OVERVIEW: People who recreate on dusty trails (walking, hiking, biking, horseback riding) or who work in the dust (construction, agriculture, land management) are at greatest risk. Family members are at risk for secondary exposure, which can occur when dust on hair, clothing, and shoes is brought into vehicles and homes. Children are especially vulnerable because they are impacted by low levels, close to the ground, play outdoors more frequently, and prone to putting things in their mouths (Agency for Toxic Substances and Disease Registry (ATSDR), 2019).

Exposure to arsenic, asbestos, and lead can occur through the inhalation or ingestion of contaminated dust. Dust can enter the body through direct inhalation into the lungs or through ingestion following contact with contaminated hands, fabrics, or pets.

- **Arsenic:** Arsenic exposure is typically through eating with dirty hands or other methods of ingestion. Arsenic can affect the gastrointestinal tract, heart, brain, and kidney. Toxicity from natural sources is rare, but chronic exposure can lead to conjunctivitis (pink eye), irritation of the throat and respiratory tract, and perforation of the nasal septum (ATSDR, 2019).

- **Asbestos:** Asbestos exposure is typically the result of inhalation. Asbestos exposure is associated with mesothelioma and cancers of the lung, larynx, and ovary (International Agency for Research on Cancer, 2012). Health risks increase with heavier exposure and longer exposure time, however, research has found asbestos-related diseases in individuals with only brief exposures (ATSDR, 2001). Once asbestos fibers are released into the air they may remain airborne for a long time, meaning that exposure can continue to take place long after the dust is initially mobilized (USFS, 2008).

- **Lead:** Lead exposure is typically the result of inhalation. Lead exposure is especially problematic because a high percentage of lead is absorbed into the body, as much as 20-70%, especially for children (ATSDR, 2010). Health impacts include neurological and gastrointestinal effects, anemia, and kidney disease. Lead is considered lethal to fetuses, and children under the age of six are at risk for developing cognitive impacts even at very low blood lead levels (ATSDR, 2019).
**Preventing Your Exposure**

- **CHANGE CLOTHES** as soon as you have completed recreation or work activities.
- **CONTAIN YOUR SOILED CLOTHING** in a garbage bag during transport to prevent contamination of your vehicle.
- **WIPE DOWN** the interior of your vehicle to minimize dust exposure.
- **WASH CLOTHES** that have been exposed to dusty environments separately to prevent potential cross-contamination.
- **WIPE PET PAWS** off before bringing them home and wash them once you are home.
- **REMOVE YOUR SHOES** before entering your car and/or home to prevent bringing contaminated dust particles inside.
- **REDUCE INHALATION** of contaminated dust particles by wearing a properly fitted respirator equipped with HEPA filtered cartridges or an N-100, P-100 or R-100 NIOSH rated mask (CFR 1910.134).
- **INCREASE YOUR DISTANCE** between each individual to reduce exposure to re-suspended dust when bike riding, horseback riding, and running in groups.

**Additional Information**

- Explore the Occupational Safety and Health Administration (OSHSA) Occupational Safety and Health Standards for respiratory protection, 29 CFR 1910.134 Subpart I.
- Check to see if your favorite recreational and OHV trails are on or close to abandoned mine lands (AMLs): Department of Toxic Substances Control (DTMC) EnviroStor at www.envirostor.dtsc.ca.gov/public or at California Department of Conservation (DOC) PAMP/TOMS database at www.maps.conservation.ca.gov/dmr
- Educate yourself on Naturally Occurring Asbestos (NOA), visit the United States Forest Service Land & Resource Management page at https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement?cid=STELPRDB5363833
- Familiarize yourself and your children with the United States Department of Labor Mine Safety and Health Administration (MSHA) “Stay Out – Say Alive” program at https://www.msha.gov/sosa