

Occupational Respiratory Diseases

Your workplace and your lungs

Who is at risk for work-related lung disease?

If the air you breathe at work contains an excessive amount of dust, fumes, smoke, gases, vapors or mists, you may be at risk for a lung disease that can cause a breathing problem. Workers who smoke are at a much greater risk of lung disease if they are exposed to substances in the workplace that cause lung disease. Poor ventilation, closed-in working areas and heat increase the danger. Outside air pollution can also increase the risk of lung disease in people who work in jobs that expose them to substances that can cause lung disease.

What substances in the workplace can hurt my lungs?

Many substances found in the workplace can cause breathing problems. Some of them are as follows:

- **Dusts** from such things as wood, cotton, coal, asbestos, silica and talc. Dust from cereal grains, coffee, pesticides, drug or enzyme powders, metals and fiberglass can also hurt your lungs.
- **Fumes** such as from metals that are heated and cooled quickly. This process results in fine, solid particles being carried in the air. Examples of jobs that involve exposure to fumes from metals and other substances that are heated and cooled quickly include welding, smelting, furnace work, pottery making, plastics manufacture and rubber operations.
- **Smoke** from burning organic materials. Smoke can contain a variety of dusts, gases and vapors, depending on what is burning. Firefighters are at special risk.
- **Gases** such as formaldehyde, ammonia, chlorine, sulfur dioxide, ozone and nitrogen oxides. These gases can be found in jobs where chemical reactions occur and in jobs with high heat operations, such as welding, brazing, smelting, oven drying and furnace work.
- **Vapors**, which are a form of gas given off by all liquids. Vapors, such as those given off by solvents, usually irritate the nose and throat first, before they affect the lungs.
- **Mists** or sprays from paints, lacquers (for example, varnishes), hair spray, pesticides, cleaning products, acids, oils and solvents (such as turpentine).

What kinds of breathing problems can occur following exposure to such substances?

Some substances can cause you to have *upper respiratory irritation* or irritation of your nose and/or throat and cold-like symptoms, such as a runny nose and scratchy throat.

Viral infections and allergies produce similar symptoms. You should become suspicious of a work-related illness if you often feel like your nose and throat are irritated and breathing problems seem to occur when you are at work.

Breathing in substances at work can also cause you to have *bronchitis*, a flu-like illness, *asthma* and *emphysema*. A person with bronchitis has a persistent cough that produces mucus or sputum and lasts at least three months a year. Cigarette smoking is the most common cause of bronchitis, but workplace toxins can also play a role.

Frequent episodes of flu-like illness may be caused by substances you breathe in your workplace. If you notice that you often have what seems to be the flu, your illness may be caused by something you are exposed to at work.

There are different work-related lung diseases that can make you feel as though you have the flu. One of them is *allergic alveolitis* (also known as “farmer’s lung”), which can occur after excessive exposure to moldy hay. *Metal fume fever* is another occupational lung disease that can produce flu-like symptoms. It occurs from inhalation of metal vapors such as in welding and other metallic operations. *Polymer fume fever*, from breathing the fumes of polymers such as Teflon, also may make you feel like you have the flu. A worker with one of these conditions develops breathing problems, cough, fever, muscle aches and general malaise (a feeling of being tired and having no energy) four to six hours after exposure to the substance. If such symptoms occur again and again when you are at work, this pattern is a clue that your illness may be related to your work.

If you develop *asthma* for the first time as an adult, the illness could be related to something you are exposed to at work. Asthma symptoms include wheezing, a persistent dry cough or trouble breathing.

Emphysema usually occurs in older people who smoke. However, people who have worked with coal, asbestos or silica dust for 20 years or more can develop emphysema. They may have a cough, fatigue, chest tightness and difficulty breathing.

What should I do if I think something in the air at work is making me sick?

You will want to see your family doctor. Before doing so you need to gather some information to help your doctor make a diagnosis. One way you can do this is to keep a written record about your illness. Try to write down the following information:

- When you first started to experience your symptoms
- How often you experience symptoms
- The time of day that the symptoms are worse
- Whether you feel better on some days
- How you feel your symptoms relate to work

Even if the pattern of your symptoms does not seem to be clearly related to your work, it is important to record the timing of your symptoms accurately.

Also make a note of your shift or work hours and the days of the week you work and are off work. Try to recall previous jobs, hobbies and smoking habits—anything that might have affected your lungs. If your doctor has sent you an occupational health history form, fill it out as completely as possible.

Write down the list of all of the ingredients listed on the containers of materials you are using in the workplace. Also write down any descriptions of handling precautions and first-aid measures that are printed on the label. If possible, try to get the chemical name instead of the brand name, to show your doctor.

Ask to see the material safety data sheets (MSDSs) at your workplace. These are information sheets about the products that you use in the workplace. All employers are required by law to complete these forms and you have a right to see them. Obtain copies of the MSDSs and bring them with you to your doctor's appointment.

How can I keep from having my lungs damaged by something I'm exposed to at work?

If you smoke, *stop*. This is the most important thing you can do for your overall health, regardless of your workplace risks. Cigarette smoking irritates the lungs and impairs their self-cleaning ability, so smokers are at greater risk of developing some work-related lung diseases than are nonsmokers. For example, asbestos workers who smoke more than a pack of cigarettes a day greatly increase their risk of lung cancer. Such workers have up to 90 times the chance of dying of lung cancer compared with workers who neither smoke nor work with asbestos.

If you are exposed to a substance at work that can cause lung disease, a respirator should be used at work as a temporary measure until changes are made in the workplace that prevent exposure to the substance. You must be properly fitted and trained in the use of the respirator. Over time

you should be periodically refitted and retrained in how to use this equipment. The respirator must be carefully cleaned after each use and it should be checked and maintained to ensure that it works properly.

If you are exposed to damaging substances at work, talk to your supervisor about the need for adequate ventilation and new procedures to eliminate your exposure. A change in ingredients, work practices or machinery can reduce hazards in the air. Ventilation systems can remove pollutants and toxins from the air to reduce exposure and prevent buildup. Local exhaust ventilation can be used to remove polluted air at the point where it is generated by a hazardous process or machine. At some jobs people can be separated from the hazards.

This handout provides a general overview on this topic and may not apply to everyone. To find out if this handout applies to you and to get more information on this subject, talk to your family doctor.



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