Banned on the Continent & Ireland, toxic mercury does not merit Stormont Brake

Mercury is used in dental amalgam, a filling material that is approximately 50% mercury. Recognizing that the amalgam era is over in dentistry, the European Union has taken the step to ban amalgam use and amalgam exports on 1.1.2025. This landmark action is good for the environment, good for consumer health, good for dental worker safety—and good for dentistry!

1. **Dental amalgam pollutes our air, water, and land:**
   Dental amalgam is the largest remaining intentional use of mercury in the Union and the UK.[1] Much of this dental mercury enters the environment via many unsound pathways, polluting (1) air via cremation, dental clinic emissions, and sludge incineration; (2) water via dental clinic releases and human waste; and (3) soil via landfills, burials, and fertilizer.[2] As a result, many people are exposed to a double dose of amalgam's mercury: first when it is implanted in their teeth and a second time when it contaminates their environment and the fish they eat.

2. **Mercury-free alternatives are available, effective, and affordable:** As the European Commission explained in its 2023 proposal to ban amalgam: "Considering the availability of mercury-free alternatives, it is appropriate to prohibit the use of dental amalgam for dental treatment of all members of the population…"[3] Studies show mercury-free composite fillings can last as long as – and even longer than – amalgam.[4,5,6,7,8,9,10,11] Mercury-free fillings also offer both health and cost-saving advantages over amalgam. First, mercury-free fillings preserve tooth structure that must be removed to place an amalgam filling, which can increase the longevity of the tooth itself.[12,13,14,15,16,17,18,19,20,21,22] Second, mercury-free fillings can help prevent future caries.[23,24,25] Third, composite can be easier to repair than amalgam.[26,27,28] Additionally, mercury-free alternatives eliminate the high environmental costs of amalgam (studies show that after environmental costs are factored in, amalgam is more expensive than composite).[29,30]

3. **The global trend is towards phasing out dental amalgam:** 34 countries worldwide have already banned the use of dental amalgam, declared no longer to use it or replaced it in the public health system, demonstrating that alternatives are effective, available and affordable. No adverse clinical effects were reported. By January 2025, this number will rise to 56 countries.[31]

Dental amalgam is a primitive tooth unfriendly device from the Georgian Era, far surpassed by the tooth friendly, non-polluting, cavity-fighting alternatives. Having been soundly defeated in Brussels, the dental mercury lobby is targeting the consumers of Northern Ireland to offload this 19th century relic—but one that poisons the fish children eat, and poisons the air during cremation.

The worst choice to propose a Stormont Brake is for a toxic product—like dental amalgam. **We urge the NI Legislative Assembly to reject the pressure to bring dental mercury into Northern Ireland.**

The undersigned: 12 April 2024

Florian Schulze, Managing Director, European Network for Environmental Medicine
Charles Gailey Brown, President, World Alliance for Mercury-Free Dentistry
James Orr, Director, Friends of the Earth Northern Ireland
Dr Michael Warhurst, Executive Director, CHEM Trust
Meleni Aldridge, Executive Coordinator, Alliance for Natural Health
Kate Metcalf, Co-Director, Wen (Women's Environmental Network)
Catherine Gunby, Executive Director, FIDRA
Janet Newsham, Chair, Hazards Campaign

---

[1] European Commission, *Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) 2017/852 of the European Parliament and of the Council of 17 May 2017 on mercury as regards dental amalgam and other mercury-added products subject to manufacturing, import and export restrictions*
[2]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
[3] European Commission, *Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) 2017/852 of the European Parliament and of the Council of 17 May 2017 on mercury as regards dental amalgam and other mercury-added products subject to manufacturing, import and export restrictions*
[4] Palotie, U. et. al.. 2017, *Longevity of 2- and 3-surface restorations in posterior teeth of 25- to 30-year-olds attending public dental Service—A 13-year observation*. Journal of Dentistry 62, 13-17
[5] Vieira AR et. al. (2017) *A Pragmatic Study Shows Failure of Dental Composite Fillings Is Genetically Determined: A Contribution to the Discussion on Dental Amalgams*. Front. Med. 4:186.
[6] Owen, Benjamin D., et al. *Placement and replacement rates of amalgam and composite restorations on posterior teeth in a military population*. U.S. Army Medical Department Journal, July-Sept. 2017, p. 88+
[7] McCracken MS, et al. *A 24-month evaluation of amalgam and resin-based composite restorations: Findings from the National Dental Practice-Based Research Network*. J Am Dent Assoc. 2013;144(6):583-593
[8] Heintze, S.D. & Rousson, V. 2012, *Clinical effectiveness of direct class II restorations - a meta-analysis*, The journal of adhesive dentistry, vol. 14, no. 5, p.408
[9] N.J.M. Opdam, E.M. Bronkhorst, B.A.C. Loomans, and M.-C.D.N.J.M. Huysmana, *12-Year Survival of Composite vs. Amalgam Restorations*, JOURNAL OF DENTAL RESEARCH (October 2010), Vol. 89, 10: pp. 1063-1067
[10]Opdam NJ, Bronkhurst EM, Roeters JM, Loomans BA. A retrospective clinical study on longevity of posterior composite and amalgam restorations. Dent Mater 2007;23(1):2-8
[11] 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, p.69
[12] I. A. Mjor and A. Jokstad, *Five-year study of Class II restorations in permanent teeth using amalgam, glass polyalkenoate {ionomer) cermet and resin-based composite materials*, J. Dent. 1993; 21: 338-343
[13]Walls AW, et. al. *The management of occlusal caries in permanent molars. A clinical trial comparing a minimal composite restoration with an occlusal amalgam restoration.Br Dent J* 1988; 164: 288–292,pp.363, 366

[14] Donovan TE , *Longevity of the tooth/restoration complex: a review*, Journal of the California Dental Association [01 Feb 2006, 34(2):122-128], https://www.cda.org/Portals/0/journal/journal_022006.pdf
[15] JJM Roeters, ACC Shortall, and NJM Opdam, *Can a single composite resin serve all purposes?*, BRITISH DENTAL JOURNAL 199, 73 - 79 (2005), http://www.nature.com/bdj/journal/v199/n2/full/4812520a.html
[16] Christopher D. Lynch, et. al., *Minimally invasive management of dental caries: Contemporary teaching of posterior resin-based composite placement in U.S. and Canadian dental schools*, J AM DENTA ASSOC 2011; 142; 612-620
[17] Andre V. Ritter, DDS, MS, Clinical Techniques: A Review of Posterior Composites, ADA Professional Product Review (Oct. 2011), p.3
[18] Joseph B. Dennison, DDS, MS & James C. Hamilton, DDS, *Treatment Decisions and Conservation of Tooth Structure*, Dent Clin N Am 49 (2005) 825–845
[19] NJM Opdam et. al. (2016) *From 'Direct Versus Indirect' Toward an Integrated Restorative Concept in the Posterior Dentition*. Operative Dentistry: September 2016, Vol. 41, No. S7, pp.S27-S34
[20] *Norway Directorate for Health and Social Affairs, A National Clinical Guideline for the Use of Dental Filling Materials: Information for Dental Health Care Personnel, pp. 6, 8, 15*
[21] European Commission Scientific Committee on Emerging and Newly Identified Health Risks, *Final opinion on the safety of dental amalgam and alternative dental restoration materials for patients and users* (2015), p.69
[22] 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, p.77
[23] Mickenautsch S, Yengopal V. *Absence of carious lesions at margins of glass-ionomer cement and amalgam restorations: An update of systematic review evidence*. BMC Research Notes. 2011;4:58
[24]Mandari GJ, et. al.: *Six-Year Success Rates of Occlusal Amalgam and Glass-Ionomer Restorations Placed Using Three Minimal Intervention Approaches*. Caries Res 2003;37:246-253
[25] Lynch et. al., *Managing the phase-down of amalgam: part I. Educational and training issues*, British Dental Journal (Aug. 2013).
[26] JJM Roeters, ACC Shortall, and NJM Opdam, *Can a single composite resin serve all purposes?*, BRITISH DENTAL JOURNAL 199, 73 - 79 (2005), http://www.nature.com/bdj/journal/v199/n2/full/4812520a.html
[27] Christopher D. Lynch, et. al., *Minimally invasive management of dental caries: Contemporary teaching of posterior resin-based composite placement in U.S. and Canadian dental schools*, J AM DENTA ASSOC 2011; 142; 612-620,
[28] Niek J.M. Opdam, *Longevity of repaired restorations: A practice based study*, Journal of Dentistry 40 (2012) 829 – 835
[29]Concorde East/West, *The Real Cost of Dental Mercury* (March 2012), https://mercuryfreedentistry.files.wordpress.com/2016/02/the-real-cost-of-dental-mercury.pdf, pp.3-4
[30] Lars D. Hylander & Michael E. Goodsite, *Environmental Costs of Mercury Pollution*, Science of the Total Environment 368 (2006) 352-370
[31] Global Dental Amalgam Tracker, https://environmentalmedicine.eu/mercury-free-dentistry-for-planet-earth/