

San Mateo County Emergency Medical Services

Smoke Inhalation Injury

For patients with smoke inhalation

History

- Number and severity of other victims
- Industrial or residential fire
- Duration of inhalation
- Social history - smoking
- Past medical history
- Other trauma
- Odor

Signs and Symptoms

- Facial burns, pain, and/or swelling
- Cherry red skin
- Loss of consciousness
- Hypotension/shock
- Airway compromise/distress could be indicated by hoarseness/wheezing
- Seizure/AMS after industrial or closed space fire consider cyanide poisoning

Differential

- Foreign Body Aspiration
- Asthma exacerbation
- COPD exacerbation
- Cyanide poisoning
- Carbon monoxide poisoning
- Thermal injury
- Heart failure
- Acute respiratory distress syndrome

For suspected closed space inhalation, choose Severe Airway Involvement path

Assess Airway

Approved Burn Receiving Centers

St. Francis – San Francisco
Valley Med. Center – San Jose
UC Davis – Sacramento

No or Mild Airway Involvement
Airway patent, no signs of edema, no stridor or change in voice, no soot in the oropharynx or nasopharynx, nasal hairs intact, low likelihood of airway involvement

Moderate Airway Involvement
Suspected inhalation injury with only one of the following: Wheezing, presence of soot/singed nasal hairs, change in voice, carbonaceous sputum, increased work of breathing/tachypnea.

Severe Airway Involvement
Accessory muscle use or altered breath sounds and definitive airway felt necessary
OR
Any combination of the following: Airway edema, stridor, presence of soot/singed nasal hairs, change in voice, carbonaceous sputum, increased work of breathing/tachypnea.

If oxygen saturation $\geq 92\%$
Routine Medical Care

Head Trauma

Pain

Burns

Carbon Monoxide/
Cyanide

Hazmat

Hypotension

Eye Injury

| | |
|---|---|
| E | Monitor and reassess |
| P | Apply Oxygen to maintain goal $SpO_2 \geq 92\%$ |
| E | Cardiac monitor |
| P | CO-oximetry (SpCO), if available |
| E | Consider, 12-Lead ECG |
| P | Consider, 2 IV/IO sites |
| E | Consider, Albuterol or Albuterol MDI with spacer or Levalbuterol |

Notify burn center.
Consider Base Hospital
for medical direction

| | |
|---|---|
| E | Monitor and reassess |
| P | High flow Oxygen Regardless of SpO_2 |
| E | Cardiac monitor |
| P | Consider, 12-Lead ECG |
| E | Consider, 2 IV/IO sites |
| P | Albuterol or Albuterol MDI with spacer or Levalbuterol |
| E | Epinephrine 1:1,000 nebulized for stridor |
| P | CPAP |
| E | Closest receiving facility for definitive airway. Consider Base Hospital for medical direction |



San Mateo County Emergency Medical Services

Smoke Inhalation Injury

For patients with smoke inhalation

Pearls

- Ensure patient is properly decontaminated before placing in ambulance and transport to hospital.
- Contact Hazmat or Poison Control Center with questions about chemical or guidance on immediate treatment.
- If able, obtain the name of chemical(s) patient was exposed to pass information along to receiving hospital staff.
- If able, remove patient's clothing before placing in ambulance and transport to hospital.



**SAN MATEO COUNTY HEALTH
EMERGENCY
MEDICAL SERVICES**

Treatment Protocol R07

Page 2 of 2
Effective April 2025