

PRESENTER

Melissa Nootz



Montana Field Organizer, Moms Clean Air Force

Presenting on public health impacts of wildfire smoke at a family and community level and the role of equity in building community resilience

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FIGHTING FOR
OUR KIDS' HEALTH

Wildfire Smoke
&
Equity

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TAKE SMOKE SERIOUSLY TAKE SMOKE SERIOUSLY

WILDFIRE SMOKE AND YOUR HEALTH

Children, the elderly, and people with heart disease, lung disease, and asthma are especially vulnerable to health problems caused by wildfire smoke.

Wildfires affect not only people in the immediate area, but they also send vast amounts of dangerous pollution into communities near and far, in the form of smoke.

Smoke is made up of ash, tiny particles, liquid droplets, and gases. It also contains toxic chemicals released from burning flame retardants in furniture and fabrics, and other chemicals in building materials.

The most concerning pollutant is particle pollution, or PM_{2.5}—a dangerous air pollutant that also comes from car and truck tailpipes, power plants, and factories.

Particle pollution is so small you can't see it. Each individual bit of solid or liquid in PM_{2.5} is less than 2.5 microns in diameter -- smaller than one twentieth the width of a human hair. These tiny particles have a unique ability to penetrate deep inside the lungs, into the broccoli-shaped alveolar sacs. They can lodge there, or slip directly into the bloodstream.

Wildfire smoke is hazardous to your health. Smoke inhalation can kill. Other health effects include chest tightness; shortness of breath; wheezing; coughing; burning sensation in respiratory tract and eye; chest pain; dizziness or lightheadedness; nausea; asthma attacks; reduced lung function; bronchitis; and exacerbation of preexisting conditions, such as heart disease.

Wildfire smoke can contain toxic air pollutants such as polycyclic aromatic hydrocarbons (PAHs), benzene, and formaldehyde. However, short-term exposure to these carcinogens, such as in a wildfire, are small relative to overall lifetime exposures, and are not likely to significantly increase risk of cancer.

The danger from wildfires doesn't end when the fires are doused. Wildfire smoke lingers and spreads, causing major health problems. Cleaning up from fires also exposes people to potentially hazardous conditions, such as heavy metals in ash and dust, and risk of injury from unstable buildings and debris.

Adult lungs can recover fully from some smoke damage. Cardiovascular impacts from wildfire smoke, such as increased risk of blood clots, heart attack, and stroke, also appear to be temporary.



THE NEW SMOKE BELT

Wildfires across the country, and especially in the West, are burning more intensely than ever before. Across the Western U.S., the average annual number of large fires each year has more than tripled since the 1970s. Wildfire seasons are also lasting longer than they used to, up to 105 days longer than in the 1970s, straining the fire-fighting budgets of many states. When fires burn, health care costs balloon as well.

People in the new Smoke Belt—Northern California, Western Oregon, and the Great Plains—are at greatest risk of exposure to wildfire smoke.

Climate change is making wildfires worse. Our warming temperatures contribute to both the intensity and length of many wildfires—and this trend is projected to increase.



PLAN AHEAD FOR SMOKE WAVES

Smoke waves occur when there are more than two consecutive days of high levels of wildfire-related air pollution. Prepare well in advance for smoke waves; supplies can be scarce during a crisis.

If you live in or near an area that is prone to wildfires, buy a box of face masks that can protect you from the smoke. Keep it with your emergency supplies so you can grab it if you have to leave home in a hurry.

Choose a N95 or N100, NIOSH-approved face mask—with two straps—to get protection from fine particles. These masks are available at drugstores, hardware stores, and online.

Children breathe faster than adults, so they will be hit harder by wildfire smoke. Unfortunately the effective masks are not manufactured to seal around small faces.

Do NOT rely on surgical masks or dust masks. They will not work for wildfire smoke.

Do NOT rely on single strap masks. They will not make a tight enough seal.

Do NOT rely on wet bandanas or towels. They won't protect you from inhaling tiny particles.

Know the warning signs of smoke inhalation. Early signs of trouble include wheezing, stinging in eyeballs and throat, a feeling of mucous membrane "burn," chest tightness, and a chronic need to cough.

Identify buildings in your area (such as schools or libraries or government centers) that have installed sophisticated air filtration systems.

Pay attention to evacuation notices. Consider relocating to stay with relatives or friends who live away from the smoke during fires.

PROTECT YOUR FAMILY FROM WILDFIRE SMOKE

- Stay indoors, with doors and windows closed.
- Avoid strenuous activity and exercise.
- If possible, run an air-conditioner on the "recirculate" setting. Maintain your air conditioner by changing the filter when recommended.
- Reduce other sources of indoor air pollution, such as smoking, wood stoves, wood fires, candles, incense, frying and broiling food, and vacuuming, all of which can generate particle pollution.
- High-efficiency particulate air (HEPA) filter air cleaners can help reduce indoor particle levels, but the specific air cleaner needs to be matched to the size of the room. Only portable air cleaners that do not produce excess ozone should be used.
- Never operate gasoline-powered generators indoors. They produce dangerous carbon monoxide.
- When riding in a car, keep the windows and vents closed. Run air-conditioning on "recirculate."



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FOR MORE INFORMATION:

Visit: www.momscleanairforce.org

Sources: www.momscleanairforce.org/wildfire-sources

momscleanairforce.org

- Local Air Monitors
- Community Resilience Plan
- School Policy
- Join Moms Clean Air Force

momscleanairforce.org





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PRESENTER

Will Barrett



Director of Clean Air Advocacy, American Lung Association in California

Presenting on health equity & wildfire smoke in California and how to advocate for clean air

 American Lung Association.



American
Lung Association.[®]
State Of The Air **2020**

- ✓ Puts air pollution into everyday language
- ✓ Gives public local information
- ✓ Focuses attention on ozone and particle pollution
- ✓ Highlights Progress and Challenges
- ✓ Grades and Ranks Counties
- ✓ Ranks Metro Areas
 - ✓ Cleanest Cities
 - ✓ Most Polluted Cities

Key Findings: California

98% of Californians live in counties with a Failing Grade in State of the Air 2020

- 48% of Californians in counties with 3 Failing Grades
- 55% of people of color in California live in counties with 3 Failing Grades

California cities dominate the lists of the most polluted in America, including:

- **7 of the 10** most ozone-polluted cities in the US: #1 Los Angeles
- **6 of the 10** US cities most polluted by year-round particles: #1 Bakersfield
- **5 of the 10** US cities most polluted by short-term particles: #1 Fresno

Climate change is making it harder to protect human health.

- 3 of 5 hottest years ever recorded (2016-2018)
- 5 of the 10 most destructive wildfires in California history (2016-2018)

Top Ten

Most polluted cities in the U.S.

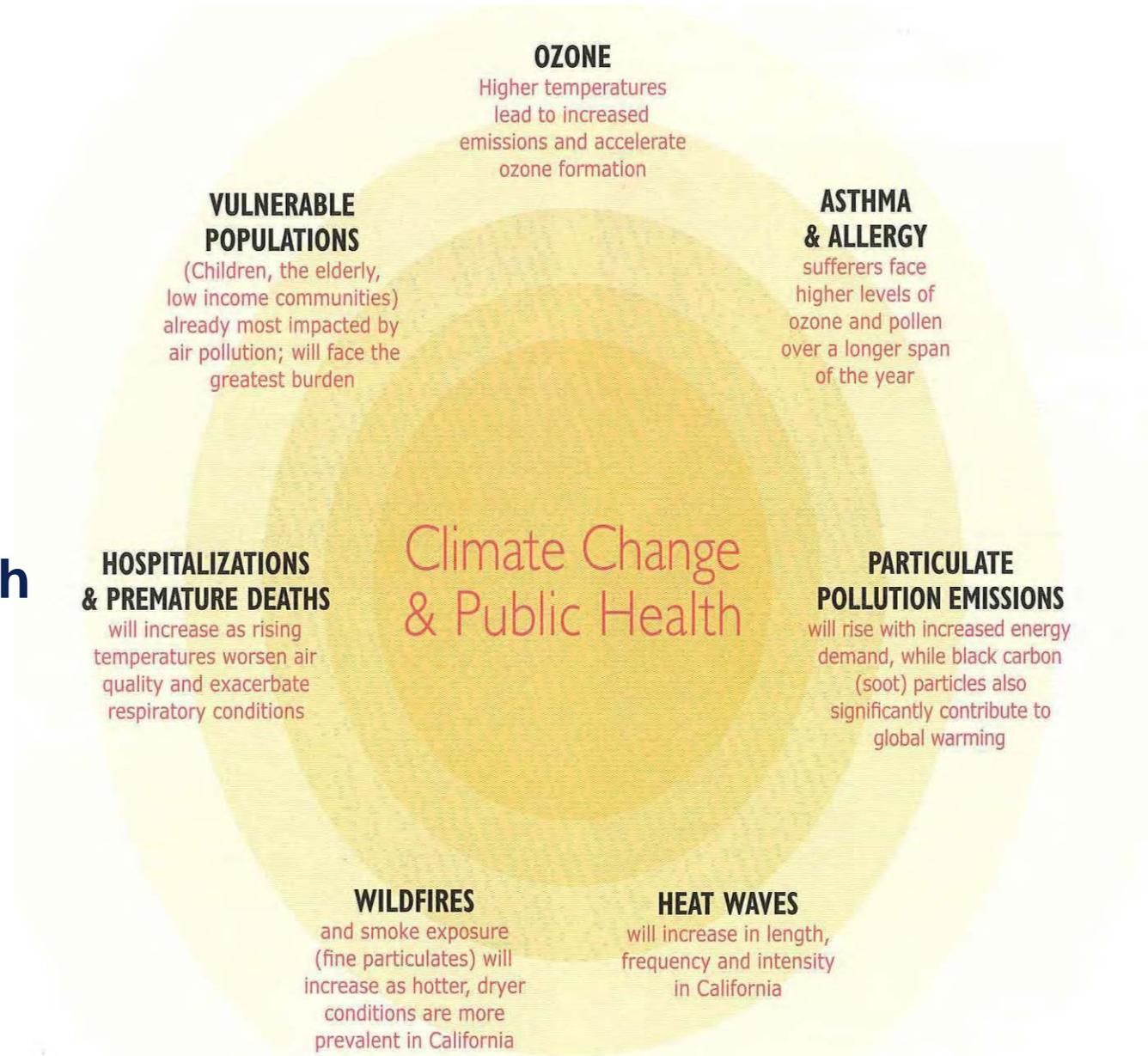


US Rank	Unhealthy Ozone Days	US Rank	Unhealthy Particle Pollution Days	US Rank	Annual Particle Pollution
1	Los Angeles-Long Beach, CA	1	Fresno-Madera-Hanford, CA	1	Bakersfield, CA
2	Visalia, CA	2	Bakersfield, CA	2	Fresno-Madera-Hanford, CA
3	Bakersfield, CA	3	San Jose-San Francisco-Oak., CA	3	Visalia, CA
4	Fresno-Madera-Hanford, CA	4	Fairbanks, AK	4	Los Angeles-Long Beach, CA
5	Sacramento-Roseville, CA	5	Yakima, WA	5	San Jose-San Francisco-Oak, CA
6	San Diego-Ch. Vista-Carlsbad, CA	6	Los Angeles-Long Beach, CA	6	Fairbanks, AK
7	Phoenix-Mesa, AZ	7	Salt Lake City-Provo-Orem, UT	7	Phoenix-Mesa, AZ
8	San Jose-San Francisco-Oak., CA	7	Redding-Red Bluff, CA	8	Pittsburgh-Weirton, PA-OH-WV
9	Las Vegas-Henderson, NV	7	Missoula, MT	8	El Centro, CA
10	Denver-Aurora, CO	10	Phoenix-Mesa, AZ	10	Detroit-Warren-Ann Arbor, MI

California Populations At Risk

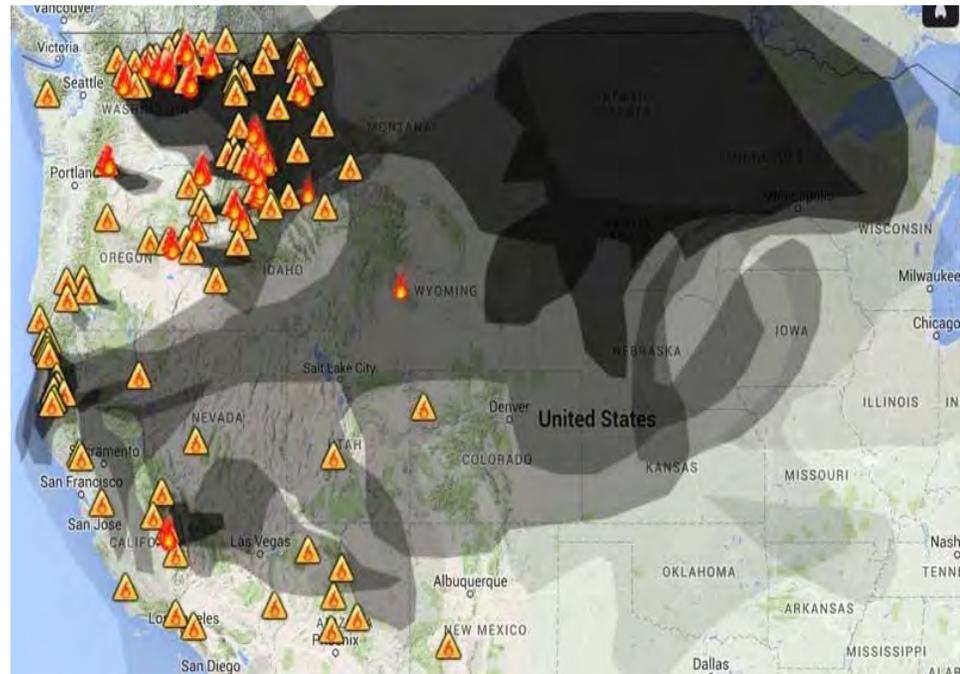
Total Pop	39,557,045
Under 18	8,989,955
65 and Over	5,669,025
Ped. Asthma	555,014
Adult Asthma	2,605,786
COPD	1,410,093
Lung Cancer	15,320
Heart Disease	2,041,761
Ever Smoked	10,177,047
Poverty	4,972,956
People of Color	24,988,437

Climate Change: Many Impacts on Respiratory Health

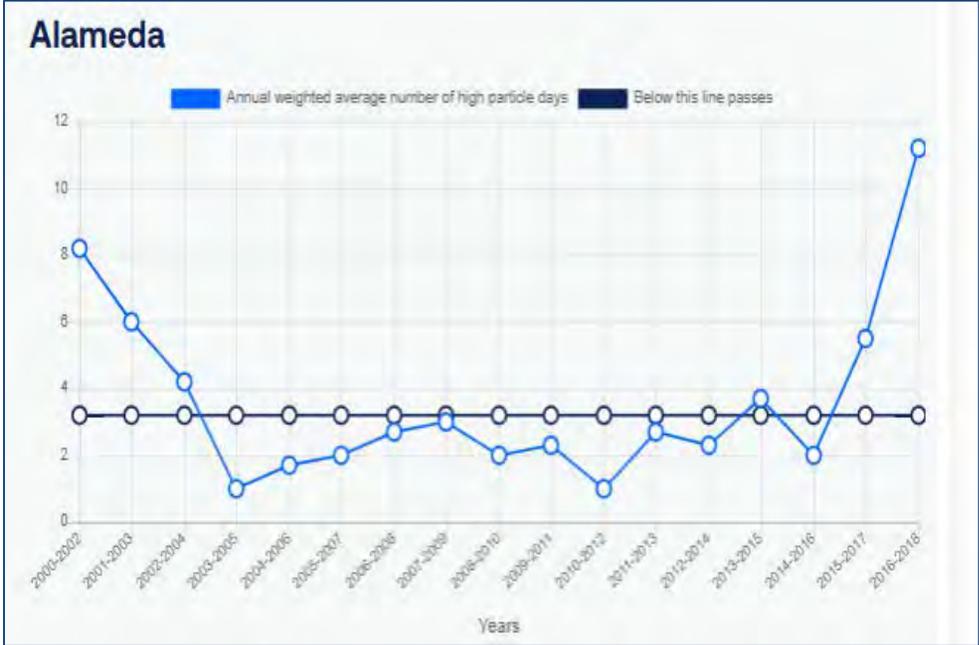
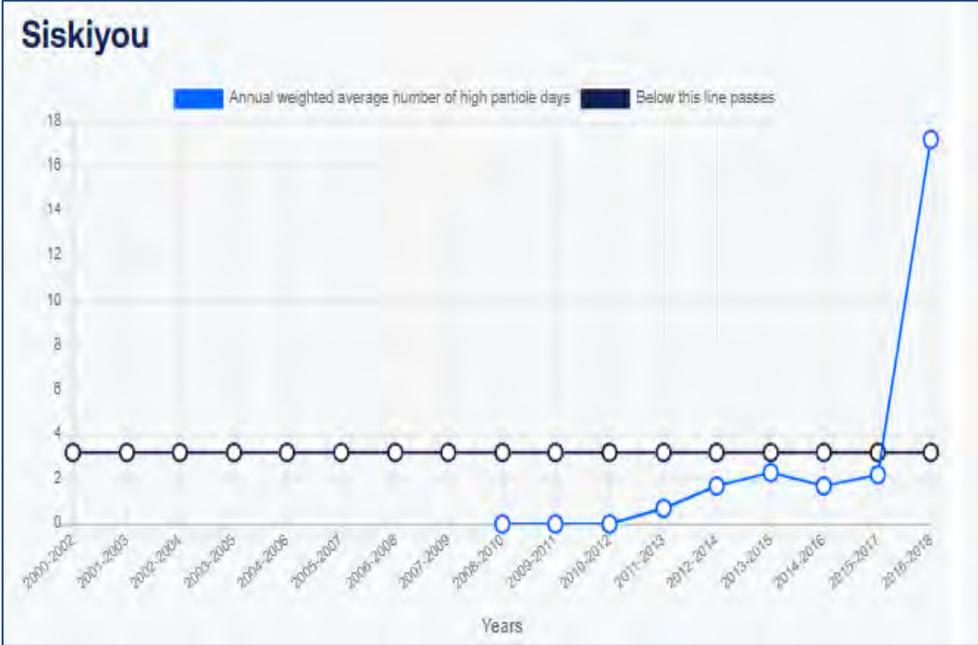


Western Wildfires

- More frequent and severe
- Downwind effects
- Spikes in particle pollution
- Impacts on ozone pollution
- Add to existing pollution burdens and disparities



Urban and Rural Impacts



Wildfire Response



- Public information and health messaging
- Wildfire Smoke Shelters
- Expanded smoke management & education
- Increased mobile monitoring of wildfires and prescribed fire

Health Professionals for Clean Air and Climate Action

Health professionals are stepping up to support urgent action to address air pollution and climate change.

[Lung.org/climatechangeshealth](https://lung.org/climatechangeshealth)

 American Lung Association.

Health Professionals for Clean Air and Climate Action 

Support clean air policies for our children's health.



Aparna Bole, M.D.
UH Rainbow Babies & Children's Hospital, Cleveland

#ClimateChangesHealth

 American Lung Association.

Health Professionals for Clean Air and Climate Action 

Clean air is essential to all of us.



Theresa Smith, RN, BSN
Care manager
Michigan Medicine, University of Michigan

#ClimateChangesHealth

 American Lung Association.

Health Professionals for Clean Air and Climate Action 

Climate change affects everyone.



Sumita B. Khatri, M.D., M.S.
Pulmonary Physician
Asthma Center, Cleveland Clinic
National Board Member
American Lung Association

#ClimateChangesHealth

 American Lung Association.

Health Professionals for Clean Air and Climate Action 

When you can't breathe, nothing else matters.



Karen Jalpor, M.D.
Volunteer Physician, American Lung Association in California, Riverside

#ClimateChangesHealth

Health Professionals for Clean Air and Climate Action



- Join our letters to urge policymakers to take action to protect health
- Receive monthly newsletter with updates on climate and health news
- Share why climate action is important to you

American Lung Association.
Health Professionals for Clean Air and Climate Action
We need policymakers as partners to achieve healthy air.
#ClimateChangesHealth

Peggy Pennoyer, MD, FAAAAI
Asthma and Allergy Specialist,
Portland Maine
American Lung Association
New England board member

Lung.org/ClimateChangesHealth

Declaration on Climate Change

Join thousands of health professionals nationwide by signing this statement in support of urgent action to protect the health of patients and communities from the impacts of climate change

[SIGN THE DECLARATION](#)

Sign up for our health professionals' newsletter

Get opportunities and updates in the fight for healthy air in our newsletter specifically for health professionals.

[SUBMIT](#)

Questions and Answers



Let's connect.

apha.org/climate

climatechange@apha.org

 [@PublicHealth](https://twitter.com/PublicHealth)

 [@ClimateHealthEquity](https://www.instagram.com/ClimateHealthEquity)

[#ClimateChangesHealth](https://twitter.com/ClimateChangesHealth)

