Learn About Hypersensitivity Pneumonitis

Hypersensitivity pneumonitis is a disease of the lungs in which your lungs become inflamed as an allergic reaction to inhaled dust, fungus, molds, or chemicals.

Key Facts
- Hypersensitivity pneumonitis is caused by an allergy to certain dusts (allergens) that you inhale.
- This allergy causes inflammation in your lungs.
- If detected early, and you avoid the allergy-producing substance, the inflammation can be reversed.
- Sometimes hypersensitivity pneumonitis can cause lung scarring if it is not detected early and you continue to be exposed to the substances.

What Is Hypersensitivity Pneumonitis?
Hypersensitivity pneumonitis is caused by an allergy to certain dust (allergens) that you breathe in. Commonly, these allergens are naturally occurring (organic). These allergens may be present at home, work, or in the environment. Commonly, these dusts contain fungus spores from moldy hay or bird droppings.

How Does Hypersensitivity Pneumonitis Affect Your Body?
When you breathe in the dust that you are allergic to, you will not notice any problems the first time. Some individuals may develop symptoms after a large exposure to the dust or after repeated smaller exposures. The tiny air sacs in the lungs become inflamed as their walls fill with white blood cells and, occasionally, the air sacs may also fill with fluid. The inflammation gets better within a few days if you no longer breathe in those dusts. If you breathe in those dusts repeatedly, the inflammation in the lung continues. This may lead to some portions of the lung developing scar tissue. When your lungs have scar tissue, you may have trouble breathing normally.

How Serious Is Hypersensitivity Pneumonitis?
Hypersensitivity pneumonitis can become a serious condition for some individuals whose lungs develop scarring. Lung scarring (also called pulmonary fibrosis) may occur in the later stages of the disease. The lung scarring is permanent. Unfortunately, there is no cure or effective treatment for chronic (or long-standing) hypersensitivity pneumonitis. The good news is that if the disease is caught in the early stages and if you avoid the dust, then it can be completely reversed. That is why it is very important to catch this disease in the early stages to prevent permanent lung damage.

Hypersensitivity Pneumonitis Symptoms, Causes, and Risk Factors
A variety of materials that are inhaled as a fine dust can cause hypersensitivity pneumonitis. It can take several months to a number of years to develop allergy to the dust. Only a small number of people who inhale this dust actually develop hypersensitivity pneumonitis.
What Are the Symptoms of Hypersensitivity Pneumonitis?
You may feel like you have caught the flu when the acute attack occurs. It appears about 4 to 6 hours after you inhale the dust. The symptoms seen are:
- Dry cough
- Shortness of breath
- Chest tightness
- Fever
- Chills
- Tiredness

The initial symptoms may last for as little as 12 hours but may continue for several days in some individuals. If you have repeated exposure to the dust, the following symptoms may be seen.
- Shortness of breath, especially with activity
- Dry cough
- Unintentional weight loss

What Causes Hypersensitivity Pneumonitis?
There are more than 300 known substances that, when inhaled as a fine dust, have been known to cause hypersensitivity pneumonitis. Some commonly seen problems are given specific names related to the source of the dust, including

Farmer’s lung: seen in farmers and cattle workers, this condition is caused by breathing mold that grows on hay, straw, and grain.

Bird fancier’s lung: (also called pigeon breeder’s disease) caused by breathing particles from feathers or droppings of many species of birds.

Humidifier lung: can develop by breathing in fungus growing in humidifiers, air conditioners, and heating systems, particularly if they are not well maintained.

Hot tub lung: may develop by breathing in bacteria that may be found in the water vapor coming from indoor hot tubs.

What Are Risk Factors?
If you work in certain occupations, then you may be at an increased risk of developing hypersensitivity pneumonitis. This includes farmers; vegetable or dairy cattle workers; bird and poultry handlers; veterinary workers and animal handlers; grain and flour processing and loaders, lumber milling; wood stripping, and paper and wallboard manufacturers. Another risk factor is inhaling certain chemicals produced in plastic manufacturing, painting, and the electronics industry.

Most individuals who work in such occupations do not develop hypersensitivity pneumonitis. It appears that certain genetic factors determine if you are going to develop hypersensitivity pneumonitis or not. Unfortunately, at this time, there is not much information about the genes that can predispose a person to develop hypersensitivity pneumonitis.

When to See Your Doctor
If you develop symptoms of hypersensitivity pneumonitis, contact your doctor. You may feel like you have caught the flu when the acute attack occurs. You may notice a dry cough, shortness of breath, chest tightness, fever, chills, or tiredness about 4 to 6 hours after you inhale the dust. Unlike the common flu, which most commonly occurs during October to May, hypersensitivity pneumonitis symptoms can occur during any time of the year. You may notice dry cough or shortness of breath on activity if you have repeated exposure to the dust. Your coworkers or family members may not have any symptoms but your lungs could still be allergic to some dust at workplace or home respectively.
Diagnosing and Treating Hypersensitivity Pneumonitis

You should schedule an appointment with your doctor who will check if you have hypersensitivity pneumonitis. It is diagnosed by a detailed history, including possible exposure to certain dusts. Your doctor will ask you about such exposures, perform a physical examination, and may order some or all of the tests described in the section below.

What to Expect
Your doctor will do a physical exam and listen to your lungs with a stethoscope. Individuals with hypersensitivity pneumonitis may have abnormal lung sounds or crackles. Your doctor may also use a small instrument called a pulse oximeter that is placed on the finger to check the oxygen levels in your blood.

Your doctor will ask if you have exposure to any kind of dust at home or at work. Some specific questions that your doctor may ask are as follows:

- Have you been exposed to any water damage in your house or at work, especially from humidifiers, heating systems, or air conditioners?
- Do you have a hot tub at home?
- Have you have been exposed to bird droppings/ do you have any birds as pets/ do you have any feather cushions or down pillows?

You can bring in a family member to the doctor's visit since they may remember exposure to certain dusts that you may have forgotten or overlooked. Rarely, if no obvious cause for exposure is determined, an industrial hygienist who is trained to detect such dust exposure may have to visit your home or workplace.

How Hypersensitivity Pneumonitis Is Diagnosed
Your doctor may order any of the following tests to assist in the diagnosis process.

- **Chest X-ray and CT (computerized tomography) scan** that may be able to show early stages of the disease and if there is any scarring.

  - **Lung function tests** show how well you breathe to see if your lungs are working correctly.

  - **Blood tests** are done to find out if you have developed antibodies against the dust (allergen). These blood tests can help show if you have been exposed to a certain dust.

  - **Bronchoscopy** is when a bronchoscope (small flexible tube about the size of a pencil with a video camera attached at its end) is passed either through your nose or mouth. The scope is then passed into your vocal cords, windpipe, and the air passages. This tool can be used to collect specimens from your lung for further testing.

  - **Video-assisted thoracic surgery (VATS) or open lung biopsy** is performed by a cardiothoracic surgeon under general anesthesia. It is another way to get lung tissue for further testing.

How Hypersensitivity Pneumonitis Is Treated
The single most important thing that you can do is avoid the dust that causes the disease. If you do so, your lungs can return to normal function, as the disease is completely reversible in the early stages. Completely avoiding the dust is sometimes not possible, unless you remove yourself from the dust-causing environment. Your doctor may recommend completely avoiding the dust by relocating to a new home or job. If you have bird fancier's lung, then it is possible you may have to give up your pet bird.

In patients who have severe cases, treatment may include prescription steroids, such as prednisone. You may be required to take this medication for up 3 months and sometimes longer. Steroids may help with your symptoms; however, it will not cure the disease. Steroids can also cause certain side effects such as weight gain, thinning of the bones, cataracts, abnormal blood sugar levels, and increased pressure in your eyes.
Living With Hypersensitivity Pneumonitis

Once hypersensitivity pneumonitis is diagnosed, measures should be taken to avoid the dust to which your lungs has developed allergy. Avoiding the dust is important both in early and later stages of hypersensitivity pneumonitis. You can live a normal life and your lungs may become normal if you avoid the dust in the early stages of hypersensitivity pneumonitis.

Managing Hypersensitivity Pneumonitis

You can take steps to limit exposure to certain dusts.

- Allergy-causing bacteria and fungus can thrive in stagnant, or still, water. Be sure to remove any standing water inside and outside your home.
- Take efforts to keep the humidity in your home and work below 60%.
- Immediately repair any water damage inside your home or work. This includes removing water-damaged carpeting, furnishings, and drywall.
- Properly maintain your heating, ventilation, and air conditioning systems.
- Make sure that the water in heating, air conditioning, and ventilation systems is not recirculated.
- Properly dry and store farm products if you work with them.

If you cannot completely avoid the dusts, there are certain protective devices that can reduce the chances of breathing in the dust. You can consider wearing an air-purifying respirator. Air purifying respirators have been used to prevent acute attacks of farmer’s lung. Wearing such respirators for long periods can be a challenge. Dust respirators are not found to be very helpful. Some engineering controls, such as having an electrostatic dust filter in the return ducts of central air conditioning systems, can also be considered to reduce dust exposure.

Finding Support

The Lung Association recommends patients and caregivers join our Living with Lung Disease Support Community to connect with others facing this disease. You can also call the Lung Association’s Lung HelpLine at 1-800-LUNGUSA to talk to a trained respiratory professional who can help answer your questions and connect you with additional support.

Ask your health-care provider about lung disease support groups in your area, or look online for a Better Breathers Club near you.
Questions to Ask Your Doctor About Hypersensitivity Pneumonitis

Making notes before your visit, as well as taking along a trusted family member or friend, can help you through the appointment with your doctor.

- I have been diagnosed with hypersensitivity pneumonitis due to an allergy to a workplace dust. Is it safe for me to continue working?
- Are there any work restrictions that I need to follow?
- Do I have to give up my pet birds?
- Should I avoid hot tubs?
- Can my family members get the disease if I have it?
- What tests will I need to confirm my diagnosis?
- How often should I get lung function tests?
- How often should I get chest X-rays and CT scans?
- Do I need to be on steroids?
- Should I use oxygen?
- Should I continue to receive flu shots and pneumonia shots?
- Is it safe for me to exercise?
- Are there any dietary precautions that I need to take?
- Do I have to take any special precautions for air travel?
- Where can I find more information about hypersensitivity pneumonitis?