Dental Amalgam

Dental amalgam is not mercury

It’s important to separate fear from facts. People who might be concerned about dental amalgam because it contains mercury can be reassured that credible scientific studies show no cause for alarm. Study after study shows amalgam is safe and effective for filling cavities. Mercury exists in set amalgam as inter-metallic chemical compounds, for example with silver and copper, not as elemental mercury. This is similar to the sodium in table salt; both sodium and chloride can be toxic alone but not when combined.

Measured levels of amalgam-derived mercury in organs, blood and urine are quite low, consistent with absorption of only 1 microgram/day to 3 micrograms/day.¹ Our average diets (fruits, vegetables, breads) expose us to five to ten times this amount.² Fish provide much higher amounts of dietary mercury in its most toxic and absorbable form; methyl mercury. Yet children of mothers in the Seychelles having amalgam fillings and eating fish with every meal have no mercury-related neurodevelopmental outcomes at 9 months, 30 months and 5 years.³,⁴ The world Health Organization estimates that to reach the most subtle, pre-clinical effects in the most sensitive individuals would require from 450 to 530 amalgam surfaces.¹

Dental amalgam is safe

Authoritative medical organizations (outside of dentistry) have independently reviewed the scientific literature related to neurological, degenerative, autoimmune and psychological syndromes looking at dental amalgam as a causative agent – and found nothing:

- Alzheimer’s Association
- National Multiple Sclerosis Society
- Institute of Neurotoxicology and Neurological Disorders (Autism)
- American Academy of Pediatrics

Many organizations outside of dentistry have also reviewed the scientific literature looking for any credible link between dental amalgam fillings and general health problems – and have found none:

- U.S. Food and Drug Administration
- National Institutes of Health
- U.S. Public Health Service
- U.S.P.H.S. Centers for Disease Control and Prevention
- World Health Organization
European Commission

Two prospective clinical trials (7 years) compared the neurobehavioral, neuropsychological and renal effects in children receiving dental amalgam versus resin-based composites. No adverse effects were found in either study, other than a higher re-treatment rate for children with resin-based composite fillings.\(^5,6\)

**Dental amalgam is effective – no true direct filling “substitute” yet exists**

Amalgam fillings are considered less expensive to place and generally last much longer than any other material directly placed as a filling. While plastic fillings (composite) provide satisfactory service for approximately five years they are replaced at higher rates and repaired at twice the rate of amalgam.\(^7-9\) Collins et al\(^10\) reported twice the failure rate for composites as compared to amalgam by the eighth year. By 10 to 11 years, failure rates as high as 40% to 50% have been reported for composites.\(^11,12\) More recently, multi-surface resin-based restorations were reported to be replaced and repaired at nearly twice the rate of amalgam restorations in 2,780 U.S. Navy and Marine Corps personnel during their first five years of service.\(^13\)

**Dental amalgam is not a major source of environmental mercury**

Less than one percent of mercury released to the environment from man-made sources comes from dentistry, according to the Environmental Protection Agency. First, the vast majority of mercury in surface water is from coal-fired utility plant exhaust that travels through the air then falls back to the earth. Second, very little amalgam enters surface water, because standard dental equipment and wastewater treatment facilities capture approximately 95 percent of waste amalgam. The American Dental Association and dentists across the country are committed to recovering and recycling amalgam. To further protect the environment, the ADA encourages dentists to meet with local regulators and discuss what’s right for their community when it comes to amalgam waste disposal.

**No state that has examined the issue has banned or limited dental amalgam**

States where either legislative or regulatory actions were taken and terminated include:

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References


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Date

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