

## **Frequently Asked Questions Fire and Smoke Health Concerns**

### **What is the health threat from fires and smoke?**

Smoke from wildfires is a mixture of gases and fine particles from burning trees and other plant materials. Smoke can hurt your eyes, irritate your respiratory system, and worsen chronic heart and lung diseases.

### **How can I tell if the smoke is affecting my family or me?**

- Smoke can cause coughing, scratchy throat, irritated sinuses, shortness of breath, chest pain, headaches, stinging eyes, and runny nose.
- If you have heart or lung disease, smoke might make your symptoms worse.
- People who have heart disease might experience chest pain, rapid heartbeat, shortness of breath, and fatigue
- Smoke may worsen symptoms for people who have pre-existing respiratory conditions, such as respiratory allergies, asthma, and chronic obstructive pulmonary disease (COPD), in the following ways:
  - Inability to breathe normally
  - Cough with or without mucus
  - Chest discomfort
  - Wheezing and shortness of breath
- When smoke levels are high enough, even healthy people may experience some of these symptoms.

### **I have a head cold; will I be affected more?**

Most persons who are exposed to thick smoke will not have health problems. The level, extent, and duration of exposure, age, individual susceptibility and other factors play a significant role in determining whether or not someone will experience smoke-related problems. If you are experiencing serious medical problems for any reason, seek medical treatment immediately.

### **How can I protect myself and my family from the harmful effects of smoke?**

The best thing to do is to limit your exposure to the smoke. Specific strategies to decrease exposure to smoke include staying indoors whenever possible, using air conditioners, keeping windows and doors shut, using mechanical or non-ozone emitting electronic air cleaners, keeping windows closed while driving in a vehicle, reducing physical activity levels, and minimizing other sources of air pollution (e.g., smoking, wood burning stove use, burning candles, and vacuuming).

### **Will I suffocate in my house?**

No. The most common call for evacuation during a wildfire is due to the direct threat of the fire instead of smoke. Leaving the area of thick smoke may be a good protective measure for members of sensitive groups, but it is often difficult to predict the duration, intensity and direction of smoke, making this an unattractive option to many people. If there is a clean air shelter in the community, you can go there to reduce your exposure to smoke. These may be

located in large commercial buildings, educational facilities, shopping malls or anyplace with effective air conditioning and particle filtration.

### **Will facemasks or dust masks protect me from the smoke?**

In order for a mask to provide protection during a smoke event, it must be able to filter very small particles (around 0.3 to 0.1 microns), and it must fit, providing an airtight seal around the wearer's face.

Dust masks are not enough. Paper "comfort" or "dust" masks commonly found at hardware stores are designed to trap large particles, such as sawdust. These masks will not protect your lungs from smoke. It is best to stay indoors and limit your exposure to the smoke.

### **What about respirator masks, will they help?**

While respirator masks can reduce exposure to smoke, there are several drawbacks to recommending widespread respirator mask use in an area affected by wildfire smoke. Most people won't use the respirator masks correctly and won't understand the importance of having an airtight seal. For instance, it is impossible to get a good seal on individuals with beards. As a result, the respirator masks will provide little if any protection.

Respirator masks are uncomfortable, and they increase resistance to airflow. This makes breathing more difficult and leads to physiological stresses such as increased respiratory rates and heart rates.

However, if you must be outside, some respirator masks, (they look like paper masks) are good enough to filter out 95% of the particulate that is 0.3 microns and larger. Smoke particulate averages about 0.3 microns, so these respirator masks will filter out a significant portion of the smoke **if they are properly fitted to the wearer's face**. These respirator masks are marked with one of the following: "R95", "N95", or "P95." Respirators with higher ratings (R, N or P 99 and R, N, or P 100) are also available and will filter out even more particulate. Do not use any respirator mask that is not rated at least N95, R95 or P95.

### **Will a wet towel or bandana provide any help?**

Wet towels or bandanas have the same shortcomings as paper dust masks. We do not recommend that they be used.

### **What should I do if I must drive to work?**

Individuals can reduce the amount of particulate in their vehicles by keeping the windows closed. The car's ventilation systems typically remove a portion of the particulate coming in from outside. For best results, most cars have the ability to recirculate the inside air, which will help keep the particulate levels lower.

### **Our community has an outdoor game scheduled for this evening, should we cancel it?**

All persons in areas affected by the wildfire smoke are advised by public health officials and local emergency management officials to limit all outdoor activity and stay indoors whenever possible to minimize exposure to the smoke. View our [Activity Guidelines for Wildfire Smoke Events](#) for more information.

### **Do air-purifying machines help with indoor air?**

Air cleaners can be effective at reducing indoor particulate levels, provided the specific cleaner is adequately matched to the indoor environment in which it is placed. However, they tend to be expensive. Portable high efficiency HEPA air cleaners can supplement the work of the HVAC system by removing fine particulates. HEPA filters with activated charcoal or alumina, especially those impregnated with potassium permanganate or zeolite will absorb gases in the smoke, including NOX and some of the volatile organic compounds (VOCs) such as benzene. These filters are more expensive and need more frequent replacement.

Do not use ozone generators, personal air purifiers, or electrostatic precipitators and ionizers that produce ozone. Ozone is a respiratory irritant that can aggravate asthma and other lung diseases. Consult the California Air Resources Board Consumers' Air Cleaner Portal for information on devices certified to avoid ozone exposures.

Proper size, installation, and maintenance are critical for portable air cleaners to be effective.

- Air cleaners should filter at least two or three times the room volume per hour.
- The package should indicate the unit's airflow rate, the room size it is suitable for, its particle removal efficiency, and perhaps its Clean Air Delivery Rate (CADR), a rating that combines efficiency and airflow.
- The Association of Home Appliance Manufacturers (AHAM) maintains a certification program for air cleaners. The AHAM seal on the box lists three CADR numbers; the higher the numbers, the faster the unit filters the air. Choose a unit with the highest number.
- Consumer Reports has evaluated air cleaning devices and produced a buying guide.
- Put the unit(s) away from doors, windows, and foot traffic; but not close to walls or corners, so the air can easily reach the unit.

Humidifiers are not technically air cleaners and will not significantly reduce the amount of particulate in the air during a smoke event.

### **What should I do about closing up my house when it's so hot in there?**

If you do not have an air conditioner and if it is too warm to stay inside with the windows closed, seek shelter elsewhere, for instance go to a library or mall.

### **If I have respiratory problems and can't reach my doctor, where should I go?**

If you have a medical emergency you should call 911 or go the hospital emergency room immediately.

### **What do I bring if I'm told to evacuate my home?**

If asked or instructed to evacuate your home make sure to bring your important family documents (birth certificates, wills, insurance policies, etc.) and your family disaster supply kit. Your disaster supply kit should contain enough food, water and supplies to sustain your family for 5-7 days. Don't forget any medications or special items such as a first aid kit.

### **I am pregnant, should I take additional precautions?**

While there have not been studies of the effects of exposure to wildfire smoke on pregnancy outcomes, there is substantial evidence of adverse effects of repeated exposures to cigarette smoke, including both active and passive smoking. Wildfire smoke contains many of the same compounds as cigarette smoke. In addition, recent data suggest that exposures to ambient air

pollution in cities may result in low birth weight and possibly other, more serious adverse reproductive effects. Therefore, it would be prudent for pregnant women to limit prolonged or heavy exertion, limit time spent outdoors, and avoid physical exertion. If pregnant you should call your doctor if you experience shortness of breath, chest pain, rapid heartbeat or other symptoms.