CONDITION

Asbestosis

Learn how asbestos exposure can scar the lungs, what symptoms may occur, how asbestosis is diagnosed, and how treatment and follow-up can protect breathing and overall health.

WHAT IT IS
Long-term lung disease causing permanent scarring

BODY SYSTEM
Lungs and breathing

MAIN SYMPTOMS
Shortness of breath, persistent dry cough, chest tightness, reduced stamina

WHAT CAUSES IT
Inhaling asbestos fibers

HOW IT IS DIAGNOSED
Exposure history, chest imaging, lung function tests

MAIN TREATMENT
Supportive care and exposure avoidance

CAN IT BE CURED?
No, lung scarring cannot be reversed

IS IT AN EMERGENCY?
Sometimes, severe difficulty breathing

LONG-TERM OUTLOOK
May remain stable or gradually progress

Overview

Asbestosis is a long-term lung disease caused by breathing in asbestos fibers. These tiny mineral fibers can become trapped deep in the lungs. Over time, they may cause inflammation and permanent scarring, called pulmonary fibrosis .

Scarred lung tissue becomes stiff. This makes it harder for the lungs to expand and move oxygen into the bloodstream. The disease usually develops slowly, often decades after asbestos exposure began. Symptoms may continue to appear or worsen even after exposure has ended.

Asbestosis is not cancer. However, asbestos exposure also increases the risk of lung cancer and mesothelioma, a cancer of the lining around the lungs or abdomen. A person can develop

an asbestos-related cancer without having asbestosis.

Not everyone who has been exposed to asbestos develops lung disease. Risk depends on factors such as how much asbestos was inhaled, how often exposure occurred, and how many years it continued.

Asbestos was widely used because it resists heat and fire. It may still be present in older buildings, insulation, roofing, floor tiles, cement products, and some industrial materials. Intact asbestos-containing material may not release many fibers. Cutting, drilling, sanding, breaking, or removing it can release fibers into the air.

Symptoms

Early asbestosis may cause no noticeable symptoms. When symptoms develop, they usually progress gradually.

Common symptoms include:

These symptoms are not specific to asbestosis. Asthma, chronic obstructive pulmonary disease, heart disease, infections, and other forms of pulmonary fibrosis can cause similar problems.

Arrange a medical appointment if you have a history of asbestos exposure and develop an ongoing cough, increasing breathlessness, chest discomfort, unexplained weight loss, or a lasting change in exercise ability. These symptoms need evaluation, but they do not necessarily mean that you have asbestosis or cancer.

Seek urgent medical care for a sudden or major change in breathing, new coughing up of blood, or significant chest pain.

Call emergency services for severe difficulty breathing, blue or gray lips, confusion, fainting, or chest pressure that could be related to a heart attack.

- Shortness of breath, first during activity and sometimes later at rest
- A persistent dry cough
- Chest tightness or discomfort
- Reduced stamina or unusual tiredness during physical activity
- Fine crackling sounds in the lungs that a clinician may hear with a stethoscope
- Clubbing in some people, which means the fingertips become wider and the nails curve around them

Causes and risk factors

Asbestosis is caused by inhaling asbestos fibers. The fibers reach the small air sacs of the lungs, where oxygen normally enters the blood. The immune system cannot easily remove them. Ongoing irritation can lead to thickened, scarred tissue.

The chance of developing asbestosis generally rises with heavier and longer exposure. Historically, higher-risk work has included:

Family members of workers were sometimes exposed to fibers carried home on clothing, shoes, tools, or hair. People may also have environmental exposure if they live near asbestos mines, processing sites, contaminated soil, or deteriorating asbestos-containing materials.

Smoking does not cause asbestosis. However, smoking and asbestos exposure together greatly increase lung cancer risk. Smoking can also worsen breathing by causing additional lung damage.

If asbestos may be present in a home or workplace, do not drill, sand, sweep, vacuum, or remove the material yourself. Disturbing it may release more fibers. A qualified asbestos professional can inspect and manage the material according to local safety rules. Workers should follow occupational controls, including appropriate training and protective equipment.

- Shipbuilding and ship repair
- Construction, demolition, and building renovation
- Asbestos mining, milling, or product manufacturing
- Insulation, boiler, furnace, and pipe work
- Power plant, factory, and railroad work
- Brake and clutch repair
- Firefighting and emergency response in damaged buildings

Diagnosis

There is no single blood test that confirms asbestosis. Diagnosis usually combines a detailed exposure history, symptoms, a physical examination, lung function testing, and chest imaging.

Your clinician may ask about every job you have held, including temporary or military work. They may ask what materials you handled, whether dust was visible, whether respiratory protection was used, and whether coworkers had asbestos-related disease. Household and environmental exposures also matter.

A chest X-ray may show a pattern of scarring, often affecting the lower parts of both lungs. It may also show pleural plaques , which are areas of thickening on the lining around the lungs. Pleural plaques are evidence of previous asbestos exposure, but they are not the same as asbestosis and often do not cause symptoms.

High-resolution computed tomography, or HRCT, provides more detailed images than a standard X-ray. It can help identify early fibrosis and distinguish asbestosis from other lung conditions. Imaging findings must still be interpreted alongside the exposure history because several diseases can produce similar scarring.

Pulmonary function tests measure how much air the lungs hold, how well air moves, and how effectively oxygen crosses into the blood. Asbestosis often causes a restrictive pattern , meaning the lungs cannot expand to their expected size. A test called diffusing capacity may show reduced oxygen transfer.

A clinician may check oxygen levels at rest and during walking or other activity. Blood tests may be used to look for other causes of lung disease, but they do not prove asbestos exposure.

A lung biopsy is not usually needed when the exposure history, imaging, and test results fit together. It may be considered if the diagnosis remains unclear or another disease must be ruled out. Finding asbestos fibers or asbestos bodies alone does not establish asbestosis; evidence of lung fibrosis is also needed.

Treatment and management

Scarring from asbestosis cannot currently be reversed. Treatment focuses on preventing additional exposure, reducing symptoms, maintaining activity, and detecting complications.

The first step is to avoid further asbestos exposure. If exposure may still be occurring at work, discuss it with an occupational health service, employer safety program, or workplace regulator. Do not attempt to remove asbestos from a building without trained professional help.

Smoking cessation is especially important. Stopping smoking lowers the risk of further tobacco-related lung damage and reduces cancer and heart disease risks. A clinician can discuss counseling, nicotine replacement, or prescription treatments without assuming that one method is right for everyone.

Pulmonary rehabilitation may help people whose breathlessness limits daily activity. This supervised program can include exercise training, breathing techniques, education, and support with energy conservation. Regular activity within a safe range may help preserve

strength and independence.

Supplemental oxygen may be prescribed if testing shows that the blood oxygen level is too low. Oxygen is not useful for every person with asbestosis and should be based on measured need.

Clinicians may recommend staying current with vaccines that reduce the risk of serious respiratory infections, such as influenza, COVID-19, and pneumococcal vaccines. Which vaccines are appropriate depends on age, medical history, and current public health guidance.

Medicines that suppress inflammation or the immune system do not routinely reverse established asbestos scarring. Antifibrotic medicines used for some other forms of progressive pulmonary fibrosis are being studied in asbestos-related disease, but treatment decisions require specialist assessment. Antibiotics like amoxicillin or doxycycline treat bacterial infections when present; they do not treat asbestosis itself.

In advanced disease, referral to a specialist center may be appropriate. Lung transplantation is an option for a small number of carefully selected people with severe respiratory failure.

Complications

Asbestosis may remain stable for a time or gradually progress. Possible complications include:

Other noncancerous asbestos-related conditions include pleural plaques, fluid around the lung, and diffuse pleural thickening. Pleural thickening can sometimes restrict breathing, while plaques alone often have little effect on lung function.

New chest pain, coughing up blood, unexplained weight loss, worsening fatigue, or a clear change in cough should be assessed promptly. These symptoms have several possible causes and do not by themselves confirm cancer.

- Chronic respiratory failure: The lungs cannot provide enough oxygen or remove carbon dioxide adequately.
- Pulmonary hypertension: High pressure develops in the blood vessels of the lungs.
- Right-sided heart strain: The right side of the heart works harder to push blood through damaged lungs. Severe strain may lead to swelling or heart failure.
- Reduced mobility and conditioning: Breathlessness can lead to less activity, muscle weakness, and greater difficulty with daily tasks.
- Respiratory infections: Lung disease may make infections harder to tolerate.

- Lung cancer and mesothelioma: These are linked to asbestos exposure rather than being a direct stage of asbestosis.

Follow up

Follow-up is based on the extent of exposure, symptoms, imaging findings, lung function, and other health risks. Some people need periodic appointments with a pulmonologist, a doctor who specializes in lung disease. An occupational medicine specialist may help document exposure and explain workplace or reporting issues.

Routine monitoring may include a symptom review, physical examination, pulmonary function tests, and oxygen measurements. Imaging is repeated when clinically useful rather than on a single schedule for everyone.

Tell your clinician if breathlessness begins to interfere with work, sleep, exercise, or personal care. Report a persistent change in cough, new chest discomfort, repeated infections, reduced appetite, or unplanned weight loss.

Asbestos exposure alone does not determine whether someone should have low-dose CT screening for lung cancer. Screening decisions depend on established eligibility criteria and an individual discussion of smoking history, age, overall health, and potential benefits and harms.

Keeping copies of employment records, job descriptions, exposure reports, imaging results, and pulmonary function tests can support long-term care. Because asbestos disease may appear many years after exposure, a clear record can be useful even after retirement or a change of doctors.

Sources

- American Thoracic Society. "Diagnosis and Initial Management of Nonmalignant Diseases Related to Asbestos." American Journal of Respiratory and Critical Care Medicine . 2004;170(6):691-715.
- Agency for Toxic Substances and Disease Registry. Asbestos Toxicity: Case Studies in Environmental Medicine . U.S. Department of Health and Human Services; 2014.
- National Cancer Institute. "Asbestos Exposure and Cancer Risk." Cancer Causes and Prevention fact sheet. U.S. National Institutes of Health.
- Occupational Safety and Health Administration. "Medical Surveillance Guidelines for Asbestos." Appendix I to 29 CFR 1910.1001, Asbestos. U.S. Department of Labor.



- Wolff H, Vehmas T, Oksa P, Rantanen J, Vainio H. "Asbestos, Asbestosis, and Cancer, the Helsinki Criteria for Diagnosis and Attribution 2014: Recommendations." Scandinavian Journal of Work, Environment & Health . 2015;41(1):5-15.