**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 | Monday morning fever |
| Brazier's disease | Saturday night fume fever |
| Copper colic | Smelter shakes |
| Copper fever | The shakes |
| Foundry fever | The smothers |
| Galvanized shakes | Zinc chills |
| Galvanizer's poisoning | Zinc-fume fever |
| Metal malaria | Zinc oxide chills |
| Metal shakes | 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
distress breathing
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