

type of asbestos the person is exposed to, and that person's smoking history.

Workers who have significant past or ongoing exposure to asbestos should get a medical exam from a physician who knows about diseases caused by asbestos. The OSHA asbestos standard (<http://www.osha.gov/SLTC/asbestos/compliance.html>) describes medical tests used to assess workers exposed to asbestos.

For more information about asbestos-related disease, refer to ATSDR's "Asbestos and Health: Frequently Asked Questions" fact sheet. You can find it online at: <http://www.atsdr.cdc.gov/NOA/Asbestos-and%20Health.pdf>

### Smoking and asbestos exposure

Smokers exposed to asbestos are much more likely to develop asbestos-related lung cancer than are most nonsmokers. Smoking also causes asbestosis to progress more quickly. Workers should quit smoking and avoid the cigarette smoke of others. Employers can help workers by offering smoking cessation programs.

## Where can you get more information?

### Stay informed

Contact ATSDR or the National Institute for Occupational Safety and Health (NIOSH) for more information about how to limit exposure to asbestos in the workplace and for answers to specific questions.

### Toll free call:

1-888-42-ATSDR (1-888-422-8737) ATSDR:  
<http://www.atsdr.cdc.gov/asbestos/>

or

1-800-35-NIOSH (1-800-356-4674) NIOSH:  
<http://www.cdc.gov/niosh/topics/asbestos/>

### Online Resources:

**Protect Your Family: Reduce Contamination at Home**  
DHHS (NIOSH) Publication No. 97-125 (1997)\_  
<http://www.cdc.gov/niosh/thttext.html>

**Occupational Respiratory Disease Surveillance (ORDS)**  
NIOSH Topic Page about occupational respiratory disease medical screening and monitoring:  
<http://www.cdc.gov/niosh/topics/surveillance/ORDS/>

**Work Related Lung Disease Surveillance Report 2002**  
DHHS (NIOSH) Publication No. 2003-111 (2002)  
<http://www.cdc.gov/niosh/docs/2003-111/2003-111.html>

### Environmental Protection Agency:

**Naturally Occurring Asbestos in California:**  
<http://www.epa.gov/region09/toxic/noa/index.html>

**General Information about Asbestos:**  
<http://www.epa.gov/oppt/asbestos/help.html>

Some of the information in this fact sheet comes from the brochure NIOSH Recommendations for Limiting Potential Exposures of Workers to Asbestos Associated with Vermiculite from Libby, Montana 2002. Access online at <http://www.cdc.gov/niosh/docs/2003-141/> or call 1-800-35-NIOSH to request a copy.



This fact sheet was prepared by the Agency for Toxic Substances and Disease Registry (ATSDR). ATSDR's mission is to serve the public by using the best science, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and diseases related to toxic substances.



## Asbestos

*For workers involved in activities that disturb soil or generate dust in areas with naturally occurring asbestos.*

### Who should read this fact sheet?

This fact sheet is for people in El Dorado County, California who work or have worked outdoors in areas where asbestos has been found in the soil. Some of this information may apply to other locations where naturally occurring asbestos is present.

### Purpose of this fact sheet

This fact sheet addresses common asbestos-related concerns, such as:

- How do you find out if asbestos is a problem in your work area?
- Who do you contact if you suspect a problem with asbestos at work?
- How can you be exposed to asbestos at work?
- How can you protect yourself from asbestos at work?

### *Limiting Asbestos Exposure While Working in Areas with Naturally Occurring Asbestos*

### What is asbestos?

#### Asbestos defined

Asbestos is a group of fibrous minerals that occur naturally in rock formations. Asbestos fibers are too small to be seen by the naked eye. They do not dissolve in water or evaporate. They resist heat, fire, and chemical or biological degradation. Because of these properties, asbestos has been mined and used in many commercial products including insulation, fireproofing and acoustic materials, wallboard, plaster, cement, floor tiles, brake linings, and roofing shingles.

#### Naturally occurring asbestos

*Naturally occurring asbestos* refers to those fibrous minerals that are found in the rocks or soil in some areas and released into the air by routine human activities or weathering processes. ***If naturally occurring asbestos is not disturbed and fibers are not released into the air, then it is not a health risk.***

#### Where asbestos is found in your environment

Asbestos is commonly found in ultramafic rock, including serpentine rock, and near fault zones. The typical amount of asbestos in these rocks ranges from less than 1% to 25%. Asbestos can be released into the air or soil if the rock is broken or crushed.

In California, ultramafic rock, including serpentine rock, is found in the Sierra foothills, the Klamath Mountains, and the Coast Ranges. This type of rock is present in at least 44 of California's 58 counties. Not all ultramafic rock contains asbestos. Environmental testing can determine if a rock contains asbestos.

## How can you find out if a problem exists in your work area?

### Who to contact to find out if a problem exists

To learn if you work in an area that might have naturally occurring asbestos, consult the following agencies:

1. California Geological Survey provides information on the geology of asbestos occurrences in California. [http://www.consrv.ca.gov/cgs/minerals/hazardous\\_minerals/asbestos/index.htm](http://www.consrv.ca.gov/cgs/minerals/hazardous_minerals/asbestos/index.htm)
2. El Dorado County Environmental Management Department <http://www.co.el-dorado.ca.us/emd/apcd/asbestos.html>.

These agencies can assist with understanding the current conditions in your area. **If asbestos is present in an area, but it is not disturbed by human activity or construction, then it is not a health risk.**

### How to find out if asbestos is present in a work area

If you work in an area with naturally occurring asbestos, the only way to know if asbestos is present where you work is to test your work area. The Occupational Safety and Health Administration's (OSHA) asbestos standards need to be followed when working with asbestos. More information is posted on the OSHA Internet page at:

<http://www.osha.gov/SLTC/asbestos/index.html>

Material that contains asbestos is not a health risk if it is undisturbed or covered. It can be a hazard if it becomes friable (crumbly) and airborne.

## How can you be exposed to asbestos?

### How you might be exposed to asbestos

Limit activities that create dusty conditions near asbestos containing soil. You might be exposed to asbestos through activities that crush asbestos-containing rock or stir up dust in soils that contain asbestos in your work area. The following are some examples of activities that might result in exposure if they create dusty conditions:

- Working in a garden
- Digging or shoveling dirt
- Landscaping
- Sweeping or leaf blowing
- Plowing or planting
- Excavating or using a backhoe
- Rock drilling or using a jackhammer
- Driving over unpaved surfaces
- Walking or running on gravel roads
- Running underground cable or pipe
- Disturbing dirt on unpaved surfaces
- Felling trees because it disturbs dirt
- Blasting, chipping, hammering, drilling, crushing, loading, hauling, and dumping rock
- Working near a helicopter that is creating dusty conditions
- Working in railroad construction or maintenance
- Working in highway construction or maintenance
- Operating heavy equipment where the soil contains asbestos fibers
- Engaging in any activity that disturbs the soil or crushes rocks that contain asbestos

### Types of workers who may be exposed to naturally occurring asbestos

Any activity that creates dust or disturbs soil in an area where asbestos is present can cause exposure to asbestos. Construction workers and excavators have jobs that could expose them to asbestos. These include backhoe, crane, tractor, and other heavy equipment operators. Miners, rock drillers or jackhammer operators, demolition workers, bricklayers, stone workers, and cement workers also have jobs that could expose them to asbestos. Other people who might be exposed to asbestos on-the-job include utility workers, lumberjacks, foundry workers, and gravel pit operators.

Highway and railroad construction or maintenance workers also may be at risk. The list also includes outdoor sports instructors and playground workers, outdoor maintenance workers, farmers and nursery workers, landscapers, and others.

## What can you do to reduce potential asbestos exposure?

### Take steps to avoid dusty conditions and reduce exposure

Workers should take steps to limit the generation and inhalation of dust known or thought to be contaminated by asbestos. As with any dust, workers should avoid prolonged high-level exposures. If you work in areas that contain naturally occurring asbestos that can become airborne and creates dusty conditions, limit your exposure by taking some of the following steps:

- Use wet methods to reduce airborne exposure. Wet the soil before gardening or planting. Wet down dusty areas when operating a jackhammer or when cleaning up construction sites.
- Avoid handling or disturbing loose material that contains asbestos.
- Never use compressed air for cleaning. Also avoid using leaf blowers.
- Avoid dry sweeping, shoveling, or other dry clean-up methods.
- When drilling rock, apply water through the drill stem to reduce airborne dust, or use a drill with a dust collection system.
- Follow OSHA and EPA standards for disposing of waste and debris that contains asbestos. Use appropriate leak-proof containers.
- Do not eat, drink, or smoke in dusty work areas where asbestos fibers may be airborne. Move away from the work area for breaks. Also wash your hands and face before eating, drinking, or smoking.
- Limit bystander exposure. Prevent visitors and coworkers from standing in work areas where asbestos fibers may be airborne.
- Use disposable protective clothing or clothing that is left in the workplace.
- Shower (if possible), wash your hair, and change out of work clothes before leaving the worksite. This helps prevent contamination of car, home, and other work areas.

- Do not wash work clothing at home. The people you live with could develop asbestos-related diseases from the fibers brought home on work clothes and boots.
- Drive slowly over unpaved roads, with windows and vents closed.
- Keep vehicles dust-free to prevent continuing exposure. Wash equipment and vehicles when the job is finished

### Personal Protective Equipment (PPE)

When working with material that may contain asbestos, use proper breathing protection. When you need to reduce asbestos exposure below OSHA standards, wear respirators that use high-efficiency filters (e.g., N100). Supplied air respirators also are effective.

Which type of respirator to use depends upon the amount of airborne asbestos or conditions of use. Medical clearance and respirator training are also required. Disposable respirators or dust masks do not prevent asbestos exposure. If personal protective equipment (PPE) is required at your worksite for asbestos work, then use proper respiratory protection. OSHA guidelines for PPE are posted at:

<http://www.osha.gov/SLTC/respiratoryprotection/index.html> or <http://www.cdc.gov/niosh/npptl/topics/respirators/>

## How can asbestos make you sick?

### Asbestos exposure and health

If asbestos fibers are in the air you breathe, the fibers may lodge in your lungs. The tiny fibers can scar your lungs and make it difficult to breathe. That condition is called asbestosis. The fibers also can cause lung cancer and mesothelioma. Mesothelioma is a cancer of the membrane that covers the lungs and chest cavity (pleura). It is also a cancer of the membrane that lines the abdominal cavity (peritoneum). The symptoms of these diseases do not usually appear until about 15 to 40 years after the first exposure to asbestos. However, being exposed to asbestos does not mean you will definitely develop health problems. Many factors influence a person's chances of developing disease. They include how much, how often, and how long a person is exposed to asbestos. They also include the