

Preventing Punctures and Lacerations in the Dental Office

According to the Bureau of Labor Statistics (BLS), one of the parts of the body most frequently injured at work are the hands. Most of these injuries could have been prevented.

In Zenith's experience with the dental industry, punctures and lacerations account for nearly half of all injuries reported. Although these are not the most costly injuries in the dental profession, they are the most frequent and the most preventable. These injuries are usually easily treated and do not always result in lost time and wages, but they have the potential to cause serious health problems.

Punctures are holes or wounds in the skin's surface from sharp or pointed devices. Whether shallow or deep, puncture wounds pose potentially dangerous risks for infection because they are closed and often do not bleed much. Lacerations (cuts) can range from minor nicks to deep, jagged wounds that damage tendons, blood vessels or nerves that are essential to hand function. Severe cuts may even cause loss of the finger or hand.

In some cases these injuries can lead to illness caused by bloodborne pathogens. Bloodborne pathogens are viruses, bacteria and parasites that exist in blood or other bodily fluids of infected persons. Workers who come into intimate contact with blood or other bodily fluids containing bloodborne pathogens occasionally develop infections, become seriously ill, or in rare cases may even die.

A needle stick or a cut from a contaminated dental instrument can lead to infection from bloodborne diseases, most commonly hepatitis B virus (HBV), hepatitis C virus, (HCV), human immunodeficiency virus (HIV).

Dental healthcare professionals (DHCP) are exposed to many sources of punctures and lacerations during their normal operation. This includes handling of needles, dental instruments and other sharp devices (e.g., needles, scalers, laboratory utility knives, burs, explorers, and endodontic files) or sharps disposal containers, and may occur during patient care and instrument processing (cleaning, decontamination, preparation, packaging, sterilization and storage).

Careful handling of sharps can prevent injury and reduce the risk of infection. By following safe work practices, dental professionals can decrease their chances of punctures and lacerations.

Handling Sharps

The best way to prevent punctures and lacerations is to minimize contact with needles and other sharp devices. Engineering controls and safe work practices are important methods of prevention. Wherever possible, use of safely designed dental instruments and devices, (such as self-sheathing anesthetic needles and dental units designed to shield burs in handpieces) are the best method of reducing punctures and lacerations. Work practices are also effective, but only when they are used. Some common methods of prevention include:

- Immediate disposal of sharps, including used disposable syringes and needles, scalpel blades, and other sharp items in appropriate puncture-resistant containers located near where they were used
- Recapping needles from nondisposable syringes between uses and before disposal using one of the following methods:

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- a one-handed scoop technique, using the needle itself to pick up the cap, and pushing the cap and sharp together against a hard surface to ensure a tight fit.
- a mechanical device designed for holding the needle cap to facilitate one-handed recapping. For example, hold the cap with tongs or forceps to place it on the needle.
- needles with resheathing mechanisms
- Avoidance of bending or breaking needles before disposal
- Avoidance of passing a syringe with an unsheathed needle
- Removing burs before disassembling the handpiece from the dental unit
- Restricting use of fingers during suturing and administration of anesthesia
- Minimizing potentially uncontrolled movements of such instruments as scalers or laboratory knives
- Storage of reusable sharps in containers with wire basket liners that can easily be removed for cleaning and disinfecting, or use of tongs or forceps to withdraw the contents from unlined containers.

- Replace the containers often to avoid overfilling
- Discard containers only after the lids are securely closed.
- If there is a possibility of leakage from the primary container, place it in a secondary container that is closable, labeled or color-coded and leak-resistant.

Infection Control Program

Because of the risk of disease caused by bloodborne pathogens, your dental practice should have an Infection Control Program that addresses the following:

- Universal precautions
- Biohazard identification
- Emergency procedures
- Training
- Compliance monitoring

For additional information on bloodborne pathogens and developing an infection control program, see Zenith's Risk Management Bulletin (RMB #115), Infection Control Programs—Preventing the Transmission of Bloodborne Diseases.

The gloves normally worn in a dental office do not protect against injuries from sharps.

Disposal and Storage of Sharps

To prevent injury when disposing of sharps, used sharps should be placed in containers made of tough plastic or material that prevents the needle's sharp points from poking through the sides. The container should have the following characteristics:

- leak-proof on the sides and bottom
- color-coded red
- include warning labels on the side identifying its contents as bio-hazardous materials
- have a lid and remain upright to keep liquids and sharps from spilling.

The following practices should be followed to avoid injury from handling used sharps:

- Never reach by hand into containers of contaminated sharps
- Set up containers as close as practical to the area of use

Zenith provides workplace safety resources at: **TheZenith.com**

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