

MERCURY-FREE DENTAL FILLINGS ARE INCREASINGLY **EFFECTIVE**



Unlike placing amalgam, mercury-free filling materials preserve and strengthen teeth. As explained in the 2011 WHO report, “Adhesive resin materials allow for less tooth destruction and, as a result, a longer survival of the tooth itself.”

The lifespan of amalgam is about 10 years. But the latest scientific studies confirm that alternatives survive as well as – or even better than – amalgam:

**Composite:** In the WHO report, it’s explained that “Composite resins have been reported to last 12-15 years.” A 2010 study comparing composite and amalgam over the course of 12 years concluded that “Large composite restorations showed a higher survival in the combined population.”

**Compomers:** A recent study found that 95% of compomer restorations survive after 4 years, while only 92% of amalgam fillings survive that long.

**Glass ionomers:** Glass ionomers are especially valuable in low-income areas for atraumatic restorative treatment (ART). The latest studies show “The technique was effective after 10 years of clinical service.”



MERCURY-FREE DENTAL FILLINGS ARE INCREASINGLY **AVAILABLE**

In the 2011 WHO report, it states that: “Materials alternative to dental amalgam are available,” noting that “Alternative restorative materials of sufficient quality are available for use in the deciduous [baby] dentition of children.”

With alternatives now so widely available, amalgam use is rapidly decreasing around the world. According to the WHO report, placement of amalgam only accounts for:

- 4% of restorations in Japan,
- 5% in Finland,
- 10% in the Netherlands and Switzerland,
- 10% in Mongolia, and
- 20% in Singapore and Vietnam.

Sweden and Norway have practically stopped using amalgam altogether. In West Africa, where all filling materials must be imported, it is just as easy to import mercury-free fillings and they are produced globally. India, China, Australia, USA, Indonesia, etc. have manufacturing capabilities for producing mercury-free materials which they supply their markets.

Reliance on amalgam makes dental care inaccessible to many developing nations because its placement requires electricity, anesthetic, advanced dental training, and specialized clinic equipment. However, mercury-free alternatives, like the glass ionomers used in ART, are less costly, much more sustainable and can eliminate these barriers.

MERCURY-FREE DENTAL FILLINGS ARE INCREASINGLY **AFFORDABLE**

Cost comparison of filling in rear teeth	Composite filling	Amalgam filling
Without pollution costs	\$185	\$144
With pollution costs	\$185	\$185 - \$272

**Real Cost of Dental Mercury Fillings\***

\*These costs are based on average private clinic fees and externalized dental mercury pollution impacts borne by society, as calculated by Concorde report, available at: <http://tinyurl.com/Concorde-Report>

Placing small composites is already less expensive than small amalgams in many nations. In addition, the cost of amalgam will likely increase in light of the:

- (1) rising price of silver and mercury,
- (2) increased regulation of mercury,
- (3) new trade restrictions on mercury,
- (4) costs to prevent pollution, and
- (5) growing liability concerns.

Also, atraumatic restorative treatment (ART) only costs half as much as amalgam according to the Pan American Health Organization. The cost-effectiveness, performance and durability of alternatives continues to improve.

**Phasing Out Dental Amalgam**

Clearly, it’s time to phase out amalgam globally and set a time-table for doing so. In the interim, an amalgam “phase down” strategy should be adopted worldwide, which includes provisions to protect vulnerable populations and governs the transition period until the amalgam phase out begins.

**Thank you for your support!**

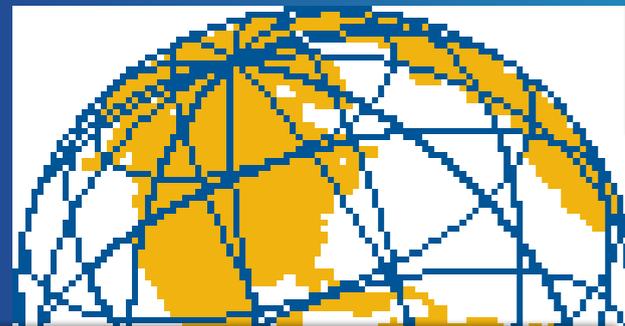


**Mercury-Free Dental Fillings**

Improve Care and Help Protect Our Environment



For more information & references, visit [www.iaomt.org](http://www.iaomt.org)



## ABOUT THE INTERNATIONAL ACADEMY OF ORAL MEDICINE AND TOXICOLOGY (IAOMT)

The IAOMT is a network of dental, medical and research professionals who seek to raise the standards of scientific biocompatibility in the dental practice with information from the latest interdisciplinary research.

**IAOMT has affiliated chapters in fourteen countries**, and represents the interests of a growing number of dentists who no longer use dental amalgam.

**IAOMT dentists serve communities worldwide** – from inner-city families to people in rural developing areas, from young children to individuals with disabilities, and from students to prisoners.

**IAOMT members have been appointed by their governments** to dental boards, selected to serve on government advisory panels, and elected to public office; they have testified before parliamentary bodies, published in peer-reviewed journals, and taught at distinguished universities.

## WHY AVOID DENTAL AMALGAM USE?

Dental amalgam is a filling material containing approximately **50% mercury** that is mixed with silver, tin and copper powder. As an outdated material, amalgam raises two concerns for dentists today:

- Placing amalgam requires the unnecessary removal of large amounts of healthy tooth matter, permanently damaging the tooth structure. These problems lead to expensive future dental work.



- Amalgam – the greatest exposure source to elemental mercury vapor in the general population, according to UNEP GMA (2001) – is a matter of growing concern to dentists, physicians and dental assistants as well as the patients, parents, and communities affected by dental mercury pollution.



## THE REAL COSTS OF DENTAL MERCURY



According to the United Nations, over **300 metric tonnes** of dental mercury are used annually, thus being among the largest consumer uses of mercury in the world! Dental mercury enters the environment through numerous pathways, including:

- **water via dental clinic releases and human waste;**
- **air releases via cremation and dental clinic emissions;**
- **waste and municipal sludge incinerator emissions; and**
- **land disposal via landfills and burials.**

Studies also clearly demonstrate that as dental mercury becomes bioavailable in the environment, it may constitute a significant source of risk to human health and the environment. Due to the high costs of these environmental hazards, amalgam is now recognized as more expensive than most mercury-free dental fillings.

A 2011 World Health Organization (WHO) report, *Future Use of Materials for Dental Restoration*, concludes that the “significant amount of mercury” from amalgam poses a serious environmental health problem: “When released from dental amalgam use into the environment through these pathways, mercury is transported globally and deposited. Mercury releases may then enter the human food chain especially via fish consumption,” according to the WHO report.

## ON THEIR OWN, AMALGAM SEPARATORS DO NOT SOLVE THE MERCURY CRISIS!

There are a number of “end-of-pipe” techniques to prevent dental mercury from entering the environment, but each comes at a high cost, and may not be as effective as intended. For example, installing separators in clinics to collect waste mercury is mandatory in some wealthier countries, but does not resolve the overall problem for several reasons:

- **Initial costs range between \$600 and \$3000 (US) to purchase and install each amalgam separator, in addition to the \$800 (US) a year to maintain it. These costs may be prohibitive in many developing nations.**
- **Studies show that dental personnel do not always properly maintain separators or dispose of the mercury in special facilities (which do not even exist in many countries and localities).**
- **Mandating separators and ensuring proper maintenance will be even more challenging in some countries due to weak environmental laws and lack of resources for enforcement.**
- **Most amalgam walks out of the dental clinic in patients’ teeth. In the USA, for example, it’s estimated that over 500 tons of mercury is stored in American mouths! From there, no separator will stop this mercury from eventually being released.**