

## Frequently Asked Questions about Chronic Beryllium Disease (CBD) FAQ 310

### **What is Chronic Beryllium Disease (CBD)?**

Chronic beryllium disease (CBD) means a chronic granulomatous lung disease caused by inhalation of airborne beryllium by an individual who is beryllium sensitized. CBD is a condition in which the immune system in the lungs of susceptible individuals reacts to the presence of beryllium-containing particles and the lung becomes inflamed. This inflammation, when accompanied by scarring, may stiffen the lung, make breathing difficult and restrict the exchange of oxygen between the lungs and the bloodstream.

Before the late 1980s, CBD was diagnosed in workers only when they exhibited clinical symptoms of CBD and changes in their chest x-ray or lung function test. This is now referred to as clinical CBD. Clinical CBD can be a serious and sometimes fatal lung disease. During the late 1980s and early 1990s, the criteria for CBD diagnosis were changed to include workers without clinical symptoms or measurable impairment whose CBD was detected as a result of surveillance, combining the beryllium blood lymphocyte proliferation test (BeBLPT) and bronchoscopy with biopsy. These workers are labeled as sub-clinical, or surveillance CBD, based on the positive BeBLPTs and the presence, upon biopsy, of microscopic biological lung formations called granulomas.

### **What causes CBD?**

CBD is caused by breathing small airborne particles containing beryllium. Three factors are required, and all must be present for a person to develop CBD. First, the individual must be exposed to airborne beryllium in the form of a dust, fume or mist. Second, the particles must be tiny enough (approximately 10 times less than the diameter of a human hair) to reach the air sacs deep in the lungs; and third, the person must be sensitive to beryllium. CBD does not occur in most people and medical science suggests that development and progression of CBD may be related to a person's genetic makeup.

### **What are the symptoms of clinical CBD?**

The symptoms of clinical CBD include shortness of breath, dry cough, wheeze, weight loss, night sweats or fatigue. These symptoms are also common to many lung and other conditions which may be confused with CBD. In individuals with clinical disease, chest x-rays can be normal, but may show small nodules, enlarged lymph nodes, or extensive scarring. Pulmonary function tests may show reduced lung volume, reduced air flow, or reduced diffusion of gases from the air sacs in the lung into the blood stream.

### **What is Beryllium Sensitization?**

Beryllium sensitization means a response in the immune system of a specific individual who has been exposed to beryllium. There are no associated physical or clinical symptoms and no illness or disability with beryllium sensitization alone, but the response that occurs through beryllium sensitization can enable the immune system to recognize and react to beryllium. While not every beryllium-sensitized person will develop CBD, beryllium sensitization is essential for development of CBD.

See our FAQ 304 - Frequently Asked Questions about the Beryllium Blood Lymphocyte Proliferation Test (BeBLPT), for more information on sensitization testing.

**If a person's test results for beryllium sensitization indicate they are sensitized to beryllium, does it mean they have CBD and will get sick?**

No. The results of the BeLPT alone do not establish that a person has CBD or will get sick. However, the American Thoracic Society recommends it is prudent for persons who are beryllium sensitized to not perform work with beryllium-containing products involving airborne exposures to beryllium dust.

**Is it true that a person can be diagnosed as having CBD and not have any clinical symptoms?**

Yes. This is described as sub-clinical CBD and is a term that originated after the criteria for the diagnosis of CBD was changed in the late 1980s. The diagnosis of sub-clinical CBD is based on two abnormal BeLPTs indicating beryllium sensitization and the presence of non-caseating granulomas in lung tissue samples taken during a medically invasive procedure called a bronchoscopy. Individuals diagnosed with sub-clinical CBD do not have evidence of clinical symptoms or measurable impairment and may or may not progress to clinical CBD.

**How can I obtain assistance?**

If you have any questions regarding the above information, please contact your sales representative; our sales department at +1-216-486-4200; or the Product Safety Hotline at 1-800-862-4118 (in the U.S.) or +1-216-383-4019 (outside the U.S.). This document, as well as other product specific safety data information, can be found at [www.materion.com](http://www.materion.com). Additionally, information on the Beryllium Worker Protection Model and process specific safety guidance can be found in the Interactive Guide to Working Safely with Beryllium and Beryllium-containing Materials at [www.berylliumssafety.com](http://www.berylliumssafety.com).