

[WHO Consensus Statement on Dental Amalgam \[1\]](#)

September, 1997 Seoul South Korea

Preamble

Dental caries (tooth decay) is a common oral disease and its prevention is in accord with the main mission of WHO. In spite of great success in the prevention of dental caries, caries in need of restoration still occur. In these cases, diseased tissue should be removed and teeth restored with appropriate material(s). Dental amalgam, a combination of mercury and silver-based alloys, is widely used as a dental restorative material. While the current weight of evidence suggests that dental restorative materials, including dental amalgams, are considered to be safe and effective, concerns have been expressed about the health effects of mercury in amalgam. Following an evaluation of a large amount of sometimes conflicting evidence from diverse sources, the WHO offers the following consensus statements on dental amalgam:

1. The Use of Dental Amalgam

Dental amalgam is a frequently used material for restoring decaying teeth. It has been used successfully for more than a Century and its quality has improved over the years. Amalgam restorations are durable and cost-effective; they are, however, not tooth-coloured. While much research has been devoted to the development of dental restorative materials, there is currently no direct filling material that has the wide indications for use, ease of handling and good physical properties of dental amalgam. The restorative materials currently available as alternatives to dental amalgam significantly increase the cost of dental care.

2. Safety of Dental Amalgam

Dental amalgam restorations are considered safe, but components of amalgam and other dental restorative materials may, in care instances, cause local sideeffects or allergic reactions. The small amount of mercury released from amalgam restorations, especially during placement and removal, has not been shown to cause any other adverse health effects.

Because of concerns over adverse effects of mercury, some patients with or without symptoms, may request the removal of their amalgam restorations. While there has been a number of case studies and informal reports, no controlled studies have been published demonstrating systemic adverse effects from amalgam restorations. At present, there is no scientific evidence showing that general symptoms are relieved by the removal of amalgam restorations. Therefore, after a comprehensive oral examination and appropriate dental treatment, these patients should be considered for referral to other health care professionals for diagnosis and treatment if symptoms persist.

3. Occupational Risk to Oral Health Personnel

A potential health risk to oral health personnel from mercury exposure exists if working conditions are not properly organized. The application of proper mercury hygienic requirements together with monitoring of mercury vapours in the work environment in dental clinics will significantly reduce mercury exposure.

4. Environmental Concerns

Mercury used in dentistry may contaminate the environment via the disposal of waste products from dental clinics. Equipment is available to collect metallic waste generated during dental amalgam placement and removal. Appropriate collection and recycling technology is also available to reduce mercury pollution of the environment, including pollution from crematoria.

5. Public Opinion and Mass Media

Today there is considerable exchange of information on dental amalgam around the world. For environmental reasons some countries are restricting all uses of mercury, including dental amalgam. Due to publicity in the mass media, however, the situation in countries which have undertaken restrictive action is often misinterpreted, leading to numerous inquiries about the safety of dental amalgam and a demand for removal of amalgam fillings.

The current weight of evidence is that contemporary dental restorative materials, including dental amalgam, are considered to be safe and effective. However, adverse biological reactions to the materials do occasionally occur and they must be treated on an individual basis. The WHO recognizes the importance of the continued monitoring of the safety and effectiveness of all dental restorative materials.

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