



Accident prevention guide: Dental offices



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Please customize this accident prevention guide according to your workplace. Also, your written accident prevention program can only be effective if it is put into practice!

1. State and Federal Posters

● Statutes and regulations enforced by agencies within the Department of Labor require that posters or notices be posted in the workplace. Please note that posting requirements vary by statute; that is, not all employers are covered by each of the Department's statutes and thus may not be required to post a specific notice. For information on coverage, visit the Employment Laws Assistance for Workers and Small Business (elaws) Poster Advisor.

<http://webapps.dol.gov/elaws/posters.htm>

● Many states have additional posting requirements; please consult your state department of labor for specific information.

2. OSHA Guidelines

● Recordkeeping

Dental offices are currently identified as low-hazard industries and as such are exempt from routinely keeping OSHA injury and illness records. This includes the OSHA Form 300 which is the “Log of Work-Related Injuries and Illnesses” and the OSHA Form 300A, which is the “Summary of Work-Related Injuries and Illnesses,” that is posted annually. (29 CFR 1904)

If you are in a state plan state (twenty-six states, Puerto Rico, and the Virgin Islands have OSHA-approved State Plans), contact your state plan directly for more information.

<https://www.osha.gov/recordkeeping2014/>

● Severe Injury Reporting

All employers under OSHA jurisdiction must report any worker fatality within 8 hours and any amputation, loss of an eye, or hospitalization of a worker within 24 hours. This includes employers who are exempt from routinely keeping OSHA records due to company size or industry.

To make a report:

- ◇ Call the nearest OSHA office - <https://www.osha.gov/html/RAmap.html>
- ◇ Call the OSHA 24-hour hotline at 1-800-321-6742 (OSHA)
- ◇ Report online - <https://www.osha.gov/pls/ser/serform.html>

Be prepared to supply: Business name; names of employees affected; location and time of the incident, brief description of the incident; contact person and phone number.

Establishments located in states that operate their own safety and health programs (twenty-six states, Puerto Rico, and the Virgin Islands have OSHA-approved State Plans) have also implemented the new reporting requirements. Severe Injury Reporting information for the State Plan States is available at the following website:

https://www.osha.gov/recordkeeping2014/state_adoption_table.html

● Training Records

A record of all safety and health training should be maintained. Documenting all training is a best practice. There are training requirements for general industry which are identified in Title 29, Code of Federal Regulations Part 1910. Additional training requirements may appear in certain other standards (ANSI, NFPA, etc.) and are adopted by reference in Part 1910 and are therefore mandatory.

Training required by OSHA for dental offices, including initial training, is dependent on the assigned job duties and responsibilities. This training may include:

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- ◇ Accident reporting and investigation
- ◇ Bloodborne Pathogens
- ◇ Emergency Action Plan
- ◇ Ethylene Oxide
- ◇ Fire Extinguishers
- ◇ Hazard Communication
- ◇ Personal Protective Equipment (PPE)
- ◇ Respiratory protection

Annual refresher training should be conducted on required OSHA and other safety and health topics along with safe job practices. This training may include:

- ◇ Bloodborne Pathogens
- ◇ Ethylene Oxide
- ◇ Fire Extinguishers
- ◇ Respiratory Protection

<https://www.osha.gov/Publications/osha2254.pdf>

3. Bloodborne Pathogens

Bloodborne pathogens are infectious microorganisms in human blood that can cause disease in humans. These pathogens include, but are not limited to, hepatitis B (HBV), hepatitis C (HCV) and human immunodeficiency virus (HIV). Needlesticks and other sharps-related injuries may expose workers to bloodborne pathogens. Workers in many occupations, including dental offices and other healthcare personnel, all may be at risk for exposure to bloodborne pathogens.

In order to reduce or eliminate the hazards of occupational exposure to bloodborne pathogens, an employer must implement an exposure control plan with details on employee protection measures. The plan must also describe how an employer will use engineering and work practice controls, personal protective clothing and equipment, employee training, medical surveillance, hepatitis B vaccinations, and other provisions as required by OSHA's Bloodborne Pathogens Standard ([29 CFR 1910.1030](#)). Engineering controls are the primary means of eliminating or minimizing employee exposure and include the use of safer medical devices, such as needleless devices, shielded needle devices, and plastic capillary tubes.

Employers should follow all federal (including the Occupational Safety and Health Administration (OSHA)) and state requirements for recording and reporting occupational injuries and exposures. The following information should be included in the exposure report, recorded in the exposed person's confidential medical record, and made available to qualified health care professionals:

- ◇ Date and time of exposure.
- ◇ Details of the procedure being performed, including where and how the exposure occurred, whether the exposure involved a sharp device, the type of device, whether there was visible blood on the device, and how and when during its handling the exposure occurred.
- ◇ Details of the exposure, including the type and amount of fluid or material and the severity of the exposure. For a percutaneous injury, details would include the depth of the wound, the gauge of the needle, and whether fluid was injected; for a skin or mucous membrane exposure they would include the estimated volume of material, the duration of contact, and the condition of the skin (e.g., chapped, abraded, or intact).
- ◇ Details about the exposure source—whether the patient was infected with hepatitis B virus (HBV) and his or her hepatitis B e antigen (HBeAg) status; hepatitis C virus (HCV); or human immunodeficiency virus (HIV); and, if

the source was infected with HIV, the stage of disease, history of antiretroviral therapy, and viral load, if known. If this information is not known from the medical record, then the source patient should be asked to obtain serologic testing for HBV, HCV, and HIV.

- ◇ Details about the exposed person (e.g., hepatitis B vaccination and vaccine-response status).
- ◇ Details about counseling, post-exposure management, and follow-up.

<https://www.osha.gov/SLTC/bloodborne pathogens/index.html>

4. Compressed Gases

Hazards associated with compressed gases include oxygen displacement, fires, explosions, and toxic gas exposures, as well as the physical hazards associated with high pressure systems. Special storage, use, and handling precautions are necessary in order to control these hazards.

Individuals using compressed gases must be trained in the safe use of the material and pressurized systems. General requirements for their storage, use and handling include the following:

- ◇ Always transport cylinders with the safety cap installed and use a cylinder cart. Do not roll them by hand along the floor or transport them on forklifts.
- ◇ Always store cylinders upright and secure them using an approved lock-down device.
- ◇ Oxygen and fuel gas cylinders should be separated by a minimum of 20 feet when in storage.
- ◇ Always use the correct pressure regulator for the specific gas.
- ◇ Do not store cylinders with the regulator in place. If the regulator fails, the entire contents of the cylinder may be discharged.
- ◇ Compressed gas cylinder valve covers should be in place when cylinders are not in use.
- ◇ Compressed Gas Association (CGA) fittings differ for inert gases (e.g., He, Ar, N₂), flammable gases (e.g., H₂) and oxidizers (e.g., O₂, N₂O).
- ◇ Compressed gas cylinders, which contain acutely toxic gases, must be stored in a designated area
- ◇ All compressed gas cylinders must be clearly marked with the correct chemical name
- ◇ All cylinders should be labeled to indicate if the container is full or empty.
- ◇ Employees should be prohibited from using compressed gases (air) to clean clothing or work surfaces.

<https://www.osha.gov/SLTC/compressedgasequipment/standards.html>

5. Electrical Safety

Electrical equipment used in an office is potentially hazardous and can cause serious shock and burn injuries if improperly used or maintained.

- ◇ Overloading electrical circuits and extension cords can result in a fire.
- ◇ Electric cords should be examined on a routine basis for fraying and exposed wiring.
- ◇ Don't fasten extension cords with staples, hang from nails, or suspend by wire.
- ◇ Never operate electrical equipment while you are standing in water.
- ◇ Never repair electrical cords or equipment unless qualified and authorized.
- ◇ Have a qualified electrician inspect electrical equipment that has gotten wet before energizing it.
- ◇ If working in damp locations, inspect electric cords and equipment to ensure that they are in good condition and free of defects, and use a ground-fault circuit interrupter (GFCI).
- ◇ Always use caution when working near electricity.

6. Emergency Action Plans

The objective of an Emergency Action Plan is to comply with the Occupational Safety and Health Administration's

(OSHA) Emergency Action Plan Standard, 29 CFR 1910.38, and to prepare employees for dealing with emergency situations. This plan is designed to minimize injury and loss of human life and company resources by training employees, procuring and maintaining necessary equipment, and assigning responsibilities. The plan should identify all emergencies that may reasonably be expected to occur within dental offices. This may include:

- ◇ Fire Reporting
- ◇ Evacuation Procedures
- ◇ Explosion
- ◇ Weather
- ◇ Bomb Threat
- ◇ Chemical Spill / Leak
- ◇ Violence
- ◇ Medical Emergencies

<https://www.osha.gov/SLTC/etools/evacuation/eap.html>

7. Ergonomics

Ergonomics is a way to work smarter- not harder, by designing tools, equipment, work stations and tasks to fit the job to the worker- NOT the worker to the job. Ergonomics have one primary objective – the prevention of work-related musculoskeletal disorders (MSDs), or the symptoms that aggravate these disorders. In dentistry, bad working habits, repetitive tasks – such as scaling, root planning, and uncomfortable physical postures contribute greatly to musculoskeletal disorders, stress, and loss of productivity. Ergonomic hazards can be managed or alleviated effectively using a multifaceted approach that includes preventive education, postural and positioning strategies, proper selection and use of ergonomic equipment and frequent breaks with stretching and postural strengthening techniques.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4144062/>

8. Ethylene Oxide

Ethylene Oxide (EtO) is used to sterilize medical equipment and supplies. EtO possesses several physical and health hazards that merit special attention. EtO is both flammable and highly reactive. Acute exposures to EtO gas may result in respiratory irritation and lung injury, headache, nausea, vomiting, diarrhea, shortness of breath, and cyanosis (a bluish discoloration of the skin resulting from poor circulation or inadequate oxygenation of the blood). Chronic exposure has been associated with the occurrence of cancer, reproductive effects, mutagenic changes, neurotoxicity, and sensitization. (29 CFR 1910.1047)

https://www.osha.gov/OshDoc/data_General_Facts/ethylene-oxide-factsheet.pdf

9. Fire Prevention

Workplace fires and explosions kill hundreds and injure thousands of workers each year. One way to limit the amount of damage due to such fires is to make portable fire extinguishers an important part of your fire prevention program. When used properly, fire extinguishers can save lives and property by putting out a small fire or controlling a fire until additional help arrives. A fire is the most common type of emergency for which small businesses must plan. A critical decision when planning is whether or not employees should fight a small fire with a portable fire extinguisher or simply evacuate.

If fire extinguishers are available for employee use, it is the employer's responsibility to educate employees on the principles and practices of using a fire extinguisher and the hazards associated with fighting small or developing fires.

<https://www.osha.gov/SLTC/firesafety/index.html>

10. First Aid, CPR and AED Response

First aid is emergency care provided for injury or sudden illness before emergency medical treatment is available. The first-aid provider in the workplace is someone who is trained in the delivery of initial medical emergency procedures, using a limited amount of equipment to perform a primary assessment and intervention while awaiting arrival of emergency medical service (EMS) personnel.

It is a requirement of OSHA that employees be given a safe and healthy workplace that is reasonably free of occupational hazards. However, it is unrealistic to expect accidents not to happen. Therefore, employers are required to provide medical and first aid personnel and supplies commensurate with the hazards of the workplace. The details of a workplace medical and first aid program are dependent on the circumstances of each workplace and employer.

<https://www.osha.gov/Publications/OSHA3317first-aid.pdf>

11. Hazard Communication – Chemicals

OSHA's Hazard Communication Standard (HCS) is based on a simple concept - that employees have both a need and a right to know the hazards and identities of the chemicals they are exposed to when working. They also need to know what protective measures are available to prevent adverse effects from occurring. OSHA designed the HCS to provide employees with the information they need to know.

Knowledge acquired under the HCS will help employers provide safer workplaces for their employees. When employees have information about the chemicals being used, they can take steps to reduce exposures, substitute less hazardous materials, and establish proper work practices. These efforts will help prevent the occurrence of work-related illnesses and injuries caused by chemicals.

The HCS addresses the issues of evaluating and communicating chemical hazard information to workers. Evaluation of chemical hazards involves a number of technical concepts, and is a process that requires the professional judgment of experienced experts. That's why the HCS is designed so that employers who simply use chemicals - rather than produce or import them - are not required to evaluate the hazards of those chemicals. Hazard determination is the responsibility of the manufacturers and importers of the chemicals, who then must provide the hazard information to employers that purchase their products

Employers that do not produce or import chemicals need only focus on those parts of the rule that deal with establishing a workplace program and communicating information to their workers. (29 CFR 1910.1200)

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10099

12. Hygiene and Decontamination

Hand hygiene substantially reduces potential pathogens on the hands and is considered a primary measure for reducing the risk of transmitting organisms to patients and health care personnel (HCP). Hospital-based studies have shown that noncompliance with hand hygiene practices is associated with health care-associated infections, the spread of multi-resistant organisms, and has been a major contributor to outbreaks. Studies also have shown that the prevalence of health care-associated infections decreased as hand hygiene measures improved.

Indications for hand hygiene include the following:

- ◇ Before and after treating each patient (e.g., before glove placement and after glove removal).
- ◇ After barehanded touching of inanimate objects likely to be contaminated by blood, saliva, or respiratory secretions.
- ◇ Before leaving the dental operatory.

- ◊ When hands are visibly soiled. Before regloving, after removing gloves that are torn, cut, or punctured.
- ◊ For oral surgical procedures, perform surgical hand antisepsis before donning sterile surgical gloves.

Before high-level disinfection or sterilization, instruments should be cleaned to remove debris. Cleaning may be accomplished by a thorough scrubbing with soap and water or a detergent, or by using a mechanical device (e.g., an ultrasonic cleaner). Persons involved in cleaning and decontaminating instruments should wear heavy-duty rubber gloves to prevent hand injuries. Metal and heat-stable dental instruments should be routinely sterilized between use by steam under pressure (autoclaving), dry heat, or chemical vapor. The adequacy of sterilization cycles should be verified by the periodic use of spore-testing devices (e.g., weekly for most dental practices). Heat- and steam-sensitive chemical indicators may be used on the outside of each pack to assure it has been exposed to a sterilizing cycle.

At the completion of work activities, countertops and surfaces that may have become contaminated with blood or saliva should be wiped with absorbent toweling to remove extraneous organic material, then disinfected with a suitable chemical germicide.

<http://www.cdc.gov/OralHealth/infectioncontrol/fag/hand.htm>

13. Industrial Hygiene

Industrial Hygiene is the science of anticipating, recognizing, evaluating and controlling workplace conditions that may cause workers injury or illness. Industrial hygienists use environmental monitoring and analytical methods to detect the extent of worker exposure and employ engineering, work practice controls and other methods to control potential health hazards.

Air Contaminants are commonly classified as either particulate or gas and vapor contaminants. The most common particulate contaminants include dusts, fumes, mists, aerosols and fibers.

Harmful chemical compounds in the form of solids, liquids, gases, mists dusts, fumes and vapors exert toxic effects by inhalation (breathing), absorption (through direct contact with the skin), or ingestion (eating or drinking).

Biological hazards include bacteria, viruses, fungi and other living organisms that can cause acute and chronic infections by entering the body either directly or through breaks in the skin. Effective personal hygiene, particularly proper attention to minor cuts and scratches, especially those on the hands and forearms, should be followed to keep worker risks to a minimum.

Physical hazards include excessive levels of ionizing and nonionizing electromagnetic radiation, noise, vibration, illumination, and temperature. Hazard controls include engineering, work practice and administrative controls. Engineering controls include practices such as replacing harmful toxic materials with less hazardous ones. Work practice controls alter the manner in which a task is performed such as implementing good housekeeping procedures. Administrative controls include controlling employees' exposure by scheduling production and workers' tasks.

Personal protective equipment (PPE) may be required when effective engineering, work practice or administrative controls are not feasible to achieve the permissible exposure limit or while such controls are being instituted.

14. Ladder Safety

Many of the basic safety rules that apply to most tools also apply to the safe use of a ladder:

- ◊ Before using a ladder, inspect it to confirm it is in good working condition. Ladders with loose or missing parts must be rejected. Rickety ladders that sway or lean to the side must be rejected.

- ◇ The ladder you select must be the right size for the job. The Duty Rating of the ladder must be greater than the total weight of the climber, tools, supplies, and other objects placed upon the ladder. The length of the ladder must be sufficient so that the climber does not have to stand on the top rung or step.
- ◇ Only one person at a time is permitted on a ladder unless the ladder is specifically designed for more than one climber (such as a Trestle Ladder).
- ◇ Factors contributing to falls from ladders include haste, sudden movement, lack of attention, the condition of the ladder (worn or damaged), the user's age or physical condition, or both, and the user's footwear.
- ◇ When climbing a ladder, it is safest to utilize Three Points-of-Contact because it minimizes the chances of slipping and falling from the ladder.

https://www.osha.gov/Publications/portable_ladder_gc.html

15. Material Handling

Back injuries are one of the most common problems we can have with our body. They affect all types of people and back injuries occur on all types of jobs.

Use proper lifting and carrying techniques:

To lift:

- ◇ Keep the object close to your body
- ◇ Bend you knees, keep your back straight and slowly straighten your legs
- ◇ Bring your back to a full, upright position

There are also rules for carrying objects:

- ◇ Make sure that you can see
- ◇ Move slowly and smoothly
- ◇ Always turn your feet, never twist your back
- ◇ Just reverse the steps you used to lift the object when you put it down

Use material handling devices whenever possible such as: forklifts, hand trucks, carts, and pallet jacks.

Some loads are too big or heavy for one person. These require team lifting, which also requires proper techniques in order to be safe.

- ◇ Designate a person to lead the lift
- ◇ Lift at the same time
- ◇ Keep the load level
- ◇ Slowly unload together

<http://www.cdc.gov/niosh/docs/2007-131/pdfs/2007-131.pdf>

16. Medical Lasers

LASER is an acronym which stands for Light Amplification by Stimulated Emission of Radiation. A laser produces an intense, highly directional beam of light. Lasers can be used to detect caries, prepare teeth for fillings, seal dental tubules to reduce sensitivity, and whiten teeth. There are also soft-tissue applications as the beam can be adjusted to enable it to cut, vaporize, or cauterize tissue.

The FDA requires engineering controls for laser use. Engineering controls include an on/off key or password to operate the unit, an emergency stop button, a foot switch cover guard, safety interlocks on paneling and housing, software diagnostics, standby mode prior to ready mode with a five-second delay, system time out, and visible and auditory sounds when the laser is in use.

The American National Standards Institute (ANSI) recommends that there be administrative controls for laser use. Administrative controls include that there be a laser safety officer responsible for making sure all engineering controls
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are in place. Another responsibility of the laser safety officer is determining the hazard zone for each laser. The hazard zone is the distance around the laser that is dangerous when the laser is in use. This distance is device-specific and not wavelength-specific, so it is important to review and understand the manufacturer's instructions for each type of laser used in the dental practice to determine the hazard zone. A "Laser in Use" sign must be posted outside the operatory when a laser is being used.

Another responsibility of the laser safety officer is to make sure that appropriate protective eyewear is available. Eyewear is laser-specific, determined by the wavelength. One kind of specially filtered eyewear for a brand/type of laser may not be enough protection for another brand/type of laser. The eyewear itself will display the optical density (OD) and the nanometers that it protects against. Health-care providers should carefully review the laser device owner's manual and operating instructions to confirm that the eyewear is the appropriate level of protection for the device being used.

Anyone who operates a laser or assists during laser use must be well versed in the use of lasers and follow all safety precautions.

<https://www.osha.gov/SLTC/laserhazards/>

17. Motor Vehicle Operations

Only authorized drivers' should operate motor vehicles!

All laws and regulations should be strictly followed including proof of a valid Drivers' / operator's license

A seat belt is to be used at all times by the driver and passenger(s)

Vehicles should not be operated if impaired by alcohol or any drug, including medications

Operators should be prohibited from:

- ◊ Using mobile devices to text message, receive or respond to email, or access the internet
- ◊ Smoking in or near vehicles
- ◊ Using radio/audio headsets or ear buds while operating a vehicle
- ◊ Using vehicles for personal business such as unauthorized home-to-work travel

<https://www.osha.gov/SLTC/motorvehiclesafety/index.html>

18. Needlesticks / Sharps Injury Prevention

An effective sharps injury prevention program includes several components that must work in concert to prevent healthcare personnel from suffering needlesticks and other sharps-related injuries. This program plan is designed to be integrated into existing performance improvement, infection control, and safety programs. It is based on a model of continuous quality improvement, an approach that successful healthcare organizations are increasingly adopting. This model can be described in a variety of terms, but the underlying concept is that of a systematic, organization-wide approach for continually improving all processes (Processes Performance Improvement) involved in the delivery of quality products and services. The program plan also draws on concepts from the industrial hygiene profession, in which prevention interventions are prioritized based on a hierarchy of control strategies. The plan has two main components:

- ◊ Organizational steps for developing and implementing a sharps injury prevention program. These include a series of administrative and organizational activities, beginning with the creation of a multidisciplinary working team.
- ◊ Operational processes. These activities form the backbone of the sharps injury prevention program. They include creating a culture of safety, reporting injuries, analyzing data, and selecting and evaluating devices.

http://www.cdc.gov/sharpsafety/pdf/sharpsworkbook_2008.pdf

If you experience a needlestick or sharps injury or were exposed to the blood or other body fluid of a patient during the course of your work, immediately follow these steps:

- ◊ Wash needlesticks and cuts with soap and water
- ◊ Flush splashes to the nose, mouth, or skin with water
- ◊ Irrigate eyes with clean water, saline, or sterile irrigants
- ◊ Report the incident to your supervisor
- ◊ Immediately seek medical treatment

In addition to other requirements, contaminated sharps shall not be bent, recapped or removed from devices except when the procedure is preformed using a mechanical device or a one-handed technique, and the employer can demonstrate that no alternative is feasible, or that such action is required by a specific dental procedure. In addition to the 1904 Recordkeeping Requirements, all percutaneous injuries from contaminated sharps are also recorded in a Sharps Injury Log.

https://www.ctdol.state.ct.us/osha/sample_SharpsInjLog.pdf

19. Personal Protective Equipment (PPE)

For protection of personnel and patients, gloves must always be worn, when touching blood, saliva, or mucous membranes. Gloves must be worn by dental health-care workers (DHCWs) when touching blood-soiled items, body fluids, or secretions, as well as surfaces contaminated with them. Gloves must be worn when examining all oral lesions. All work must be completed on one patient, where possible, and the hands must be washed and regloved before performing procedures on another patient. Repeated use of a single pair of gloves is not recommended, since such use is likely to produce defects in the glove material, which will diminish its value as an effective barrier.

Surgical masks and protective eyewear or chin-length plastic face shields must be worn when splashing or spattering of blood or other body fluids is likely, as is common in dentistry.

Respiratory protection is meant to protect both portals to the respiratory system – the mouth and the nose. Inhalation of airborne droplets can lead to many types of respiratory infections, including colds, influenza, tuberculosis, and others. Selecting the appropriate type of facemask is also important for dental professionals. Facemasks are rated and certified by the American National Standards Institute (ANSI). As such, ANSI classifies masks by safety characteristics: bacterial filtration efficiency, particle filtration efficiency, and body fluid penetration (splash repellence, splash resistance, and fluid resistance).

Reusable or disposable gowns, laboratory coats, or uniforms must be worn when clothing is likely to be soiled with blood or other body fluids. If reusable gowns are worn, they may be washed, using a normal laundry cycle. Gowns should be changed at least daily or when visibly soiled with blood.

Impervious-backed paper, aluminum foil, or clear plastic wrap may be used to cover surfaces (e.g., light handles or x-ray unit heads) that may be contaminated by blood or saliva and that are difficult or impossible to disinfect. The coverings should be removed (while DHCWs are gloved), discarded, and then replaced (after ungloving) with clean material between patients.

All procedures and manipulations of potentially infective materials should be performed carefully to minimize the formation of droplets, spatters, and aerosols, where possible. Use of rubber dams, where appropriate, high-speed evacuation and proper patient positioning should facilitate this process.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/00033634.htm>

20. Slips / Trips / Falls

● Slips

Slips happen where there is too little friction or traction between the footwear and the walking surface. Common causes of slips are:

- ◇ Wet or oily surfaces
- ◇ Occasional spills
- ◇ Weather hazards
- ◇ Loose, unanchored rugs or mats
- ◇ Flooring or other walking surfaces that do not have same degree of traction in all areas

● Trips

Trips happen when your foot collides (strikes, hits) an object causing you to lose balance and, eventually fall. Common causes of tripping are:

- ◇ Obstructed view
- ◇ Poor lighting
- ◇ Clutter in your way
- ◇ Wrinkled carpeting
- ◇ Uncovered cables
- ◇ Bottom drawers not being closed
- ◇ Uneven (steps, thresholds) walking surfaces

Both slips and trips result from some a kind of unintended or unexpected change in the contact between the feet and the ground or walking surface. This shows that good housekeeping, quality of walking surfaces (flooring), selection of proper footwear, and appropriate pace of walking are critical for preventing fall accidents.

● Housekeeping

Good housekeeping is the first and the most important (fundamental) level of preventing falls due to slips and trips. It includes:

- ◇ Cleaning all spills immediately
- ◇ Marking spills and wet areas
- ◇ Mopping or sweeping debris from floors
- ◇ Removing obstacles from walkways and always keeping them free of clutter
- ◇ Securing (tacking, taping, etc.) mats, rugs and carpets that do not lay flat
- ◇ Always closing file cabinet or storage drawers
- ◇ Covering cables that cross walkways
- ◇ Keeping working areas and walkways well lit
- ◇ Replacing used light bulbs and faulty switches

Without good housekeeping practices, any other preventive measures such as installation of sophisticated flooring, specialty footwear or training on techniques of walking and safe falling will never be fully effective.

● Flooring

Changing or modifying walking surfaces is the next level of preventing slip and trips. Recoating or replacing floors, installing mats, pressure-sensitive abrasive strips or abrasive-filled paint-on coating and metal or synthetic decking can further improve safety and reduce risk of falling. However, it is critical to remember that high-tech flooring requires

good housekeeping as much as any other flooring. In addition, resilient, non-slippery flooring prevents or reduces foot fatigue and contributes to slip prevention measures.

- **Footwear**

In workplaces where floors may be oily or wet or where workers spend considerable time outdoors, prevention of fall accidents should focus on selecting proper footwear. Since there is no footwear with anti-slip properties for every condition, consultation with manufacturers' is highly recommended. Properly fitting footwear increases comfort and prevents fatigue which, in turn, improves safety for the employee.

21. Tuberculosis

Tuberculosis (TB) is caused by a bacterium called *Mycobacterium tuberculosis*. The bacteria usually attack the lungs, but TB bacteria can attack any part of the body such as the kidney, spine, and brain. Not everyone infected with TB bacteria becomes sick. As a result, two TB-related conditions exist: latent TB infection (LTBI) and TB disease. If not treated properly, TB disease can be fatal.

TB bacteria are spread through the air from one person to another. The TB bacteria are put into the air when a person with TB disease of the lungs or throat coughs, speaks, or sings. People nearby may breathe in these bacteria and become infected. If you think you have been exposed to someone with TB disease, you should contact your doctor or local health department about getting a TB skin test or a special TB blood test. Be sure to tell the doctor or nurse when you spent time with the person who has TB disease.

If respirators are used in a health-care setting, the Occupational Safety and Health Administration (OSHA) requires the development, implementation, administration, and periodic reevaluation of a respiratory protection program. The most critical elements of a respiratory protection program include 1) assignment of responsibility, 2) training, and 3) fit testing. All HCWs who use respirators for protection against *M. tuberculosis* infection should be included in the respiratory protection program.

<http://www.cdc.gov/tb/publications/factsheets/prevention/rphcs.htm>

22. Waste Anesthetic Gas Control

In anesthetizing locations and post-anesthesia care units (PACU), where employees are at risk of exposure to waste anesthetic gases, exposure will be controlled by some or all of the following: (1) effective anesthetic gas scavenging systems that remove excess anesthetic gas at the point of origin; (2) effective general or dilution ventilation; (3) good work practices and administrative controls on the part of the health care workers, including the proper use of controls; (4) personal protective equipment, (5) proper maintenance of equipment to prevent leaks; and (6) periodic personnel exposure and environmental monitoring to determine the effectiveness of the overall waste anesthetic gas control program. (29 CFR 1910.1000)

The waste anesthetic gases and vapors of concern are nitrous oxide and halogenated agents (vapors) such as halothane, enflurane, isoflurane, and desflurane.

<https://www.osha.gov/SLTC/wasteanestheticgases/solutions.html>

23. Workplace Violence

Workplace violence is any act or threat of physical violence, harassment, intimidation, or other threatening disruptive behavior that occurs at the work site. It ranges from threats and verbal abuse to physical assaults and even homicide. It can affect and involve employees, clients, customers and visitors. Homicide is currently the fourth-leading cause of fatal occupational injuries in the United States.

Nearly 2 million American workers report having been victims of workplace violence each year. Unfortunately, many more cases go unreported. Research has identified factors that may increase the risk of violence for some workers at certain worksites. Such factors include exchanging money with the public and working with volatile, unstable people. Working alone or in isolated areas may also contribute to the potential for violence. Providing services and care, and working where alcohol is served may also impact the likelihood of violence.

In most workplaces where risk factors can be identified, the risk of assault can be prevented or minimized if employers take appropriate precautions. One of the best protections employers can offer their workers is to establish a zero-tolerance policy toward workplace violence. This policy should cover all workers, patients, clients, visitors, contractors, and anyone else who may come in contact with company personnel.

By assessing their worksites, employers can identify methods for reducing the likelihood of incidents occurring. OSHA believes that a well-written and implemented workplace violence prevention program, combined with engineering controls, administrative controls and training can reduce the incidence of workplace violence in both the private sector and federal workplaces.

This can be a separate workplace violence prevention program or can be incorporated into an injury and illness prevention program, employee handbook, or manual of standard operating procedures. It is critical to ensure that all workers know the policy and understand that all claims of workplace violence will be investigated and remedied promptly.

<http://www.cdc.gov/niosh/docs/96-100/develop.html>

24. X-ray / Ionizing Radiation

State laws and regulations set specific requirements for the use of ionizing radiation (which includes X-rays). Contact the state radiation protection program to determine specific requirements for:

- ◇ Inspection and testing for the facility, X-ray machine, radiation monitoring equipment and radiograph processing equipment
- ◇ Permits or licensing
- ◇ Supervision of personnel
- ◇ Use of dosimetry badges
- ◇ Training or certification
- ◇ Dental office design and radiation shielding
- ◇ Record keeping
- ◇ Equipment

Radiographic training requirements for dental office personnel frequently differ from and are less rigorous than those of medical personnel who take X-ray. Training requirements for dental office personnel typically are found in state dental practice acts or dental board regulations.

Each radiation area will be conspicuously posted with a sign or signs bearing the radiation caution symbol and words "Caution – X-Ray Equipment" or works having a similar intent. ([29 CFR1910.1096](#))

<https://www.osha.gov/SLTC/radiationionizing/healtheffects.html>

Additional Resources

Markel Insurance Risk Management Library

<http://www.markelinsurance.com/risk-management-home>

Medical and Dental Office – Safety and Health Management Program – North Carolina Department of Labor

<http://www.nclabor.com/osha/etta/indguide/ig109.pdf>

National Fire Protection Association (NFPA)

<http://www.nfpa.org/>

Occupational Safety and Health Standards – 1910 (OSHA)

https://osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1910

Safety and Health Topics – Dentistry

<https://www.osha.gov/SLTC/dentistry/recognition.html>

The National Institute of Occupational Safety and Health (NIOSH)

<http://www.cdc.gov/niosh/index.htm>