

UNDERSTANDING JOB HAZARDS



Many hazards on the job are obvious, like sharp objects, slippery floors, and hot liquids. Other hazards, such as repetitive movements and chemicals, may be hidden. Sometimes it is hard to tell if pain in your arms, hands, or back was caused by repetitive movements on the job. It may also be hard to tell if an illness you have was caused by the chemicals at work.

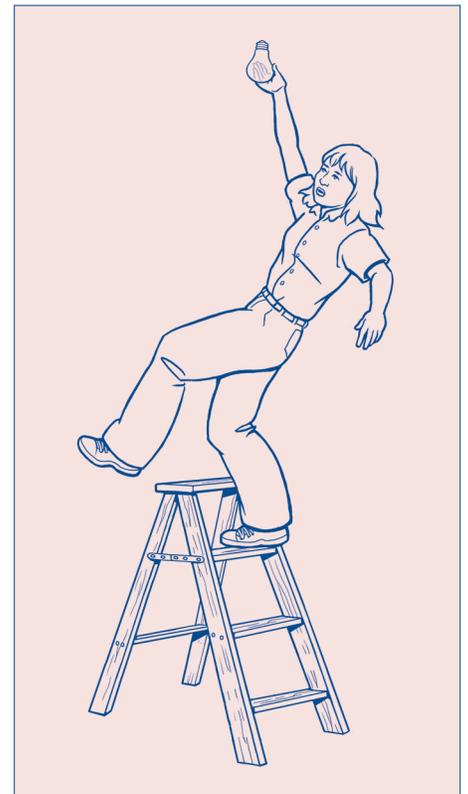
It is important to be aware of all the different types of hazards to look for on the job, both obvious and hidden ones.

Workplace hazards can be broken down into different categories, such as Safety Hazards, Chemical and Biological Hazards, and Other Health Hazards, such as noise, heat, and radiation that don't fit into the first two categories.

Safety Hazards

Safety hazards can cause injuries right away. Examples include:

- Hot surfaces
- Slippery floors
- Unsafe ladders
- Working at heights
- Unguarded machines
- Chemicals that can cause a fire or explosion
- Knives and other sharp objects
- Hot grease
- Electrical hazards
- Workplace violence (assaults, threats, verbal abuse robberies, etc.)
- Lack of fire exits



Safety Hazards (continued from previous page)

- Cluttered work areas
- Poorly designed tools
- Heavy lifting
- Inadequate lighting
- Vehicles (cars, buses, construction equipment, etc.)
- Working in a confined space (any enclosed or partly enclosed area that is difficult to get in or out of). The hazard increases if vapors or fumes are present, if there is a lack of oxygen, or there is too much oxygen.
- Unshored trenches that can cave in
- Unidentified utility gas and fuel lines that may explode if punctured

Chemical and Biological Hazards

Chemical and biological hazards are agents that can make you sick. Some produce effects right away, but others take time.

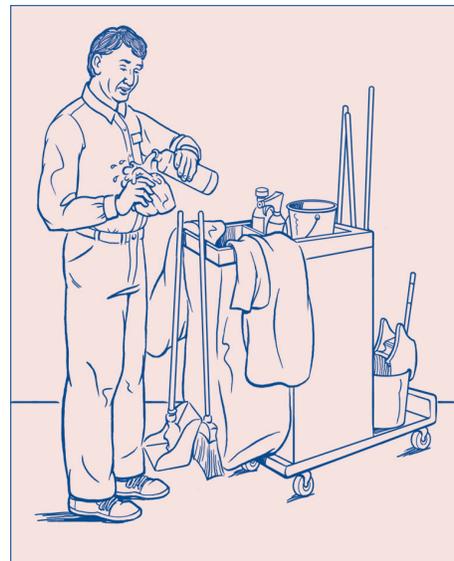
Chemical Hazards

All kinds of chemicals are used in workplaces including solvents, cleaners, construction materials (such as lead and asbestos), and pesticides.

Chemicals exist in different forms: solids (including dusts and fumes), liquids, and gases (including vapors). A chemical can change its form when it is heated or cooled. For example, when you freeze water, it changes from a liquid to a solid. When you heat water, it evaporates from a liquid to a vapor.

The hazards of a chemical can change depending on what form it takes. Some chemicals are more harmful as a vapor or gas than as a liquid. For example, a liquid solvent can become a dangerous vapor in the air if it is heated.

Chemicals can cause damage at the point where they first contact the body (such as the skin, eyes, nose, or throat). Some can also get inside the body when you breathe them in, swallow them, or get them on your skin. Then they travel in the bloodstream to internal organs like the liver, kidneys, heart, nervous system, brain, and reproductive organs. They may cause harm throughout the body.





The **hazard** of a chemical is the likelihood that it will cause harm. The hazard depends on these factors: how toxic the chemical is, how much exposure is required to cause harm, how the chemical enters your body, how much of it actually enters your body, the length of time you are exposed, other chemicals you are exposed to, and how your own body reacts to the chemical.

Biological Hazards

Biological hazards are living things that can cause disease. Examples are bacteria, viruses, molds, animals, and insects. Biological hazards are found in a wide variety of jobs. Nurses and health aides can be exposed to HIV (the AIDS virus), hepatitis viruses, and tuberculosis (TB) bacteria, for example. Garbage collectors who pick up waste from research laboratories, hospitals, or public places can get diseases from the waste or from discarded needles in the trash. Office workers may be exposed to mold spores that can grow in any moist environment and spread through the air.



The effects of biological hazards range from mild skin irritation to life-threatening illnesses.

Ergonomic Hazards

Ergonomic hazards are caused by poor equipment and job design. These produce unnecessary wear and tear on the body. The result can be pain and eventual damage to the hands, arms, neck, back, feet, or legs.

Risk factors for ergonomic injuries include:

- **Repetition:** Performing the same motion over and over again
- **Excessive Force:** Using physical effort such as pushing, pulling, and lifting
- **Awkward Posture:** Working in a way that puts strain on the body, such as stooping, bending, reaching overhead, or staying in one position too long
- **Direct Pressure:** Prolonged contact with a hard surface or edge
- **Vibration:** Working with vibrating tools or equipment
- **Extreme Cold or Heat**

The more risk factors that are present, the greater the chances of developing an ergonomic injury, often called a **repetitive strain injury** (RSI) or a **cumulative trauma disorder** (CTD). The best solution is to redesign the job so the risk factors are reduced.





Other Health Hazards

There are also other workplace conditions that can injure you or make you sick. Below are some examples.

Temperature Extremes

Extremes in temperature, either too cold or too hot, are a health hazard. People who work where it is too cold may suffer frostbite and hypothermia. Heat stress occurs when the body is unable to maintain a normal temperature and overheats. This can cause serious illnesses and even death.

When the body's heat regulating mechanism completely breaks down, heat stroke occurs. This is a life-threatening emergency. The person's body must be cooled while emergency help is on the way.

Indoor Air Pollution

Poor ventilation and lack of fresh air can result in a build-up of chemical vapors, fumes, or gases in the work environment. Biological hazards such as molds, viruses, and bacteria can also build up in a building that is not properly ventilated.

Noise

Noise is a widespread problem in the workplace. Long-term health effects of noise include permanent ringing in the ears, hearing loss, irritability, fatigue, and trouble concentrating and communicating.

Noise may be a problem at your worksite if:

- You have to shout to be heard while working
- You have trouble hearing after work
- You have ringing in your ears

Stress

There are many factors in the work environment that can create anxiety, frustration, and fear. The body's response to chronic stress can lead to high blood pressure, heart disease, and emotional disorders.

Causes of stress can include, for example:

- Too much work in a limited amount of time
- Harassment or discrimination
- Job insecurity
- Threat of workplace violence
- Lack of input or control on the job
- Shift work or rotating shifts



Investigating Job Hazards

Tools that can help identify hazards in the workplace include:

- Worksite inspections, including assessment of equipment, walk ways, and work practices
- Written surveys of employees' health symptoms
- The Log of Work-related Injuries and Illnesses (Cal/OSHA Log 300)
- Hazard mapping
- Body mapping (shows symptoms employees may have)
- Job task analysis (breakdown of tasks and associated risks)
- Workers' compensation records
- Interviews with employees and managers
- Monitoring records showing exposure to chemicals, noise, and other hazards
- Any required medical test records, such as hearing or blood lead level tests
- Inspection records from Cal/OSHA and other agencies (for example, fire department, health department, EPA), including any citations or fines
- The workplace's written safety programs, such as the Injury and Illness Prevention Program (IIPP), required by Cal/OSHA
- The workplace's written policies and procedures for performing specific tasks and using specific tools and equipment
- Minutes of health and safety committee meetings
- Grievances filed about health and safety issues
- Incident/accident investigation records, including underlying causes of the incident and what was done to prevent similar incidents in the future
- An inventory of hazardous materials in use and their Material Safety Data Sheets (MSDSs)
- Manufacturers' manuals, operating instructions, and safety literature for tools and equipment
- Maintenance records for equipment and machinery