

The below excerpt is from the 2013 report of the Beryllium Health and Safety Committee Medical Epidemiology Subcommittee titled: **Medical Evaluation of Workforces at Risk of CBD: A Review of the Relevant Literature and Other Considerations**. The full report is available on line at <https://berylliumhealthandsafetycommittee.com/>

Risks & Benefits of Participating in the OSHA Beryllium Standard Medical Surveillance Program.

Occupational health programs often struggle with balancing the potential benefits and harms of testing for work related disease. Most people exposed to beryllium may not get the disease due to the amount of airborne dust present in the workplace. For some, it can be a relatively minor condition, while for others it can become a very serious, disabling disease. Testing must be of benefit to the individual being tested and not just a benefit to the workforce as a whole. For CBD, striking the right balance is difficult due to the combination of individual susceptibility, workplace exposure characterization, and the uncertainty surrounding CBD prognosis for an individual. As with other lung diseases, CBD may go undetected if individuals delay seeking medical attention for symptoms they attribute to aging or deconditioning. When combined with reports of CBD cases among individuals with seemingly trivial exposures, there is uncertainty that CBD cases will be identified through the provision of medical care to individuals with symptoms and raises the question of whether a more active approach is beneficial. The value of early detection and/or intervention will depend on a particular individual's health and life circumstances. The potentially progressive nature of the lung damage which can occur with CBD may create opportunities for individuals to delay or possibly prevent disability.

Risks/Benefits of Being Sensitized to Beryllium for the Worker's Consideration

- If current job duties create potential exposure to beryllium, it is likely physicians will recommend changes in these duties to reduce future exposure. It is hoped that removal from potential exposure will reduce the risk of developing disease.
 - May change career path.
 - May cause worry and anxiety (about health, about insurability, about job) in worker or loved ones.
- May result in additional and repeated invasive medical evaluation procedures risks, though infrequent, may result in injury related to diagnostic procedures.
- Eligibility for worker's compensation benefits for the cost of recommended medical care. For DOE workers, U.S. federal employees and in most U.S. states, diagnosis of an occupational disease provides access to worker's compensation insurance coverage with medical and disability benefits.
- Work cohort/public health benefits may result in identification of inadequate work controls thus resulting in prevention of future additional worker exposure.
- Secondary prevention: Early treatment of CBD may prevent progression of disease to permanent lung damage and disability. Although not providing definitive proof, authors of recent studies have concluded that the long standing standard of care for CBD has been shown to reduce the progression of disease.

The difficult issues that surround the use of the BeLPT are summarized below.

- The test is not widely available and there exists intra- and inter-laboratory variability.
- The significance of intra-individual variability (reversals from positive to negative over time) is not well understood.
- The unexposed 'background' rate of sensitization is thought to be 0-1% of the unexposed population.
- Serial testing is recommended due to the possibility of false negatives associated with a single test.
- There remains a lack of standardization of what constitutes 'sensitized' (2 abnormal results²⁴, 1 abnormal, 1 borderline, 3 borderlines³).
- Benefits of the removal from future Be exposure after sensitization is argued by analogy to other pulmonary hypersensitivity responses, and remains unproven.

- There may be adverse effects, both physical and psychological, following the identification of sensitization.
- While not curable, early diagnoses of CBD create opportunities for treatment of the lung damage that causes disability. The evidence for the efficacy of treatments is limited.

**Risks and Benefits of Participating in the Beryllium
Medical Surveillance Program**

Test	Risks	Benefits
BeLPT	False positive results could lead to a psychologically stressful series of subsequent confirmatory BeLPT tests.	Detection of beryllium sensitization and CBD. Helps determine the effectiveness of your employer's Be health effects prevention program. Assists your employer's efforts in identifying opportunities to eliminate or reduce Be related risks to you and your fellow workers. As necessary, provides an opportunity for placement in a job with lower airborne exposure. As necessary, provides information for you to decide on increasing your level of respiratory protection.
Physical examination	none	Evaluation of general and respiratory health.
Chest x-ray	Radiation exposure could potentially increase the risk of cancer.	More accurate diagnosis of lung diseases, including CBD.
CT scan	Radiation exposure could potentially increase the risk of cancer.	More accurate diagnosis of lung diseases, including CBD.
Pulmonary function testing (spirometry, DLCO, plethysmography)	Hypertension during spirometry.	Evaluation of general lung physiology.
Bronchoscopy	Pneumothorax	More accurate diagnosis of lung diseases, including CBD.

Risks of the BeLPT

- Venipuncture may cause pain and bruising.
- The test may need to be repeated due to:
 - Shipping/processing delays which may harm cells.
 - Failed tests that result in "un-interpretable" results.
 - Borderline or abnormal results that require confirmatory testing.
- False negative or false positive results may occur.