REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMT-Basic, Intermediate, Paramedic

SMO: Carbon Monoxide Exposure

Overview: Carbon monoxide is a colorless, odorless, tasteless gas produced by incomplete combustion of carbon-containing fuels. Carbon monoxide does not physically harm lung tissue, but it causes a reversible displacement of oxygen in the hemoglobin. The result is low circulating volumes of oxygen. Tissues become hypoxic before oxygen is released from the hemoglobin to fuel the cells.

INFORMATION NEEDED

__ Type of exposure to patient
__ Scene is safe
__ Patient respiratory symptoms

OBJECTIVE FINDINGS

__ Headache
__ Irritability
__ Vomiting
__ Chest pain
__ Loss of coordination
__ Cyanosis
__ Loss of consciousness
__ Cherry red skin color (late sign)

TREATMENT

__ Remove patient from source to fresh air.

__ ROUTINE MEDICAL CARE
__ Keep patient quiet as possible to decrease oxygen requirements.
__ Treat per appropriate SMO for:
- Cardiac Arrest
- Cardiac Dysrhythmia
- Pulmonary Edema

Documentation of adherence to SMO:

__ Patient removed from CO environment
__ 100% oxygen administered to patient

PRECAUTIONS AND COMMENTS

- **NOTE** Pulse oximeter gives false elevated readings in CO poisoning.
- Don't assume levels of CO are always consistent with the patient's smoking or occupational history.
- You should primarily be looking for altered levels of consciousness and flu-like symptoms

CARBOXYHEMOGLOBIN LEVELS & CLINICAL MANIFESTATIONS

% COHb	MANIFESTATIONS	TREATMENT AND TRANSPORT DECISION
5	Mild headache	100% O_2
10	Mild headache, shortness of breath with vigorous exertion	100% O_2
10 - 20	Mild headache, shortness of breath with moderate exertion	100% O_2
20 - 30	Worsening headache, nausea, dizziness, fatigue	Hyperbaric O_2
30 - 40	Severe headache, vomiting, vertigo, altered judgement	Hyperbaric O_2
40 - 50	Confusion, syncope, tachycardia	Hyperbaric O_2
50 - 60	Seizures, shock, apnea, coma	Hyperbaric O_2
60 - 70	Seizures, coma, cardiac arrythmias, death	Hyperbaric O_2
> 70	Death within minutes	Hyperbaric O_2

COHb Levels in Persons 3-74 Years Of Age

Smoking Status	COHb % (mean ± SD)	COHb % (98th percentile)
Nonsmokers	0.83 ± 0.67	≤ 2.50
Current Smokers	4.30 ± 2.55	≤ 10.00
All smoking statuses combined	1.94 ± 2.24	≤ 9.00