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# Eye on Safety

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## Foot protection

When you think about foot injuries, the first thing to come to mind is how you could drop something onto your feet.

Fortunately, when OSHA thought about potential foot injuries, it decided to protect workers from:

- Falling objects;
- Rolling objects;
- Objects piercing the sole;
- Static discharge; and
- Electrocutation.

The best way to prevent foot injuries is to eliminate or control the hazards at the source by using engineering, work practice, and/ or administrative controls. Foot protection shouldn't be used as a substitute for these primary control measures. However, foot protection should be used when a hazard assessment finds that employees still face hazards despite these controls.

OSHA's foot protection standard, 1910.136, requires footwear to comply with certain industry consensus standards (unless the employer can demonstrate that other footwear is equally effective): ANSI Z41-1991, ANSI Z41- 1999, or ASTM F-2412-2005 and F-2413-2005. ASTM international standards, F 2412, Test Methods for Foot Protection, and F 2413, Specification for Performance Requirements for Protective Footwear, have replaced the former ANSI Z41 standard, Standard for Personal Protection — Protective Footwear.



Employers are required to have their employees wear protective footwear when they're exposed to the hazards, but employers might not be required to pay for it. OSHA's requirements for employer payment at 1910.132(h) include an exception for non-specialty safety-toe protective footwear that employees are allowed to wear off the job site. However, if the footwear provides specialized protection, the employer must pay for it. When metatarsal protection is necessary, employers can provide and pay for removable metatarsal guards instead of paying for footwear having built-in metatarsal protection. Even though employers might not have to pay for protective footwear, many employers choose to do so as a way to promote its use.

### When to wear protective footwear

Your employer must assess the hazards in the workplace that can be addressed by wearing personal protective equipment.

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**National Institutes of Health  
Office of Research Services  
Division of Occupational  
Health and Safety**

**Providing a safe and healthy  
environment for employees,  
patients and visitors.**

***“Safe science and good  
science go hand-in-hand.”***

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## Foot protection *(continued from page 1)*

You need to wear protective footwear when working in areas where there is a danger of foot injuries due to falling and rolling where your feet are exposed to electrical hazards.

For example, safety shoes or boots with impact and compression protection are required to be worn in work areas where employees carry or handle materials such as packages, objects, parts, or heavy tools that could be dropped; where operations could cause objects to fall onto the feet; and where materials or equipment could roll over a worker's feet. Safety shoes or boots with puncture-resistant soles are needed where sharp objects such as nails, wire, scrap metal etc., could be stepped on to cause an injury.

### Foot protection choices

Foot protection choices include the following:

- Toe guards fit over the toes of regular shoes to protect the toes from impact and compression hazards. They may be made of steel, aluminum, or a composite material. They're typically used on a temporary basis.
- Metatarsal guards protect the instep area (top of the foot) from impact and compression. Made of aluminum, steel, fiberglass, or a composite material, these guards can be a built-in part of the shoe or boot. Removable metatarsal guards that are strapped to the outside of the footwear are also available.
- Safety shoes have a built-in impact- and compression-resistant toe cap.
- The metal insoles of some safety shoes protect against puncture wounds.
- Electrical hazard safety-toe shoes are nonconductive and will prevent the wearers' feet from completing an electrical circuit to the ground. These shoes can protect against open circuits of up to 600 volts in dry conditions and should be used in conjunction with other insulating equipment and additional precautions to reduce the risk of electrocution. *Note:* Nonconductive footwear must not be used in explosive or hazardous locations.
- Electrically conductive shoes provide protection against the buildup of static electricity. Employees working in explosive and hazardous locations such as explosives manufacturing facilities or grain elevators must wear conductive shoes to reduce the risk of static electricity buildup on the body that could produce a spark and cause an explosion or fire. Foot powder should not be used in conjunction with protective conductive footwear because it provides insulation, reducing the conductive ability of the shoes. Silk, wool, and nylon socks can produce static electricity and should not be worn with conductive footwear.

*Note:* Employees exposed to electrical hazards must never wear conductive shoes.

- Foundry boots are designed to keep hot metal from lodging in shoelace eyelets, tongues, or other shoe parts. In addition, they insulate the feet from the extreme heat of molten metal. They are snug-fitting and have built-in safety toes. Foundry boots have quick-release fasteners or elasticized insets to allow their speedy removal should any hazardous substances get into the boot itself.
- Chemical-resistant safety boots keep feet dry while providing an impact- and compression-resistant toe cap. Chemical-resistant overboots without a protective toe are also available to be worn over protective footwear.

When shopping for safety shoes, make sure they're either labeled "Complies with ASTM F 2412-05 and F 2413- 05" or marked to show they were approved under ANSI Z41.

### Proper wearing of protective footwear

In order for personal protective equipment to be effective, it must be comfortable, and it must be worn properly. Sometimes foot protection may be uncomfortable simply because it does not fit well. To help get a good fit, when you try on protective footwear, wear the same type of socks that you will wear on the job. Foot protection is designed to do an important job — never alter it or remove parts.

### Proper care and maintenance

Periodic inspection assures you that your safety footwear is still giving you the level of protection you need. Inspect before each use. Check for wear and tear, holes, separation of materials and broken buckles or laces. The soles of shoes should be checked for pieces of metal or other embedded items that could present electrical or tripping hazards.

Normal wear as the footwear ages may reduce its effectiveness. In addition, protection is compromised if the footwear is damaged. The insulating protection of electrical hazard, safety-toe shoes may be compromised if the soles are worn through or metal particles become embedded in the sole or heel.



# Safety focus: Preparing for flu season

A bad flu season can put the brakes on your organization's productivity.

## Have a plan

The Centers for Disease Control and Prevention (CDC) encourages employers to implement a strategy for preventing the flu.



One strategy is to host a flu vaccination clinic in the workplace. Offering onsite flu vaccination at low or no cost can reduce the number of employees who miss work due to contracting the flu. Pharmacies and community

vaccinators can be contracted to provide seasonal flu vaccination services on-site at the start of flu season.

Another option is to promote flu vaccination in the community. With this strategy, find out what health care providers, pharmacies, and clinics provide seasonal flu vaccines. Then, make sure your employees know where they and their families can get seasonal flu vaccines. You can also partner with a pharmacy or provider to get your employees vaccinated for low or no cost.

## Flu is serious

Flu can be a serious disease, particularly among young children, older adults, and people with certain chronic health conditions, such as asthma, heart disease, or diabetes. Any flu infection can carry a risk of serious complications, hospitalization, or death, even among otherwise healthy children and adults.

## Get vaccinated

CDC and the Advisory Committee on Immunization Practices (ACIP) recommend that flu vaccinations begin by the end of October, if possible. However, as long as flu viruses are circulating, it's not too late to get vaccinated, even in January or later. Most of the time, flu activity peaks between December and February, although activity can last as late as May. It's best to be vaccinated in time to be protected before flu viruses begin spreading in your area because it takes about two weeks after vaccination for the body to develop the antibodies that protect against flu virus infection. Studies suggest that immunity lasts through a full flu season for most people.

Getting an annual flu vaccine is everyone's best strategy for staying healthy. The CDC recommends the vaccine for everyone six months and older. Flu vaccination can reduce

illness severity and duration, visits to the doctor, and missed work and school due to the flu, as well as prevent flu-related hospitalizations. The more people who get vaccinated, the more people will be protected from flu.

You need a vaccine every year because there are many flu viruses and they are constantly changing. The composition of U.S. flu vaccines is reviewed annually and updated to match circulating flu viruses. Flu vaccines protect against the three or four viruses that research suggests will be most common.

## Side effects

A flu shot cannot give you the flu. The most common side effects from the influenza shot are soreness, redness, tenderness, or swelling where the shot was given.

This usually lasts less than two days. Other reactions following the flu shot are usually mild and can include a low-grade fever and aches. If these reactions occur, they usually begin soon after the shot and last one or two days. The most common reactions people have to flu vaccine are considerably less severe than the symptoms caused by actual flu illness. Serious allergic reactions to flu vaccines are very rare.

## If you get sick

The symptoms of flu can include fever or chills, cough, sore throat, runny or stuffy nose, muscle or body aches, headaches, and fatigue.

Cold symptoms are usually milder than the symptoms of flu. People with colds

are more likely to have a runny or stuffy nose. Symptoms such as vomiting, diarrhea, and being nauseous can sometimes be related to the flu (more commonly in children than adults), but these problems are rarely the main symptoms of influenza. The flu is a respiratory disease and not a stomach or intestinal disease. A serious complication of flu illness is the development of pneumonia.

If you get the flu, stay at home as soon as symptoms begin until you are fever-free for 24 hours without the use of fever-reducing medicine. While you're sick, stay away from others as much as possible to keep from infecting them. Cover coughs and sneezes with a tissue, and wash your hands often to keep from spreading flu to others.





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## Sleep apnea: It's more than a snore

*"We are all born ignorant, but one must work hard to remain stupid."*

Benjamin Franklin,  
American  
Statesman  
1706-1790

Snorting, snoring, and gasping for breath during the night may be signs of sleep apnea, a breathing interruption caused by a blocked airway. The condition is sometimes called OSA or obstructive sleep apnea.

A person with sleep apnea actually stops breathing repeatedly during sleep. A short deep breath, gasp, or sudden sensation of choking occurs when the airway reopens. Usually the sleeper is unaware of these sleep interruptions, which can occur hundreds of times each night.

A common symptom of sleep apnea is daytime sleepiness due to interrupted sleep at night. Additional symptoms include:

- Restless sleep or insomnia
- Difficulty concentrating
- Waking up several times a night to urinate
- Waking up with a dry mouth or sore throat
- Morning headaches
- Heartburn
- Decreased libido

Sleep apnea is dangerous because, left untreated, it can contribute to serious health conditions including high blood pressure, stroke, heart disease, and diabetes.



In addition to medical conditions, the daytime sleepiness caused by sleep apnea can decrease work or school performance and increase the risk of accidents while driving or working.

If you are experiencing symptoms of sleep apnea, talk to a physician who may order a sleep apnea test to be done in a sleep center or possibly at home. After sleep apnea is diagnosed, treatment options can be discussed.

### Are you at risk for sleep apnea?

Some people are at higher risk for sleep apnea. Risk factors include:

- Back sleeping
- Obesity
- Chronic sinusitis
- Large neck circumference (greater than 17 inches for men/15 inches for women)
- Large tonsils or adenoids
- Smoking
- Family history of sleep apnea
- Recessed chin

Lifestyle changes can be a first step in treating sleep apnea. These include: avoiding alcohol, giving up smoking, losing weight, and changing one's sleep position from back sleeping to side sleeping.



**Sleep apnea can contribute to other serious health conditions.**