

Background

During the summer and fall of 2000, 6,149 persons participated in asbestos medical testing sponsored by the Agency for Toxic Substances and Disease Registry (ATSDR). Those eligible for testing included former W.R. Grace workers from Libby and persons who lived, worked, or played in Libby for at least 6 months before December 31, 1990. A second round of testing was conducted during the summer of 2001, and an additional 1,158 persons were tested. A total of 7,307 participated in the two rounds of testing.

Components of the testing included

- a face-to-face interview designed to obtain information needed to better analyze the health data collected during the medical testing. Questions asked included number of years lived in the Libby area, smoking history, and exposure variables (such as having been a W.R. Grace worker, playing in vermiculite piles, playing at the ball field near the expansion plant, etc.).
- a three-view chest x-ray to identify changes in the lungs and lung lining that might be the result of asbestos exposure.
- a spirometry test that measured air flow in and out of the lungs to evaluate lung function.

X-Ray Findings

Only study participants 18 years of age and older were eligible for x-rays. Three B-readers (experts in reading chest x-rays for asbestos-related lung abnormalities) found that 1,186 of those 6,668 participants (or 18% of those x-rayed) had abnormalities in the lining of their lungs (pleural abnormalities). The risk of pleural abnormalities increased with increasing age and increasing length of residence in the Libby area. The rate of pleural abnormalities found in groups within the United States that have no known asbestos exposures ranges from 0.2% to 2.3%.

Interstitial abnormalities (abnormalities of the lung tissue itself) were found in 54 (0.8%) of the 6,668 persons undergoing chest x-rays. An x-ray was considered abnormal if two of three B-readers found an abnormality consistent with asbestos exposure.

Additional Findings:

- The prevalence of radiographic pleural and interstitial abnormalities was highest in W.R. Grace workers: 51% (186 of 365) and 3.8% (14 of 365), respectively.
- Most participants reported multiple routes of exposure (household contact, occupational, recreational, and other). An “exposure-response” relationship was noted in that the percentage of participants with pleural abnormalities increased with the number of exposure pathways (Figure 1).
- Of those participants who reported no apparent exposure, 6.7% (9 of 135) had pleural abnormalities.

Factors most strongly related to having pleural abnormalities were 1) having been a W.R. Grace/Zonolite worker, 2) having household contact with a W.R. Grace/Zonolite worker, and 3) being a male.

- The odds of finding a pleural abnormality were 1.7 to 4.4 times greater (depending on age) for former W.R. Grace workers when compared with nonworkers.
- The odds of finding a pleural abnormality were 3.3 times greater for females who had household contact with W.R. Grace workers when compared with women who had no household contacts with these workers.
- In nonhousehold contacts, the odds of finding a pleural abnormality were 5 times greater for men than for women.

- Other factors associated with significantly increased odds of pleural abnormalities included smoking, playing in vermiculite piles, duration of residence in Libby, asbestos exposure in the military, and increased body mass index (BMI) (see Table 1).

Lung Function Test Findings

Lung function tests (spirometry) were offered to all study participants. An on-site pulmonologist from the National Jewish Medical and Research Center of Denver, Colorado, interpreted all tests. Some of the key findings are as follows:

- Being a current smoker was the strongest risk factor for restrictive abnormalities.
- Moderate to severe restriction in breathing capacity was found in 1.8% of all those tested.
- Moderate to severe restriction in breathing capacity was found in 5.5% of former W.R. Grace workers.
- In those under 18 years of age who were tested, no one had moderate to severely restricted lung function.
- Other factors associated with restrictive abnormalities included being a non-W.R. Grace/Zonolite worker exposed to vermiculite, having had chest surgery, and being overweight.

Public Health Followup

The Department of Health and Human Services (HHS), the Environmental Protection Agency, (EPA) and other federal and state agencies are committed to providing other support for the Libby Community.

Factors Associated With Pleural Abnormalities

- | | |
|--|---|
| • W.R. Grace Worker | • Cigarette smoking |
| • Household contact with W.R. Grace worker | • Duration of residence in Libby (34 + years) |
| • Military asbestos exposure | • Play in vermiculite piles (some/frequent) |
| • Increasing age | • Higher body mass index (BMI > 28) |
| • Male sex | |

Table 1

In particular, ATSDR and the Department's Region VIII office will do the following:

- Funding has been made available by the Health Resources and Services Administration (HRSA) for a community health clinic for medically under-served persons. This clinic focuses on primary care services, and persons with asbestos-related medical conditions will be eligible for services provided.
- With ATSDR funding and technical support, the Montana Department of Public Health and Human Services (MDPHHS) will coordinate ongoing periodic medical testing of eligible persons, continuing the screening program sponsored by ATSDR since 2000.
- ATSDR is in the process of creating a Tremolite Asbestos Registry (TAR) of eligible persons. The TAR will enable ATSDR and MDPHHS to follow affected persons over time and ensure that the latest medical recommendations and research findings are communicated to participants and their health care providers.

In addition, through the Center for Asbestos Related Disease (CARD) in Libby, Montana, St. John's Lutheran Hospital (SJLH) continues to provide diagnostic evaluation for persons with potential exposures or x-ray and/or spirometric abnormalities.

For more information, contact:

Dr. Vikas Kapil, Phone 1-888-422-8737, or

Dan Strausbaugh, Region VIII Representative, Phone (406) 457-5007

Exposure response relationship with number of exposure pathways

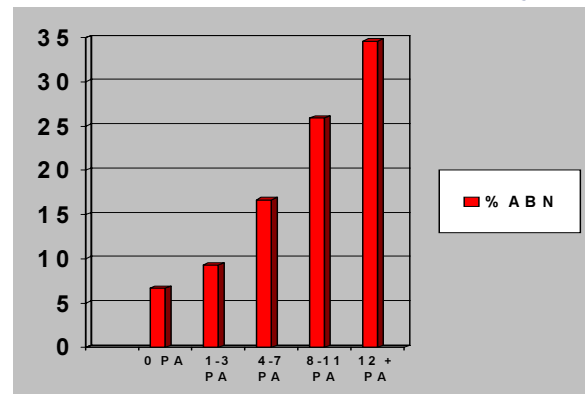


Figure 1