



Wildland Fire:

Health Effects and Public Health Outreach

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Office of Research and Development
US EPA

The Sand Fire
Santa Clarita Valley July
2016 Credit: Kevin Gill/flickr

SERPPAS Webinar
Research Triangle Park, NC
May 4, 2018



Wildland Fires & Their Emissions

An Individual and Public Health Issue



Known and Suspected Health Effects of Wildfire Smoke

Known

- **Respiratory morbidity**
 - *Asthma & COPD*
 - *Bronchitis & pneumonia*
- **Susceptible populations**
 - *Children, elders and those with chronic disease*

Suspected

- All-cause mortality
- Cardiovascular morbidity
- Adverse birth outcomes

More data needed

- Risk of mortality
- Cardiovascular morbidity
- Susceptible populations





Who's at Risk from Wildfire Smoke

NHANES 2007-2010, N=10,898

Susceptible category	N	Percent (95% CI)
None	7135	73.0 (71.4, 74.6)
Respiratory only	642	6.4 (5.5, 7.2)
Cardiovascular only	319	2.6 (2.3, 2.9)
>65 years only	1713	10.9 (10.1, 11.8)
Respiratory and cardiovascular	136	1.0 (0.7, 1.3)
Respiratory and >65 years	220	1.6 (1.3, 1.8)
Cardiovascular and >65 years	608	3.8 (3.3, 4.3)
All three groups	125	0.7 (0.5, 0.9)

NHANES = National Health and Nutrition Education Survey

Wells EM, Dearborn DG, Jackson LW (2012). PLoS ONE 7(11): e50526



Who's at Risk from Wildfire Smoke

NHANES 2007-2010, N=10,898

Susceptible category	N	Percent (95% CI)
None		73.0 (71.4, 74.6)
Respiratory only		1.1 (0.5, 2.2)
Cardiovascular only		1.5 (0.7, 2.9)
>65 years only		10.1 (8.1, 12.8)
Respiratory and cardiovascular		1.3 (0.7, 2.3)
Respiratory and >65 years		1.8 (1.3, 2.5)
Cardiovascular and >65 years		3.8 (3.3, 4.3)
All three groups	125	0.7 (0.5, 0.9)

27% fall into at least one susceptible group category

NHANES = National Health and Nutrition Education Survey

Wells EM, Dearborn DG, Jackson LW (2012). PLoS ONE 7(11): e50526



Air Quality Awareness Among Adults With Respiratory & Heart Disease

2014–2016 ConsumerStyles surveys U.S. adults were asked about self-reported asthma, respiratory disease, heart disease, and air quality awareness

- **49% of respondents were aware of air quality alerts**
- **Existing respiratory disease was associated with increased air quality awareness, existing heart disease was not**
 - 3% discussed with a health professional ways to reduce exposure
 - 27% always/usually avoided busy roads to reduce exposure
- **Opportunities exist to raise awareness of air quality alerts & behavior changes to reducing air pollution exposure among adults at risk of exacerbating respiratory and heart diseases**



Changing U.S. Demographic Increases Wildfire Smoke-Related Risk

Changing U.S. Demographic

- U.S. population will continue to:
 - Grow
 - Median age will shift upward

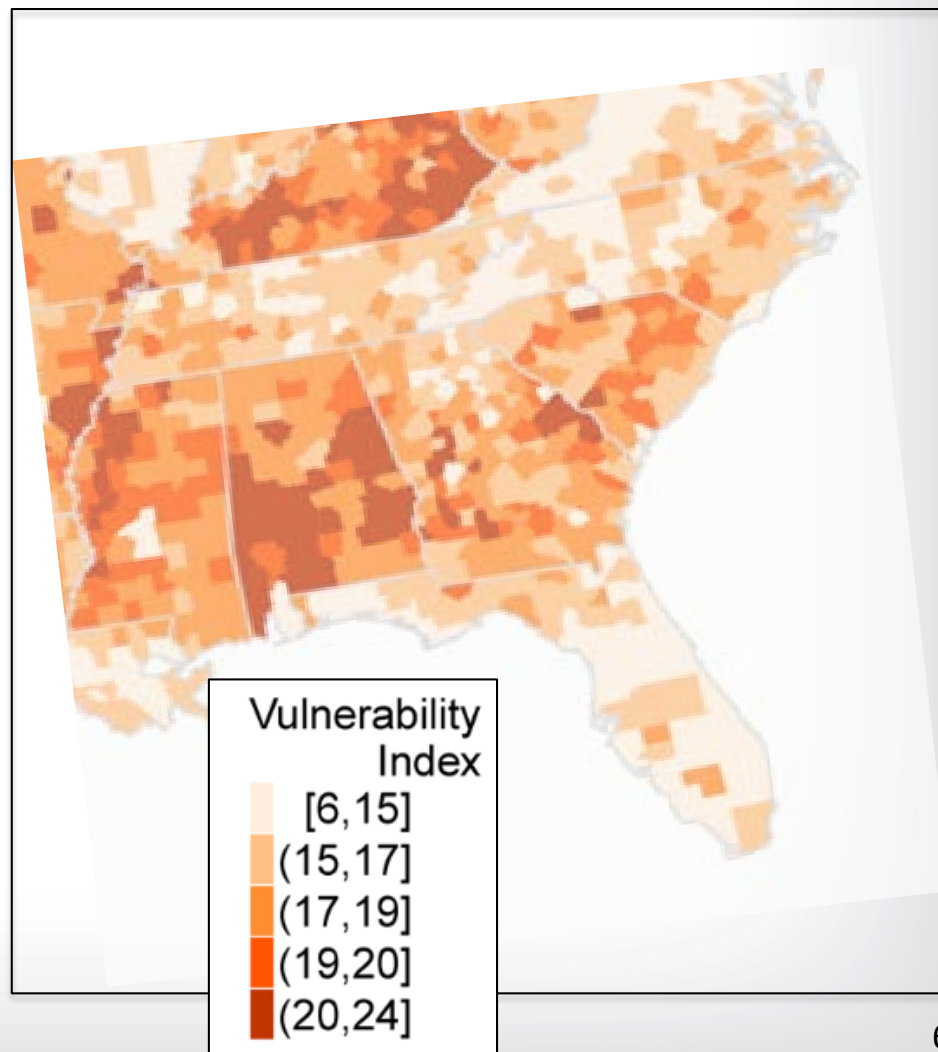
Higher Prevalence of Chronic Diseases Conferring Risk to Wildland Fire Smoke

- Aging U.S. population with increasing prevalence of:
 - Heart-lung disease, obesity, diabetes

Wildland-Urban Interface

- Growing by 4,000 acres/day in U.S.

Community-Health Vulnerability Index

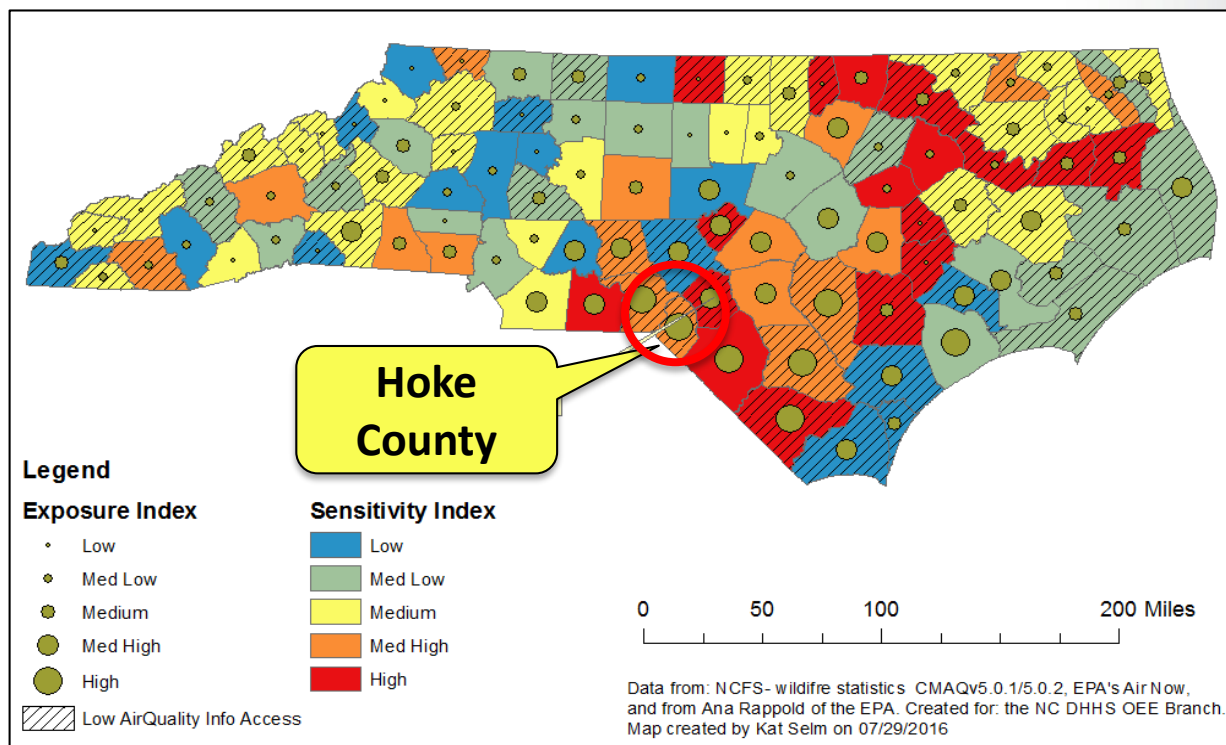




Community-Health Vulnerability Index Use in North Carolina

CDC-funded North Carolina Health Program

- ***Community-Health Vulnerability Index was adapted for use in North Carolina***
- ***Utilized CHVI to identify an at risk NC community***
- ***Added NC-specific layers (e.g., NC Forestry data)***
- ***Engaged Hoke County stakeholders (e.g., local fire departments) to discuss vulnerability to smoke health impacts***



- ***CHVI discussion has given way to implementing prevention efforts, e.g. Smoke Sense***



Smoke Ready Toolbox for Wildfires

epa.gov/air-research/smoke-ready-toolbox-wildfires



Airnow.gov: Current Fire Conditions

Get current air quality conditions and learn what to do to protect your health from air pollution, including smoke from wildland fires. Airnow.gov provides local air quality forecasts using EPA's science-based air quality index. https://airnow.gov/index.cfm?action=topics.smoke_wildfires

How Smoke From Fires Can Affect Your Health

Learn who is more at risk from smoke, how to tell if it is affecting you, and steps you can take to protect your health. Learn what to do before, during and after a wildfire. <https://airnow.gov/index.cfm?action=smoke.index>

Wildfire Smoke: A Guide for Public Health Officials

The guide is an easy-to-use resource that outlines whose health is most affected by wildfire smoke, how to reduce exposure to smoke, what public health actions are recommended, and how to communicate air quality to the public. The recommendations are based on science conducted by EPA and others. https://www3.epa.gov/airnow/wildfire_may2016.pdf

Wildfire Smoke Exposure Infographics

Two infographics provide information on actions to take to reduce health risks from smoke exposure in areas with wildfire smoke and what respirator (mask) to wear if you have to go outside and how to wear it properly. https://www3.epa.gov/airnow/smoke_fires/reduce-health-risks-with-wildfire-smoke.pdf and <https://airnow.gov/static/topics/images/epa-infographic-respirator.jpg>

Smoke Sense App

The Smoke Sense mobile app, developed by EPA researchers, enables you to get information on air quality and learn how to protect your health from wildland fire smoke. The app is being used in a citizen science study to determine how smoke from fires impacts public health. The app is available for anyone to use and can be downloaded on Android or iOS. www.epa.gov/air-research/smoke-sense

Particle Pollution and Your Patients' Health Course

Particle pollution, also known as particulate matter or PM, is the main component of haze, smoke, and dust. This course provides health professionals with knowledge they can share with patients to help reduce overall risk of PM-related health effects, particularly in individuals with heart and lung disease. www.epa.gov/pmcourse

Online Healthy Heart Toolkit

Breathing in fine particulate matter (PM_{2.5}) can trigger heart attacks, ischemic stroke, abnormal heart rhythms and worsen heart failure in people with cardiovascular disease or older adults with medical conditions that put them at risk. Particle pollution is a main component of smoke. Use the toolkit to protect your heart. <https://www.epa.gov/air-research/healthy-heart-toolkit-and-research>



Smoke Ready Toolbox for Wildfires

- Resources health officials can use to educate the public about the risks of smoke exposure and actions people can take to protect their health

https://www.epa.gov/sites/production/files/2018-04/documents/smoke_ready_toolbox_for_wildfires_tagged.pdf



Local Air Quality Conditions

Zip Code:

Go

State :



Go

[National Summary](#)

[Forecast](#)

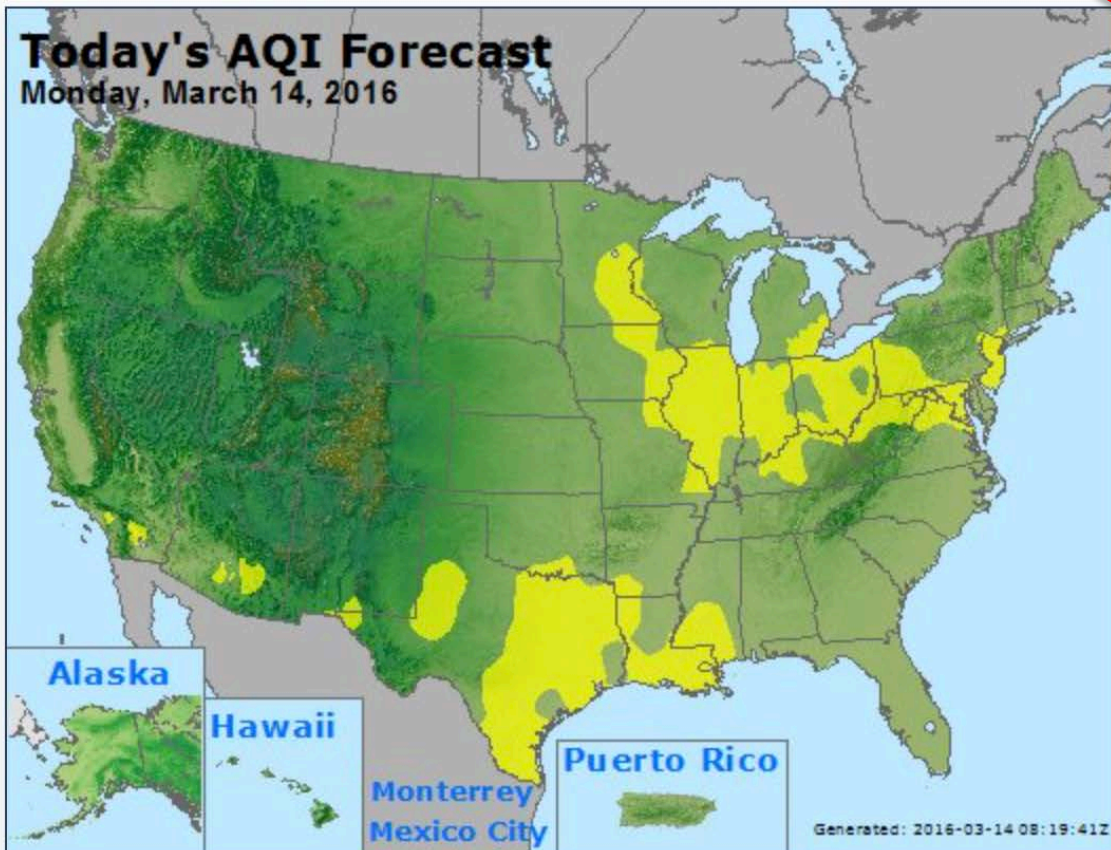
[Current AQI](#)

[AQI Loop](#)

[More Maps](#)

Today's AQI Forecast

Monday, March 14, 2016



Alaska

Hawaii

Monterrey
Mexico City

Puerto Rico

Generated: 2016-03-14 08:19:41Z

Good

Moderate

Unhealthy

Very Unhealthy

Very Unhealthy

Hazardous

! Action Day

Fires: Current Conditions

[Click to see map](#)



U.S. Embassies and Consulates

Data from air quality monitors at select U.S. embassies and consulates around the world

Announcements

3/9/16: NEW: [Spanish-language website](#) for Air Quality Flag Program - NEUVO: [En español—El sitio web](#) de la programa de banderines sobre la calidad del aire

03/03/16: Now available! Heart Disease, Stroke, and Outdoor Air Pollution (en Español) - [Enfermedades del corazón, ataques cerebrales y contaminación del aire](#)

[more announcements](#)

Air Quality Basics

[Air Quality Index](#) | [Ozone](#) | [Particle Pollution](#) | [Smoke from fires](#) | [What You Can Do](#)

▶ [Health](#)

▶ [Learning Center](#)



Apps



EnviroFlash Email



Local Air Quality Conditions

Zip Code:

Go

State :

Alabama



Go

[National Summary](#)

[Forecast](#)

[Current AQI](#)

[AQI Loop](#)

[More Maps](#)

Fires: Current Conditions

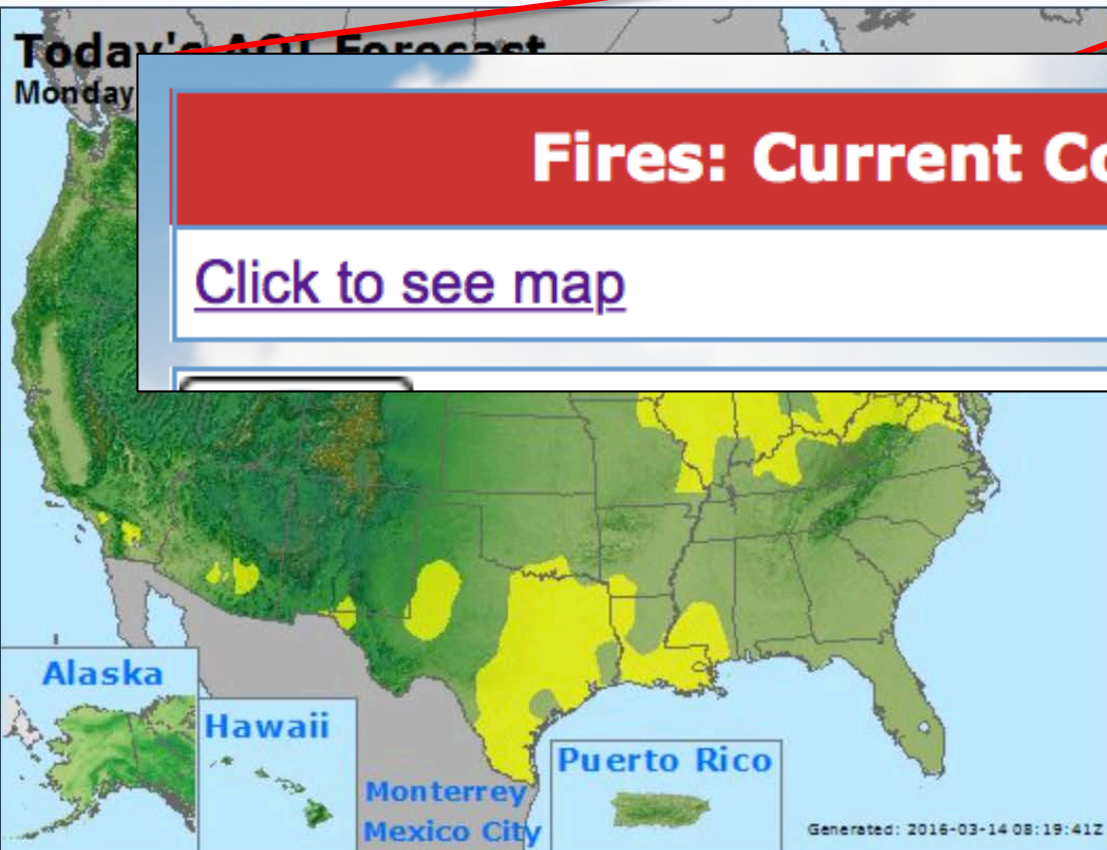
[Click to see map](#)



[U.S. Embassies and Consulates](#)

Fires: Current Conditions

[Click to see map](#)



[corazón, ataques cerebrales y contaminación del aire](#)

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Air Quality Basics

[Air Quality Index](#) | [Ozone](#) | [Particle Pollution](#) | [Smoke from fires](#) | [What You Can Do](#)

[Health](#)

[Learning Center](#)

Good

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USG

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Very Unhealthy

Hazardous

! Action Day



Apps



EnviroFlash Email



Fires: Current Conditions Page

- **Current Smoke Map generated by NOAA Hazard Mapping System**
- **Current Advisories – State/Local/Tribal agency blogs**
- **Wildland Fire Air Quality Response Program**



More Fire Tools

- [Prepare for Fire Season](#) (2 pp., 260KB, [about PDF](#)) - Learn how to protect your health from wildfire smoke.
- [Wildfire Smoke, A Guide for Public Health Officials, 2016](#) (76 pp., 2.3MB, [about PDF](#)) - This document is designed to help local public health officials prepare for smoke even the public when smoke is present, and communicate with the public about wildfire smoke and health. It was updated assistance and expertise from a number of federal and state agencies.
- The right respirator and proper fit can reduce your exposure to wildfire smoke.



See [Infographic enlarged JPG](#) 127.36 KB
See [Infographic enlarged PNG](#) 26.17 KB



See [Infographic enlarged PDF](#) (1 p., 2.2

Fires and Your Health

Fires and Your Health

Smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic materials burn. The biggest health threat from smoke is from fine particles. These microscopic particles can get into your eyes and respiratory system, where they can cause health problems such as burning eyes, runny nose, and illnesses such as bronchitis. Fine particles also can aggravate chronic heart and lung diseases - and even be linked to premature deaths in people with these conditions.

If you are healthy, you're usually not at a major risk from short-term exposures to smoke. Still, it's a good idea to avoid breathing smoke if you can. If everyone should take the steps below when wildfires are present.

Questions? Visit our [Frequently Asked Questions](#) page for answers to some common questions about health and smoke from wildland fires.

Use common sense. If it looks smoky outside, it's probably not a good time to mow the lawn or go for a run. And it's probably not a good time for your children to play outdoors.

Pay attention to local air quality reports. Stay alert to smoke-related news coverage or health warnings.

Visit AirNow to find out the Air Quality Index in your area. As smoke gets worse, the amount of particles in the air changes - and so do the steps you should take to protect yourself. AirNow recommends precautions you can take to protect your health when air pollution gets bad.

If you are advised to stay indoors, take steps to keep indoor air as clean as possible. When smoke levels are high, try to avoid using anything that burns, such as wood, candles, gas stoves, gas heaters - and even candles! Don't vacuum. That stirs up particles already inside your home. And don't smoke. That puts even more pollution in your lungs, and in the lungs of people around you.

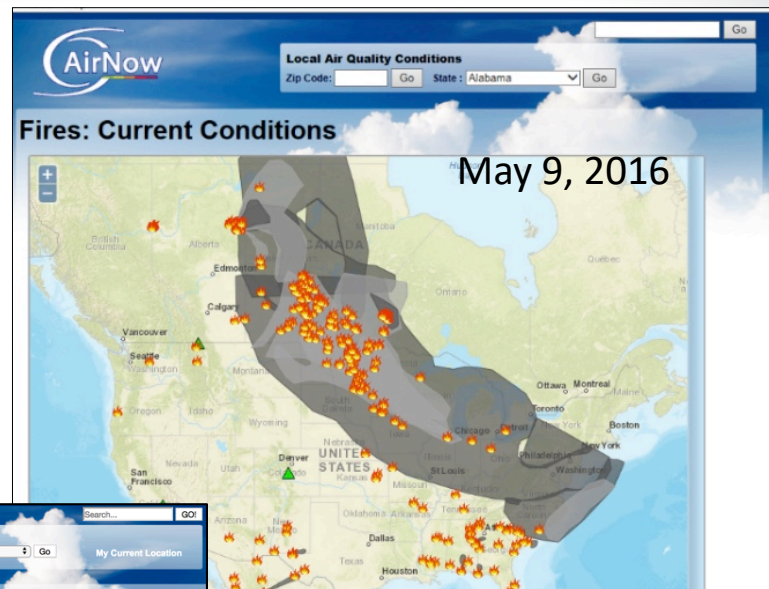
If you have asthma or other lung disease, make sure you follow your doctor's directions about taking your medicines and following your asthma management plan. Call your doctor if your symptoms worsen.

Health Resources

- [Wildfire Smoke, A Guide for Public Health Officials, 2016](#) (76 pp., 1.5MB, [about PDF](#))
- [How Smoke from Fires Can Affect Your Health](#) - Learn steps you can take to protect your health.
- [Particle Pollution and Your Health](#) - Find out if you are at risk from exposure to particle pollution, and what health effects can be caused by particles.

Educational Resources

- [CDC Wildfire Fact Sheet](#) - Information on emergency preparedness and response
- [California Air Resources Board SMP Public Outreach Protocol - Tools and Materials](#)
- [FOR KIDS- Follow Smokey Bear's advice](#) when wildfires are in your area!



CDC Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

Natural Disasters and Severe Weather

- Earthquakes
- Extreme Heat
- Floods
- Hurricanes
- Landslides & Mudslides
- Lightning
- Tornadoes
- Tsunamis
- Volcanoes
- Wildfires

Wildfires

More and more people make their homes in areas that are prone to wildfires. You can take steps to be ready for a wildfire and prepare your home and landscaping to reduce your risk. Learn how to protect yourself and your family from a wildfire, evacuate safely during a wildfire, and how to stay healthy when you return home.

Before a Wildfire

- [Wildfire, Are You Prepared?](#)
- [Is your home Firewise?](#)
- [Make a Plan](#)

During a Wildfire

- [Wildfire Smoke](#)
- [Wound Care](#)
- [Ready.gov Wildfires](#)
- [Protecting Pets](#)
- [Animals in Evacuation Centers](#)

After a Wildfire

- [What to Do After a Home Fire](#)
- [Preventing Injury](#)
- [Returning Home After a Disaster](#)

Info for Specific Groups

- [Evacuees & Other Affected Persons](#)
- [Evacuation Centers](#)
- [Pregnant Women](#)
- [Responders](#)

CDC: Before, During and After a Wildfire



Local Air Quality Conditions

Zip Code: State : [My Current Location](#)

How Smoke from Fires Can Affect Your Health

Updated January 2017

Smoke may smell good, but it's not good for you

While not everyone has the same sensitivity to wildfire smoke, it's still a good idea to avoid breathing smoke if you can help it. And when smoke is heavy, such as can occur in close proximity to a wildfire, it's bad for everyone.

Smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic materials burn. The biggest health threat from smoke is from fine particles. These microscopic particles can penetrate deep into your lungs. They can cause a range of health problems, from burning eyes and a runny nose to aggravated chronic heart and lung diseases. Exposure to particle pollution is even linked to premature death.

Some people are more at risk

It's especially important for you to pay attention to local air quality reports during a fire if you are

- **a person with heart or lung disease**, such as heart failure, angina, ischemic heart disease, chronic obstructive pulmonary disease, emphysema or asthma.
- **an older adult**, which makes you more likely to have heart or lung disease than younger people.
- **caring for children, including teenagers**, because their respiratory systems are still developing, they breathe more air (and air pollution) per pound of body weight than adults, they're more likely to be active outdoors, and they're more likely to have asthma.
- **a person with diabetes**, because you are more likely to have underlying cardiovascular disease.
- **a pregnant woman**, because there could be potential health effects for both you and the developing fetus.



How to tell if smoke is affecting you

<https://airnow.gov/index.cfm?action=smoke.index>



Public Health Recommendations

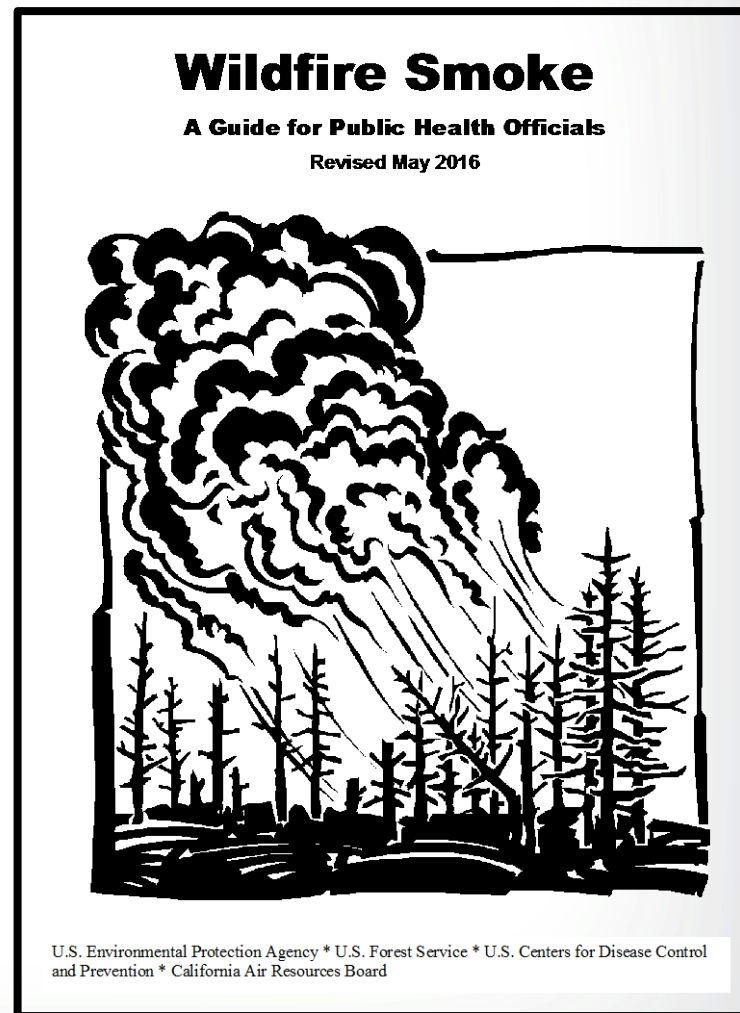
Exposure Reduction Measures

An individual can be advised to:

- Stay indoors
- Reduce outdoor physical activity
- Respirators (e.g., N-95) can help in the short-term
- Activate asthma/COPD action plans
- Use a home clean air shelter

A community can be advised to:

- Cancel outdoor events
- Provide community clean air shelters
- Increase air filtration in institutions
- Evacuate



https://www3.epa.gov/airnow/wildfire_may2016.pdf

14



Wildfire Smoke Guide 2018

Anticipate Availability Late Summer/Fall



- *Updated look*
- *Smoke vs urban particles*
- *Addition of ozone*
- *Add sections*
 - *PM web course*
 - *Sensors*
 - *Ash clean-up*
- *Stand-alone fact sheets*
 - *Children*
 - *Older adults*
 - *Older adults*
 - *Respirator use*
 - *Pets/livestock*
 - *Ash clean-up*
 - *Preseason preparedness*
 - *Exposure reduction*
 - *Know when to evacuate*



Wildfire Smoke Guide 2018

Fact Sheets Being Release as Approved



WILDFIRE SMOKE FACTSHEET

Children and Families

Background

- **Wildfires** expose children and women of reproductive age to a number of environmental hazards, e.g., fire, smoke, psychological stress, and the byproducts of combustion of wood, plastics, and other chemicals released from burnings structures and furnishings.
- **During the acute phase** of wildfire activity, the major hazards are fire and smoke.
- **Children, Pregnant Women**, individuals with pre-existing lung or cardiovascular diseases (e.g. asthma), impoverished populations are especially vulnerable to hazards due to wildfires.

Environmental Hazards

- **Wildfire Smoke:** Consists of very small organic particles, liquid droplets, and gases such as carbon monoxide (CO), carbon dioxide (CO₂) and other volatile organic compounds (VOCs), such as formaldehyde and acrolein. The actual content of the smoke depends on the fuel source.

Health Effects from Smoke

- Symptoms from smoke inhalation can include chest tightness, shortness of breath, wheezing, coughing, respiratory tract and eye irritation and burning, chest pain, dizziness, or lightheadedness and other symptoms.
- Underlying conditions such as allergies and asthma symptoms may be exacerbated.
- The risk of developing cancer from short-term exposures to smoke is vanishingly small.

Recommendations

Prepare Before Wildfire Season

- **Stock up** so you don't have to go out when it's smoky. Have several days of medications on hand. Buy groceries that do not need to be refrigerated or cooked because cooking can add to indoor particle levels.
- **Create a "clean room"** in your home. Choose a room with as few windows as possible, such as a bedroom, and use a portable air cleaner and avoid sources of pollution.
- **Buy a portable air cleaner** before there is a smoke event. High-efficiency particulate (HEPA) filter air cleaners, and electrostatic precipitators that do not produce ozone, help reduce indoor particle levels.
- **Organize** your important items ahead of time and know where to go in case you have to evacuate.



WILDFIRE SMOKE FACTSHEET:

Indoor Air Filtration

Exposure to Particle Pollutants

Indoor sources of particulate matter (PM) come from combustion events such as smoking, candle burning, cooking and wood-burning. During a wildfire event, outdoor PM can increase indoor PM levels well above the levels normally found. As outlined in the Guide, reducing indoor sources of pollution is a major step to lower the concentrations of PM indoors. Further reductions in indoor PM can be achieved using one of the filtration options discussed below.

Filtration Options

There are two effective options for improving air filtration in the home: upgrading the central system filter, or using high efficiency portable air cleaning appliances. Before discussing filtration options, it is important to understand the basics of filter efficiency.

Filter Efficiency

The most common industry standard for filter efficiency is known as the Minimum Efficiency Reporting Value, or MERV rating. The MERV scale for residential filters ranges from 1-20. The higher the MERV rating the greater the percentage of particles captured as the air passes through the filter media. Higher MERV (higher efficiency) filters are especially effective at capturing very small particles that can most affect health.

Central Air System Filter

The filter used in the central heating/cooling system of the home can effectively reduce indoor PM. A home typically will have a low MERV (1-4)

fiberglass filter that is 1" thick. Replacing this filter with a medium efficiency pleated filter can significantly improve the air quality. Higher efficiency filters (MERV 11-16) in the central system can reduce indoor PM as much as 95%. However, these filters have more resistance to air flow, which may require more energy used by the blower motor. You may wish to consult a HVAC technician or the manufacturer of your system to confirm that the system can handle a more efficient filter. If you are not sure, simply switching to a "Auto" or "On" filter has been shown to reduce concentrations by as much as 50%.

Portable Air Cleaners

Portable air cleaners are self-contained appliances that can be used to enhance central filtration to remove particles. Their effectiveness depends on several factors such as the size of the air cleaner, the filter efficiency, and whether the unit is turned on and at what fan speed. Cleaners fitted with high efficiency filters can reduce indoor PM concentrations by as much as 50%.

Portable Air Cleaners: How to Choose

There is a wide variety of air cleaners ranging in price from about \$50 to \$500. Air cleaners under about \$200 are typically the air well and would not be recommended for use in a wildfire situation.

Types of Air Cleaners

Most air cleaners fall under two categories: mechanical and electronic. Mechanical

WILDFIRE SMOKE FACTSHEET

Prepare for Fire Season



If you live in an area that is regularly affected by smoke or where the wildfire risk is high, take steps to prepare for fire season. Know how to get ready before a wildfire. Know how to protect yourself from smoke exposure during a wildfire.

Being prepared for fire season is especially important for the health of children, older adults, and people with heart or lung disease.

Prepare Before a Wildfire

- **Stock up** so you don't have to go out when it's smoky. Have several days of medications on hand. Buy groceries that do not need to be refrigerated or cooked, because cooking can add to indoor particle levels.
- **Create a "clean room"** in your home. Choose a room with as few windows and doors as possible, such as a bedroom. Use a portable air cleaner and avoid indoor sources of pollution.
- **Buy a portable air cleaner** before there is a smoke event. High-efficiency particulate air (HEPA) filter air cleaners, and electrostatic precipitators that do not produce ozone, can help reduce indoor particle levels.
- **Understand** how you will receive alerts and health warnings, including air quality reports and public service announcements, from local officials.


- **If you have heart or lung disease**, check with your doctor about what you should do during smoke events.
- **If you have asthma or another lung disease**, update your respiratory management plan.
- **Have a supply of N95 masks** and learn how to use them. They are sold at many home improvement stores and online.
- **Organize** your important items ahead of time and know where to go in case you have to evacuate.





Particulate Matter Web Course

Particle Pollution and Your Patients' Health





 United States Environmental Protection Agency

Environmental Topics Laws & Regulations About EPA

Search EPA.gov


Particle Pollution and Your Patients' Health

CONTACT US

SHARE    

An evidence-based training for healthcare professionals that:

- Describes the biological mechanisms responsible for the cardiovascular and respiratory health effects associated with particle pollution exposure.
- Provides educational tools to help patients understand how particle pollution exposure can affect their health and how they can use the Air Quality Index to protect their health.



This course is designed for family medicine physicians, internists, pediatricians, occupational and rehabilitation physicians, nurse practitioners, nurses, asthma educators, pulmonary specialists, cardiologists, and other medical professionals.

[Start the Course](#)

[Course developers](#)

Course Home
About this course
What is Particle Pollution?
Particle Pollution Exposure
Cardiovascular Effects
Respiratory Effects
Patient Exposure and the Air Quality Index
Patient Exposure and High Particle Pollution Events
Clinical Scenarios
Frequent Questions
Course Outline/Key Points
Review Questions
Patient Education Tools
Course Evaluation
References
Glossary

 United States Environmental Protection Agency

Environmental Topics Laws & Regulations About EPA

Search EPA.gov

Particle Pollution and Your Patients' Health

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Course Home

About this course

What is Particle Pollution?

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Respiratory Effects

Patient Exposure and the Air Quality Index

Patient Exposure and High Particle Pollution Events

Clinical Scenarios

Particle Pollution Exposure

On this page:

- [Why is particle pollution exposure a health concern?](#)
- [What groups are at increased risk from particle pollution?](#)
- [Are there symptoms of particle pollution exposure?](#)
- [How does an individual's genetic background influence particle pollution response?](#)
- [How are particles deposited in the respiratory system?](#)
- [What are the lung's defense mechanisms against fine particles?](#)

Why is particle pollution exposure a health

Continuing education credit (CME, CNE, CEU) available from the CDC for physicians, nurses, and health educators

<https://www.epa.gov/pm-and-your-patients-health/patient-education-tools>



EPA's Healthy Heart Program


Increasing Environmental Health Literacy



EPA's Healthy Heart program aims to prevent heart attacks and strokes by:





- Raising public awareness about the role outdoor air pollution plays in cardiovascular health, and
- Steps individuals can take to reduce their pollution exposure



 United States
Environmental Protection
Agency

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Related Topics: [Air Research](#) CONTACT US SHARE    


Healthy Heart Toolkit and Research: Steps You Can Take

Steps You Can Take to Reduce Health Effects from Air Pollution

Studies show that air pollution can trigger heart attacks, strokes and worsen heart failure in people who are at risk for these conditions. If you have a heart condition, you could benefit by reducing your exposure to high levels of air pollution.

When are air pollution levels high?

- Any time of year
- When weather is calm
- Near busy roads
- In urban areas
- In industrial areas
- When there is smoke



Daily Air Quality

- [Check Pollution Forecasts](#)
- [Get Free Email Alerts](#)

[EXIT](#)

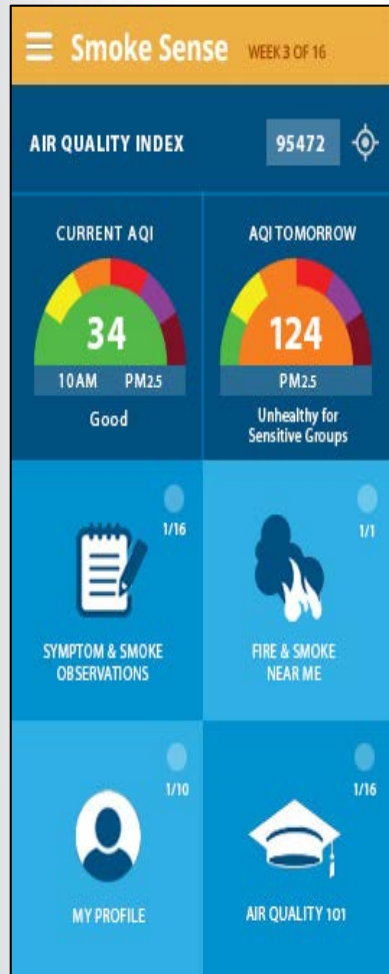
Resources

- [Be Smart, Protect Your Heart video](#) [EXIT](#)
- [Heart Disease, Stroke and Outdoor Air Pollution](#)
- [Million Hearts Initiative](#)

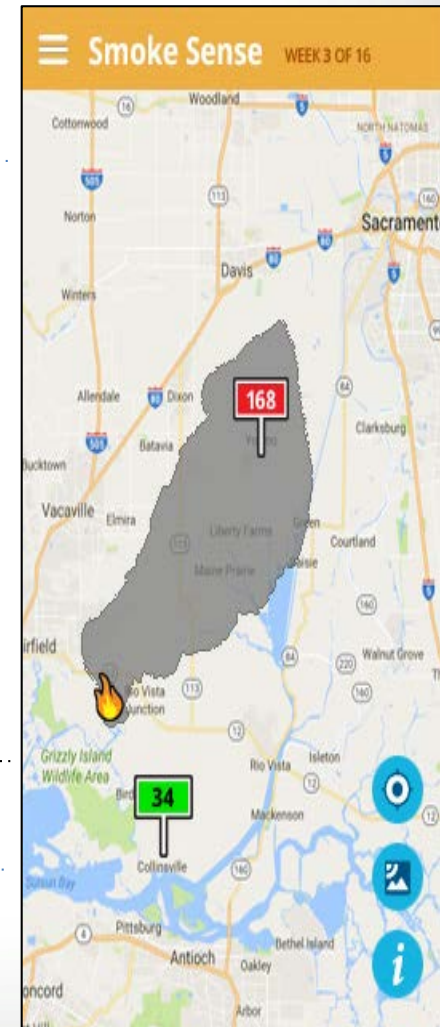
- *When are air pollution levels high?*
- *Are you at risk?*
- *Steps to Protect Your Heart*
- *How to Reduce your Risk?*
- *Warning Signs of a Heart Attack*
- *Warning Signs of a Stroke*



Air Quality & Smoke Plume Info

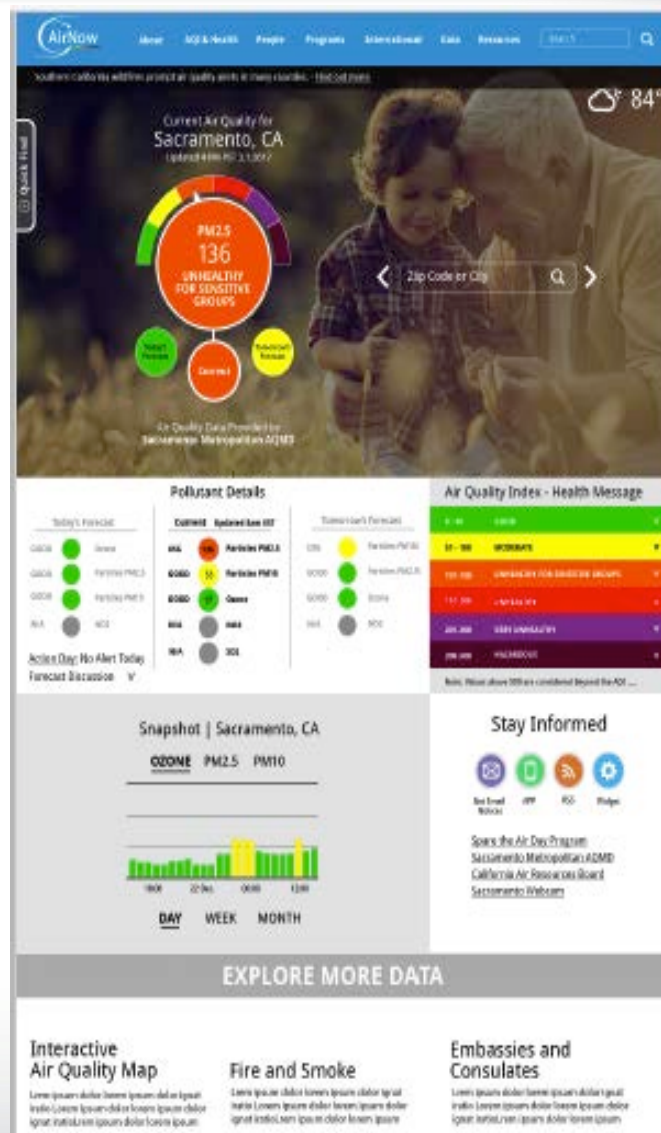


- **Smoke Sense provides information about current and future air quality**
- **Forecasted smoke plumes can be visualized**
- **Less time outside during smoke episodes to decrease exposure, & protect health**
- **Smoke Sense helps collect information about who, when, and how frequently people are impacted by smoke**
- **Information about smoke in the air and symptoms experienced in the past week will be logged**



AirNow Redesign

- Look will be different: focus on local conditions
- Mobile-friendly web site
- Same great information
 - Health Care Provider page
 - Fires: Current Conditions page
- Better display of temporal changes in air quality





Partnering with Million Hearts®



- EPA's contributes the **Healthy Heart** program*
- *to the National Prevention Strategy*
 - *and the fight against heart attacks and strokes*



Million Hearts® Educational Tools on Particle Pollution

Connect with us:

Search the site

Home Tools & Protocols Data & Reports Partners & Progress Learn & Prevent

Undiagnosed Hypertension
Self-Measured Blood Pressure
Medication Adherence
Treatment Protocols
Action Guides
Tools
Health IT
Particle Pollution
Physical Activity
Tobacco

Tools & Protocols
Find treatment protocols, action guides, and other tools to help educate, motivate, and monitor your patients.

Data & Reports
Access the latest data and published research on heart disease and stroke.

<https://millionhearts.hhs.gov>

Million Hearts®
millionhearts.hhs.gov

e-update

Tools You Can Use

- **Now Million Hearts® website on physical activity** promotes community programs and resources. Physical activity is one of the most effective ways to prevent and manage heart disease, but just half of U.S. adults get enough. Take advantage of resources and information about community-based programs to boost physical activity in your community.
- **Vermont Department of Health releases Hypertension Management Toolkit.** The toolkit uses Lean quality improvement tools and methods to support evidence-based strategies that improve blood pressure control. A new statewide peer learning collaborative will share best practices to keep the toolkit updated.
- **Million Hearts® Tobacco Cessation Protocol now available on the go.** Find the CDC Protocol for Identifying and Treating Patients Who Use Tobacco on Eponotes, a free website and app for clinicians. (Registration may be required.)
- **A visual air quality alert makes air awareness easy.** The EPA's Air Quality Flag Program provides instructions on using physical and digital flags at your business or online to alert people to daily air quality.
- **Now EPA toolkit details the link between heart problems and air pollution.** Use the Healthy Heart Toolkit to take steps to protect yourself and your community, sign up for air alerts, and download public education materials.

Million Hearts® in the Community

- **The District of Columbia Department of Health's Million Hearts® program builds a framework for success.** Learn how D.C.'s Million Hearts® program's strong partnerships, data monitoring, and targeted interventions have reduced CV disease morbidity and mortality in the nation's capital.
- **Find your niche when partnering with Million Hearts®.** Hospitals, employers, and clinical care teams in communities across the nation have tailored unique approaches to keeping people healthy, optimizing care, and helping priority populations. Learn how they did it—and then craft your own plan.
- **Million Hearts® continues engagement to find patients with hypertension "hiding in plain sight."** How many people in your practice have undiagnosed high blood pressure? Learn how to establish criteria for finding people with hypertension, implement evidence-based strategies to treat them, and improve their CV outcomes.
- **Pilot program with National Association of Community Health Centers (NACHC) shows progress in fighting hypertension.** In honor of National Heart Center Week (Aug. 12-19), take the time to learn how Million Hearts® partner NACHC is making strides in blood pressure control.

The Science of Million Hearts®

- **Physicians experienced in health information technology are more likely to achieve 75% blood pressure control.** (*Journal of the American Medical Informatics Association*)
- **Lowering prices of fruits and vegetables could reduce the number of deaths from CV disease.** (*PLoS Medicine*)
- **A cost-benefit analysis shows how indoor air filtration may reduce mortality due to particulate matter.** (*International Journal of Indoor Environment and Health*)

You are receiving this newsletter because you are a Million Hearts® supporter.

Do This!
Share the EPA Air Quality Index with networks and people at risk.
Particle pollution puts people with CV conditions at higher risk for heart problems or stroke. Post this tool on your websites and social media so people can check air quality before they go outside for physical activity. Those at risk should avoid going outside on days ranked "orange" or worse and instead choose indoor versions of their favorite activities.

Quick Fact
One in three American adults has heart or blood vessel disease and is at higher risk from air pollution, which can trigger heart attacks and strokes and arrhythmias.

Thank you

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- No conflicts of interest
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