News Releases

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New study finds cancer-causing mineral in U.S. road gravel

*Erionite in North Dakota roads may increase risk of mesothelioma*

As school buses, trucks and cars drive down the gravel roads in Dunn County, North Dakota, they stir up more than dirt. The clouds of dust left in their wake contain such high levels of the mineral erionite that those who breathe in the air every day are at an increased risk of developing mesothelioma, a type of cancer of the membranes around the lungs, new research shows. Erionite is a natural mineral fiber that shares similar physical similarities with asbestos. When it’s disturbed by human activity, fibers can become airborne and lodge themselves in people’s lungs. Over time, the embedded fibers can lead to mesothelioma, a form of lung cancer most often associated with the related mineral asbestos.

Michele Carbone, M.D., Ph.D., director of the University of Hawai’i Cancer Center, has previously linked erionite exposure in some Turkish villages to unusually high rates of mesothelioma. Recently, he and colleagues turned their attention to potential erionite exposure in the U.S., where at least 12 states have erionite-containing rock deposits. His team—which includes scientists from the National Institute of Environmental Health Sciences, Environmental Protection Agency, New York University, University of Chicago, University of Iowa, and University of Hacettepe—focused their efforts on North Dakota, when they learned that rocks containing erionite have been used to produce gravel for the past 30 years. More than 300 miles of roads are now paved with the gravel. The study, reported in a recent issue of Proceedings of the National Academy of Sciences is the first to look at the potential hazards associated with erionite exposure in the U.S.

"Based on the similarity between the erionite from the two sources," says Carbone, “there is concern for increased risk of mesothelioma in North Dakota.” The long latency period of the disease—it can take 30 to 60 years of exposure to cause mesothelioma—and the fact that many erionite deposits have only been mined in the past few decades suggests that the number of cases could soon be on the rise. In addition to North Dakota, California, Oregon, Arizona, Nevada and other states have erionite deposits, but the possibility of human exposure elsewhere in the U.S. has not yet been investigated. The study was funded through grants from the National Cancer Institute and the 2008 AACR-Landon Innovator Award for International Collaboration in Cancer Research.