

Safety Leader's

Discussion Guide



Respiratory

Ergonomics

Chemical Safety



Industry

2003

Construction

Eye Protection

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Dear Safety Leader:

Safety Works for You® and your employees. You can reduce your workers' compensation costs by improving safety and preventing accidents. And the Ohio Bureau of Workers' Compensation's (BWC's) Division of Safety & Hygiene is here to help.

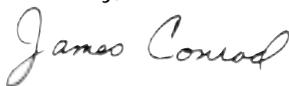
This discussion guide supplies you with a tool you can use to improve safety awareness and performance. Designed to assist safety discussion leaders, this guide provides your employees with how-to information to help them perform their jobs safely. It offers **14 safety-meeting topics** you can tailor to address your company's safety issues. It also supplies you with a handout for your employees to reinforce the safety topic for that specific meeting.

Regular safety meetings will involve your employees and familiarize them with occupational injury- and illness-prevention information. Employee involvement will stimulate ideas, awareness and energies that will **improve your company's safety performance**.

Involve employees in the company's efforts to maintain a safe and healthy work environment. Reinforce the benefits of safety policies, ask employees to share motivational ideas and encourage employees to **report unsafe conditions**.

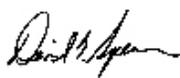
Safety does work, and it can work for you and your employees. Use this discussion guide as part of your safety plan to prevent workplace accidents and lower your workers' compensation costs.

Sincerely,



James Conrad

Administrator/CEO
Ohio Bureau of Workers'
Compensation



Dave Spencer

Superintendent
BWC's Division of
Safety & Hygiene

P.S. Don't forget about the Ohio Safety Congress & Expo held in Columbus, April 1-3, 2003!

Using this discussion guide is easy

- 1** Review the discussion leader notes prior to the meeting so that you are familiar with the topic.
- 2** Supplement your meeting with examples of safety issues specific to your workplace.
- 3** Photocopy the handout located to the right of each month's safety topic. The handout contains safety tips to ensure safety works for your company.



January

Hand protection

We use our hands for so many things that we often take them for granted. Because of this, they are the most frequently injured part of the body. Planning ahead, paying more attention to your hands, keeping them out of harm's way and using appropriate personal protective equipment can help prevent most of these injuries.

Hospital emergency room studies confirm that hand and finger lacerations are one of the most common injuries treated. Skilled tradesmen account for about a third of those injuries. Malfunctioning machinery, uncommon work tasks, increased work pace and distractions contributed to injuries. Workers who wear gloves seem to suffer fewer hand injuries.

Check your plant statistics to obtain actual numbers of hand injuries, and poll your group for actual injuries or close calls, to prove the need for hand-protection initiatives.

What are the major sources of hand injuries?

- Trauma resulting from mechanical hazards, such as cuts, abrasions, punctures, broken bones and amputations
- Electricity and heat sources resulting in burns and possible nerve damage
- Chemicals and other irritants leading to chemical burns, abrasions, simple skin irritation and dermatitis

Why do we incur hand injuries?

- Inadequate machine guarding
- Missing machine guarding
- Using the wrong tools
- Using tools incorrectly
- Inadequate training for the task being performed
- Not wearing appropriate hand protection
- Inadequate personal hygiene
- Using inappropriate solvents and cleaning agents
- Not following proper ergonomic practices

What are ways to prevent hand injuries?

- Keep machine guards in place.
- Properly use the correct tools.
- Remove hand jewelry.
- Use lockout/tagout procedures to prevent unexpected start-up of equipment.
- Keep tools in good condition.
- Keep your work area clean and free from debris.
- Obtain training on proper tool usage.
- Don't use your hand as a temperature gauge.
- Use barrier creams to prevent skin contact with irritants.

How do gloves protect the hands?

- Cotton gloves can protect against abrasions, cuts, snags and temperature extremes.
- Leather gloves protect against rough surfaces, heat, cuts and sparks.
- Cut-resistant gloves can protect against sharp edges and thermal hazards.
- Chemical-resistant gloves resist penetration and permeation; and can protect against dermatitis, chemical burns and corrosion.

Gloves can provide protection from a variety of concerns, but they must be used with care, and the proper selection for the hazard is critical. In some cases, gloves can contribute to injuries. Understanding the types of gloves, and their appropriate uses, is the key to a good hand-protection program.

Protecting your hands is a constant job. Whether it is un-jamming a machine, loading parts, changing tools, lifting a tray or any other job using your hands, think about the job before you do it and imagine what could happen. Assume it could happen, and take appropriate action to prevent an injury.

Use your head to protect your hands.

January

Hand protection

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Hospital emergency room studies confirm that hand and finger lacerations are one of the most common injuries treated. Skilled tradesmen account for about a third of those injuries. Malfunctioning machinery, uncommon work tasks, increased work pace and distractions also contribute to injuries. Workers who wore gloves suffered fewer hand injuries.

What are the major sources of hand injuries?

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- Keep tools in good condition.
- Keep your work area clean and free from debris that could cause injury.
- Obtain training on proper tool usage.
- Don't use your hand as a temperature gauge.
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Use your head to protect your hands.

February

Eye protection

Like any other type of personal protective equipment (PPE), eye protection devices are only effective if used properly.

Prior to the meeting, review your company's policy regarding eye protection. Check to see if you have operations that produce flying solid or liquid particles, splashing chemicals or radiation from welding or cutting. Prepare for your talk by collecting examples of the eye protection used in your facility.

Use each of these items to explain the proper use and care of the equipment.

Types of eye protection equipment

Safety glasses are the most commonly used form of protection. They include standard issue, non-prescription glasses; prescription glasses with tinted or multi-focal plastic or glass lenses; and special use glasses for laser or ultraviolet radiation.

Goggles provide more complete protection than glasses. They may be vented to reduce fogging or unvented to keep out mists and dust particles. Special use goggles are available for gas welding or cutting.

Face shields are worn over glasses or goggles to provide full face protection.

Welding helmets cover the entire face. They feature:

- Standard lens or an electronic auto-darkening unit;
- Correct shade number based on welding process and amperage level.

A full-face respirator is a good choice for handling hazardous materials that can damage the eyes and also are an inhalation hazard.

Occupational Safety & Health Administration (OSHA) regulations require that employers provide eye protection, and ensure that employees use it properly when necessary. Discuss the following information with your class, and ensure that eye protection is used when needed.

What standards cover eye protection in the workplace?

- OSHA 29 CFR 1910.133 — states that an employer must evaluate the hazards present in the workplace, and determine the best way to protect employees from those hazards.

- American National Standards Institute (ANSI) standard Z-87.1 — has been incorporated into the OSHA standard, All eye-protection devices (glasses, goggles, face shields) used in your facility should be marked with the ANSI Z-87.1 approval.

Eye protection program

The following items are all components of an effective eye-protection program. Discuss these with your class, and ask them to evaluate your program. Does your program include all of these elements? Can improvements be made?

List comments or suggestions that may help improve your program.

The following are parts of an effective eye-protection program:

- Hazard assessment;
- Controlling or eliminating eye hazards, where possible;
- Written policies governing the use of eye protection;
- Employee training;
- Adequate supplies of protective eyewear on-site;
- Lens-cleaning stations in accessible locations;
- Eyewash or face wash units within 100 feet of areas where chemical-eye hazards exist;
- Adequate signs specifying where eye protection is required.

Quiz

Circle the correct answer.

1. Regular sunglasses can be used for light welding.
True False
2. OSHA standards provide performance requirements for safety glasses. True False
3. Vented goggles provide good splash protection.
True False
4. Employers are not required to provide eye-protection devices. True False
5. You can change the lens (shade number) of a welding helmet to fit the welding process being used.
True False
6. Only eye protection with the ANSI Z-87.1 approval should be used on the job. True False
7. Eyewash stations are required by OSHA when working with hazardous chemicals. True False
8. Face shields can be worn without safety glasses or goggles under them. True False

Answers: 1.-F, 2.-F, 3.-T, 4.-F, 5.-T, 6.-T, 7.-T, 8.-F.

February

Eye protection

Like any other type of personal protective equipment (PPE), eye protection devices are only effective if used properly. This discussion will focus on the selection and use of the various kinds of eye protection available.

Types of eye protection equipment

Safety glasses are the most commonly used form of protection. They include:

- Standard issue, non-prescription glasses — clear or tinted, flat or wrap-around, with brow bar, adjustable temple bars and permanent side shields;
- Prescription — custom-fitted with tinted or multi-focal plastic or glass lenses, and attached or removable-side shields;
- Special-use glasses — for laser or ultraviolet radiation.

Goggles provide more complete protection than glasses. They include:

- Vented to reduce fogging; direct vent for impact protection, indirect vent for splash protection;
- Non-vented to keep out mists and dust particles;
- Special use for gas welding or cutting.

Face shields are worn over glasses or goggles to provide full-face protection. They include:

- Headband or hard-hat mounted for particle impact or splash protection;
- Tinted or shaded for light-gas welding, soldering, brazing;
- Special coatings, such as heat-reflective.

Welding helmets cover the entire face. Features include:

- Standard lens or an electronic auto-darkening unit;
- Correct shade number based on welding process and amperage level.

Full-face respirator: Good choice for handling hazardous materials that can damage the eyes and also are an inhalation hazard. Features include:

- Positive or negative pressure types protect eyes and respiratory system against gases, mists, vapors and dust;
- Polycarbonate lenses provide impact and liquid splash protection.

What standards cover eye protection in the workplace?

- Occupational Safety and Health Administration (OSHA) 29 CFR 1910.133 — states that an employer must evaluate the hazards present in the workplace, and determine the best way to protect employees from those hazards.

- American National Standards Institute (ANSI) standard Z-87.1 — has been incorporated into the OSHA standard. All eye protection devices (glasses, goggles, face shields) used in your facility should be marked with the ANSI Z-87.1 approval.

Eye protection program

The following are parts of an effective eye-protection program:

- Perform a hazard assessment as required by OSHA;
- Where possible, control eye hazards or eliminate them from the workplace;
- Develop written policies to guide employees and visitors about when, where and what kind of eye protection is necessary;
- Provide training to all personnel required to wear eye protection;
- Keep adequate supplies of appropriate glasses, goggles and other eye protection available on the work site;
- Place lens-cleaning stations and other similar equipment in accessible locations;
- Locate eyewash or face wash units within 100 feet of areas where chemical eye hazards exist;
- Post adequate signs notifying employees and visitors of where eye protection is required.

Quiz

Circle the correct answer.

1. Regular sunglasses can be used for light welding. True False
2. OSHA standards provide performance requirements for safety glasses. True False
3. Vented goggles provide good splash protection. True False
4. Employers are not required to provide eye protection devices. True False
5. You can change the lens (shade number) of a welding helmet to fit the welding process being used. True False
6. Only eye protection with the ANSI Z-87.1 approval should be used on the job. True False
7. Eyewash stations are required by OSHA when working with hazardous chemicals. True False
8. Face shields can be worn without safety glasses or goggles under them. True False

Answers: 1.-F, 2.-F, 3.-T, 4.-F, 5.-T, 6.-T, 7.-T, 8.-F

March

Respiratory protection programs

Identify and prepare a list of any potential respiratory hazards in your workplace. Obtain the material safety data sheets for those chemicals identified in your workplace. Check to see if your company has a respiratory protection program. If it does, review it and use it to teach; if not, get a copy of standard 29 CFR 1910.134 and use it.

The preferred method of protection is through engineering controls in the workplace. This can happen through isolation of the substance from the worker and/or possible air and water movement as in a paint booth in an automobile-assembly plant.

Advise your group that these hazards may fall into three categories:

1. Dust, such as that from asbestos and fibers;
2. Mist (from tree spraying, for example);
3. Vapors, such as some strong cleaning solvents.

What makes up a good respiratory protection program?

- A person is responsible for the program.
- The responsible person conducts an annual review of the program.
- Conduct an annual review of the medical-surveillance and fit-test programs.
- Identify your workplace hazards.
- Identify contaminants' physical form and chemical state.
- Conduct area and individual exposure monitoring.
- Review and approve engineering and administrative controls.
- Review and approve respirator makes and models.

What do you consider to be respiratory protection?

- Self-contained breathing apparatus (SCBA) — like firefighters use
- Supplied air breathing systems
- Emergency egress systems — escape systems
- Full-face, cartridge-type respirators
- Half-face, cartridge-type respirators
- Nuisance dust masks

Have you seen any of this equipment in use at work or at home?

Explain to your fellow workers that the standard says before you can wear respiratory protection, you must be part of a medical-surveillance program to ensure that you are medically fit to wear a protective device, unless the respirator is for nuisance dust only.

After this part is finished, employees need to know they must be trained and fit-tested to ensure that each person has a positive fit with the type of respirator being used. Some people cannot get a facial seal with certain manufacturers' products.

Explain that the preferred methods of respiratory protection are engineering and administrative-control measures. With respiratory-protection equipment, you heighten the possibility of repeat exposures due to human failures.

To find out what kind of respirator and type of cartridge to wear, consult your respirator supplier and manufacturer's guide.

Quiz

1. What is the preferred method of protection against respiratory hazards?
A. Respirators
B. Engineering and administrative controls
C. Goggles
2. Should you be fit-tested before wearing a respirator?
A. Yes
B. No
3. Is a self-contained breathing apparatus like firefighters wear a form of respiratory protection?
A. Yes
B. No
4. Where can you go to find out what respirators and cartridges you need for your specific situation?
A. Your program advisor
B. The manufacturers' respirator and cartridge chart
C. None of the above
D. Both A and B
5. Is it necessary that you be qualified to wear respiratory protection? For example, will you need to be medically qualified? Will you need to be trained on the use and care of your respirator?
A. True
B. False

Answers: 1.-B, 2.-A, 3.-A, 4.-D, 5.-A.

March

Respiratory protection programs

In addition to protecting the rest of our body parts, our lungs, at times, need protection. At a minimum, this protection can be as little as your nostril hairs; at a maximum, it can involve a completely controlled environment.

The preferred method of protection is through engineering controls in the workplace. This can happen through isolation of the substance from the worker and/or possible air and water movement as in a paint booth in an automobile-assembly plant. A gluing process in a box-assembly factory where ventilation was engineered into the process is another example.

Respiratory hazards may fall into three categories:

1. Dust, such as from asbestos and fibers;
2. Mist (from tree spraying, for example);
3. Vapors, such as some strong cleaning solvents.

What makes up a good respiratory protection program?

- A person is responsible for the program.
- The responsible person conducts an annual review of the program.
- Conduct an annual review of the medical-surveillance and fit-test programs.
- Identify your workplace hazards.
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What do you consider to be respiratory protection?

- Self-contained breathing apparatus (SCBA) — like firefighters use
- Supplied air breathing systems
- Emergency egress systems — escape systems;
- Full-face, cartridge-type respirators
- Half-face, cartridge-type respirators
- Nuisance-dust masks

To find out what kind of respirator and type of cartridge to wear, consult your respirator supplier and manufacturer's guide.

If you are going to wear respiratory protection, you or someone should consult the site-specific respiratory protection plan.

Remember — if you're going to wear a respirator, get fit tested and use it wisely. Store it properly so as not to get it dirty, and be careful. Also, consult the experts!

Quiz

1. What is the preferred method of protection against respiratory hazards?
 - A. Respirators
 - B. Engineering and administrative controls
 - C. Goggles
2. Should you be fit-tested before wearing a respirator?
 - A. Yes
 - B. No
3. Is a SCBA, like firefighters wear, a form of respiratory protection?
 - A. Yes
 - B. No
4. Where can you go to find out what respirators and cartridges you need for your specific situation?
 - A. Your program advisor
 - B. The manufacturers' respirator and cartridge chart
 - C. None of the above
 - D. Both A and B
5. Is it necessary that you be qualified to wear respiratory protection? For example, will you need to be medically qualified? Will you need to be trained on the use and care of your respirator?
 - A. True
 - B. False

Answers: 1.-B, 2.-A, 3.-A, 4.-D, 5.-A.

Ergonomics

The purpose of this month's safety discussion is to create awareness and understanding of ergonomics; and to initiate an effort to identify opportunities for improving the work process.

In preparation, review the work area personally to become familiar with opportunities to improve the ergonomics of the work area. Also, find out the number of workers' compensation claims with ergonomic causes the company has had in the past several years.

During this session, first lead a discussion on the meaning of ergonomics, and then have the group identify work processes that could be looked into to reduce ergonomic risks and stresses.

We want to talk about ergonomics as it applies to our work environment and our work processes. First, we need to understand ergonomics, and second, we need to apply it to improve how we do things.

Ergonomics awareness

Ask the group for possible definitions of ergonomics. Write their definitions down on a white board or flip chart. See if the group recognizes that the science of ergonomics tries to balance worker capabilities with job demands. After the discussion, write this definition so the group can see it.

What problems are caused by poor ergonomics?

Ask what happens when peoples' work causes them physical problems. The group should talk about wrist, knee, back and shoulder problems. Ask for examples. Possible answers include tendonitis, carpal tunnel syndrome, trigger finger or back strain. Let the group know that these physical problems may be caused from overuse of muscles and tendons over time, which is called cumulative trauma.

Ask the group to identify how people might know if they are being subjected to overuse and cumulative trauma — the signs and symptoms. They should come up with physical symptoms. After a short discussion, share the following list of signs and symptoms.

- Fatigue
- Swelling
- Burning sensation
- Stiffness
- Pain
- Tingling
- Insomnia
- Numbness

Next, ask the workers if they feel that poor ergonomics reduce productivity and increase costs. Help them see that when workers are affected by cumulative trauma, they are not only in pain, but their ability to do the job significantly decreases. Add to the decrease in productivity, the costs of workers' compensation (average cost for strains is \$28,000 and for cumulative trauma, \$31,000), and one can see that ergonomics should be taken seriously.

Your organization's history of ergonomics cases

Before the meeting, find out the number of ergonomics-related cases the company has experienced in the past several years. Bring this information to the meeting. Ask for peoples' thoughts and ideas; and to identify past problems they, or others, have had that might be related to ergonomics. Get people talking about instances of sore backs and arms, tingling in their fingers or actual workers' compensation cases.

Next, ask if there are any jobs or tasks in one's personal life that could contribute to cumulative trauma or overuse. The group should identify a variety of things that people do at home.

Risk Factors

Identify the factors that contribute to ergonomic problems. Ask what types of physical effort or work design problems might contribute to overuse, cumulative trauma and pain. Write the ideas down so everyone can see them.

Next, see if you can group the ideas into these categories and call the categories ergonomic risk factors.

- Overexertion
- Excessive force
- Vibration
- Environmental factors (glare, heat, cold, wetness)
- Awkward positions
- Repetitive motions
- Lack of recovery time

Ergonomic improvements

It will be important for you to keep the discussion constructive and positive during this last part of the session. First, have the group identify jobs that could pose ergonomic risks, then, have the group discuss possible ways to improve the jobs.

April

Ergonomics

Ergonomics

We want to talk about ergonomics as it applies to our work environment and our work processes. First, we need to understand ergonomics, and second, we need to apply it to improve how we do things.

Ergonomics awareness

What is ergonomics?

What problems are caused by poor ergonomics?

- Fatigue
- Swelling
- Burning sensation
- Stiffness
- Pain
- Tingling
- Insomnia
- Numbness

Your organization's history of ergonomics cases

Many of the jobs or tasks in your personal life could contribute to cumulative trauma or overuse. These include:

- Fishing;
- Knitting;
- Chopping wood;
- Using a socket wrench;
- Hand sanding;
- Lifting heavy objects;
- Vacuuming the rugs;
- Throwing darts;
- Lifting weights;
- Painting;
- Using a chain saw;
- Using a screwdriver;
- Using a hand saw;
- Using wrenches;
- Moving furniture;
- Scrubbing (floors, walls, etc.);
- Bowling;
- Mixing (dough, paint, etc.).

Risk Factors

What types of physical effort or work design problems might contribute to overuse, cumulative trauma and pain? Next, see if you can group the ideas into these categories of ergonomic-risk factors.

- Overexertion
- Excessive force
- Vibration
- Environmental factors
(glare, heat, cold, wetness)
- Awkward positions
- Repetitive motions
- Lack of recovery time

Adjustable workstations

Review your workstations to identify equipment that allows employees to adjust their work environments. Be familiar with how you can adjust these workstations to fit employees' needs.

What kind of adjustable equipment is available?

- Bins
- Pallet lifts/stands
- Telescoping conveyors
- Tilter dumpers
- Adjustable work stands
- Chairs/stools
- Workstations/VDT stations

How does each of these items help to reduce stress?

Place bins in a position comfortable for access. Ideally, they should be within reach of the employee without stretching, and below shoulder height to prevent the need for excessive reaching.

Lower pallet lift stands to allow pallets to be loaded by mechanical equipment, and raise them to allow employees to lift the product at the waist level from the pallet.

A telescoping conveyor brings the item closer to the point of operation and when adjusted vertically or horizontally, will reduce the need for bending and reaching when loading or unloading.

Tilter dumpers eliminate bending and reaching by mechanically emptying the contents of the items being lifted.

The adjustment of the chair is related to the placement of the work surface, monitor, keyboard and mouse. The chair, when properly adjusted, will provide appropriate support to the back, legs, buttocks, arms and reduce static and contact stress, over exertion and fatigue.

Chairs should be height adjustable, especially in work areas where they are shared by a number of employees. The chair height is correct when the entire sole of the foot can rest on the floor or a footrest, and the back of the knee is slightly higher than the seat of the chair.

The seat and backrest of the chair should support a comfortable posture that allows frequent changing of the seating position. The seat pan should accommodate the specific employee (not too big/small). It should be padded and have a rounded, waterfall front edge, to reduce contact stress with the back of the legs.

Armrests that are too high or too low can produce awkward postures, create contact stress to the elbow, provide inadequate support, and prevent the operator from moving close enough to the workstation. The armrests should support both forearms while the employee performs tasks and should not interfere with movement.

Sit/stand stools are often an appropriate rest option for tasks that are best performed in a standing position. They allow employees to lean and rest, but still keep them in a position to perform the task.

Adjustable work surfaces/VDT stands adjust to various heights depending on the physical characteristics of the operator or work activity.

Place keyboards directly in front of the user. Position the mouse at the operator's side with his or her arm close to the body. Maintain a straight line between the hand and the forearm while using a keyboard or mouse. Also, do not elevate or extend the upper arm.

Design workstations to accommodate 95 percent of employees. Using height adjustable stands allows employees of shorter body sizes to work at the same workstation without using awkward postures, such as reaching above shoulder height. Stands should be easily adjustable at the beginning of a shift without special tools or training.

Quiz

Circle the correct answer.

1. Employees differ in physical characteristics.
True False
2. When should the workstation be adjusted?
A. At the end of the workday
B. When employee begins at the workstation
C. After break
3. An improperly adjusted chair can cause body stress.
True False
4. Frequently used items should be close to the individual's reach.
True False
5. It is easier to lift items from waist level than to lift them from above or below waist level.
True False

Answers: 1.-T, 2.-B., 3.-T, 4.-T, 5.-T

May

Adjustable workstations

Ergonomics involves providing a work environment that adapts to fit an individual's physical capabilities. Since individual workers differ in physical character, one approach to this is to have adjustable equipment and furniture.

What kind of adjustable equipment is available?

- Bins
- Pallet lifts/stands
- Telescoping conveyors
- Tilter dumpers
- Adjustable work stands
- Chairs/stools
- Workstations/VDT stations

How does each of these items help to reduce stress?

Place bins in a position comfortable for access. Ideally, they should be within your reach without stretching, and below shoulder height to prevent the need for excessive reaching.

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Chairs should be height adjustable, especially in work areas where they are shared by a number of employees. The chair height is correct when the entire sole of the foot can rest on the floor or a footrest, and the back of the knee is slightly higher than the seat of the chair.

The seat and backrest of the chair should support a comfortable posture that allow frequent changing of the seating position. The seat pan should accommodate the specific employee (not too big/small). It should be padded and have a rounded, waterfall front edge, to reduce contact stress with the back of the legs, and ensure adequate circulation to the extremities.

Armrests that are too high or too low can produce awkward postures, create contact stress to the elbow, provide inadequate support, and prevent the operator from moving close enough to the workstation. The armrests should support both forearms while the employee performs tasks and should not interfere with movement.

Sit/stand stools are often an appropriate rest option for tasks that are best performed in a standing position. They allow employees to lean and rest, but still keep them in a position to perform the task.

Adjustable work surfaces/VDT stands adjust to various heights depending on the physical characteristics of the operator or work activity.

Place the keyboard directly in front of you. Position the mouse at your side with your arm close to the body. A straight line should be maintained between the hand and the forearm while using a keyboard or mouse. Also, do not elevate or extend the upper arm.

Workstations should be designed to accommodate 95 percent of employees. Using height adjustable stands allows employees of shorter body sizes to work at the same workstation without using awkward postures, such as reaching above shoulder height. Stands should be easily adjustable at the beginning of the shift without special tools or training.

Quiz

Circle the correct answer.

1. Employees differ in physical characteristics.
True False
2. When should the workstation be adjusted?
A. At the end of the workday
B. When employee begins at the workstation
C. After break
3. An improperly adjusted chair can cause body stress.
True False
4. Frequently used items should be close to the individual's reach.
True False
5. It is easier to lift items from waist level than to lift them from above or below waist level.
True False

Answers: 1.-T, 2.-B, 3.-T, 4.-T, 5.-T.

Repetitive motion and cumulative trauma disorders

The purpose of this month's safety discussion is to create awareness and understanding of repetitive motion, and influence effort that leads to improving the work process so that repetitive motion injuries are prevented.

In preparation, review the work area(s) personally to ensure you are familiar with the activities and work requirements. Also, determine the number of repetitive motion injuries and workers' compensation cases the company has experienced over the past several years, either in your area, or from throughout the organization.

Your task is to lead the discussion on repetitive motion. Your challenge is to make the discussion informative, and to engage the group in the discussion, so that employees take the initiative to modify behaviors and processes, where necessary, to prevent cumulative trauma disorders.

What are cumulative trauma disorders?

Cumulative trauma disorders (CTDs) include a variety of muscular disorders that result from repeated motion performed in the course of normal work or daily activities.

What might cause CTDs in the courses of normal work or daily activities?

CTDs are caused by repeated motions performed in the course of normal work and daily activities. The effort may or may not require high levels of force. Examples of conditions in the workplace that increase the likelihood of repetitive motion stress include:

- High forces;
- Awkward postures;
- Compression of nerves and blood vessels;
- Too many repetitions with no breaks in the routine or awkward motions, such as twisting of the arm or wrist, can cause stress to the soft tissues (muscles, tendons, nerves and ligaments);
- Vibration;
- Duration of exposure.

Ask the group for its thoughts and ideas on what constitutes CTDs. How do you know you've experienced CTDs? What are symptoms of CTDs? Write the answers on a white board or flip chart, so they can see their ideas.

The group should identify the feelings or sense of discomfort associated with CTDs. They should come up with physical symptoms, such as those listed below. After a short discussion, share the following list of signs and symptoms:

- Burning sensation;
- Tingling;
- Numbness;
- Inability to straighten a joint;
- Swelling;
- Stiffness.

Where on the body might one experience these symptoms?

- Hands
- Wrists
- Elbows
- Neck
- Shoulders
- Back

Share these additional characteristics of CTDs with the group.

- Discomfort is brought on by carrying out a particular task, then, may improve when no longer doing the task.
- Discomfort starts in one area; for example, the neck, or back, then, may spread to other parts of the body.
- Early warning signs may occur as sore shoulders or neck pain, particularly when traveling home in the car after a day at work or the effects may show up in the morning as aches and stiffness in the limbs and hands.

What is the treatment for discomfort related to CTDs?

After a short discussion with the group, share the following thoughts on treatment:

- The most important treatment: Stop the repetitive motion and effort causing the discomfort so the tissues can rest and begin the healing process;
- Splints may be prescribed to prevent further stress on the affected joint. (Please do not use a splint unless it is prescribed by a medical professional.);
- Medication, such as anti-inflammatory drugs and pain relievers, are standard treatments prescribed by physicians;
- In cases where treatment has been delayed for an extended period, surgery may be necessary.

June

Repetitive motion and cumulative trauma disorders

We want to talk about cumulative trauma disorders (CTDs) as they apply to our work environment and our work processes. The objective: Prevent repetitive motion injuries by having the right equipment and setting up jobs to eliminate repetitive motion. Everybody needs to think deeply about the issues and to participate in the discussion.

What are CTDs?

CTDs include a variety of muscular disorders that result from repeated motion performed in the course of normal work or daily activities. The effort may or may not require high levels of force. Examples of conditions in the workplace that increase the likelihood of CTDs include:

- High forces;
- Awkward postures;
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- Too many repetitions with no breaks in the routine or awkward motions, such as twisting of the arm or wrist, can cause stress to the soft tissues (muscles, tendons, nerves and ligaments);
- Vibrations;
- Duration of exposure.

How do you know you've experienced CTDs?

What are some symptoms of CTDs?

- Burning sensation
- Tingling
- Numbness
- Inability to straighten a joint
- Swelling
- Stiffness

Where on the body might one experience these symptoms?

- Hands
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- Medication, such as anti-inflammatory drugs and pain relievers, are standard treatments prescribed by physicians.

In cases where treatment has been delayed for an extended period, surgery may be necessary.

Additional treatment may include:

- Stretching before and after exertion;
- Relaxation exercises;
- The application of ice or heat to the affected area;
- Physical therapy to help return the worker to the work force.

Facility parking lots

Obtain a copy of accident records that relate to incidents in your facility's parking areas; for example, slips trips or falls, vehicle backing accidents, personal injury from vehicle-pedestrian incidents and near-miss incidents in the parking areas. (If not available, a number of written materials can be obtained from various agencies.) Review this information with the group, analyzing it for types of potential personal behaviors and corrective actions that could have prevented the incidents in the first place.

What hazards exist in our parking areas?

- Lack of lighting
- Lack of marked walkways
- Lack of signage and traffic control information
- Space availability
- Heavy pedestrian and vehicular traffic at specific times
- Weather
- Workplace violence issues

What types of personal behaviors can contribute to incidents in parking lots?

- Failure to stop, look and listen
- Walking and talking
- Hurrying
- Parking in tight or improper spaces or where visibility is poor
- Backing without looking
- Not using inside and outside mirrors
- Not warning others with your horn
- Talking to passengers or on cell phone
- Lack of courtesy
- Making assumptions about other drivers (for example, that they see you and will stop)
- Lack of awareness of a change in the situation
- Large crowds in the parking area

Emphasize to the group that certain time periods of the day — shift changes and starting or quitting times — account for delays and cause people to be in a hurry.

Also, emphasize that it can cause large numbers of pedestrians and vehicles to be moving through a parking area at the same time.

Large numbers of people, people in a hurry to leave, plus limited exits/entrances, bad weather and poor lighting equal a disastrous outcome both for pedestrians and drivers.

Discuss ways your employees can keep themselves and their families safe in parking lots.

When in an unfamiliar parking lot, follow these safety rules:

- Walk in pairs or small groups, especially at night and in commercial parking lots like malls or shopping centers;
- Familiarize yourself with the parking lot. If uncomfortable, find another place to park;
- Park in well-lighted areas and next to poles, if possible, for easy identification and location of your vehicle;
- Be aware of everything and everybody around you at all times;
- Look inside before entering your vehicle;
- Lock your vehicle after entering, and turn the lights on;
- Have your keys in hand before you reach the vehicle.

The key to safety in parking lots is for every person to look out for the other person, be courteous, do not be in a hurry, and have a little patience.

Quiz

Circle the correct answer.

1. A pedestrian and vehicle can collide, resulting in serious injury for the vehicle operator.
True False
2. Most accidents result from personal behaviors or acts. True False
3. Hurrying and large groups of people can lead to potential hazards and accidents. True False
4. Pre-planning when entering a parking lot can reduce problems and the likelihood of an accident when leaving. True False
5. Lighting, awareness of surroundings, looking before entering your vehicle, and having your keys ready when reaching your vehicle are of no concern in unfamiliar parking areas.
True False

Answers: 1.-F, 2.-T, 3.-T, 4.-T, 5.-F.

July

Facility parking lots

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Strange surroundings

When in an unfamiliar parking lot, follow these safety rules:

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Answers: 1.-F, 2.-T, 3.-T, 4.-T, 5.-F.

August

Process safety management

The purpose and objective of process safety management (PSM) is to prevent or minimize the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals. These releases may result in toxic, fire or explosive hazards. The federal Occupational Safety & Health Administration (OSHA) provides specific guidelines and standards for employers and employees to develop and implement to minimize the risk of a catastrophic incident.

Upon review of the many requirements of process safety management, one can clearly identify the key elements of an effective safety and health process. Through the development and implementation of key PSM requirements, employers should be able to improve their overall safety process.

To achieve great safety performance, leading safety professionals have identified the following elements as the foundation for an effective safety and health process:

- Management commitment and support;
- Employee involvement;
- Job safety analysis;
- Written standard operating procedures;
- Employee training;
- Employee accountability.

Upon close comparison of the 14 elements for process safety management, one can clearly identify a distinct similarity between PSM and an effective safety and health process.

- Employee participation
- Process safety information
- Process hazard analysis
- Operating procedures
- Employee training
- Contractor safety
- Pre-startup safety review
- Mechanical integrity
- Hot work permits
- Management of change
- Incident investigation
- Emergency planning and response
- Audits
- Trade secrets

Management commitment and support

For any business system to be effective, management must fully support and be committed to the process. This would include items such as providing adequate funding and other resources for the system to be developed and implemented. This could simply mean providing time and resources for employee training. Another example of management support would include attending strategic planning meetings and being more visible on the shop floor.

Employee involvement

In addition to obtaining management commitment and support, all business systems must include employee involvement to be successful. For example, without involving employees in the initial stages of building a new chemical handling system, very important information regarding the hazards associated with the chemical or specific standard operating procedures may be overlooked by the other members of the design team. All levels of employee involvement are vital for any safety system to be effective in the workplace. Process safety management is not any different than any other system.

Job safety analysis

Job safety analysis (process hazard analysis) involves a very comprehensive, methodical manner of identifying, evaluating, and developing controls for specific hazards associated with a given process. There are many proven methods of conducting a hazard analysis. Samples of these analytical methods include the fault-tree analysis (FTA), failure mode and effects analysis (FMEA), and the hazard and operability study (HAZOP).

Written standard operating procedures

For a safety system to be successful, employers must, with the assistance of their staff, develop written standard operating procedures. Written safety operating procedures are a vital element of process safety management. Employers must develop and implement written operating procedures that provide clear/concise instructions for each operation and task identified in the process.

Training

With advancement in technology and the constant change in the industrial environment, employers must allocate time and resources for effective employee training. Specifically, for process safety management, employees must receive initial training prior to being involved in operating a newly assigned process or work area. PSM should emphasize specific safety and health hazards associated with the operations, emergency procedures, and all written safety work practices. To measure the effectiveness and impact for the business, all training should be documented and outlined in a training manual.

Employee accountability

The final element of an effective safety and health process, although certainly not the least of importance, is employee accountability. All employees must be held accountable. This includes all managers, supervisors and front-line staff. The requirements of PSM include various levels of accountability. These elements include contractor safety, employee training, emergency planning and response, process hazard analysis, incident analysis, and compliance audits. Employers must develop systems to hold staff accountable for their actions in the workplace.

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September

Chemical safety and glove selection

Obtain a few material safety data sheets (MSDSs) before class for products used by your employees. Also, have on hand chemical-resistant gloves used in your workplace. If possible, obtain glove selection guides from the glove manufacturer or safety equipment vendor.

Have you ever noticed how many types of gloves are available? There used to be just a few — leather, cloth or rubber. These days, there are hundreds of gloves of varying size, thickness, toughness, material and combinations of materials.

Ask employees to give examples of specialized gloves. There are cut-resistant gloves for butchers, gloves for food handlers, welding gloves, heat-resistant gloves, surgical gloves, household cleaning gloves, chemical-resistant gloves and more.

Today, we will focus on some important considerations for chemical-resistant gloves. Note the use of the term chemical resistant, rather than chemical proof. There is no such thing as a chemical-proof glove. Gloves are usually rated based on permeability and degradation. Permeability, or permeation, is the ability of one substance to pass through another. Degradation is a physical deterioration of the material in contact with the chemical.

How would you recognize that a chemical-resistant glove has degraded?

Degraded gloves may swell, discolor, lose flexibility, dissolve, tear more easily, wear through quickly, and puncture easily. If you recognize any of these characteristics in the gloves you are wearing, discard them and get a new pair.

Many products and chemicals contain substances that can be harmful to the skin or can be absorbed through the skin. Once absorbed, the chemical can migrate to and harm other organs in the body, such as the kidneys or liver.

Where can you find this information?

Refer to your MSDSs. Look in section 3 (Hazard identification). Information also can be found on product labels.

How can you determine which glove is appropriate?

- Refer to the MSDS for the chemical you are using.
- Consult the glove manufacturer for chemical compatibility information.

When handling these chemicals, it is very important to use the proper glove.

Have you selected the appropriate gloves for the chemicals you use?

Be aware that gloves made of the same material, for example, nitrile or butyl rubber, that come from different companies, may not have the same chemical resistance. The process by which gloves are made varies from company to company. The thickness of the glove may not be the same. As a result, the gloves may have significantly different permeation resistance.

If in doubt about the gloves you wear for the chemicals that you handle, discuss these with your supervisor and, together, seek the opinion of a health and safety professional.

Quiz

Circle the correct answer.

1. Rubber gloves are great protection from all chemicals.
True False
2. When contaminated, chemical-resistant gloves will remain useful for up to one month.
True False
3. Chemical resistant glove selection and compatibility information should always be consulted before purchasing or using gloves.
True False
4. Gloves are not normally needed when using chemicals because the human skin provides adequate protection.
True False
5. MSDSs will usually recommend the appropriate type of glove to wear.
True False

Answers: 1.-F, 2.-F, 3.-T, 4.-F, 5.-T.

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Today, we will focus on important considerations for chemical-resistant gloves. Note the use of the term chemical-resistant, rather than chemical-proof. There is no such thing as a chemical-proof glove. Gloves are usually rated based on permeability and degradation.

Permeability, or permeation, is the ability of one substance to pass through another, not unlike water seeping through a cinder block wall. Generally, chemicals will not permeate gloves with the best permeation resistance to that chemical for four to eight hours after continuous contact, based on laboratory testing. However, there is no such thing as an impervious glove. Chemicals will permeate gloves if given enough time.

Degradation is a physical deterioration of the material in contact with the chemical.

How would you recognize that a chemical-resistant glove has degraded?

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If in doubt about the gloves you wear for the chemicals that you handle, discuss these with your supervisor and, together, seek the opinion of a health and safety professional.

Summary

The selection of an appropriate glove and knowledge of its limitations will reduce the risk of injury from skin contact with harmful chemicals.

Quiz

Circle the correct answer.

1. Rubber gloves are great protection from all chemicals.
True False
2. When contaminated, chemical-resistant gloves will remain useful for up to one month.
True False
3. Chemical resistant glove selection and compatibility information should always be consulted before purchasing or using gloves.
True False
4. Gloves are not normally needed when using chemicals because the human skin provides adequate protection.
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5. MSDSs will usually recommend the appropriate type of glove to wear.
True False

Answers: 1.-F, 2.-F, 3.-T, 4.-F, 5.-T.

October

Lifting: a daily routine

Whether you're at work or conducting daily activities at home, the potential exists for injuries to occur as a result of lifting. Lifting principles applied before, during and after working hours should lower the risk of back strains and sprains, the most common ailments that humans experience. Before we talk about ways to reduce our chances of suffering, such an injury, let's consider what situations may lead to an incident.

Encourage members of the group to share experiences both from home and work. Examples may include removing items from the car's trunk, such as dog food, lawn fertilizer or groceries. Work situations will be varied: manufacturing, construction or other occupations where material handling is common.

How big is the problem?

According to the National Safety Council, 60 percent to 80 percent of all workers will experience a back problem at some time during their working careers. Back strains and sprains are the largest source of workplace claims.

Conditions in the workplace which, increase the likelihood of back pain, are called risk factors. Back pain risk factors associated with lifting include:

- Lifting heavy loads;
- Carrying bulky loads or loads far away from the body;
- Frequent lifting;
- Bending the body's trunk, as when picking items up off the floor;
- Twisting the body's trunk;
- Static loading (for example, holding objects for long periods of time).

If we reduce or eliminate exposure to these risk factors, we also reduce the chance of experiencing back pain.

Ask attendees what solutions they may have to the exposures that they face both at home and at work. Guide them to consider a hierarchy of prevention techniques, such as:

- 1) Limiting exposure by providing mechanical assistance, such as conveyor systems, two- and four-wheel carts, and hoists; or by lightening the load to be lifted;
- 2) Engineering means, such as elevating the starting point of the lift, to reduce worker exposure to awkward postures;
- 3) Training (a safer way to lift should be considered when none of the previous methods are feasible);
- 4) Administrative controls (if the lifting is frequent, rotate the work with other workers).

Lifting techniques

If you must lift, you should select the safest way to lift — one that is free from the potential for injury. However, we can lessen our exposure by using an approach that encompasses best practices that have come about through research and application.

Demonstrate, or use a volunteer to demonstrate, a safer lifting method. Stand close to the load.

Here are some guidelines:

- Plan the lift from start to destination;
- Flex to loosen up your body before starting the lift;
- Squat close to the load;
- Grip the load firmly with both hands, not just the fingers;
- Place hands on diagonally opposite corners so one hand pulls toward you and the other one lifts;
- Bring the load as close as possible to the body;
- Keep weight centered over your feet, with arms and elbows against your sides;
- Keep your back straight, use the power in your legs to push yourself and the object into a standing position;
- Avoid twisting by changing direction with your feet;
- Continue to your destination with the object as close to the body as possible.

Remember, relying only on lifting techniques to prevent back injuries still leaves us quite vulnerable to pain and suffering, which can affect our ability to perform our jobs and enjoy our free time with our family and friends.

Encourage members of the group to suggest ways to eliminate unnecessary lifts or to lessen the amount of exposure. Examples in our daily lives that ease lifting include:

- Grocery carts to transport items to our car;
- Bags with handles;
- Snow shovels and other tools that have curved handles like scythes;
- The carrying of items in smaller amounts or shorter distances;
- Wagons to carry yard trimmings.

Quiz

Circle the correct answer.

1. Lower back strain is a common injury. True False
2. Back strains can happen at home, as well as at work. True False
3. Figure out where you will put down a load as soon as you pick it up. True False
4. Avoid twisting your back when carrying a load. True False
5. Keep the load close to your body as you carry it. True False

Answers: 1.-T, 2.-T, 3.-F, 4.-T, 5.-T.

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These include:

- Plan the lift from start to destination;
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Remember, relying only on lifting techniques to prevent back injuries still leaves us quite vulnerable to pain and suffering, which can affect our ability to perform our jobs and enjoy our free time with our family and friends.

What are some objects we use in our daily lives that make lifting easier?

- Grocery carts to transport items to our car.
- Bags with handles.
- Snow shovels and other tools that have curved handles like scythes.
- The carrying of items in smaller amounts, or shorter distances.
- Wagons to carry yard trimmings.

In short, work smart, not hard! Now, using these ideas, use the same applications to your workplace.

Quiz

Circle the correct answer.

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True False
2. Back strains can happen at home, as well as at work. True False
3. Figure out where you will put down a load as soon as you pick it up. True False
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Answers: 1.-T, 2.-T, 3.-F, 4.-T, 5.-T.

November

Pushing and pulling

Many work injuries occur as a result of overexertion from pushing and pulling to move objects. The risk of injury is higher from pulling than from pushing because the load on the back is greater, and loads can be pulled onto the feet. To reduce the risk, push when you can, pull only when you have to.

Review the materials-moving tasks at your workplace, and prepare to discuss the safety of the methods used to move things. If you know of any concerns from workers about a difficult push/pull situation, use it as an example for discussion. Use the following questions to develop participation. If possible, use a board or chart to write down the answers and key points made by the group.

Today, I would like to discuss the injury risks associated with pushing or pulling objects.

What equipment must be moved by pushing or pulling?

- Four-wheeled carts
- Wheeled baskets
- Non-automated conveyors
- Two-wheeled dollies

Where are these used?

Add to the answers with your findings. Follow up with questions like: Where do you start from? Where do you go? What route do you take? Are there any problem areas on the way? Are there rough floors, up-hill or down-hill ramps, or steps that have to be negotiated?

Why are some things harder to move than others?

- Overloads
- Bad wheels
- Awkward loads
- Carpet on floors
- Rough or uneven floors
- Poor hand holds

Follow-up question

Are some loads difficult to stop once you begin moving them?

Can you think of some alternate ways to move hard-to-push or hard-to-pull loads?

- Use mechanical assistance.
- Have another person help.
- Change carts if one has bad wheels.

How many types of injuries can you think of that occur from pushing and pulling?

- Straining your back.
- Straining a wrist or elbow.
- Pulling the cart over or onto your foot.
- Getting caught between the loaded cart and a stationary object.
- Slipping or falling.
- Not being able to see over a high load.

Follow-up questions

Do you know of any injuries that occurred when someone was pushing or pulling? What happened? Can you think of any way he/she could have avoided injury?

Summarize the discussion by identifying the problems discussed by the group. Emphasize the ways the group thought injuries from pushing and pulling could be reduced. Remind the group that pulling has greater risks than pushing by saying: Push when you can. Pull only when you have to.

November

Pushing and pulling

Many work injuries occur as a result of overexertion from pushing and pulling to move objects. The risk of injury is higher from pulling than from pushing because the load on the back is greater, and loads can be pulled onto the feet. To reduce the risk, push when you can, pull only when you have to.

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Follow-up questions

Do you know of any injuries that occurred when someone was pushing or pulling? What happened? Can you think of any way he/she could have avoided injury?

December

Mechanical material handling equipment

This short discussion explores the hazards of moving materials by mechanical means, and how to eliminate those hazards. Remind those in the discussion group that many injuries still occur when moving material mechanically.

Bring information on mechanical material moving equipment at your facility. Consider bringing a chalkboard or flip chart to write the questions and answers.

Many workplace injuries occur while using mechanical equipment to move material. Today, we will discuss these hazards.

What material handling equipment is used at this facility?

- Forklifts
- Conveyors
- Powered pallet jacks
- Platform trucks
- Narrow aisle trucks
- Reach trucks
- Stock pickers
- Skid steer trucks
- Robots
- Cranes

What incidents could occur while using material handling equipment at this facility?

One answer may be, an employee walks in front of a forklift and is injured.

Concentrate on the most common causes of incidents.

How could a person be injured by a conveyor?

- A hand gets caught between parts on the conveyor.
- Hair or loose clothing is caught in moving parts, if those parts are not guarded.
- The employee falls when walking on or over a conveyor.
- A hand gets caught in drive belts or gears that are not properly guarded.

Remind the group that if an employee crawls under a conveyor, his or her clothing could get caught in moving parts if the moving parts are not guarded. An employee could fall when walking on or over a conveyor, or could get a hand caught in drive belts or gears that are not properly guarded.

When should equipment be checked for proper operations?

You should check equipment at the beginning of each shift before it is used, or as required by standard or the equipment manufacturer. It is especially necessary to check safety devices to ensure that they correctly work.

Should we use a piece of equipment if it has missing parts or missing safety devices?

Equipment, especially powered industrial trucks, must not be operated if the equipment does not have all the parts (especially safety equipment). This could be as simple as only having part of an LPG fuel tank holding device functional.

How do we work around robots if they are not operating?

Robots can be especially dangerous, and should be guarded both physically and operationally. Methods must be used (including lockout/tagout) to ensure the robot cannot function if a person is going to enter its range of motion.

What are the hazards of using a crane to move material?

- Pinning yourself or another person with the load.
- Dropping the load.
- Damaging other equipment.

Remind the members of the group that it is important to inspect the crane cables and brakes, properly rig the loads and use only certified slings and cables.

Quiz

Circle the correct answer.

1. Forklifts are the only type of mechanical material moving equipment in this facility. True False
2. A conveyor does not have the potential to cause injury. True False
3. Powered industrial trucks must receive a safety inspection at the beginning of the shift before they are used. True False
4. It's safe to work around a robot as long as it is at rest. True False
5. A conveyor should not be operated with guards missing from the drive belts or gears. True False

Answers: 1.-F; 2.-F; 3.-T; 4.-F; 5.-T.

December

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What incidents could occur while using material handling equipment at this facility?

Concentrate on the most common cause of incidents. One answer might be that an employee walked in front of a forklift and was injured. Would this be an instance of being caught in between, or being struck by a forklift?

How could a person be injured by a conveyor?

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Answers: 1. F; 2. F; 3. T; 4. F; 5. T.

Defensive driving

No matter what our jobs are, most of us are involved in driving safely, either on the job or to and from our workplace. Contributing factors to collisions include, but are not limited to, backing, road rage and weather.

We will tackle each of these today and move toward a cultural change. Collisions are embarrassing, inconvenient and expensive. Driving defensively is the best way to avoid these problems. Take the stand, "If it has to be, it is up to me."

Depending on the size of the group, you may break into three smaller groups to discuss each topic and summarize, or tackle each topic in a large group.

Backing safely

Backing is one of the leading causes of collisions for vehicle fleets. Has anyone had a backing collision, or been on the receiving end of a backing collision? What events contributed to it? What precautions can you take to prevent backing collisions? Which vehicular, environmental and human factors can we control and prevent the most?

Other causes of backing crashes include:

- **Vehicular factors** — Broken warning device, lights not working and defective brakes;
- **Environmental factors** — Poor guidance/judgment/visibility from helper, too dark, too icy, poor traction, too foggy, too narrow, poorly marked area, something appearing behind the vehicle after checking, fixed objects;
- **Human factors** — Failure to perform pre-trip inspection, not checking behind vehicle, not asking for help, fatigue, hurrying, hunger, cellular telephones, distractions, not using mirrors, not seeing what was there, not looking, not signaling and using foot on wrong pedal (accelerator instead of brake).

Precautions for preventing backing collisions include:

- **Proceed cautiously** — Don't back up if there is not enough space. You are responsible for blending with the elements in your driving environment. Defend yourself;
- **Proper pre-trip inspection of vehicle** — Check to be sure that brakes, lights, tires, (warning devices, where applicable) are in working order;

- **Helper communication** — Assess the situation behind the vehicle. Get out and check poorly marked areas, agree on signals, how close is too close, light color/reflective clothing, flashlights;
- **Darkness** — Be sure all lights are working on the vehicle and add light where possible;
- **Weather (see next section)** — Ensure traction and visibility;
- Keep your eyes moving and check mirrors to ensure nothing enters your backing path;
- Look in the direction in which you are moving.

Road rage

Road rage is recognized as a hazard on our roadways. Let's discuss what might enrage a driver to take unnecessary risks while driving a vehicle. List common denominators in types of individuals who partake in emotions that cause commotion, and what actions do they take with their vehicles that we can identify?

Weather

Using the wealth of driving experience in this room, name types of weather and what we do as drivers to increase stopping distances and defend ourselves against the elements.

Types	Defense
Rain	Wipers, headlights, tires, space management
Fog	Low beams, fog lights, slower speeds (Drive as far as you can see 15 seconds ahead)
Sleet	Ensure traction and visibility or park it
Snow	Prepare a winter driving kit if stranded; search, identify and predict other vehicles' actions

Extra

Defensive driving

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Road rage: Don't be a victim

As news stories reporting violence resulting from road rage grab front-page headlines, one must ask:

How does it affect me?

Though there is no agreed-upon definition, some would say that the minute you become angry with a slow-moving driver, you have experienced road rage. More conservative sources say that you must be involved in physical violence to have become a victim. Somewhere in the middle are the estimated 90 percent of American drivers who have engaged in an aggressive behavior in the previous 12 months, according to an American Automobile Association survey. This may include yelling or swearing, offensive hand gestures, laying on the horn, flashing high-beam headlights or tailgating. More aggressive behaviors include deliberately cutting someone off, throwing objects or chasing other vehicles.

The bottom line is aggressive driving can lead to tickets, criminal penalties, accidents or violence. Everyone on the road must learn to control his or her anger and not become a victim of road rage.

This discussion is designed to encourage active participation. Please guide the discussion toward constructive participation. Do not allow the meeting to become a gripe session.

What causes the anger?

Some contend that road rage is merely a symptom of the far greater problem of driver inattention and lack of courtesy. The inception of road rage often involves one party feeling slighted, ignored or even threatened by another driver's actions. These feelings can result from a parking spot being taken, being tailgated or being cut off.

What are actions by other drivers that have made you angry?

- Lane blocking
- Failure to use turn signals
- Tailgating
- Headlight use
- Cell phones
- Honking the horn
- Improper merging, passing or parking
- Not paying attention
- Accidents

The goal is not to change another person's driving habits. However, by examining other drivers' actions and not making the same mistakes, you are much less likely to be involved in a road-rage incident.

This can be done by:

- Using turn signals;
- Allowing a safe stopping distance;
- Staying in the right-hand lanes when moving slower than other traffic.

These practices are not only common courtesies, they make good safety sense, too.

Some drivers present a hazard to others on the road, but unless we are police officers, there is little we can or should do to correct them.

The instant road rage anger or fear is felt is when we must take action to avoid escalation of the incident. This is where emotional intelligence must take over, and you begin to focus attention on what can be controlled— your reaction. It is important that the reaction be positive and pro-social, focusing on our feelings, rather than a negative, anti-social reaction which seeks to blame, retaliate or punish.

A conscious effort must be made to ensure a controlled, positive, productive reaction, rather than one that is self-defeating and seeks to blame.

Quiz

Circle the correct answers.

1. Screaming at another driver can be considered road rage. True False
2. There is no way to control your temper when a person cuts you off. True False
3. The best way to avoid a conflict on the road is to tell the other driver exactly how you feel.
True False
4. A person can avoid becoming the target of road rage by avoiding dangerous and inconsiderate actions, such as tailgating, blocking "passing" lanes and failing to use turn signals. True False

Answers: 1.-T, 2.- F, 3.- F, 4.-T.

Extra

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A conscious effort must be made to ensure a controlled, positive, productive reaction, rather than one that is self-defeating and seeks to blame.

Everytime we take a seat in a car, we have an opportunity to increase our power over road rage. You may even be surprised to find that when you focus on what you can control — yourself and your emotions — you will have a much more positive driving experience.

Summary

Americans drive billions of miles every year. Avoiding the allure of road rage can be difficult, but it is a big step to traffic safety. When we learn to practice good, sound judgment and emotional intelligence on the road, we will pass that along to the next generation of drivers.

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Answers: 1.-T, 2.-T, 3.-F, 4-T.



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