

CONTENTS

Fatal Fibers

BY KATY HUMAN

Crush an asbestiform rock and you end up with fibers that can be woven into a textile that's tough, flexible and easy to clean. The term "asbestos" actually refers to several minerals with shared properties: long, flexible fibers that are resistant to stretching, heat and corrosion.

Geologists separate out asbestos minerals into two classes: chrysotile (or white) asbestos, with very flexible and fine fibers; and amphibole, with brittle fibers that are more "biodegradable." Chrysotile asbestos—more commonly used in insulation—is cleared from the lungs more easily than amphibole, says Jill Dyken, PhD, and the latter is generally considered more likely to cause mesothelioma. Both types of asbestos have been implicated in lung cancer and other pulmonary diseases, such as asbestosis. Though the asbestos industry launched in the late 1800s, scientists didn't link the mineral to mesothelioma until the 1950s, after more than 30 people in a South African asbestos mining district developed the disease.

In the United States, asbestos continued to be mined and used—particularly for insulation—until about 1980. "Asbestos isn't used in new products today, but millions of pounds were used up to the 1970s," says Dr. Dyken. "A lot of it is still in place in insulation and wall boards in old buildings. When that starts deteriorating, there's potential for fibers to get into the air."

Although asbestos is no longer mined in the United States, Brad Van Gosen, a geologist with the U.S. Geological Survey, and other federal geologists are busy mapping natural deposits of the rock. "Are there unexplained disease clusters that can now be explained?" Van Gosen asks. "Maybe there are, maybe there aren't. We've never been able to look." A detailed national map could help epidemiologists learn more about asbestos diseases.

Researchers believe mesothelioma rates may have already peaked in the United States since asbestos use was largely banned about 30 years ago. In Europe and Australia, mesothelioma is expected to increase until about 2015, and though asbestos has been banned in most countries, it continues to be widely used in numerous developing countries. "Prevention of exposure is key," says Dr. Dyken, "because once you have fibers in your lung, there's no way to get them out."

For more information about asbestos exposure, visit the Environmental Protection Agency's website at www.epa.gov/asbestos.