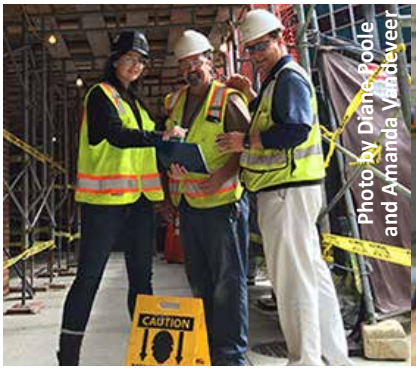

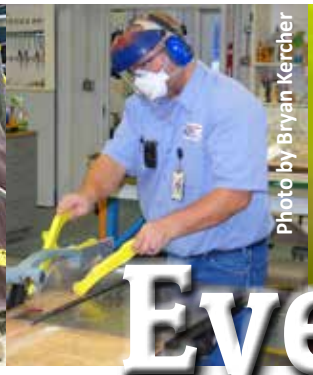

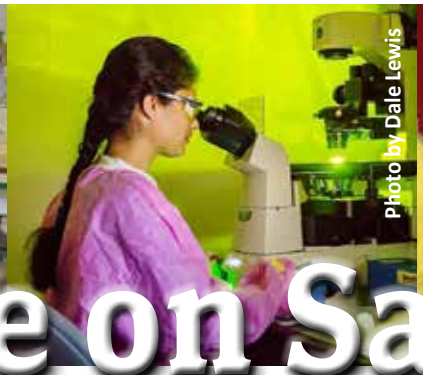

Eye on Safety

Inside this issue:

National Institutes of Health
Office of Research Services
Division of Occupational Health and Safety

Providing a safe and healthy environment for employees, patients and visitors.

"Safe science and good science go hand-in-hand."

Hazard awareness helps prevent amputations

OSHA's requirements for machine guarding and lockout/tagout help prevent the deaths and permanently disabling injuries associated with machinery operation, and the agency is using employer reporting requirements and inspections to put an emphasis on compliance.

You only get ten fingers, two hands, two arms, and two feet. Crushing injuries and severe lacerations can result in an amputation. These injuries have a devastating impact on your life, if you survive the accident. OSHA has found that about 90 percent of reported amputations involve the fingers.

Frequency of Amputation Injuries

A wide variety of activities and equipment can cause amputations. The Bureau of Labor Statistics reports there were 5,360 non-fatal amputations in private industry during 2015.

About 48 percent of these amputations happened in manufacturing workplaces. The rest happened in the transportation, construction, and other industries.

Amputation injuries can happen when workers use, clean, or repair machines such as:

- Saws;
- Presses;
- Conveyors;
- Bending, rolling, or shaping machines;
- Shears,
- Food slicers;
- Grinders
- Drill presses;
- Milling machines;
- Slitters;
- Powered and non-powered hand tools;
- Forklifts; or
- Trash compactors.

Injuries that result in amputations can also happen during materials handling activities (such as using hoists) or even when closing doors or access panels.

Operations that have a risk of amputations

These three types of machine components present amputation hazards:

(continued on page 2)

Hazard awareness helps prevent amputations *(continued from page 1)*

- The point of operation — the place where the machine acts on the materials that are fed into it;
- Power-transmission apparatus — the gears, pulleys, belts, flywheels, etc. that move power to machine parts; and
- Other moving parts — machine parts often rotate, slide back and forth, or move along a path.

Because people get hurt if they get caught up in moving parts, always pay attention to machine motions and actions. Machinery can have:

- Rotating motion (like a drill bit);
- Sliding motion (reciprocating, or back-and-forth motion);
- Straight-line movement (continuous, transverse motion in one direction like a conveyor belt);
- Cutting action (usually associated with rotating, reciprocating, or transverse motion);
- Punching action (like a metal stamping machine);
- Shearing action (like a guillotine shears used to trim plastic or paper);
- Bending action (like a power press or press brake);
- In-running nip points (like a rubber mill or a drive chain running into a gear).

Fortunately, there are methods to keep you from coming into contact with hazardous moving parts.

Machine guards or other safeguarding devices

Machines must be equipped with guards or other safeguarding devices.

Guards provide physical barriers that prevent access to danger zones. They are usually attached to the machine using screws, bolts, or other fasteners. You usually need a tool to remove them. Because there are so many different types of machines, guards come in a big variety of styles and types that fit the machine and how it's used. Guards can be fixed in place, adjustable, or interlocked with the machine's controls so the equipment stops running when the guard is opened.

Safeguarding devices either prevent or detect operator contact with the point of operation or stop potentially hazardous machine motion if any part of your body is within the machine's danger zone. Because they don't necessarily cover the machine's point of operation, it's critical to be sure safeguarding devices are adjusted and are working properly every time the machine is used.

Safeguarding devices can include pullback and restraint devices that use cords attached to the machine operator. They can be presence-sensing devices or mats that shut down a machine if you reach into a light curtain or step on a mat. Another type of device will only let the machine operate when you have both hands on the controls. Power presses and press brakes can have gates that move into place when the machine cycles.

All safeguards must be properly designed, constructed, installed, used, and maintained in good operating condition. Learn how to inspect, adjust, and use the safeguards on the equipment you use.

Follow safe work practices

Injuries can happen:

- During machine set-up operations;
- While inspecting the machine;
- During normal production operations;
- While clearing jams;
- When lubricating machine parts;
- When changing parts or making adjustments;
- During cleaning; and
- During maintenance, repair, and service operations.

To prevent injuries, look at your work area and think about the hazards involved in your job. Focus on where you sit or stand, what motions you make, what tools and other materials you use, and what is happening in the area as you work.

Safe work procedures give you the instructions you need. They describe how to do a task the safe way. Procedures will likely remind you to not wear loose clothing or jewelry and to wear a net or cap to keep long hair secured. Clothing, jewelry, long hair, and even gloves can get caught in moving machine parts and pull you into the danger zone.

When something goes wrong with a machine, or even when it's time for regular service, it's a prime time for amputations and other injuries. Any time a guard or safeguard device is removed, the hazards are exposed.

Follow lockout/tagout (LOTO) procedures to keep a machine off during machine maintenance and repair jobs.

Lockout means that procedures are used to completely disconnect the machine from its power sources and the energy control devices are locked in the "off" or "safe" position. If a lockout device won't fit on the control, a tag is used instead of a lock and other steps are taken to keep the machine from starting (tagout). Each person who works on locked out or tagged out equipment must have specialized training on how to follow the procedures and verify that the machine is deenergized during the repair job.

Safety focus: Safety in the sun (heat-related hazards)

As we head into the heat of summer, it's time to start thinking about how hot weather can impact your work. Typically, heat stress issues arise in hot and humid conditions when there is moderate to strenuous work being performed. But other factors that can affect a person's response to heat include the amount of radiant heat, air movement, PPE being used, and underlying medical conditions or medications taken. The Centers for Disease Control (CDC) provides information on how to recognize and treat certain heat-related illnesses.

Heat Stroke

Heat stroke is the most serious heat-related disorder. It occurs when the body becomes unable to control its temperature. The body's temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down. When heat stroke occurs, the body temperature can rise to 106 degrees Fahrenheit or higher within 10 to 15 minutes. Heat stroke can cause death or permanent disability if emergency treatment is not given. Symptoms of heat stroke include:

- Hot, dry skin or profuse sweating
- Hallucinations
- Chills and a throbbing headache
- High body temperature
- Confusion/dizziness/slurred speech

Take the following steps to treat someone with heat stroke:

- Call 911 and notify the person's supervisor.
- Move the individual to a cool shaded area.
- Cool the person by soaking the person's clothing with water and fanning his or her body.

Heat Exhaustion

Heat exhaustion is the body's response to an excessive loss of the water and salt, usually through excessive sweating. Individuals most prone to heat exhaustion are those that are elderly, have high blood pressure, and those working in a hot environment. Symptoms of heat exhaustion include:

- Heavy sweating, slightly elevated body temperature
- Extreme weakness or fatigue
- Dizziness, confusion, nausea
- Clammy, moist skin, and a pale or flushed complexion
- Muscle cramps
- Fast and shallow breathing

Individuals suffering from heat exhaustion should:

- Rest in a cool, shaded, or air-conditioned area.
- Drink water or other cool, nonalcoholic liquids.
- Take a cool shower, bath, or sponge bath.

Heat Syncope

Heat syncope is a fainting (syncope) episode or dizziness that usually occurs with prolonged standing or sudden rising from a sitting or lying position. Dehydration and lack of acclimatization contribute to heat syncope. Symptoms of heat syncope include light-headedness, dizziness, and fainting.

Individuals suffering from heat syncope should sit or lie down in a cool place when they begin to feel symptoms and slowly drink water, clear juice, or a sports beverage.

Heat Cramps

Heat cramps usually affect individuals who sweat a lot during strenuous activity. This sweating depletes the body's salt and moisture levels causing painful cramps. Heat cramps may also be a symptom of heat exhaustion.

Symptoms of heat cramps include muscle pain or spasms usually in the abdomen, arms, or legs. Individuals with heat cramps should:

- Stop all activity, and sit in a cool place.
- Drink clear juice or a sports beverage.
- Not return to strenuous work for a few hours after the cramps subside because further exertion may lead to heat exhaustion or heat stroke.
- Seek medical attention if they suffer from heart problems, are on a low-sodium diet, or the cramps do not subside within one hour.

Work at Working Safely

There are a number of things that you can do to keep yourself safe in hot weather. Learn how water, clothing, rest breaks, and acclimatization can affect how well you tolerate working in hot weather. Recognize signs of heat stress in yourself and other workers. If you can't avoid working in the sun:

- Cover up with protective clothing, and wear a hat with a wide brim.
- Apply sunscreen; and wear sunglasses that block 99 to 100 percent of UV radiation.
- Drink water frequently. Drink enough water that you never become thirsty, five to seven ounces of fluids every 15 to 20 minutes. Sports drinks are also good for replacing fluid in the body but use should be monitored due to the high sodium content.
- Avoid drinks with caffeine and alcohol.

Preventing heat stress is important. Monitor your physical condition and that of your coworkers.

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The purpose of this newsletter is to provide a forum for the dissemination of health and safety information. It is intended to enhance communication to National Institutes of Health (NIH) employees, raise awareness of current safety policies and procedures, and provide guidance on relevant issues. It is provided as a service by the NIH, Office of Research Services, Division of Occupational Health and Safety. This is not an NIH publication.

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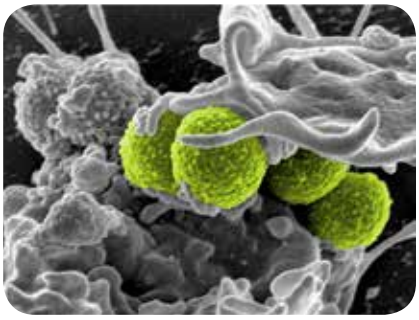
Allergies — watch out for pesky invaders

"He who enjoys good health is rich, though he knows it not."

Italian Proverb

Are you prepared for allergy season?

Tiny substances in our everyday environment, such as mold spores, might not wield much power over the human body, but to a person with allergies they can be debilitating invaders. Common allergens include mold, dust mites, pet dander, food, and insect stings.



An allergy is a specific reaction of the body's immune system to a normally harmless substance that doesn't bother most people. When an allergic person first comes into contact with an allergen, the immune system treats it as an invader and gets ready to attack by generating antibodies.

The antibodies signal the body to release chemicals that cause symptoms such as hives, itching, and watery eyes. More severe symptoms can include difficulty breathing or swallowing, dizziness, swelling, and unconsciousness.

A person's first reaction to an allergen is typically mild. Minor symptoms, such as rashes or itchiness, may be controlled with ice, an oatmeal bath, or hydrocortisone creams.

Subsequent reactions can, however, be more severe, and even life threatening. The most severe form, called anaphylaxis, can occur only seconds after exposure to a substance. Symptoms to watch for include hives, persistent wheezing, or fainting.

A person with severe allergies may opt to wear a medical bracelet alerting others of a particular allergy, and carry an EpiPen.

While most reactions are mild and resolve without any problems, it's important to watch for more serious symptoms. A severe reaction requires medical attention.

Pollen

Do you find that your eyes get itchy and your nose runs when you're outside on a windy day in the spring, summer, or fall? Pollen carried by the breeze may be the culprit.

A pollen allergy, also known as hay fever, is one of the most common allergies. Trees, weeds, and grasses all release pollen that can travel many miles, so it's almost impossible to avoid some of the most common allergens during the warmer seasons of the year. Relief can be found from certain prescription medicines or over-the-counter antihistamines.

In addition to medication, you can also reduce your exposure by staying inside when the pollen counts are at their highest, keeping windows in your home and car closed, and using an air conditioner with an air filter.