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[Prevention: Monitor Safety and Recognize Breathing Hazards](#)

[Changing the Face of Occupational Lung Disease Research](#)

- Occupational lung disease is the number-one cause of work-related illness in the United States in terms of frequency, severity and preventability.
- Worldwide, about 20 percent to 30 percent of the male and five percent to 20 percent of the female working-age population may have been exposed to agents that cause cancer in the lungs during their working lives.
- Occupational asthma is the most prevalent occupational lung disease in the United States. Approximately 15 percent of asthma cases in the United States are due to occupational exposures.
- The cost of occupational injuries and illnesses in the United States totals more than \$170 billion. In 2002, there were about 294,500 newly reported cases of occupational illness in private industry.
- A total of 2,591 work-related respiratory illnesses with days away from work (2.4 per 100,000 workers) occurred in private workplaces in 2000. The highest total for days away from work due to respiratory illnesses was in the manufacturing sector.
- In 2002, African Americans made up 18.8 percent of the 800,000 textile workers. Exposure to dusts generated while processing cotton can cause byssinosis, a chronic condition that results in blocked airways and impaired lung function. Between 1990 and 1999, African-American males had an age-adjusted mortality rate due to byssinosis that was 80 percent greater than White males.
- It is estimated that African Americans accounted for 20.7 percent of the 3.1 million cleaning and building service jobs, which involve exposure to noxious chemicals and biological contaminants.
- African-American males were twice as likely to die of silicosis as White males between 1990 and 1999.
- Hispanics are more likely to be employed in high-risk occupations than any other race or ethnic group.
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Asian Americans account for a very low percentage of workers in high-risk industries.

- Between 1969 and 1993, Navajo uranium miners were 28 times more likely to develop lung cancer than Navajos not exposed to uranium.

**Occupational lung disease** is the number-one cause of work-related illness in the United States in terms of frequency, severity and preventability. It is mainly caused by long-term exposure to irritating or toxic agents in the workplace (mineral and/or organic dusts, smoke, fumes, gases, mists, sprays and vapors). It is possible, however, to develop occupational lung disease from several single exposures. There are two broad categories of occupational lung disease:

- Diseases that are not occupation-specific, but are aggravated at work.
- Diseases related to a specific occupation such as asbestosis, coal worker's pneumoconiosis (black lung), silicosis, berylliosis, byssinosis (brown lung) and farmer's lung. Adult-onset asthma, COPD and lung cancer can also be triggered by workplace exposures.

## Did You Know?...Mesothelioma

[Mesothelioma](#) is a rare form of cancer that involves the cells that line the lungs, abdominal organs, and heart. It is usually caused by asbestos exposure. People exposed to asbestos fibers for just a short period of time (a few weeks) or even to a small amount may be at risk. On average, 35 to 40 years lapse between exposure and onset of disease. Early symptoms resemble pneumonia, including shortness of breath, difficulty breathing, persistent cough and chest and abdominal pain. Depending on the person's health, time of diagnosis and other factors, the survival time is about four to 12 months from the onset of symptoms. However, occasionally people may live longer.

Smoking can increase the severity of these diseases. Smokers who are exposed to cancer causing agents, such as asbestos and radiation, greatly increase their chances of getting lung cancer and other lung diseases.

Worldwide, about 20 percent to 30 percent of the male and five percent to 20 percent of the female working-age population may have been exposed to agents that cause cancer in the lungs during their working lives. These occupational exposures account for about 10.3 percent of cancer of the lung, trachea and bronchus, the most frequent occupational cancer.<sup>I</sup> Workplace exposures have also been associated with deaths from respiratory diseases other than cancer.<sup>II</sup>

Occupational asthma is the most prevalent occupational lung disease in the United States. Approximately 15 percent of asthma cases in the United States are due to occupational exposure.<sup>III</sup> According to a recent study, men working in forestry and with metals and women in the service

industries (waitresses, cleaners and dental workers) have the highest risk for occupational asthma.<sup>IV</sup>

The cost of occupational injuries and illnesses in the United States totals more than \$170 billion per year.<sup>V</sup> In 2002, there were about 294,500 newly reported cases of occupational illness in the private industry, and 22,000 newly reported respiratory conditions. Overall, 2.5 per 10,000 fulltime workers developed nonfatal occupational respiratory diseases.<sup>VI</sup>

A total of 2,591 work-related respiratory illnesses with days away from work (2.4 per 100,000 workers) occurred in private workplaces in 2000. The highest total for days away from work due to respiratory illnesses was in the manufacturing sector.<sup>VII</sup> Although occupational lung diseases are often not curable, they are always preventable. Improving ventilation, wearing protective equipment, changing work procedures and educating workers are key factors for prevention.

## Did You Know?...Occupational Asthma

Occupational asthma is a lung disease in which the airways overreact to dusts, vapors, gases or fumes that exist in the workplace. Sometimes the worker will only have a cough or mild symptoms. Symptoms usually occur while the worker is exposed at work, but in some cases, they develop several hours after the person leaves work, and then subside before the worker returns to the job the next day. In later stages of the disease, symptoms may occur away from work after exposure to common lung irritants. Occupational asthma is usually reversible, but permanent lung damage can occur if exposure continues. In highly sensitive persons, even very low levels of exposure may cause an episode.

**Table 9** displays a list of occupational lung diseases and related exposures. Extra protection is necessary for people exposed to these hazardous materials at work. Industries mainly at risk are those in agriculture, mining, construction, manufacturing, cleaning and building services and farming.

### Occupational Lung Disorders or Disease Symptoms Caused by Exposure to Inhaled Materials

Inhaled Material	Lung Diseases
Ammonia; chlorine; nitrogen dioxide; sulfur dioxide; hydrogen sulfide; ozone; phosgene; formalin vapors	Lung irritation
Animal pelts and hair	Furrier's lung
Asbestos	Asbestosis
Asbestos	Lung Cancer
Asbestos	Mesothelioma

Avian dropping or feathers	Bird fancier's/breeder's/handler's lung
Beryllium dust or fumes	Beryllosis
Cadmium fumes	COPD
Cloth wrappings or mummies	Mummy disease
Coal dust	Coal worker's pneumoconiosis
Coffee beans	Coffee worker's lung
Contaminated sauna bath water	Sauna taker's disease
Contaminated water in humidification and air conditioning systems	Humidifier or air conditioner lung
Cotton dust	Byssinosis
Fish meal	Fish meal worker's lung
Maple tree logs or barks	Maple bark stripper's disease
Moldy bagasse (sugar cane)	Bagassosis
Moldy barley	Malt worker's lung
Moldy cheese	Cheese washer's lung
Moldy cork dust	Suberosis
Moldy hay, grain silage	Farmer's lung
Moldy paprika pods	Paprika slicer's disease
Moldy wood pulp	Paper mill worker's lung and pulpwood handler's disease
Mushroom compost	Mushroom worker's lung
Nitrogen dioxide; sulfur dioxide; hydrogen sulfide	Bronchitis, cough, dyspnea
Nitrogen dioxide; sulfur dioxide; hydrogen sulfide; phosgene; cadmium fumes; zinc oxide fumes	Pulmonary edema
Oak, cedar and mahogany	Woodworker's lung
Radioactive gases	Lung cancer
Redwood sawdust	Sequoiosis
Silica dust	Silicosis

Tolulene diisocyanate; polyvinyl chloride vapor; formalin vapors; several others	Asthma
Wheat flour containing weevils	Wheat thresher's lung
Zinc oxide fumes	Metal fume fever

Source: Martin, Lawrence. Breathe Easy: A Guide to Lung and Respiratory Disease for Patients and Families, 1997.

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- [Additional Resources](#)
- [Click here for Fact Sheets which contain updated statistics for 2006](#)  -- *added February 2006*
- To view the full PDF of Lung Disease Data in Culturally Diverse Communities: 2005, [click here](#).