Malignant Mesothelioma Causes, Risk Factors, and Prevention

Learn about the risk factors for malignant mesothelioma and what you might be able to do to help lower your risk.

Risk Factors

A risk factor is anything that affects your chance of getting a disease such as cancer. Learn more about the risk factors for malignant mesothelioma.

- Risk Factors for Malignant Mesothelioma
- What Causes Malignant Mesothelioma?

Prevention

There's no way to completely prevent mesothelioma. But there are things you can do that might lower your risk. Learn more.

- Can Malignant Mesothelioma Be Prevented?

Risk Factors for Malignant Mesothelioma

- Asbestos
- Zeolites
- Radiation
- SV40 virus
- Age
- Sex
- Gene changes

A risk factor is anything that increases your chance of getting a disease such as cancer. Different cancers have different risk factors. Some risk factors, like smoking, can be changed. Others, like a person's age or family history, can't be changed. But having a known risk factor, or even many, does not mean that you will get the disease. And some people who get the disease may have few or no known risk factors. Researchers have found some factors that increase a person's risk of mesothelioma.

Asbestos

The main risk factor for **pleural mesothelioma** is exposure to asbestos. In fact, most cases of pleural mesothelioma have been linked to high levels of asbestos exposure, usually in the workplace.

Asbestos is a group of minerals that occur naturally as bundles of tiny fibers. These fibers are found in soil and rocks in many parts of the world.

When asbestos fibers in the air are inhaled, they can get into the lungs. Fibers that stay in the lungs can travel to the ends of the small airways and enter the pleural lining of the lung and chest wall. These fibers can then injure the cells of the pleura, and, over time, cause mesothelioma. Asbestos fibers can also damage cells of the lung and result in **asbestosis** (scar tissue in the lung) and/or lung cancer[1] .

Peritoneal mesothelioma can form in the abdomen when inhaled asbestos fibers are coughed up and then swallowed.

Many people are exposed to very low levels of naturally occurring asbestos in outdoor air. It's in dust that comes from rocks and soil containing asbestos. This is more likely to happen in areas where rocks have higher asbestos content. In some areas, asbestos can be found in the water supply as well as in the air.

In the past, asbestos was used in many products because it was heat and fire-resistant. The link between asbestos and mesothelioma is now well known, and most of its use in

the United States stopped several decades ago, but it's still used in some products.

Still, millions of Americans may already have been exposed to asbestos. People at risk for asbestos exposure in the workplace include some miners, factory workers, insulation manufacturers and installers, railroad and automotive workers, ship builders, gas mask manufacturers, plumbers, and construction workers. Family members of people exposed to asbestos at work can also be exposed because the workers can carry home asbestos fibers on their clothes.

Asbestos was also used to insulate many older homes, as well as commercial and public buildings around the country, including some schools. Because these particles are contained within the building materials, they're not likely to be found in the air in large numbers. The risk of exposure is likely to be very low unless the particles somehow escape into the air, such as when building materials begin to decompose over time, or during remodeling or removal.

The risk of developing mesothelioma is loosely related to how much asbestos a person is exposed to and how long exposure lasts. People exposed at an early age, for a long time, and at higher levels are more likely to develop this cancer. Still, most people exposed to asbestos, even in large amounts, do not get mesothelioma. Other factors, such as a person’s genes or having radiation treatments in the past , may make them more likely to develop mesothelioma when exposed to asbestos.

Mesotheliomas related to asbestos exposure take a long time to develop. The time between the first asbestos exposure and diagnosis of mesothelioma is usually between 20 and 50 years. And the risk of mesothelioma does not go down over time after the exposure to asbestos stops. The risk appears to be lifelong.

For more information, see Asbestos and Cancer Risk[2].

Zeolites

Zeolites are minerals chemically related to asbestos. An example is erionite, which is common in the rocks and soil in parts of Turkey. High mesothelioma rates in these areas are believed to be caused by exposure to this mineral. In the United states, erionite has been detected in Nevada, Oregon, Utah, Arizona, Montana, and South Dakota.

Radiation

There have been a few published reports of mesotheliomas that developed after people

were exposed to high doses of radiation to the chest or abdomen as treatment for another cancer. Although the risk of mesothelioma is higher in patients who have been treated with radiation, this cancer is still rare in these patients.

SV40 virus

Some studies have raised the possibility that infection with simian virus 40 (SV40) might increase the risk of developing mesothelioma. But most experts agree that at this time we still don't know if SV40 is responsible for some mesotheliomas. This important topic is still being researched.

Age

The risk of mesothelioma increases with age. Mesothelioma can occur in young people (even children), but it's rare in people under age 45. About 2 out of 3 people with mesothelioma of the chest are 65 or older.

Sex

Mesothelioma is much more common in men than in women. This is probably because men have been more likely to work in jobs with heavy exposure to asbestos.

Gene changes

A mutation or change in the gene called *BAP1* can be passed in families and has been linked to mesothelioma. But *BAP1* mutations are rare.

Hyperlinks

1. www.cancer.org/cancer/types/lung-cancer.html
2. www.cancer.org/cancer/risk-prevention/chemicals/asbestos.html

References

American Society of Clinical Oncology. Mesothelioma: Risk Factors. 07/2017. Accessed at www.cancer.net/cancer-types/mesothelioma/risk-factors on October 17, 2018.

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Can Malignant Mesothelioma Be Prevented?

Being exposed to asbestos[1] is by far the biggest risk factor for mesothelioma , so the best way to reduce your risk is to limit your exposurear the biggeficultbwww 6ur i,e9l(4 jme9luildg /rT,a

containing material yourself.

Asbestos can also be found in some commercial and public buildings (including some schools), where the same basic principles apply. Intact, undisturbed materials containing asbestos generally do not pose a health risk. They may pose a risk if they are damaged, disturbed in some way, or deteriorate over time and release asbestos fibers into the air. By federal law, all schools are required to inspect materials with asbestos regularly and must have a plan in place for managing them.

Hyperlinks

1. www.cancer.org/cancer/risk-prevention/chemicals/asbestos.html

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Mesothelioma Cancer Alliance. What Is Asbestos? Accessed at www.mesothelioma.com/asbestos-exposure/what-is-asbestos.htm on October 17, 2018.

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