# HYDROGEN SULFIDE, SULFIDES & MERCAPTANS

## NOTES ON HYDROGEN SULFIDE, SULFIDES & MERCAPTANS

**BACKGROUND:**
Hydrogen sulfide ($H_2S$) is a highly toxic gas with an odor of rotten eggs at low concentrations. At higher concentrations olfactory fatigue rapidly occurs, making odor a poor warning symptom of danger. Hydrogen sulfide may be found in oil refineries, natural gas drilling sits, sewage sludge, liquid manure and in a variety of industry. Mercaptans are sulfur-containing, highly odorous compounds. All of these compounds are direct irritants, but the major toxicity is due to interference with cellular oxygen utilization. Low-level exposures produce irritation of the eyes, nose and throat, cough, headache, nausea and dizziness. Higher exposures can cause syncope, seizures, coma, tracheobronchitis and pulmonary edema (which may occur up to 48-72 hours later). Death may occur within minutes of acute massive exposure.

**INITIAL DECONTAMINATION PRIOR TO PREHOSPITAL MANAGEMENT:**
Decontamination should include flushing the victim with water spray and, if clothing has been soaked, clothing should be removed and double-bagged and flushing skin for 1 – 2 minutes. Injured eyes should be irrigated.

**POTENTIAL FOR SECONDARY CONTAMINATION:**
Small amounts of $H_2S$ gas can be trapped in clothing after an overwhelming exposure but are not usually sufficient to create a hazard for health care personnel away from the scene. However, clothing which has become soaked with concentrated liquid sulfide solutions or mercaptans may pose a risk to rescuers. Once the victim has been stripped and flushed with water, there is no significant risk of secondary contamination.

## PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

## HYDROGEN SULFIDE & MERCAPTANS

FORMS: Gas (hydrogen sulfide, methyl and short-chain alkyl mercaptans) and liquid (other mercaptans).

- Evaluate Airway *
- Oxygen – High flow/NRM
- Irrigate injured eyes
- Cardiac Monitor
- Transport

**BASE**:
Consider: IV tko

* Intubation should be considered if the victim develops severe respiratory distress.