

FACT SHEET ON HUMAN HEALTH RISKS FROM DENTAL AMALGAM MERCURY FILLINGS

Prepared by the International Academy of Oral Medicine and Toxicology
(IAOMT, www.iaomt.org)



“Adverse health effects from mercury exposure can be: tremors, impaired vision and hearing, paralysis, insomnia, emotional instability, developmental deficits during fetal development, and attention deficit and developmental delays during childhood.

Recent studies suggest that mercury may have no threshold below which some adverse effects do not occur.”¹

—World Health Organization Policy Paper, 2005



All silver-colored fillings are dental amalgams, and each and every one of these fillings is comprised of 45%-55% mercury.² Although a number of other countries have banned or limited their use, dental mercury amalgams are currently used on about 45% of direct dental restorations worldwide,³ including in the USA.⁴

Mercury is continuously emitted from amalgam fillings, and it is absorbed and retained in the body, particularly in the brain, kidney, liver, lung, and gastrointestinal tract.⁵ The output of mercury can be intensified by the number of fillings and other activities, such as chewing, teeth-grinding, and the consumption of hot liquids.⁶ Mercury is also known to be released during the placement, replacement, and removal of dental mercury amalgam fillings.⁷

Scientific studies have documented the potential risks these fillings pose to human health:

1) The General Population: Mercury in amalgam fillings has been scientifically linked to a number of health conditions. Individual response to mercury varies, and some of the factors known to potentially impact those exposed to mercury include their allergies, diet, gender, genetic predispositions to adverse reactions from mercury, the number of amalgam fillings in the mouth, and concurrent or previous exposures to other toxic chemicals such as lead (Pb). Scientific studies have identified dental mercury as a potentially causal or exacerbating factor in the conditions included on the table to the right. →

Allergies	Alzheimer's disease	Amyotrophic lateral sclerosis (Lou Gehrig's disease)	Antibiotic resistance	Autism spectrum disorders
Autoimmune disorders/ immunodeficiency	Cardiovascular problems	Chronic fatigue, fatigue, myalgic encephalomyelitis/ chronic fatigue syndrome	Complaints of unclear causation	Dermatitis
Fibromyalgia	Gastrointestinal issues and/or irritable bowel syndrome	Hearing loss	Kidney disease	Multiple sclerosis
Oral lichenoid reaction and oral lichen planus	Orofacial granulomatosis	Parkinson's disease	Periodontal disease	Psychological issues such as depression and anxiety
Reproductive dysfunction	Suicidal ideations	Symptoms of chronic mercury poisoning	Systemic lupus erythematosus	Thyroiditis

2) Pregnant Women and Children: Scientific studies have documented the devastating impact mercury can have on pregnant women and children, and the number of maternal amalgam fillings has been associated with mercury levels in cord blood; in the placenta; in the kidneys and liver of fetuses; in fetal hair; and in the brain and kidneys of infants; as well as the risk of perinatal death. Additionally, authors of a study from 2011 cautioned: “Changes in dental practices involving amalgam, especially for children, are highly recommended in order to avoid unnecessary exposure to Hg [mercury].”⁸

3) Dentists and Dental Personnel: Researchers have also demonstrated dangers to dental personnel who routinely work with amalgam, and the Norwegian Labour and Welfare Service has officially recognized mercury injury as an occupational disease.

4) Safe Removal of Existing Amalgam Fillings: Whereas “mercury-free” dentists no longer place amalgam fillings and use available alternatives, “mercury-safe” dentists apply special techniques to remove existing amalgam fillings. In fact, the IAOMT has developed rigorous recommendations, known as [the Safe Mercury Amalgam Removal Technique \(SMART\)](#), for removing existing dental mercury amalgam fillings to assist in mitigating the potential negative outcomes of mercury exposure to patients, dental professionals, dental students, office staff, and others.⁹



For more detailed information and a full list of sources, download the IAOMT's “Comprehensive Review of Dental Mercury” by scanning the code to the left or visiting <https://iaomt.org/wp-content/uploads/Comprehensive-Review-Dental-Mercury.pdf>

¹ World Health Organization. Mercury in Health Care [policy paper]. August 2005: 1.

² *Ibid.*

³ Heintze SD, Rousson V. Clinical effectiveness of direct Class II restorations—a meta-analysis. *J Adhes Dent.* 2012; 14(5):407-431.

⁴ Makhija SK, Gordan VV, Gilbert GH, Litaker MS, Rindal DB, Pihlstrom DJ, Gvist V. Dental practice-based research network restorative material: Findings from the characteristics associated with type of practitioner, patient and carious lesion. *J Am Dent Assoc.* 2011; 142: 622-632.

⁵ Many scientific studies support this, but an example from a reputable government agency is Health Canada. *The Safety of Dental Amalgam.* 1996: 4.

⁶ Scientific studies support this fact, but one example of this being reported from a reputable U.S. environmental group is State of Connecticut Department of Environmental Protection. Fillings: the choices you have: mercury amalgam and other filling materials [brochure]. 2006: 3.

⁷ Health Canada. *The Safety of Dental Amalgam.* 1996: 4.

⁸ Al-Saleh I, Al-Sedairi A. Mercury (Hg) burden in children: The impact of dental amalgam. *Sci Total Environ.* 2011; 409(16):3003-3015.

⁹ IAOMT. Safe Removal of Amalgam Fillings. Available from: <https://iaomt.org/safe-removal-amalgam-fillings/>.

Representing a global network of dental, medical, and research professionals with more than 1000 members in over 30 countries, the IAOMT has been researching the damage dental mercury inflicts on the environment and humans since the non-profit organization was created in 1984.

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The IAOMT is an accredited member of the United Nations Environment Programme (UNEP)'s Global Mercury Partnership