YOUR COMPLETE GUIDE TO

Pleural Mesothelioma

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Introduction

Learning that you or a loved one is diagnosed with pleural mesothelioma — an incurable and aggressive cancer — is a profoundly distressing experience.

Countless thoughts may be running through your mind: What exactly is mesothelioma? Do I have to get chemotherapy? How will immunotherapy help me? How much will this cost? How long do I have to live?

All of us at The Mesothelioma Center at Asbestos.com, the nation's most trusted mesothelioma resource, sympathize with you because hundreds of husbands, wives, daughters, sons, and military veterans have asked us these same questions—and we've answered them!

That's why we publish "Your Complete Guide to Pleural Mesothelioma." This is our gift to you: A roadmap to help you and your loved ones comprehend all aspects of this rare disease.

Our guide will help you understand your symptoms and treatment options, show you the best mesothelioma specialists and specialty cancer centers in the nation, explain how nutrition plays an essential part in your survival, and how clinical trials could help you and future patients live longer lives.

You can read about our free services, such as our monthly online support group and unique Doctor Match program. The guide also explains how our Veterans Department helps these brave heroes with mesothelioma file their VA benefits claims.

We will also walk you through the legal options that may provide you and your loved one with money to cover lost wages, medical bills, travel, and housing for treatments. While no amount of money can replace a loved one, it can minimize the pain and suffering you and your family may experience.

Call or email our Patient Advocates to learn more about pleural mesothelioma and how we can lessen the emotional and financial burden for you and your loved one.

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What Is Pleural Mesothelioma?

Pleural mesothelioma is a malignant cancer that begins on the pleura, which is the lining around the lungs. It is the most common type of mesothelioma, accounting for 75% of all cases.

Although the prognosis is typically poor — and there is no definitive cure — finding the right specialist will give you or your loved one the best chance of living a longer life to enjoy with family and friends.

Pleural mesothelioma develops after asbestos exposure, a naturally occurring carcinogen. The first symptoms of the disease typically include chest pain and shortness of breath. You or anyone else exposed to asbestos in their lifetime may not experience symptoms during the early stages of the cancer.

A diagnosis may emerge 20-60 years after exposure. Because of its unusually lengthy latency period, the average age of diagnosis is 60. However, much younger patients are developing mesothelioma from exposure to asbestos-contaminated talc products found in baby powder and makeup products.

The life expectancy of someone with pleural mesothelioma is 12-24 months, although some patients live considerably longer for a variety of reasons: Genetics, lifestyle, gender, age, and other factors.

CAUSES

Long-term exposure to asbestos fibers, either occupational, secondhand, environmental or from talc products (baby powder), causes pleural mesothelioma. Dozens of occupations, including construction, firefighting, shipyard repair, roofing, industrial, or power plant work, expose workers to high levels of asbestos.

After a person inhales airborne asbestos, the fibers become lodged in the thin pleural membrane surrounding the lungs. The trapped fibers irritate the membrane, causing chronic inflammation and scarring.

Trapped fibers and scarring may trigger cell genetic changes, making them cancerous. These mutated cells grow uncontrollably, forming aggressive tumors around the lungs.

TYPES

Other types of mesothelioma are less common but still associated with asbestos exposure.

For example, peritoneal mesothelioma forms in the peritoneum, the membrane that lines the abdominal cavity. This type accounts for an estimated 20% of all mesothelioma cases. Pericardial mesothelioma starts in the lining around the heart, accounting for almost 3% of cases.

The rarest form of the disease, accounting for less than 1% of cases, is testicular mesothelioma, which develops in the lining around the testes.

SYMPTOMS

Most doctors struggle to diagnose the disease because early symptoms mirror those of more common, less serious health problems.

Typical pleural mesothelioma symptoms include a persistent dry or raspy cough, shortness of breath, fatigue, night sweats, fever, pleural effusion, unexpected weight loss, difficulty swallowing, and pain in the chest area.

Symptoms often do not become pronounced until the cancer has already spread, making it even more challenging to treat.

“I consider myself extremely lucky for a lot of reasons. I haven’t won the lottery yet, but I’m working on that.”

– Andy A., Survivor

Pleural mesothelioma can be challenging to diagnose because symptoms usually do not arise until long after the first asbestos exposure. Because many diseases of the lungs and respiratory system have the same symptoms as pleural mesothelioma, doctors may misdiagnose it during its early stages, which can prolong a definitive diagnosis.

An early diagnosis is crucial to achieve the best treatment options and survival outlook. After a review of medical and occupational history and a physical examination, patients typically undergo imaging tests that may reveal potentially cancerous tumors. Three primary imaging tests diagnose pleural mesothelioma: Chest X-rays, CT scans and PET scans.

Differentiating pleural mesothelioma from lung cancer is challenging for some doctors. While a patient’s symptoms, history of asbestos exposure, and irregular imaging results may lead doctors to suspect mesothelioma, these signs are not enough to confirm a diagnosis. More reliable ways to diagnose the disease include thoracoscopy, which allows a doctor to view the patient’s chest through a small camera and collect a tissue biopsy. A thoracoscopy evaluates tissue and fluid samples for cancerous cells.

TREATMENT

The latest treatment plans should include chemotherapy, immunotherapy, surgery, radiation therapy, or a combination of these therapies. Clinical trials also help some patients with experimental treatments. Tumor Treating Fields, also known as TTFields, work in combination with chemotherapy to limit cancer growth and improve survival in pleural mesothelioma patients.

Depending on how far the mesothelioma has progressed, these therapies can be cytoreductive (reduction of tumor cells) or palliative (control of symptoms).

Cytoreductive treatments aim to control the cancer, while palliative treatments only address the symptoms and try to improve the quality of life for patients.

Some people with pleural mesothelioma take an integrative approach to treatment by combining complementary therapies — nutrition, acupuncture, osteopathic medicine — with traditional cancer treatment. While complementary therapies cannot cure pleural mesothelioma, they can ease cancer symptoms and reduce treatment side effects.

LEGAL COMPENSATION

A mesothelioma diagnosis may leave you and your loved ones wondering about how you can afford medical bills, recover lost wages, and manage other financial hardships. Choosing the right attorney to represent you

in asbestos litigation is an important first step in ensuring your family's financial future and peace of mind.

You need a specialist to get the compensation you deserve. Just like finding a medical specialist to treat you for mesothelioma, you need an asbestos litigation specialist with a history of successfully securing compensation for his clients. The attorney can explain the avenues of compensation available to you, such as asbestos trust funds, lawsuits, settlements, and other legal options.

MILITARY VETERANS

For much of the 20th century, asbestos was an integral part of the U.S. military because of its ability to insulate and fireproof, a lifesaving quality during war and peace.

Unfortunately, it has led to an exceptionally high rate of mesothelioma among veterans today. Veterans currently make up 6% of the U.S. population, but they account for an estimated 30% of all mesothelioma legal cases.

"My advice to anyone diagnosed is to find a reason like I have to fight and to live, to keep you going."

– Albert S., Survivor

Scan the QR code to learn more about this rare cancer and how it affects the body

Causes and Symptoms of Pleural Mesothelioma

Pleural mesothelioma is caused by exposure to asbestos, which most often occurs occupationally, although environmental and secondhand exposure has also led to the development of this cancer.

Mesothelioma is a cancer that most commonly attacks the lining of the lungs and abdomen. It was almost unheard of until industrial and commercial companies expanded the use of asbestos early in the 20th century.

After decades of investigating the disease and its causes, medical researchers identified one primary culprit: Toxic asbestos fibers.

Medical research studies gradually showed that breathing in minuscule fibers starts a chain reaction of physical and metabolic events that lead to the development of several types of cancers or incurable breathing disorders, such as asbestosis.

Mesothelioma also is challenging to detect in the early stages. The early symptoms mirror those of less serious health problems, often delaying diagnosis and making effective treatments more difficult.

HOW DOES ASBESTOS CAUSE PLEURAL MESOTHELIOMA?

While asbestos exposure is the leading cause of mesothelioma, other elements can play a significant role in this cancer's development. Doctors call these elements risk factors, including any reason that may increase your likelihood of developing cancer.

Mesothelioma Risk Factors

- Working at an asbestos mine or asbestos processing plant
- Working in a high-risk occupational setting, such as the construction or automotive industries
- Serving on military ships or facilities built with products containing asbestos
- Living in a residential area near an asbestos mine
- Disturbing asbestos products during a home renovation without proper safety measures

Apart from risk factors associated with asbestos, other dynamics increase your chances of developing mesothelioma from asbestos exposure.

Only a small number of people exposed to asbestos develop mesothelioma, leading doctors to targeted therapies aimed at specific genetic mutations linked to their type of mesothelioma. Researchers have confirmed that a mutation in a gene called BAP1 increases the likelihood of developing mesothelioma and melanoma in the eye.

Mesothelioma is more commonly diagnosed in men than women. While most patients are in their 60s and above, younger patients are developing the disease from using asbestos-contaminated talc products.

Studies also have shown that smoking is not a risk factor for mesothelioma, but it increases the chances of developing asbestos-related lung cancer. Some studies reveal that people who smoke are as much as 90% more likely to develop lung cancer if they also were exposed to asbestos.

Researchers also found that smoking can weaken the lungs and reduce the body's ability to dispense of asbestos fibers trapped inside. Smoking also aggravates asbestosis, an incurable breathing disorder also caused by asbestos exposure.

WHERE DOES ASBESTOS EXPOSURE OCCUR?

Asbestos once filled countless U.S. homes and businesses as insulation and heat-protecting materials. Throughout the massive construction boom following World War II, it was a key element in thousands of industrial and household products, including drywall, wiring, glues and adhesives, ceiling tiles, cement and shingles, and beauty products containing talc.

Some of these asbestos products remain in old structures and are usually harmless as long as they are not disturbed. Workers were usually exposed to harmful minerals while on the job. Still, others, including their family members, also faced secondary exposures at home and environmental exposures in communities that mined or processed asbestos.

OCCUPATIONAL EXPOSURE

Most harmful asbestos exposures occur at work. These are often called primary exposures. Your risk for asbestos-related illnesses is highest if you work directly with the raw mineral or asbestos-containing products daily.

High-Risk Occupations

- Shipyard workers
- Construction workers
- Power plant workers
- Chemical plant workers
- Industrial workers
- Insulators
- Boiler workers
- Auto mechanics

SECONDHAND EXPOSURE

When the asbestos industry was booming, families of workers exposed to asbestos were at significant risk.

Workers often came home with asbestos fibers on their hair, work clothes, and tools, exposing family members and others to the toxic substance and increasing their risk for related diseases.

The National Institute of Occupational Safety and Health (NIOSH) presented a Workers' Home Contamination Study to Congress that showed families of asbestos-exposed workers have been at increased risk of pleural, pericardial or peritoneal mesothelioma; lung cancer, cancer of the gastrointestinal tract, and nonmalignant pleural and parenchymal abnormalities as well as asbestosis.

PRODUCTS THAT CONTAINED ASBESTOS

Asbestos became a central part of commercial product manufacturing in the U.S. in the early 1800s. Its first widespread use was the lining in steam engines in 1828.

It was cheap, durable, flexible, and naturally acted as an insulating and fireproofing agent. During World War II, the use of these products peaked, and the shipbuilding industry utilized asbestos extensively. From the early 1900s to the 1970s, asbestos remained the ideal material.

Asbestos-containing products stretched across several industries, mainly in construction and automotive materials.

Popular Asbestos Products

- Adhesives (flooring, wallpaper, HVAC systems, stoves)
- Insulation (attics, ceilings, walls, basements)
- Asbestos sheets (roofing and siding, interior walls, ceiling materials)
- Ductwork connectors (floor cavities, crawl spaces, attached garages, attics)
- Floor backing (tiles, vinyl floors, linoleum, sheet flooring, floor adhesives)
- Automotive parts (brake pads, clutches, hood liners, gaskets, valves)
- Cement
- Textiles (blankets, fireman suits, rope)

While the use of asbestos products dropped significantly in recent decades, the threat of exposure still exists, especially in older homes and buildings.

Many uses of asbestos are currently banned in the United States. In 2024, the Biden-Harris Administration finalized the U.S. Environmental Protection Agency's chrysotile asbestos ban under the Toxic Substance Control Act.

This final rule only banned chrysotile asbestos. It also allows for different timelines to phase out particular uses. The ban on aftermarket asbestos automotive brakes and linings, oilfield brake blocks and other vehicle friction products is now in effect.

Restricted-Use Products

- Brake pads
- Automobile clutches
- Roofing materials
- Vinyl tile
- Home insulation
- Corrugated sheeting
- Cement piping

RISKY OCCUPATIONS

Harmful exposures happen in a wide range of occupational settings. Construction work and home renovations can be especially hazardous because many common building materials contain asbestos.

Top At-Risk Occupations

- Construction workers
- Firefighters
- Industrial workers (including mechanics and machine operators)
- Power plant workers
- Shipyard workers
- Navy servicemen

Additionally, asbestos remains in roads, schools, factories, ships, trains, and automobiles across the country.

ENVIRONMENTAL EXPOSURE

Because asbestos is a naturally occurring mineral, people living near areas of large deposits, such as hilly or mountainous regions, also face possible exposures.

Minimal amounts of the mineral can fill the air in these regions, but environmental exposure is most dangerous near asbestos mines.

Two of the most recognized cities for asbestos exposure problems are Libby, Montana, and El Dorado Hills, California. Libby was home to a vermiculite mine contaminated by naturally occurring asbestos. The mine, controlled by W.R. Grace & Company and operated from 1923 to 1990, is responsible for several hundred asbestos-related deaths. The U.S. Environmental Protection Agency in June 2009 declared a public health emergency in the city.

HOW DOES PLEURAL MESOTHELIOMA DEVELOP?

It usually takes heavy, repeated exposures to asbestos for a related cancer to develop, but even minor exposures can be harmful.

Exposure occurs when raw asbestos is inhaled or activities disturb materials containing asbestos and release toxic fibers into the air.

Mesothelioma has a dose-response relationship to asbestos, which means higher doses of asbestos exposure lead to a greater risk of developing mesothelioma. However, no amount of asbestos exposure is considered safe. People should wear personal protective equipment when handling asbestos or a material that could be asbestos.

SYMPTOMS OF PLEURAL MESOTHELIOMA

Early symptoms, such as a persistent cough or fever, often mirror symptoms of less serious problems, making mesothelioma challenging to detect when it is most treatable.

Symptoms of pleural mesothelioma and other asbestos cancers first emerge in small, subtle ways. Some are minor, and others resemble those of other less severe conditions. Other symptoms mirror those of pneumonia, bronchial infection, and COPD.

Common Symptoms

- Shortness of breath
- Exercise intolerance
- Reduced chest expansion
- Persistent, dry hacking cough
- Body aches
- Harsh breathing sounds
- Fever
- Muscle weakness
- Chest pains
- Coughing up blood

These small signals don't become noticeable until 20 to 60 years after your asbestos exposure. This form of cancer takes decades to develop, and symptoms usually don't make an impact on you or your loved one's life until tumors have already started to spread.

Most people who get mesothelioma of any type are diagnosed in stages 3 or 4, which are the later stages of the cancer.

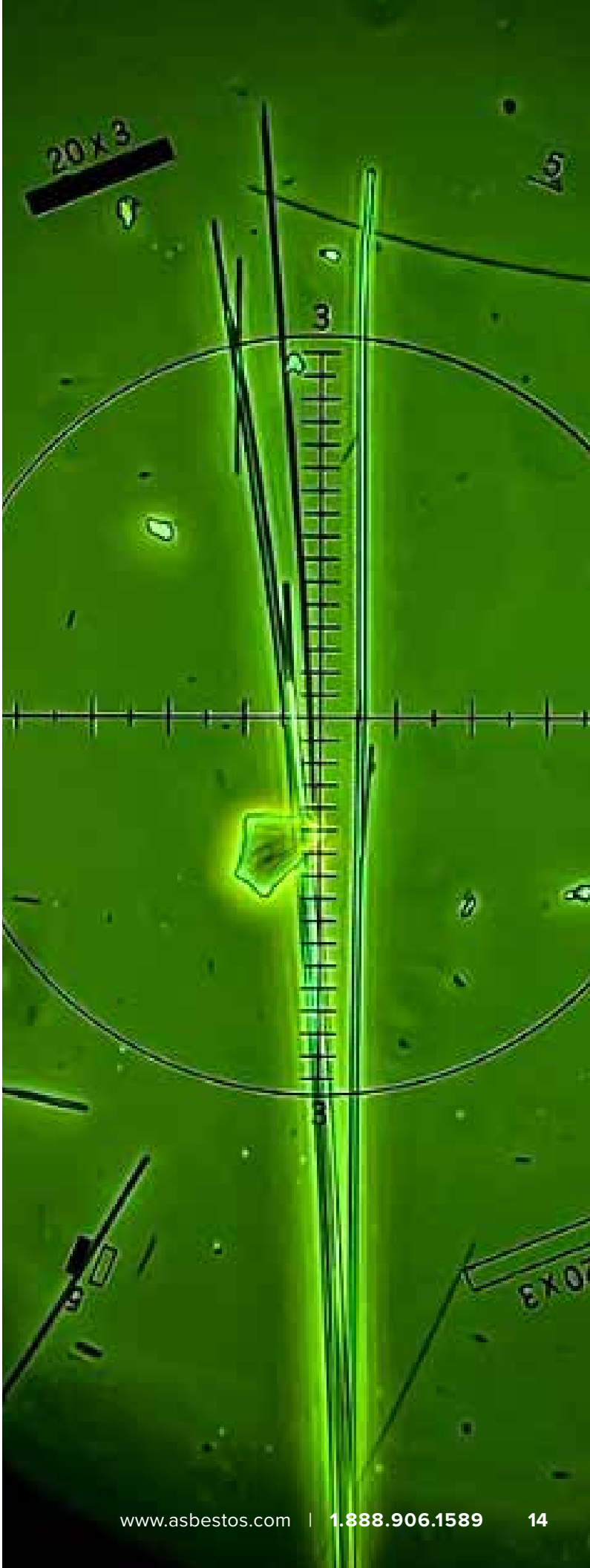
WHAT SYMPTOMS INDICATE PLEURAL MESOTHELIOMA HAS SPREAD?

Many patients don't understand the early symptoms of mesothelioma. They only seek medical advice when symptoms intensify, which is why much of the mesothelioma research today involves finding better ways to secure an earlier diagnosis so it can be treated more effectively. There is considerable support for early screening for those with prolonged, occupational exposure to asbestos.

Symptoms Indicating Cancer Spread

- Dysphagia (difficulty swallowing)
- Pleural effusion
- Superior vena cava syndrome (obstruction of the vein that returns blood from the upper body to the heart)
- Laryngeal nerve palsy (hoarseness)
- Horner's syndrome (nerve damage to the face)
- Hypoglycemia (low blood sugar)
- Nerve involvement of the arm

Scan the QR Code to learn more about causes and symptoms



Occupational Asbestos Exposure

According to the National Institute for Occupational Safety and Health, more than 75 occupational groups have exposed workers to asbestos. The effect of daily exposure throughout a career has led many workers to develop asbestos-related diseases, including mesothelioma, lung cancer and asbestosis.

Asbestos is a mineral that is naturally fibrous and resistant to heat, water, chemicals, and electricity. It is virtually everywhere in the United States.

Throughout the 20th century, asbestos was incorporated into thousands of construction, commercial, and household products, including fire-retardant coatings, concrete and cement, bricks, pipes, gaskets, insulation, drywall, flooring, roofing, joint compound, paints, and sealants.

It exists in electrical appliances, plastics, rubber, mattresses, flowerpots, lawn furniture, hats, and gloves.

ASBESTOS REGULATION

The Biden-Harris Administration in 2024 finalized the EPA's chrysotile asbestos ban under the Toxic Substance Control Act. This final rule only banned chrysotile asbestos. It also allows for different timelines to phase out particular uses.

The prohibition of aftermarket asbestos automotive brakes and linings, oilfield brake blocks, and other vehicle friction products is now in effect. The ban will protect people from lung cancer, mesothelioma, ovarian cancer, laryngeal cancer, and other health problems caused by asbestos exposure.

TOP FIVE AT-RISK OCCUPATIONS

Construction Worker

Thousands of construction products contained asbestos before the 1980s. Demolition crews and home renovators are among the most at risk of exposure. Roofing and flooring materials are still made with asbestos, placing current workers on new projects at risk of exposure.

Firefighter

Fire quickly damages products that may contain asbestos, causing fibers to become airborne. Asbestos was used to make protective firefighter clothing, helmets, and boots. Many firefighters were exposed to asbestos during and after the 9/11 attacks on the World Trade Center. Fire stations built before the 1980s often were constructed with asbestos-contaminated materials. The rate of mesothelioma diagnoses among firefighters is two times higher than the rate in the U.S. population as a whole.

Industrial Worker

Industrial workers include mechanics, foremen, trade laborers, chemical workers, and machinery operators. These workers are often exposed to asbestos products such as asbestos paper, textiles, gaskets, insulation and fireproofing. Industrial insulators are among the industries most at risk of asbestos exposure. Asbestos fibers may have become airborne when laborers use power tools on asbestos products.

Power Plant Worker
Heat-resistant products, such as fireproofing spray and pipe insulation, were the most common sources of asbestos exposure. Cutting old asbestos pipes remains an exposure threat to power plant workers today. A study found nearly 33% of power plant workers had asbestos in sputum samples. The average age of all energy workers is 50. Studies have shown an increased risk for mesothelioma, lung cancer, and asbestosis in power plant workers.

Shipyard Worker
Shipyards are dangerous places because asbestos is commonly used throughout ships. It was used to insulate boilers, incinerators, hot water pipes, and steam pipes. Boiler workers and those working on the construction, demolition, and repair of vessels experienced the most asbestos exposure. Shipyard workers carried a mortality rate from asbestosis that is 16 times higher than the average for other occupations. During WWII, approximately 4.5 million people working in shipyard occupations may have been exposed to asbestos.

Shipbreaking workers now face the dangers of asbestos exposure as they tear down old vessels.

HIGH-RISK OCCUPATIONS

Workers in high-risk jobs tend to handle asbestos in significant concentrations regularly.

Mining is the profession with the most significant potential for dangerous asbestos exposure. Although asbestos is no longer mined in the U.S., many American miners over the years have suffered from asbestosis, lung cancer, and mesothelioma because asbestos contaminated the substances they mined.

High-Risk Industries

- Construction
- Ship and boat building and repairing
- Agricultural
- Industrial and chemical
- Railroads
- Hospitals
- Miscellaneous nonmetallic mineral and stone products
- General government (not elsewhere classified)
- Blast furnaces, steelworks, rolling and finishing mills
- Electrical light and power
- Elementary and secondary schools
- Other manufacturing industries

According to NIOSH, construction jobs were listed on the death certificates of almost 25% of workers whose deaths were caused by asbestosis.

MODERATE-RISK OCCUPATIONS

Moderate-risk jobs involve working directly or indirectly with asbestos materials. The concentration of asbestos fibers in such working environments can range from low to high and may vary by day and job site.

Some jobs in this category expose workers to low levels of asbestos, but the frequency is enough for workers to inhale or ingest harmful amounts of asbestos over time. Other jobs may infrequently expose workers to high levels of asbestos. Regardless of the concentration, asbestos fibers can accumulate in the body over time and cause biological changes that lead to cancer.

Moderate-Risk Jobs

- Auto mechanics
- Blacksmiths
- Carpenters
- Cement plant workers
- Chemical plant workers
- Engineers
- HVAC mechanics
- Electricians
- Linotype technicians
- Metal workers
- Oil refinery workers
- Paper mill workers
- Plumbers
- Railroad workers
- Steel mill workers

LOW-RISK OCCUPATIONS

Low-risk jobs infrequently expose workers to asbestos. The concentration of asbestos in the workplace may be low or moderate. It may spike if a more dangerous project, job site, or product is encountered. Even low-level asbestos concentrations can cause mesothelioma if someone is exposed regularly for years.

Low-Risk Jobs

- Aircraft mechanics
- Appliance installers
- Hairdressers
- Teachers
- Navy servicemen

Because asbestos was commonly used in building battleships and destroyers throughout most of the last century, many Navy veterans were exposed to asbestos as shipbuilders or sailors. All divisions of the U.S. armed forces used asbestos to construct buildings, aircraft, and automobiles.

DEMOLITION CREWS

Another occupation that places workers at risk for asbestos exposure is asbestos remediation and decontamination. As older buildings with asbestos in their walls, floors, attics, ceilings and roofs are dismantled, demolition crews, bulldozers and crane operators, and other laborers can become exposed to asbestos dust.

Call or visit a local OSHA office to file a complaint if an employer isn't providing safe conditions to protect workers from asbestos exposure.

OTHER AT-RISK OCCUPATIONS

- Aerospace workers
- Bakers
- Brake and clutch manufacturers
- Building inspectors
- Contractors and building managers
- Excavator
- Floor coverers
- Glass factory workers
- Job and die setters
- Longshoremen
- Machinists
- Mixing operatives
- Packing and gasket manufacturing workers
- Painters
- Protective clothing manufacturers
- Refinery workers
- Road workers
- Rubber workers
- Sawyers
- Technicians
- Tile setters
- Tinsmiths
- Toll Collectors
- Warehouse workers
- Weavers

Employers must provide safe working conditions and protective clothing and equipment to employees working around asbestos.

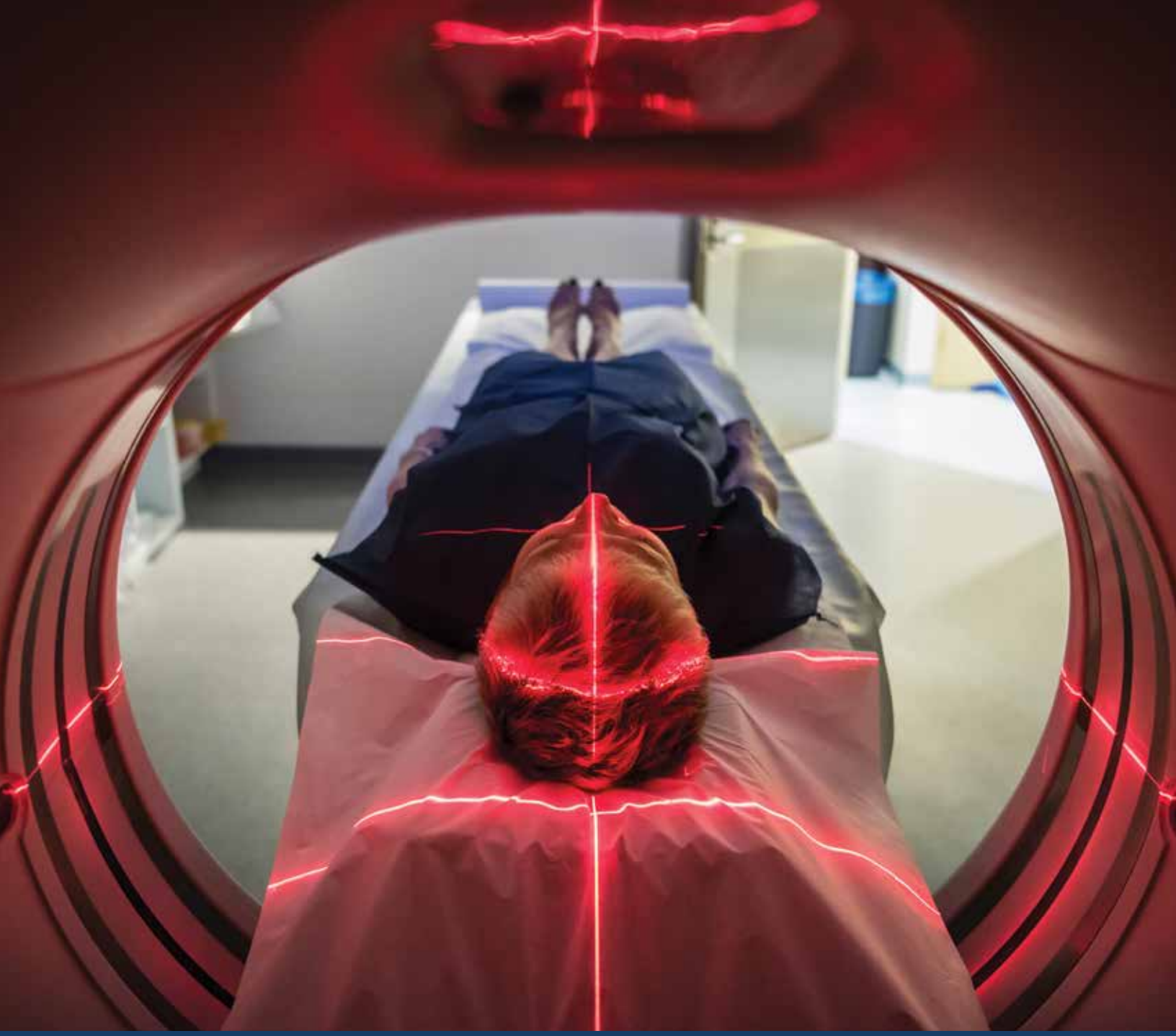
Scan the QR Code to learn more about occupational asbestos exposure

"I would go down there with him, and it was very dusty in the boiler room. There would be chunks of gray, fibrous stuff down there. I didn't know what it was, but I'd pick it up and play with it. I couldn't believe it. When I did my research and found out they knew asbestos caused aggressive cancer, I couldn't believe they were still putting it in things and houses."

– Carla F., Survivor

"In 1981, I graduated and got a job at Northeast Sheet Metal in Lawrence, Massachusetts, and at that time, during the '80s, they were renovating a lot of old mills into condominiums. There were just a lot of old buildings that I worked in. I also worked on old boilers, which were encased in asbestos. At that time, asbestos was considered a state-of-the-art insulator. It was fireproof."

– Joey B., Survivor



Diagnosing Pleural Mesothelioma

Early diagnosis is the key to having the best possible outcome with pleural mesothelioma.

Diagnosing the cancer in its earliest stages supports a broader range of treatment possibilities that could extend your life expectancy.

Should you have a history of asbestos exposure and notice early symptoms, make sure to inform your physician about your exposure. Providing this information will allow for the appropriate testing to diagnose pleural mesothelioma.

The most common symptoms of pleural mesothelioma include chest pain and difficulty breathing. These symptoms generally start to appear 20-60 years after asbestos exposure. If you or a loved one has a history of occupational asbestos exposure, you should remain watchful for these symptoms and report them to your doctor immediately. Providing your doctor with a comprehensive work history can hasten the diagnostic process.

WHAT STEPS LEAD TO A MESOTHELIOMA DIAGNOSIS?

Diagnosing mesothelioma can be challenging because signs of the disease are similar to other conditions. If you and your doctor have discussed your history of asbestos exposure and symptoms, they may suspect mesothelioma.

KEY TESTS TO DIAGNOSE MESOTHELIOMA

Medical history and physical exam: Discuss your complete history with your doctor who will perform a physical exam to identify signs of mesothelioma.

Blood tests: They can show unusual blood cell counts and some markers for mesothelioma but can't detect mesothelioma cancer cells.

Imaging tests: Seeing tumor size, location, and spread on PET scans, X-rays, CT scans and MRIs can help identify the stage of cancer progression.

Fluid analysis: Fluid is removed in procedures like thoracentesis and paracentesis. Analysis of cells in this fluid can help diagnose mesothelioma.

Biopsies: Common procedures for collecting tissue or tumor samples include needle biopsy, thoracoscopy with VATS, laparoscopy, and mediastinoscopy.

A biopsy is the most crucial test in confirming a mesothelioma diagnosis. A pathologist will use a microscope to study the tissue or tumor sample collected during your biopsy and write up their findings. Pathology reports show the specific type of mesothelioma cells in your sample. The type of mesothelioma cell can affect your prognosis and treatment plan.

FIRST DIAGNOSTIC APPOINTMENT

Most patients visit their primary care physician several months after noticing something wrong with their health. They might be experiencing abdominal or chest pain. Other times, they have an unexplained acute shortness of breath or trouble catching their breath after light exertion.

TO PREPARE FOR YOUR FIRST APPOINTMENT:

- Assemble all necessary documents, including insurance cards and ID.
- Make a mental note to discuss any occupational or secondary asbestos exposure you may have experienced, including length, time, and location of exposure.
- Plan to spend 1 hour at the doctor's office.

This initial consultation often includes:

- Medical history review
- Occupational history review
- Basic physical exam
- Discussion of symptoms

WHAT TESTS DIAGNOSE MESOTHELIOMA?

Doctors will start the diagnostic process by asking about your medical history and performing some standard physical exams. If cancer is suspected, they will order imaging and lab tests, and then you may be referred to an oncologist.

Pleural mesothelioma specialists utilize several diagnostic tools to confirm mesothelioma accurately.

IMAGING TESTS

A pleural mesothelioma diagnosis relies on a series of diagnostic imaging tests, including:

X-rays: Produce basic images of dense areas (such as tumors) within the body
CT scans: Use electromagnetic imagery to create detailed images of internal structures
MRIs: Generates images of highly active internal structures using magnets and radio waves
PET scans: Highlight areas of the body with abnormally high, potentially cancerous metabolic activity

A different medical professional performs each of these tests. Most people get diagnosed within two or three months of being seen for their symptoms.

Most doctors consider CT scans their first choice, while the gold standard for a mesothelioma diagnosis is a combination of CT and PET scans.

With results from both tests, doctors can get a detailed look inside your body and see whether suspicious growths are cancerous or noncancerous. Potentially cancerous growths will light up on PET scans but not on CT scans or MRIs.

Many pleural mesothelioma diagnoses are made incidentally when doctors use other types of scans to identify an unknown condition.

BIOPSIES

Biopsies can reveal whether a growth is cancerous, where in the body the cancer originated, and what type of cells are involved. The cancer's location and cell type play a major role in planning treatment. Doctors can retrieve biopsy samples in several different ways:

Fine-Needle Aspiration: Cells are extracted with a thin, hollow needle and a syringe.
Thoracoscopy: Doctors insert a tube equipped with a camera through the chest wall to take samples.
Mediastinoscopy: These are similar to thoracoscopies, except doctors insert the tube through an incision in the neck.
Incisional/Core: These are similar to fine-needle biopsies, but doctors use a wider needle to obtain larger samples.
Excisional: Surgeons remove the whole tumor from the body and test selected samples from the mass.
Thoracentesis: The surgeon draws out liquid from pleural effusions to obtain cytology.
Video-Assisted Thoracoscopy: VATS is a more complex type of thoracoscopy. VATS can collect large samples from multiple sites in the chest.

Thoracoscopy is the most accurate diagnostic biopsy for mesothelioma because it allows doctors to look into the pleural cavity and retrieve high-quality biopsy samples. It can accurately diagnose up to 98% of mesothelioma patients.

BLOOD TESTS

While imaging tests and tissue biopsies are the most common methods for diagnosing mesothelioma, blood tests can help doctors identify the disease. These blood tests look for certain indicators of disease, known as biomarkers, in a patient's blood.

Common blood tests include MESOMARK, SOMAmer, and Human MPF. Early studies suggest these blood tests have the potential to help diagnose mesothelioma, but they are not yet reliable enough to confirm a diagnosis on their own.

MISDIAGNOSIS

Pleural mesothelioma is such a rare and complex cancer that getting an accurate diagnosis often requires an experienced specialist who understands all of its intricacies.

Physicians and oncologists who rarely see it and don't fully understand how it works often misdiagnose the cancer, leading to unnecessary delays in developing a comprehensive treatment plan.

The initial symptoms of pleural mesothelioma can resemble other conditions, such as pneumonia, making it common for the cancer to be misdiagnosed as a nonterminal condition.

As the cancer progresses and more serious symptoms develop, increasingly advanced testing becomes warranted, which leads to an accurate diagnosis.

However, mesothelioma can also be misdiagnosed as other forms of cancer, most commonly a type of lung cancer called adenocarcinoma that develops in mucus-secreting glands. Expert pathologists at the Centers of Excellence are the best specialists to diagnose pleural mesothelioma and avoid misdiagnosis.

Working with a cancer center that specializes in mesothelioma can confirm or deny the diagnosis. The professionals working at such cancer centers have the experience thatís necessary to diagnose the disease accurately.

Possible Pleural Mesothelioma Diagnosis Timeline

Day 1:
Initial symptoms, such as shortness of breath, fatigue, and chest pain, are common. The doctor might order X-rays.

Day 2:
Nonspecific changes on X-ray can lead to misdiagnosis of more benign illnesses.

Day 3 – Day 13:
The physician prescribes antibiotics to treat pneumonia (10-day treatment) or drains fluid in the pleural cavity. No cancer cells are detected in the fluid.

Day 14:
X-rays after treatment show lungs are clear. The doctor orders follow-up X-rays and asks patient to return in 30 days.

Day 44:
Follow-up X-rays show a fluid buildup in the pleural cavity again. The doctor either drains fluid, which may again test negative for cancer cells, or treats the pneumonia with antibiotics again (add 10 days). The doctor orders PET scans and CT scans that can prompt further diagnostic testing.

Day 54:
Imaging scans show a possible underlying cause of recurrent pneumonia. The patient is referred to a surgeon for an appointment, which can take u p to 15 days.

Day 69:
The surgeon schedules a biopsy appointment, which can take up to 10 days.

Day 79:
The surgeon takes a biopsy, usually via VATS, and typically requires a three-day hospital stay for the patient. Lab work to confirm mesothelioma can take up to two weeks if the surgeon sends the biopsy to a Center of Excellence for a pathologist to review.

Day 89 (approximately three months since initial symptoms):
Mesothelioma is confirmed if a biopsy tests positive for the disease.

Scan the QR Code to learn more about how mesothelioma is diagnosed.

Pleural Mesothelioma Prognosis

Cancer specialists diagnose less than 3,000 new mesothelioma cases annually in the United States. When they confirm the existence of asbestos cancer, they quickly turn to prognosis.

Your mesothelioma prognosis or outlook depends mostly on your stage and type of cancer. Improving that prognosis can depend on finding a specialist with experience treating your form of the disease.

Pleural mesothelioma is a difficult disease to treat. And while there are many aspects to it that you can't control, there are things you can do to help improve your quality of life and possibly improve your survival.

MESOTHELIOMA PROGNOSIS STATISTICS

Survival Rates: The latest SEER report says the 5-year mesothelioma survival rate is 24% for early-stage cases and 9% for advanced stages.

Life Expectancy: Average life expectancy for mesothelioma patients is 22.2 months for stage 1 and 14.9 months for stage 4.

Mortality Rate: The mesothelioma mortality rate is around 8 deaths per million people.

Choosing mesothelioma treatment can improve the prognosis. Ongoing cancer treatment can help keep mesothelioma under control. Some patients live more than a decade after therapy.

FACTORS THAT AFFECT YOUR PROGNOSIS

Your mesothelioma prognosis depends on several factors, including your age, gender, overall health, history of asbestos exposure, and stage of your cancer.

Unique qualities of your cancer at the time of diagnosis, such as the exact type of cancer you have, its cellular subtype, stage, and whether your cancer has spread, are all equally important in shaping prognosis.

These factors also determine the treatments your doctor will recommend.

Type of Mesothelioma

Only 10% of pleural mesothelioma patients survive more than five years.

Stages

The size of a tumor and how far it has spread (metastasized) from its original location affects prognosis. Doctors typically discuss tumor size and the extent of cancer's spread in terms of stages, ranging from 1 to 4 in order of increasing severity. Patients with stage 1 or stage 2 (early-stage cancer) will typically have a better prognosis than patients with stage 3 or stage 4 (advanced).

Cell Type

Patients with epithelioid mesothelioma, which is a less aggressive type, generally have a better life expectancy than those with sarcomatoid or biphasic subtypes.

Health

People in otherwise good health may qualify for more intensive treatments. On the other hand, if you have pre-existing health issues, you may not be able to tolerate aggressive treatment. If you're a smoker, it's recommended you quit smoking, which impairs the immune response to asbestos damage and the lungs' ability to remove asbestos fibers.

Other Factors

Additional factors, such as age, gender, and history of asbestos exposure, can also affect your prognosis. Women tend to have a slightly better prognosis than men.

IMPROVING AND BEATING YOUR PROGNOSIS

While you can't change important prognostic factors, such as your age, gender, or cancer stage, you can choose to be proactive and take steps to improve your prognosis. With advances in treatment and care for pleural mesothelioma patients, beating the typical prognosis is happening more frequently. Survivors credit increased life spans to multimodal treatment, improvements in nutrition, and complementary medicines.

Those diagnosed early in the cancer's development have the best prognosis and longest survival. Treatment is more successful if doctors can diagnose the disease before it spreads to lymph nodes and other parts of the body.

Treatment at a Center of Excellence by dedicated mesothelioma experts can also improve prognosis as they are well-versed in the management of mesothelioma.

Enrolling in a clinical trial might improve your prognosis. The development of the newest treatments in the last five years were all outcomes of clinical trials to expand treatment options for patients with mesothelioma. These studies test experimental therapies that may be more effective than traditional treatment options.

Once you've started treatment, you can take a few extra steps to improve your chances of recovery. If you're a smoker, find a cessation program. Smoking increases your risk of lung complications if you opt for surgery, so you should stop immediately.

You can also talk to an oncology dietitian about strengthening your body through your diet, or ask your practitioner about complementary therapies that can help control your symptoms.

"I'm at four years and counting right now, and I am still doing well. Does that sound like five to nine months?"

— Richard D., Survivor

Scan the QR Code to learn more about survival and outlook

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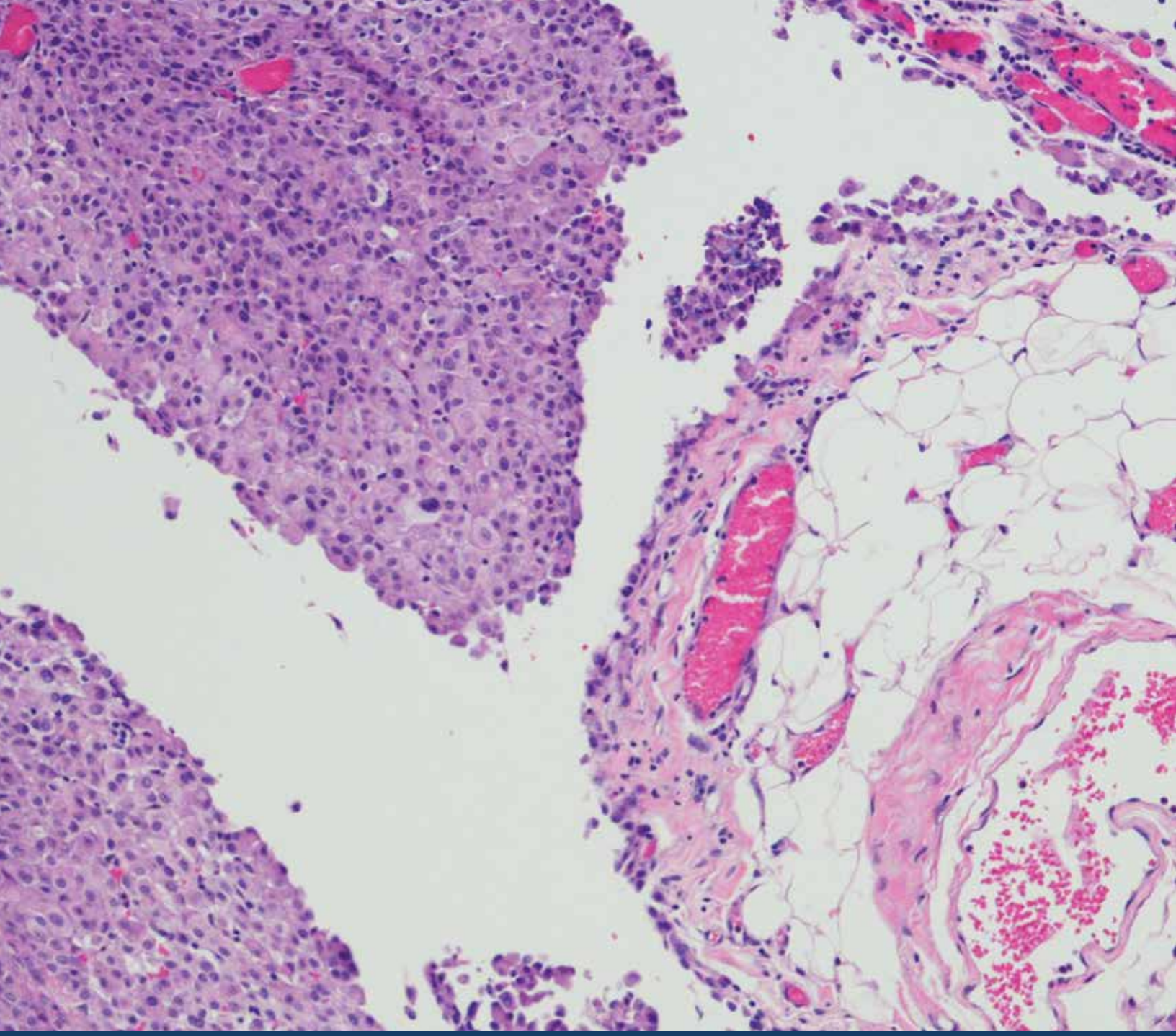


Pleural Mesothelioma Cell Types

The characteristics of your cancer, even at the cellular level, can have a significant impact on your prognosis.

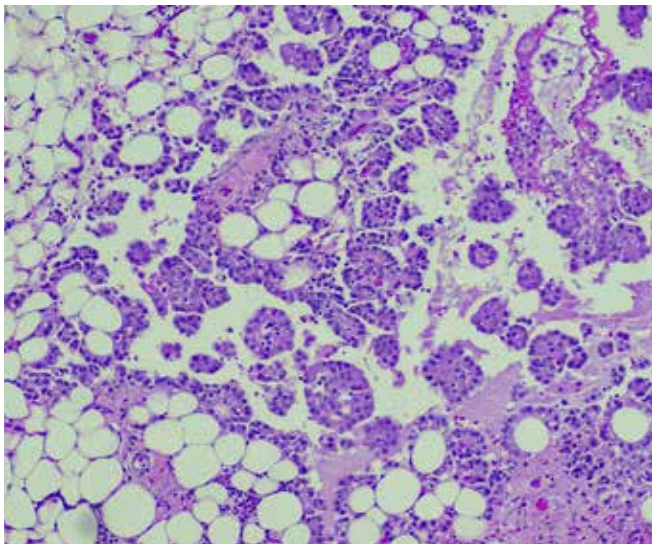
The types of pleural mesothelioma cancer cells include epithelioid, sarcomatoid, and biphasic. Each cellular type responds to different treatments and affects the individual patient's prognosis, so an accurate diagnosis of cancer cell type is essential to develop an effective treatment plan tailored for you.

Studying tissue samples after treatment can also provide insight into the effectiveness of chemotherapy drugs and other treatments.

EPITHELIOID

Epithelioid mesothelioma accounts for 50% to 70% of all diagnosed cases. If your tumor mainly comprises epithelioid cells, which are epithelial cells that turned cancerous, you may respond better to treatment and receive a more favorable outcome than patients with other cell types.

Epithelioid cells form the epithelium, the most common of the four major tissue types in humans. Epithelial tissue lines several major body cavities and most of our organs, including our skin, eyes, taste buds, and ears. Its functions include protection, sensory perception, and fluid secretion.



High-scale magnification of epithelioid mesothelioma cells.

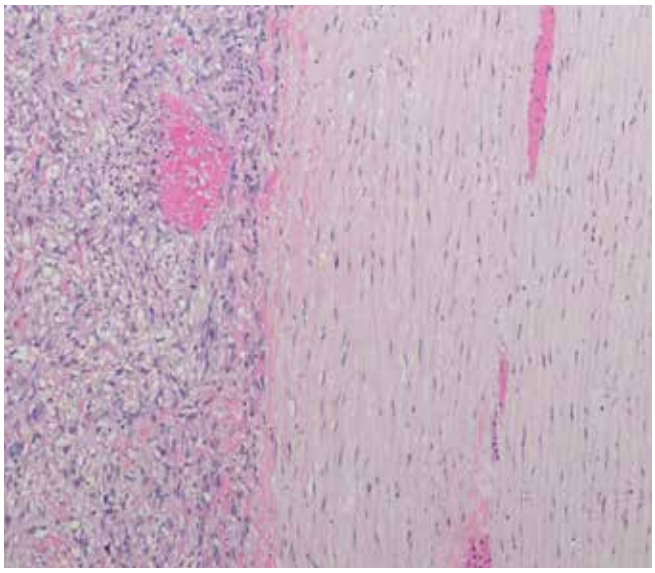
The structure of epithelial tissue will vary depending on its location and function. The epithelial cells may appear thin and flat, shaped like cubes or hexagons, or tall and column-like. The epithelial cells can take on several visual patterns when they turn malignant. Usually they lose uniformity or otherwise become atypical in appearance, but they can also form small tubes or clusters that resemble a raspberry.

Because epithelioid cells lack mobility and adhere closely together, they are less likely to spread to distant locations. Epithelioid cells primarily spread to nearby lymph nodes and then migrate locally via the lymphatic system.

A particular type of epithelioid mesothelioma occurs more commonly in women, and it is known as well-differentiated papillary mesothelioma. No other cell type is associated with a specific gender, age, or race.

Epithelioid cells cannot be identified with diagnostic imaging scans such as X-rays, CT scans, MRIs and others. Only a thoracoscopy or similar surgical biopsy will determine which cell type is present.

Doctors often use a mix of chemotherapy, immunotherapy and surgery to treat epithelioid mesothelioma. A treatment plan for mesothelioma should include two or more types of therapy. No single treatment can fully control cancer. Using different therapies together can help patients live longer.



High-scale magnification of sarcomatoid mesothelioma cells.

SARCOMATOID

Sarcomatoid cells are the least common mesothelioma cell types and most resistant to cancer therapies.

This type of tumor is also called sarcomatous, diffuse malignant f ibrous, and spindled mesothelioma.

These cells appear elongated and spindle-shaped. They often form a fibrous pattern that resembles a tumor called histiocytoma.

Some epithelioid cells may be present within sarcomatoid tumors, but by definition, they must make up less than 10% of the tumor's mass. Like most other types of the disease, the sarcomatoid cell type is linked to asbestos exposure.

Diagnosis is challenging because the cells can resemble those of other cancers. Treatment will mostly depend on the cancer's type, stage, and overall health.

When pathologists examine these tissue samples under a microscope, the cells resemble those of sarcoma tumors and localized fibrous tumors of the pleura. Because of the aggressive nature of this tumor type, prognosis is not as favorable as other cell types, and treatment options are not as plentiful. The poor survival rates of this cell type make accurate diagnosis even more imperative.

The primary treatment options for this cell type are chemotherapy, immunotherapy, and radiation therapy.

Sarcomatoid cells are more resistant to treatment than other types of mesothelioma. Surgery, in particular, can be complicated because these tumors are rigid and often metastasize to the chest wall, making them especially difficult to remove.

Research from Brigham and Women's Cancer Center in Boston identified a distinct spectrum of genetic mutations in pleural mesothelioma tumors, particularly in patients with the sarcomatoid cell type. The study identified a highly expressed molecule (PD-L1), representing a defined target for a cancer immunotherapy pathway.

BIPHASIC

Malignant mesothelioma is considered biphasic when epithelioid and sarcomatoid cells are present, and each type accounts for at least 10% of the tumor's mass. Biphasic (mixed) cells are present in 20% to 35% of all mesothelioma cases, making it the disease's second most common cell type.

The ratio of epithelioid to sarcomatoid cells will influence how aggressively the cancer grows. Treatment will depend upon the cancer's stage, how quickly it is growing, and your overall health.

In biphasic cases, epithelioid and sarcomatoid cells can exist in close proximity or, more frequently, within distinctly separate areas of a tumor.

Malignant biphasic mesothelioma can be difficult to detect and diagnose because, during a biopsy, doctors may collect only a small tissue sample to study in the lab. Taking samples from just one location offers a limited view of the type and amount of mesothelioma cells involved.

Doctors can make a more accurate diagnosis by taking tissue samples from several parts of the tumor.

Because biphasic cells have a slightly poorer prognosis than epithelioid cells, patients with the biphasic cell type may not be considered for aggressive treatment, as would epithelioid patients. However, treatment is not completely based on cell type, and most patients undergo one or more therapies.

The more epithelioid cells you have in a biphasic mix, the better your prognosis may be.

"The survival rate for epithelial patients is overall significantly longer. Epithelial cell type is the best mesothelioma cell type to have. This patient will have more options, such as surgery, and is more likely to respond to treatment."

– Karen Selby, Registered Nurse

"When I speak with a patient who is hesitant to have a biopsy, which is rare, I explain that diagnosing the cell type is imperative for assessing treatment options."

– Danielle DiPietro, Patient Advocate

Scan the QR Code to learn more about mesothelioma cell types

Spread of Pleural Mesothelioma & Staging

Staging is an accepted way for cancer doctors to describe to patients and to one another how advanced the disease is, how prevalent tumors are, and how far the cancer has spread.

Given the aggressive nature of pleural mesothelioma, staging is a key part of proper diagnosis and treatment.

There are four primary stages of pleural mesothelioma that doctors use to identify the seriousness of a diagnosis. They are labeled stages 1, 2, 3 and 4. The lower the number, the more treatment options you have, and the better your chances are for long-term survival.

Knowing where cancer is in its development sets the table for the types of treatment options available to you. For example, doctors use the cancer stage as a guideline when deciding whether you will likely benefit from surgery.

If you are healthy enough for aggressive treatment and doctors believe all visible signs of cancer can be removed entirely, they say the cancer is resectable and will likely recommend a treatment plan for you involving surgery.

However, if the spread of cancer is too advanced and it can't be removed completely, the cancer is termed unresectable. In this situation, doctors will recommend other treatment options for you, including chemotherapy, clinical trials, or palliative care.

Stage 1 pleural mesothelioma is generally resectable, as are some other types diagnosed at stages 2 and 3. But by stage 4, the cancer can't be removed completely with surgery. The cancer's subtype can also affect treatment options because surgery isn't the best option for all types of mesothelioma.

The stage of cancer is vital information for oncologists who treat pleural mesothelioma, but all experts agree universally on one principle: It's preferable to catch cancer, specifically mesothelioma, in the earliest stage possible.

STAGING SYSTEMS

The preferred staging system doctors use for pleural mesothelioma is the TNM system, which stands for Tumor, Node, and Metastasis. This system, also commonly used for other cancers, classifies mesothelioma into four stages.

TNM Staging System

Doctors use the TNM system to stage different types of cancer. The abbreviation TNM signifies three different parts of a diagnosis:

- (T) Tumor size and location
- (N) Lymph nodes affected
- (M) If tumors have metastasized

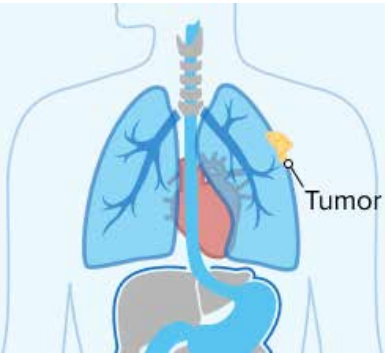
Doctors add a number after each letter to describe how far the cancer has advanced. The number increases as tumor size increases, and the cancer invades more structures.

The 9th edition of the TNM system, released in January 2025, includes updates that improve staging accuracy. These changes provide specialists with better tools to understand how mesothelioma develops and which treatments may be most effective.

Dr. Jeffrey Velotta, a pleural mesothelioma expert and thoracic surgeon says, "The new TNM staging system for pleural mesothelioma standardizes tumor measurements which can help improve treatment guidelines and prognostic information."

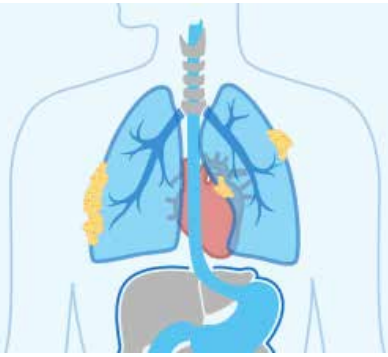
TREATMENT OPTIONS AND LIFE EXPECTANCY FOR EACH STAGE

Treatment options for each stage depend heavily on cell types. Patients in stages 1 and 2 are typically candidates for curative treatment, while palliative treatment is offered to patients in the later stages.

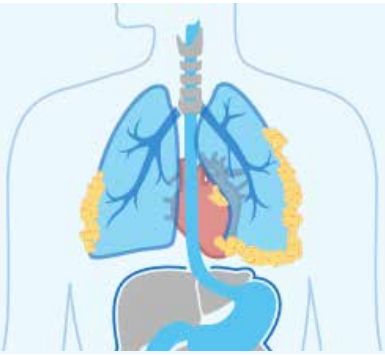


Stage 1:
Curative surgery to remove the tumor is considered the first line of treatment, and doctors usually recommend aggressive treatment that includes chemotherapy and radiotherapy. Life expectancy at stage 1 is about 21 months or more.

Stage 2:
Several treatment options are available. Doctors can usually offer curative surgery to remove tumors. In studies, some patients diagnosed at this point survive for years. Life expectancy at stage 2 is 19 months to 27 months.



Stage 3:
Tumors typically do not respond to potentially curative treatment, and some stage 3 cancer patients will find themselves ineligible for surgery. At that point, doctors offer palliative options such as chemotherapy and radiation therapy. Life expectancy at stage 3 is 16 months to 56 months.



Stage 4:
Doctors don't recommend aggressive surgeries. Instead, they fall back on palliative treatments designed to ease pain and control symptoms. Life expectancy at stage 4 is 12 months to 26 months.

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Treating Pleural Mesothelioma

Doctors offer four primary types of treatment to patients with mesothelioma: Chemotherapy, immunotherapy, surgery and radiation. The type of treatment you receive will depend on your diagnosis, the stage and cell type of your disease, and your overall health.

The American Society of Clinical Oncologists released updated treatment guidelines for pleural mesothelioma in January 2025. The updates introduce important changes to the current approach to treatment options in key areas: Immunotherapy, combination therapies, radiation, and surgery.

IMMUNOTHERAPY

The updated guidelines reflect a shift in favor of immunotherapy over chemotherapy as a first-line treatment for many patients with pleural mesothelioma. This is based on clinical trial data showing that immunotherapy improved overall survival.

The U.S. Food and Drug Administration approved the immunotherapy drug Keytruda (pembrolizumab), along with pemetrexed and platinum chemo, as a first-line treatment for unresectable advanced or metastatic malignant pleural mesothelioma.

FDA also approved immunotherapy drugs Opdivo (nivolumab) and Yervoy (ipilimumab) for certain pleural mesothelioma patients. Clinical trials are testing different checkpoint inhibitors to see if the response can lead to increased treatment options. Advances in targeted therapy are giving hope that we will have more specialized treatments based on genetic components of individual tumors.

CHEMOTHERAPY

Chemotherapy for mesothelioma uses drugs like pemetrexed, carboplatin, and cisplatin to kill cancer cells. Administered through IV every 21 days, these drugs can shrink tumors, slow cancer, relieve symptoms, and improve quality of life.

"In general, chemotherapy drugs disrupt the division of cells that divide quickly," Dr. J. Marie Suga, an oncologist in California, told us. "This prevents cancer cells from replicating and growing."

HITHOC, also known as hyperthermic intrathoracic chemotherapy, is a specialized chemotherapy treatment for pleural mesothelioma. It involves administering heated chemotherapy drugs directly into the chest cavity during surgery, targeting and killing cancer cells.

SURGERY

Traditionally, pleural mesothelioma surgeries include aggressive extrapleural pneumonectomy and pleurectomy/ decortication. But the results from the 2024 Mesothelioma and Radical Surgery II clinical trial, also known as MARS2, show P/D with chemo resulted in worse survival, higher rates of side effects and poorer quality of life.

However, cytoreductive surgery can still be considered for highly selected patients with early-stage epithelioid disease evaluated by a multidisciplinary team and undergoing appropriate clinical staging, according to a 2025 study published in the American Journal of Clinical Oncology.

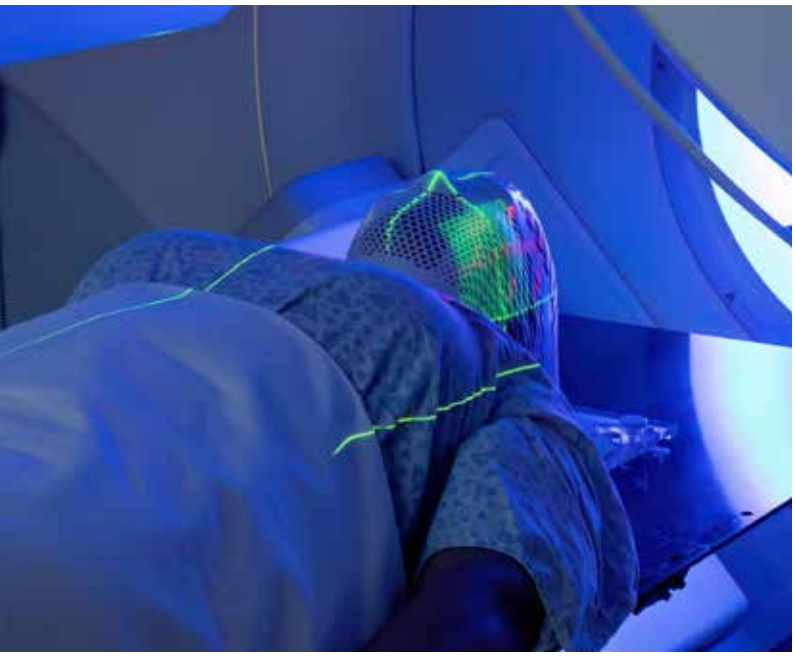
These aggressive surgeries are best performed at experienced Centers of Excellence with documented low morbidity and mortality rates.

RADIATION THERAPY

Radiation therapy for pleural mesothelioma uses ionizing radiation, which consists of high-energy X-rays or particles. The goal is to damage the DNA of cancerous cells and kill them. This treatment can extend survival and relieve pain for people with pleural mesothelioma. The therapy results in tumor shrinkage and helps prevent cancer recurrence and spread.

Radiation treatments for mesothelioma include external and internal therapies. External beam radiation is the most common type of radiation therapy for mesothelioma. It involves aiming high-energy rays directly at malignant tumors. This non-invasive procedure effectively targets and shrinks tumors. It is often used for pleural mesothelioma.

Another type of radiation for mesothelioma is internal radiation. It involves placing radioactive material into or near the tumor. Patients receive this treatment less often than external beam radiation.



TUMOR TREATING FIELDS

Tumor Treating Fields for pleural mesothelioma is a noninvasive therapy that uses electrical fields to target cancer cells. Electrical fields come from tiny charged particles like electrons in your body. These fields can push or pull on other charged particles similar to how magnets can attract or repel each other.

In mesothelioma treatment, TTFields use these electrical fields to target cancer cells without harming your healthy cells. They disrupt special proteins inside mesothelioma cells that help them divide and grow. When the fields interfere with this process, mesothelioma cells eventually die, which can help shrink your tumors over time.

MULTIMODAL THERAPY

Multimodal therapy combines mesothelioma treatments to attack the cancer from multiple angles. One treatment alone cannot control the cancer, but combining treatments (immunotherapy, chemotherapy, surgery, Tumor Treating Fields, and radiation) offers patients a better chance at living longer. Doctors sometimes use a more specific term for a multimodal treatment plan. “Bimodal therapy” combines two treatments, and “trimodal therapy” combines three treatments.

EMERGING NEW THERAPIES

Experimental new treatment options for mesothelioma include advances such as cancer vaccines, enzyme therapy, gene therapy, and virotherapy. These promising treatments may provide hope for patients who don’t respond to standard therapies.

"I see a lot of time and money being put into mesothelioma research, so I think eventually, they will find something to control the disease," said pleural mesothelioma survivor Jack Riordan. "I'm glad to be part of that now."

SOME EMERGING TREATMENTS

Anti-Angiogenic Drugs: These drugs target the growth of blood vessels in tumors to treat mesothelioma

Cryotherapy: A type of cancer treatment that uses freezing temperatures to kill cancer cells.

Epigenetic Therapy: A way to treat mesothelioma that focuses on how our DNA responds and how mutations within tumor suppressor genes can be associated with mesothelioma.

Photodynamic Therapy: A cancer treatment involving injecting drugs that react to a special light. Shining this light on cancer cells during surgery activates the drug, killing the cells and preventing cancer spread.

FIND A MESOTHELIOMA CENTER OF EXCELLENCE

Mesothelioma is not a disease that can be treated at just any cancer center or hospital. Many primary care doctors and oncologists around the country never treat it or ever see it. That's why our Doctor Match program at The Mesothelioma Center is so valuable.

Our close relationships with doctors and mesothelioma Centers of Excellence ensure we will find you the best doctor at the cancer center nearest to you.

Scan the QR Code to explore treatment options in more detail

Chemotherapy for Pleural Mesothelioma

Although chemotherapy may be an alarming treatment to consider, this therapy is recognized as one of the few effective treatment options for mesothelioma patients. It cannot cure mesothelioma, but depending on the severity of the cancer, it can alleviate symptoms, improve quality of life and prolong survival.

The primary objective of this treatment is to kill cancer cells and shrink tumors. It attacks rapidly dividing cells and interrupts the division process. While chemotherapy targets cancer cells, it may harm other cells throughout the body that divide quickly. For example, hair follicles are among the fastest-growing cells and are easily damaged during treatment, leading many cancer patients to experience temporary hair loss.

Chemotherapy relieves symptoms of mesothelioma by reducing tumor size, and it may lessen the risk of spread (metastasis) or extend life expectancy. Treatment plans can vary depending upon the type of mesothelioma you are diagnosed with, as pleural and peritoneal mesothelioma patients may receive different drugs and administration methods.

The length and type of treatment a patient receives are determined by factors such as the type of cancer, stage and extent of the cancer, patient health, and the type of drug administered. Mesothelioma patients receive chemotherapy systemically, orally, or directly into the body cavity where the cancer is located.

METHODS OF ADMINISTERING CHEMOTHERAPY

Medication is injected into a vein or swallowed in pill form. The medication enters the bloodstream and systemically circulates throughout the body.

In an intrapleural setting, the drug is administered through a small tube straight into the thoracic cavity where the cancer is developing. Medication still enters the bloodstream, but the greatest concentration is absorbed in the area where cancer cells reside. Doctors use this method now in conjunction with surgery.

Chemotherapeutic drugs are given in cycles. The duration, frequency and number of cycles vary from patient to patient. Drugs may be administered as first-line, stand-alone therapy, or as part of a multimodal treatment plan.

They can be given before surgery to reduce the tumor size or after surgery to reduce the risk of recurrence. Chemotherapy also can be used in palliative care to relieve symptoms of mesothelioma.

CHEMOTHERAPY DRUGS

These drugs are usually administered in combinations of two or more, but one drug is best for patients who are not healthy enough to handle a combination.

MOST COMMON CHEMOTHERAPY DRUGS

Alimta:
Also known by its generic name pemetrexed, it has been hailed as the most consistently effective agent for fighting mesothelioma. It is often used in conjunction with cisplatin.

Carboplatin:
Many patients favor this agent because of its minimal side effects. It is most commonly used to treat ovarian, lung, and head and neck cancers, but it has also shown success with mesothelioma.

Cisplatin:
This platinum-based drug is used to treat various cancers, including mesothelioma. It was approved by the U.S. Food and Drug Administration in 1978 and is still used today.

Gemcitabine:
This drug is used to treat pancreatic, ovarian, and breast cancers. Doctors have also had success using it with lung cancer. Gemcitabine can slow the growth of mesothelioma by interfering with DNA replication.

SIDE EFFECTS

Before considering chemotherapy as a treatment option for mesothelioma, patients should become familiar with the potential side effects, including:

- Hair loss
- Nausea and vomiting
- Lower platelet count
- Compromised immune system
- Body aches
- Tingling in the feet and hands
- Anemia (decrease of red blood cells)
- Loss of appetite
- Constipation or diarrhea
- Rash
- Fatigue
- Fever

Not everyone experiences the same side effects. Some people will struggle with the effects, and others will have only minimal effects. It will depend on the drug, the person, and the overall treatment plan.

Chemotherapy combinations have improved in recent years, often cutting down on debilitating side effects. Chemo regimens can also be tailored to patient symptoms as long as it's beneficial to tumor regression.

FIRST-LINE AND SECOND-LINE TREATMENTS

First-line chemotherapy offers the most favorable approach to treating cancer. It is typically a combination of cisplatin and pemetrexed, although other medications may be used depending on several factors.

If first-line chemotherapy fails to demonstrate positive results, second-line chemotherapy may be prescribed. A second round of chemotherapy may involve a similar approach to the initial treatment or a completely different combination of medications.

COMBINING CHEMOTHERAPY WITH OTHER MESOTHELIOMA TREATMENTS

Many doctors recommend a multimodal approach to treating mesothelioma. Multimodal treatment for mesothelioma combines two or more standard treatments. A recent review of multimodal approaches shows they improve overall survival rates and treatment effectiveness.

Immunotherapy with chemotherapy may help. It may delay disease and boost survival at established checkpoints. The combinations of durvalumab (anti-PD-L1 antibody) with cisplatin and Alimta and pembrolizumab with pemetrexed-platinum chemotherapy both resulted in statistically longer survival times than chemotherapy alone.

Another novel mesothelioma treatment approach is the use of Tumor-Treating Fields with chemotherapy. Electric fields can disrupt the growth of tumor cells. A 2023 study tested TTFields with standard chemo for mesothelioma. The combination therapy was better than the standalone treatments because it greatly reduced cell growth.

KEYNOTE-483 trial, which touted the combination of immunotherapy with chemotherapy versus only chemotherapy, has prompted other trials to test the multimodal treatment.

HOW YOU CAN MANAGE CHEMOTHERAPY SIDE EFFECTS

It's vital to manage the side effects of chemotherapy for mesothelioma to preserve your quality of life. Talk to your doctor about options like changing your treatment.

TIPS FOR MANAGING SIDE EFFECTS

Ask About Nutrition: Pemetrexed lowers the body's folic acid and B12 levels. Talk to your doctor about your nutritional needs or supplements to maintain nutrient levels.

Journal: Record new or changing side effects. Note the date, their intensity and any remedies that help.

Openly Communicate: Don't try to "tough it out" for fear of missing a chemo cycle. Be honest with your doctor to avoid complications.

Over-the-counter and prescription drugs, like Aloxi, Emend, and Zofran, may help. They can reduce nausea and vomiting from chemotherapy. Palliative care specialists can also provide guidance and care to reduce pain and promote comfort during your treatment.

"I've never had a bad experience with chemotherapy. Part of that is I take a steroid that gives me 48 hours of protection from nausea and it works like a charm. My chemo has been pounding my mesothelioma to shreds. If I ever want a chemo holiday, I can take it, meaning I can skip a round."

– Kevin H., Survivor

Scan the QR Code to learn more about how chemotherapy works and what to expect

Immunotherapy for Pleural Mesothelioma

Immunotherapy for mesothelioma is a treatment that uses the immune system against asbestos-related cancer. It's now a standard treatment for many patients. Immunotherapy boosts the immune response, while chemotherapy and radiation target cancer cells. This method offers excellent hope for mesothelioma patients with difficult-to-treat forms.

Key types of immunotherapy include checkpoint inhibitors like Keytruda (pembrolizumab), Opdivo (nivolumab) and Yervoy (ipilimumab). These drugs block proteins that delay immune attacks against cancer. Monoclonal antibodies also target cancer cells. Research shows these treatments improve survival with fewer side effects. Doctors often combine them with chemotherapy or surgery.

HOW DOES IMMUNOTHERAPY FOR MESOTHELIOMA WORK FOR YOU?

Immunotherapy for mesothelioma works by kickstarting the immune system's ability to find and kill cancer cells. This is similar to how your body fights viruses and bacteria. Immune cells also clear out damaged cells.

Cancer cells can hide from the immune system by using specific proteins. Immunotherapy drugs counteract this. They expose cancer cells, allowing immune cells to attack.

Keytruda and Opdivo expose tumors to the immune system. This helps immune cells destroy them.

WHAT ARE THE TYPES OF IMMUNOTHERAPY FOR MESOTHELIOMA?

Several types of immunotherapy are used to treat mesothelioma. Each targets the immune system differently. The main types are cancer vaccines, monoclonal antibodies, immune checkpoint inhibitors, and CAR T-cell therapy.

Immunotherapy can be active or passive. Active types, like CAR T-cell therapy, stimulate antibody production. Passive types, like Keytruda and Opdivo, use engineered immune cells for protection.

Clinical trials test new immunotherapy types. Success varies by patient. Factors include cancer type, stage, past treatments, and health.

MESOTHELIOMA CANCER VACCINES

There are preventive and therapeutic vaccines. Preventive vaccines lower the chance of recurrence, while therapeutic vaccines aim to treat active diseases. It's important to remember that vaccines are not a cure for mesothelioma.

Research is ongoing for a preventive vaccine targeting the OX40 receptor. It has shown promising results in mice. Two therapeutic vaccines, CRS-207 and galinpepimut-S (WT1), are in trials. Both have shown improved survival.

CELL AND PROTEIN THERAPIES

Cell therapies involve injecting immune cells into patients. These are promising for other cancers and are being tested for mesothelioma. CAR T-cell therapy modifies T cells to target cancer.

In one trial, patients received dendritic cells after chemotherapy. These patients showed strong immune responses. Cytokines are proteins that enhance immune responses. These proteins can kill cancer cells or stop their growth.

MONOCLONAL ANTIBODIES

Monoclonal antibodies create copies of anti-cancer antibodies. They're common in cancer treatment but rare for mesothelioma. Research is ongoing to change this.

Tremelimumab is one MAB under investigation. It targets CTLA-4. Another, amatuximab (MORAb-009), shows promising results in trials.

HOW EFFECTIVE IS IMMUNOTHERAPY FOR MESOTHELIOMA?

The success rate of immunotherapy varies by patient's health and cancer stage. Key drugs include Opdivo, Yervoy and Keytruda. Trials show promising results, especially for recurrent cancer.

JAMA Network Open in 2024 published a study on the success of immunotherapy. Researchers said their results "support pembrolizumab use as a treatment option" for mesothelioma patients.

The FDA has approved Opdivo and Yervoy for certain patients. New treatments are being tested, including immune checkpoint inhibitors and the WT1 vaccine.

WHAT ARE THE BEST IMMUNOTHERAPY TREATMENTS FOR MESOTHELIOMA?

Combining Opdivo and Yervoy boosts survival rates. Some trials show a two-year survival rate of about 40% for advanced mesothelioma. Keytruda, used after first-line treatment, shows a 22% response rate. Some patients benefit long term.

Ongoing trials aim to understand these treatments better. Not everyone responds, but some enjoy longer lives with stable disease.

Patient stories highlight immunotherapy's potential.

Opdivo and Yervoy

Opdivo and Yervoy target different immune system checkpoints. Opdivo blocks PD-1, helping the immune system find cancer. Yervoy blocks CTLA-4, enhancing the immune response. Together, they improve the body's fight against mesothelioma.

Keytruda

Keytruda is for patients whose cancer worsens after initial treatments. It blocks the PD-1 pathway, aiding the immune system. It is a second-line treatment when cancer recurs or advances.

Keytruda shows promise with a 22% response rate. It extends life and improves the quality of life when other treatments fail. Mesothelioma survivor Barbara Lapalla said, "Keytruda has worked like a charm for me, although I'm not sure why. There have been no side effects. For me, it's the magic bullet."

SIDE EFFECTS

Immunotherapy can boost side effects because of an increased immune response. Common issues include fevers and body aches. Coughing and fatigue are especially bothersome.

COMMON IMMUNOTHERAPY SIDE EFFECTS

- Constipation
- Coughing
- Diarrhea
- Fatigue
- Fever
- Loss of appetite
- Mouth sores
- Muscle or joint pain
- Nausea
- Skin irritation
- Weight loss

Most patients experience mild, temporary side effects. Severe reactions are rare but can harm tissues or organs. These are often due to inflammation.

SEVERE SIDE EFFECTS

- **Pneumonia:** Chest pain, shortness of breath and persistent cough
- **Colitis:** Inflammation of the colon that causes bloody stools, abdominal pain and intestinal tearing
- **Hepatitis:** Liver inflammation characterized by eye and skin discoloration, changes in urine, and right-side abdominal pain
- **Hormone Gland Problems:** Hormonal side effects such as muscle aches, increased heart rate, headaches and weight loss
- **Kidney Problems:** Nephritis, or inflammation of the kidneys, leading to changes in urine, back pain, hormone imbalance, and potential kidney failure

Adverse reactions to immunotherapy may require patients to stop these therapies. Also note that patients with a history of prior autoimmune disorders may not be candidates for these therapies because of potential worsening of the autoimmune disease.

Any amount of immunotherapy is beneficial, even if patients don't finish the full course of immunotherapy.

BENEFITS OF IMMUNOTHERAPY FOR MESOTHELIOMA

Immunotherapy offers more prolonged survival and better symptom control for mesothelioma. It targets cancer cells without harming healthy tissue, unlike chemotherapy or radiation.

PRIMARY BENEFITS OF IMMUNOTHERAPY

- Fewer side effects and more manageable than conventional mesothelioma treatment.
- Financial assistance is often available through clinical trials or grants.
- Personalized treatment for each patient based on their DNA.
- Targeted immunotherapy reduces damage to healthy tissues.
- Treatment uses the immune system and the body's cells to fight cancer.
- When a patient enrolls in a clinical trial, the research sponsor covers the cost of experimental immunotherapy.

Immunotherapy and similar treatments are the future for mesothelioma. They promise lasting protection against the disease.

COST OF IMMUNOTHERAPY

Immunotherapy for mesothelioma can cost over $10,000 a month. Adding more care raises this cost. The combo of Yervoy and Opdivo surpasses $250,000 a year. Other treatments can hit $150,000.

Medicare and many insurances cover it. However, patients might face out-of-pocket costs and lost wages. VA benefits lower costs significantly, but the claims process is tricky.

Patient Advocates can help find financial aid. The Mesothelioma Center's Veterans Outreach team assists with VA claims.

"We do our best to explain patients' financial options," said Karen Selby, RN, and Patient Advocate at The Mesothelioma Center. "Our job as Patient Advocates is to educate and guide them so that when they make those decisions, they're making very informed decisions."

WHAT IS THE FUTURE OF IMMUNOTHERAPY FOR MESOTHELIOMA?

Researchers aim to combine immunotherapy with other treatments. In May 2024, the FDA fast-tracked Keytruda's review with chemotherapy for pleural mesothelioma.

Other clinical trials are testing several immunotherapy and chemo combinations for pleural and peritoneal mesothelioma. These trials stem from the promising results of previous experiments. The novel therapy combination shows hope for inoperable mesothelioma patients.

"Keytruda has worked like a charm for me, although I'm not exactly sure why. There have been absolutely no side effects. For me, it's the magic bullet."

– Barbara L., Survivor

"Immunotherapy has given me a new window. It may not save my life, but it's certainly buying me some valuable time."

– Walter M., Survivor

Scan the QR Code to learn more about how immunotherapy works and what to expect

Surgery for Pleural Mesothelioma

Surgery may be a valuable treatment option for patients with an asbestos-related disease. Choosing which type of mesothelioma surgery you'll undergo is up to you and your specialist.

The American Society of Clinical Oncologists released updated treatment guidelines for pleural mesothelioma in 2025. The updates introduce essential changes to the standard approach to surgery.

The new guidelines indicate a preference for lung-sparing surgeries (pleurectomy/decortication) vs. lung-removal surgeries (extrapleural pneumonectomy).

Surgeries generally fall into three categories: Potentially curative, palliative, and diagnostic.

POTENTIALLY CURATIVE SURGERY

There are two types of potentially curative surgeries for pleural mesothelioma: Extrapleural pneumonectomy and pleurectomy/decortication. Both major medical procedures are part of a multimodal approach to therapy.

Surgeons often differ on which procedure they recommend. But it's a choice you may have to make based on your situation, expectations and your specialist.

EPP surgery lends itself to a higher rate of complication than the P/D procedure. Both are considered when the diagnosis is made relatively early, doctors are confident that the disease has not spread, and the benefits are worth the risks of serious complications. Both require an experienced mesothelioma surgeon at a major cancer center.

Extrapleural Pneumonectomy

The EPP is an aggressive surgery that involves removing an entire lung, the lining around it, parts of the pericardium and diaphragm, and the nearby lymph nodes. Theoretically, it offers the best chance to remove all cancer cells.

While both lungs are not needed for survival, the removal of one is a life-changing procedure. You must be in relatively good health to undergo this surgery. The heart and the remaining lung must be in good working condition before surgery.

Usually, a two-week hospital stay is needed, and a respirator will assist breathing for the first few days. Full recovery may take 2-3 months. If successful, it can add several months or years to your life.

Pleurectomy Decortication

P/D is less life-altering but has shown equally effective results. It leaves the lung intact but is considerably more detailed and time-consuming. Doctors remove the pleural lining surrounding the lungs and meticulously eliminate all visible tumors on the lungs and surrounding areas. Afterward, the surgical area undergoes an iodine bathing.

The procedure has a lower post-surgery mortality rate than the EPP, and there are typically fewer complications with both lungs intact.

Robotic Surgery

Robotic surgery, which has been used for more than a decade, helps thoracic surgeons conduct more precise cancer surgeries. The da Vinci Surgical System does the hard work and allows for more precise movement, a more magnified view, and better maneuverability during the operation.

Surgeons work on a computer board that guides tiny instruments attached to a robotic arm with pincers. Robotic surgery shortens recovery time because it significantly reduces blood loss. It also reduces the stress on the remaining lung, which is often a significant problem when the surgery is done conventionally.

Palliative Surgery
Palliative surgery is designed for mesothelioma patients who opt against the more aggressive, potentially curative options. It's also used when those options are no longer available because the cancer has already spread, or the patient is not healthy enough to withstand the strains of major surgery. It is considerably less invasive.

The goal of palliative surgery is to improve your quality of life. It is accomplished by relieving you of as many symptoms as possible and providing pain relief. There is no pretense of a cure, but palliative procedures can prolong your life and make your cancer a little more tolerable. Many of these surgeries involve the removal of fluids.

Pleurodesis
Pleurodesis is a procedure for draining fluid buildup. A hollow tube is inserted into the chest wall to drain the fluid, and surgeons also use it to administer curative substances to the patient.

Thoracotomy
Surgeons perform a thoracotomy to access the lungs, heart, aorta, trachea, or diaphragm. For someone with mesothelioma or asbestos-lung cancer, this could include a wedge resection, lobectomy, or pneumonectomy.

Wedge Resection: Also known as a segmentectomy, it is the least invasive of these procedures and is often used when the cancer is confined to a single area. The surgeon will leave much of the lung intact, removing only a small, wedge-shaped section.

Lobectomy: This involves removing at least one of the five lobes of the lungs. It is more extensive than the wedge resection and is often used if the cancer is confined to a single lobe.

OTHER SURGERIES

Shunt placement involves implanting a device that moves fluid within the body from one part to another, where it is more likely to be absorbed.

Catheter placement is sometimes used to control the fluid buildup. A tube is placed in the abdomen or chest through a small incision. One end is left outside the body, allowing the fluid to drain regularly without the need for a doctor's visit.

Diagnostic Surgery
Biopsies and fine-needle aspirations are the most common types of diagnostic surgery. Diagnostic surgery confirms the presence and location of cancer. This is typically accomplished with a biopsy, which removes tissue from inside the body to determine if cancer is present. Some of the more common biopsies include fine-needle aspiration, incisional/core biopsy, and excisional biopsy.

Fine-needle aspiration biopsies use a hollow needle to gather sample cells for testing. Results from this biopsy are available within a few minutes. Incisional/core biopsies only remove a small section of suspicious tissue for further evaluation. An excisional biopsy involves the removal of an entire tumor or organ for diagnosis.

Typical biopsies for patients with lung conditions include thoracentesis and thoracoscopy, which can be used to diagnose patients who may have pleural mesothelioma or other lung-related conditions. A thoracentesis, like the fine-needle aspiration, also removed fluid from the lungs for analysis.

In a thoracoscopy, a doctor makes an incision in the chest and inserts a long, thin tube into the tissue surrounding the lungs. The doctor probes the pleura and takes samples of possible cancer cells for testing.

Scan the QR Code to see if surgery may be an option for you

Radiation for Pleural Mesothelioma

Radiation therapy has developed into a key component of a still-evolving, three-pronged approach to treating pleural mesothelioma.

The most recent medical data shows radiation in combination with surgery and chemotherapy is a powerful mesothelioma treatment. Radiation's increased ability to target these cells in patients can also relieve pain and improve life expectancy, depending on the stage of someone's cancer.

Oncologists have used radiation as a cancer treatment for decades. However, technological advancements make it a much more refined treatment. Despite its toxicity, well-targeted radiation can work without causing serious side effects. It is a valuable tool to stunt cancerous tumors' growth and size.

Although unable to eliminate or cure the cancer, radiation has been most effective as a way to relieve some of the pain that accompanies mesothelioma. It can be used for various reasons to treat patients in different stages of cancer.

PRIMARY ROLE

Radiation is often used for palliative pain relief. It can alleviate pain by reducing the size of mesothelioma tumors and relieving pressure on the lungs and chest.

It is used in conjunction with surgery along incision sites, where seeding of cancer cells occurs in 20% to 50% of mesothelioma patients who undergo these procedures.

Seeding happens when loose cancer cells dislodge from the tumor and inadvertently move into the bloodstream or become lodged in nearby healthy cells. Even modest radiation at surgery or drain tube sites can help.

Radiation therapy also is used as part of first-line treatment with chemotherapy for patients who are not eligible for surgery. It can extend survival time and slow tumor growth. Results from multiple clinical trials show this two-pronged treatment approach of surgery and radiation, even without chemotherapy, can help.

TYPES OF RADIATION THERAPY

Asbestos cancer experts see more positive results from radiation in people with pleural mesothelioma than with other forms of the disease. Two types of radiation are used to treat pleural mesothelioma: External beam radiation and intraoperative radiation.

External Beam Radiation

External beam radiation therapy is a noninvasive procedure. EBRT treats mesothelioma by directing high-energy rays at malignant tumors. This method is particularly effective for pleural mesothelioma. It can target large areas, shrink tumors, and improve symptoms.

TYPES OF EXTERNAL BEAM RADIATION THERAPY

3-D Conformal Radiation Therapy: 3D-CRT imaging creates a 3D map of the tumor. It allows precise targeting of radiation beams.

Image-Guided Radiation Therapy: IGRT takes imaging before and after treatment. This is to adjust as the tumor position or the patient's body changes.

Stereotactic Body Radiotherapy: SBRT uses one machine for imaging and radiation. It allows continuous imaging to improve accuracy and focus during treatment.

Intensity-Modulated Radiation Therapy: IMRT is an advanced form of 3D-CRT. It varies the intensity of the radiation beams. This allows for higher doses of the tumor. It also minimizes exposure to nearby healthy tissues.
Proton Therapy: This treatment uses protons, not photons. It targets mesothelioma tumors more precisely, with fewer side effects. It is available at select cancer centers.

These types of EBRT are used for mesothelioma. They can target the tumor and spare healthy tissue. IMRT is a common, precise, and effective treatment. Proton therapy is less common but very effective in some cases.

INTRAOPERATIVE RADIATION

Intraoperative radiation therapy involves administering a high dose of radiation to a tumor during surgery. This method targets cancer cells and minimizes exposure to nearby healthy tissues. Compared to other radiation therapies, IORT is less common for treating mesothelioma, but it offers significant benefits in some cases.

One of the key advantages of IORT is its ability to deliver high doses of radiation in a single session. This helps mesothelioma patients. It can target leftover cancer cells after tumor removal. Using radiation during surgery cuts the risk of cancer returning. It can also make the treatment more effective.IORT is a promising option for some mesothelioma patients. However, its use depends on the tumor's traits and the treatment plan. Doctors consider the tumor's location, disease stage, and health to decide if IORT is a good part of the therapy plan.

COMMON SIDE EFFECTS

Side effects of mesothelioma radiation are most often temporary and are typically more constrained than those of chemotherapy, which can affect the entire body. However, some side effects of radiation may be chronic and appear months or years after the patient finishes treatment. They include a low risk of secondary cancer.

Common Radiation Therapy Effects

- Cough, fever, and fullness of the chest (radiation pneumonitis)
- Difficulty swallowing
- Fatigue
- Hair loss near the radiated area
- Scarring of the lungs (radiation fibrosis)
- Shortness of breath
- Skin problems

Side effects from the death of healthy cells are common. Early recognition and management care can help prevent long-term issues.

LATEST RADIATION ADVANCEMENTS

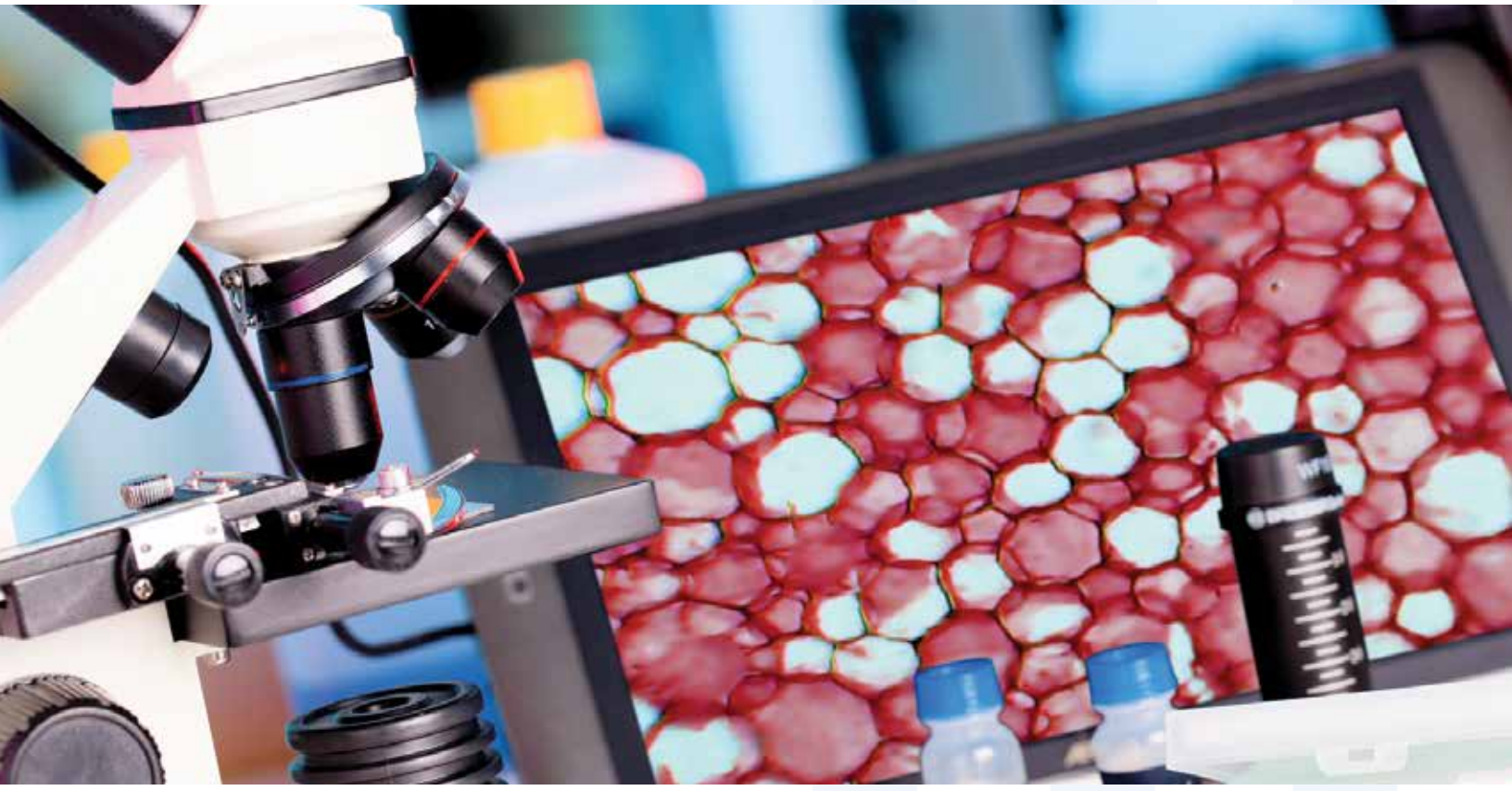
Doctors recently confirmed a novel radiation procedure that can be combined safely and effectively with a pleurectomy/decortication, a lung-sparing surgery that improves survival time and quality of life for patients with pleural mesothelioma.

After a decade of refinement, a few mesothelioma specialty centers are now using intensity-modulated pleural radiation therapy (IMPRINT) as part of the recent advancements in multidisciplinary treatments.

“We’re hoping that all centers with experience in treating mesothelioma will now look at this as another technique to put in their arsenal,” said radiation oncologist Dr. Kenneth Rosenzweig. “It’s exciting that technology has caught up with what we needed to help these patients.”

Rosenzweig has treated mesothelioma for more than two decades. He was an early contributor to a study of IMPRINT that found an acceptably low incidence of radiation pneumonitis, a potential adverse side effect.

Scan the QR Code to learn more about how radiation is used to treat mesothelioma



Importance of Clinical Trials

Ongoing clinical trials at cancer centers nationwide may provide the best hope for beating mesothelioma. These trials provide patients with access to cutting-edge treatments that can improve their life expectancy and play an essential role in the fight against asbestos cancer.

WHAT IS A CLINICAL TRIAL?

In simple terms, clinical trials are research studies that involve people.

Each trial has a focused, unique purpose. They can be sponsored by Specialized Programs of Research Excellence, which brings researchers and scientists together with patients and governmental agencies such as the National Cancer Institute's Community Clinical Oncology Program.

Clinical trials strive for new research involving new drugs, therapies, and treatment combinations. Even though a clinical trial might not provide a breakthrough, every mesothelioma specialist wishes to push treatment to a new level. Trials let doctors measure effectiveness and get a clearer picture of the newest drugs and most up-to-date treatment procedures.

CLINICAL TRIALS: RARE VS. COMMON CANCERS

Mesothelioma is a rare cancer diagnosed in less than 3,000 people annually in the United States, making patient participation in clinical trials critically important to the fight.

These heroes are hard to find.

Mesothelioma clinical trials move everyone, present and future patients, closer to a cure and allow researchers to break new ground in the search for a better understanding of this awful disease.

The problem, though, can be attracting enough patients, researchers and revenue to create meaningful trials for rare diseases, which are hurdles that more common cancers don't have to face.

"As researchers, we need our patients' help to make the breakthroughs," Dr. David Jablons, thoracic surgeon and mesothelioma specialist, told The Mesothelioma Center.

WHY ARE MESOTHELIOMA CLINICAL TRIALS IMPORTANT?

While traditional treatments, such as radiation, chemotherapy, and surgery, significantly improve the health and well-being of some mesothelioma patients, others don't respond well to these therapies or qualify as candidates for a variety of reasons.

Each clinical trial has a distinct, well-focused purpose, often categorized into screening, prevention, or treatment. They typically give patients access to the latest experimental drugs and novel treatments, helping increase survival rates. But there are other important benefits, too.

These studies allow people to be more active in their health care. Many participants appreciate the opportunity to choose a new therapy from a list of clinical trials and possibly be among the first patients to benefit from these experimental treatments.

Without brave participants, clinical trials wouldn't be able to develop experimental and life-saving therapies that lengthen the lives of other cancer patients, giving them more precious time with their wives, husbands, daughters, sons and grandchildren.

Despite the path of hope clinical trials pave for thousands of people diagnosed with deadly mesothelioma, there are many roadblocks along the way:

- Few mesothelioma clinical trials
- Lack of funding
- Long-distance travel to cancer centers
- Low participation among patients and researchers
- Misconceptions
- Overwhelming lack of awareness

Clinical studies may also help participants feel safer during treatment. Leading cancer centers and top cancer specialists host mesothelioma trials. Doctors with this expertise offer patients some clear advantages over general oncologists, who may only see one or two cases of mesothelioma during their careers.

In addition to a whole team of specialists providing quality patient care, research coordinators monitor side effects and ensure the study follows all safety regulations. Participants in clinical trials also tend to have more positive results than people who choose the standard treatment. Some key benefits include closer monitoring throughout treatment and easier access to advice and support from medical professionals. Even when a clinical trial doesn't provide effective treatment, some participants say they're happy to be involved in research to help another mesothelioma patient one day.

WHY SHOULD I PARTICIPATE IN CLINICAL TRIALS?

Because there is no cure for mesothelioma, scientists and clinicians continually research new therapies to provide patients with life-extending treatments and ways to improve their quality of life.

Patients who have not responded to conventional therapies and may have no other treatment options are usually the optimal candidates for clinical trials.

Clinical trials make progress possible and fuel the engine of hope. The recent KEYNOTE 483, MARS2 and CHECKMATE 743 trials have led to significant advances and more options for mesothelioma patients.

By participating in a mesothelioma clinical trial, you are not only giving yourself a better chance at beating the cancer but also helping future patients by providing doctors and researchers with valuable information and feedback.

"Participation of patients with mesothelioma in clinical trials is essential if we are going to make progress and develop novel therapies," said Dr. Raffit Hassan, senior investigator at the National Cancer Institute.

The best news is patients don't have to wait to get into these trials. Dozens of mesothelioma and asbestos lung cancer trials are recruiting for patients at all times.

WHAT CONCERNS SHOULD I HAVE?

When a patient participates in a clinical trial, there are certain risks because these are experimental drugs and treatments.

Potential Health Risks: The trial may result in ineffective treatment that doesn't achieve the desired conclusions or harms your health. You could end up experiencing side effects.

Costs: Research and patient care expenses are the most common costs. Patient costs may include two subsets: Routine and extra care costs. Routine care involves doctor and hospital visits or stays. A health insurance company often pays this portion. Extra costs include additional tests required for the trial, which may be partially or fully covered by insurance or the clinical trial.

Some states require health insurance companies to pay for routine medical care in a clinical trial. This partial coverage may provide a little relief for mesothelioma patients.

However, this only applies to routine medical care; not all trials fall under this umbrella.

Factors that determine if insurance companies will pay for clinical trial costs include:

- If the study is classified as experimental or more of a standard treatment
- Duration of the study
- Risks involved with the specific trial

PHASES OF CLINICAL TRIALS

Clinical trials fall into one of three categories: Prevention, screening, or treatment. Each trial is divided into three phases. If a drug or treatment passes effectively through all three phases, it can proceed to the FDA approval process.

Phase I

A phase I trial involves a small group of people (20 or more) to analyze the safety of a drug or therapy. The goal is to investigate side effects and examine how the body processes the drug. The trial also examines safe dosage levels.

Phase II

A phase II trial, which includes up to 300 patients, involves examining safety levels and the effectiveness of the drug or treatment. It may also compare the drug or treatment with other treatment options or even a placebo.

Phase III

A phase III trial involves the largest group (up to several thousand people) and measures the effectiveness of the new treatment versus standard treatment approaches. It also is used to finalize dosage amounts and document side effects.

Phase IV

Phase IV involves long-term testing of effectiveness and safety in a diverse patient population, usually after the FDA has approved treatment for standard use.

QUALIFYING FOR A CLINICAL TRIAL

Your mesothelioma specialist or Patient Advocate can help you apply to the available clinical trials. You may need to travel if you wish to participate. Each trial has specific guidelines that will determine your eligibility.

Some of the guidelines may include:

- The age and gender of the patient
- The overall health of the patient
- Type and stage of mesothelioma
- Patient's past treatment history
- Underlying medical conditions

TOP MISCONCEPTIONS ABOUT CLINICAL TRIALS

Lack of Knowledge

People may say they didn't know joining a clinical trial was an option. This highlights the importance of asking your treatment team about clinical trial options, especially if none of your doctors mention them.

Fear of Testing

Some people with cancer fear serving as guinea pigs for experimental and unproven treatments. While clinical trials may involve uncomfortable tests and uncertainty about treatments to answer important medical questions, most participants report positive experiences. Patients praise the high level of care they receive, close monitoring, and round-the-clock access to medical professionals.

Michelle, who participated in the Canadian clinical trial in Toronto, debunks this myth.

"You could call me a guinea pig, but this cancer center doesn't make you feel that way at all," Michelle said. "They are constantly monitoring you. You can talk with someone 24/7 if you've got questions or concerns. You get great care. I'm a good patient for them. I'm young, healthy, and have no other issues."

Fear of a Placebo

Another common but unfounded fear is that people may join a trial only to receive a placebo or "sugar pill." While a few clinical trials use placebos in their studies, researchers still provide all participants with the best standard of care.

Trials Are the Last Resort

Far too many people believe that clinical trials are only used when all other traditional methods have failed. Still, clinical trials are available for people at any stage of mesothelioma.

There may even be times when a clinical trial is an excellent option for you early in your diagnosis, as some studies focus on different ways to diagnose and detect cancer. Some clinical trials serve patients who are in remission.

Trails Are Temporary

Other patients believe that if they join a clinical trial, it will only be for a short period. What does that mean if it doesn't work? More importantly, what does it mean if it does? While some trials may end because of a lack of efficacy, many trials can become a longer treatment option if they are safe and effective.

On the other hand, if the treatment is not effective or makes you unhappy or unhealthy, you can drop out of treatment at any time.

Insurance Concerns

Sometimes, people don't enroll in a clinical trial because they fear their health insurance won't cover the costs. While coverage can

vary depending on the company, state, and federal laws require insurers to pay for clinical trial treatment costs. Participants may still have to pay deductibles related to their standard-of-care treatment. Be sure to talk to your insurance company about what costs it will cover.

Trials Are Unsafe

Some people believe a clinical trial is too risky. What if it makes me worse? Mesothelioma is an aggressive cancer. Without any treatment, it typically will worsen. Treatment can extend survival significantly.

Many precautions are taken before a clinical trial opens to ensure the safety of all participants. In addition to regular medical attention from trial staff and close observation, you will continue to be monitored by your regular physicians. Throughout the study, researchers are required to notify you of any new risks or side effects discovered.

Younger Patients Preferred

Older patients are indeed underrepresented in many clinical trials overall, but that is not because researchers don't want them. Many times, older patients cannot travel far distances to participate in a trial.

Mesothelioma commonly affects older individuals. People 60 and older are 10 times more likely to be diagnosed with mesothelioma than people under 40. As a result, mesothelioma clinical trials typically incorporate an increased number of older patients.

IS A CLINICAL TRIAL RIGHT FOR YOU?

Deciding whether a clinical trial is the right choice for a mesothelioma patient is an important decision that should not be taken lightly. A patient's health care team can help explain the process and answer any questions.

There are also some important questions you should ask yourself before deciding. Some may be difficult to answer, but it helps to start thinking about them.

WHAT QUESTIONS SHOULD I ASK MY DOCTOR?

It is important for a mesothelioma patient to fully understand the details and purpose of the trial before enrolling.

For example, patients should ask the trial sponsors about the specific goal of the clinical trial, other treatment options available, costs, and possible side effects, among other concerns.

QUESTIONS TO HELP YOU DECIDE IF A MESOTHELIOMA CLINICAL TRIAL IS RIGHT FOR YOU

- What is the specific goal of this trial?
- Why do you believe this new treatment may be effective for me?
- In what phase is this trial?
- Are there other treatment options I should consider first?
- What are the odds that I will receive a placebo in this trial?
- What are the risks of participating in this trial?
- What are the possible side effects?
- What are the costs?
- Is there any potential compensation for participation?
- Who do I contact if I have questions about the trial?
- What role, if any, will my family have in my participation in this clinical trial?
- Can I leave the trial at any point?
- How will this trial affect my prognosis?
- How soon can I expect these treatments to begin working?
- How and when will I know if the treatment is working properly?
- Will I have to change my daily activities to participate in this trial?
- What tests and treatments will I undergo?
- Where is the trial being conducted?
- How much time should I expect to commit to the trial?
- What type of long-term follow-up care can I expect as a participant in this study?
- Can I talk with others who have participated in this trial to hear about their experiences?
- Has this treatment been tested in other trials before? If so, what were the outcomes?

Scan the QR Code to see if a clinical trial could be right for you

Complementary and Alternative Medicine for Mesothelioma

People with pleural mesothelioma often turn to complementary and alternative therapies to help treat the cancer and its effects on the mind and body. Those who integrate these approaches, including nutritional therapy and yoga, into treatment plans often increase their survival time.

Complementary and alternative medicine (CAM) is the term most widely used to describe healthcare approaches that originate outside of mainstream medicine. You may have seen this terminology before but may not know what the words “complementary” and “alternative” mean in health care.

Complementary: This approach is used in combination with mainstream medicine.
Alternative: This approach refers to treatments other than mainstream medicine.

Alternative medicine is not standard. Most people combine nonmainstream therapies with conventional medicine. This complementary approach is also called integrative medicine. Approximately 70% of people with cancer use complementary therapies.

INTEGRATIVE PROGRAMS

In recent years, integrative oncology programs have been launched throughout the U.S. These programs unite clinically proven complementary therapies with conventional medicine to treat the whole person, not just the disease.

BODY-BASED THERAPIES

Body-based therapies use various techniques to heal pain and discomfort throughout the body. The primary body-based therapies used in cancer care include TENS therapy, chiropractic care, therapeutic massage, and acupuncture.

TENS THERAPY

Transcutaneous Electrical Nerve Stimulation (TENS) is a therapy that relieves pain with low-voltage electrical current. TENS therapy and therapeutic massage are often administered during chiropractic care sessions. All three therapies may help you relieve your cancer pain and stress.

ACUPUNCTURE

Acupuncture studies show the therapy is helpful to people with cancer. It can effectively reduce your pain and adverse reactions to radiation therapy and chemotherapy. Research also shows that acupuncture can reduce the occurrence of chemotherapy-related vomiting.

ACUPRESSURE

Though less widely known in the U.S., acupressure is a form of self-massage based on acupuncture. Similar points throughout your body are used in acupressure and acupuncture, but without needles, one of the factors that frightens people about acupuncture. Clinical trials show that acupressure can relieve some of your cancer symptoms and treatment side effects, including nausea, vomiting, fatigue, anxiety, and pain.

EXERCISE

Most oncologists recommend gentle exercise to pleural mesothelioma patients. Light exercise can ease side effects, reduce fatigue, and improve mood. It can also boost the quality of life. Adding exercise to a patient’s treatment plan lowers the risk of death and cancer recurrence.

Exercise improves cardiovascular fitness in mesothelioma patients. This helps them cope with surgery and chemotherapy. Gentle exercise can improve sleep, rest, and recovery. Dr. Diana Molinares, an oncology rehab specialist, recommends frequent light exercise. It can help build a routine and fight fatigue.

COMPLETE HEALING SYSTEMS

The most commonly used complete healing systems in CAM include Traditional Chinese Medicine and Ayurveda.

The Chinese developed TCM, and practitioners have used it for thousands of years to help treat cancer. For the past century, most cancer clinical trials conducted in China combined mainstream medicine with TCM. They found that certain TCM herbs, mind-body techniques, dietary changes, and acupuncture can help people with cancer.

Ayurveda originated in India, and for thousands of years, it has also helped people with cancer feel better. Ayurvedic doctors treat cancer with surgery, herbal medicine, dietary changes, bodily cleansing therapies, and lifestyle changes.

EMOTIONAL EFFECTS THERAPIES

Emotional effects therapies include techniques that positively impact your emotional health and well-being. This category includes meditation, counseling, and pet therapy.

Meditation techniques can help you cope with cancer-related anxiety, depression, and pain.

Whether spiritually focused or not, meditation may help you attain a better outlook, which can significantly reduce your stress. Ask your doctor if meditation education programs, such as the Mindfulness-Based Stress Reduction technique, are available in your area.

Counseling is a therapy that helps people facing cancer better cope with the experience. During sessions, counselors help people process their emotions with constructive and effective techniques, such as cognitive behavioral therapy. Many cancer centers offer you free counseling services.

Pet therapy is quite simple: It involves spending time with animals to improve your mood. Dogs and cats are most commonly present at pet therapy sessions, but nearly any animal can temporarily comfort someone dealing with cancer. Ask your treatment center if pet therapy is available for you.

ENERGY THERAPIES

Energy therapies strive to produce a state of balance and well-being within a person. Cancer patients' primary energy therapies include music and sound therapy, Therapeutic Touch, Reiki, and Jin Shin Jyutsu.

Music Therapy and Sound Energy Therapy
Music therapy involves listening to, playing, singing, and talking about music in the company of a professionally trained music therapist. The therapy can reduce stress, support well-being, and may improve healing or help reduce the severity of symptoms.

Sound energy therapy is similar in that patients listen to or create music, but specific instruments or tones are used to promote relaxation.

THERAPEUTIC TOUCH AND REIKI

Therapeutic Touch and Reiki are similar healing modalities that send healing energy from a healer's hands to a patient's body. People who receive these therapies report deep peace and relaxation during and after the therapy. Some claim lasting effects on the perception of stress.

JIN SHIN JYUTSU

Jin Shin Jyutsu is similar to acupressure. Energy pathways and pressure points are

used to clear blockages and balance energy within the body. Trained practitioners can administer the therapy and teach patients how to do Jin Shin Jyutsu at home. One mesothelioma patient found the treatment was effective at relieving fatigue and easing digestion problems caused by chemotherapy.

MIND-BODY THERAPIES

Mind-body therapies are practices designed to facilitate the union of body and mind. The most commonly studied types of mind-body therapies in cancer treatment include yoga, qigong, and tai chi.

Qigong and tai chi are similar practices that unite movement with mindfulness and breathing. The disciplines originated in China and have been widely used for centuries. Studies of qigong and tai chi in people with cancer reveal that it can enhance the quality of life, reduce stress chemicals, lessen fatigue and signs of depression, and improve survival rates in liver cancer patients.

NUTRITION

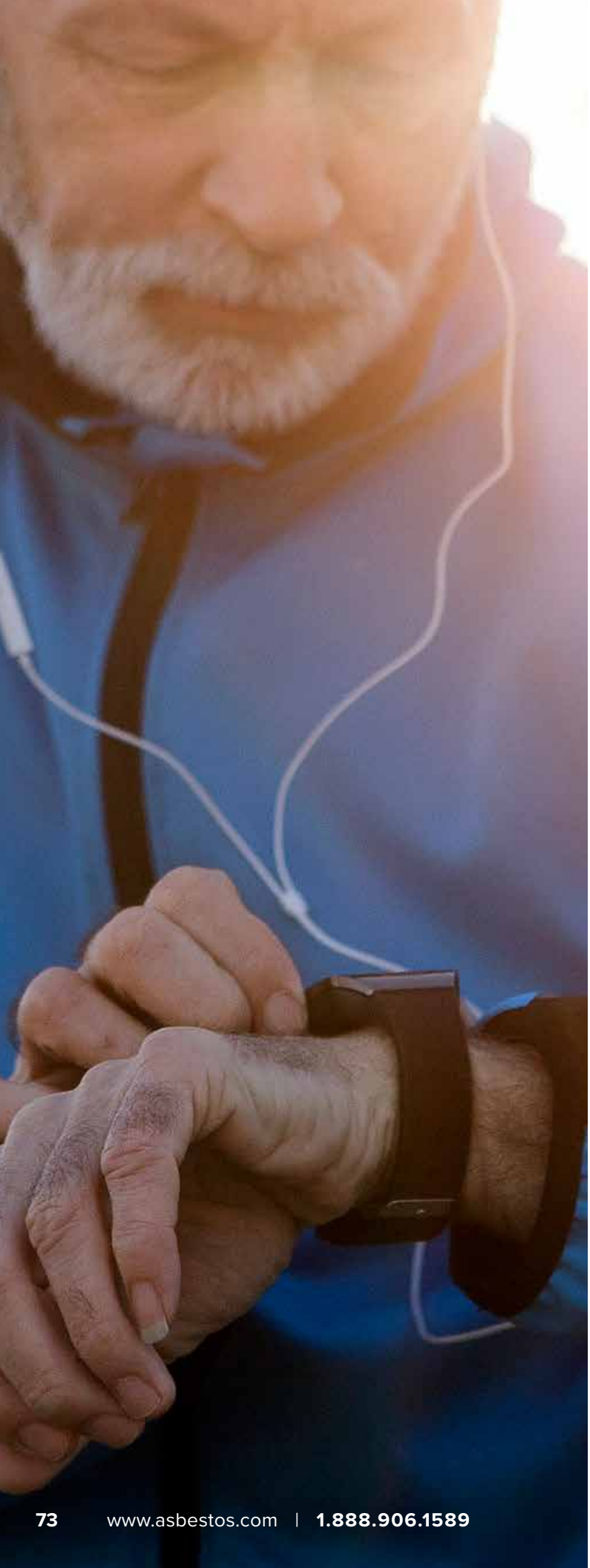
Adequate and balanced nutrition is essential before, during, and after cancer treatment.

Diet and nutrition can help strengthen the immune system to fight mesothelioma and infections. Certain foods can also help counter some of the effects of cancer. Consuming more proteins, for example, may help boost the immune system and restore the tissue mesothelioma damages.

Mesothelioma patients should consume a balanced diet rich in protein, vitamins, and minerals. Survivors may also be directed to limit whole grains or avoid other types of food during and while recovering from treatment.

HERBAL MEDICINE

Herbal medicine is a complementary therapy that may lessen cancer symptoms and enhance specific cancer treatments. These naturally sourced medicines are made from herbs and administered in capsules, teas, tinctures (concentrates of herbs in an alcohol solution), and creams. Scientific studies have proven certain herbs are effective at reducing cancer symptoms and improving the effects of cancer treatment.



CBD AND MEDICAL MARIJUANA

Medical cannabis is considered an herbal medicine, and it can offer significant pain and nausea relief to people with cancer. Clinical studies have proven the herb effectively reduces pain, eases nausea, boosts appetite during chemotherapy, and improves sleep.

Many mesothelioma patients use medical marijuana and CBD to ease nausea, pain, and stress. This therapy lets patients pick their preferred delivery method. They can smoke the dried leaves, eat edibles and capsules, or apply topicals to the skin.

If you are considering using cannabis, talk to your doctor. Medical marijuana is not legal in all states, and federal law prohibits its use.

TREATMENT CENTERS WITH COMPLEMENTARY THERAPIES

Several cancer centers that specialize in mesothelioma treatment offer complementary therapies through integrative oncology programs. Now that integrative health care is gaining popularity, these centers are nationwide.

Programs offer a variety of complementary therapies such as massage, acupuncture, yoga, tai chi, meditation, and nutritional counseling. The goal is to provide therapies that treat the whole person, not just the disease, and boost quality of life and overall health.

WHAT TO KNOW BEFORE CHOOSING CAM THERAPY

It is essential to reiterate the above natural remedies and medicines are still often considered “folk cures” by the conventional medical community. In many cases, scientific studies of these substances have not

definitively shown them to be effective mesothelioma treatments. Their use may be detrimental to a patient because they may delay or avoid a more accepted form of treatment.

Before choosing any CAM therapy, you should consult with your medical practitioner or health care provider and thoroughly explore the pros and cons of each substance in question.

You and your doctor should investigate its origins and understand prescribed dosages and any inherent dangers or side effects.

"While Chinese medicine continues to be researched, certain therapies such as acupuncture and acupressure could provide benefits in managing the myriad side effects that can occur with treatment such as chemotherapy."

– Tejal Parekh, Registered and Licensed Dietitian

"I just figured I had nothing to lose, so why not try something like moringa tea? I feel great, so you could say I'm a believer now. People say I look better now than before I got sick. I'm sure this moringa had something to do with it."

– Billy K., Survivor

Scan the QR Code to see more complementary therapy options

Nutrition and Cancer

Adequate nutrition is important for people with pleural mesothelioma. Cancer patients often lose essential muscle and tissue after diagnosis, and this weight loss can negatively impact their prognosis. Some changes to your diet might help you feel better during and after cancer treatment.

Diet and nutrition can help strengthen the immune system to fight mesothelioma and infections. Certain foods can also help counter some of the effects of cancer. Consuming more proteins, for example, may help boost the immune system and restore tissue that mesothelioma damages.

TOP MESOTHELIOMA DIET TIPS

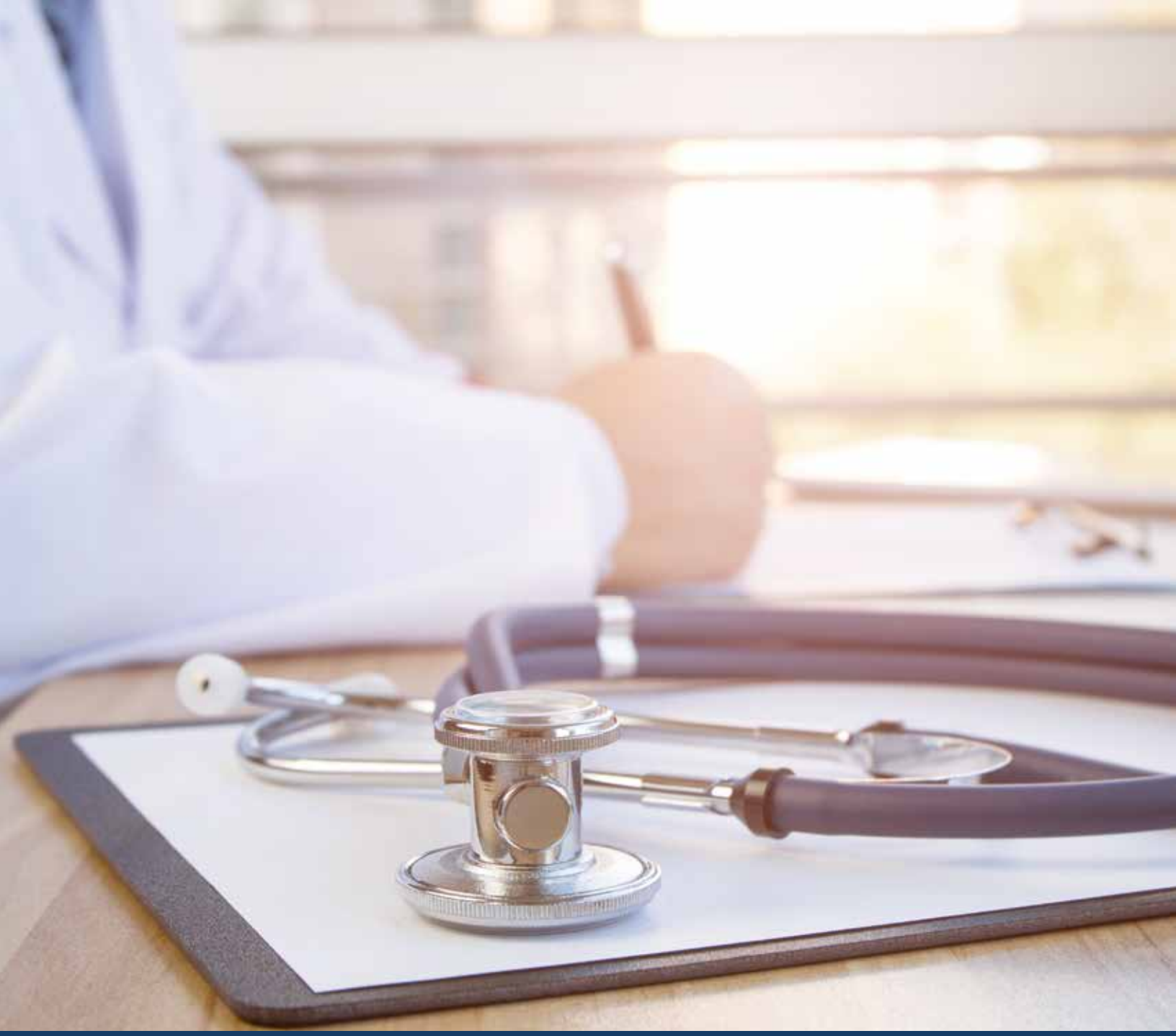
- Eat 5-6 small meals or snacks every 2 or 3 hours instead of 3 large meals daily.
- Choose nutrient-dense foods that are easy to eat. These can include full-fat Greek yogurt, eggs and salmon, whole milk, fruit and protein powder smoothies.
- Avoid kitchens and try colder foods such as sandwiches if cooking smells bother you.
- Experiment with different foods if you have taste changes to help you find more palatable ones.
- To clear taste buds and relieve dry mouth, try a mouthwash of 1 quart water, 3/4 teaspoon salt, and 1 teaspoon baking soda.
- Eating at routine times can help keep your energy levels up and prevent malnutrition.
- Stay hydrated with water, milk, 100% fruit or vegetable juices and soups.

Nutrition also helps maintain energy levels. Consuming the right foods can give you the power to carry out daily activities. Before dietary changes are made, all patients should consult with their mesothelioma doctor.

Not only does what you eat matter when managing pleural mesothelioma but when you eat can also make a difference. Eating smaller portions throughout the day can help you get the nutrients you need without feeling too full or overwhelmed. If you're not eating every 3 hours, set a timer. It's easy to forget to eat when you're not feeling well.

Our guide, "Your Nutrition Guide to Mesothelioma," was written by licensed dietitian Tejal Parekh. She has hosted conferences on oncology nutrition and taught cooking classes designed for cancer survivors. Get quick and easy recipes designed to ease mesothelioma symptoms.

Scan the QR Code to get our free mesothelioma nutrition guide



Importance of a Pleural Mesothelioma Specialist

Anyone diagnosed with pleural mesothelioma today is strongly encouraged to find a specialist who understands the intricacies of this rare cancer. Because the disease represents only 0.12% of all diagnosed cancers, only a select number of doctors have experience treating mesothelioma.

Only a mesothelioma specialist will be up-to-date on the latest medical advancements in the pleural mesothelioma community.

Given the rarity of pleural mesothelioma, primary care physicians and general oncologists may be unaware of current clinical trials and recent developments. You can be assured a specialist will give you the best care to improve your prognosis and mental health.

It's always important to get a second opinion when it comes to cancer treatment, and a mesothelioma specialist can do just that. A mesothelioma specialist is the best type of second opinion because they will know about clinical trials best suited for your subtype, stage, and other variables.

Our Doctor Match Program connects patients to a pleural mesothelioma specialist with a special interest in your diagnosis type. Our Medical Outreach team can typically help cut through some red tape to speed up the process. When it comes to mesothelioma, time is of the essence.

As the disease progresses, treatment options become increasingly limited, so the sooner a patient can get into a mesothelioma specialist, the better.

HOW TO CHOOSE YOUR MESOTHELIOMA DOCTOR

One of the most important concerns is finding a doctor you can trust completely with your care. You will want to evaluate the doctor's expertise while also getting comfortable with the head of a team charged with trying to save your life.

Building a good relationship with your health care team ensures everyone, including you, your loved ones, your doctors and nurses, can efficiently communicate with each other.

QUESTIONS TO ASK YOUR DOCTOR

- How many years has this doctor been practicing?
- Do I want this doctor to decide or offer me options?
- Will this doctor respect my choices and address all of my concerns?
- Can I openly communicate with this doctor?
- Does this doctor accept my insurance?
- Is it easy to travel to this facility for all of my appointments?
- How many cases of mesothelioma have this doctor treated in his or her career? Have any of these cases been recent?
- What's the success rate of remission?
- What types of mesothelioma does this doctor treat? Has he or she managed any cases of my particular subtype?
- What treatments does this doctor typically use to treat mesothelioma?
- Is this doctor prepared to treat my cancer if it spreads to other parts of my body?
- Does this doctor support any supplemental types of therapy in addition to direct medical intervention?
- Does the facility this doctor is associated with offer access to clinical trials? Can the doctor sign up for any I might qualify for?

Scan the QR Code to find a top-rated mesothelioma specialist near you

Mesothelioma Centers of Excellence

Centers of Excellence provide access to cutting-edge clinical trials and lead mesothelioma-specific research. High patient volume, strong outcomes, and affiliations with academic or NCI-designated institutions set them apart. Our close partnerships with these centers help connect patients to advanced, coordinated care to improve outcomes and quality of life.

NOTABLE MESOTHELIOMA CANCER CENTERS

Centers of Excellence provide access to cutting-edge clinical trials and lead mesothelioma-specific research. High patient volume, strong outcomes, and affiliations with academic or NCI-designated institutions set them apart. Our close partnerships with these centers help connect patients to advanced, coordinated care to improve outcomes and quality of life.

Picking the right cancer treatment center might be the most important medical decision you can make. Don't take it lightly. Do your homework to find the best fit for you. Or you can lean on us for help, and we'll walk you through it. Here are a few of the top mesothelioma cancer centers in the United States by region:

Southeast Region (FL, GA, SC, NC, TN, AL, MS, LA, AR)

H. Lee Moffitt Cancer Center
Tampa, FL

Advent Health Orlando
Orlando, FL

UHealth- Sylvester Cancer Center
Miami, FL

Emory University Winship Cancer Institute
Atlanta, GA

Hollings Cancer Center/ University of South Carolina
Charleston, SC

Wake Forest Baptist Health
Winston Salem, NC

Duke Cancer Center
Durham, NC

Vanderbilt Ingram Cancer Center
Nashville, TN

UAB O'Neal Comprehensive Cancer Care
Birmingham, AL

University of Mississippi Medical Center
Jackson, MS

Ochsner Medical Center
New Orleans, LA

Winthrop P. Rockefeller Cancer Institute
Little Rock, AR

Southwest Region (TX, OK, NM, AZ, CO, UT)

Baylor College of Medicine
Houston, TX

MD Anderson Cancer Center
Houston, TX

UT Southwestern Medical Center
Dallas, TX

OU Health Stephenson Cancer Center
Oklahoma City, OK

UNM Comprehensive Cancer Center
Albuquerque, NM

Mayo Clinic
Phoenix, AZ

UCHealth Cancer Care
Aurora, CO

University of Utah Health
Salt Lake City, UT

West Region (CA, NV)

UCLA Health
Los Angeles, CA

City of Hope Comprehensive Cancer Center
Duarte, CA

UC San Diego Moores Cancer Center
LaJolla, CA

Kaiser Permenente
Oakland, CA

UCSF Health
San Fransisco, CA

Stanford Cancer Institute
Stanford, CA

Comprehensive Cancer Centers of Nevada
Las Vegas, NV

Midwest Region (ND, SD, NE, KS, MN, IA, MO, WI, IL, MI, IN, KY, OH)

Mayo Clinic
Rochester, MN

M Health Masonic Cancer Center
Minneapolis, MN

Holden Comprehensive Cancer Center
Iowa City, IA

Siteman Cancer Center
St. Louis, MO

Froedtert Hospital and Medical College of Wisconsin
Milwaukee, WI

University of Chicago Medicine
Chicago, IL

Loyola University Medical Center
Maywood, IL

University of Michigan Comprehensive Cancer Center
Ann Arbor, MI

Karmanos Cancer Institute
Detroit, MI

Henry Ford Hospital
Detriot, MI

IU Health Simon Cancer Center
Indianapolis, IN

University of Kentucky Markey Cancer Center
Lexington, KY

Ohio State University Comprehensive Cancer Center
Columbus, OH

Mid-Atlantic Region (VA, WV, MD, DE, PA, NJ, NY)

UVA Health
Charlottesville, VA

WVU Cancer Institute
Morgantown, WV

NIH National Cancer Institute
Bethesda, MD

Johns Hopkins Medicine
Baltimore, MD

Mercy Medical Center
Baltimore, MD

Helen F. Graham Cancer Center
Newark, DE

Penn Medicine
Philadelphia, PA

Fox Chase Cancer Center
Philadelphia, PA

UPMC Hillman Cancer Center
Pittsburgh, PA

Rutgers Cancer Institute
New Brunswick, NJ

Mount Sinai Hospital
New York, NY

NYU Langone Medical Center
New York, NY

Memorial Sloan Kettering
New York, NY

Northeast Region (CT, RI, MA, NH, VT, ME)

Smilow Cancer Hospital
New Haven, CT

Brigham and Women's Hospital
Boston, MA

Massachusetts General Hospital
Boston, MA

Northwest Region (WA, OR, ID, MT, WY)

Fred Hutch at UW Medical Center
Seattle, WA

OHSU Knight Cancer Institute
Portland, OR

HOW TO CHOOSE THE RIGHT CANCER CENTER

Research Top Doctors

Although mesothelioma is a hazardous form of cancer, not all cancer doctors are mesothelioma specialists. The Mesothelioma Center maintains a unique database of thoracic surgeons and other physicians who treat patients with various forms of mesothelioma, asbestos lung cancer, and asbestosis.

Our Patient Advocates can help you find the right specialist.

Decide on a Treatment Strategy

In general, the treatment for mesothelioma includes therapies used for other cancers — surgery, chemotherapy, radiation therapy, immunotherapy, and a combination of all these. Because asbestos cancers are so aggressive, doctors often point patients to emerging treatments and clinical trials that may lead to cutting-edge treatments.

We can help you sort through the various options.

Consider Treatment Costs and Other Expenses

There's no getting around the fact that treating cancer is costly. Even with the best insurance plans, families can face a financial crisis to ensure loved ones get the prescribed treatments that could save lives or buy wanted time with family and friends.

Our Patient Advocates can help you navigate the maze of doctor, insurance, and treatment center issues and questions that will arise.

WHY CHOOSING A MESOTHELIOMA SPECIALTY CENTER IS IMPORTANT

The rarity of mesothelioma — less than 3,000 Americans diagnosed annually — in comparison to many other cancers is what makes a specialist so important. Most doctors rarely see it and don't understand it fully. A specialist does.

Mesothelioma Is Often Misdiagnosed

Too often, patients with mesothelioma are initially misdiagnosed and begin treatment for a condition they don't have.

Many of the first symptoms of mesothelioma are similar to less serious illnesses. It's why an individual's history of possible asbestos exposure — the cause of mesothelioma — should be communicated early to a physician who understands it.

Mesothelioma Requires Specialized Treatment

Chemotherapy, immunotherapy, surgery, and radiation treatments can be different for mesothelioma. The best treatments today for this cancer are specialized and no longer a one-size-fits-all regimen.

Decades ago, the prognosis for a mesothelioma patient was grim. Life expectancy was 1 to 2 years after diagnosis. Today, the specialized Centers of Excellence extend lives three to four years beyond that.

VA Hospitals and Mesothelioma Treatment

A higher percentage of veterans develop mesothelioma than the general public does, making veterans a group in need of treatment centers. Although their military history makes them eligible for treatment at VA hospitals, that doesn't mean there aren't choices to make. The VA has hospitals that specialize in mesothelioma treatment.

Once in the VA health care system, a veteran can seek treatment anywhere in the country, needing only a referral to receive specialized care.

Scan the QR Code to see top mesothelioma hospitals and cancer centers

Support for Mesothelioma Patients and Caregivers

When you or a loved one is diagnosed with cancer, it can be difficult to move forward. That is why developing a mesothelioma support system is important for everyone involved in the cancer journey.

As a patient, you may feel overwhelmed, scared, and anxious. That's completely normal. In these challenging times, it becomes essential for you to surround yourself with those you love. Building a strong mesothelioma support system can nurture your emotional well-being, lower your stress level, and limit your fear of the unknown. For some of you, mesothelioma support means emotional help, which makes sense.

Good mental health and positive well-being are crucial to surviving mesothelioma. Key outlets for emotional support include mental health counseling, mesothelioma support groups and therapy.

But support should also address your medical and financial needs and those of your caregiver. These two types of needs are the most common causes of stress when dealing with a serious illness. If you seek help, you are more likely to be able to focus on what matters — you and your loved one's health.

Regarding your medical care, you can rest assured you are making the best treatment decisions if you build a well-rounded medical team. By reaching out for financial assistance, whether it is through legal action, grants, or charities, you may also cover medical fees and additional costs.

If you double as a caregiver and family member, remember that a solid support system is also essential for your well-being. Taking on this new role is difficult, and it is not something you should do alone. By asking for additional help, you can build a reliable mesothelioma support network to help you through this challenging time.

EMOTIONAL SUPPORT FOR MESOTHELIOMA PATIENTS & CAREGIVERS

Because mesothelioma doesn't only affect the body, there are several emotions you may experience: Stress, anger, confusion, denial, and depression.

As a patient or caregiver, numerous mesothelioma support resources bring comfort, peace of mind, and an understanding that you are not alone.

MESOTHELIOMA SUPPORT GROUP

Sharing your feelings or listening to others going through similar experiences in a mesothelioma support group may provide you or your caregiver with much-needed and sympathetic emotional support.

Studies show that people with terminal cancers who participate in support groups have higher survival rates and increased quality of life. Local hospitals, therapists, or cancer advocacy groups, such as the American Cancer Society and the American Psychological Oncological Society, host support groups.

The Mesothelioma Center also holds a monthly online support group for people like you who are affected by this cancer. During these meetings, a licensed mental health counselor leads a community of mesothelioma survivors, caregivers, and family members to build a safe, judgment-free environment. Participants are welcome to share their stories and experiences with mesothelioma while also asking any questions.

FIVE BENEFITS OF JOINING A SUPPORT GROUP

Mesothelioma-Focused Support: Mesothelioma may be a rare disease, but you're not alone in this journey. Support groups provide a safe place to share your experiences.

Comprehensive Support: Licensed counselors and social workers with expertise and training lead groups to help patients like you cope with the disease.

Greater Quality of Life: Studies show that participating in support groups can reduce anxiety, stress levels, emotional distress, fatigue, pain, and mood.

Additional Resources: Many mesothelioma support groups share new resources that could help you outside of the support group and in addition to your medical team.

Caregiver Support: Support groups are not just for you. Your caregiver often takes on a new role and may need encouragement while coping with changes in both your lives.

DEPRESSION AND ANXIETY

Depression and anxiety may accompany any life-threatening illness, and this is especially true if you're diagnosed with mesothelioma. Depression is not just feeling down or blue. It is a clinical condition that may require treatment from a professional.

Clinical depression comes with a specific set of symptoms. Among them are mood swings, fatigue, sadness or emptiness that last for more than a few days, feelings of helplessness or worthlessness, and changes in eating and sleeping habits. It's important to recognize symptoms of anxiety in your life and seek help.

GRIEF SUPPORT

Experiencing grief is a normal response to losing someone you love. Attending support groups or counseling sessions can make a huge difference in your life. It takes time to cope with the loss of a loved one.

Grief counseling can help you work through this loss. If you are like most people who are struggling with grief, you just want to get your life back. When participating in grief counseling sessions, hospice support staff or a licensed counselor can help you set recovery goals and guide you as you work toward achieving them.

SUPPORT FOR CAREGIVERS OF MESOTHELIOMA PATIENTS

The people who care for you as a mesothelioma patient face unique challenges that make it essential for them to find their type of support.

The experience itself can test your faith and character. While it is an honor to care for the ones we love when they need us, reaching out for help when you need it doesn't make your effort less valiant.

Some responsibilities caregivers may need help with include shopping for groceries, cooking, cleaning, paying bills, and driving to doctor appointments.

MEDICAL SUPPORT FOR MESOTHELIOMA PATIENTS

While traditional treatment is essential in your battle against mesothelioma, a well-rounded treatment approach can make a huge difference in your prognosis. You may want to contact various specialists to complete your support team.

Even if you've already seen an oncologist, it's best to see a mesothelioma specialist for a second opinion. While this may sound like a lot of running around to hear the same verdict, it can impact your medical decisions as specialists are more familiar with the disease.

You do not have to do this alone. Our Patient Advocates can help you find a mesothelioma specialist at a specialty center. With the help of our free Doctor Match program, patients can connect with local specialists to get the best treatment options at the best cancer centers.

Building a strong team of medical professionals and personal advocates will help you feel more supported in your decisions and limit your fears.

KEY MEMBERS OF A MESOTHELIOMA MEDICAL SUPPORT TEAM

- Mesothelioma Specialist
- Nutritionist
- Patient Advocate
- Mental Health Counselor
- Hospice Staff

MESOTHELIOMA SPECIALIST

Only a mesothelioma specialist will be up-to-date on the latest medical advancements in the community.

Given the rarity of mesothelioma, primary care physicians and general oncologists may be unaware of current clinical trials and recent developments. You can be assured a specialist will give you the best care to improve your prognosis and mental health.

It's always important to get a second opinion when it comes to cancer treatment, and a mesothelioma specialist can do just that. A mesothelioma specialist is the best type of second opinion because they will know about clinical trials best suited for your subtype, stage, and other variables.

NUTRITIONIST

Diet, nutrition and exercise are key portions of your mesothelioma treatment plan. Traditional therapies, such as chemotherapy, radiation and surgery, can complicate eating patterns, likes and dislikes. This can lead to various unintended consequences, including weight and muscle loss that can hurt your overall prognosis.

While plenty of so-called experts online instruct cancer patients on what to eat, only an oncology dietitian or nutritionist can give accurate advice on adequate nutrition and exercise tips.

PATIENT ADVOCATE

Our Patient Advocates are committed to helping you with your questions about mesothelioma or any other asbestos-related disease. They can help you access a variety of resources such as:

- Finding the best doctors and treatment facilities near you
- Connecting you with local support groups
- Providing you access to our on-staff nurse and physician
- Mailing you free custom literature and books about your diagnosis
- Helping veterans receive their VA claims benefits
- Assisting you with financial and legal options

As a free resource, Patient Advocates can make a huge difference for you and your loved ones at no cost.

MENTAL HEALTH COUNSELOR

When you are diagnosed with mesothelioma, you may experience a range of emotions that are difficult to understand. Speaking with a therapist or mental health counselor may be worth your time. A mental health counselor can provide in-depth emotional, social, and educational support for you.

Some counselors specialize in working with cancer patients. They can be an excellent resource for you when it comes to coping with new and confusing thoughts and feelings.

HOSPICE STAFF

It's never easy to discuss end-of-life decisions, especially when a loved one has just recently been diagnosed with terminal cancer. Despite the difficulty, it's important to understand your options ahead of time. Remember that choosing hospice care does not mean you are giving up. Hospice offers a variety of benefits such as constant round-the-clock care, palliative treatment, in-home assistance, and emotional support.

Also, it's important to note that hospice does not have to be a permanent decision. If you choose to begin a new treatment, join a promising new clinical trial or simply leave the program, patients can leave hospice care later.

DOCTOR MATCH PROGRAM

When building a medical support team, finding the right doctor for you is one of the most challenging parts. Through our free Doctor Match program, you will be connected to a mesothelioma specialist with a special interest in your diagnosis type. Just like other doctors, not all specialists are the same. Some focus on pleural mesothelioma, while others specialize in peritoneal mesothelioma.

Since mesothelioma is relatively rare, there are only a select number of specialists nationwide. As a result, the waiting lists for some of these physicians are lengthy. Our Medical Outreach team can help cut through some red tape to speed up the process for you.

When it comes to mesothelioma, time is of the essence. As the disease progresses, treatment options become increasingly limited, so the sooner you can get into a mesothelioma specialist, the better.

MESOTHELIOMA CENTERS OF EXCELLENCE

Certain cancer centers have established themselves as frontrunners in the fight against mesothelioma. These cancer centers offer a multidisciplinary approach to battling asbestos-related cancers.

Physicians and advocates urge people with mesothelioma to visit one of these specialized centers to learn about the latest treatments helping patients like you beat the odds.

If you're interested in finding the best mesothelioma cancer center near you, contact our Patient Advocates.

FINANCIAL SUPPORT FOR MESOTHELIOMA PATIENTS

Treating any type of cancer or chronic illness is costly for you, your loved ones, and anyone else who may help pay bills. The rarity of mesothelioma often means increased expenses for specialized treatments.

Money should never limit your access to treatment or your ability to connect with loved ones in different states. If you or your family is struggling financially, options include travel grants, free or reduced hotel stays, and legal compensation.

Scan the QR Code to discover all of our available support services

You Don't Have to Carry This Alone

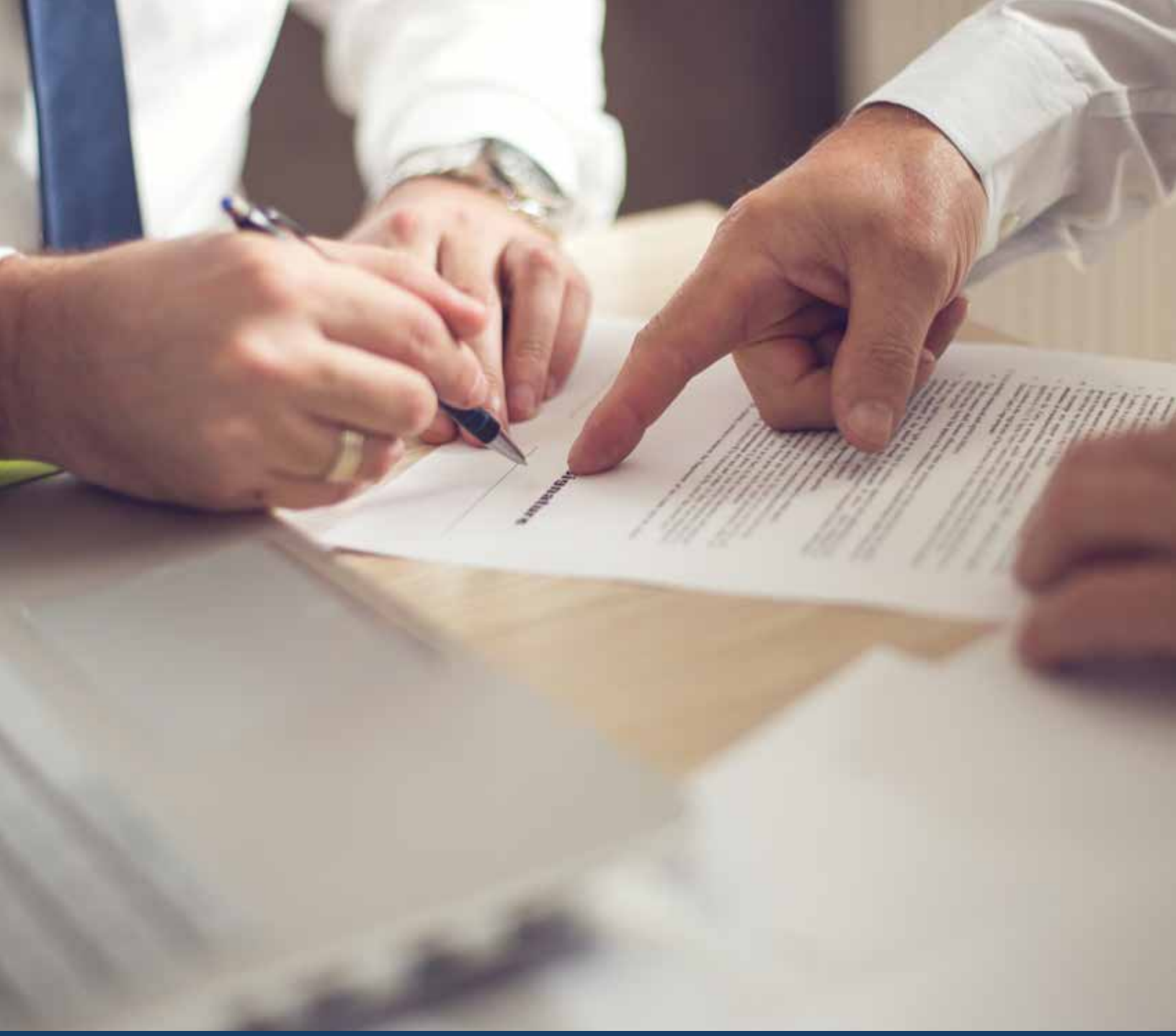
Join our private support group created just for mesothelioma patients and caregivers. It's a safe space to share, ask questions, and find encouragement from others who understand.

Join Our Support Group

Asbestos.com®

Brought to you by The Mesothelioma Center

1.888.906.1589



Legal Compensation for Pleural Mesothelioma

Legal compensation is available for pleural mesothelioma patients and their families. The litigation falls under personal injury and wrongful death. Seeking compensation provides financial means to help with treatment and care costs. It also holds companies accountable for causing pleural mesothelioma.

Compensation differs for each mesothelioma claim. On average, mesothelioma compensation ranges from $1 million to $20.7 million, including settlements and trial verdicts. This compensation helps patients and their families pay for medical bills, lost wages, and other expenses.

In most cases, a mesothelioma diagnosis can be traced to a specific company or companies that exposed you to asbestos despite the known dangers of this toxic material. In these situations, the company knowingly risked your health and safety to make a profit, and you deserve legal compensation for your suffering.

Various types of mesothelioma claims may apply to your situation. An asbestos attorney can explain your options and help you file the appropriate claim for your circumstances. In addition to filing a legal claim, other types of general financial help are available to you.

It can be hard to predict how much compensation can come with each case or even how it will be resolved. An experienced asbestos attorney can help gauge your eligibility and case value.

Mesothelioma law firms do not charge any upfront costs or fees. These law firms work on a contingency fee basis, so your family doesn't have to pay anything unless the law firm wins your case.

WHAT TYPE OF COMPENSATION CAN YOU RECEIVE?

There are different types of compensation for pleural mesothelioma patients and their families, including asbestos trust funds, settlements and trial verdicts. Compensation amounts can vary widely.

Asbestos Trust Funds

Some people develop mesothelioma after exposure to an asbestos product manufactured by a company that filed for bankruptcy. Because the company is no longer in business, you cannot file a lawsuit against it. Instead, your legal claim goes through the company's trust fund, speeding up the compensation process.

More than 60 active mesothelioma trust funds have set aside $30 billion for future claims. Claimants typically receive compensation within a couple of months.

Settlement

A settlement is when a defendant pays a plaintiff to dismiss the lawsuit. Many mesothelioma lawsuits settle before trial. Several factors affect whether your lawsuit settles. The average settlement ranges from $1 million to $2 million.

Because settlements provide compensation faster than lawsuits, they may be a more immediate solution to pay expenses. Although verdicts typically result in higher total compensation, most lawsuits are settled before trial.

Some defendants decide settling a claim is cheaper than incurring more legal fees. Other defendants are willing to risk a trial because they can negotiate an asbestos settlement at any point.

A qualified asbestos law firm will negotiate settlements on your behalf. They'll advise you about whether to take the compensation or pursue a court trial.

Trial Verdicts

Most asbestos-related lawsuits never go to trial. Many cases are settled out of court long before a trial begins. And several others are settled during the trial process. Regardless, the job of your mesothelioma attorney is to prepare for a trial as soon as you decide to file a claim.

It's the plaintiff's decision whether the case goes to trial. If your case goes to trial and the defendant does not settle, there are two likely outcomes: Liable or not liable. If the defendant is found liable, money is usually awarded to you. Each mesothelioma case is unique, and there are no guidelines for claiming compensation from asbestos exposure.

If you win, the amount owed depends on your case's facts and other factors, such as medical costs and lost income.

WHEN WILL YOU RECEIVE COMPENSATION?

The time it takes to receive compensation for a case filed in the courts depends on the jurisdiction in which the case is filed, but hopefully, it will be within a year of filing. As for a claim filed with the asbestos trusts, you may receive compensation within three months of filing a claim. Compensation from settlements comes at different points and from different defendants if more than one is named in the lawsuit.

DETERMINING THE VALUE OF YOUR CASE

Estimating how much your case is worth can be a complex process. You need an asbestos claims expert who can explain the details of your case. An experienced mesothelioma attorney knows how to get your case to the finish line without placing too much strain on you or your family.

You should also consider choosing someone close to you who can document your battle with mesothelioma. This person will collect any relevant medical files and correspondence and pass that information to your attorney.

Two things your attorney will need to know immediately are the stage of your cancer and your prognosis. Work history is another integral part of the case value. To pursue a legal claim, your attorney must determine where the asbestos exposure occurred and whose asbestos-containing products were involved.

CASE VALUATION MATRIX

Many lawsuits are settled before trial and paid out of a trust fund set aside to handle the financial load of future cases. These fund managers rely on a case valuation matrix to do that. The matrix is a legal document that assigns base dollar figures to cancer types and then recalculates that base amount with additional information.

For example, the matrix will assign one baseline dollar amount for mesothelioma, one for lung cancer, etc. Those dollar amounts can vary by state or region because exposure levels are set by location. The baseline dollar figure can be as low as several thousand dollars or as high as several hundred thousand dollars.

Once the baseline is established, some specifics of your case will kick in, increasing or decreasing your level of compensation.

Other factors that affect the value of your case may include:

- Your location, age, gender, and work history
- A history of military service
- Physical and mental distress (also known as pain and suffering)
- Where the asbestos exposure occurred
- Which asbestos products were involved
- Medical expenses, including those not covered by health insurance
- Travel costs for medical treatments
- Lost wages
- Cost of continued medical care
- Your ability to support dependents
- Funeral expenses

These variables make it difficult to predict a case's value before you file a claim. However, an attorney can review information about your case and provide a range of expected values. This estimate can assist you in deciding whether to pursue a claim.

HOW TO CHOOSE AN ASBESTOS ATTORNEY

Consider factors such as experience handling mesothelioma cases when choosing the best mesothelioma lawyer for you. Resources such as Patient Advocates can help match you with a lawyer who has a proven record of success and is someone you can feel comfortable working with throughout the legal process.

HOW TO FIND THE RIGHT MESOTHELIOMA ATTORNEY

Connect with a Patient Advocate: They can help you navigate medical care and also help with financial assistance, including finding a lawyer best suited for your specific case.

Learn more about the firm: Find out how your chosen firm's experience matches your type of exposure and why they may be best suited to file a claim where you live.

Schedule an initial phone consultation: During this process, you can learn more about the firm's experience and how they'll be able to help you.

Schedule a meeting: Set up an in-person or virtual meeting to begin your case. An asbestos lawyer should offer you a free case evaluation. You can assess their expertise and approach without any financial obligation. A lawyer who is a good communicator and presents legal matters in a way you understand is important and can make your legal experience less stressful. They also obtain the most compensation for their clients year after year.

Top asbestos law firms understand the challenges that come with a mesothelioma diagnosis. Mesothelioma attorneys at these firms are mindful of managing your case while you focus on your care and spending quality time with your family.

REMEMBERING YOUR ASBESTOS EXPOSURE

No one is expected to remember everything about their work, medical, life, and exposure history. It's simply too much information, and the time between exposure and diagnosis is too long. Don't be discouraged if you can't remember where you were exposed to asbestos. That is why the most beneficial action you can take if you are considering an asbestos-related claim is to speak with a qualified attorney. They have resources other attorneys do not have, which can significantly help your case.

Mesothelioma law firms have investigators who gather information and evidence related to a mesothelioma claim. Many mesothelioma attorneys have product identification books that feature pictures of asbestos-containing products and their packaging. These kinds of images can help jog your memory of products long forgotten. Knowledge of exposure to specific products or brands can significantly raise the value of your case.

Your attorney can find it even if you can't remember your employment history.

Employment records are accessible through the federal government with your approval. Likewise, a good mesothelioma lawyer will know to dig through your medical records and establish specific facts about you, your work history, and your life history.

These factors are essential in establishing how and where you were exposed. Attorneys will also attempt to identify and locate co-workers, friends, shipmates, or other witnesses who can help identify or corroborate your exposure history.

Experienced asbestos attorneys can also compare your case to others they have handled and see how it stacks up. Case histories can be a good indicator of what can be expected in your case process. Deciding whether to file a lawsuit is an important decision in any situation, especially if you are coping with a serious illness.

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Veterans and Pleural Mesothelioma

Military veterans account for more than 6% of America's population today, but veterans file a staggering 30% of all mesothelioma legal cases in the United States.

Veterans in all branches of the U.S. armed forces were exposed to vast amounts of asbestos, putting them at high risk for mesothelioma and other asbestos-related diseases. However, help is available if you are a veteran or the family member of a veteran.

Veterans who developed mesothelioma and other asbestos-related conditions after exposure to asbestos in the military qualify for special financial benefits from the U.S. Department of Veterans Affairs.

Benefits include disability compensation, special monthly compensation, and service-connected death benefits for surviving family members.

An approved mesothelioma VA benefits claim provides veterans much-needed help such as access to treatment at any facility in the VA network. Free travel is available for veterans visiting VA facilities offering mesothelioma treatment programs.

MILITARY'S RELIANCE ON ASBESTOS

Asbestos was once highly regarded for its heat resistance and fireproofing capabilities, making it a valuable tool for the U.S. armed forces. From the 1900s to the mid-1970s, nearly all branches of the military used the material, putting veterans who specialized in many military occupations at risk for mesothelioma.

All modes of military transportation, such as U.S. Navy ships, tanks, automobiles and aircraft, contained products contaminated with asbestos. It was used in electric wiring insulation, brake pads and clutch pads found in jeeps, tanks and aircraft. Buildings on military bases, including barracks, were filled with asbestos cement pipes and various other asbestos-containing building materials. Veterans today who served from 1940 to 1980 are at especially high risk of developing health problems from asbestos. Those who served more recently are also in danger because it took decades for the military to remove or replace the asbestos products.

Veterans stationed in Iraq and Afghanistan may have been exposed to asbestos when older buildings containing the material were damaged.

ASBESTOS USE IN ALL MILITARY BRANCHES

It wasn't until the mid-1970s, after considerable publicity over the toxicity and long-term health problems of asbestos, that the military curtailed its use of the product. Many of the veterans who are diagnosed today were first exposed to asbestos during the Korean or Vietnam wars and soon thereafter.

Although the Navy used asbestos the most, the Army, Marines and Air Force also incorporated the carcinogen into many products. The military occupations that posed the most danger of asbestos exposure were the mining, shipyard and construction jobs.

HIGH-RISK JOBS

- Pipefitting
- Shipyard work
- Mining
- Insulation work
- Demolition work
- Manufacturing or installing roofing or flooring
- Building or maintaining military equipment
- Repairing vehicles and friction products

SECONDARY ASBESTOS EXPOSURE IN THE MILITARY

The military's reliance on asbestos not only put service members at risk but also endangered their family members through secondary asbestos exposure. During the peak years of asbestos use, many veterans brought home asbestos fibers on their work clothes and unintentionally exposed their spouses or children to the toxic mineral.

These secondary exposures were far less severe than heavy firsthand exposures that frequently occurred at Navy shipyards. Yet, they still had the potential to cause mesothelioma and other asbestos-related illnesses.

One common scenario for secondhand exposure: A serviceman's wife inhales asbestos while washing or handling her husband's asbestos-laden clothes. Children have also suffered secondhand asbestos exposure by playing with their fathers or hugging them when they return home from work.

Secondary exposure is rarely a problem when service members are deployed overseas. Still, it can be a serious risk for families living on military bases or in military housing. If a veteran ever returns home covered in asbestos dust, there is a chance a family member may develop a related illness later in life.

NAVY VETERANS ARE MOST VULNERABLE

Navy veterans were exposed to higher levels of asbestos than men and women in other branches of the military because the Navy packed its vessels with asbestos materials from bow to stern. As a result, Navy veterans are diagnosed with mesothelioma and other asbestos-related illnesses at higher rates than other military veterans.

The Navy began adding asbestos fireproofing materials to its ships in 1938. The following year, the surgeon general of the U.S. Navy issued a warning about the dangers of asbestos exposure in the New York Navy Yard and the risk for asbestosis.

Navy officials, however, ignored the warning and increased production of asbestos-laden ships in preparation for World War II. Navy personnel faced exposure risks from the late 1930s to the early 1990s.

Records show Navy ships housed more than 300 asbestos-containing products, and shipyards were filled with these materials. Navy personnel working below deck before the early 1990s were commonly exposed to asbestos. Seamen frequently removed damaged asbestos lagging from engine rooms and re-wrapped the pipes with asbestos paste, usually with no respiratory protection or other safety equipment required for such a dangerous task.

Ventilation below deck was often poor, so asbestos released from damaged materials or maintenance work that disturbed them would linger where personnel lived and worked.

Even veterans who never worked with asbestos directly may have been exposed to nearby work involving asbestos.

High-Risk Exposure Sites in Ships

- Engine & boiler rooms
- Damage control
- Pump room

Medium-Risk Exposure Sites in Ships

- Powder & shot hoist
- Powder & shot magazine
- Ward room
- Turrets

Low-Risk Exposure Sites and Ships

- Mess deck
- Reefer
- Secondary battery director
- Aft main battery director
- Forward main battery director
- Admiral's cabin
- Captain's sea cabin
- Pilot's house
- Open bridge
- Sick bay
- Anchor windlass room
- Chain locker
- Crew berthing space
- Junior officers' quarters

HELP WITH VA CLAIMS AND OTHER BENEFITS FOR VETERANS

If you are a veteran with known asbestos exposure, it is urgent to heed any early warning signs and request a chest X-ray or other early screening tests. The Mesothelioma Center can help connect you with a doctor and answer any questions.

Every veteran discharged under conditions other than dishonorable has a right to VA benefits, including health care, monthly compensation, and survivor benefits for their loved ones.

The Veterans Department at The Mesothelioma Center specializes in getting veterans' VA claims approved for benefits.

Former U.S. Army Capt. Aaron Munz, director of the Veterans Department, is well-versed in helping people navigate the complicated VA claims process. He has the knowledge and resources to guide you through each step.

The VA recognizes mesothelioma as a service-connected medical condition. We help you gather evidence to prove your disease is asbestos-related and show the majority of your exposures to asbestos occurred during your military service. We also help you explore other potential avenues of compensation.

ASBESTOS DISEASES APPROVED FOR VA DISABILITY

- Mesothelioma
- Asbestosis
- Lung cancer
- Bronchus cancer
- Gastrointestinal cancer
- Larynx cancer
- Pleural effusion
- Pleural plaques
- Pharynx cancer
- Urogenital cancers (except prostate)

VA HEALTH CARE

Eligibility for VA health care is based on a series of priorities, including service-related disabilities and income levels. There also are exceptional circumstances.

For veterans with an asbestos-related illness, enrollment would be tied to a determination that the illness was service-related or to income level. The VA uses two different income limits: a National Income Threshold and a Geographically Adjusted Income

Threshold. Qualifying under the income level category may require copays for health services.

Different types of VA benefits are available to those with an asbestos-related disease.

DISABILITY COMPENSATION

Disability Compensation is a monthly benefit based on a veteran's level of disability. The VA rates the level of disability from zero to 100% and provides more compensation for higher disability ratings.

Cancers such as mesothelioma are considered 100% disabling. This would qualify a veteran for the maximum monthly benefit, which starts at $3,877. Benefits may increase based on the veteran's number of dependents.

Dependency And Indemnity Compensation (DIC)

Dependency and indemnity compensation is a helpful monthly benefit for those who have lost a loved one who served in the military. If you are a surviving spouse of a veteran who passed away due to service-related disabilities, you may be eligible to receive up to $1,612.75. This support can provide some relief during a difficult time.

You might be eligible for an extra monthly payment if you meet certain conditions. We encourage spouses of deceased veterans to file a claim to access this benefit.

Special Monthly Compensation (SMC)

Disabled veterans who need assistance from someone else can receive special monthly compensation. This support can range from $4,651 to more than $6,382 each month. This benefit is also available for the spouses and parents of veterans.

Rates for special monthly compensation depend on several factors, including the number of dependents.

VA Burial Benefits

The VA provides a burial allowance of $2,000 for veterans who pass away due to service-related issues. To access this benefit, you will need to demonstrate that you covered the costs of the veteran's burial or funeral. Additionally, it's important to show that the veteran's passing was due to a service-related disability, such as mesothelioma from military asbestos exposure. Understanding the requirements for filing a claim is essential.

The VA updates these monthly payments every year. It's always best to check with the VA for the latest benefits.

VETERANS' MISCONCEPTIONS

After years of providing help for veterans with mesothelioma, we've found some veterans and their loved ones have misconceptions about VA benefits that prevent them from filing a claim, even when they qualify.

Unfortunately, veterans who mistakenly think they are ineligible to miss out on quality health care and vital financial assistance.

One common myth is veterans can't file a VA claim because they developed an asbestos-related condition after their military discharge. Diseases related to asbestos exposure can take decades to develop, so if veterans can prove their asbestos exposure was service-connected, they qualify for VA benefits.

Another misconception is that only veterans of the five main military branches are eligible for benefits. VA benefits are extended to commissioned U.S. Public Health Service officers, the U.S. Environmental Services Administration, the National Oceanic and Atmospheric Administration, and its precursor, the Coast and Geodetic Survey.

POST-MILITARY EXPOSURE

For some veterans who developed mesothelioma, their service was only one component of their asbestos exposure. Many service members were trained in Navy, Army, Marines, Coast Guard, and Air Force trade jobs. When they rejoined civilian life, they often sought jobs related to skills they developed during service.

They became plumbers, electricians, construction specialists, mechanics, and industrial workers, just to name a few occupations veterans may have chosen after their service. Many later learned these jobs added to their exposure history, increasing the odds of developing a related condition years later. Mesothelioma typically develops 20 to 60 years after asbestos exposure.

QUALITY HELP IS AVAILABLE FOR VETERANS

Many veterans with mesothelioma disability status don't realize they can seek treatment anywhere in the VA system, which gives them access to some of the best specialists in the country. In most cases, the VA can assist with travel arrangements and cover the cost of airfare and housing.

Veterans can also participate in clinical trials, where researchers test and refine the latest experimental treatments. Although there is no cure for mesothelioma, researchers are making significant advancements in treatment through clinical trials.

Scan the QR Code to explore additional resources and benefits for veterans

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Pleural Mesothelioma Glossary

A

Adjuvant Therapy
Extra treatment given after the main one to help it work better. It often includes chemotherapy or radiation.

Alternative Treatments
Non-traditional treatments used with standard care to help people feel better. Examples include acupuncture, herbal medicine and medical marijuana.

Amosite
Also called brown asbestos. This is a type of the toxic mineral with straight fibers and lots of iron.

Amphibole Asbestos
A group of asbestos types with straight, chain-like fibers. Common ones include amosite (brown asbestos) and crocidolite (blue asbestos).

Anthophyllite
A rare kind of asbestos that forms in the earth near talc and can contaminate talc products.

Asbestiform
Describes minerals that act like asbestos. They're flexible, strong and have long, thin fibers in bundles.

Asbestos
A natural mineral once widely used in buildings and products because it resists heat. Breathing in or swallowing asbestos fibers is the main cause of mesothelioma.

Asbestos Abatement
The safe removal or control of materials that contain asbestos. Only trained and licensed workers should do this.

Asbestos Exposure
Happens when someone breathes in or swallows asbestos fibers. This can happen at work or near damaged materials that contain asbestos.

Asbestos Trust Fund
A pool of money that bankrupt asbestos companies created to compensate people with asbestos-related diseases.

Asbestosis
An illness that happens when people breathe in asbestos fibers. It leads to scarring in the lungs and trouble breathing.

Asbestos-Containing Material (ACM)
Any material with more than 1% asbestos. Examples include ceiling tiles, insulation and certain cement products.

Ascites
Fluid buildup in the belly (peritoneal cavity) that can cause swelling and pain.

B

BAP1 Gene
A gene that helps stop tumors. Changes or mutations in this gene can raise the risk of mesothelioma and affect life expectancy.

Biphasic Mesothelioma
A type of mesothelioma made up of two kinds of cancer cells (epithelioid and sarcomatoid). The chances of recovery depend on how much of each kind is in the tumor.

Biomarkers
Molecules (like proteins) in blood, fluids or tissues that show signs of disease. In immunotherapy, biomarkers help predict how well treatment will work.

Biopsy
A medical procedure where doctors remove a small tissue sample to check for diseases like mesothelioma under a microscope.

Brachytherapy
A type of internal radiation therapy where doctors place radioactive seeds or pellets are placed directly into or near the tumor. It's less common for mesothelioma, but is used in some cases.

Brigham Staging System
A mesothelioma-specific system that looks at tumor removal options, lymph node involvement and spread.

Butchart Staging System
An early system for staging mesothelioma. It divides the cancer into four stages based on how far the tumor has spread in the lining of the lungs, called the pleura, and other organs.

C

Carcinogen
A substance that can cause cancer. Asbestos is a known carcinogen.

Cell Type
The kind of cancer cells in mesothelioma: epithelioid, sarcomatoid or biphasic. The cell type affects the outlook.

Checkpoint Inhibitors
Drugs that block checkpoint proteins from stopping T cells. This lets T cells attack cancer cells. Examples include Keytruda (pembrolizumab) and Opdivo (nivolumab).

Chemotherapy
Treatment using drugs to kill or stop cancer cells from growing. For mesothelioma, common drugs are Alimta (pemetrexed) and cisplatin.

Chrysotile
Also called white asbestos. This fibrous mineral is the most common type of asbestos used in products.

Claimant
An individual who files a legal claim seeking compensation for injuries or losses, such as those resulting from asbestos exposure.

Class-Action Lawsuit
A legal case where a group of people sue the same company for causing similar harm, such as asbestos-related illness.

Clinical Trials
Research studies where doctors test new treatments to see if they're safe and work well. Some people choose to participate to try newer therapies.

Compensation
Money awarded through a settlement, verdict or trust fund claims to help people with mesothelioma pay for treatment, lost income and other costs linked to their illness.

Contingency Fee Agreement
A payment arrangement where a lawyer gets a share of the money only if the client wins the case.

Crocidolite
Also called blue asbestos. This type of the toxic mineral has thin fibers and resists chemicals. It's one of the most dangerous forms of asbestos.

CT Scan (Computed Tomography Scan)
An imaging test that uses X-rays to take clear pictures of the inside of the body. Doctors use it to find signs of mesothelioma.

Cytology
The study of cells to find disease. Doctors often check fluid from the chest or belly to look for cancer cells.

Cytoreductive Surgery
A surgery where doctors remove as much of the tumor as possible. They often use it to treat peritoneal mesothelioma.

D

Damages
Money someone receives in a lawsuit because another person or company caused harm.

Defendant
The person or company being sued in court, like manufacturers that caused harm through asbestos exposure.

Dependency and Indemnity Compensation (DIC)
Monthly payments the VA gives to families of service members who died in the line of duty or from a service-related illness.

Deposition
A recorded, sworn statement that someone gives before a trial. Lawyers use it to gather facts.

Disability Compensation:
Tax-free monthly payments the VA gives to veterans who got sick or hurt while serving in the military.

Discovery
The step in a lawsuit when both sides share facts, documents and evidence.

E

Epithelioid Mesothelioma
The most common mesothelioma cell type (50–70% of cases). It often responds better to treatment than other mesothelioma cell types.

Exposure History
A detailed list of times and places when someone came into contact with asbestos. Lawyers use it to build a case.

External Beam Radiation Therapy (EBRT)
The most common type of radiation therapy for mesothelioma. EBRT uses strong X-rays from a machine outside the body to shrink tumors.

Extrapleural Pneumonectomy (EPP)
A major surgery where doctors remove one lung, part of the diaphragm and other tissue to treat early-stage pleural mesothelioma.

G

Genetic Factors
Inherited traits that increase a person's risk of developing mesothelioma after asbestos exposure.

H

Heated Intraperitoneal Chemotherapy (HIPEC)
A treatment for peritoneal mesothelioma where doctors circulate heated chemotherapy drugs within the abdominal cavity immediately after cytoreductive surgery.

I

Image-Guided Radiation Therapy (IGRT)
A technique that uses imaging during radiation therapy to improve the precision and accuracy of treatment delivery.

Immunohistochemistry
A lab test that uses special proteins to look for signs of cancer in a tissue sample. Doctors use it to help confirm a mesothelioma diagnosis.

Immunotherapy
A treatment that harnesses the body's immune system to fight cancer. Immune checkpoint inhibitors like Opdivo (nivolumab) and Yervoy (ipilimumab) have shown promise in treating mesothelioma.

Intensity-Modulated Radiation Therapy (IMRT)
An advanced form of external beam radiation therapy that uses computer-controlled X-ray beams to deliver precise radiation doses to a tumor while minimizing damage to surrounding healthy tissue.

J

Judgment
A court's official decision that defines the rights and obligations of the parties in a lawsuit.

Jurisdiction
A court's legal authority to hear and decide a case, often based on geographic location or subject matter.

K

Keytruda
The brand name for pembrolizumab, an immunotherapy drug. Combining it with chemo helps patients who can't undergo surgery. The FDA approved it as a first-line treatment for pleural mesothelioma in 2024.

L

Latency Period
The time between asbestos exposure and mesothelioma diagnosis, typically ranging from 20 to 60 years.

Liability
Legal responsibility for one's actions or omissions, which may require paying damages in a lawsuit.

Life Expectancy
The estimated time a patient is expected to live after a mesothelioma diagnosis, varying based on factors like cancer stage, cell type, treatment and overall health.

Litigation
The process of taking legal action. In mesothelioma cases, litigation involves filing lawsuits against responsible parties for asbestos exposure.

Lung Cancer
A cancer that starts in the lungs. It can look like pleural mesothelioma, which makes it hard to tell them apart. Asbestos exposure can also cause it.

M

Mesothelioma
A rare and fast-growing cancer. It starts in the mesothelium, a thin layer of tissue that covers organs. Asbestos exposure is the main cause of mesothelioma.

Mesothelioma Lawsuit
A legal case people file after receiving a mesothelioma diagnosis. This type of legal action seeks money from companies that exposed people to asbestos.

Mesothelioma Lawyer
A lawyer who helps people with mesothelioma get money for their illness. These lawyers know how to handle asbestos cases.

Mesothelioma Specialist
A doctor specializing in mesothelioma. This includes oncologists, surgeons and pathologists who study tissue in labs.

Mesothelioma Survival Rate
The percentage of people still alive after a certain time with mesothelioma. Doctors often look at 1-year, 3-year or 5-year survival rates.

Mesothelioma Symptoms
Warning signs of mesothelioma. These can change based on the type and stage. Common symptoms include chest or belly pain, tiredness, trouble breathing and fluid buildup.

Mesothelium
A thin lining that covers the inside of the chest and belly. It protects your heart, lungs and other organs.

Misdiagnosis
When a person is given the wrong diagnosis. With mesothelioma, this can delay the right care and make the disease worse.

MRI (Magnetic Resonance Imaging)
A scan that uses magnets and radio waves to take pictures inside the body. It helps doctors see how far mesothelioma has spread.

Multimodal Therapy
A treatment plan that uses more than one method. Doctors may use surgery, chemo or radiation to help the person live longer.

O

Occupational Exposure
Contact with asbestos at work. This happens often in jobs like building ships, firefighting, serving in the military, manufacturing or working in construction.

Opdivo
This is the brand name for nivolumab, a drug that helps the immune system fight cancer. The FDA approved it when combined with another immunotherapy drug called Yervoy to treat pleural mesothelioma in 2020.

P

Palliative Care
This care helps with pain and other symptoms. It can help people feel better while they also get treatments that try to cure their illness.

Palliative Radiation Therapy
Doctors use this kind of radiation to relieve pain and other symptoms from mesothelioma. It doesn't aim to cure the cancer.

Pathology
Doctors study body tissues, fluids or organs to find disease. Pathologists check biopsy samples to help diagnose mesothelioma.

Pericardial Mesothelioma
This rare cancer grows in the lining around the heart. It often causes chest pain or shortness of breath and can be misdiagnosed because the symptoms aren't specific.

Pericardium
Your pericardium is a thin sac filled with fluid that surrounds your heart. It protects your heart, helps it move smoothly and keeps it in place. It has two layers: one holds the heart steady and the other helps it move without friction.

Pericardiectomy
Doctors remove the lining around the heart when mesothelioma grows there.

Peritoneal Mesothelioma
This cancer starts in the lining of the belly called the peritoneum. Symptoms include belly pain and swelling from fluid buildup (ascites).

Peritoneum
Your peritoneum is a thin lining inside your belly and pelvis. It covers organs such as your stomach, spleen and liver to help protect them.

Peritonectomy
Doctors surgically remove the peritoneum or belly lining to treat peritoneal mesothelioma.

Personal Injury Lawsuit
People diagnosed with mesothelioma file legal claims against companies responsible for their asbestos exposure.

PET Scan (Positron Emission Tomography Scan)
This scan shows how tissues and organs are functioning. Doctors use it to check if mesothelioma has spread.

Plaintiff
This person starts a lawsuit and files a legal complaint against someone else or a company (the defendant).

Pleura
Your pleura is a thin two-layer lining that covers your lungs and chest wall. It protects your lungs, helping them move smoothly when you breathe and keeps the pressure your lungs need to stay filled with air.

Pleural Effusion
Fluid builds up between the lungs and chest wall. Pleural mesothelioma often causes this.

Pleural Mesothelioma
This is the most common kind of mesothelioma. It starts in the lining of the lungs and chest called the pleura. It can cause chest pain, coughing and fluid buildup.

Pleurectomy and Decortication (P/D)
Doctors use this surgery to remove the lung lining and tumors. They leave the lung in place to help the person breathe better and feel better.

Pleuritis
Swelling in the lung lining causes chest pain and breathing problems. It can look like pleural mesothelioma.

Pleurodesis
A palliative procedure that eliminates the pleural space by causing the lung lining to adhere to the chest wall, reducing fluid buildup and symptoms.

Pneumonectomy
Doctors use this treatment to make the lung lining stick to the chest wall. This seals the space and helps stop fluid from coming back.

Product Liability
This legal rule says companies must make safe products. People can sue if a product hurts them.

Prognosis
Doctors give their best prediction of how someone's disease could grow or change. For mesothelioma, they look at a person's cancer stage, cell type, treatment options and their overall health.

Proton Therapy
This treatment uses proton beams to target cancer. Doctors are still studying how well it works for mesothelioma.

R

Radiation Therapy
Doctors use strong rays to kill cancer cells. Types include external beam radiation and intensity-modulated radiation.

Risk Factors
These are things that raise your chance of getting mesothelioma. They include asbestos exposure and family history.

S

Sarcomatoid Mesothelioma
This rare and fast-growing mesothelioma cell type makes up 10% to 20% of cases. It often doesn't respond well to treatment.

Second Opinion
You can ask another doctor to review your diagnosis or discuss other treatment plans. This helps you choose the best therapies for you and avoid misdiagnosis, which can happen with rare diseases like mesothelioma.

Settlement
People involved in a lawsuit can agree to end the case without going to court. This often includes a payment to the person who filed the claim.

Side Effects
Cancer treatments can cause problems like tiredness, skin changes, nausea or damage to healthy tissues near the cancer.

SMART Protocol
This stands for Surgery for Mesothelioma After Radiation Therapy. Doctors give strong radiation first, then remove the tumor with surgery.

Stage 1 Mesothelioma
The cancer stays in one area and hasn't reached the lymph nodes. Doctors can often use more treatments at this stage, giving a better outlook.

Stage 2 Mesothelioma
The cancer starts to spread to nearby tissue or lymph nodes. Doctors still have many treatment options.

Stage 3 Mesothelioma
The cancer spreads to nearby organs and lymph nodes. Doctors may use a mix of treatments to try to slow the cancer and ease symptoms.

Stage 4 Mesothelioma
The cancer spreads to distant parts of the body. Doctors focus on easing symptoms and improving your quality of life.

Staging
Doctors check how far the cancer has spread. This helps them choose the right treatment and explain what to expect.

Statute of Limitations
Each state sets a time limit for filing a lawsuit. An experienced lawyer can ensure you file before this deadline.

Survival Rate
Doctors track how many people stay alive for a set time after diagnosis, such as 1, 3 or 5 years.

T

T Cells
These white blood cells help your body fight illness. In some treatments, doctors boost T cells to attack cancer cells.

Talcum Powder
A product that contains the mineral talc. When talc is mined, it can be contaminated with asbestos. Using talcum powder may raise the risk of mesothelioma.

Targeted Therapy
Doctors use these treatments aimed at certain genes or proteins to try to only attack cancer cells. This approach helps protect healthy cells.

Testicular Mesothelioma
This very rare type of mesothelioma starts in the thin lining around the testicles, the tunica vaginalis. It's primarily linked to asbestos exposure.

Three-Dimensional Conformal Radiation Therapy (3D-CRT)
Doctors use 3D images to aim radiation at the tumor and avoid healthy tissue.

Thoracoscopy
Doctors use this procedure to look inside the chest and take tissue samples. It helps them diagnose pleural mesothelioma.

TNM Staging System
Doctors use this system to explain how far the cancer has grown. It measures tumor size, node involvement and metastasis or cancer spread.

Trust Fund Claim
People diagnosed with mesothelioma can file claims seeking money when a company responsible has gone bankrupt and set up an asbestos trust fund.

Tumor Location
This shows where the mesothelioma grows: lung lining (pleural), belly lining (peritoneal) or heart lining (pericardial). Tumor location helps doctors plan treatment and predict outlook.

Tumor Treating Fields (TTFields)
Doctors use this treatment to send electric fields into the body. These fields can slow or stop cancer cells from dividing.

Tunica Vaginalis
The tunica vaginalis is a thin lining around each testicle, cushioning them and helping them move without friction.

V

VA-Accredited Claims Agent
This VA-approved trained expert helps veterans apply for benefits.

Verdict
A judge or jury makes this final decision in a court case. It decides who wins and what payment, if any, must be made.

W

Workers' Compensation
These programs give money and medical help to workers who get hurt on the job. Every state runs its own program.

Wrongful Death Lawsuit
When someone dies because of a company's actions, the family can file this lawsuit to seek justice and payment.

Y

Yervoy
This is the brand name for ipilimumab. This immunotherapy drug helps treat mesothelioma when used with Opdivo. The FDA approved Yervoy with Opdivo for plural mesothelioma patients in 2020.

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