

Background

In June-September 2001, 353 persons took part in an asbestos study that involved computed tomography (CT) of the chest.

The Agency for Toxic Substances and Disease Registry (ATSDR) initiated the study in response to the Libby community's interest in the use of CT testing.

CT combines x-ray with state-of-the-art computing technology. The CT scan uses a rotating x-ray beam to create a series of pictures of the body. A computer combines these pictures to produce detailed cross-sectional images of parts of your body.

Radiation dose to the patient from a CT scan is far greater than that from a chest x-ray.

Overall goal

To determine if computed tomography is useful as a screening tool for detecting asbestos-related lung abnormalities in persons who had indeterminate chest x-rays in Libby, Montana.

Who was tested?

The 353 participants of the 2000 Medical Testing Program were in one or more of the following categories:

- 18 years of age and older
- Indeterminate chest x-ray – Only 1 of the 3 B-readers reported an abnormality along the lining of the lungs or chest wall (pleural abnormalities) on participant's chest x-ray
- Former vermiculite mine and mill workers – 55 participated
- Their household contacts – 99 participated
- Persons with exposure to vermiculite due to past direct recreational behaviors – 199 participated

In the group studied, participants who were in one or more of the following categories were more likely to have an abnormality detected by CT scan:

- W.R. Grace/Zonolite worker
- Secondary contractor worker
- Household member with W.R. Grace worker or secondary contractor
- Age 65 or older
- Lived in Libby 35 years or more
- A cigarette smoker
- Frequently popped vermiculite
- Had a vermiculite insulation in home

How did we do the testing and evaluation?

The CT scans were performed at the St. John's Lutheran Hospital.

Three nationally recognized physicians who are experts in reading CT scans independently reviewed each CT scan. To assure an objective review, these physicians had no patient's demographic, medical, or exposure information.

What did the study find?

CT scans detected pleural abnormalities in 98 persons (28% of all tested) whose chest x-rays had been classified as indeterminate.

Most of these persons – 69 (70%) – were either former vermiculite mine/mill workers or their household contacts.

What does ATSDR recommend?

Low-dose CT scans may be considered for screening certain former vermiculite mine/mill workers and their household contacts who have indeterminate chest x-rays. If there is some suspicious finding on chest x-ray, particularly in a high-risk individual, a CT scan may be helpful.

ATSDR

AGENCY FOR TOXIC SUBSTANCES
AND DISEASE REGISTRY

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