



## *Just the Facts...* Exposure to Oil Fires/Oil Fire Smoke - Medical

**THE MAJOR FACTOR IN DETERMINING THE BIOLOGICAL AND HARMFUL EFFECTS FOLLOWING EXPOSURE TO OF/OFS IS THE AMOUNT (HOW MUCH OR “DOSE”) TO WHICH ONE WAS EXPOSED.**

- **Background.** Similar to exposure to any fire and smoke, burns on exposed body surfaces can occur from oil fires-oil fire smoke (OF/OFS), and the inhalation of the smoke particles, gases, and other aerosol components can cause immediate or chronic health effects. Burning crude oil can produce heat and large amounts of thick black smoke. The smoke is composed of solid unburned carbon (soot) and other “particulate” pollutants (in both the solid and liquid states), as well as, gases of volatile substances and vaporized matter. The chemical pollutants found in the smoke vary with the composition of the crude oil and factors related to how it is burned. There are several combustion products that may be present and could be significant health hazards. These products include non-carbon substances (like acids and metals) as additional free particles or stuck to the surface of the soot; gases (like carbon dioxide, carbon monoxide, sulfur oxides, nitrogen oxides, and hydrogen sulfide); and vaporized liquids and solids.

**During this conflict, there were very few oil well fires, and exposure duration was limited. Given the absence of significant health risk and health risk seen even among firefighters in the first Gulf War, with hundreds of oil well fires ablaze, health risk is not considered significant.**

- If an individual has been directly exposed to OF/OFS, he or she should have been evaluated for signs and symptoms of thermal and chemical burns, and acute inhalation exposure. Base any consideration of the likelihood of unusual exposure or potential health effects based on the initial presentation and course. Most acute symptoms resolve rapidly.
- Individuals who were not directly involved with fire fighting or who were not proximal to the fire source will have “general atmosphere exposures”. These “indirect” exposures will generally result in mild, transitory effects associated with the inhalation of the downstream or dispersed, diluted smoke plume and relatively low concentration level of pollutants. Signs and symptoms at this level of exposure include “black mucous or material” in eyes, nose, or mouth; eye or mucous membrane irritation—often with nasal discharge and tearing, shortness of breath, hoarseness, and cough. The duration of the exposure is important in assessing health effects. The usual clinical course following mild exposure to OF/OFS results in complete recovery after a limited period of discomfort or illness.
- Provide risk communication. If the initial exposure produced only minimal effects, they should be resolved and no further health risk should be anticipated.