



Workplace  
Safety and Health

## National Institute for Occupational Safety and Health Division of Respiratory Disease Studies

### NIOSH Libby Vermiculite Study: Update of a Cohort Mortality Study

#### Background

- Vermiculite from the mine that operated near Libby, Montana from the early 1920s until 1990 contained tremolite asbestos and related fibers (winchite and richterite).
- A previous NIOSH study of Libby workers documented increased risk of death from lung cancer and nonmalignant respiratory disease among highly exposed workers with at least 1 year on the job (Amandus and Wheeler 1987).
- The intent of this updated study was to describe the mortality experience of workers exposed to mineral fibers over the full range of exposure and employment duration at the Libby operations.

#### Study Design

- This study expands the previously studied group of workers to include all white men hired at the Libby vermiculite operations from September 1935 through December 1981.
- The analysis compared the mortality, through 2001, of 1,672 Libby workers to that of white men in the general U.S. population.
- This analysis focused on respiratory conditions potentially related to asbestos exposure: lung cancer, asbestosis, mesothelioma or cancer of the pleura (cancers of the lining around the lungs), and other respiratory diseases.

#### Study Publication

- Sullivan PA. 2007. Vermiculite, respiratory disease, and asbestos exposure in Libby, Montana: Update of a cohort mortality study. *Environmental Health Perspectives* 115:579-584.





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#### Study Results

- Compared to other white men of the same age in the U.S. population, Libby workers were more likely to die from asbestosis, lung cancer, cancer of the pleura, or mesothelioma.
- Libby workers were 166 times more likely than expected to die from asbestosis, nearly 2 times more likely than expected to die from lung cancer, 23 times more likely than expected to die from cancer of the pleura, and 15 times more likely than expected to die from mesothelioma.
- The chance of dying from asbestos or lung cancer increased with more years on the job and with increasing cumulative workplace exposure to fibers from the vermiculite.
- The excess deaths from these respiratory diseases are believed to have been caused by exposure to asbestos fibers from the vermiculite.

#### Conclusions

- Even if you are healthy, and may never develop asbestos-related disease, you should share a copy of this fact sheet with your medical care provider(s) so that he/she will be aware of your past asbestos exposure.
- You should limit your exposure to cigarette smoke because people with exposure to both asbestos and cigarette smoke are much more likely to die from lung cancer than are those exposed to either asbestos or cigarette smoke alone. If you smoke, you should quit to reduce your lung cancer risk.
- Libby vermiculite that contained asbestos fibers was used in loose-fill attic insulation that remains in millions of homes in the United States, Canada, and other countries. Increases in asbestosis and cancer deaths among Libby workers highlight the need for homeowners and construction workers to exercise caution when disturbing loose-fill attic insulation made with asbestos-contaminated vermiculite from Libby, Montana. See the NIOSH fact sheet at <http://www.cdc.gov/niosh/docs/2003-141/> for additional information.





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- In some cases, workers have brought asbestos home on their work clothes, exposing those they live with. Although this study does not assess risk to household contacts, you may want to share this fact sheet with those you lived with at the time you were employed at the Libby vermiculite facilities.
- This study has evaluated workers as a group. The study does not predict the future health of any one individual.

#### For More Information

- If you, your doctor, or members of your family have any questions, you may call the NIOSH toll-free number, **1-800-232-2114**, between 9:00 a.m. and 4:00 p.m. Eastern Time, Monday through Friday. Please indicate that you are calling about the Libby Vermiculite Notification. For specifics about the study, ask for Dr. Patricia Sullivan. For medical questions, ask to speak to a physician.
- An abstract and link to the full HTML and PDF versions of the research paper can be found online at:  
[www.ehponline.org/docs/2007/9481/abstract.html](http://www.ehponline.org/docs/2007/9481/abstract.html) .

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