



Mesothelioma: Danger Behind Asbestos Exposure

Each year, several thousand people worldwide will learn that their home or workplace has caused them to develop a rare form of cancer — mesothelioma.^{vi,vii} This devastating disease is primarily associated with asbestos exposure, a natural particle found in many building materials. In recent years asbestos has been banned or severely restricted by the United States and other countries.

What is mesothelioma? Mesothelioma is a rare form of cancer that arises in the mesothelium — the thin layers of tissue that surround organs and body cavities. Between the membranes that make up the mesothelium, there is a lubricating fluid, which helps organs move easily among surrounding structures. In the case of the lung, it helps reduce friction between the lung and chest wall during normal breathing as the lung expands and contracts.

There are different types of mesothelioma, depending on where it is found in the body. In the abdomen, it is called *peritoneal mesothelioma*; on the lungs, it is called *pleural mesothelioma*; and if it develops on the heart, it is referred to as *pericardial mesothelioma*.

What are the symptoms?

Mesothelioma is characterized by a long latency period, which means that symptoms do not develop until 20-50 years after exposure to the cause.ⁱ

Symptoms associated with peritoneal mesothelioma can include weight loss, nausea and pain and swelling in the abdomen due to the buildup of fluid. Other symptoms can include difficulty with bowel movements, anemia, fever and swelling of the feet.

The main symptoms of pleural mesothelioma are shortness of breath, chest pain and coughing. Other symptoms include weight loss, weakness, lower back pain and/or difficulty swallowing. Occasionally a patient may not have any identifiable symptoms at diagnosis.

Who does it affect? All types of mesothelioma are most commonly found in Caucasian men over the age of 50ⁱⁱ who have been exposed to asbestos. Occupations associated with occurrence of mesothelioma include asbestos miners, insulation factory workers, railroad workers, ship builders, automotive workers and workers in the heating and construction industries.

Other causes include second-hand exposure to asbestos, such as living with someone who works in an environment with the material and carries material home on clothes, as well as exposure to radiation or to minerals found in soil that are closely related to asbestos. While smoking has not been shown to cause mesothelioma, a smoker exposed to asbestos will have a greater risk of developing other types of lung cancer.ⁱⁱⁱ

Between 2,000-3,000 people are diagnosed with mesothelioma each year in the US.^{iv} Cases around the world

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continue to rise. For example, the annual number of mesothelioma deaths in Great Britain has increased from 153 in 1968 to 1,969 in 2004. It is projected that the total number of deaths will be more than 1,950 between the years 2011 and 2015.^v

How is it diagnosed?

Diagnosing mesothelioma can be difficult as many of the symptoms are similar to those of a number of other conditions, including other types of cancer.

In addition to medical history and a physical exam, detection may include a battery of tests, including chest x-rays, which can reveal abnormal changes around the lung. A CT or MRI scan may be used to identify the type, size and location of the tumor. A physician may also conduct a thoracentesis, in which a needle is inserted into the lung area to drain fluid for testing. Finally, a biopsy of tissue may be removed from the mass and observed under a microscope.

How does it progress? Unlike other tumors, mesotheliomas do not form as a “lump”; rather they extend from the pleural lining and press against the lung or abdominal

organs. The disease can also grow along the pleural lining, forming a hard casing around the lung, similar to a peel of an orange. This can make it difficult for patients to breathe. There are four stages of mesothelioma, which define how far the cancer has spread to other parts of the body.

What is the prognosis? In most cases, mesothelioma has already advanced by the time it is diagnosed, so the outlook usually is poor. On average, survival time after diagnosis is one to two years.^{vi}

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How is it treated? Similar to other cancers, mesothelioma may be treated with chemotherapy, radiation therapy and/or surgery to remove cancerous growths.

What does the future look like? Research is ongoing to understand why asbestos causes mesothelioma. The objective of the research is to identify potential ways to treat the disease. Doctors are combining therapies such as surgery, radiation and chemotherapy. New therapies are also being investigated in clinical trials.

i American Cancer Society, “What Causes Mesothelioma? Can it Be Prevented?,” January 5, 2007, American Cancer Society, http://www.cancer.org/docroot/CRI/content/CRI_2_2_2X_What_causes_mesothelioma_Can_it_be_prevented_29.asp?nav=cri, (January 26, 2007).

ii Lilly Oncology, “Understanding Cancer: FAQs About Mesothelioma,” Eli Lilly and Company, www.lillyoncology.com, (January 26, 2007).

iii American Cancer Society, “What Causes Mesothelioma? Can it Be Prevented?,” January 5, 2007, American Cancer Society, http://www.cancer.org/docroot/CRI/content/CRI_2_2_2X_What_causes_mesothelioma_Can_it_be_prevented_29.asp?nav=cri, (January 26, 2007).

iv American Cancer Society, “How Many People Get Mesothelioma?,” January 5, 2007, American Cancer Society, http://www.cancer.org/docroot/CRI/content/CRI_2_2_1X_How_many_people_get_mesothelioma_29.asp?nav=cri, (January 26, 2007).

v Health & Safety Executive, “Mesothelioma,” November 20, 2006, United Kingdom Health & Safety Executive, <http://www.hse.gov.uk/statistics/causdis/meso.htm>, (February 28, 2007).

vi American Cancer Society, “How Many People Get Mesothelioma?,” January 5, 2007, American Cancer Society, http://www.cancer.org/docroot/CRI/content/CRI_2_2_1X_How_many_people_get_mesothelioma_29.asp?nav=cri, (January 26, 2007).