Safety of Dental Amalgam

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Introduction

Dental caries remains a common disease, even though substantial progress has been made in its prevention. Dental amalgam (containing approximately 50% mercury, which forms intermetallic compounds with copper, silver and tin) is widely used to repair teeth damaged by caries because of its ease of use, appropriate mechanical properties and cost-effectiveness. Amalgam has been available for over 150 years, and has one of the longest life expectancies of materials used for the repair of carious teeth. Although much research effort has been expended in developing amalgam alternatives, no universal substitute is currently available.

Because dental amalgam contains mercury, concerns have been raised with respect to is potential effect on the individual patient, the dental surgery personnel and the environment. FDI Policy Statements have been developed on dental mercury hygiene and amalgam waste management;[1,2] this Policy Statement addresses amalgam use and patient safety.[3-7]

Statement

FDI World Dental Federation takes the following position:

- Dental amalgam releases very small amounts (nanograms) of mercury, some of which is absorbed by the body
- The level of urinary mercury is positively correlated with the number of amalgam restorations, but can also be affected by sources other than amalgam
- There is no evidence to support an association between the presence of amalgam restorations and chronic degenerative diseases, kidney disease, autoimmune disease, cognitive function, adverse pregnancy outcomes or any non-specific symptoms
- Local hypersensitivity reactions can occur on the mucosa adjacent to amalgam restorations, but are extremely rare and usually resolved on removal of the amalgam
- Further research into the possible adverse effects of dental amalgam is desirable
- Alternatives to amalgam may have adverse effects

References

1. FDI Policy Statement – Mercury Hygiene Guidance (2007)
2. FDI Policy Statement - Amalgam Waste Management (2006)
3. Clarkson TW, Magos L, Myers GJ. The toxicology of mercury – current exposures and clinical manifestations. New England Journal of Medicine 2003; 349:1731-1737.
4. McCullough M J, Tyas M J. Local adverse effects of dental amalgam. International Dental Journal (In press)

5. Brownawell A M, Berent S, Brent RL et al. The potential adverse health effects of dental amalgam. Toxicological Reviews 2005; 24: 1-10

6. Bellinger DC, Trachtenberg L et al. Neuropsychological and renal effects of dental amalgam in children: a randomized clinical trial. JAMA 2006 April 9;295(15):1775-63.

7. DeRouen TA, Martin MD, Leroux BG et al. Neurobehavioral effects of dental amalgam in children: a randomized clinical trial. JAMA 2006 April 9;295(15)1784-92.