

## Brazilian Oral Research

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### Abstract

[IANO, Flávia Godoy](#) et al. Optimizing the procedure for mercury recovery from dental amalgam. *Braz. oral res.* [online]. 2008, vol.22, n.2, pp. 119-124. ISSN 1806-8324. doi: 10.1590/S1806-83242008000200005.

Mercury, as any other heavy metal, may cause environmental damages due to its accumulation and biotransformation. Dental offices, whether private or institutional, use dental amalgam as a restorative material on a daily basis. Dental amalgam is composed of mercury (50%), silver (30%) and other metals. Approximately 30% of the amalgam prepared in dental offices (0.6 g per capsule) are wasted and inadequately discarded without any treatment. Methods for mercury recovery have been proposed previously, using high temperatures through exposure to direct flame (650°C), long processing time, and hazardous reagents as potassium cyanide. The purpose of this study was to develop a method to replace the direct flame by an electrical mantle in the process of mercury recovery. Results showed an average mercury recovery of 90% from 2 kg of amalgam after 30 minutes of processing time, thus optimizing the procedure. The proposed modifications allowed a significant reduction in processing time and a mercury recovery with high purity. The modified process also provided minimization of operator exposure to physical, chemical and ergonomic hazards, representing a technological advance compared to the risks inherent to the original method. It also provided environmental health and economy of energy resources by replacing a finite energy source (fossil and organic) by a more environmentally appropriate electric source, resulting in significant improvement of the procedure for mercury recovery from dental amalgam.

Keywords : Dental amalgam; Dental waste; Mercury.

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