PPE – Legs/Feet Quiz

QUESTION

How can employers help workers to protect their feet?

ANSWER

Trough safety programs, employers, can do the following:

- Train and inform on the health hazards of wearing improper shoes.
- Set principles for selecting proper shoes.
- Set simple rules of general foot care.

WHY IS IT RIGHT

WORK RELATED FOOT INJURIES

There are two major categories of work-related foot injuries.

- The first category includes foot injuries from punctures, crushing, sprains, and lacerations (cuts).
- The second group of injuries includes those resulting from slips, trips and falls.

FOOT COMPOSITION

Foot injuries are among the most common workers' compensation injuries, including breaks, fractures and heel injuries. The human foot and ankle contain 26 bones, 33 joints and more than a hundred muscles, tendons and ligaments, No wonder injuries to the foot can be especially painful – and painfully slow to heal.

OSHA'S ROLE

OSHA has identified common work-related foot injuries and causes:

- Safety shoes required when using pallet jack sign
- Crushed or broken feet, amputation of toes or feet – Falling objects, moving vehicles, feet trapped between objects or caught in a crack, conveyor belts
- Punctures of the sole of the foot – Loose nails, sharp metal or glass objects
- Cuts or severed feet or toes – Chain saws, rotary mowers, unguarded machinery
- Burns – Molten metal splashes, chemical splashes, contact with fire, flammable or explosive atmospheres
- Electric shocks – Static electricity, contact with sources of electricity
- Sprained or twisted ankles, fractured or broken bones during slips, trips or falls – Slippery floors, littered walkways, incorrect footwear, poor lighting

REGULATIONS

- Workers must wear protective footwear when working in areas where there is a danger of falling or rolling objects or objects piercing the sole.
- Protective footwear must meet ANSI Z41 or equivalent design requirements. All ANSI-approved footwear has a protective toe and offers impact and compression protection. But the type and amount of protection is not always the same. Different footwear protects in different ways. Check the product’s labeling or consult the manufacturer to make sure the footwear will protect users from the hazards they face.
- Safety shoes or boots may be required to provide special electrical conduction or insulation to prevent electric shock or static electric spark.
- Chemical-resistant boots may be required to provide protection from caustic, reactive, toxic, or corrosive materials during cleaning, or surface preparation.
- Slip-resistant soled shoes should be worn when working on slippery surfaces.

FOOT HAZARDS

- Chemical/Biological
- Compression
- Impact
- Electrical shock
- Explosive
- Extreme Heat and Cold
- Cutting tools
- Static Electricity
- Slippery Surface
- Wet Surfaces

SPECIFIC EXAMPLES OF WORKPLACE FOOT INJURIES

Injuries

- Crushed or broken feet, amputations of toes or feet.
- Punctures of the sole of the foot.
- Cuts or severed feet or toes, lacerations .
- Burns.

- Electric shocks.
- Sprained or twisted ankles, fractured or broken bones because of slips, trips or falls.

Common Causes

Feet trapped between objects or caught in a crack, falls of heavy objects, moving vehicles (lift trucks, bulldozers, etc.), conveyor belts (feet drawn between belt and roller).

Loose nails, sharp metal or glass objects.

Chain saws, rotary mowers, unguarded machinery.

Molten metal splashes, chemical splashes, contact with fire, flammable or explosive atmospheres.

Static electricity, contact with sources of electricity.

Slippery floors, littered walkways, incorrect footwear, poor lighting.

OTHER FOOT PROBLEM AT WORK

There is a whole range of foot problems at work. There are also other conditions such as calluses, ingrown toenails or simply tired feet that are common among workers. Although these may not be considered as occupational injuries in the strictest sense, they can have serious consequences for health and safety at the workplace. They cause discomfort, pain and fatigue. Fatigue sets up the worker for further injuries affecting the muscles and joints. Also, a worker who is tired and suffering from pain is less alert and more likely to act unsafely. An incident of any kind may result.

Severely aching feet, blisters, calluses, corns, rheumatism, arthritis, malformations of toes, fallen arches (flat feet), bunions, sprains caused by:

Long periods of standing, hard flooring, and poorly fitted footwear:

– high heels

– pointed shoes

– lack of arch support

– too loose or too tight footwear

Sweaty feet, fungal infections (athlete’s foot) caused by:

Hot and humid environment, strenuous work, footwear with synthetic (non- porous) uppers.

WHY IS EVERYTHING ELSE WRONG

PREVENTION – IDENTIFY/ADDRESS HAZARDS

Prevention of workplace foot injuries makes good sense. Safety shoes and foot PPE reminder signs are not enough.

The first step to reducing foot injuries is to identify and address relevant hazards in the workplace, and taking steps to eliminate or reduce those hazards through job and/or workplace design, including identifying proper foot and leg protection. Foot and leg protection choices include:

- Leggings to protect the lower legs and feet from heat hazards such as molten metal or welding sparks. Safety snaps allow leggings to be removed quickly.
- Metatarsal guards to protect the instep area from impact and compression. Made of aluminum, steel, fiber or plastic, these guards may be strapped to the outside of shoes.
- Toe guards that fit over regular shoes to protect toes from impact and compression hazards. They may be made of steel, aluminum or plastic.
- Combination foot and shin guards that protect the lower legs and feet, and may be used in combination with toe guards when greater protection is needed.
- Safety shoes with impact-resistant toes and heat-resistant soles to protect feet against hot work surfaces common in roofing, paving and hot metal industries.

IMPROVE JOB DESIGN

Aching, flat or tired feet are common among workers who spend most of their working time standing.

The most important goal of job design is to avoid fixed positions especially fixed standing positions. Good job design includes varied tasks requiring changes in body position and using different muscles. Job rotation, job enlargement and teamwork are all ways to make work easier on the feet.

- Job rotation moves workers from one job to another. It distributes standing among a group of workers and shortens the time each individual spends standing. However, it must be a rotation where the worker does something completely different such as walking around or sitting at the next job.
- Job enlargement includes more and different tasks in a worker’s duties. If it increases the variety of body positions and motions, the worker has less chance of developing foot problems.
- Teamwork gives the whole team more control and autonomy in planning and allocation of the work. Each team member carries a set of various operations to complete the whole product. Teamwork allows workers to alternate between tasks which, in turn, reduces the risk of overloading the feet.
- Rest breaks help to alleviate foot problems where redesigning jobs is impractical. Frequent short breaks are preferable to fewer long breaks.

IMPROVE DESIGN OF WORKPLACE

Redesigning the job alone will not effectively reduce foot problems if it is not combined with the proper design of the workplace.

- For standing jobs, an adjustable work surface is the best choice. If the work surface is not adjustable, two solutions include installing a platform to raise the shorter worker or a pedestal to raise the object for a taller worker.
- Workstation design should allow the worker room to change body position.

- A foot-rail or footrest enables the worker to shift weight from one leg to the other. This ability reduces the stress on the lower legs and feet.
- Where possible, a worker should be able to work sitting or standing at will. Even when work can only be done while standing, a seat should be provided for resting purposes.

MORE IMPROVEMENT

Job and Workplace Designs also have the potential to increase foot safety in workplaces that are specifically hazardous.

Examples:

- Separating mobile equipment from pedestrian traffic and installing safety mirrors and warning signs can decrease the number of incidents that might result in cut or crushed feet or toes.
- Proper guarding of machines such as chain saws or rotary mowers can avoid cuts or severed feet or toes.
- Effective housekeeping reduces the number of incidents at workplaces. For example, loose nails, other sharp objects, and littered walkways are hazards for foot injury.
- Using colour contrast and angular lighting to improve depth vision in complicated areas such as stairs, ramps and passageways reduces the hazard of tripping and falling.
- Posting safety signs in conspicuous places where safety footwear is required when there is a potential hazard from falling objects, sharp objects, etc.

FLOOR/FOOT CONNECTION

Standing or working on a hard, unyielding floor can cause a lot of discomfort. Wood, cork, carpeting, or rubber – anything that provides some flexibility – is gentler on workers' feet. Where resilient floors are not practical, footwear with thick, insulating soles and shock-absorbing insoles can alleviate discomfort. Anti-fatigue matting can also be useful wherever workers have to stand or walk. They provide a cushioning which reduces foot fatigue. However, the use of matting requires caution. When installed improperly, it can lead to tripping and slipping incidents.

Anti-slip flooring or matting can reduce slipping incidents. If installed properly, these mats are useful, but workers may find that their feet burn and feel sore. The non-slip properties of the flooring mat cause their shoes to grab suddenly on the flooring making their feet slide forward inside the shoes. Friction inside the shoes produces heat that creates soreness and, eventually, calluses. A non-slip resilient insole can reduce this discomfort.

Employers Can

Employers through safety programs can help workers protect their feet by providing workers with:

- Training and information on the health hazards of wearing improper shoes.
- Principles for selecting proper shoes.
- Simple rules of general foot care.

ROLE OF PERSONAL PROTECTIVE EQUIPMENT

The role of personal protective equipment is to minimize exposure to specific occupational hazards, not to eliminate them. Protective footwear does not guarantee total protection.

All working footwear, for both men and women, whether it is safety wear or not, should provide comfort without compromising protective value.

- A steel toe cap should cover the whole length of the toes from tips to beyond the natural bend of the foot. A soft pad covering the edge of the toecap increases comfort. If the toecap cuts into the foot, either the size or style of the footwear is incorrect.
- Soles come in a variety of thicknesses and materials. They need to be chosen according to the hazards and type(s) of flooring in the workplace.
- Uppers of protective footwear come in a variety of materials. Selection should take into account the hazards, and individual characteristics of the worker’s foot.
- A steel midsole which protects the foot against penetration by sharp objects should be flexible enough to allow the foot to bend.
- No one type of non-slip footwear can prevent the wearer from slipping on every surface type.

WORKER RESPONSIBILITIES

- Wear the correct footwear. Boots with toecaps and puncture proof soles are required in many industrial work settings. Other jobs may call for non-slip soles, chemical-resistant materials, insulation and other protective qualities. Make sure the shoes meet required safety standards.
- Practice good housekeeping. Keep the area free of clutter which can cause falls and foot injuries. Store tools and materials safely so they will not fall off work surfaces or shelves.
- Clean up spills promptly.
- Pay attention to what you are doing. Accidents causing foot injuries tend to happen when the worker is distracted or in a hurry.
- Handle chemicals with care to avoid accidental contact.
- Keep your feet, socks and safety shoes clean and dry.
- Safety footwear should be inspected prior to each use.
- Shoes and leggings should be checked for wear and tear at reasonable intervals.
- Looking for cracks or holes, separation of materials, 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.
- Employees should follow the manufacturers’ recommendations for cleaning and maintenance of protective footwear.