This fact sheet was written for former construction workers whose work history showed they had been exposed to beryllium. The fact sheet was designed to help explain to the worker why certain medical examinations/tests were being recommended.

BERYLLIUM

Fact Sheet

Beryllium is a very lightweight, strong, hard metal that is easy to shape. The Department of Energy has used beryllium for a long time because of its many uses in nuclear weapons and reactors.

Chronic Beryllium Disease

Breathing beryllium particles can lead to scarring of the lungs. This is known as chronic beryllium disease—CBD for short. It can be treated, but it cannot be cured. It is sometimes fatal.

CBD is primarily a lung disease. But it may also affect the lymph nodes, skin, spleen, liver, kidneys, and heart.

Among construction workers at DOE facilities, less than 1% have been found to have CBD. In jobs where people inhaled the most beryllium (such as machinists in beryllium operations), 10 to 14% of the workers have gotten chronic beryllium disease.

CBD can take years to develop after the first exposure to beryllium. The average time is 10 to 15 years. Sometimes it takes as long as 30 years to show up.

Chronic beryllium disease can cause persistent coughing, shortness of breath, chest pain, fever, night sweats, blood in the sputum (saliva, mucus, and other discharges that can be "coughed up"), rapid heart beat, loss of appetite, and weight loss. If you have been exposed to beryllium and you have any of these symptoms, you should tell your doctor about your beryllium exposure or seek help from a doctor who specializes in occupational lung diseases.

Lung Cancer

Workers in some beryllium-producing plants have had an increased rate of lung cancer. Beryllium is classified as a cause of cancer in humans by the International Agency for Research on Cancer and by the American Conference of Governmental Industrial Hygienists.

What Can I do to Avoid Beryllium Exposure?

It is not possible to determine your exact risk for developing beryllium disease, but listed below are some general guidelines that you can follow to lessen your exposure.

- Avoid breathing beryllium dust or fumes by working in well-ventilated, well-exhausted areas where beryllium air monitoring is done routinely.
- Use all ventilation and exhaust equipment available in order to reduce exposures to the lowest possible level.
- Whenever possible, work with non-beryllium metals, alloys, ceramics and salts.
- Do not eat, drink or smoke in areas where beryllium is in use.
- Before entering work areas where beryllium is used, change into work clothes, including shirt, pants and shoes.
- At the end of the work shift take a shower and thoroughly clean your hands and hair before changing into street clothing.
- Use approved respirators for tasks that may result in high exposures.
- Avoid generating beryllium dust unless the process is well protected and has been sampled for exposure levels.

Testing for Beryllium Disease

CBD occurs in people who have become "allergic" or sensitized to beryllium after being exposed. Medical screening programs start by identifying people who are sensitized to beryllium. People who are sensitized then get more exams and tests to see if they have chronic beryllium disease.

The first step is a blood test called a beryllium lymphocyte proliferation test, or BeLPT. A small amount of blood will be drawn from a vein in your arm. It will be sent to a laboratory to see if you have become sensitized to beryllium.

If the blood test shows that you may be sensitized to beryllium, the blood test will be repeated. If the second test also shows that you have been sensitized, the doctor will recommend additional medical tests. These will help the doctor make a diagnosis. The tests will probably include a chest x-ray and breathing tests. You may also need a test called bronchoscopy to see if you have scarring in your lungs.

Treatment for Chronic Beryllium Disease

CBD can be treated, but it cannot be cured.

If the tests find reduced lung function, treatment may involve taking steroids. The most common steroid prescribed for CBD is prednisone. If treatment with steroids works, it can reduce the buildup of scar tissue and delay permanent lung damage. This slows the progress of chronic beryllium disease.

However, many people do not respond well to this treatment. Others cannot tolerate the side effects of the steroids. These can include slower healing of infections, calcium loss from the bones, and high cholesterol. Steroid use can also cause the body to retain fluids and salt. This can make heart or kidney disease worse. People who cannot take steroids may continue to lose lung function.

If you are sensitized to beryllium, but do not yet have the disease, you should be checked by a doctor regularly for signs of disease development. Patients with early beryllium disease, who do not yet have symptoms, might not need treatment. They, too, should be checked by a doctor regularly.

If you are sensitized to beryllium, avoid future exposure to beryllium. More exposure may make chronic beryllium disease much more likely—and may make it more severe.

Possible Benefits Under the Energy Employees Occupational Illness Compensation Programs Act

If you worked at a Department of Energy facility:

- If you are sensitized to beryllium but do not have CBD, you may be eligible to have the government pay the cost of ongoing medical exams and tests to monitor your condition. This is a benefit under the Energy Employees Occupational Illness Compensation Programs Act.
- If you have a diagnosed case of CBD, you may be eligible for additional benefits under the Energy Employees Occupational Illness Compensation Programs Act. These include a $150,000 lump-sum payment and payment of your medical expenses related to CBD. (If you are sensitized but do not have CBD, you are not eligible for the $150,000.) These benefits are administered by the U.S. Department of Labor.

Protection for Current DOE Site Workers

In 1999 the Department of Energy issued a detailed rule outlining its Chronic Beryllium Disease Prevention Program. This is designed to reduce the number of people currently exposed to beryllium in DOE facilities, to minimize the exposure levels and the potential for exposure, and to provide a medical program for current site workers who have been exposed. This applies only to current DOE and DOE contractor employees.