

Human Health Issues during Oil Spill Response: Overview

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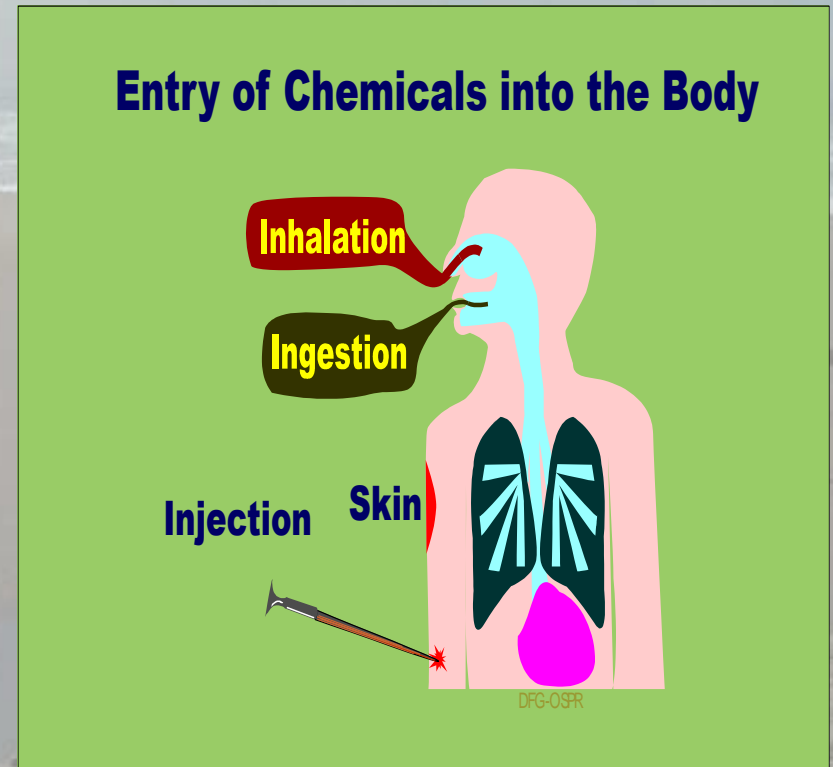
Human Health Issues during Spill Response

- Oil toxicity to humans
 - Exposure
 - Effects
 - Prevention
- Who is responsible for:
 - Responder safety
 - Public safety

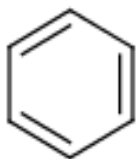
Pathways of Exposure

- Lungs
 - Inhalation
- Skin
 - Dermal
- Eating/Drinking
 - Ingestion
- Injection

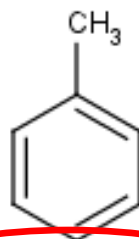
Primary route for
exposure to VOCs



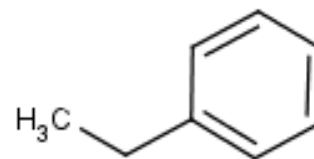
Volatile Chemicals (VOCs) associated with Oil Spills



Benzene
(PEL: 1.0 ppm)

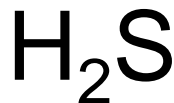


Toluene
(PEL: 10 ppm)

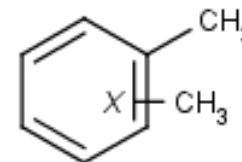


Ethyl Benzene
(PEL: 100 ppm)

Decrease from 50 ppm in 2012



Hydrogen Sulfide
(PEL: 10 ppm)



m-Xylene
(PEL: 100 ppm)

Exposure Duration

- Acute
 - Single event
 - Short-term: hours to days
- Chronic
 - Ongoing
 - Longer-term: weeks to months

Effects of Inhalation Exposure (BTEX)

ACUTE

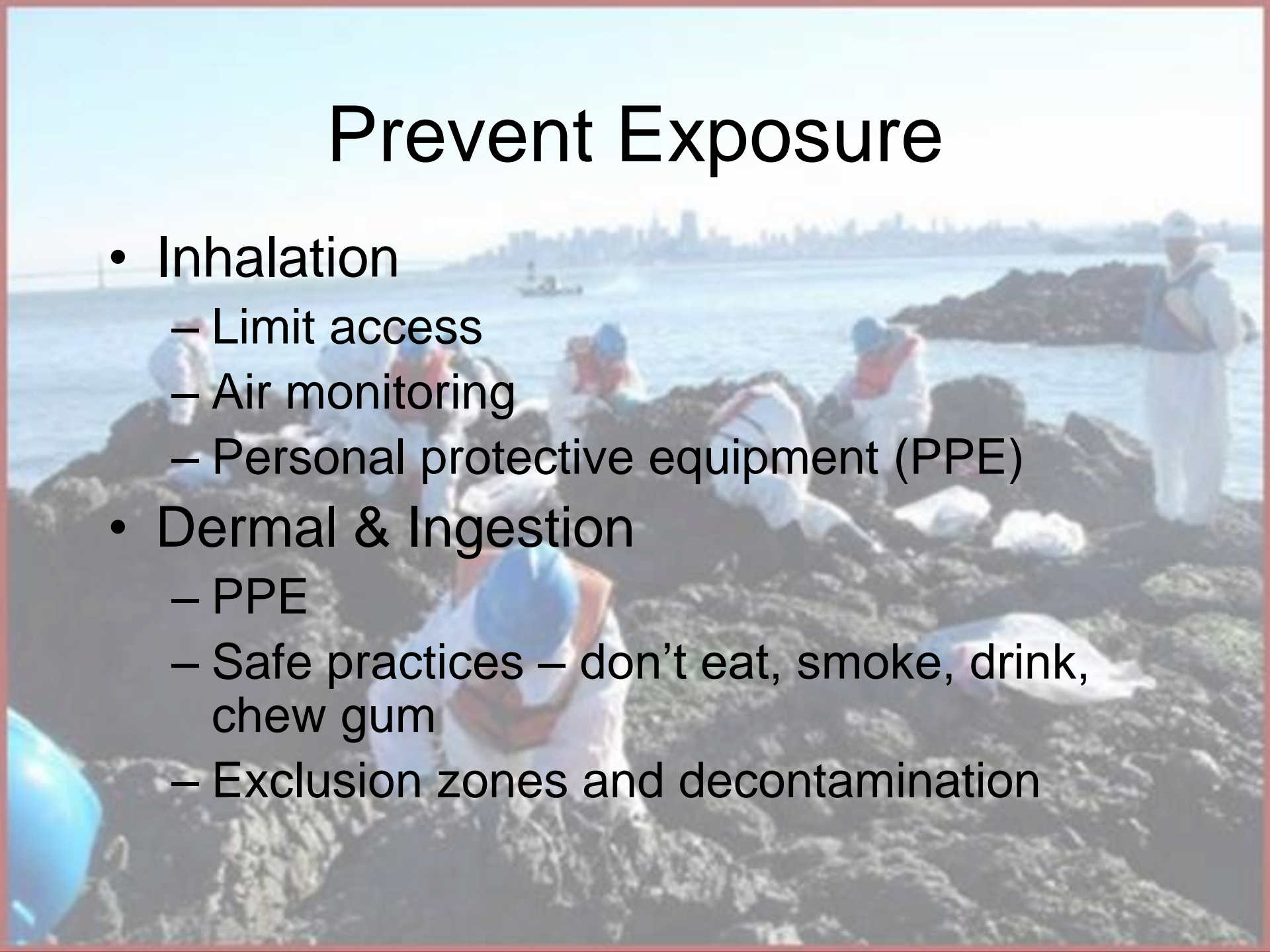
- Nose, Throat, Lungs
 - Airway Irritation
- Brain and Nervous system
 - Headache
 - Confusion
 - Dizziness
 - Fatigue
 - Unconscious
 - Death

CHRONIC

- Blood
 - Anemia
 - Leukemia (Benzene)
- Heart
 - Chest pain
 - Arrhythmias
- Brain and nervous system
 - Chronic headache
 - Loss of cognitive function
- Hearing loss

Prevent Exposure

- Inhalation
 - Limit access
 - Air monitoring
 - Personal protective equipment (PPE)
- Dermal & Ingestion
 - PPE
 - Safe practices – don't eat, smoke, drink, chew gum
 - Exclusion zones and decontamination



Public Safety

- Beach closures
 - San Francisco Public Utilities Commission and the San Francisco Department of Public Health (SF City)
 - County Environmental Health (typically- other Bay Areas)
- Air monitoring
 - Bay Area Air Quality Management District
 - <http://www.baaqmd.gov/>
 - County Environmental Health (typically)

Spill Responder Safety

- OSHA and HAZWOPER training
- Site Safety Officer
- Site Safety Plan
 - Limit exposure to oil
 - Safe access and working conditions
 - Notification
 - PPE

Fishery Closure under FGC 5654

- Applies to
 - At least 1 barrel of petroleum product
 - state marine waters
 - where fishing occurs
- CDFW & OEHHA responsible
- Closure of fisheries within the spill zone
 - Commercial fishing and aquaculture
 - Recreational fish and shellfish harvest
- Responsible party covers all costs

Questions?

- OSPR's Industrial Hygienists
 - Bob Ford
 - Jeff Westervelt
- Fishery Closure
 - Lori Chumney or Randy Imai, OSPR
 - Susan Klasing, OEHHA
 - http://oehha.ca.gov/public_info/emergency/oilspill.html