



# Wildfire Smoke and Your Health Page 1



- **What's in smoke from a wildfire?** Smoke is made up of small particles, gases and water vapor. Water vapor makes up the majority of smoke. The remainder includes carbon monoxide, carbon dioxide, nitrogen oxide, irritant volatile organic compounds, air toxics and very small particles.
- **Is smoke bad for me?** Yes. It's a good idea to avoid breathing smoke if you can help it. If you are healthy, you usually are not at a major risk from smoke. But there are people who are at risk, including people with heart or lung diseases, such as congestive heart disease, chronic obstructive pulmonary disease, emphysema or asthma. Children and the elderly also are more susceptible to smoke.
- **What can I do to protect myself?** Many areas report the EPA's Air Quality Index for particulate matter (PM). PM (tiny particles) is one of the biggest dangers from smoke. As smoke gets worse, that index changes and so do guidelines for protecting yourself. Be sure to listen to your local air quality reports.
- Use common sense. If it looks smoky outside, that's probably not a good time to go for a run. It's also a good time for your children to remain indoors.
- If you're advised to stay indoors, keep your windows and doors closed. If you have an air conditioner, run it. Keep the fresh air intake closed and the filter clean.
- Help keep particle levels inside lower by avoiding using anything that burns. Such as wood stoves and gas stoves – even candles. And don't smoke. That puts even more pollution in your lungs – and those around you.
- If you have asthma, be vigilant about taking your medicines, as prescribed by your doctor. If you're supposed to measure your peak flows, make sure you do so. Call your doctor if your symptoms worsen.
- **How can I tell when smoke levels are dangerous? I don't live near a monitor.** Generally, the worse the visibility, the worse the smoke.
- **How do I know if I'm being affected?** You may have a scratchy throat, cough, irritated sinuses, headaches, runny nose and stinging eyes. Children and people with lung diseases such as asthma may find it difficult to breathe as deeply or vigorously as normally, and they may cough or feel short of breath. People with diseases such as asthma or chronic bronchitis may find their symptoms worsening.
- **Should I leave my home because of smoke?** The tiny particles in smoke do get inside your home. If smoke levels are high for a prolonged period of time, these particles can build indoors. If you have symptoms indoors (coughing, burning eyes, runny nose, etc.), talk with your doctor or call your county health department. This is particularly important for people with respiratory diseases, the elderly and children.
- **Are the effects of smoke permanent?** Healthy adults generally find their symptoms (runny noses, coughing, etc.) disappear after the smoke is gone.
- **Do air filters help?** Yes. Indoor air filtration devices with HEPA filters can reduce the levels of particles indoors. Make sure to change your HEPA filter regularly. Don't use an air cleaner that works by generating ozone. It will put pollution in your home.
- **Do dust masks help?** Paper "comfort" or "nuisance" masks are designed to trap large dust particles – not the tiny particles found in smoke. These masks generally will not protect your lungs from wildfire smoke.
- **How long is the smoke going to last?** That depends on a number of factors, including the number of fires in the area, fire behavior, weather, and topography. Smoke also can travel long distances, so fires in other areas can affect smoke levels in your area.

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- **I'm concerned about what the smoke is doing to my animals. What can I do?** The same particles that cause problems for people may cause problems for animals. Don't force your animals to run or work in smoky conditions. Contact your veterinarian or county extension office for more information.
- **How does smoke harm my health?** One of the biggest dangers of smoke comes from particulate matter – solid particles and liquid droplets found in air. In smoke, these particles are very tiny; smaller than 2.5 micrometers in diameter. How small is that? Consider this: the diameter of the average human hair is about 30 times larger. These particles can build up in your respiratory system, causing a number of health problems. These include burning eyes, runny noses, and illnesses such as bronchitis. The particles also can aggravate heart and lung diseases. These include congestive heart failure, chronic obstructive pulmonary disease, emphysema, and asthma.
- **How do you measure the quality of the air?** Local air agencies (or sometimes federal land managers) use monitors to measure the amount of particulates in the air. That amount, measured in micrograms per cubic meter, is compared to a national index designed to protect public health.
- **What about firefighters?** Firefighters do experience short-term effects of smoke, such as stinging, watery eyes, coughing and runny noses. Firefighters must be in good physical condition, which helps to offset adverse effects of smoke. In addition to being affected by particles, firefighters can be affected by carbon monoxide from smoke. A recent Forest Service study showed a very small percentage of firefighters working on wildfires were exposed to levels higher than occupational safety limits for carbon monoxide and irritants. If you are working on a fire and you're concerned about your health, see the medical unit or contact your safety officer. If you're not working on a fire, call your doctor.
- **Why can't the firefighters do something about the smoke?** Firefighters do try to manage smoke when possible. As they develop their strategies for fighting a fire, firefighters consider fire behavior and weather forecasts, topography, and proximity to communities – all factors that can affect smoke.
- **Why doesn't it seem as smoky when firefighters are working on prescribed fires?** Land managers are able to plan for prescribed fires. They get to choose the areas they want to burn and the size of those areas. The weather and wind conditions must be precise before any prescribed burning begins. This allows them to control the fire more easily and limit its size. Wildfires don't allow those sorts of choices. In addition, wildfires that start in areas that haven't been managed with prescribed fire, often have more fuel.
- **Will the smoke be bad this summer?** That depends on where you live and the weather each year. If you live in an area where fire has always been a part of the ecosystem (like Arizona), you can expect fire and smoke. The amounts will depend on weather and the amount of fuel (trees, brush, etc.) that is available to burn. You can protect yourself and your property by following wise fire prevention measures. Fire and smoke, however, will never be completely eliminated from these natural fire ecosystems.
- **Learn more at: [www.firewise.org](http://www.firewise.org)**