



Munitions Workers Study

A University of Iowa Study
of DoD Contract Workers

Beryllium Sensitivity Surveillance and the Beryllium Lymphocyte Proliferation Test

What is beryllium and why is it a concern for workers at IAAAP?

Beryllium (Be) is a hard, lightweight metal that is very strong and easy to shape. Be and Be compounds have many industrial uses. Be is not reported to have been used as a component in the production of conventional munitions at the Iowa Army Ammunition Plant (IAAAP), but Be-containing non-sparking tools—such as hammers, punches, and chisels—were used for a number of years. Use of these tools has been discontinued. Some IAAAP workers may have come into contact with Be in a number of jobs over the years and some of these individuals may be at increased risk of developing chronic beryllium disease (CBD). See boxed section below for additional information on CBD.

What is the purpose of beryllium sensitivity surveillance in the IAAAP Munitions Workers Study?

The main purpose of this program is to measure the prevalence of beryllium sensitivity among Department of Defense (DOD) contract workers at IAAAP, and to offer medical evaluations to those workers who may be at increased risk of developing CBD. Information from this program may help to determine if there is an industry-wide health concern related to beryllium and, if indicated, to improve screening and hygiene programs for other workers who may be at risk.

Selected workers will be offered the Beryllium Lymphocyte Proliferation Test (Be-LPT) to determine the rates of beryllium sensitivity among various job categories working in the munitions industry. Individuals offered the Be-LPT are selected because their work history represents a job category, work practice, or job description being studied. Some of those studied will be workers with low or no expected exposure to Be.

What is the Beryllium Lymphocyte Proliferation Test (Be-LPT)?

The Be-LPT is a laboratory test that examines how types of disease-fighting blood cells—called lymphocytes—react to beryllium. It is performed on blood drawn from the arm. In this study, the test will be conducted by two different laboratories. If the lymphocytes **do not** react to beryllium very strongly, then the test is considered “normal.” If the lymphocytes **do** react strongly to beryllium, then the LPT is considered “abnormal.” It is not unusual for samples submitted to two different laboratories to have different results. If this occurs, individuals will be asked to provide a second blood sample for retesting.

If an individual has two abnormal tests, he or she will be offered further medical tests to screen for CBD. **Further tests may be refused at any point during the medical evaluations.** If CBD is identified, doctors can determine what treatment is needed.

What is Chronic Beryllium Disease (CBD)?

CBD is caused primarily by breathing beryllium dusts. CBD can take years or even decades to develop. Inflammation of the lungs makes it more difficult for the lungs to get oxygen to the bloodstream and body. Symptoms of CBD include shortness of breath (especially with activity), cough, chest pain, fatigue, weight loss, and loss of appetite. It is important to note that NOT all individuals with these symptoms will have CBD. These can be symptoms of other conditions which may require medical attention as well. Not all people with CBD have all these symptoms.

Are individuals selected for the Be-LPT required to participate?

No. Participation in the medical surveillance program is strictly voluntary. All individually identifiable health information collected will be kept confidential.

How much time will this take?

For most people, participation involves coming to have your blood drawn on one day, and completing a questionnaire that day. The total time might take 1-2 hours at most. A few people will be asked to provide a blood sample on a second occasion, a few weeks later, if the original laboratory results are not conclusive, or if there are unusual circumstances regarding sample quality assurance or delivery problems, such as lost shipments, late delivery to the lab, or other improper handling.

Could abnormal Be-LPT results affect an individual's work with beryllium in the future?

If an individual is found to have Be sensitization (2 confirmed abnormal Be-LPT test results), or if he or she is diagnosed with CBD, it is advisable to avoid work environments where Be may be present. Note there is no longer any use of Be at the IAAAP.

Will individuals be compensated for participation in the project?

Individuals will receive \$20 for each occasion they submit blood samples. This should occur only once for most participants. An individual may be asked to submit a blood sample on a second occasion if the initial results are inconclusive.

Who can be contacted for more information?

For more information, call the IAAAP Munitions Workers Study toll-free number at 866-282-5818, or e-mail Howard Nicholson, the Project Coordinator, at howard-nicholson@uiowa.edu. The project can also be reached by mail at:

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