

Welding Fumes

Dangers and Preventative Measures

Causes

Welding fumes are usually caused by:

- The intense heat of the weld vaporizes the workpiece and filler metals
- Coatings on the metal (such as paints, plating, or rust-preventing chemicals) burning into gases

The rising smoke in this photo is the “welding fumes” being referred to. While it can be seen as a usual effect of welding, it can also pose real danger to health.



To put it into perspective, metals such as Chromium, Zinc, and Aluminum can be found in vapes, making breathing it in too much causing of a similar effect.



Toxic Chemicals

These fumes are primarily made up of:

- Iron Oxide, Manganese, Chromium, Zinc, Aluminum, and other evaporating metals

which can also cause toxic gases like:

- Carbon Monoxide, Nitrogen Oxides, Ozone, and Hydrogen Fluoride all carry negative effects upon inhaling.

Health Risks

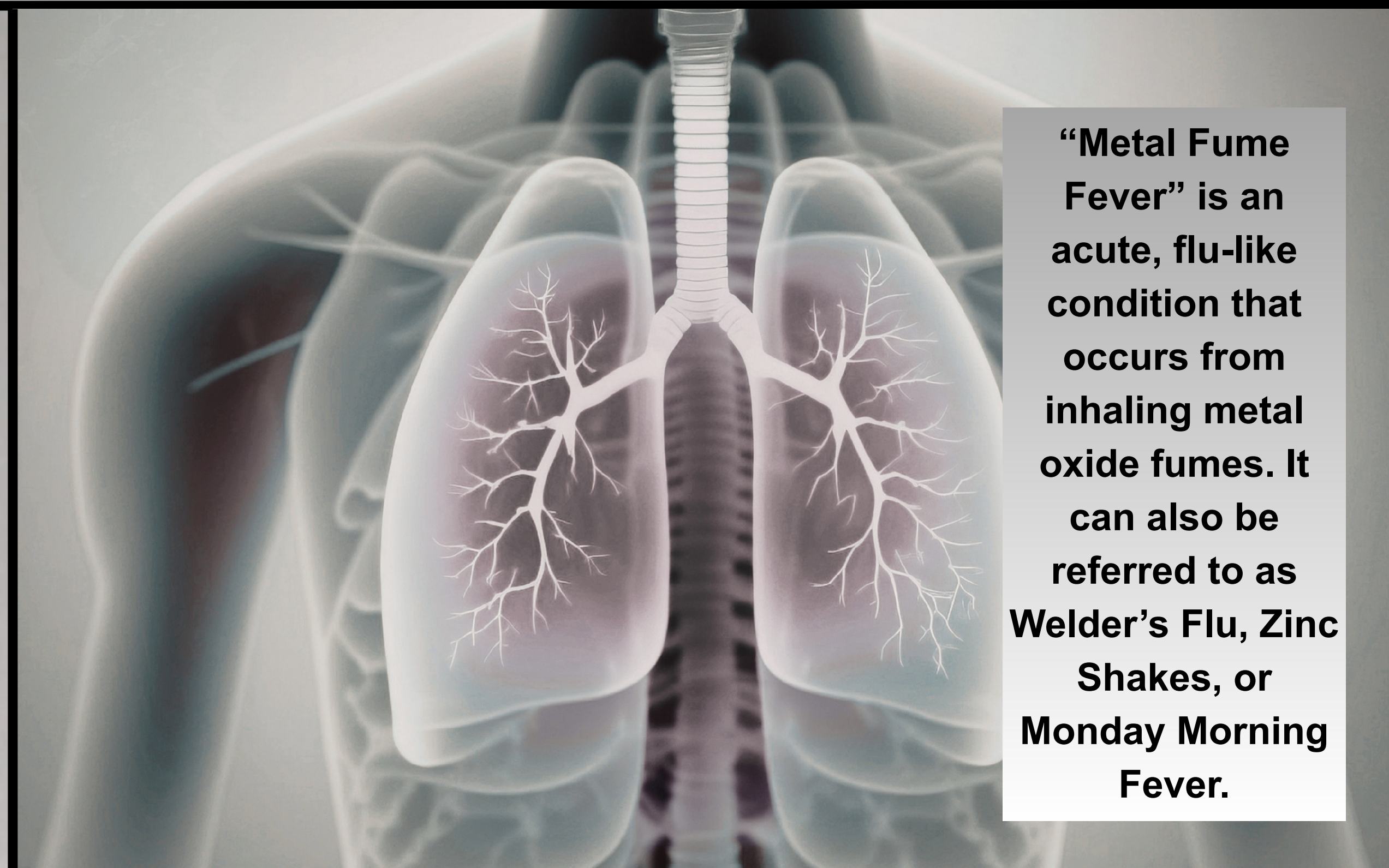
Breathing in fumes from welding can cause a variety of short and long term health issues such as:

Short Term (Acute)

- “Metal Fume Fever”, Respiratory/Neurological Complications, and Acute Pneumonia

Long Term (Chronic)

- Cancer, Manganism, Chronic Respiratory Disease, and Organ Damage



“Metal Fume Fever” is an acute, flu-like condition that occurs from inhaling metal oxide fumes. It can also be referred to as Welder’s Flu, Zinc Shakes, or Monday Morning Fever.

Safety Precautions

Some ways to prevent the inhalation of these dangerous fumes include:

- Using adjustable Local Exhaust Ventilation in order to immediately take the fumes from the open air
- Maintaining functioning ventilation within indoor worksites
- Distancing your head further away from the arc than normal to minimize the amount of gas inhaled
- Clean the workpiece metal of any noticeable coatings/chemicals
- Do not position yourself where the wind will blow the fumes at you (generally for outside operation)
- Using respirators is an efficient fallback layer of PPE under the welding helmet to ensure extra protection from inhaling toxic gases

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