OSHA Safety Training

LADDER SAFETY
BACK SAFETY
ELECTRICAL SAFETY
PERSONAL PROTECTION EQUIPMENT
Ladder Safety
What’s wrong with this picture??
And this one......
Choose the correct ladder

3 considerations.......

- **Height**....is the ladder tall enough???
- **Performance**....is the weight capacity rating enough to support the employee *and* materials??
- **Material**....is the ladder wood, fiberglass or aluminum? Is the ladder to be used to work on energized equipment?
Select the Right Ladder for the Job

- Use a ladder, not a chair or box, to reach heights.
- The ladder should be:
  - Tall enough to reach the height you need
  - Rated to handle the combined weight of you and your equipment.
- Ladders are rated I-A (holds 300 pounds); I (250 pounds); II (225 pounds); III (200 pounds. Not usually used on the job).
- Safe for the conditions.
  - Don’t use metal ladders around electricity, because metal is a conductor.
ladders

6 foot
7 foot
Inspect Every Ladder Before Using It

- Don’t use a ladder that has any missing or broken parts.
  - Tag it as defective and remove it from service.
  - Don’t try to fix a ladder yourself.
Set Up a Ladder Firmly and Properly

- Place ladder on level floor or ground, with feet parallel to the surface it rests against.
  - Place the ladder on wide boards if the ground is soft or broken.
- Extend the ladder at least three feet above the top support.
  - Don’t rest it on a window or window sash or in front of an unlocked door.
- Have someone hold the ladder.
- The distance from the ladder’s base to the wall should equal one-fourth the ladder’s length.
Use caution when reaching “outside” of the rails of the folding ladder, “Never Overreach”
Ladder Supports must always be in the locked-down position before climbing the ladder
Read, understand and follow ALL warning stickers
Check the load capacity of the ladder
Climb and Work on Ladders Safely

- Wear shoes with clean, nonskid, non-leather soles.
- Allow only one person at a time on a ladder.
- Climb up and down facing the ladder and holding both side rails.
- Move slowly and cautiously on a ladder.
- Don’t move a ladder while you’re on it.
NEVER stand on the top step
NEVER stand on the step below the top step
Never climb up the back side of a folding ladder, unless the ladder is designed for such use.
Never stand on both sides of a folding ladder unless the ladder is designed for such use
What’s wrong????
Carry and Store Ladders Properly

- Carry a ladder with another person when possible.
- Store ladders in a dry, ventilated area.
- Store ladders standing up, if possible.
- Don’t keep anything on a stored ladder, or the ladder will warp.
Back Safety
Why Do You Need To Know?

- 80% of Americans will have a back injury that requires medical attention
- Back injuries are the second most common cause of days away from work, next to the common cold
- Injured backs are often subject to re-injury
- In addition to missed work, there may be a lifetime of pain
General Causes Of Back Injury

Usually a combination of causes:

- Poor posture
- Unconditioned back
- Excess weight and potbellies
- Bad lifting techniques
- Underlying medical condition
Activities That Can Cause Back Injury

• Reaching
• Bending over
• Sitting
• Poor lifting technique
Injury Prevention—Maintain Proper Posture

- Maintain the back’s natural curves
- Stand straight
- Sit properly
- Improve your posture
- Stretch regularly
Injury Prevention—Condition Your Back

- Physical conditioning
- Stay flexible and limber
- Lose excess weight
Injury Prevention—Exercises

- Walk regularly
- Stretch and bend
- Do sit-ups
- Practice leg lifts
- Practice squats
Safe Practices—Use Lifting Equipment

• Stand close with a wide stance

• Bend at the knees

• Pull the load close and grip it
Safe Practices—Use Lifting Equipment

- Tighten stomach, lift your head
- Rise using your legs
Team Lifting

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

• Make sure you can see
• Take small, stable steps
• Do not twist your back
Unload Properly

• Squat with the load
• Do not bend your back over the load
• Be careful of fingers
Think About Your Back

• Be diligent
• Think long term
• Don’t try to lift too much
• Consider your back in all things you do
Key points to Remember...

- Maintain proper back posture
- Exercise regularly
- Use available lifting equipment and have a lifting plan
- Use your legs; bend them when lifting
- Always think about your back
Electrical Safety

- Understand the hazards of electricity
- Identify and avoid common electrical hazards
- Follow safe work practices around electrical equipment
Electrical Hazards

- Contact with power lines
- Contact with damaged electrical equipment
- Improper wiring
- Overloading
- Unsafe work practices
How Electrical Shock Occurs

Contact with:

- Electrical energy
- Two current-conducting wires at different voltages
- An energized wire and a grounded object
Severity of Electrical Shock

- Amount of electrical current—higher is more dangerous
- Duration—longer is more dangerous
- Path through the body—through the heart is most dangerous
Injuries from Electrical Shock

- Electrocution
- Injuries
- Secondary injuries
Electrical Burns

• Burns are a common shock-related injury
• Electricity generates heat in the body
• Thermal burns from hot surfaces and fires
Emergency Response and First Aid for Electrical Shock

• Do not touch!
• Shut off electrical current
• Call for help
• Administer first aid and CPR
Report and Don’t Use Damaged Equipment

• Broken or missing covers
• Damaged tools
• Damaged cords
• Damaged equipment
Ensure Electrical Equipment Is Grounded

- Exposed parts can become energized
- Always ground electric tools and equipment
- Path to ground must be continuous
Circuit Protective Devices

- Circuit breakers trip if overloaded
- Don’t reset unless authorized
- Contact a qualified person to investigate
Use Portable Electrical Equipment Safely

- Inspect for damage
- Check cord and ground
- Don’t lift by cord
- Dry hands when plugging and unplugging
- Only use Ground Fault Circuit Interruptor (GFCI) outlets in wet locations
Key Points to Remember

☑ Exposure to electricity can be dangerous
☑ Watch for electrical hazards
☑ Follow safe work practices
☑ Follow the electrical safety program
☑ Seek assistance from a qualified person
PPE
Personal Protection Equipment
Potential Hand Hazards

- Skin absorption of harmful substances
- Severe cuts or lacerations
- Severe abrasions
- Pinches and crushes
- Punctures
- Chemical burns
- Thermal burns
Other Hand Hazards

- Carpal tunnel syndrome
  - Carpal tunnel syndrome does not just affect office workers. It is caused when repetitive motions inflame tendons in the wrist and put pressure on the nerves.
- Vibration
  - Using hand tools that vibrate, such as drills, pneumatic socket drivers, hand sanders, or rivet guns, can damage the hands over long periods of use.
- Fractures or compression
  - Fractures or compression can occur when using almost any machine or hand tool.
Evaluate and Select Hand Protection

The OSHA standard states the four items below need to be considered when selecting hand protection.

- **Tasks to be performed**
  - Determine if the task requires dexterity for delicate tasks, extra grip for slippery objects, or extra clean gloves so product is not contaminated.

- **Conditions present**
  - If you are handling sharp metal objects in a acid bath, not only will the glove have to protect against the hazard, it will also have to be cut resistant so the glove’s integrity is not compromised allowing acid to breach the glove.

- **Duration of use**
  - Consider the length of time the glove will be used. Chemical gloves are designed to protect against certain chemicals for a specific amount of time.

- **Hazards and potential hazards identified**
  - When selecting gloves, consider all the hazards as well as potential hazards that have been identified for each task.
General Glove Use and Care

- Gloves must fit properly
- Hands should be clean
- Clean fabric and leather gloves regularly
- Inspect gloves for damage and replace if necessary
- Gloves should be the right length
- Do not use fabric or leather gloves with liquid chemicals
Contaminated Glove Removal

- Bare hands should not touch the outside of your gloves
- Grasp outside of one glove with other gloved hand and pull off
- Insert fingers of ungloved hand under cuff of glove on other hand
- Pull glove off hand by pulling on inside surface of the glove
Glove Limitations

• Gloves can get caught in moving machinery
• Some people are allergic to latex gloves
• Chemicals can get inside the gloves and cause problems
• Gloves can fail under extreme conditions
Select Proper Tools

- Use the right tool for the job
- Select tools that will keep your wrists straight to avoid repetitive motion/overuse problems.
Foot Protection
Who Needs Foot Protection?

For protection of feet from falling or rolling objects, sharp objects, molten metal, hot surfaces, and wet slippery surfaces workers should use appropriate safety shoes, or boots.
## Causes of Foot Problems

<table>
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<tr>
<th>Foot Problems:</th>
<th>Common Causes:</th>
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<tbody>
<tr>
<td>○ Severely aching feet blisters, calluses, corns, hard flooring, rheumatism, arthritis, malformations of toes, fallen arches (flat feet), bunions, sprains</td>
<td>○ Long periods of standing, hard flooring, and poorly fitted footwear:</td>
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<td>○ Sweaty feet, fungal infections (Athlete’s Foot)</td>
<td>○ high heals, pointed shoes, lack of arch support, too loose or too tight footwear</td>
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<td>○ Hot and humid environment, strenuous work, footwear with synthetic (non-porous) uppers</td>
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How Does the Working Position Contribute to the Foot Problem?

- Since the human foot is designed for mobility, maintaining an upright stance is extremely tiring.

- Continuous standing can cause the joints of the feet to become miss-aligned (flat feet) and cause inflammation that can later lead to rheumatism and arthritis.
How can foot injuries be prevented?

Proper footwear is important, not only for foot comfort but also for one’s general well being. Improper footwear can cause new or aggravate existing foot problems.
Selecting Footwear

- Just like your everyday footwear, when selecting work shoes, it is important that they fit properly and are comfortable, especially if you are going to spend 8 to 12 hours a day in them.
- Lightweight footwear will reduce fatigue.
- Make sure boots fit snugly around the heel and ankle when laced up. Leave plenty of wiggle room for your toes.
- Try on work shoes after your work shift when your feet are likely to be swollen to their maximum size.
Head Protection
When to Wear a Hard Hat

- If there is a chance of:
  - Falling objects
  - Exposed electrical conductors
  - Low-hanging obstructions
Head injuries are usually caused by falling or flying objects or by bumping against a fixed object.

Head protection must be able to:
- resist penetration,
- absorb the shock of impact by a flying object.
- High-density, lightweight polyethylene
- Stamped with ANSI Z89 specifications
Maintenance and Care

- Clean with mild detergent and hot water
- Inspect shell for damage or excess wear
- Inspect suspension straps for cuts, frays, chemical damage
- Never drill holes
- Do not use paints or cleaning solvents
Eye Protection
Eye Injury Statistics

- Each day, more than 2,000 workers suffer eye injuries
- Annually, 62,000 eye injuries result in lost workdays
- Eye protection can reduce the number and severity of eye injuries in 90% of accidents
Eye Hazards

- Flying objects
- Harmful dust particles
- Chemical splashing or spraying
- High-intensity heat or light
- Welding, brazing, torch cutting
- Direct or reflected sunlight
Use Proper Protective Eyewear

- 90% of occupational eye injuries could have been avoided with proper protective eyewear
- Many injured workers believed protective eyewear was not necessary in their particular situation
- Follow company rules for eye protection
Eyewear Standards

- Comply with ANSI Z87.1
- Proper eye protection equipment should be marked “Z87” from manufacturer
- Sunglasses or prescription glasses usually do not meet the standard
Choosing Eye Protection

- Fit the eyewear to the person who will be wearing it.
- Use high-quality eyewear; it will last longer and protect better.
- Ensure good fit and comfort. If it doesn’t fit well, it won’t provide complete protection.
- Lens options include anti-fog, antiglare, indoor/outdoor lenses, and different colors or tints.
Maintain Eyewear

- Use mild soap and water to clean protective eyewear.
- Use holders or cases to protect the eyewear when not in use.
- Get new eyewear whenever necessary.
Routinely Inspect Eyewear

- Inspect before each use
- Check for and replace cracked lenses
- Replace scratched lens
- Check for loose frames and nose pieces
- Fit test before each use
Contact lenses may be worn with PPE if determined safe by a hazard evaluation
Prescription safety glasses are available
Over glasses or partial face shields serve as additional barriers
Quiz

- **Return the quiz to:**
  - your supervisor or
  - send the quiz to: [jgraham@depaul.edu](mailto:jgraham@depaul.edu) or
  - 1036 W. Belden, 270 AB