San Mateo County Emergency Medical Services

Inhalation Injury

For any signs/symptoms related to inhaling a gas or substance other than smoke or carbon monoxide

**History**
- Type of exposure (heat, gas, chemical)
- Duration of exposure
- Time of injury
- Past medical history
- Other trauma
- Loss of consciousness

**Signs and Symptoms**
- Burns, swelling, pain
- Dizziness
- Loss of consciousness
- Hypotension/shock
- Airway compromise/distress could be indicated by hoarseness/wheezing
- Seizure/AMSI after industrial or closed space fire, consider cyanide poisoning

**Differential**
- Foreign Body Aspiration
- Upper Respiratory Infection
- Asthma exacerbation
- Anaphylaxis
- COPD exacerbation
- Cyanide poisoning
- Thermal injury
- Chemical/Electrical injury
- Radiation injury
- Blast injury

**Scene safety. Quantify and triage patients. Load and go with assessment and treatment enroute to hospital**

**No or Mild Airway Involvement**
- Airway patent, no signs of edema, no stridor or change in voice, nasal hairs intact, low likelihood of airway involvement

- If oxygen saturation ≥ 92%
  - Routine Medical Care

- Trauma if indicated
- Pain if indicated
- Burn if indicated

- Carbon Monoxide/ Cyanide if indicated
- Hazmat if indicated
- Hypotension if indicated
- Eye Injury if indicated

**Moderate Airway Involvement**
- Suspected inhalation injury with only one of the following: Wheezing, change in voice, increased work of breathing/tachypnea.

- Monitor and reassess
- Apply Oxygen to maintain goal SpO2 ≥ 92%
- Cardiac monitor
- Consider, 12-Lead ECG
- Consider, 2 IV/IO sites
- Consider, Albuterol
- Notify receiving facility. Consider Base Hospital for medical direction

**Severe Airway Involvement**
- Accessory muscle use or altered breath sounds and definitive airway felt necessary
- Any combination of the following: Airway edema, stridor, change in voice, increased work of breathing/tachypnea.

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- Monitor and reassess
- High flow Oxygen
  - Regardless of SpO2
- Cardiac monitor
- Consider, 12-Lead ECG
- Consider, 2 IV/IO sites
- Albuterol
- Epinephrine 1:1,000 nebulized for stridor
- CPAP

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**Closest receiving facility for definitive airway. Consider Base Hospital for medical direction**

**Effective October 2019**

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Pearls

- Consider expedited transport for inhalation injury.
- 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.