



Hand Protection Meeting

Meeting Objectives

To understand the types of hand and finger injuries possible on the job, and the right kind of hand protectors and safety procedures to use to prevent injury. The result should be elimination of hand accidents and skin problems through appropriate safety practices and the use of protective equipment.

Suggested Materials to Have on Hand

Samples of gloves provided for on-the-job use.

Introduction/Overview

We use our hands so constantly, for so many things, that we often take them for granted. But think about the qualities your hands have: strength, flexibility, sensitivity, coordination. And think about where you'd be without them.

Unfortunately, because they're so often taken for granted, hands and fingers are among the most frequently injured parts of the body. The National Safety Council reported that in a recent year there were 530,000 disabling hand and finger injuries.

Most of these injuries can be prevented by paying a little more attention to your hands, keeping them out of harm's way, and using the protective equipment the company provides for them. There are gloves designed to protect your hands from almost any kind of injury. If you wear those gloves, and take precautions to keep your most useful "tools" in good condition, we won't be having any hand injuries and problems here.

General Hazards

Almost anything in the workplace can be a hand hazard: hand or power tools, chemicals, scrap, and fire. That's because whatever you're doing; your hands are on the front lines.

Most hand and finger injuries fall into these categories:

- Traumatic injuries range from cuts and punctures to broken bones to the worst case—amputation. Many cuts or punctures are minor, but if they go through the skin they can sever nerves, tendons, or ligaments. They can also get infected.
- Contact injuries are usually skin diseases or burns that can result from direct contact with hot or cold objects, or with chemicals, detergents, or metals. Most of us have had some skin disease, also known as dermatitis. Symptoms like swelling, itching, rash, burning, or blisters are usually more annoying than anything else, but they can be bad enough to make it impossible for you to work. Dermatitis often shows up immediately after contact with a chemical, but sometimes it takes a while to develop an allergic-type reaction. Once you have this kind of sensitization, you usually can't get near that chemical again.
- Carpal tunnel syndrome is a condition that results from doing the same movement over and over again with the wrists and hands. Tendons get inflamed and press on the wrist nerves.



- Temporary symptoms can include swelling, tingling, numbness, weakness, or pain. For some people, however, this becomes a disability that's hard to fix.

OSHA Regulations

OSHA has a new regulation on hand protection 29 CFR 1910.138. The regulation states that "Employers shall select and require employees to use appropriate hand protection when employees' hands are exposed to hazards such as those from skin absorption of harmful substances; severe cuts or lacerations; severe abrasions; punctures; chemical burns; thermal burns; and harmful temperature extremes."

OSHA also requires rubber insulating gloves for electrical workers (29 CFR 1910.137). The Hazard Communication Standard, of course, requires companies to inform workers about any hazards in the workplace and to explain and provide protective devices—which include gloves.

Guards on both hand and portable powered tools (29 CFR 1910.242) and on machinery to protect your body and especially your hands are also required by OSHA.

The machine-guarding regulations (29 CFR 1910.211-222) are very specific for individual types of machinery. But there is an overall requirement that states "One or more methods of machine guarding shall be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips, and sparks. Examples of guarding methods are—barrier guards, two-hand tripping devices, electronic safety devices, etc."

Machine guards are important enough to require their own safety talk, but they are also a key part of hand protection.

Identifying Hazards

It's really easy to identify most hand hazards on the job because virtually every task presents them. So just keep the possibilities in mind at all times and look for ways to reduce the chance of injury.

The one hand problem that's a little trickier is carpal tunnel syndrome. As I mentioned earlier, it results from repeated hand or wrist motions. The carpal tunnel is the area that the nerves pass through in the wrist, but the problem usually includes both the wrist and hand and, in some cases, the whole arm. The National Institute for Occupational Safety and Health says that almost 25,000 workers file workers' compensation claims for this injury, so it's not exactly rare.

If you do any job where you do the same motion over and over—like painting, welding, packing, etc.—be on the lookout for pain or discomfort in the wrists and hands that could be caused by carpal tunnel syndrome.

Protection against Hazards

Gloves are one of the best ways to protect your hands against hazards, but not always. If, for instance, you wear gloves when you work with moving machinery like drill presses, mills, lathes, or grinders, there's a serious risk of getting the glove caught in the machine—and taking your hand along.

And, like most protective equipment, the gloves you use have to protect you against the particular hazard.

Here's a sampling of what kind of gloves to use for what kind of hazard.



- Insulated gloves are designed to protect you against heat or cold. If you work around open flame, the fabric should be fire-retardant; for radiant heat, it should be reflective. Leather may also be effective for working around hot surfaces and cotton may be sufficient if the degree of heat or cold isn't too high.
- Special insulated rubber gloves are required around electricity.
- Metal mesh or other cut-resistant gloves are the best choice for handling sharp objects.
- Leather gloves are the choice for rough surfaces.
- Fabric gloves are good choices for handling slippery objects.
- Neoprene or nitrile rubber gloves are needed if you work with corrosives.

When you're working with chemicals, check the MSDS to determine the best glove choice. This is not a decision to make casually, because you really want to keep those chemicals off your skin. So you have to be sure you're wearing a glove that protects you from the chemical you're working with and that the material won't react in a dangerous way with that chemical.

In addition to gloves, there are other devices available to protect your hands. They include:

- Hand pads, which can protect against heat, roughness, and splinters. They're useless, though, if you're doing anything delicate.
- Thumb or finger guards or tapes, which can provide extra protection on dangerous jobs.
- Long cuffs, wristlets, and duct tape, which can keep chemicals or heat from getting into the glove and on the skin.
- Barrier creams, which can help protect the skin from chemicals when gloves aren't practical. But they only work when they're put on clean skin and replenished regularly.

Machine and Tool Protections

As I mentioned, guards are your best protection from getting your hands or fingers caught and injured by tools and machines.

It's up to the company to make sure that every machine has guards. It's up to you to see that the guards stay in place and that you follow company lockout/tagout procedures whenever a machine has to be shut down for repair or maintenance.

Power tools, too, are equipped with guards. Make sure they're in place and working right, or don't use the tool.

Safety Procedures

All the guards and gloves in the world won't protect you unless you take responsibility for doing jobs in a safe and sensible way that keeps your hands out of harm's way.

As a starter, pay attention to what you're doing. Working with tools, machinery, and chemicals requires your whole attention. When your mind or your eyes are somewhere else, accidents happen. So the first step in hand safety is to focus totally on the job you're doing.

Here are a few safety basics for protecting your hands when you work with machinery and tools and in material-handling tasks.

- Always cut away from your body.
- Check materials for sharp edges, burrs, splinters, etc., before handling them.



- Feed materials into moving machinery with a push stick, not your hands.
- Follow manufacturer's and company's instructions for using tools and equipment.
- Keep fingers on the sides, not the top or bottom, of spacers when you're stacking materials.
- Keep your hands away from moving machine parts.
- Lift an object so your hands are not near the pinch points.
- Make sure you know how hot or cold an object is before handling it.
- Pass—don't throw—tools to other workers, handle first.
- Put materials down carefully so you don't mash your fingers.
- Store tools so no sharp edges are exposed.
- Use brushes, not hands, to sweep up metal or wood chips.
- Use the right tool for the job and use it correctly.
- Wipe off greasy or slippery objects before handling them.

Gloves

We've already talked about selecting the right glove for the job. You also have to be sure that gloves fit snugly and comfortably. In addition, gloves used to protect against chemicals need extra care in order to do their job.

- Inspect before wearing to make sure gloves are clean, with no rips or holes.
- Rinse gloves thoroughly before removing them.
- Clean gloves thoroughly before putting them away.
- Store gloves in a cool, dark, dry place. Be sure they're right-side out, or you can trap chemicals inside. And don't fold the cuffs over or it will weaken the material.

When you work with chemicals, you should also take these precautions for your hands even though you wear gloves:

- Bandage any small cuts or scrapes before putting on gloves.
- Keep chemical containers closed when you're not using them; the particles or vapors can cause an allergic reaction.
- Wash hands frequently and thoroughly with soap and water or skin cleanser after working with chemicals.
- Don't use solvents or industrial detergents to clean hands.

Carpal Tunnel Syndrome

Carpal tunnel syndrome, the result of repeated hand motions, is not always an easy problem to prevent. But if you're doing anything with the hands over and over again, keep these safety tips in mind:

- Avoid wearing clothes or jewelry that's tight around the wrist.
- Carry materials—particularly awkward ones—with a palm-down grip.
- Keep wrists straight rather than bent or flexed as much as possible.
- Take an occasional break and shake out your hands.
- Try to vary your movements.
- Use power tools whenever possible on repetitive jobs.
- Use the full hand and all fingers to hold objects.

If you have recurring pain that you think might be carpal tunnel syndrome, talk to me. There may be ways we can reorganize your job to reduce the problem. There also may be exercises you can learn that could help.



First Aid

The number of possible on-the-job hand injuries makes first aid an important part of protection. Any hand problem, no matter how minor it appears, can become serious, so you should always be checked out by a medical professional. While you're waiting for that, however, there are a few basic things to do.

- Chemicals. If you've had skin contact with chemicals, wash thoroughly for at least 15 minutes.
- Cuts. If the cut is large or is bleeding, put direct pressure on it and raise the hand above the shoulder. If it's a small cut, wash with soap and warm water and cover it with a sterile bandage.
- Burns. Soak a minor burn in cold water and then put on a sterile bandage. If it blisters or is charred, medical attention is a must.
- Sprains. Apply cold compresses to reduce pain and swelling.
- Broken bones. Keep the hand still until you can get medical attention.
- Amputations. Put the severed part on ice and rush it—and the victim—to the hospital.

Suggested Discussion Questions

- What are some of the general kinds of hazards that can affect your hands on the job?
- What are some of the kinds of special gloves we have available for use on the job?
- Name some things you do on the job that would require gloves.
- Name some things you do on the job where you shouldn't wear gloves.
- What is carpal tunnel syndrome and what are some jobs here where it could become a problem?
- Where do you find out what gloves to use with chemicals?
- What does the company do to protect you from hand injuries with machinery?
- What are some hand-protection techniques to keep in mind on the job besides wearing gloves?
- Are there any other questions?

Wrap-Up

As you can see, hand protection is a constant job. We've covered a lot of specifics today, and I'll be giving you a handout that recaps the most important protection points as a reminder.

But if you focus on them for a while, you'll probably find that the basics of hand protection will become second nature.

Keep these points in mind:

- Use machine and tool guards.
- Keep hands away from moving machine parts.
- Wear gloves for any tasks that aren't very delicate or that don't have a risk of getting the glove caught in moving machine parts.
- Select gloves to protect against the job's specific hazards.
- Use material safety data sheets to determine what gloves you need for chemical protection.
- Wash hands thoroughly if you've been working with chemicals and keep gloves clean and in good condition.



Hand Protection Safety Checklist

Machinery and Tools

- Don't wear gloves, jewelry, or loose clothing if they could get caught in machinery.
- Keep machine and tool guards in place.
- Use lockout/tagout procedures when machines have to be repaired or maintained.
- Keep your hands away from moving machine parts.
- Pay full attention to the job and the equipment.
- Follow manufacturer and company instructions for using tools and equipment.
- Feed materials into moving machinery with a push stick, not your hands.
- Always cut away from your body.
- Use brushes, not hands, to sweep up metal or wood chips.

Material Handling

- Check materials for sharp edges, burrs, splinters, etc., before handling them.
- Make sure you know how hot or cold an object is before handling it.
- Wipe off greasy or slippery objects before handling them.
- Lift an object so your hands are not near the pinch points.
- Keep fingers on the sides, not the top or bottom, of spacers when you're stacking materials.
- Put materials down carefully so you don't mash your fingers.
- Use the right tool for the job and use it correctly.
- Store tools so no sharp edges are exposed.
- Pass—don't throw—tools to other workers, handle first.

Gloves

- Make sure gloves fit comfortably.
- Wear insulated or leather gloves for heat and cold. Fabric should be fire-retardant for open flame, reflective for radiant heat.
- Wear special insulated rubber gloves for electricity.
- Wear metal mesh or other cut-resistant gloves to handle sharp objects.
- Wear leather gloves for rough surfaces.
- Wear fabric gloves for handling slippery objects.
- Wear neoprene or nitrile rubber gloves for corrosives.
- Check the MSDS to select gloves for working with chemicals.
- Consider hand pads for heat, roughness, and splinters if the job's not delicate.
- Use thumb or finger guards or tapes for extra protection on dangerous jobs.
- Use long cuffs, wristlets, or duct tape to keep chemicals or heat from getting into gloves.
- Use barrier creams to help protect the skin from chemicals when gloves aren't practical.

To care for chemical-protective gloves:

- Inspect before wearing to make sure gloves are clean, with no rips or holes.
- Bandage any small cuts or scrapes before putting on gloves.
- Rinse gloves thoroughly before removing them.
- Clean gloves thoroughly before putting them away.
- Store gloves in a cool, dark, dry place, right-side out, with cuffs unfolded.



- Wash hands frequently and thoroughly with soap and water or skin cleanser—not solvents or industrial detergents—after working with chemicals.

Carpal Tunnel Syndrome

- Use power tools whenever possible on repetitive jobs.
- Try to vary your movements.
- Keep wrists straight rather than bent or flexed as much as possible.
- Use the full hand and all fingers to hold objects.
- Shake out your hands occasionally.

