

Collection of Extracted Teeth

Dear Dental Student:

Prior to performing dental procedures on patients at UCSF, you will be learning many of the techniques in the teaching laboratory utilizing extracted human teeth. Artificial plastic teeth can be used for many of the learning experiences, but for other procedures, there is no adequate substitute for the real thing. We have no reliable source of extracted teeth at UCSF, and we cannot provide the numbers of teeth that will be needed for teaching purposes. It will be necessary for you to collect teeth from practicing dentists in your area beginning as soon as possible. Dentists, especially oral surgeons, are familiar with the needs of dental students and will usually be very cooperative in regard to collecting teeth. Since many students from other dental schools are also collecting teeth, you will likely need to ask several dental offices for assistance in this matter.

To provide an adequate selection of teeth for your projects in operative dentistry, fixed prosthodontics and endodontics, you will need to collect about 50 teeth. The most difficult teeth to find are unrestored, caries-free premolars, first molars, and upper anterior teeth. Unfortunately, these are the most needed teeth for the projects you will be required to complete. Please collect teeth with various stages of caries also. You will have some assignments to learn about caries recognition and its removal in your first year. We've found that it is helpful if you let the office you are collecting teeth from, know that you would like carious teeth as well. The more teeth you collect, the easier it will be for you to select an appropriate tooth for each laboratory project and get a better learning experience.

COLLECTION PROCEDURE:

1. Obtain a supply of Thymol Crystals (one source is Amazon.com for Thymol Lab grade crystals 100 gm container). Please purchase one 100 gram container. Also, provide collection jars (wide mouth mason jars, pint sized) for each office that will be collecting teeth for you. Thymol is an organic plant extract from the common thyme plant *Thymus vulgaris*. You will also need to purchase Isopropyl Alcohol (rubbing alcohol) from your local pharmacy. The bottle typically will contain 70% alcohol and 30% water.
2. Fill the jars half full with the isopropyl alcohol solution. For each 3 ounces of alcohol, dissolve 7-8 grams of Thymol crystals (approximately 2 tsps.) Label each jar:

TOOTH COLLECTION FOR

Name: _____

Telephone #:() -

**Isopropyl Alcohol 70 % & Thymol Mixture
Do not Autoclave**

3. When mixing Thymol crystals with Isopropyl Alcohol, please follow the safety procedure as follows: a) wear gloves and [proper eye protection](#); b) use a disposable spoon to mix the solution; c) conduct the procedure in a well ventilated area; and d) store Thymol, isopropanol, and mixed solution in a cool, dry, well ventilated area, and away from heat sources. Please read the Safety Data Sheet (SDS) for [Thymol](#) for more safety information ([link](#)).
4. Distribute a jar with a copy of the SDS to several dentists. Inform the dentist or the dental office staff that:
 - Dentists should save all extracted teeth even if they have caries or fractures. Please discard teeth with amalgam. It is important to mention this because you will also be practicing on carious teeth.
 - Thymol is part of a naturally occurring class of compounds known as Biocides which exhibit strong anti-microbial and anti-fungal properties.
 - The Thymol solution should be replenished every 4 weeks since it will break down over time into its organic components due to the water in the collection container. Following safety procedures: wear gloves and proper eye protection; just add measured quantities of Thymol crystals to the jar to replenish. Do not stir the contents unnecessarily while the jar is open, do not transfer contents into another jar. Thymol byproducts degrade rapidly in the environment.
 - The teeth should not be allowed to dry out, but should be placed in the solutions as soon after extraction as is convenient (dried teeth become brittle and will fracture when cut, even if rehydrated).
 - There is no OSHA regulation against collecting and storing teeth. Extracted teeth should be handled using standard precautions.
 - California laws regarding the handling and disposal of human tissue and hazardous wastes specifically exclude extracted teeth from regulation.
 - Once the teeth are collected and brought to the school, the solution will be disposed properly and the teeth will be sterilized. Do not directly handle the teeth until decontamination has been completed.
5. Return regularly to the dental offices to claim collected teeth and encourage further collection.
6. Have at least half of your collection of extracted teeth available for use by the first day of classes in the Fall quarter in your First Year.

7. Transport teeth: Once you have collected your teeth you have two options to get your teeth to UCSF:
 - If you are arriving in San Francisco by car, you may bring them along for the ride. Please keep teeth in a leak-proof container. And put the container in a sealed plastic bag as the second container.
 - If you are flying to San Francisco you must use FedEx to ship the teeth to a local address.
 - You CANNOT bring teeth with you on a flight, strict regulations carry hefty fines and jail time if you try to smuggle teeth in your luggage.

8. For those who will be shipping teeth to a local address, please follow these guidelines:
 - Purchase packing material for “Exempt Human Specimen” at <https://www.fishersci.com/shop/products/therapak-exempt-human-specimen-ehs-ambient-shipping-systems-5/22130428> and follow the instructions.
 - Place teeth in a leak-proof container with buffered saline.
 - Place leak-proof primary container in a leak-proof bag (included in packing materials from Fisher Scientific).
 - Ensure "Exempt human specimen" label is present and visible on outside of packing box (included in packing materials from Fisher Scientific).
 - Ship package by using FedEx service.

You should begin to collect teeth immediately so that your collection will be adequate for your needs in the pre-clinical courses. Thank you for your efforts.

Ramneek Rai, DDS
Director of Health and Safety
UCSF School of Dentistry
415-502-4671