

PERSONAL PROTECTIVE EQUIPMENT

COURSE OUTLINE

- **Every day, thousands of people like you risk serious injury while on the job... yet most of them still go home safe at the end of the day.**
 - Often that's because of the personal protective equipment (PPE) that they use.
- **PPE is anything that you wear to prevent injuries.**
 - It can be as simple as a hard hat, safety glasses or a pair of gloves.
 - To really do its job it must be the right PPE for the work that you're doing, and you have to use it and maintain it properly.
- **To help workers stay safe on the job, the Occupational Safety and Health Administration (OSHA) has created a series of Personal Protective Equipment Standards.**
- **The standards require employers to make appropriate PPE available to all employees, and to provide them with training on:**
 - Why employees need to wear PPE.
 - How it works.
 - How to use it and maintain it.
- **While each type of PPE has its own features and capabilities, there are some "rules" that apply to all of it.**
- **First, you must use PPE wherever you encounter hazardous conditions. These can include:**
 - Dangerous procedures, such as with some assembly line, production and maintenance jobs.
 - Environmental hazards, i.e. any conditions that could hurt you, like falling objects, dangerous contaminants and open pits.
 - Chemical hazards, including substances that could injure you immediately as well as those that could have long-term effects on your health.
 - Radiological hazards, which can sometimes be found in pharmaceutical, healthcare and industrial environments.
 - Mechanical irritants, which are any objects that could puncture or cut your skin.

- **Whenever one of these conditions is present, your employer will provide you with personal protective equipment that is:**
 - Appropriate for your work conditions.
 - Properly maintained.
 - Sanitary.
- **In some cases, you might want to use your own personal protective equipment instead of the PPE your employer supplies.**
 - No matter who owns the equipment, your employer is ultimately responsible for its suitability and upkeep.
- **In addition to the equipment itself, your employer will also provide you with training about the PPE that you'll be using, including information on:**
 - What type of protection is required for your job.
 - When the PPE is necessary.
 - How to properly put on, take off, adjust and wear your PPE.
 - The limitations of your PPE.
 - The proper maintenance, useful life and disposal of the PPE.
- **You will receive re-training in these areas as your employer thinks it's necessary.**
- **Whenever there's danger from falling objects or low clearances, you should wear a hard hat. It can help to protect you from:**
 - Falling or flying objects.
 - Chemical splashes and molten metal.
 - Scrapes, cuts and impacts when you're working under a low overhead.
- **While hard hats come in a variety of styles and colors, the most important thing is that you have one that fits.**
 - It shouldn't be too tight or too loose.
 - A hard hat that doesn't fit you correctly can't provide the protection you need.
 - Hard hats are available in different sizes, and have "suspension systems" that can be adjusted to fit your head.
- **If you work near exposed electrical wires your hard hat should be made of material that will protect you from electrical shock hazards.**
 - All hard hats must comply with American National Standards Institute (ANSI) regulations.

- **A type of "light duty" protective headgear called a "bump cap" can protect you from scrapes, cuts and light impacts.**
 - But bump caps should never be used where conditions are hazardous enough to require a hard hat.
- **Because your face and your eyes are two of the most vulnerable parts of your body, a number of different types of PPE are available to protect them.**
 - The most common of these is safety glasses.
 - Their shatter-resistant lenses protect your eyes from frontal impacts by flying particles.
 - If they're equipped with "side shields," safety glasses will also protect you from impacts coming from the side.
- **Today many safety glasses have built-in side shields.**
 - Detachable "clip-on" or "slide-on" side shields can be used as well, as long as they meet OSHA standards.
- **If you work near sources of intense light, such as lasers or welding torches, your safety glasses must have special optical filter lenses.**
 - These lenses all have "shade numbers" that specify what types of light they protect you from.
 - Be careful to use glasses with shade numbers that match the light you're being exposed to.
 - Otherwise they won't provide the protection you need.
- **Other conditions, such as large quantities of dust or some liquid splashes, may require more protection than safety glasses can provide.**
 - This is when goggles may be needed.
 - They fit closely over your eyes, and can protect the eye area from all angles.
- **If you need to wear goggles along with prescription glasses the goggles must fit over the glasses without disturbing the proper position of the glasses or the goggles themselves.**
 - Another option is to wear custom goggles that have your prescription built in.
- **If you wear contact lenses, ask about your company's policies regarding them.**
 - Contacts may not be safe to wear in some work areas, or may cause significant irritation if dust, liquids or particles are trapped under them.

- **Some situations call for even greater eye and face protection.**
 - When there's the potential for significant chemical splashing or lots of flying particles, you'll need a full face shield.
 - Anyone who is welding or doing other work that can create intense light and throw off sparks will need a welder's helmet or similar protection.
- **Being able to identify the PPE that workers are using is very important.**
 - All types of eye and face PPE must be distinctly marked, so its manufacturer is easy to determine.
 - This allows your employer to identify an employee's eye protection at a glance.
 - If someone isn't wearing the proper eyewear, they can be issued the necessary equipment before an accident happens.
- **Some work environments contain airborne hazards, such as dust, mist, fumes and vapors, that are serious enough to require you to wear a respirator.**
- **There are three types of respirators to choose from:**
 - Disposable masks.
 - Air-purifying respirators (APRs).
 - Air-supplying respirators (ASRs).
- **Disposable masks are the simplest type of respirator.**
 - Made of fibers that trap airborne contaminants, they keep hazardous particles out of your nose and lungs.
 - Disposable masks are often used where a lot of nuisance dust is generated, or when you're cleaning up at the end of the day.
- **But if there are large quantities or concentrations of contaminants in the air, or the substances are particularly hazardous, disposable masks can't provide adequate protection.**
 - In these situations, you'll need to use an air-purifying respirator (APR).
- **APRs come in "half" and full-face" models, and trap airborne contaminants in disposable cartridges.**
 - The cartridges filter the air and capture impurities before you can inhale them.

- **There are a number of cartridges to choose from, each engineered to capture a specific substance or family of substances.**
 - When you wear an APR, you must make sure that its cartridges are designed for the type of substances you are working with.
 - A respirator fitted with the wrong type of cartridge won't provide the protection you need.
- **To make selecting the correct cartridge easier, they are color-coded and marked with standardized labels.**
 - Remember, wearing the wrong filter can be the same as wearing no filter at all.
 - So you need to be sure that you have the correct filter for the job you're doing.
 - If you're not sure, ask your supervisor about which cartridges you should use in your work area.
- **There are some environments that even APRs can't handle, where atmospheres either don't contain enough oxygen or are full of toxic gases.**
 - In these environments, air-supplying respirators (ASRs) must be used.
 - ASRs provide clean air from pressurized tanks.
- **There are two types of ASRs:**
 - Self-contained breathing apparatus (SCBAs).
 - Supplied-air respirators (SARs).
- **SCBAs use a portable air tank which is strapped onto your back.**
- **SARs supply air through a long hose, from a source located some distance away.**
- **Each type of respirator has its own advantages and disadvantages.**
 - Your supervisor will work with you to choose which type you should use and how to use it.
 - No matter what type of respirator you use, your safety department will periodically check you to confirm that it fits properly.
 - This is called a "fit test."
- **If you aren't fit-tested, no one can be sure that your respirator is continuing to seal correctly against your face.**
 - Remember, even a tiny gap can let in contaminants.
 - So you should take fit tests seriously... they're for your protection.

- **Your hands are the "built-in tools" that make it possible for you to do your job.**
 - To protect them, you often need to wear some type of gloves.
- **Cloth gloves are good for light jobs like grounds-keeping or cleaning up your work area.**
 - They protect your hands against minor physical hazards, like dust, dirt and abrasions.
- **Leather and aluminized gloves will protect your hands from sparks and metal flakes, as well as moderate heat.**
- **Metal mesh gloves are designed to shield your hands against cuts from sharp edges on the tools and materials you're working with.**
- **Disposable gloves made from latex and similar materials provide protection from biological or health hazards, such as blood and other body substances.**
- **Rubber and plastic gloves help to protect your hands against many types of chemicals, including acids and corrosives.**
 - Some of these gloves are also shock-resistant.
 - This can be important, since electricity doesn't just affect your hands... it can kill you.
- **To be acceptable as electrical PPE, rubber gloves and the "sleeves" that are often used with them must be able to insulate against significant levels of both AC and DC current.**
- **As with all personal protective equipment, you must maintain your electrical PPE properly to stay safe.**
 - Gloves and sleeves should be inspected for wear and tear at the beginning of each work day, and immediately after any incident that could have damaged them.
- **You should never use electrical PPE that has:**
 - Holes.
 - Tears.
 - Punctures.
 - Cuts.
 - Embedded foreign objects.

- **Damage that looks like interlacing cuts or cracks in the rubber is called "ozone cutting" or "checking".**
 - If you find ozone cutting in gloves that you're using, take them out of service immediately.
- **The same goes for gloves that show texture changes such as swelling, softening or hardening, or that become sticky or inelastic.**
 - If the insulating properties of any electrical PPE may have been compromised, you have to play it safe and not use it.
- **Whatever type of protective gloves you wear, they should always fit correctly.**
 - If they're too loose, they can snag in equipment or machinery, or make handling small objects difficult.
 - If they're too tight, they can restrict your hand movement... even cut off your circulation.
- **If you need help finding the right hand protection for the job you do, talk to your supervisor.**
- **The workplace also has plenty of hazards that can injure your feet.**
 - Heavy objects like loaded pallets or tools can crush them.
 - Sharp objects like nails or spikes can puncture them.
 - Hot surfaces and molten metal can burn them.
 - And don't forget electricity... shocks and sparks can be dangerous... sometimes disastrous.
- **Proper foot and leg protection can help you avoid all of these.**
 - You need to know what types of protection are available, and how they work.
- **The most common form of foot PPE is a work boot with steel toes that guards against crushing and other impacts.**
 - Some boots have puncture-resistant metal insoles as well, to protect your feet if you step on something sharp.
 - Boots with heat-resistant soles also "insulate" your feet from hot or cold.
- **If you're working around power lines or with energized equipment, non-conductive boots will protect you from electric shock.**

- **Conductive footwear, on the other hand, is designed to prevent the build-up of static electricity.**
 - They should be worn if there's a potential for explosive atmospheres, when it's important to prevent sparks.
- **Other types of foot and leg protection are designed to fit over your shoes and legs. These include:**
 - Toe guards.
 - Metatarsal guards.
 - Foot and shin guards.
 - Leggings.
- **Whatever safety footwear you're using, you should inspect it for cracks and holes, tearing and broken buckles or laces... before you put it on.**
 - Check the soles for pieces of metal or other embedded objects that could cause electrical or tripping hazards.
 - If you find problems, take the footwear out of service.

*****SUMMARY*****

- **Personal protective equipment can help guard against all sorts of hazards, but you have to wear the right PPE and use it correctly to avoid injury.**
- **Your employer will evaluate your workplace to determine if it's hazardous and if you need to wear PPE to work there safely.**
- **If your job does require protective equipment, you will be provided with the PPE that is suitable for the work you're doing.**
- **Your employer must train you on how to use your PPE, and you must demonstrate that you know how to handle it before you will be allowed to wear it on the job.**
- **All personal protective equipment must be maintained in a safe and undamaged condition.**
- **Doing your job requires protection. Not having it could mean injury... disability... even death. So play it safe. Find out what personal protective equipment you need for your job. Learn how to use it correctly. And wear it... every day!**