

What Wildfire Smoke, Gas Stoves and Covid Tell Us About Our Air

June 7, 2023

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We just lived through a pandemic caused by a tiny virus floating in the air. Now we are experiencing wildfires that not only devastate communities and landscapes but also send out [gigantic plumes of smoke](#) that can affect millions of people downwind, as the Northeast is experiencing now.

If the pandemic was whispering to us about air quality, the wildfires are screaming to us about it. Add to that concerns about [gas stoves](#) and longer allergy seasons, and it's clear we should be on the precipice of a new public health movement to improve the air we breathe.

Air pollution is bad for us, and we've known that for a long time. The ancient Romans wrote about "heavy heavens" generated by emissions from wood burning and metal processing. In 1948, [killer smog](#) in Donora, Pa., affected nearly half the town's residents and inspired the comprehensive Clean Air Act of 1970. Currently, the World Health Organization estimates that indoor and outdoor air pollution is responsible for about 6.7 million premature deaths per year.

Why aren't we doing more about the quality of the air we breathe?

While water and food are carefully regulated for safety, there are gaps in how we ensure the safety of our air. The National Ambient Air Quality Standards apply to outdoor air and are designed to protect health, but no such standards exist for indoor air quality for the public, even though we spend, on average, about [90 percent of our time](#) indoors. Also, these standards don't help when unstoppable plumes of wildfire smoke drift through our cities and towns.

Those who are paying attention and have the resources can take steps to improve their air quality and protect their health. The particles in wildfire smoke are about the same size as respiratory particles that carry the coronavirus, so some of the same tools we used during the pandemic also work for wildfire smoke. Indoors, the portable air filtration unit that some people used to scrub viruses from the air will also remove smoke particles. Run it on high. If you must go outdoors, wear a high-quality, well-fitting mask such as an N95 or a KN95, which are designed to filter out at least 95 percent of particles of all types. You may still smell smoke when wearing the mask because gas

molecules can pass through it, while the much larger and more hazardous particles are blocked.

There has been newfound attention to gas stoves and the pollutants they generate. One of the greatest concerns is a gaseous pollutant, nitrogen dioxide, rather than a particulate pollutant, but cooking by itself, on any type of stove or in an oven, can generate large amounts of particles in the air. A strong kitchen exhaust fan can remove these pollutants, though there are many kitchens that lack this simple technology.

But air quality is a problem big enough that we cannot leave it to individual actions. Air pollution, including wildfire smoke, causes symptoms like coughing, burning eyes, headaches and difficulty breathing in the short term. Long-term exposure to air pollution is associated with increased risk of cardiovascular disease, cancer, worsened asthma symptoms and other chronic diseases. Furthermore, poor air quality is linked to increased absences from school and work and worse academic performance and cognitive function. There is so much to gain by providing everyone with clean air.

People started paying more attention to indoor air quality during the pandemic because we learned that the risk of transmission was higher in poorly ventilated buildings. Popular media described the use of ventilation and filtration to remove the coronavirus from the air. The White House held the Summit on Improving Indoor Air Quality, and the Environmental Protection Agency issued the Clean Air in Buildings Challenge. Improvements in ventilation and filtration should happen in schools and other buildings, and the federal government provided billions of dollars that could have been used to do so. However, much of this remains unspent or was slow to be used, possibly because of a combination of lack of appreciation for the benefits it could bring and lack of guidance on how to obtain and spend the funds.

As we emerge from a pandemic caused by an airborne virus to skies darkened by wildfires, we cannot return to ignorance and complacency about our air. Through a combination of greater public awareness, more widespread implementation of filtration and other air-cleaning technologies and government guidance, we can move into a new era of cleaner air.

The Centers for Disease Control and Prevention took a first step when it released a new recommendation for buildings to aim for at least five air changes per hour to reduce the risk of virus transmission. We need to expand recommendations such as these to address human health more broadly, not just for respiratory infections. This is especially important in schools, where children spend long hours in classrooms that often have insufficient ventilation.

Improved indoor air quality will not only reduce disease but also improve other aspects of our lives, allowing us to be our best selves. If air pollution isn't detracting from our health, we can run our fastest race, perform our best on an exam or be well enough to enjoy a few extra days with our loved ones. As the saying goes, we wouldn't accept a glass full of dirty water, and we should no longer accept a lungful of dirty air.

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