

Health concerns for workers who worked around **beryllium**

This study summary contains important information that may be related to your health. You are being sent this information because you began working at a beryllium processing plant between 1940 and 1969. You may have been exposed to beryllium at your worksite.

Study background:

About 20 years ago, the National Institute for Occupational Safety and Health (NIOSH) did a study that included workers from seven beryllium processing plants. The study compared the causes of death among workers to the US general population to see if workers had a higher risk of certain health problems. In 2010, this study was updated to see if any of the health risks had changed.

Included in the study were 9,199 men who worked for at least two days at one of seven beryllium processing plants during 1940 -1969. The processing plants are or were located in:

- Lorain, Ohio
- Elmore, Ohio
- Luckey, Ohio
- Reading, Pennsylvania
- Cleveland, Ohio
- Hazleton, Pennsylvania

These plants were chosen because they process beryllium.

For this study, yearly beryllium exposure was estimated for each job. These estimates were used to assess whether beryllium exposure could be linked to the causes of death found among workers. This was a records-based study, so no surveys or samples were taken from workers. Because of this, you may not have known this study update was being done.

What is beryllium?

Beryllium is a hard, light-weight metal that is used in many industries. It is often blended with other metals and ranges in color from gray to white, copper, or gold. Beryllium is found naturally in rocks, coal, and soil. Since the 1940s, beryllium has been linked to certain health problems. There is now evidence that exposure to beryllium can cause cancer.

How could I have been exposed to beryllium?

Beryllium dust and fumes can be breathed-in. Beryllium dust or liquid can also absorb through skin. Dust is made when beryllium is:

- Chemical cleaned/processed
- Heat treated
- Chipped
- Hot pressed
- Cut
- Machined
- Ground
- Powdered

Fumes containing beryllium occur with high temperatures and with some chemical processes. Job activities that can produce beryllium fumes include:

- Hot press operation
- Welding
- Maintenance
- Working around chemical processes
- Melting furnace operation
- Working around hot processes

Exposure can also occur when dust is spread to other areas of the work site during maintenance and housekeeping activities. Both dust and fumes can be present long after the beryllium work has finished. Because of this, you may have been exposed even if you did not work directly with or near beryllium.

How do I know if I was exposed to beryllium?

There are no immediate symptoms of exposure, so you may have been exposed and not known it. There are no tests that can tell you if you have been exposed to hazardous levels of beryllium.

Health concerns we found:

- Workers had a 17% higher risk of lung cancer compared to the US population. 545 workers died, compared to 466 expected based on rates in the US population. As the exposure to beryllium increased, so did the risk of lung cancer. We do not think the increased risk of lung cancer is related to smoking.
- Certain other lung diseases (including chronic beryllium disease (CBD)) were 780% higher than the US population. 89 workers died, compared to 12 expected based on rates in the US population. Increased CBD and beryllium sensitivity have been found in many other studies.
- Chronic Obstructive Pulmonary Disease (COPD) was 23% higher than the US population. 670 workers died, compared to 545 expected from the US population. As exposure to beryllium increased, so did the risk of COPD. We do not think the increased risk of COPD is related to smoking.

- Diseases of the arteries (including “right-sided heart failure”, which has been linked to CBD) were 17% higher than the US population. 656 workers died, compared to 561 expected from the US population.
- Nervous system cancer was not increased compared to the US population. However, among workers, we found that as exposure to beryllium increased, so did the risk of nervous system cancer.
- Urinary tract cancer was not increased compared to the US population. However, among workers, we found that as exposure to beryllium increased, so did the risk of urinary tract cancer.

What should I do?

Always tell your doctor if you worked with materials that may be hazardous to your health. Your doctor should know that you worked in a beryllium processing plant, even if it was years ago and the plant is no longer open. If you have not already talked with your doctor about this, it is important to discuss it at your next yearly visit. Your doctor may want to run some tests to make sure you are still healthy. You and your doctor should carefully monitor your health. Many diseases are curable or manageable, if found early.

What symptoms should I watch out for?

See the following resources for information on:

- COPD:
www.copdfoundation.org/
- Lung cancer:
www.cancer.gov/cancertopics/types/lung
- Nervous system cancer:
www.cancer.gov/cancertopics/types/brain
- Right-sided heart failure:
www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001186/
- Urinary tract cancer:
www.cancer.gov/cancertopics/types/bladder
www.cancer.gov/cancertopics/types/kidney

Do not wait for symptoms to appear to tell your doctor that you worked around beryllium. If you start developing any unusual or persistent symptoms, see your doctor as soon as possible. Do not wait until your yearly visit.

Should my family be worried about their health?

Beryllium-related health problems are not likely passed down to your children. However, it's possible for beryllium dust to be carried home on work clothes. If you think this may have occurred, your family members should tell their doctor. Though it is likely that these exposures were low, it's best to keep doctors informed to ensure better patient care. Some family members of beryllium workers have developed health problems as a result of exposure to beryllium dust.

Will this study make a difference?

The results of this study were given to the Occupational Safety and Health Administration (OSHA). OSHA establishes exposure levels for workers. OSHA will consider these study findings to determine if exposure levels should be lowered to protect the health of the men and women who still work with beryllium.

Can I get compensation if I have a beryllium-related illness?

If you worked with beryllium, you may be eligible for compensation under the Energy Employee Occupational Illness Compensation Program (EEOICP). To learn more about the program and whether you are eligible, please contact one of the resource centers by calling 1-866-363-6993 (Portsmouth Resource Center) or 1-800-941-3943 (New York Resource Center).

You may also be eligible for state worker compensation. To learn more, visit www.dol.gov/owcp/dfec/regs/compliance/wc.htm or call 1-866-4-USA-DOL (1-866-487-2365).

For more information:

This study only looked at health effects among workers. It did not assess possible health effects of the surrounding communities. To learn more about beryllium and how it affects the public, more generally, visit:

- Beryllium ToxFAQs Sheet
www.atsdr.cdc.gov/tfacts4.pdf
- Beryllium Public Health Statement
www.atsdr.cdc.gov/ToxProfiles/tp4-c1-b.pdf

To learn more about this study or to request more information about beryllium, call 1-800-CDC-INFO (1-800-232-4636).

