

Extracted Teeth

[Disposal of Extracted Teeth Containing Amalgam](#)

[Heat Sterilization of Extracted Teeth](#)

[Extracted Teeth in Educational Settings](#)

Disposal of Extracted Teeth Containing Amalgam (11/07)

Question: How do I dispose of extracted teeth containing amalgam? Do the teeth have to be disinfected or sterilized before disposal?

Answer: The USAF Best Management Practices for Amalgam Waste (Click [here](#) to view the letter.) address the disposal of extracted teeth containing amalgam. In summary, extracted teeth with amalgam restorations cannot be disposed of in municipal waste, into sharps containers or as biohazardous waste (i.e., in biohazard bags or red bags). Extracted teeth containing amalgam should be treated (e.g., sprayed) with a disinfectant that does not contain bleach or chlorine, air dried, and stored in a sealed container. As a reminder, the recommendation to use formalin to disinfect extracted teeth containing amalgam before disposal was discontinued several years ago. Accumulated extracted teeth with amalgam should be turned in to local hazardous waste managers along with other amalgam waste (e.g., scrap amalgam, amalgam capsules, amalgam chairside traps) generated in the dental clinic. If your local hazardous waste manager does not accept extracted teeth with amalgam restorations, please refer to the [ADA Web site](#) for a list of recyclers that do accept extracted teeth. The only time that an extracted tooth should be heat sterilized is if it does not contain amalgam and will be used for educational purposes (e.g., preclinical or post-graduate educational training). Additional information on using extracted teeth for educational purposes is available by clicking [here](#).



References

1. American Dental Association. Best Management Practices for Amalgam Waste. Available at http://www.ada.org/sections/publicResources/pdfs/topics_amalgamwaste.pdf. Accessed August 2010.
2. Batchu H, Chou H, Rakowski D, Fan PL. The effect of disinfectants and line cleaners on the release of mercury from amalgam. J Am Dent Assoc 2006;137:1419–1425.
3. USAF/SGOD. USAF Best Management Practices for Amalgam Waste Policy Letter—FY06 Update.

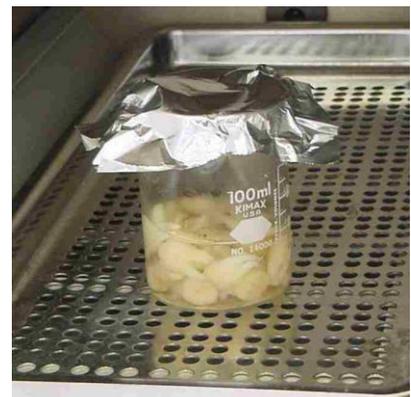
[Return to Top](#)

Heat Sterilization of Extracted Teeth (8/04)

Question: Since we have to heat sterilize teeth before use in educational settings, do you recommend a special technique?

Answer: Before use in an educational setting, extracted teeth should be heat-sterilized to allow for safe handling. The following steps for sterilization of amalgam-free teeth are recommended before used in an educational setting:

1. Wear personal protective equipment (e.g., gloves, mask, protective eyewear) when handling extracted teeth.



2. Do not heat sterilize any teeth containing amalgam. If it is necessary to use extracted teeth containing amalgam, immerse in 10% formalin for two weeks before use in an educational setting.
3. Clean and thoroughly rinse any amalgam-free teeth to be sterilized.
4. Place amalgam-free teeth in a heat-resistant glass container.
5. Fill the heat-resistant container **no more than half-way** with deionized or distilled water or saline, and cover loosely (e.g., place foil over the top of the beaker, use a cork to close a flask).
6. Process through a steam sterilizer at 121°C for 40 minutes using a **fluid or liquid cycle**.
7. At the end of the cycle, remove the container slowly without shaking to avoid the boiling over of the water.



Thank you to Chris Miller, PhD and the Indiana University School of Dentistry for sharing this protocol.

[Return to Top](#)

Extracted Teeth in Educational Settings (4/04) **UPDATED** (11/07)

Question: What are the infection control recommendations for using extracted teeth in educational settings?

Answer: Extracted teeth are occasionally collected and used for preclinical or post-graduate educational training. The teeth should be cleansed of visible blood and gross debris and maintained in a hydrated state in a well-constructed container with a secure lid to prevent leakage during transport. The container should also be labeled with the biohazard symbol. Because the recommendation is to autoclave these teeth before clinical exercises, use of the most economical storage solution (e.g., water or saline) might be practical.

Before use in an educational setting, the teeth should be heat-sterilized to allow for safe handling. Pantera and Shuster demonstrated elimination of microbial growth using an autoclave cycle for 40 minutes. Autoclaving teeth for pre-clinical laboratory exercises does not alter their physical properties sufficiently to compromise the learning experience. It is unknown, however, whether autoclave sterilization of extracted teeth affects dentinal structure such that the chemistry and microchemical relationship between dental materials and the dentin is affected for purposes of dental materials research. For a protocol on heat sterilizing extracted teeth, [click here](#).



Using teeth that do not contain amalgam is preferable because they can be safely autoclaved. Extracted teeth containing amalgam restorations must **not** be heat sterilized because of the potential health hazard due to the risk of mercury vaporization and exposure. If extracted teeth containing amalgam restorations are to be used, the only method to disinfect both the internal and external structure of the teeth is by immersion in 10% formalin solution for two weeks. When using formalin, the manufacturer MSDS should be reviewed for occupational safety and health concerns and to ensure compliance with OSHA recommendations. **Do not use formalin** when disinfecting extracted teeth containing amalgam before disposal. For additional information on routine disposal of extracted teeth containing amalgam, [click here](#).



References

1. CDC. Guidelines for infection control in dental health-care settings – 2003. MMWR 2003; 52(No. RR-17):1–66.
2. Pantera EA Jr, Schuster GS. Sterilization of extracted human teeth. J Dent Educ 1990;54:283–285.
3. Parsell DE, Stewart BM, Barker JR, Nick TG, Karnes L, Johnson RB. The effect of steam sterilization on the physical properties and perceived cutting characteristics of extracted teeth. J Dent Educ 1998;62:260–263.

4. Schulein TM. Infection control for extracted teeth in the teaching laboratory. *J Dent Educ* 1994;58:411–413.
5. Tate WH, White RR. Disinfection of human teeth for educational purposes. *J Dent Educ* 1991;55:583–585.
6. US Department of Labor, Occupational Safety and Health Administration. 29 CFR Part 1910.1030. Occupational exposure to bloodborne pathogens; needlesticks and other sharps injuries; final rule. *Federal Register* 2001;66:5317–5325. As amended from and includes 29 CFR Part 1910.1030. Occupational exposure to bloodborne pathogens; final rule. *Federal Register* 1991;56:64174–82.
7. US Department of Labor, Occupational Safety and Health Administration. OSHA instruction: enforcement procedures for the occupational exposure to bloodborne pathogens. Washington, DC: US Department of Labor, Occupational Safety and Health Administration, 2001; directive no. CPL 2-2.69.
8. US Department of Labor, Occupational Safety and Health Administration. 29 CFR 1910.1200. Hazard communication. *Federal Register* 1994;59:17479.

[Return to Top](#)