

Metal fume fever: A brazier's poisoning

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Objectives

- Describe the source for developing metal fume fever.
- List the signs and symptoms of metal fume fever.
- State the treatments for metal fume fever.

Definition

Metal fume fever is an illness produced by inhaling metal oxide fumes. These oxides are produced by heating various metals including cadmium, zinc, magnesium, copper, antimony, nickel, cobalt, manganese, tin, lead, beryllium, silver, chromium, aluminum, selenium, iron, and arsenic.

The most common agents involved are zinc and copper. Metal fume fever most often occurs after welding or torch-cutting galvanized (zinc coated) metal, such as air conditioning ducting.

Common Names

Brass chills
Brazier's disease
Copper colic
Copper fever
Foundry fever
Galvanized shakes
Galvanizer's poisoning
Metal malaria
Metal shakes

Monday morning fever
Saturday night fume fever
Smelter shakes
The shakes
The smothers
Zinc chills
Zinc-fume fever
Zinc oxide chills
Zinc shakes

Source

Metal fume fever is an illness that is caused primarily by exposure to zinc oxide fumes in the workplace while welding, cutting or brazing galvanized metal. Metal fume fever frequently occurs in workers while welding zinc, galvanizing iron, smelting zinc or copper alloys, in brass foundries or in welding or cutting metals, or when torch cutting coated/painted objects.

Signs & Symptoms

Onset about 3 to 10 hrs after exposure; typically begin 4-8 hr after exposure
Usually do not last beyond 24 to 48 hrs

fever, chills, shivering
malaise (weakness)
myalgia (muscle pain)
headache
sweet or metallic taste is common

shortness of breath
difficulty breathing
wheezing
chest tightness

numbness, tingling in feet

nausea, vomiting
diarrhea or constipation
abdominal pain

Treatment

Recovery is usually complete with no chronic impairment from zinc, copper, or brass, and fatalities have not been reported.

Tolerance builds up after repeated exposures, but is lost after a few days of non-exposure.

Signs and symptoms often reappear after a weekend away from the job, giving rise to the term Monday Fever.

Home treatment:

Fever reducer: acetaminophen, ibuprofen
Rest

Emergency treatment if difficulty breathing or wheezing

Oxygen, aerosols

Antibiotics are not indicated unless a bacterial infection is suspected.

Prevention

Exhaust ventilation systems

Personal protective equipment: respirators

Reference

Editorial Staff: Metal Fume Fever (Management/Treatment Protocol). In: Klasco RK (Ed): POISINDEX® System. Thomson Healthcare, Greenwood Village, Colorado (Edition expires 3/2008).