



Mesothelioma

Pleural Mesothelioma

There are two kinds of pleural mesothelioma: diffuse and malignant (cancerous), and localized and benign (non-cancerous).

Benign [mesothelioma](#) can often be removed surgically and is generally not life threatening. It is usually not related to [asbestos exposure](#). [Malignant mesothelioma](#), however, is very serious and about two thousand people are diagnosed with malignant mesothelioma in the U.S. each year.

Malignant [pleural mesothelioma](#) is a cancer of the cells that make up the pleura or lining around the outside of the lungs and inside of the ribs. The only known cause in is previous exposure to [asbestos](#) fibers, including chrysotile, amosite or crocidolite asbestos. This exposure is likely to have happened twenty or more years before the disease becomes evident, since lies dormant for many years. It is the most common type of mesothelioma, accounting for about 75% of all cases.



Mesothelioma is sometimes diagnosed by chance, before there are any symptoms. Tumors have been discovered through routine chest x-rays. The symptoms that will occur may include shortness of breath, weakness, weight loss, loss of appetite, chest pains, lower back pains, persistent coughing, and difficulty in swallowing. The symptoms will appear alone or in combination. An initial medical examination often shows a pleural effusion, which is an accumulation of fluid in the pleural space - the area between the lungs and the chest wall. The first step in detecting pleural mesothelioma is, typically, a chest x-ray or CT scan. This is often followed by a bronchoscopy, using a viewing scope to look inside the lungs.

The actual diagnosis usually requires obtaining a piece of tissue through a biopsy. This could be a needle biopsy, an open biopsy, or through a tube with a camera (thoracoscopy or chest scope). If an abnormality is seen through the camera then a tissue sample can be taken at the same time, using the same tube. This procedure requires anesthesia, and is usually not painful. A pathologist then tests the tissue sample.

Fluid build-up from the pleural effusion can generally be seen on a chest x-ray and heard during a physical examination, but a firm diagnosis of mesothelioma can only be made through a biopsy and pathological testing. This is important because there are also benign pleural effusions and other tumors that have a similar appearance to mesothelioma.

The spread of the tumor over the pleura can cause pleural thickening. This can reduce the flexibility of the pleura and encase the lungs in an increasingly restrictive shell. With the lungs restricted, they get smaller and less functional, and breathing becomes more difficult. At first a person with mesothelioma may be

breathless only when he or she exercises, but as lung function drops, he or she can get short of breath even when resting.

The tumor spreads by direct invasion of surrounding tissue. As it spreads inward it can compress the lungs. As the tumor spreads outward it can invade the chest wall and ribs, and this can be extremely painful.

Current medical science does not know exactly how and why, at a cellular level, asbestos fibers cause mesothelial cells to become cancerous. It is not known whether only one fiber causes the tumor or whether it takes many fibers. It seems that asbestos fibers in the pleura can start a tumor as well as promote its growth; the tumor does not depend on any other processes for its development.

There is so far no known cure for malignant pleural mesothelioma. The prognosis depends on various factors, including the size and stage of the tumor, the extent of the tumor, the cell type, and whether or not the tumor responds to treatment. Some live for five to ten years after diagnosis, in good health for a majority of those years. Some mesothelioma victims succumb within a few months; the average survival time is about a year.

The treatment options for people with pleural mesothelioma have improved significantly, especially for those whose cancer is diagnosed early and treated vigorously. Many people are treated with a combination of therapies, which is known as multimodal therapy. Specific types of treatment include chemotherapy and other drug-based therapies, [radiation therapy](#), [surgery](#), and intra-operative photodynamic therapy. There are also experimental treatments like gene therapy and immunotherapy, angiogenesis inhibitors, and [clinical trials](#) for various new treatments and combinations of treatments.

Treatments that reduce pain and improve lung function are becoming more successful (although they are not a cure). Pain control medications have become easier to administer. Debulking is a surgical process of removing a substantial part of the tumor and reducing the pleural thickening; this can provide significant relief. X-ray therapy has also been successfully used to control the pleural mesothelioma tumor and the pain associated with it for a while.