

OFFICE OF HEALTH

HEALTH HAZARD ALERT

Assistant Secretary for Environment, Safety and Health

U.S. Department of Energy
Issue 94-4

Washington, DC 20585
July 1994

Chronic Beryllium Disease

In the late 1940's, beryllium, an essential metallic element used widely by the Department of Energy (DOE), was identified by researchers as an irritant to the lung responsible for causing chronic beryllium disease (CBD).

CBD is caused by breathing in beryllium particles, which in a few percent of exposed people leads to an inflammation of lung tissue. If the disease is severe, scar tissue can develop in the lungs causing potentially permanent lung damage. Physicians treat CBD with medications that reduce the inflammation and decrease the possibility of lung damage. Some of the first (clinical) symptoms of CBD include shortness of breath, fatigue, coughing, chest pain, and unexpected weight loss. People who are exposed to beryllium can get CBD within months or sometimes decades after their first exposure to beryllium. The disease can even occur after exposure to beryllium has stopped. Not everyone, however, who is exposed to beryllium will develop CBD.

Two recently conducted studies designed to test how well a new blood test (called a blood lymphocyte proliferation test) could detect CBD, found CBD in craft workers and white collar workers thought to only have had occasional, low level exposures to beryllium. These results suggest that compliance with current exposure limits for beryllium are not sufficient for protecting workers against CBD. Until enforced exposure levels are reduced, DOE operations managers and DOE contractor operations managers can take several steps to attempt to reduce beryllium exposure and prevent more cases of CBD from occurring among their workers. These steps include:

- Know if beryllium contamination is present. Management responsible for planning maintenance, repair, decontamination and decommissioning activities need to know if beryllium contamination is present to make sure workers are protected. Work on contaminated surfaces is a possible source of beryllium exposure.
- Establish personal monitoring. Routine personal monitoring practices allow workers and line managers to identify other methods for reducing beryllium exposure below the current exposure limits. Employees should also be warned that current exposure limits may not be adequate to protect them from developing CBD.

- Limit the number of exposed workers. Reducing the number of workers who are exposed to beryllium directly and indirectly will prevent new cases of CBD. Some data suggest that workers who are exposed for even very brief periods will develop CBD, about 1 or 2 cases for every 100 employees exposed.
- Workers must be identified to the plant medical department and checked for good health, particularly good pulmonary (lung) health before their assignment to work that may involve beryllium exposure. This type of preplacement examination will help to ensure that workers who have existing lung disease are not exposed to beryllium.
- Medical surveillance for beryllium workers. Workers who have been or are exposed to beryllium should be part of ongoing medical surveillance. Medical surveillance information will help track a worker's physical response to beryllium exposure.
- If you think you might have CBD, you should tell the site medical clinic of your concern or tell the doctor who is treating you that you were exposed to beryllium. The doctors at the site medical clinic can help you directly, or they can assist your personal physician in obtaining the special tests needed to tell whether you have CBD.

For more information, contact Mr. Paul Wambach, Industrial Hygienist, Occupational Medicine Programs Division, on 301-903-7373.