

HAND SAFETY



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Department of Employment
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Inspection Authority
(OH0049-CI-09)



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Hands are valuable - but also vulnerable! Our hands and wrists are made up of a complex network of bones, muscles, tendons, ligaments, blood vessels, nerves, and skin. The 27 bones in the hand and wrist are connected to muscles by tendons, while ligaments link the bones together and stabilise the joints. Blood vessels provide essential nutrients, and nerves allow us to feel sensations and control hand and finger movements. The skin acts as a protective barrier against chemicals, heat and cold. Skin on the back of the hand is thin and flexible, while the palm has thicker skin to provide grip, cushioning and insulation.

From operating heavy machinery to working at a computer, our hands are essential to almost every task we perform. Yet, despite their importance, hand injuries are among the most frequent workplace incidents. Recognising the value of hand safety and following proper safety practices can play a major role in preventing these injuries.



COMMON HAZARDS

- Sharp tools, machinery or materials can cause lacerations.
- Hot and cold spots can cause injuries due to extreme temperature.
- Entanglement can occur when a loose fitting glove is caught inside moving machinery.
- Automation may cause injury to a hand when a machine automatically starts and a worker gets caught off guard.
- Pinch points can occur when hands become caught and pinched between two moving parts of a machine, or between the material being processed and the machine itself.
- Repetitive Strain Injuries (RSIs) can be caused by repetitive tasks that strain muscles, tendons or nerves.
- Chemical Exposure as a result of contact with harmful substances can cause skin irritation or more severe damage.

Preventing hand injuries = education + proper equipment + safe work practices

BELOW ARE SOME ESSENTIAL STRATEGIES FOR HAND PROTECTION:

- ✓ **Wear the Right Gloves**
Use gloves suited to the specific job hazards, ensure they fit properly and are in good condition.
- ✓ **Use Tools Properly**
Always use the correct tools for the task and keep them well maintained to reduce injury risks.
- ✓ **Follow Safety Procedures**
Adhere to safety protocols, including locking out machinery and using guards and shields.
- ✓ **Maintain Hand Hygiene**
Wash hands after exposure to chemicals and care for skin to prevent irritation and damage.
- ✓ **Stay Aware of Hazards**
Be mindful of your surroundings and keep hands away from dangerous machinery or heavy objects.
- ✓ **Avoid Jewellery**
Avoid wearing jewellery, such as rings and bracelets at work.
- ✓ **Provide Training and Education**
Conduct regular safety training on hand hazards and the proper use of PPE.

CONTACT US TO PROVIDE THE FOLLOWING SERVICES FOR YOUR BUSINESS:

- Occupational Hygiene Surveys
- EHS Risk Assessments
- Ergonomics Risk Assessments
- EHS Management System Development and Implementation
- Environmental Monitoring
- Identification of EHS Legal Requirements and Compliance Audits
- Internal Auditor Training
- Specialised EHS Training

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CONFINED SPACES

Each year, industrial workers are required to enter confined spaces, which have restricted access and exit points, to carry out essential inspections, maintenance and operational tasks.

Confined spaces are not intended for continuous occupancy, and therefore pose numerous dangers, including:

- the presence of invisible and odourless gases, which can be potentially deadly.
- an imbalance in oxygen levels (either dangerously low or excessively high).

Oxygen deficiency occurs when the oxygen concentration in the air falls below 19.5%, the minimum safe level for human respiration.

When oxygen levels drop, the body is unable to function normally, resulting in symptoms such as dizziness and confusion and in severe cases, unconsciousness or death.

FOUR CAUSES OF OXYGEN DEFICIENCY:

- ① **Rusting:** metal surfaces can oxidise over time, gradually consuming oxygen within the confined space.

- ② **Fermentation:** organic substances, such as grain or wastewater, may decompose and use up oxygen during the process.
- ③ **Combustion:** Activities like welding and cutting can rapidly reduce oxygen levels as oxygen is consumed.
- ④ **Displacement by Other Gases:** Inert gases such as nitrogen or carbon dioxide can replace oxygen, creating a dangerous atmosphere.

To reduce the dangers of oxygen deficiency in confined spaces, employers should prioritise atmospheric testing before entry, maintain adequate ventilation and provide thorough safety training. Workers must also adhere to strict entry protocols, including the use of personal protective equipment (PPE) and ongoing monitoring of oxygen levels.

OXYGEN DEFICIENCY RISKS:

- **Loss of Consciousness:** Workers can lose consciousness suddenly, often without warning.
- **Permanent Brain Damage:** Extended exposure to low oxygen levels can result in irreversible brain injury.
- **Death:** In severe cases, oxygen deficiency can lead to death within minutes.

https://www.canadasafetytraining.com/Safety_Blog/risks-of-oxygen-deficiency-in-confined-spaces.aspx



DUSTY ELECTRICAL EQUIPMENT CAN BE A FIRE RISK!

Dust can act as both a combustible material and an insulator. When electricity passes through a loose connection or overloaded outlet, it may generate heat or sparks that can ignite the accumulated dust. Moisture and electrical tracking can further increase the danger.

THE RISKS OF DUSTY PLUG POINTS

DANGER!

Fire Hazard: Built-up dust can act like fuel, making it easy for sparks or electrical arcing to ignite the particles.

Heat Build-Up: Dust blocks normal heat dissipation from plug points and multiplugs, which can cause wires and plastic components to overheat.

Loose Connections: Dust accumulation may indicate neglected or rarely used sockets with loose contacts, increasing the risk of electrical arcing, where electricity jumps across gaps.

PREVENTING ELECTRICAL FIRES

- **Clean Regularly:** dust plug points and multiplugs with a dry anti-static cloth or duster. Never use water or damp cloths near electrical outlets.
- **Check for Damage:** look out for discolouration, melting or burn marks on plugs, cords and sockets.
- **Prevent Overloading:** avoid plugging too many high-power appliances into one outlet or connecting multiple extension cords together.
- **Unplug Unused Items:** disconnect chargers and appliances when not in use, to reduce unnecessary electrical flow and fire risks.