

Health Recommendations for Wildfire Smoke

JULY 03, 2012

DENVER — Smoke from wildfires can cause problems for those with respiratory and cardiac disease as well as the very young and elderly. Smoke from forest and grass fires contains particles that can irritate eyes, throat and lungs. These can be bothersome to many people, but especially so to those with compromised lungs.

“Many people may have respiratory symptoms when breathing smoky air. The good news is that most symptoms are short-lived, and resolve as smoke dissipates,” said Karin Pacheco, MD, Division of Environmental and Occupational Health Sciences at National Jewish Health.

More Information

Speak to a registered nurse for help with your respiratory health questions. Call [Lung Line](#) at 800.222.5864.

Smoke can worsen symptoms for those who have pre-existing respiratory conditions, such as [asthma](#), [allergies](#) and [chronic obstructive pulmonary disease \(COPD\)](#). Typical symptoms may include:

- Difficulty breathing normally
- Cough with or without mucus
- Chest discomfort
- Wheezing and [shortness of breath](#)
- Seasonal allergies and increased pollen made worse by smoke
- Particulate matter (PM) - extremely small particles or droplets of pollution in the air are inhaled, making respiratory symptoms worse

Particulate-laden smoke can also worsen cardiac disease. Inhaled particles trigger the release of chemical messengers into the blood that may increase the risk of blood clots, angina episodes, heart attacks and strokes. People with chronic cardiac conditions are more susceptible to chest pain, heart attacks, cardiac arrhythmias, acute congestive heart failure or stroke.

Even people without lung or cardiac disease may become symptomatic if the smoke is thick enough.

“For most healthy people, low amounts of wildfire smoke are more unpleasant than a health risk,” said Dr. Pacheco.

If wildfire smoke is triggering mild symptoms, National Jewish Health doctors recommend:

- Patients should take medications as prescribed, and use a rescue inhaler if one has been prescribed. They should not take more medication, or take it more often than prescribed.
- If patients are near the fires where smoke or particulates are significant, or the smoke is making them sick, they should consider leaving the area until the air is clear again.
- People should stay indoors as much as possible, and close windows if they can.
- Limit or eliminate outdoor exercise until the air clears.
- If patients are requiring increased medication or experiencing increased symptoms, they should call us, and together with their physician will decide whether they should be seen. We have made arrangements with the Adult MODs to be available if there is an increase in acute care demand.

Long-term Effects

Healthy individuals are at very minimal risk for any long-term effects from breathing wildfire smoke. Once exposure to the smoke goes away, so should any symptoms.

Firefighters and other safety personnel are at risk for health concerns due to long-term exposure as they work endlessly to put out wildfires. Smoke inhalation, long working hours, and scorching temperatures all contribute to health concerns. Long-term respiratory problems could be seen down the road, such as decreased lung function, although these effects could be reversible. The proper use of personal protective equipment (PPE) is paramount to mitigating the effects of smoke exposure.

High Temperatures

It's important to stay indoors as much as possible when the smoke is pluming from wildfires. It may be difficult to stay inside during the hot weather, but the use of full-house attic fans can help to lower the temperature throughout your home. A whole-house or window unit air conditioner, or a swamp cooler, is also a good cooling appliance.

High summer temperatures and low humidity can fuel wildfires, making the smoke and particulate matter (PM) hang in the air even longer. Particulate matter in the air can cause breathing problems for those with lung disease or who are prone to respiratory problems. Avoiding prolonged exertion can help prevent worsening symptoms. To determine the amount of PM in the air, check your local air quality advisories.

Air Quality Advisories

Air quality advisories are conducted by your local Department of Public Health and Environment. These advisories can help you better assess the outdoor conditions and whether you should be going outside.

HEPA Filters

One way to limit exposure to airborne allergens and irritants is the use of a High Efficiency Particulate Air (HEPA) filter. These filters can be effective for people who have problems with airborne allergens and irritants such as wildfire smoke. HEPA filters are available in room air-cleaning devices and for use on vacuums. People who use HEPA air filters say they feel better and have reduced symptoms.

Types of HEPA Filters

Freestanding filter units trap airborne allergens, such as pollen and animal dander, and don't re-release them back into the air. HEPA filters attached to vacuum cleaners reduce dust by trapping the small particles and don't re-release "dirty" air.

Many people with allergies, asthma, and [chronic bronchitis](#) have a freestanding HEPA filter in the bedroom, a HEPA filter attached to a vacuum cleaner, or both. Filters need to be changed regularly in freestanding units and vacuums.

When using a freestanding unit with a HEPA filter, designate one room in the house in which to place the unit to maximize the cleanliness of the air in that room all the time. Do not use a freestanding unit that produces ozone emissions (some of these units do). Ozone can increase with wildfires and high temperatures, further worsening the air quality.

Dust Masks

Do not rely on dust masks for protection. Paper "comfort" or "dust" masks commonly found at hardware stores are designed to trap large particles, such as sawdust. They often have one strap, but may have two. Dust masks, as well as surgical masks, will not protect your lungs from smoke. An "N95" mask has two straps and will be stamped "NIOSH", indicating it is a certified respirator. N95 masks can also be purchased at hardware stores. When properly worn, they can offer some protection. There needs to be a good seal at all points of contact with your face. Make sure the mask is the proper size for your face. It will not seal properly if there is any facial hair, even stubble. For more information about effective masks and fit testing, see the [Respirator Fact Sheet](#) provided by CDC's National Institute for Occupational Safety and Health.

This information has been approved by doctors and clinical staff at National Jewish Health (June 2013).

National Jewish Health is the leading respiratory hospital in the nation. Founded 121 years ago as a nonprofit hospital, National Jewish Health today is the only facility in the world dedicated exclusively to groundbreaking medical research and treatment of patients with respiratory, cardiac, immune and related disorders. Patients and families come to National Jewish Health from around the world to receive cutting-edge, comprehensive, coordinated care. To learn more, visit the media resources page.

Media Contacts

Our team is available to arrange interviews, discuss events and story ideas.

William Allstetter

303.398.1002

allstetterw@njhealth.org

Adam Dormuth

303.398.1082

dormutha@njhealth.org