

# Prevention Update



## Controlling Welding Fume Exposure

### How do I know if I am at risk?

Welding fumes are created when **metal** is heated to high temperatures, releasing metal vapours that cool and form tiny airborne particles. **These fumes are dangerous and must be controlled to protect workers.** The risk is not limited to the welder. Others can also be exposed, especially in indoor, confined or poorly ventilated spaces. Controlling exposure is essential for a healthy and safe workplace.

### Health effects of welding fumes

Exposure to welding fumes can cause a range of immediate and longer-term health effects, including:

- **Irritation, redness, burning** – of the eyes, nose and throat
- **Metal fume fever**- a flu-like condition from inhaling certain metal particles like zinc
- **Neurotoxicity** – which is the damage or dysfunction of the nervous system
- **Respiratory illness** – like asthma, bronchitis, chronic obstructive pulmonary disorder (COPD)
- **Cancer** – including lung cancer

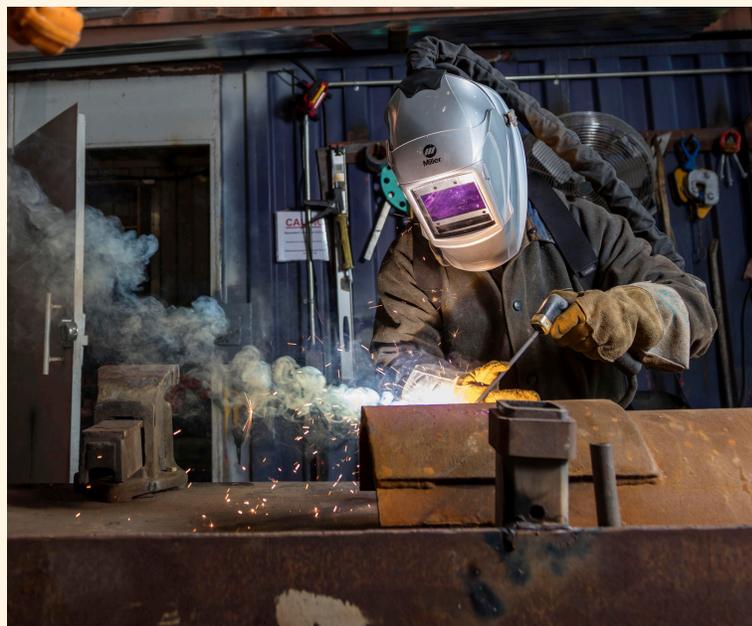
### Welding related legislation

**Section 12 of the Occupational Health and Safety Act (OHS Act)** states that employers must take every reasonable precaution to protect the health and safety of individuals at or near the workplace.

**Part 37.1 of the OHS Act General Regulations (Regs)** focuses on workplace ventilation requirements for removing harmful fumes and gases produced by welding.

In addition, **Part 11.1 of the Regs** outlines how an employer is required to provide adequate ventilation, either natural or mechanical, to keep the air safe.

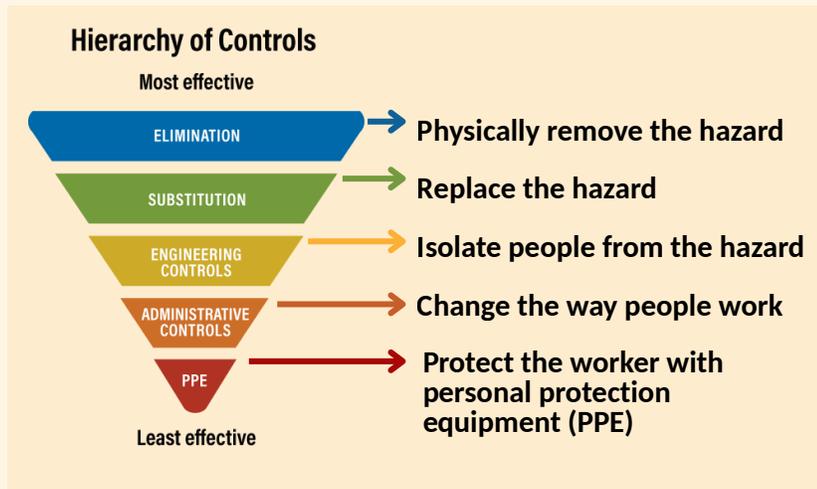
Employers must assess welding hazards, implement appropriate controls, and make sure conditions are safe before work begins.



## Controlling welding fumes

Welding fumes are a workplace hazard. Welding fumes are dangerous, but they can be controlled. Start by identifying where fumes are created and how workers might be exposed. Then apply controls that make the job safer like:

- Using local exhaust ventilation (LEV) or fume extraction.
- Welding in well-ventilated areas.
- Providing and enforcing the use of appropriate PPE.



## Know your responsibilities

### Employers

Employers are legally responsible for making sure the work environment is healthy and safe. For welding operations, this includes:

- Providing proper ventilation and fume extraction in the workplace or worksite.
- Supplying and enforcing the use of appropriate personal protective equipment (PPE), including respiratory protection.
- Making sure workers are trained in safe welding practices.
- Making sure workers get adequate supervision.
- Conducting regular equipment inspections and maintenance.
- Conducting regular hazard assessments.

### Supervisors

Supervisors are the link between workers and the employer. They are legally responsible for:

- Verifying that workers are competent and properly using PPE, especially respirators.
- Monitoring ventilation systems and correcting unsafe conditions.
- Leading by example to support a strong workplace health and safety culture.

### Workers

Workers also have legal responsibilities to protect their own health and safety and the health and safety of others at the workplace. This includes:

- Wearing required PPE, including being clean-shaven when using tight-fitting respirators.
- Reporting hazards or unsafe conditions immediately.
- Participating in welding safety training and asking questions to make sure they understand their tasks.

Protecting workers from welding fumes takes commitment from everyone at the workplace. When employers, supervisors, and workers collaborate and do their part, it makes the workplace healthier and safer for everyone.

For more information, see our [Controlling Exposure Risks from Welding and Cutting Processes](#) guide at [wcb.pe.ca](http://wcb.pe.ca)