



Fact Sheet

South Carolina Department of Health and Environmental Control • www.scdhec.gov

Environmental Smoke

What is smoke?

Whether from a campfire, wildfire, or burning landfill or pile of debris, all smoke is made up of very small partially-burned particles and chemicals that form during burning. What makes up the particles and accompanying gases depends on the type of material that is burning. An efficient fire that burns clean, dry fuel and has plenty of air will have little visible smoke and fewer potentially harmful chemicals. A fire consuming damp, dirty fuel and that burns slowly due to a lack of air will create more particles and chemicals that come from incomplete combustion. Visible smoke is the most immediate sign of incomplete combustion.

It's never good to breathe smoke of any kind for extended periods of time. Most people should not have long-term health problems caused by breathing smoke for short periods of time, but chemical odors and particles in the air from fires may cause short-term nausea, headaches, and/or irritation to the throat and eyes. If symptoms are caused by smoke, they should improve when a person leaves the smoky area. Exposure to smoke may aggravate some pre-existing lung or heart-related health conditions.

How can I be exposed to smoke?

The heat from outdoor fires typically lifts smoke up into the air, but slower, smoldering fires in combination with some weather conditions can trap smoke close to the ground. You can be exposed to smoke from fires close by or from fires long distances away.

If smoke is visible, even if the source of the smoke is not, we recommend that you follow the precautions listed in this fact sheet.

Who is at greatest risk from smoke?

- **Pregnant women and people who have existing health conditions** like heart disease, lung disease, or asthma, are at higher risk of health effects from smoke.
- **Older adults** are more likely to be affected by smoke due to their increased risk of heart and lung diseases.
- **Children** are more likely to be affected by smoke. Children's airways are still developing and they breathe more air per pound of body weight than adults. That results in an increased dose or exposure. Children also often spend more time outdoors engaged in activity and play.

What should I do if smoke is in my area?

In the event of an uncontrolled fire or smoke event, the first and most important thing to do is to minimize your exposure.

- Report smoke to local authorities as the adage is usually true, “where there is smoke, there is fire.”
- Go upwind from the source.
- Go inside, close windows and close exterior air intakes.
- Don’t exercise in smoky conditions because you breathe in more air and that increases your exposure to smoke-related contaminants.

Keep in mind that sometimes weather conditions may bring smoke to the ground from a fire that is found a long way away.

How can I protect myself?

Avoid spending extended amounts of time in smoky conditions. Don’t walk, run, do yard work or participate in outdoor activities on days when smoke is visible at ground level.

People who have trouble breathing, experience an increase in coughing episodes, or have tightness in their chest should seek medical attention from their doctor or health care provider. People with asthma, chronic obstructive pulmonary disease (COPD) or emphysema are more likely than others to have these symptoms and should, when possible, not stay in smoky environments for long periods of time.

Don’t rely on “dust masks” for protection. Paper dust masks found at hardware stores are designed to trap large particles, like sawdust. These masks will ***not*** protect your lungs from the small particles found in smoke from an uncontrolled fire. ***Don’t use a respirator unless you speak with your doctor to ensure wearing one won’t negatively affect your health.*** If you use a respirator, choose a “particulate respirator” that has been tested and approved by the National Institute of Occupational Safety and Health (NIOSH). It will have the words “NIOSH” and either “N95” or “P100” printed on it.

Summary

When weather conditions bring the smoke from an uncontrolled fire (e.g. campfire, wildfire or other type of fire) into your area, it results in increased amounts of particulates and other chemicals in the air. This can be a nuisance even for healthy people, but it can also make some pre-existing health conditions, like asthma and some heart or lung conditions, worse. Our data monitoring has found that usually the particulate concentrations from smoke are highest in the early morning hours on days when the wind is coming from the direction of the fire and there is not enough wind to clear out smoke that has accumulated near the ground overnight. Choose to walk, jog, or be outside during times when smoke isn’t visible at ground level. Should you have any personal health concerns, we recommend that you seek advice from your normal health care provider.