



N A E M

National Association of
Environmental Medicine

WILDFIRE SMOKE: PROTECTING YOURSELF & YOUR FAMILY

Wildfire smoke is especially toxic

Wildfire smoke contains very small particulates, PM_{2.5}, that can penetrate deep into your lungs, especially on poor air-quality days when the smoke is thicker. These PM_{2.5} small particulates are up to 10 times more harmful to human health than from other non-wildfire PM_{2.5} pollution, and results in up to 10% more respiratory admissions at hospitals [\(1\)](#).

Wildfire smoke is more than burned trees. It often contains particulate matter, toxic gases, solvents, metals, pesticides, plastics, and forever chemicals due to burned buildings and cars [\(2\)](#).

Acute health effects include throat, eye, upper respiratory irritation, headaches, allergies, and acute exacerbations of asthma/lung and cardiovascular disease [\(2\)](#). Chronic health effects includes increased risk of cancer, reproductive concerns, immune dysregulation, neurological conditions, developmental delays, cardiovascular disease, respiratory disease and increased anxiety and depression [\(3,4,5\)](#).

Children are more vulnerable as their lungs are not fully mature and they breathe faster. Those with long covid, respiratory illnesses and other chronic conditions may also be more vulnerable.

How to protect yourself & family

Know your Air Quality Index and follow recommendations on when to stay indoors:

- [Air Now App](#) and [Map](#) - created by the EPA to show local air quality conditions & risk
- [Purple Air](#) - a community network of air pollution monitors

Test your Water Quality if concerned about contamination.

- [WaterCheck](#)
- [Tapscore](#)

Preventative Measures during Smoke Events:

- Stay indoors with windows closed
- Do not exercise outside
- Do not use gas stoves, fireplaces, or vacuum as these increase indoor air pollution
- If you have central air, run on recirculate and use a MERV 13+ furnace filter
- Use a HEPA air purifier in bedrooms and living room
- Use a DIY [Low cost filter fan](#)
- Wear a properly fitting N95 mask or [respirator](#) with [3M 60926](#) filters (particulates & gasses) when outside

- Filter your drinking and cooking water. A reverse osmosis system is preferred in most cases.
 - For additional filtration information see Environmental Working Group's water filter [guide](#).
 - Consider filtering your [shower](#) water as well in higher smoke exposure areas.

Nutritional Support during Smoke Events:

- Organic whole foods Mediterranean diet
- Omega-3s
- Rainbow of colorful fruits and vegetables, especially carotenoids
- Broccoli sprouts, onions, garlic, berries
- Green tea - 3 cups a day, as tolerated

Researched Supplements for Smoke Events:

From Dr. Lyn Patrick's [Wildfire Smoke Action Plan](#)

- Vitamin C - 1000mg three times a day
- Vitamin E - up to 800IU daily
- Sulforaphane - 30-50mg/day
- NAC - 1800mg/day
- Glutathione - 500mg/day
- Curcumin - dosing dependent on product, usually 2-4 caps/day
- Quercetin - 500mg twice a day
- Resveratrol - 450mg/day
- B-complex - 1 in the AM
- EPA/DHA - 1.6g combined

SOLUTION SUMMARY

Actions	Nutritional Support	Supplements
<p>Stay Indoors with windows closed</p> <p>Do not exercise outside</p> <p>Do not use gas stoves, fireplaces or vacuums - which can stir up the indoor air.</p> <p>If you have air conditioning, run on recirculate and use a MERV 13+ furnace filter</p> <p>Use a HEPA air purifier in bedroom and living rooms</p> <p>Filter your drinking and cooking water with a reverse osmosis or other quality system</p>	<p>Eat organic, whole foods, such as the Mediterranean diet</p> <ul style="list-style-type: none"> ● Eat a rainbow of fruits & vegetables, especially carotenoids ● Eat broccoli sprouts, onions, garlic & berries <p>Drink green tea, 3 cups/day as tolerated</p> <p>Take high quality Omega-3s</p>	<p>Vitamin C - 1000mg 3x day</p> <p>Vitamin E - up to 800IU daily</p> <p>Sulforaphane - 30-50mg/day</p> <p>NAC - 1800mg/day</p> <p>Glutathione - 500mg/day</p> <p>Curcumin - 2-4 caps/day</p> <p>Quercetin - 500mg 2x/day</p> <p>Resveratrol - 450mg/day</p> <p>B-Complex - 1 cap in morning</p> <p>Omega EPA/DHA - 1.6g combined</p>

Sources: 1 PMID: [33674571](#); 2 PMID: [31776122](#); 3,4,5 PMIDs [17646040](#), [23714370](#), [34991532](#)