Knife Handling and Safety

Knives are necessary in food service work, but they present some obvious hazards. Follow these safety tips to make sure that nothing but food gets cut.

When Chopping, Slicing, Dicing or Peeling:
- Keep your fingertips out of harm’s way by curling your fingers under on the hand that’s holding what you’re cutting. This puts your knuckles, not your fingers, nearest the knife.
- Wear cut-resistant gloves if you can.
- Angle the blade away from you when slicing or peeling so the knife won’t cut you if it slips.
- If you get distracted or interrupted while using a knife, stop what you’re doing until you can focus on the task at hand.

Cleaning
Cleaning knives after each use can prevent the spread of bacteria, keep knives in good shape and prevent accidents caused by dirty or slippery knives. Always wipe or rinse food off of knives immediately after they’re used (especially mayonnaise, which is highly corrosive).
- Lay the blade on a flat surface.
- Carefully wipe one side with a wet cloth, then the other.
- Wipe from the spine (back) of the blade.
- Use soap and hot water to clean a knife after it has been used to cut poultry, meat or fish, and at the end of each day.
- Wash and dry knives by hand.
- Use a sanitizing solution.
- Avoid putting a knife into soapy water and leaving it unattended there. Someone could reach into the cloudy water and get cut.

Avoid Putting Knives in a Dishwasher Because:
- Loose knives could damage the machine’s protective coating.
- Knives are hazardous to people reaching into the machine.

Sharpening
When a knife needs a good sharpening, get a sharpening stone or have a professional sharpen it for you. To align a knife’s edge after daily wear and tear, use a sharpening steel.
- Hold the blade’s edge at about a 20-degree angle from the steel.
- Draw the blade along the steel with a few easy strokes.
- Alternate sides.
- Be gentle; don’t push too hard.

Storing
Store knives:
- In a wooden knife block.
- On a wall-mounted magnet strip.
- In racks.
- In trays.
- Away from open flames or extreme heat.
- Separate from other utensils.

Knife Safety:
- Never use a knife as a substitute for other tools such as a screwdriver or bottle opener.
- Avoid scraping food off a cutting board with the sharp edge of a knife—you’ll dull it. Use the back of the blade instead.
- Carry knives with the blade pointed downward.

It’s Important to Keep Knives Sharp Because:
- Sharp knives require less pressure to cut food.
- Dull knives are more likely to slip and cut you instead of the food.
- If you cut yourself, it will be a clean cut.

To Keep Knives Sharp, Avoid Cutting on These Surfaces:
- Porcelain
- Glass
- Metal
Use Extreme Caution
When using Meat Slicers

If not used safely, meat slicers can inflict serious cut injuries. Lack of training, poor work procedures, improper use of guards, and cleaning the blades without protective gloves are a few of the contributing factors.

**OPERATE ONLY IF:**

- You are 18 years or older in age.
- You have been properly trained and understand the operating instructions.

**WHEN USING:**

- Blade guard must be in a secured position over the knife.
- Use the meat grip to keep your hands away from the blade.
- Maintain sharp blades on the slicer.
- Give your full attention to the operation of the equipment and the task you are doing.
- Do not remove food from the machine until it has come to a complete stop.
- When not in use, set the blade adjustment to zero.

**WHEN CLEANING AND MAINTAINING:**

- Unplug the machine and set the blade adjustment to zero before cleaning or moving.
- Follow manufacturer's cleaning and maintenance instructions.
- Wear metal mesh or Kevlar gloves when cleaning the blade.
- CAREFULLY wash both sides of the blade by wiping outward from the center of the blade.
- Before plugging back into the outlet, make sure the switch is in the "off" position.
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When You're Cooking
♦ Remove all flammable items from the cooking area.
♦ Use large oven mitts—preferably ones that cover your forearms.
♦ Don’t wear clothing that’s loose-fitting or has dangling sleeves.
♦ Make sure there’s a lid nearby for each pan you use.
♦ Closely watch anything you’re heating on a stove or in an oven, especially when cooking with grease or oils.
♦ Make sure there’s enough ventilation for stoves (to prevent grease fires in the exhaust ducts).
♦ Keep stoves, ovens and all cooking appliances clean.
♦ Never turn up a burner or oven to a higher temperature than is needed.

If There’s a Fire:
♦ in an oven, close the oven door and let the fire burn out itself. Closing the door shuts off oxygen the fire needs to burn.
♦ in a pan on the stove, smother the fire with the lid. (Don’t use water if it’s a grease fire.)
♦ that has spread from a pan, smother it with a wet towel.

Cooking Dangers
♦ Steam—Steam can build up under a lid, plastic wrap or anything used to cover hot or cooking food. Use oven mitts to lift a lid, beginning with the side farthest away from you, letting the steam escape. When removing plastic wrap or foil from a dish, prick the wrapping with a knife or fork and keep your fingers and face clear as the steam escapes.
♦ Grease and oils—Avoid carrying uncovered pans of hot cooking oil or grease. They can easily flare up or be spilled.
♦ Foods—Avoid letting your fingers or hands come in contact with hot food. Don’t leave hot food anywhere it could be spilled.
♦ Heat—Never leave hot items near the edge of a table or on a tablecloth that can be pulled off. Always wear oven mitts when touching hot plates, pots, pans or utensils.
♦ Hot water—Hot water is dangerous because the water as well as its steam can cause serious scalds. Never carry boiling water. Never put your hands into water until you know its temperature.

Cooking With Fire
Sometimes you may need to prepare food using an open flame. Preparing foods with fire enriches flavor and makes a great impression if done correctly in front of customers. But it requires some special precautions.
♦ When using liquor to flame food, always pour it into a ladle and then into the pan. If you pour liquor from a bottle near an open flame, the flame can follow the liquor stream into the bottle and make it explode.
♦ Light the food by pouring the liquor over it and immediately lighting it with a long match, or light the liquor in the ladle and pour it flaming over the food.
♦ Turn your face away from the food as you light it.
♦ When cooking with fire, be sure the flame is far away from people, curtains, draperies, napkins and tablecloths.

Stove and Cooking Safety
If you cook or work around hot ovens, stoves or other cooking appliances there are certain safety precautions you should take.
USING DEEP FRYERS SAFELY

• Wear the proper Personal Protective Equipment when working around hot oil.

• Dry off utensils and wet food and brush or shake off excess ice crystals before placing in the hot oil. Wet foods splatter and cause steam.

• Fill fryer baskets no more than half full.

• Gently raise and lower fryer baskets.

• Allow hot oil to drip off before completely removing baskets.

• Do not stand too close or lean over hot oil.

• NEVER attempt to strain or carry hot oil. Wait until it is cool!

• Do not store items near or above fryers, particularly liquids, cans of food, or spray cans. Hot oil can splatter and pressurized containers can burst, causing severe injuries.

• Areas surrounding the fryer should have slip resistant flooring or matting.
Know Your Restaurant Equipment

Restaurant equipment can help you finish a job faster and more efficiently. But if used incorrectly or carelessly, equipment can become a danger for you and your coworkers. Be especially cautious around:

- Slicers
- Mixers
- Food processors
- Dishwashers
- Ovens
- Stoves
- Grills
- Coffee makers
- Toasters
- Blenders
- Warmers

Safety Tips

- Only use equipment you’ve been trained to use.
- Always focus your attention on the task at hand when using any kind of equipment. Stop if you’re interrupted, intoxicated, drowsy or distracted.
- Use the correct personal protective equipment, such as gloves, mitts or goggles.
- At the end of the day, turn off appliances that aren’t being used.
- Dry your hands before plugging in or unplugging equipment.

Equipment Maintenance and Inspection

Malfunctioning equipment can cause hazards such as food poisoning, cuts, burns and fires. For example, malfunctioning cooking and refrigeration equipment could cause foodborne illnesses by allowing temperatures that let bacteria grow.

- Check equipment regularly to make sure it’s working properly.
- Use appliance thermometers to make sure the equipment is reaching and maintaining the necessary temperatures.
- Keep blades sharpened to make them less likely to slip and cut you.
- Disconnect any electrical equipment that malfunctions or gives off a strange odor and tell your supervisor.

Cleaning Safely

- Turn off and unplug equipment before cleaning.
- Follow the equipment’s cleaning instructions.
- Be careful of sharp parts or edges.
- Be careful when using cleaning solvents around anything flammable.
- Use the dishwasher whenever possible; it is more effective at killing bacteria than washing by hand.

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Preventing Back Injuries

Back injuries on the job can cost a business big money. And once you’ve had a back injury, you’re four times more likely to suffer another one. All this can be easily prevented by taking proper precautions on the job.

Proper Lifting
Improper lifting causes most back injuries.
- When lifting, keep your back and neck in alignment, and bend at the knees, not at the waist, as you use your leg, abdominal and buttocks muscles to do the work.
- If you feel any pain, however fleeting, stop lifting.
- Avoid trying to lift objects that are too heavy for you.
- Ask for help, or use a dolly or cart to push (rather than pull) heavy loads.

Stress Management
Stress can aggravate back problems by causing your muscles to tense.
- Take deep, prolonged breaths.
- Do regular aerobic exercise.
- Take breaks.
- Laugh out loud.
- Give yourself a neck and shoulder rub.
- Meditate.

Posture
Poor posture is one of the major culprits in the growing incidence of back, neck and shoulder pain.
- Keep your ears aligned with your shoulders and hips in a straight line.
- Avoid wearing high-heeled shoes.
- Take “micro” breaks to allow muscles to recover.
- Vary your positions.
- When standing, use a footstool, if possible, to elevate one foot and alternate.
- Keep your knees flexed, not locked.
- Stand on a mat or carpeted or padded surface whenever possible.

Avoid Substances
Nicotine and caffeine stimulate adrenaline, increasing sensitivity to pain.
- Try drinking juice or bottled water instead of coffee or caffeinated soft drinks.
- Quit smoking.

If You Have Back Pain
- Some over-the-counter medications, such as ibuprofen or aspirin, can relieve back pain and reduce inflammation. If back pain persists, see your doctor.
- Sit with an electric heating pad on your lower back. To avoid accidental burns, use the heating pad for no more than 20 to 30 minutes at a time. Remove the pad for at least 10 minutes between sessions.

Stretch
Stretching can help loosen tense back muscles, making them less susceptible to injury.
- Perform stretching exercises before work and during breaks.
Cumulative Trauma Disorders

If your wrists ache, elbows throb or hands hurt from chopping vegetables, washing dishes, carrying trays, pouring drinks or performing other activities on the job, you may be using bad body mechanics that can cause injury. Cumulative trauma disorders (CTDs), also known as repetitive motion injuries, are physical problems that can develop over time.

Most Common CTDs

• **Carpal tunnel syndrome**: when a nerve in your wrist gets irritated from repeating the same motions over and over

• **Low back pain and tension neck syndrome**: when muscles and nerves get irritated by poor posture, sudden twisting or bending motions or improper lifting or carrying

• **Tendinitis**: when muscles and tendons in your elbows, forearms, wrists or hands get irritated

• **Bursitis**: when the area around your joints becomes irritated

• **Rotator cuff injury (shoulder tendinitis)**: when one or more of the tendons in your shoulder becomes irritated, limiting shoulder movement

Preventing CTDs

• **Stand Tall**—Stand and sit with your ears, shoulders and hips “stacked” in a straight line.

• **Take Your Position**—Position yourself at your workstation so you can do less bending and reaching.

• **Set Up**—Position things so you can keep your wrists straight and do fewer repeated motions.

• **Give Me a Break**—Switch tasks or take regular breaks to stretch and shake out your hands.

• **Don’t Overdo It**—Use only the force or effort needed for a certain task.

• **Stay Fit**—Keep in shape through stretching, exercising, getting enough sleep, avoiding stress and eating right.

Controlling CTDs

Remember, the earlier you pay attention to a suspected CTD, the more likely you’ll be able to do something about it. If you suspect you have a CTD, try using ice packs and anti-inflammatory over-the-counter medications, such as aspirin or ibuprofen. If these don’t do the trick, consult with your doctor.
Know About Hazardous Chemicals

Hazardous chemicals are often used in the workplace, even in food service businesses. Cleaners, dishwashing chemicals, pesticides and refrigerants are all chemicals that can be hazardous. Health problems caused by exposure to certain chemicals and safety hazards such as fire and explosions are possible if the chemicals you work with aren’t handled properly. It’s essential to be aware of the hazardous chemicals in your workplace and to know how to handle them.

**Hazardous Materials Include:**

- **toxic chemicals**—gases, liquids or solids that can cause illness or death
- **flammable liquids**—give off vapors that can form an explosive mixture with air
- **gases**—can be corrosive, combustible, flammable, explosive, poisonous or all of these
- **corrosives**—can destroy living tissue and other substances

**Ways You Can be Exposed**

- **dermal**—direct contact with the skin
- **inhalation**—breathing gases, vapors, dusts or fumes
- **ingestion**—swallowing a chemical

**Health Problems Caused By Hazardous Materials Include:**

- damage to lungs and respiratory system
- skin irritation, such as burns, rashes and dermatitis
- eye damage, even blindness
- nervous system damage
- cancer
- damage to the liver or other organs
- infertility
- birth defects

**Preventing Harm When Using Chemicals**

- Know the substance you’re handling.
- Use the proper personal protective equipment.
- Wash thoroughly after use.

- Obey all safety rules.
- Avoid mixing chemicals unless you’re qualified to do so and you know how they’ll react.
- Ventilate the area properly.

**Storage**

- Store chemicals in approved ventilated safety cabinets, away from food, moisture, sunlight, heat sources and substances they can react with.
- Take only needed amounts to the work area.
- Carry and store chemicals only in approved, properly labeled safety containers.
- Dispose of chemicals and waste according to approved procedures (never down sewers or drains).
Material safety data sheets (MSDSs) keep you informed about the chemicals you use and instruct you on how to use them safely. Your employer must have an available MSDS for each hazardous chemical you use.

An MSDS Must Include:
- the name of the chemical (as used on the label).
- all hazardous ingredients and their amounts.
- physical and chemical characteristics.
- reactivity and how to prevent a reaction.
- the chemical’s flash point.
- control measures and how to protect yourself.
- health hazards.
- whether the chemical is carcinogenic (cancer-causing).
- precautions for safe handling and use.
- emergency and first aid procedures.
- date of preparation and latest revision.
- name, address and telephone number of the manufacturer, importer or other responsible party.

Read the MSDS
Always read the MSDS before starting a job with a hazardous chemical. Practice by choosing a chemical that’s used in your workplace and looking up its corresponding MSDS. Then use this quiz to familiarize yourself with the chemical and using an MSDS.

✓ Chemical name
✓ What should you do if the chemical spills or leaks?
✓ What number would you call to get more information about the chemical?
✓ Is this chemical likely to be in liquid or gas form at room temperature?
✓ What hazardous ingredients are in the chemical?
✓ What protective equipment should you use around this chemical?
✓ What should you do if you get this chemical on your skin? In your eyes?
✓ How do you dispose of this chemical properly?

Right to Know
You have a right to know about the hazards of chemicals in the workplace and how to protect yourself. The Hazard Communication Standard developed by the Occupational Safety and Health Administration gives you that legal right. HazCom details what chemical manufacturers, employers and employees have to do to make sure that everyone who works around hazardous chemicals is aware of the specific hazards and necessary protection.
The Hazard Communication Standard (HCS) requires chemical manufacturers, distributors, or importers to provide Safety Data Sheets (SDSs) (formerly known as Material Safety Data Sheets or MSDSs) to communicate the hazards of hazardous chemical products. As of June 1, 2015, the HCS will require new SDSs to be in a uniform format, and include the section numbers, the headings, and associated information under the headings below:

**Section 1, Identification** includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.

**Section 2, Hazard(s) identification** includes all hazards regarding the chemical; required label elements.

**Section 3, Composition/information on ingredients** includes information on chemical ingredients; trade secret claims.

**Section 4, First-aid measures** includes important symptoms/ effects, acute, delayed; required treatment.

**Section 5, Fire-fighting measures** lists suitable extinguishing techniques, equipment; chemical hazards from fire.

**Section 6, Accidental release measures** lists emergency procedures; protective equipment; proper methods of containment and cleanup.

**Section 7, Handling and storage** lists precautions for safe handling and storage, including incompatibilities.

**Section 8, Exposure controls/personal protection** lists OSHA's Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; personal protective equipment (PPE).

**Section 9, Physical and chemical properties** lists the chemical's characteristics.

**Section 10, Stability and reactivity** lists chemical stability and possibility of hazardous reactions.

**Section 11, Toxicological information** includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.

**Section 12, Ecological information**

**Section 13, Disposal considerations**

**Section 14, Transport information**

**Section 15, Regulatory information**

**Section 16, Other information,** includes the date of preparation or last revision.

*Note: Since other Agencies regulate this information, OSHA will not be enforcing Sections 12 through 15 (29 CFR 1910.1200(g)(2)).

**Employers must ensure that SDSs are readily accessible to employees.**
See Appendix D of 1910.1200 for a detailed description of SDS contents.

For more information: [www.osha.gov](http://www.osha.gov)

(800) 321-OSHA (6742)
U.S. Department of Labor
As of June 1, 2015, the Hazard Communication Standard (HCS) will require pictograms on labels to alert users of the chemical hazards to which they may be exposed. Each pictogram consists of a symbol on a white background framed within a red border and represents a distinct hazard(s). The pictogram on the label is determined by the chemical hazard classification.

### HCS Pictograms and Hazards

<table>
<thead>
<tr>
<th><strong>Health Hazard</strong></th>
<th><strong>Flame</strong></th>
<th><strong>Exclamation Mark</strong></th>
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<tbody>
<tr>
<td>Carcinogen</td>
<td>Flammables</td>
<td>Irritant (skin and eye)</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Pyrophorics</td>
<td>Skin Sensitizer</td>
</tr>
<tr>
<td>Reproductive Toxicity</td>
<td>Self-Heating</td>
<td>Acute Toxicity (harmful)</td>
</tr>
<tr>
<td>Respiratory Sensitizer</td>
<td>Emits Flammable Gas</td>
<td>Narcotic Effects</td>
</tr>
<tr>
<td>Target Organ Toxicity</td>
<td>Self-Reactives</td>
<td>Respiratory Tract Irritant</td>
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<tr>
<td>Aspiration Toxicity</td>
<td>Organic Peroxides</td>
<td>Hazardous to Ozone Layer (Non-Mandatory)</td>
</tr>
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<thead>
<tr>
<th><strong>Gas Cylinder</strong></th>
<th><strong>Corrosion</strong></th>
<th><strong>Exploding Bomb</strong></th>
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</thead>
<tbody>
<tr>
<td>Gases Under Pressure</td>
<td>Skin Corrosion/Burns</td>
<td>Explosives</td>
</tr>
<tr>
<td></td>
<td>Eye Damage</td>
<td>Self-Reactives</td>
</tr>
<tr>
<td></td>
<td>Corrosive to Metals</td>
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<tr>
<th><strong>Flame Over Circle</strong></th>
<th><strong>Environment</strong></th>
<th><strong>Skull and Crossbones</strong></th>
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<tbody>
<tr>
<td>Oxidizers</td>
<td>Aquatic Toxicity</td>
<td>Acute Toxicity (fatal or toxic)</td>
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For more information:

[www.osha.gov](http://www.osha.gov) (800) 321-OSHA (6742)
OSHA has updated the requirements for labeling of hazardous chemicals under the Hazard Communication Standard (HCS). As of June 1, 2015, all labels will be required to have pictograms, a Signal Word, hazard and precautionary statements, the product identifier, and supplier information. A sample revised HCS label, identifying the required label elements, is shown on the right. Supplemental information can also be provided on the label as needed.
EYE SAFETY

Avoiding Eye Injuries

Wear the appropriate protective eyewear for the specific hazards you face.

Of all of our senses, the one most precious perhaps is our sense of sight. Yet each year, thousands of us suffer eye injuries that impair our vision or deprive us of our sight altogether. These injuries are, to a large extent, avoidable. In fact, over 90% of all eye injuries can be prevented by following established safety guidelines and using the appropriate protective eyewear for the tasks we perform.

Recognizing Eye Hazards

Among the most common eye hazards are flying particles, a hazard typical of many machine operations such as grinding, sawing, etching, and so on. Dusts (such as wood, metal, and other airborne particles), sparks (common in welding), and fumes and splashes (from molten materials or chemicals) can all cause eye injury unless the appropriate protective eyewear is used. Harmful light rays (common in arc and electrical welding, furnace operations, and work using acetylene equipment) can cause painful eye burns unless your eyes are adequately protected. The following guidelines for on-the-job eye safety can help you save your sight—for life.

Eye Safety Checklist

- Be alert to the eye hazards present at your worksite.
- Wear the appropriate protective eyewear—glasses, goggles, and/or hoods, face shields and welding helmets—provided by your employer for the specific hazards you face.
- Remember that regular eyeglasses or contact lenses will not protect you from eye hazards—if you must wear corrective lenses, you'll need to wear protective eyewear over them.
- Check to see that your protective eyewear meets ANSI (American National Standards Institute) standards.
- Make sure that your protective eyewear fits properly and is clean and in good condition before and after each use.
- Replace faulty eyewear immediately.
- Follow established safety guidelines.
- Learn basic first-aid for eye injuries.
- Know where all eyewash stations and emergency equipment are located.
- In the event of eye injury, get medical attention immediately.

A SPECIAL NOTE . . .
HAND SAFETY

Avoiding Finger, Hand, and Wrist Injuries

Whether you’re a machine operator, a lab technician, an office worker—any kind of worker, for that matter—your hands are one of your most important “instruments.” Yet, over a quarter of a million people suffer serious (and often disabling) hand injuries each year. By recognizing hand hazards, following established safety guidelines, and using protective guards, shields, gloves and other personal protective devices as needed, you can save your hands from injury and yourself from unnecessary disability.

Recognizing Hand Hazards
One of the most serious yet common causes of hand injury is the use of unprotected or faulty machinery or equipment. Failure to use push-sticks, guards, kill-switches, or to follow appropriate lock-out procedures are among the leading industrial hand hazards. Wearing jewelry, gloves, or loose-fitting clothing around moving parts can also lead to injury. Chemicals, corrosives, and other irritating substances can cause burns and skin inflammation unless appropriate hand protection is used. Temperature extremes and electrical hazards are other common causes of hand injuries. In addition, constant, repetitive motion (as in assembly-line work or painting) can cause undue stress on the wrists and hands unless protective measures are taken. The following list provides a guideline for hand safety that can help you protect your hands from injury and disability.

Hand Protection Checklist

✓ Be alert to potential hand hazards before an accident can happen.
✓ Be alert to possible unguarded pinch points.
✓ Always use push-sticks, guards, shields, and other protective devices when appropriate. Do not remove guards.
✓ Use brushes to wipe away debris.
✓ Inspect equipment and machinery before and after tasks to make sure that it is in good operating condition.
✓ Disconnect power and follow established lock-out procedures before repairing or cleaning machinery.
✓ Never wear gloves, jewelry, or loose clothing when working with moving machine parts.
✓ Use the appropriate personal protective equipment—gloves, guards, forearm cuffs, barrier creams—for the specific task you are performing.
✓ When wearing gloves, be sure they fit properly and are rated for the specific task you are performing.
✓ Select tools designed to keep wrists straight to help avoid repetitive motion/overuse problems.
Work gloves cannot prevent hand accidents—only safe and conscientious work practices can do that. But, choosing the right work glove for the job can help protect you from unnecessary injury and disability if an accident should occur. When protective handwear is required for the job you perform, make sure that the gloves you use fit well, are comfortable to wear, and are rated to guard against the particular hand hazards you face.

The following is a guide to the most common types of protective work gloves and the types of hazards they can guard against.

**Disposable Gloves**
Disposable gloves, usually made of light-weight plastic, can help guard against mild irritants. (These gloves are often used for food-handling operations.)

**Fabric Gloves**
Gloves made of cotton or fabric blends are generally used to improve your grip when handling slippery objects. They also help insulate your hands from mild heat or cold.

**Rubber Gloves**
Although commonly called “rubber,” these gloves may actually be made of rubber, neoprene, poly vinyl alcohol or vinyl. These gloves help protect hands from corrosives such as organic acids and petroleum-based products.

**Leather Gloves**
These gloves are used to guard against injuries from sparks or scraping against rough surfaces. They are also used in combination with an insulated liner when working with electricity.

**Metal Mesh Gloves**
These gloves are used to protect your hands from accidental cuts and scratches. They are used most commonly by persons working with cutting tools or other sharp instruments.

**Aluminized Gloves**
Gloves made of aluminized fabric are designed to insulate your hands from intense heat. These gloves are most commonly used by persons working with molten materials.

**Using Hand Protectors**
Although these are the most common types of work gloves, many gloves are designed to protect against specific hazards. (For instance, workers exposed to radiation hazards wear specialized lead-lined gloves.) It’s also important to remember that your work may require that you use additional hand protection other than gloves which may include approved barrier creams, forearm cuffs, hand pads, mittens, or finger cots. Your supervisor can help you determine the appropriate protective handwear for your particular job, but only you can make them work—by wearing them.

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**A SPECIAL NOTE...**

- Check gloves for cracks and holes, especially at tips and between fingers.
- Replace worn or damaged gloves promptly.
- Keep gloves clean and dry.
- Make sure gloves fit properly. A small glove tires the hand and a large one is clumsy.
- Check the MSDS for a particular glove recommendation when working with chemicals.
- Cover all cuts before putting gloves on.
- Wash hands often to prevent build-up of sweat and dirt.
CHOOSING AND USING PROTECTIVE HEADWEAR

Hard Hats, Bump Caps, And Hair Covers

Head injuries may not be the most commonly-reported industrial accident, but they are by far among the most devastating. One serious blow to the head can leave an otherwise strong and healthy person permanently brain-damaged or disabled for life. All of us know the importance of wearing head protection on the job, but it's equally important to select and wear the right hat for the specific hazards you face. The following is a guide to the most common types of protective headwear and the types of hazards they can guard against.

Hard Hats
As their name suggests, the outer shell of these hats are made of rigid, impact-resistant, non-flammable materials such as fiberglass and thermoplastics. The shell is held on your head by a network of straps and harnesses: crown straps which fit over the head itself and cushion impact; an adjustable headband that secures the hat to your head; and chin or nape straps to prevent the hat from being accidently bumped off your head. A full-brimmed hard hat (such as the type worn by firefighters) protects against blows to the entire head, neck, and shoulders. A visored hard hat (front-brim only) does not protect the sides of the head or the neck and shoulders, but is often used when working in confined spaces.

Bump Caps
Bump caps do not protect against blows to the head or other serious impacts such as falling objects. Made of lightweight plastic, these hats guard against minor bumps only. Bump caps should never be used in place of hard hats. Bump caps are commonly used when working in confined spaces where there are no serious head hazards.

Hair Covers
Hair covers made of breathable fabric or lightweight materials are often required when working around machinery. This type of headwear is usually adjustable (to ensure proper fit) and may have a front visor (to let you know if you are getting too close to your machine.) Hair covers help prevent hair from becoming caught in moving machine parts.

Using Protective Headwear
Although these are the most common types of protective headwear, your particular job may require that special safety accessories be added to your basic head protector. For example, thermal liners may be required if you work in extremely cold temperatures; lamp brackets may be attached if you work in dark areas; or face shield mounts may be needed if you are also exposed to flying particles. (Note: Face shields alone do not protect against flying particles. Protective eyewear is also required.) To keep your protective headwear in top condition, check it before and after each use. Are all straps secure and working properly? Is there any damage to the outer shell? Does it fit correctly? Is it clean? Remember, though, in order for your protective headwear to work, you have to wear it.

A SPECIAL NOTE...

- Adjust the headband to the proper size so there is adequate clearance between the shell and headband.

- Check daily for signs of cracks, penetration, or other damage.

- Do not drill or punch holes in the helmet shell to gain ventilation.

- Store in a clean, dry location – not in sunlight.

- Do not paint hard hats.
CHOOSING AND USING EYE PROTECTION

Safety Glasses And Goggles

No matter where we work, flying particles, dusts, fumes, vapors, harmful rays, are apt to expose us to potential eye injury. Fortunately, we can protect against these hazards by using the appropriate protective eyewear for our jobs and by following our companies' established safety guidelines. The following is a guide to the most common types of protective eyewear and the specific hazards they can guard against.

Safety Glasses
Standard safety glasses look very much like normal glasses, but are designed to protect you against flying particles. Safety glasses have lenses that are impact resistant and frames that are far stronger than regular eyeglasses. Safety glasses must meet the standards of the American National Standards Institute (ANSI). (Safety glasses are also available in prescription form for those persons who need corrective lenses.) Standard safety glasses can be equipped with side shields, cups, or tinted lenses to offer additional protection.

Safety Goggles
Like standard safety glasses, goggles are impact resistant and are available in tinted lenses. Goggles provide a secure shield around the entire eye area to protect against hazards coming from many directions. Safety goggles may have regular or indirect ventilation. (Goggles with indirect ventilation may be required if you are exposed to splash hazards.)

Shields and Helmets
Face shields and helmets are not in themselves protective eyewear. But, they are frequently used in conjunction with eye protectors. Full-face shields are often used when you are exposed to chemicals or heat or glare hazards. Helmets are used when welding or working with molten materials.

Using Protective Eyewear
You can guard against eye injury by making sure that you are wearing the appropriate protective eyewear for the particular eye hazards you face. It's important to remember that regular glasses alone do not offer protection from eye hazards. Follow your company's established safety procedures, and never hesitate to ask your supervisor if you have any questions about what you can do to protect your sight for life.

A SPECIAL NOTE...

- Adjust frame periodically to prevent glasses from sliding down the nose.

- Before cleaning, flush them with water or blow on lens to remove dirt. Dirt and grit can scratch lenses.

- Regularly check eye protection for damage and store in a clean, dry place.

- Promptly replace any device that doesn't sit properly or becomes scratched, bent or broken.
CHOOSING AND USING WORK SHOES

Safety Shoes And Boots

Who thinks about their feet? Well, each year at least 120,000 workers certainly do. That's because each of them suffered from an accidental foot injury while on the job. And what are most of them thinking about? Chances are, it's the realization that their accidents could have been prevented by using common safety sense and wearing the appropriate protective footwear. The following is a guide to the most common types of protective footwear and the types of hazards they protect against.

Steel-Reinforced Safety Shoes
These shoes are designed to protect your feet from common machinery hazards such as falling or rolling objects, cuts, and punctures. The entire toe box and insole are reinforced with steel, and the instep is protected by steel, aluminum, or plastic materials. Safety shoes are also designed to insulate against temperature extremes and may be equipped with special soles to guard against slip, chemical, and/or electrical hazards. Other protective footwear (such as metatarsal and shin guards) can be used in conjunction with standard safety shoes.

Steel-reinforced safety shoes protect your feet from falling or rolling objects, cuts, and puncture injuries.

Safety Boots
Safety boots come in many varieties and which you use will depend on the specific hazards you face. Boots offer more protection when splash or spark hazards (chemicals, molten materials) are present. When working with corrosives, caustics, cutting oils, and petroleum products, neoprene or nitrile boots are often required to prevent penetration.

Foundry or "Gaiter" style boots (often used in welding operations) feature quick-release fasteners or elasticized insets to allow speedy removal should any hazardous substance get into the boot itself. When working with electricity, you may need to wear special electrical hazard boots which are designed with no conductive materials other than the steel toe (which is properly insulated).

Using Protective Footwear
There are many types and styles of protective footwear and it's important to realize that your job may require additional protection. Features such as slip-resistant soles, for example, will vary from one shoe to the next, depending upon the type of slip hazard. Whatever your specific requirements are, you can ensure that your footwear meets established safety standards by checking for the American National Standards Institute's (ANSI) label inside each shoe.

A SPECIAL NOTE . . .

- Select safety shoes or boots at the end of the day when the feet are a bit swollen.
- Have both feet measured.
- Inspect footwear for cracks and holes prior to use.
- Store in a clean, dry location.
- Select and use the right kind of footwear.
- Replace worn or torn footwear.
- Avoid leather and cloth footwear when working with acids and caustics.

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CHOOSING AND USING HEARING PROTECTION

Muffs, Plugs, And Canal Caps

Silence may be golden—but not when it's permanent. Hearing loss is a condition that occurs over time from repeated exposure to excessive noise. We can't always prevent noise, but we can prevent hearing loss by following established safety procedures and using the appropriate hearing protectors for the noise hazards we face each day. The following is a guide to the most common types of hearing protectors and the types of hazards they can guard against.

**Muffs**

Muffs cover the entire ear and can reduce noise by as much as 15-30 decibels.

**Ear Muffs**

Ear muffs come in many styles. Most are attached to spring-loaded headbands, while others are attached directly to safety headgear. Specialized muffs are also available for persons who work in high-voltage exposures, or who need to filter out hazardous noises while retaining acute hearing for normal sound ranges. Muffs cover the entire ear and can reduce noise by as much as 15-30 decibels. (Muffs are often used in conjunction with ear plugs when a worker is exposed to extremely high noise levels—105 decibels and above.)

**Ear Plugs**

Ear plugs are positioned in the outer part of the ear and may reduce noise by as much as 30 decibels.

Like muffs, ear plugs come in many varieties—formable, custom-molded, pre-molded, disposable, reusable—and may be made of many different types of materials such as acoustical fiber, silicone, rubber, or plastic. Ear plugs are positioned in the outer part of the ear and may reduce noise by as much as 30 decibels. (Excessive noise is commonly defined as 85-90 decibels or more over an 8-hour period.)

**Canal Caps**

As their name suggests, these hearing protectors cap off or close the ear canal at its opening. Like many muffs, canal caps are connected to a flexible headband that ensures a close fit. Canal caps are most commonly used when an individual is unable to use traditional ear plugs.

**Using Hearing Protectors**

Your supervisor can help determine the amount of noise you are exposed to on-the-job through various testing devices and will provide you with the appropriate type of hearing protection for the particular noise hazards you face. But remember, hearing protectors only work when you use them correctly and consistently. Depending on the type of hearing protectors you use, dispose of or replace them as necessary. For reusable protectors, follow the manufacturer's guidelines for cleaning and storage. When it comes to your hearing, an ounce of prevention is worth a pound of cure.
HOW NOISE AFFECTS HEARING

Understanding Hearing Loss

Hearing loss is a normal part of the aging process. Throughout our lives we are exposed to loud noises and physical conditions that add up to gradual loss of hearing. But many of us lose our hearing prematurely by failing to protect ourselves from excess noise both at home and at the workplace. Understanding how hearing works can help you realize the importance of protecting your hearing now, before it’s too late.

How Hearing Works

The ear is composed of numerous delicate structures designed to carry sound waves to the brain. The hair cells in the inner ear are particularly important because they stimulate the auditory nerve which transmits impulses to the brain. The brain translates auditory impulses into the sounds that we hear. When the ear’s hair cells become damaged due to excess noise exposure, the auditory nerve is not sufficiently stimulated, the brain does not receive the appropriate sound signal, and we fail to hear correctly. And, when hair cells are damaged by prolonged overexposure to loud noise, they “die” and cannot be replaced, resulting in permanent hearing loss.

Excess Noise Exposure

Noise is measured in units called decibels (dBs or dBA). Excess noise is generally considered to be exposure to 85-90 decibels or more over an 8-hour period. A typical automobile horn can be as loud as 120 decibels, but hearing a horn honk for 10 seconds is unlikely to cause hearing loss. If you had to listen to the horn blast for 8 hours straight, though, you could very well experience gradual, permanent loss of hearing. Or, if you work in a factory and are exposed to 80 decibels of noise over a 4-hour period, you might not be at risk. But, if you then went home and operated a power mower or tools, listened to high-volume music, or perhaps practiced at the shooting range, you could very well exceed your safe noise exposure limit.

Protecting Your Hearing

On or off the job, you can protect your hearing by wearing the appropriate personal protective equipment recommended for your tasks. Ear muffs, plugs, and canal caps can all reduce the amount of noise your ears are exposed to. It also helps to know the decibel range or noise level of some common activities and situations to see if you may be exposing yourself to too much noise. Remember that even loud vacuum cleaners, dishwashers, and home power tools can create excessive noise, so protect your hearing wherever you are.

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