

AFTER THE FIRE

Clinical Guidance: Managing Patients Exposed to Wildfire Smoke



Wildfire-specific fine particulate matter (PM_{2.5}) is more pro-inflammatory than standard urban pollution and penetrates deep into the distal airways, causing both local and systemic injury. Use this guide to identify at-risk patients and implement actionable clinical interventions.

1. Clinical Manifestations & Risks

SYMPTOMS	ACUTE RISKS OF EXPOSURE	CHRONIC CONCERNS
Cough Wheezing Shortness of Breath Respiratory Symptoms	Exacerbation or new presentation of asthma, pneumonia, and upper airway damage.	PM _{2.5} and other wildfire smoke exposures have been linked to a number of health conditions*, including: - Elevated risk of developing COPD and accelerated progression of lung disease. - Prolonged inflammation linked to hypertension, cerebrovascular disease, and lung cancer. - Increased risk of dementia. More research is needed to understand long-term health impacts. *Gould CF, Heft-Neal S, Johnson M, Aguilera J, Burke M, Nadeau K. Health Effects of Wildfire Smoke Exposure. <i>Annu Rev Med.</i> 2024 Jan 29;75:277-292. doi: 10.1146/annurev-med-052422-020909. Epub 2023 Sep 22.
Eye or skin irritation	Increased risk of eczema and atopic dermatitis. Irritation of conjunctive of the eye.	
Nausea Dizziness	Can occur within hours to days after exposure, typically resolves after removing exposure.	
Cardiovascular Stress Chest Pain Irregular Heartbeat	There is sharp increases in risk of heart attacks, stroke, and out-of-hospital cardiac arrest in weeks after exposure (up to 70% in heavy smoke).	
Sleep Disruption Fear Hopelessness Confusion	Mental health ER visits (depression, anxiety, mood disorders) typically spike for up to 7 days post-exposure. Increased rates of alcohol and tobacco use often follow wildfire events.	

2. Clinical Interventions

RISK STRATIFICATION:

- identify high-risk groups: patients with concurrent disease (including cancer), the elderly, children, pregnant individuals, and outdoor workers.

OPTIMIZE ACTION PLANS:

- Update Asthma Action Plans and COPD management; ensure patients have a 14-day supply of rescue and controller medications.
- Verify patients understand the Air Quality Index (AQI); advise staying indoors when AQI > 100.

FACILITY READINESS:

- Ensure your clinic has clean air zones, upgraded filtration, and adequate oxygen/nebulizer supplies for patient surges.

ENVIRONMENTAL COUNSELING:

- Recommend using a portable HEPA air purifier in home and/or installing MERV 13+ rated in HVAC system filter to remove ash and fine particles from the air.
- Advise against indoor pollutants (frying food, vacuuming, burning candles) during smoke events.
- If outdoor activity is unavoidable, recommend well-fitted N95 or P100 respirators (surgical masks are ineffective).
- Advise personal protective equipment (PPE) when cleaning or sorting through ash and debris. Examples of PPE include N95 face masks, disposable gloves, protective eyewear, and cloth or Tyvek coveralls to keep dust/debris out of lungs, eyes, skin, and off clothes.

