense and increased oxidative stress. Mercury binds to metallothionein and substitute for zinc, copper, and other trace metals, reducing the effectiveness of metalloenzymes. Mercury induces mitochondrial dysfunction with reduction in adenosine triphosphate, depletion of glutathione, and increased lipid peroxidation. Increased oxidative stress and reduced oxidative defense are common. Selenium and fish containing omega-3 fatty acids antagonize mercury toxicity. The overall vascular effects of mercury include increased oxidative stress and inflammation, reduced oxidative defense, thrombosis, vascular smooth muscle dysfunction, endothelial dysfunction, dyslipidemia, and immune and mitochondrial dysfunction. The clinical consequences of mercury toxicity include hypertension, coronary heart disease, myocardial infarction, cardiac arrhythmias, reduced heart rate variability, increased tid intima-media thickness and carotid artery obstru cerebrovascular accident, generalized atherosclerosis renal dysfunction, insufficiency, and proteinuria. Path cal, biochemical, and functional medicine correlatior significant and logical. Mercury diminishes the prot effect of fish and omega-3 fatty acids. Mercury inact catecholaminei-0-methyl transferase, which incr serum and urinary epinephrine, norepinephrine, and mine. This effect will increase blood pressure and m a clinical clue to mercury-induced heavy metal to Mercury toxicity should be evaluated in any patient hypertension, coronary heart disease, cerebral vas disease, cerebrovascular accident, or other vas disease. Specific testing for acute and chronic toxicit total body burden using hair, toenail, urine, and s should be performed. *J Clin Hypertens (Green* 2011;13:621–627. ©2011 Wiley Periodicals, Inc.