



## Carbon Monoxide/Smoke Inhalation

### **Aliases**

CO

### **Patient Care Goals**

1. Remove patient from toxic environment.
2. Assure adequate ventilation, oxygenation, and correction of hypoperfusion.
3. Consider use of environmental carbon monoxide (CO) monitors on "first in" bags to assist in detection of occult CO toxicity.

### **Patient Presentation**

Carbon monoxide is a colorless, odorless gas which has a high affinity for binding to red cell hemoglobin, thus preventing the binding of oxygen to the hemoglobin, leading to tissue hypoxia (although pulse oximetry may appear to be normal). A significant reduction in oxygen delivery to tissues and organs occurs with carbon monoxide poisoning. Carbon monoxide is also a cellular toxin which can result in delayed or persistent neurologic sequelae in significant exposures. With any form of combustion (fire/smoke [e.g., propane, kerosene, or charcoal stoves or heaters], combustion engines [e.g., generators, lawn mowers, motor vehicles, home heating systems]), carbon monoxide will be generated. People in a fire may also be exposed to cyanide from the combustion of some synthetic materials. Cyanide toxicity may need to be considered in the hemodynamically unstable patient removed from a fire.

### **Inclusion Criteria**

1. Patients exposed to carbon monoxide may present with a spectrum of symptoms:
  - a. Mild intoxication:
    - i. Nausea
    - ii. Fatigue
    - iii. Headache
    - iv. Vertigo
    - v. Lightheadedness
  - b. Moderate to severe:
    - i. Altered mental status
    - ii. Tachypnea
    - iii. Tachycardia
    - iv. Convulsion
    - v. Cardiopulmonary arrest

### **Exclusion Criteria**

None noted

### **Patient Management**

#### **Assessment**

1. Remove patient from toxic environment
2. Assess ABCDs and, if indicated, expose patient and re-cover to assure retention of body heat
3. Vital signs (pulse, blood pressure, respiratory rate, neurologic status assessment) temperature, and O<sub>2</sub> saturation, and EtCO<sub>2</sub> if available