



Adverse Health Effects from Exposure to Crude Oil Mixtures

With the recent Chevron oil spill into Red Butte Creek, it is important to be aware of potential adverse health effects that can occur from exposure to crude oil mixtures. In an effort to protect the public's health, the Utah Department of Health recommends taking the following precautions:

Avoid contact with crude oil and do not clean up any spills. Contact professionals to clean any contaminated areas.

If you come into contact with oil, immediately clean any exposed skin thoroughly with soap and water.

Monitor your health and if you begin to feel ill from exposure contact a physician.

What is crude oil? Crude oil is a complex mixture of many chemicals, each having an associated toxicity. It is the mixture of these compounds, however, that has the potential to be the most toxic. Many of the chemicals in crude oil are made up of hydrogen and carbon, but may also contain sulfur, nitrogen, heavy metals and oxygen compounds.

The composition of crude oil varies slightly by its source, but the toxic properties are consistent. Chemicals such as benzene and polycyclic aromatic hydrocarbons (PAHs) are extremely toxic components of crude oil and of high concern. These and many other chemicals in crude oil are volatile, moving from the oil into the air, where they have the potential to expose many people.

How can I be exposed? Exposure to these compounds can occur through skin contact, inhalation of contaminated air or soil and the ingestion of contaminated food and water. Different types of exposures can occur simultaneously. Exposure may result in localized symptoms (e.g., irritation of the skin following contact), but most health effects are not localized because toxic compounds can move throughout the body. Health effects vary based on the duration of exposure and concentrations of harmful compounds in crude oil.

Differences in effects may also result from location, work and personal activities, age, diet, use of protective equipment, and other factors.

How long can the exposure last? The duration of exposure will determine the severity of the effects; therefore, reducing the time of exposure to chemicals found in crude oil will minimize adverse health effects.

What are the health effects of crude oil exposure? For brief exposures at relatively high levels (known as acute exposures), crude oil may cause irritation of the skin and mucous membranes on contact. Irritant effects can range from a slight reddening of the skin to burning, swelling, pain and permanent skin damage. Commonly reported effects from acute exposure to crude oil through inhalation and ingestion include difficulty breathing, headaches, dizziness, nausea, confusion and other central nervous system (CNS) effects.

Long-term exposure at relatively low levels (known as chronic exposure) should be avoided, if at all possible, due to the possibility of serious effects including lung, liver and kidney damage, infertility, immune system suppression, disruption of hormone levels, blood disorders, gene mutations and cancer.

Who is most at risk for health effects from the crude oil spill? Susceptible populations to the toxic effects of crude oil include:

Children are vulnerable to the toxic compounds in crude oil as their brains are highly susceptible to neurotoxic chemicals. In addition, exposure to crude oil can cause abnormal growth and infertility in children.

People taking medications that reduce their detoxification ability, and those taking acetaminophen, aspirin, haloperidol, who have nutritional deficiencies or who concurrently drink alcohol may be more susceptible.

Pregnant women and the developing fetus are also at risk due to the fact that many of the chemicals in crude oil can cause skeletal deformities and incompletely formed immune and detoxification systems.

Is there risk associated with other water bodies in Utah? There is no health risk associated with recreational activities in other lakes, streams and reservoirs in the state not affected by this spill.