



# Carbon Monoxide

## Assessment

### Pediatric Pearls:

- Use pediatric dosing of medications or electrical therapy for a pediatric patient < 37 kg and as defined by the PEDIA Tape.

### Signs & Symptoms:

- Altered mental status/dizziness
- Headache, Nausea/Vomiting
- Chest pain/Respiratory distress
- Neurological impairments
- Vision problems/Reddened eyes
- Tachycardia/Tachypnea
- Arrhythmias, seizures, coma

### Differential:

- Effects of other toxic fire byproduct (ie. Cyanide)
- Acute cardiac event
- Acute neurological event
- Flu/GI illness
- Acute intoxication
- Diabetic Ketoacidosis
- Headache of non-toxic origin

## Clinical Management Options

P	P	P	P	P	P
L	L	L	L	L	L
1	2	3	4	5	6

- Measure COHb% (SpCO), if equipment is available with covered or shielded probe
  - SpCO > 25% with or without red flag symptoms: Utilize COGs as indicated, provide airway/ventilation management with 100% supplemental oxygen, and transport to an appropriate facility.
    - Red flag symptoms include: Pregnancy\*; Any cardiac or pulmonary complaint; and Neurological changes such as altered mental status, seizure activity, or focal deficits. A headache alone is not considered a neurological change or red flag symptom.
  - SpCO 16 – 24% with symptoms but no red flag symptoms: Remove the patient from the source and treat with 100% supplemental oxygen until symptoms improve or SpCO decreases to < 15% then transport or patient refusal are options.
  - SpCO < 15% and asymptomatic: No treatment is required.
    - Any patient presenting with a red flag symptom, regardless of SpCO, is to receive airway/ventilation management with 100% supplemental [oxygen](#), and transport to an appropriate facility.
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- Acquire [12 lead ECG](#)
  - Monitor [ETCO<sub>2</sub>](#)
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- Vascular access as appropriate for patient condition
  - IV fluid with [isotonic crystalloid](#) as needed
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- Continuous ETCO<sub>2</sub> and ECG monitoring
  - Fire victims with AMS, lethargic, or cardiac arrest, consider [Cyanide Guideline](#)

## Consult Online Medical Control As Needed

### Pearls:

- Refer to drug formulary charts for all medication dosing for both adults and pediatric patients.
- \*Fetal hemoglobin has a stronger affinity to CO than maternal hemoglobin. Therefore, transport to an ED of a known/suspected female patient should occur for this reason.\*
- The absence (or low detected levels of) of COHgb is not a reliable predictor of firefighter or victim exposure to other toxic byproducts of fire.
- The differential list for CO Toxicity is extensive. Attempt to evaluate other correctable causes when possible.
- Chronic CO exposure is clinically significant; therefore advice on smoking cessation is important medical instruction and; recommend evaluation of their home/work environment for presence of CO.