World Health Organization

UNEP
United Nations Environment Programme

Dental amalgam and its impact on the environment

Information for Ministry of Health/ Chief Dental Officer

Some facts and figures

Mercury is toxic to human health and environment

Dental amalgam is composed of approximately 50% elemental mercury and of 50% silver-zinc-tin-copper alloy

An estimated 250-350 metric tonnes of mercury was used for dental amalgam in 2005, representing approximately 10% of global consumption, or 20% of total global mercury consumption in products

Dental amalgam is often the largest source of mercury in municipal wastewater: in the soil via wastewater sludge, land disposal and the burial of deceased persons with fillings. It is also an important source of mercury air pollution from wastewater sludge incineration and cremation due to the amalgam retained in the teeth of the deceased

Mercury-free dental restoration materials reduce mercury pollution and contribute to preserve our ecosystems for future generations

Contacts:

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For further information, please visit:
www.who.int/oral_health
www.unep.org/hazardoussubstances

This brochure was developed as part of the East Africa Dental Amalgam Phase-down Project.

Photos Cover: Top **Thomas Rommel**; middle **Kauzio**; bottom **pgordon2**
Inside: Left **World Bank**; middle **Kenya Dental Association/FDI Project 2011**; right **rhodesj**

Major responsibilities

Oral health promotion

Disease prevention

Use of dental restorative materials

Education and information dissemination

Capacity building

The Ministry of Health has a key role in promoting oral health through public health programmes



Oral health promotion

- Oral health promotion and dental caries prevention programmes should be part of national public health programmes
- Promoting better oral health is best achieved through engagement of the community, dental professionals and individuals
- Important risks to dental caries are unhealthy diet rich in sugars, poor oral hygiene and low access to preventive dental care
- Use of toothpaste containing fluoride is important in individual self-care

Disease prevention

- Despite success in disease prevention and health promotion, dental caries is not yet under control in many countries, in particular in low- and middle-income countries
- Prevention is the best strategy to reduce the burden of dental caries
- Appropriate use of fluoride through water, salt or milk is effective for the prevention of dental caries

Use of dental restorative materials

- It is desirable to reduce the use of dental amalgam, which contains mercury, to protect the environment and human health
- A range of dental restorative materials, including dental amalgam and quality mercury-free alternative materials, such as composites or glass-ionomers, are available
- The dental research community is working on new mercury-free dental materials, but alternative materials, in some cases, may have clinical limitations and potential effects on health and the environment
- In low- and middle-income countries, price, technology and infrastructure may limit the widespread availability of alternative materials

Best Management Practices (BMP)

- Amalgam scrap needs to be properly managed and not disposed in sewer systems
- BMP have been developed to manage waste, in particular amalgam
- National Health Authorities should determine the most feasible way to adopt BMP and to disseminate such efforts to the dental profession and endorse implementation

Education and capacity building

- Dental students must be instructed on the use of dental restorative materials and BMP
- Continuing education for dental professionals include training on use of alternative materials and BMP

Minamata Convention on Mercury

The Minamata Convention on Mercury is a global legally binding instrument, which aims to protect human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds.

The Convention was adopted by governments during a conference in Minamata, Japan in October 2013.

For further information, please visit:
www.mercuryconvention.org
www.unep.org/hazardoussubstances

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