

Environmental Impacts of Dental Amalgam

1. Mercury is a potent neurotoxin that bioaccumulates in the human body and in the environment.
2. Dentists are the third largest user of refined mercury in the country, using an estimated 34 tons or more of mercury per year.
3. The World Health Organization Policy Paper of August 2005 reports, "Recent studies suggest that mercury may have no threshold below which adverse effects do not occur." The report lists dental amalgam as the largest contributor of mercury exposure to humans.
4. The National Academy of Sciences reported in 2001 that mercury vapor from dental amalgam is the primary source of elemental mercury exposure in the US.
5. The US Agency of Toxic Substances and Disease Registry reports that dental amalgams constantly vaporize and the vapors are inhaled into the body and distributed by the bloodstream to vital organs. The mercury from amalgam can pass through the placenta of pregnant women and through the milk of lactating women, increasing health risks to infants.
6. The US Environmental Protection Agency regulates dental amalgam as a toxic substance before dental insertion and as a hazardous waste upon removal.
7. There is mounting juried/published scientific research that bioaccumulated mercury within the human body contributes to heart disease, Alzheimers, Autism, neurological disease, gastro-intestinal and reproductive diseases as well as permanently damaging the kidneys, liver, brain and virtually all other cells.
8. US Representative Dan Burton (IN) chaired Health & Welfare Sub-committee hearings on mercury for 4 years. The findings resulted in a call for the removal of mercury from health/dental products. Representatives Burton, Watson (CA) and Michaud (ME) have again introduced a bill in 2005 (H4011) toward this goal.
9. "The Association of Metropolitan Sewerage Agencies (AMSA) reports that mercury levels in household wastewater are sufficiently high to pose Clean Water Act compliance problems for the nation's wastewater treatment plants. Although several sources contributing to the domestic mercury concentrations have been identified, human wastes (feces and urine) from individuals with dental amalgam fillings are believed to be the most significant source — greater than 80 percent. "
10. Mercury cannot be adequately filtered at wastewater plants and re-enters the environment as water leaching into freshwater supplies, as sludge spread on agricultural fields, or is sent to public landfills or trash incinerators. In June 2004, Stericycle of NC received its 6th fine when it was found to be emitting over 12.9 times the allowable amount of mercury, which they attributed to dental mercury waste.
11. According to the US Naval Dental Research Institute, discharged mercury from dental amalgam can methylate and become bioavailable as methylmercury, contaminating ecosystems and moving up the food chain.
12. Following an extensive study, in 2004, the Swedish Chemicals Inspectorate in a report to the Swedish Government concluded that there were now adequate alternatives to dental amalgam (50% mercury) so that its use was no longer justified. The resulting ban on mercury amalgam stated as a reason, "one of our largest sources of mercury in the environment can be eliminated." Other countries that limit the use of mercury amalgam include Canada, Norway, Great Britain, France, Austria and Switzerland.

13. Cremation is chosen in over 30% of deaths with that figure rising. With the rise of cremation as a choice, reducing human body burdens of mercury is important as mercury is released into the air during the cremation process. The problem of mercury emissions from cremation in Europe, where it is the primary choice, has become so severe that some UK crematoriums are being closed to reduce emissions, and in Sweden they are moving to a freeze-dry process to more easily remove toxic metals, mostly from dental restoratives.
14. In 1999, the Hospital Associations voluntarily began work toward elimination of mercury waste by 2005. As more industries work to reduce mercury emissions, the percentage of mercury pollution arising from dental practice increases greatly.
15. The $\frac{1}{2}$ gram of mercury found in an average dental filling is enough to contaminate a 10 acre lake.