

Chicago Declaration to End Dental Industry Mercury Use

Whereas; Dental amalgam is a dental filling material consisting of 50% elemental mercury.¹

Whereas; Mercury is a developmental, neurological, and renal toxin,² as well as a heavy metal and persistent bioaccumulative toxin of global concern.

Whereas; Because of these concerns, 128 countries negotiated a legally binding treaty, the Minamata Convention on Mercury, which entered into force in August 2017.

Whereas; The U.S. government played a major role in the treaty negotiations and became the first country to ratify the Minamata Convention.³

Whereas; The Minamata Convention states that Parties are “Aware of the health concerns, especially in developing countries, resulting from exposure to mercury of vulnerable populations, especially women, children, and, through them, future generations.”⁴

Whereas; The Minamata Convention requires each nation to reduce all incidental and purposeful uses and releases of mercury, including from dental amalgam.⁵

Whereas; During treaty negotiations, the U.S. supported “further consideration of dental amalgam... such that the agreement is able to achieve the phase down, with the goal of eventual phase out.” Furthermore, the United States urged that a number of other obligations could be considered, including “educating patients and parents in order to protect children and fetuses.”⁶

Whereas; In 2015, dentists used between 226 and 322 metric tons of mercury accounting for almost 20% of all global mercury use in products.⁷

Whereas; Dentistry is by far the largest use of mercury in the U.S., accounting for between 35% and 57% of all domestic mercury used in 2010.⁸

Whereas; Dental amalgam pollutes the environment’s air, water and soil⁹ through an estimated 28.5 metric tons of dental mercury released from cremation, sewage treatment, and other pathways.¹⁰

Whereas; Once dental amalgam enters the environment, “certain microorganisms can change elemental mercury into methylmercury, a highly toxic form that builds up in fish, shellfish and animals that eat fish.”¹¹

Whereas; Fish and shellfish are the main sources of methylmercury exposure to humans and can damage children’s developing brains and nervous systems even during pregnancy.¹²

Whereas; Many developed nations have virtually eliminated dental amalgam. Dental amalgam use is banned in Sweden¹³ and Norway¹⁴; only used in 3% of all dental restorations in Japan¹⁵ and Finland¹⁶; 5% in Denmark¹⁷; 10% in the Netherlands¹⁸, Switzerland¹⁹, and Germany²⁰; and 20% in Singapore.²¹

Whereas; The European Union 1) instituted a mid-2018 ban on amalgam use in children, pregnant women, and breastfeeding women, 2) required Member States to develop strategies by 2019 to reduce amalgam use, and 3) set a deadline of 2020 for the European Commission to issue a report on phasing out all amalgam use.²²

Whereas; Some U.S. state and local governments have adopted fact sheets warning consumers about the risks of amalgam and the benefits of mercury-free dental fillings.

Whereas; According to Zogby polls, most Americans (63%) believe that their dentists do not provide enough information about alternatives to amalgam to enable them to make informed decisions.²³

Whereas; Only 11% of Americans report ever being told by their dentists that amalgam is mainly mercury.²⁴ Many believe amalgam is merely silver because it is often marketed as “silver fillings.” Once told that amalgam contains mercury, over 75% of patients prefer mercury-free fillings.²⁵

Whereas; The continued use of dental amalgam raises environmental justice concerns and economic justice concerns due to its disproportionate use and release in low-income and minority communities.^{26,27} In addition, dental care provided directly by the U.S. federal government to American Indian and Alaska Native tribes disproportionately uses mercury amalgam without ensuring their right to free prior and informed consent.²⁸

Whereas; Due to aggregate exposures, mercury has had a profound effect on many communities and everyone living a subsistence lifestyle that depends on fish in their diet.²⁹

Whereas; Dental amalgam use is now recognized as more expensive than most, if not all, other fillings when factoring in environmental degradation and societal costs.³⁰

Whereas; Between 32% and 52% of all U.S. dentists have already stopped all amalgam use in their practices, using mercury-free filling materials instead.³¹

Whereas; A 2010 World Health Organization (WHO) report explains that when compared to amalgam, “recent data suggest that RBCs [resin-based composites] perform equally well.”³²

Whereas; WHO’s report further states “Adhesive resin materials allow for less tooth destruction and, as a result, a longer survival of the tooth itself. Funding agencies should take the initiative and encourage the replacement of amalgam as the material of choice for posterior teeth.”³³

Whereas; A 2009 U.S. FDA rule reclassified dental amalgam as a Class II medical device, stating that “any change away from use of dental amalgam is likely to result in negative public health outcomes.” This FDA rule is at odds with WHO’s assessment, the U.S. position at the treaty negotiations, and the final provisions in the Minamata Convention on Mercury.³⁴ Further, it encourages the continued unnecessary use of amalgams contributing to continued mercury pollution in this country.

Therefore; We call upon the FDA to bring its policies in line with the Federal Government as a whole and with its responsibilities under the Minamata Convention and to publicly advise a phase down of the use of mercury amalgams with the goal of phasing out entirely.

Further we recommend:

- 1) Immediately ceasing, based on the Precautionary Principle, the placement of dental amalgam in children, pregnant women, and breastfeeding mothers, and
- 2) End all placement of new dental amalgam in the U.S. by the end of 2020 with time-limited, specified exemptions.

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¹U.S. FDA, *Final Rule for Dental Amalgam*,

<http://www.fda.gov/downloads/MedicalDevices/ProductsandMedicalProcedures/DentalProducts/DentalAmalgam/UCM174024.pdf>, p.86.

² UNEP, <http://www.unep.org/chemicalsandwaste/Mercury/tabid/434/Default.aspx>; Ha E, Basu N, Bose-O'Reilly S, Dórea JG, McSorley E, Sakamoto M,

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³ <http://www.mercuryconvention.org/Countries/tabid/3428/Default.aspx>

⁴ *Minamata Convention on Mercury* (2013),

http://mercuryconvention.org/Portals/11/documents/Booklets/Minamata%20Convention%20on%20Mercury_booklet_English.pdf

⁵ Minamata Convention on Mercury, Annex A-II

⁶ *Submission by the United States, Mercury Intergovernmental Negotiating Committee*,

<https://web.archive.org/web/201111223211800/http://www.unep.org/hazardoussubstances/Portals/9/Mercury/Documents/INC3/United%20States.pdf>, p. 6

⁷ UN Environment (2017): *Global mercury supply, trade and demand*. United Nations Environment Programme, Chemicals and Health Branch. Geneva, Switzerland, 2017.

⁸ U.S. Geological Survey, *Changing Patterns in the Use, Recycling, and Material Substitution of Mercury in the United States* (2013), p.1, 26

⁹ Concorde East West, *The Real Cost of Dental Mercury* (March 2012),

http://www.zeromercury.org/index.php?option=com_phocadownload&view=file&id=158%3Athe-real-cost-of-dental-mercury&Itemid=70

¹⁰ U.S. Geological Survey, *Changing Patterns in the Use, Recycling, and Material Substitution of Mercury in the United States* (2013), p.1, 26

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<http://yosemite.epa.gov/opa/admpress.nsf/d0cf6618525a9efb85257359003fb69d/a640db2ebad201cd852577ab00634848!OpenDocument>

¹² Ibid.

¹³ World Health Organization, *Future Use of Materials for Dental Restoration* (2011),

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¹⁴ World Health Organization, *Future Use of Materials for Dental Restoration* (2011),

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¹⁵ Bio Intelligence Service/European Commission, *Review of the Community Strategy Concerning Mercury* (p.213-14), 4 October 2010, http://ec.europa.eu/environment/chemicals/mercury/pdf/review_mercury_strategy2010.pdf

¹⁶ BIO Intelligence Service (2012), *Study on the potential for reducing mercury pollution from dental amalgam and batteries*, Final report prepared for the European Commission-DG ENV,

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¹⁷ BIO Intelligence Service (2012), *Study on the potential for reducing mercury pollution from dental amalgam and batteries*, Final report prepared for the European Commission-DG ENV,

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- ²⁰ BIO Intelligence Service (2012), *Study on the potential for reducing mercury pollution from dental amalgam and batteries*, Final report prepared for the European Commission-DG ENV, http://ec.europa.eu/environment/chemicals/mercury/pdf/Final_report_11.07.12.pdf, pp.190-191
- ²¹ World Health Organization, *Future Use of Materials for Dental Restoration* (2011), http://www.who.int/oral_health/publications/dental_material_2011.pdf, p.23
- ²² European Parliament legislative resolution (14 March 2017), <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2017-0066+0+DOC+PDF+V0//EN>
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- ²⁴ Zogby poll (2014).
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- ²⁶ Sonia K. Makhija, Valeria V. Gordan, Gregg H. Gilbert, Mark S. Litaker, D. Brad Rindal, Daniel J. Pihlstrom and Vibeke Qvist, *Practitioner, patient and carious lesion characteristics associated with type of restorative material : Findings from The Dental Practice-Based Research Network*, J Am Dent Assoc 2011;142:622-632, <http://jada.ada.org/content/142/6/622.full.pdf+html>, p.629
- ²⁷ E.g., see Connecticut Department of Social Services, *Dental Regulations Regarding Placement of Amalgam Restorations*, http://www.huskyhealthct.org/providers/provider_postings/Dental_Regulations_Placement_of_Amalgam_Restorations.pdf (On March 1, 2015, the Connecticut Department of Social Services (DSS) issued a provider bulletin telling dentists that "Medicaid will not pay for composite restorations in the molar teeth regardless of whether the practice markets itself as 'amalgam free.'" Not only did this new rule promote further amalgam use, but it also prohibited amalgam-free dentists from participating in the state's Medicaid program, telling dentists: "If your office cannot provide amalgam services, please have your patients call the Connecticut Dental Health Partnership (CTDHP) (1-855-CT-DENTAL) to locate a new dental home.")
- ²⁸ National Congress of American Indians, Calling for US Ratification of the Minamata Convention on Mercury (Resolution #TUL-13-051), https://www.iitc.org/wp-content/uploads/2013/11/TUL-13-051-Final-NCAI-Mercury-Resolution_web1.pdf; Sonia K. Makhija, Valeria V. Gordan, Gregg H. Gilbert, Mark S. Litaker, D. Brad Rindal, Daniel J. Pihlstrom and Vibeke Qvist, *Practitioner, patient and carious lesion characteristics associated with type of restorative material : Findings from The Dental Practice-Based Research Network*, J Am Dent Assoc 2011;142:622-632, <http://jada.ada.org/content/142/6/622.full.pdf+html>, p.629
- ²⁹ WHO *Mercury and Health Factsheet* March 2017 <http://www.who.int/mediacentre/factsheets/fs361/en/>
- ³⁰ Lars D. Hylander & Michael E. Goodsite, *Environmental Costs of Mercury Pollution*, SCIENCE OF THE TOTAL ENVIRONMENT 368 (2006) 352-370.
- ³¹ American Dental Association, *2007 Survey of Current Issues in Dentistry: Surgical Dental Implants, Amalgam Restoration, and Sedation* (September 2008), p.9; Haj-Ali R, Walker MP, Williams K., Survey of general dentists regarding posterior restorations, selection criteria, and associated clinical problems, Gen Dent. 2005 Sep-Oct;53(5):369-75 ("A total of 714 dentists (26.3%) responded. Direct composite was the material used most commonly for posterior intracoronal restorations. Dentists in amalgam-free practices (31.6%) were significantly more likely (p = 0.001) to use direct composite than dentists whose practices used amalgam."); Gordon J. Christensen Clinicians Report, *Is Amalgam a Systemic or Environmental Hazard?* (March 2016), <http://www.cliniciansreport.org/uploads/files/597/Bonding-Survey-Results.pdf>, p.5; U.S. EPA, *Health services industry detailed study* (August 2008), http://water.epa.gov/scitech/wastetech/guide/304m/upload/2008_09_08_guide_304m_2008_hsi-dental-200809.pdf, p.3-1 ("The survey found that 52 percent of dentists do not place amalgam fillings").
- ³² World Health Organization, *Future Use of Materials for Dental Restoration* (2011), http://www.who.int/oral_health/publications/dental_material_2011.pdf, p.11
- ³³ World Health Organization, *Future Use of Materials for Dental Restoration* (2011), http://www.who.int/oral_health/publications/dental_material_2011.pdf, p.16
- ³⁴ The difference reflects the Convention's consideration of dental amalgam's full life cycle "to protect the human health and the environment from anthropogenic emissions and releases of mercury..."