

## Chronic Beryllium Disease

Chronic beryllium disease (CBD) is a disease that primarily affects the lungs, causing inflammation, characteristic scars called granulomas and, in more severe cases, scarring called fibrosis. CBD is immune-mediated, meaning that CBD can develop only in individuals who have developed an immune response or “allergy” to beryllium metal, ceramic or alloy, termed beryllium sensitization (BeS). Beryllium sensitization occurs after a susceptible person breathes beryllium dust or fumes or if beryllium particles penetrate the skin. People are more likely to develop beryllium sensitization and CBD if they are susceptible or when they have (carry) certain genes, such as the HLA-DPB Glu69 gene.



### How do you develop CBD?

It is important to know that no one develops CBD unless they are exposed to beryllium and develop an immune response (BeS) to it. Most people who are exposed to beryllium will not experience health effects.

Studies have shown that on average, 1 – 6 percent of exposed workers develop beryllium sensitization, although the rates can be as high as 16 percent among workers with the highest exposures, such as beryllium machinists. Most workers who develop sensitization tend to do so early, but follow-up testing over the years continues to identify sensitization in individuals who were exposed up to 30 years earlier.

### What is beryllium?

Beryllium is a naturally occurring element found in rock and soil in the form of beryl and bertrandite, respectively. Beryllium is lighter than aluminum, yet stiffer than steel. These properties make it useful in many industrial applications. While beryllium occurs naturally in soil, rocks and coal, it is because this beryllium is often bound up in solid rock and soil composition that naturally occurring air concentrations are extremely low, even in major urban areas. This means you cannot develop beryllium sensitization from casual exposure to soil and rocks outdoors.

Beryl rock is mined and processed to produce beryllium in several different forms; processing beryllium and beryllium rock in industry can result in sensitization and disease.

### Where is beryllium used?

Beryllium is extremely lightweight, hard, a good electrical and thermal conductor and nonmagnetic. It is used by many industries, including but not limited to:

- **Aeronautics and Aerospace** – Components made from pure beryllium as well as copper-, aluminum-, nickel-, and magnesium-beryllium alloys

- **Ceramic manufacturing** – Semiconductor chips, ignition modules, crucibles, jet engine blades and rocket covers
- **Electronics** - Transistors, heat sinks, X-ray windows, computer and telecommunication parts and automotive parts
- **Atomic energy and defense industries** - Heat shields, nuclear reactors, components for nuclear weapons
- **Laboratory work** - Research and development, metallurgy, chemistry and dental labs
- **Mineral extraction** – Beryllium and other ore and some aluminum extraction processes
- **Dental work** - Alloys in crowns, bridges and dental plates
- **Metal recycling** - Computers, electronics, copper-alloy tubing, rod and wire
- **Sporting goods** - Golf clubs
- Prior to 1951, beryllium was used in the manufacturing of fluorescent lamps.

## Is beryllium hazardous?

Handling beryllium in a finished part does not cause illness, unless the part still has dust on it from the production process. Exposure to beryllium salts can cause a rash and/or inflammation in the respiratory tract. Most workers today are exposed to the metal or oxide forms. If beryllium enters the body through an opening in the skin, such as through a sliver or cut, it can cause a rash, poor wound healing or wart-like skin bumps.

It is important to know that no one develops beryllium sensitization or chronic beryllium disease (CBD) unless he or she is exposed to beryllium and develops an immune response to it. Beryllium sensitization and CBD may develop after an individual breathes beryllium dust or fumes. Most people who are exposed to beryllium will not experience health effects.

I've been exposed to dust or fumes from an alloy that contains only a small amount of beryllium. Is this hazardous?

Some commonly used alloys include beryllium copper (up to 4 percent beryllium), beryllium aluminum (20 – 60 percent beryllium), and beryllium nickel (0.275 – 7 percent beryllium). Studies have shown that dust or fumes from alloys that contain beryllium can be just as hazardous as pure beryllium metal. A 1999 report summarized two cases of CBD caused by copper alloy containing 2 percent beryllium. Other studies have shown that breathing even seemingly trivial amounts of beryllium dust or fumes can cause beryllium sensitization and chronic beryllium disease.

## Does beryllium cause cancer?

Beryllium has been shown to cause cancer in humans and in many species of animals and beryllium has been classified as a human carcinogen by the International Agency for Research on Cancer (IARC). Although lung cancer risk is significant, lung cancer usually develops after very high exposures, like those that were seen in the early years (e.g., 1930s - 1950s) of beryllium production. The risk of lung cancer among workers exposed to much lower levels than currently seen in industry is much lower and/or not well understood. Despite the possibility of leading to lung cancer, the more common health concerns for beryllium-exposed individuals are beryllium sensitization and chronic beryllium disease (CBD), as levels of exposure are generally lower now than they were many decades ago when most of the cancer studies were conducted.

## What is beryllium sensitization?

Beryllium sensitization is an “allergic” condition to beryllium that may develop after a susceptible person

breathes beryllium dust or fumes, or if beryllium penetrates the skin through an open cut or from a beryllium splinter. Individuals that have a certain gene called HLA-DPB Glu69 are susceptible and more likely to become sensitized after exposure to beryllium.

In individuals with beryllium sensitization, the immune system sees beryllium as a foreign substance and responds by generating a population of immune cells in the bloodstream that react to beryllium. These cells can be found in the blood using a test called the beryllium lymphocyte proliferation test (BeLPT).

## How do you develop beryllium sensitization?

It is important to know that no one develops beryllium sensitization unless he or she is exposed to beryllium. Beryllium sensitization may develop after an individual breathes beryllium dust or fumes. Most people who are exposed to beryllium will not experience health effects. Beryllium particle size and form, amount and duration of exposure, occupation, industry and genetics are all factors that play a role in determining why some people develop beryllium sensitization and others do not.

Studies have shown that, on average, 1 – 6 percent of exposed workers develop sensitivity, although the rates can be as high as 16 percent in workers with the highest exposures, such as beryllium machinists. Most workers who are going to develop an allergy to beryllium tend to do so early, but follow-up testing over the years continues to identify workers with beryllium sensitization years after first exposure.

## What are the symptoms of beryllium sensitization?

As opposed to environmental allergies, such as pollen or ragweed, individuals with beryllium sensitization do not have any immediate symptoms when they are exposed to beryllium. In fact, beryllium sensitization causes no symptoms at all.

## How do I know if I have beryllium sensitization?

Beryllium sensitization is diagnosed with a blood test called the beryllium lymphocyte proliferation test (BeLPT). The BeLPT is a test that helps determine if your immune system reacts to beryllium as a foreign substance — this reaction leads to abnormal BeLPT results. In individuals who do not have beryllium sensitization, the immune system does not respond to beryllium in any manner, which produces normal BeLPT results.

Individuals with two or more abnormal BeLPT results are considered to have “confirmed beryllium sensitization” and are encouraged to undergo further medical testing to determine if they have chronic beryllium disease (CBD). Individuals with other combinations of non-normal test results, such as an abnormal and a borderline BeLPT or three borderline results, are also considered sensitized and should be candidates for further evaluation.

## Is beryllium sensitization treated?

Currently, there is no medication or procedure available to eliminate this immune reaction to beryllium.

## Can beryllium sensitization be cured?

At the present time, there is not a known cure for beryllium sensitization.

## How often should I see my doctor?

Once diagnosed with beryllium sensitization, you should see your doctor at least every 2 years. During your visit, you may have testing, including pulmonary function tests, exercise tolerance tests, a chest X-ray or CT scan to check for inflammation and scarring in the lungs and a bronchoscopy with lavage (lung washing) and biopsy to see if granulomas or other abnormalities have developed in the lungs. The types of testing your doctor performs may be different based on your overall health. If you develop symptoms of CBD, such as a dry

cough or unexplained shortness of breath, you should see your doctor as soon as possible.

## How do you develop CBD?

It is important to know that no one develops CBD unless he or she is exposed to beryllium and develops an immune response (beryllium sensitization) to it. CBD may develop after an individual breathes beryllium dust or fumes. Most people who are exposed to beryllium will not experience health effects.

## What are my chances of developing chronic beryllium disease (CBD)?

The percentage of people with beryllium sensitization who go on to develop CBD is highly variable, ranging from 10 – 100 percent in different worker populations. Individuals with very high exposure to beryllium, such as machinists, are at great risk. On average, an estimated 40 – 60 percent of workers with beryllium sensitization will go on to develop CBD. Factors such as beryllium particle size and form, amount and duration of exposure, occupation, industry and genetics (or susceptibility) may all play a role in determining why some people develop CBD and others do not. Once you are exposed to beryllium, you carry a lifelong risk of developing beryllium sensitization or CBD, even if you had low exposures or you are no longer exposed.

When people with beryllium sensitization undergo clinical evaluation to determine if they have CBD, between 10 – 100 percent of them are found to have a CBD diagnosis on their first evaluation. If you have undergone evaluation and are found to have beryllium sensitization with no evidence of CBD, you are still at risk for developing CBD in the future. Recent research suggests that each year, 6 – 8 percent of people with beryllium sensitization will develop CBD, at least in the first 6 years.

## What are the symptoms of CBD?

Individuals with CBD may not have any symptoms at first, especially if the disease is diagnosed at an early stage. However, As CBD develops, people may notice shortness of breath with walking, climbing stairs or other physical activities, as well as a dry cough that will not go away. Some people may also experience fatigue, night sweats, chest and joint pain and loss of appetite as the disease progresses.

## How do I know if I have CBD?

Diagnosis of CBD begins with a blood test called a beryllium lymphocyte proliferation test (BeLPT). The BeLPT is a test that helps determine if your immune system reacts to beryllium as a foreign substance — this reaction results in an abnormal BeLPT. In individuals who do not have beryllium sensitization or CBD, the immune system does not respond to beryllium in any manner, and they have normal BeLPT results. Individuals with two or more abnormal BeLPT results are considered to have “confirmed beryllium sensitization” and are encouraged to undergo further evaluation to determine if they have CBD.

Individuals with other combinations of non-normal test results, such as an abnormal and a borderline BeLPT or three borderline test results, should also be candidates for further medical testing. This medical evaluation typically includes an appointment with a doctor familiar with the health effects of beryllium, exercise tolerance testing, pulmonary function testing, a chest X-ray or CT scan, blood work and diagnostic bronchoscopy with biopsy and lavage (lung washing). The types of testing your doctor performs may differ based on your overall health. Based on the results of the tests, your doctor will likely be able to determine if you have CBD.

The diagnosis is typically made on the basis of confirmed beryllium sensitization and the finding of abnormal collections of cells called granulomas, or by an abnormal beryllium test in the immune cells from the lungs and significantly elevated number of a particular type of an immune cell called a lymphocyte.

## What is a beryllium lymphocyte proliferation test (BeLPT)?

The beryllium lymphocyte proliferation test (BeLPT) is a test that helps determine if your immune system recognizes beryllium as a foreign substance and responds by generating a population of immune cells in the bloodstream that react to beryllium. The test is very specific, meaning that if your blood reacts to beryllium,



nothing besides beryllium could have caused the reaction. In individuals who do not have beryllium sensitization or CBD, the immune system does not respond to beryllium, in fact, in some individuals, beryllium is toxic to the cells of non-sensitized individuals.

## How is a BeLPT done?

To perform the test, blood is drawn from a vein in your arm. In the laboratory, the white blood cells are separated from the rest of the blood cells and then mixed with a beryllium solution. If your immune system is sensitized to beryllium, these cells will multiply, producing an abnormal BeLPT result. If your immune system is not sensitized to beryllium, the cells will not multiply, producing a normal BeLPT result. In normal (non-sensitized) individuals, cells do not multiply.

## Who should have a BeLPT?

National Jewish Health® recommends that individuals who are or have been exposed to any form of beryllium dust or fumes (including pure beryllium metal, copper-, aluminum-, nickel-, and magnesium-beryllium alloys; ceramics and composite materials) have a BeLPT. This includes:

- Individuals who currently work directly or have in the past worked with beryllium or in buildings where beryllium dust or fumes were created by others
- Individuals who have disturbed beryllium dust in some manner (such as through janitorial work, building maintenance or construction)
- Short-term employees, including summer students, since beryllium sensitization and CBD can develop with just a few months of exposure
- Any person diagnosed with lung disease (especially scarring lung diseases) who has current or past exposure to beryllium. CBD can be mistaken for asthma, sarcoidosis, pulmonary fibrosis, chronic bronchitis, COPD or other lung ailments. The blood BeLPT helps correct mistakes in diagnosis.

## Will the BeLPT tell me whether or not I have CBD?

The blood BeLPT only determines beryllium sensitivity; it does not differentiate between beryllium sensitivity and CBD. An abnormal blood response to beryllium does mean that you are beryllium sensitized, and the majority of people with beryllium sensitization will eventually develop CBD. Individuals with two or more abnormal BeLPT results are considered to have “confirmed beryllium sensitization” and are encouraged to undergo further evaluation to determine if they have chronic beryllium disease (CBD). Individuals with other combinations of non-normal test results, such as an abnormal and a borderline BeLPT or three borderlines, should also be candidates for further evaluation by a doctor familiar with CBD.

## What do the values on the test result mean?

The BeLPT is performed in two parts, which are done at the same time with a single blood sample: one part ensures your blood cells are alive and normal when they arrive at the laboratory, and the other part tests the blood cells for their reaction to beryllium.

**Part 1:** To ensure that your white blood cells are acting normally, we test them for their ability to react to two different substances known to make nearly everyone’s cells multiply. One is an antigen and the other is a mitogen. If your cells react normally to these positive controls, the cells are then tested to see if they will react to a beryllium solution.

**Part 2:** In the test for the reaction to beryllium, we use three different concentrations of beryllium salt solutions and check the cells at two different points in time. If your cells multiply in two or more of these six beryllium conditions, the test is interpreted as abnormal.

**Results:** Your cells' reactions to controls (the mitogen and antigen) to make sure the test works, and beryllium are reported in the results. Each laboratory that performs the BeLPT sets its own values to determine whether cell responses to beryllium are normal or abnormal. Results are reported as a "stimulation index" (SI), which is a ratio of your cells grown with beryllium compared to your cells grown without beryllium.

### **I have a 2.5 SI on my National Jewish Health test result. Is this considered almost abnormal?**

In the National Jewish Health laboratory, tests with all values 2.5 and less are considered normal. In our laboratory, two of the six measurements must be greater than 2.5 for the test to be abnormal.

### **Does a very high SI value on my test result mean I have CBD?**

National Jewish Health has not found that high abnormal values are linked to disease. A person with a stimulation index of 12.8 is no more likely to have CBD than a person with a 5.8. Further testing is needed to determine whether or not an individual has CBD.

### **Do I need to fast (not eat) prior to my blood test?**

No, your test results are not affected by food or drink.

### **Will taking prednisone affect my test result?**

We are able to perform the test in people who are taking prednisone. National Jewish Health sees many patients who are on immunosuppressive drugs, such as corticosteroids like prednisone, who have abnormal BeLPTs. Although definitive research has not been done, it is preferable that you discontinue medicines that suppress the immune system 3 months prior to a BeLPT if possible. This should be done only if your doctor considers it safe to reduce or stop your medicines. If you were on an immunosuppressive drug when your BeLPT was done, and you have doubts about the validity of your test results, we suggest you meet with your personal doctor to determine if you should discontinue your medication and have a repeat test.

### **Is there a program that will pay for my test?**

If you are a current or former Department of Energy employee or subcontractor, you may qualify for free testing. Many private insurance companies will cover the cost of the test, as will Medicare. Because plans vary in coverage, you should contact your insurance company for benefit information. For information on Department of Energy programs, please see [www.dol.gov/](http://www.dol.gov/).

### **Will my insurance company and/or employer have access to my test results?**

If your employer or insurance company pays for your BeLPT, most likely you will have to sign a waiver allowing an authorized representative to see the results of your test. If you file a workers' compensation or Department of Labor claim for beryllium sensitization or CBD, you may need to release your test results to the claims examiner before your claim can be processed. Under federal law (HIPAA), no one may access your test results unless you give them permission by signing a release of medical information.

### **Can I have a normal test and still have beryllium sensitization or CBD?**

National Jewish Health doctors have diagnosed CBD in individuals who have granulomas in their lungs but normal blood BeLPT results. In such instances, the lung cells usually react to beryllium when the lavage BeLPT is performed using cells washed from the lungs.

### **What is the false positive rate for the blood BeLPT?**

If a person has an abnormal ("positive") blood BeLPT, there is a greater likelihood that it will again be abnormal when it is repeated. Of people who have two abnormal blood BeLPT results, the chances of the test becoming consistently normal again in the future is very low. These rates vary some among the laboratories that perform

the BeLPT.

## What is the false negative rate for the blood BeLPT?

A “false negative” test means that the test was read as being normal (“negative”) when a person has beryllium sensitization or chronic beryllium disease. This occurs rarely. Although a normal blood BeLPT is reassuring, it is not a 100 percent guarantee that you do not have beryllium sensitization or CBD. The test should be repeated if there is a strong suspicion that you have beryllium sensitization or CBD. In some instances, it may be necessary to do other tests to determine if you have beryllium sensitization or CBD, in which case your physician should contact our medical staff to discuss options. Additionally, exposed individuals may have multiple normal BeLPTs and then have an abnormal result. This means the individual developed sensitization in the time period between the last normal test and the current abnormal test.

## Can you test urine for beryllium sensitization? Or hair?

While it is possible to test for beryllium in urine and hair, it is not helpful in determining if you have beryllium sensitization or CBD. A urine test and tests on hair can determine if someone is or has been recently exposed to beryllium, but it does not detect beryllium sensitization or CBD.

## Can CBD be cured?

At the present time, there is no known cure for CBD. However, with monitoring and treatment by your doctor, the disease can be slowed. Researchers in the United States and abroad are studying the biological mechanisms of CBD to better understand how the disease works and the complicated biological processes involved. Eventually, this research may lead to better treatments for CBD, if not a complete cure.

## How is CBD treated?

CBD is treated differently for each person, as the course and progression of the disease is different for each individual. Not everyone who has CBD will need treatment, but many people will eventually need treatment as the disease progresses. The type of treatment a person requires depends on the severity of the disease.

In general, the goals of treatment for CBD are to improve the symptoms, to protect the lungs from further damage caused by inflammation and scarring, and to improve the oxygen levels in the bloodstream. The treatment of CBD is designed to manage the symptoms.

At National Jewish Health®, our goal is to help you maintain your normal lifestyle as much as possible, so that you can continue to enjoy the people and activities that are important to you. As a result, we do recommend a healthy lifestyle, including healthy eating, regular exercise, rest and giving up smoking.

**Exercise** is among the most important things you can do to maintain your health and lung function. Regular exercise can help improve shortness of breath, strengthen your heart and muscles, decrease your blood pressure, and even improve your mood. It helps to optimize your weight; carrying excess weight also contributes to shortness of breath and fatigue. It is important to talk with your doctor before starting an exercise program.

**Healthy eating** – Healthy eating and achieving and maintaining a healthy weight are important.

**Rest** – Make sure you get enough sleep each night.

**Giving up smoking** - If you smoke cigarettes, it is important to stop. If you develop a smoking-related lung, such as emphysema, along with CBD, it can result in more damage to your lungs and be difficult to treat both diseases. Since both tobacco and beryllium are carcinogens, it is important to eliminate exposure to both beryllium and cigarette smoke.

If CBD is diagnosed in early stages, the lung function may be normal and no symptoms of the illness apparent. As the disease progresses, symptoms, such as dry cough or wheezing, similar to asthma, may become

noticeable. An inhaled steroid may be prescribed to manage these symptoms. Symptoms may worsen, or abnormalities in gas exchange (the ability of the lungs to exchange oxygen for carbon dioxide in the bloodstream) may be detected as the disease progresses. At that time, an immunosuppressive medication, such as prednisone, may be prescribed. Once the disease is advanced, supplemental oxygen may be necessary.

## Medications - Will I need to take prednisone for my CBD?

If an individual with CBD requires medication to improve symptoms and lung function, the drug most commonly prescribed is prednisone.

Immunosuppressive medications, such as prednisone, slow the immune system's response to the beryllium in your lungs, and generally help decrease symptoms while improving gas exchange between the lungs and bloodstream. Typically people are given a course of prednisone that is gradually decreased over a period of time. Long-term use of prednisone does have side effects, and you should discuss the risks and benefits of prednisone use with your doctor before beginning treatment.

## Are there other medications that can be used to treat CBD?

Other immunosuppressive medications may be used in combination with prednisone. The most commonly used agents are methotrexate and azathioprine. While they may effectively decrease the amount of prednisone needed, and hence the steroid side effects, they have their own side effects, and the risks and benefits of these medications needs to be carefully considered before they are used. Other types of immunomodulatory agents may be helpful, such as the TNF- $\alpha$  blocking agent Infliximab, and antioxidants, and other therapies are being investigated.

## Follow-Up - How often should I see my doctor?

People with CBD should see their doctor at least once a year. The types of testing your doctor performs may be different based on your overall health. If you develop worsening symptoms of CBD, see your doctor as soon as possible. People with more advanced disease should see a doctor more frequently. Talk with your doctor about how often you should be seen.

## Work Environment Management

### I've been diagnosed with CBD. Can I return to work?

Your ability to return to work after being diagnosed with beryllium sensitization or CBD depends on several factors, including your overall health and the type of work you do. Many individuals with CBD are able to resume a normal work schedule at their current job or a different one, as the disease, and its symptoms, progress slowly.

### Can I still work with or around beryllium?

While there is no level of exposure to beryllium that is considered "safe," very low levels of beryllium — potential exposures < 0.01 microgram per cubic meter as an 8-hour time-weighted average (TWA) — may be safe for both sensitized and diseased workers, although this has not been evaluated. The use of respirators may be required for some areas or jobs. The employer or an industrial hygienist will outline the type of respirator required, when to wear a respirator and how long to wear a respirator. At the present time, it is not known whether removal from beryllium exposure changes the risk of developing CBD for a person with beryllium sensitization. It is also not known if removal from beryllium exposure will significantly change the course of illness for people with CBD. Even so, doctors consider it important and prudent for individuals with beryllium sensitization and CBD to minimize their exposure to airborne beryllium. National Jewish Health doctors discuss recommendations with patients in regards to ongoing beryllium exposure because these issues can be very complex, but in general do recommend individuals diagnosed with beryllium sensitization and CBD who continue to work in a beryllium industry to have exposure of no more than 0.01 micrograms per cubic meter of beryllium as an 8-hour time-weighted average. Because we do not know of a definite "safe" level of exposure



below which sensitization and disease do not occur, it is important to limit beryllium exposure to the lowest level possible.

In the workplace, you or your employer should:

- Substitute another product for beryllium if at all possible
- Avoid cleaning with compressed air and dry sweeping of work areas
- Use engineering controls to contain and limit exposure to beryllium, such as enclosed processes and proper exhaust ventilation
- Use administrative controls to minimize the number of individuals who have access to areas where beryllium is used
- Establish and maintain a respiratory protection program as needed, ensuring respirators fit properly and are used appropriately
- Use skin protection, shower and change clothes before leaving the beryllium area and work facility
- Ensure employees receive regular training on the proper handling of beryllium, proper use of personal protective equipment, as well as the hazards of beryllium exposure
- Monitor the workplace for beryllium through industrial hygiene testing, with air and wipe sampling methods, in areas where beryllium is used currently as well as places where beryllium may have been used in the past
- Conduct medical surveillance on workers at risk for direct and indirect beryllium exposure using the BeLPT
- Link medical surveillance data to industrial hygiene data to identify areas of risk that may be amenable to further control measures.

## **Dentistry, Beryllium Sensitization and CBD**

### **I have dental work containing a beryllium alloy. Will this cause beryllium sensitization or CBD?**

No; the beryllium in dental work such as crowns, bridges or dental plates is infused in the alloy. For that reason, there is no risk of beryllium fumes or dust from the dental work becoming airborne, allowing it to be inhaled into the lungs. Bridges, crowns, dental plates and other dental work have not been found to cause beryllium sensitization or CBD. However, it has been published that, in very rare cases, beryllium in dental work has been shown to cause contact dermatitis.

### **I have been diagnosed with beryllium sensitization or CBD and have dental work. Do I need to get it replaced or tested for beryllium?**

No; bridges, crowns, dental plates and other dental work have not been found to worsen beryllium sensitization or CBD.

## **Working in a dental laboratory:**

Dental laboratory technicians who work with alloys containing beryllium or are in the same facility as modified beryllium alloys are at risk for developing beryllium sensitization and chronic beryllium disease, or CBD. It is important to know that no one develops beryllium sensitization unless they are exposed to beryllium. While the amount of beryllium used in dental alloys is small, ranging from 0.05 – 2 percent, there is still a risk of

developing beryllium sensitization or CBD. While altering the alloys, the dust and fumes produced can become aerosolized, and, if proper care is not taken, there is a potential for dental laboratory technicians to breathe them in. This risk applies only to dental labs where beryllium-containing alloys are fabricated or modified, not dental offices, where the alloys are not manufactured or altered.

It is important to know that no one develops CBD unless they are exposed to beryllium and develop an immune response (beryllium sensitization) to it. CBD may develop after an individual breathes beryllium dust or fumes. Most people who are exposed to beryllium will not experience health effects.

## Are there support groups for people with beryllium sensitization and CBD?

Talking with people who experience similar problems, concerns, feelings or struggles can be helpful to people with chronic illness. There are a number of support groups across the country for people with beryllium sensitization and CBD.

### Arizona

Tucson Arizona Beryllium Support Group  
11323 N. Anway  
Marana, AZ 85653

### Ohio

Beryllium Disease Support Group of Ohio  
P.O. Box 55  
Oak Harbor, OH 43449  
[theresan@umich.edu](mailto:theresan@umich.edu)

### Tennessee

Y-12 Chronic Beryllium Disease Support Group  
Beryllium Victims Alliance  
504 Michigan Ave  
Oak Ridge, TN 37830  
Contact Glen Bell, Chairman  
[Wheezin2@aol.com](mailto:Wheezin2@aol.com)

### Washington

The Beryllium Awareness Group  
Hanford, WA  
[Terry\\_cherney@rl.gov](mailto:Terry_cherney@rl.gov)  
[C\\_w\\_chuck\\_wildman@rl.gov](mailto:C_w_chuck_wildman@rl.gov)

Consulting individually with a mental health professional familiar with chronic illness, especially occupational illness, may help you as well.

National Jewish Health offers a comprehensive beryllium screening and surveillance program to help patients, doctors and employers manage beryllium-related health issues. Physicians with expertise in identification and treatment of beryllium disease may be consulted through the Division of Environmental and Occupational Health Sciences at National Jewish Health in Denver, Colorado. To consult with a physician, or for more information on the beryllium program, please contact National Jewish Health® at 1.800.222.5864, extension 1722.

To speak with a nurse, call the LUNG LINE® Information Service at National Jewish Health, Monday through Friday from 8:00 AM to 5:00 PM (Mountain Time) at 1-800-222-LUNG.

Visit our website for more information about support groups, clinical trials and lifestyle information.

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