About Mesothelioma

Get an overview of mesothelioma and the latest key statistics in the US.

Overview and Types

If you've been diagnosed with mesothelioma or are worried about it, you likely have a lot of questions. Learning some basics is a good place to start.

- What Is Mesothelioma?

Research and Statistics

See the latest estimates for new cases of mesothelioma in the US and what research is currently being done.

- Key Statistics About Mesothelioma
- What's New in Mesothelioma Research?

What Is Mesothelioma?

- The mesothelium
- Types of mesothelioma

Mesothelioma is cancer that starts in cells in the linings of certain parts of the body,

most commonly the linings of the chest or abdomen (belly).

Cancer starts when cells start to grow out of control. Cells in nearly any part of the body can become cancer. To learn more about how cancers start and spread, see What Is Cancer?[1]

The mesothelium

A layer of specialized cells called mesothelial cells lines the inside of your chest, your abdomen, and the space around your heart. These cells also cover the outer surface of most of your internal organs. The lining formed by these cells is called the **mesothelium**.

The mesothelium helps protect your organs by making a special lubricating fluid that allows organs to slide against each other. For instance, this fluid makes it easier for your lungs to move (expand and contract) inside your chest when you breathe. The mesothelium has different names in different parts of the body:

- The **pleura** covers the lungs and the space in the chest that contains the lungs.
- The **peritoneum** lines the inside of the abdomen and covers many of the organs in the abdomen.
- The **pericardium** covers the heart and the space that holds the heart in the chest.
- The **tunica vaginalis** lines the testicles.

Types of mesothelioma

Mesothelial tumors can start in any of these linings. These tumors can be cancer (malignant) or not cancer (benign).

A cancer tumor of the mesothelium is called **mesothelioma**. This is often shortened to just mesothelioma. Mesotheliomas can start in 4 main parts of the body.

- **Pleural mesotheliomas** start in the chest. More than 3 out of 4 mesotheliomas are pleural mesotheliomas.
- **Peritoneal mesotheliomas** start in the abdomen. They make up most of the remaining cases.
- **Pericardial mesotheliomas** start in the covering around the heart and are very rare.

Key Statistics About Mesothelioma

Mesothelioma is fairly rare in the United States. About 3,000 new cases are diagnosed each year.

The rate of mesotheliomas in the United States increased from the 1970s to the early 1990s, but since then it has leveled off and even gone down slightly. These changes have largely been seen in men, and are probably related to changes in workplace exposures to asbestos. (See Risk Factors for Mesothelioma[1]) The rate of mesothelioma is lower in women and has been fairly steady for some time. In many other countries, the rate of mesothelioma is still increasing.

Mesothelioma is more common in White, Hispanic, and Latino people than in African Americans or Asian Americans.

Mesotheliomas are much more common in older people than younger people. The average age of people diagnosed with pleural mesothelioma (mesothelioma in the chest) is 72.

Information on survival rates can be found in Survival Statistics for Mesothelioma[2].

Visit the American Cancer Society's Cancer Statistics Center[3] for more key statistics.

Hyperlinks

1. www.cancer.org/cancer/types/malignant-mesothelioma/causes-risks-prevention/risk-factors.html
2. www.cancer.org/cancer/types/malignant-mesothelioma/detection-diagnosis-staging/survival-statistics.html
3. cancerstatisticscenter.cancer.org/

References

National Comprehensive Cancer Network, Clinical Practice Guidelines in Oncology (NCCN Guidelines®), Malignant Pleural Mesothelioma, Version 2.2018 -- February 26, 2018. Accessed at www.nccn.org/professionals/physician_gls/pdf/mpm.pdf on October 17, 2018.

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What's New in Mesothelioma Research?

There's always research going on in the area of mesothelioma. Scientists are looking for better ways to prevent, diagnose, and treat mesothelioma, as well as find it before it causes problems.

Because mesothelioma is rare, it's been hard to study it well. Most experts agree that treatment in a clinical trial[1] should be considered for any type or stage of mesothelioma. This way people can get the best treatment available now and may also get the new treatments that are thought to be even better. Most of the new and promising treatments discussed here are only available in clinical trials.

Causes and prevention

The role of asbestos[2]in increasing the risk of mesothelioma is a public health concern. Researchers are learning more about which asbestos fibers can cause cancer, how they cause it, and what levels of exposure might be considered safe. Now that the dangers of asbestos are known, we can limit or stop exposure in homes, public buildings, and the workplace. Unfortunately, regulations protecting workers from asbestos exposure are much less stringent in some countries than in others.

Research is looking for genes that might affect a person's risk for mesothelioma.

Early detection and diagnosis

Mesothelioma is easiest to treat and has the best outcomes if it's found early -- when it's small and hasn't spread. Today, it's hard to find it early. Most of the time it's not

diagnosed until it's big enough to cause problems and a person goes to a doctor for help. Researchers are looking for early detection tests that might help find

studying the use of PDT for mesothelioma.

To find out more, see Photodynamic Therapy[7].

Targeted therapy

Chemo drugs tend to have a limited effect against mesothelioma. In recent years, researchers have learned more about the gene and protein changes in mesothelioma cells that are not found in normal cells. This has led to the development of targeted therapy drugs. These drugs target the changes that make cancer cells different from normal, healthy cells. Some of these types of drugs are _____
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are placed on the skin. The electrodes are attached to a battery pack (kept in a backpack) and are worn for most of the day. They generate mild electric currents that are thought to affect tumor cells more than normal cells.

Side effects of the device tend to be minor, and can include skin irritation at the electrode sites.

Other newer forms of treatment

Because standard treatments often have limited usefulness against mesothelioma, researchers are studying other new types of treatment as well. These are very early studies, and a lot more research is needed before they'll be widely available.

Gene therapy: A newer type of treatment being tested on mesothelioma is gene therapy, which attempts to add new genes to cancer cells to make them easier to kill. One approach to gene therapy uses special viruses that have been modified in the lab. The virus is injected into the pleural space and infects the mesothelioma cells. When this infection occurs, the virus injects the desired gene into the cells. In one version of this approach, the virus carries a gene that helps turn on the immune system to attack the cancer cells.

Vaccine therapy: Other new treatments called cancer vaccines[12]are also aimed at getting the immune system to attack the cancer. In one approach, immune cells are removed from a patient’s blood and treated in the lab to get them to react to tumor cells. The immune cells are then given back to the patient, where it is hoped they will cause the body’s immune system to attack the cancer. Other vaccines being tested carry certain proteins to the cancer cells to keep them from growing. This is a promising cancer treatment, and a lot of different types of vaccines are being studied.

Hyperlinks

1. www.cancer.org/cancer/managing-cancer/making-treatment-decisions/clinical-trials.html
2. www.cancer.org/cancer/risk-prevention/chemicals/agent-orange-and-cancer.html
3. www.cancer.org/cancer/types/malignant-mesothelioma/treating/surgery.html
4. www.cancer.org/cancer/types/malignant-mesothelioma/treating/radiation.html
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11. www.cancer.org/cancer/managing-cancer/treatment-types/immunotherapy.html
12. www.cancer.org/cancer/managing-cancer/treatment-types/immunotherapy/cancer-vaccines.html

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Written by

The American Cancer Society medical and editorial content team (https://www.cancer.org/cancer/acs-medical-content-and-news-staff.html)

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