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May 31, 2025

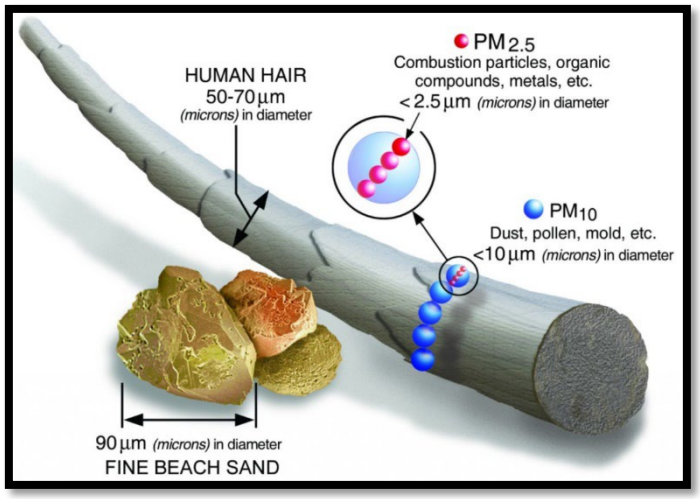
The current Canadian Forest fires are creating smoke that is impacting parts of the Dakotas, Minnesota, Wisconsin, Illinois, Indiana, Ohio and other states were all experiencing levels of smoke particulates in the air deemed between moderate and unhealthy the morning of May 31, according to the national air quality map from AirNow.gov.

Forest fires release a wide range of toxins into the atmosphere, including both gases and particulate matter. These toxins can have significant impacts on human health and the environment. Wildfires can drastically reduce air quality, cause visible smoke and haze, and make it difficult to breathe.

Wildfires can create and release toxic pollutants into the air, impacting air quality and human health. These pollutants, including fine particulate matter (PM 2.5), carbon monoxide, and nitrogen oxides, can cause a range of health problems, from eye and throat irritation to more serious respiratory and cardiovascular issues.

PM 2.5 is a major concern due to its ability to penetrate deep into the lungs and enter the bloodstream, potentially causing damage to multiple body systems. It can lead to a range of health issues, including respiratory problems, cardiovascular disease, and even premature death.

Major toxins released during forest fires include:



Gases:	Carbon dioxide (CO2).
Methane (CH4).	Nitrous oxide (N2O).
Carbon monoxide (CO).	Nonmethane volatile organic carbon (NMVOC).
Nitrogen oxides (NOx).	Sulfur oxides (SOx).
Hydrogen cyanide (HCN).	Hydrogen chloride (HCl).

Particulate Matter (PM):	Fine and coarse particulate matter.
Black carbon.	Brown carbon.

Other toxins that may be released:	Polycyclic aromatic hydrocarbons (PAHs).
Dioxins.	Furans.
Volatile organic compounds (VOCs).	Semi-volatile organic compounds (SVOCs).
Flame retardants.	Plasticizers.
Polychlorinated biphenyls (PCBs).	Heavy metals (e.g., lead, arsenic, chromium, cadmium).

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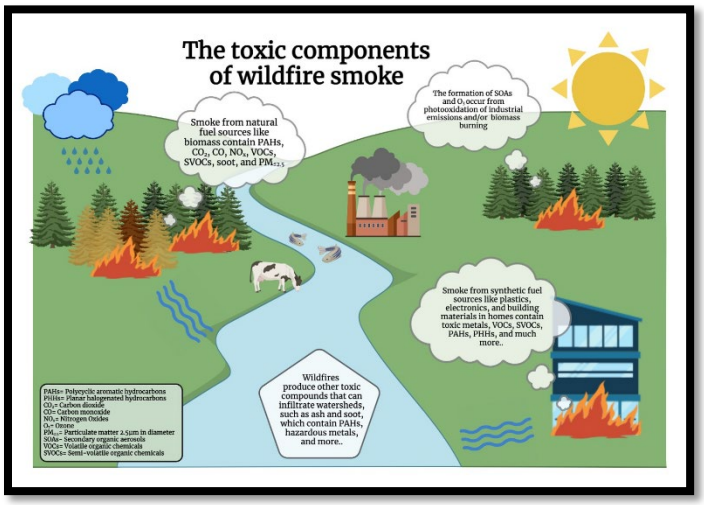
Health impacts of these toxins:
Respiratory problems (e.g., asthma, bronchitis, coughing).
Cardiovascular problems.
Neurological impairments.
Reproductive and developmental problems.
Cancer.

Some studies have found that urban wildfire smoke can contain more harmful PM2.5 compared to other sources of pollution.

Wildfires can also release toxic metals like chromium into the soil, which can pose a long-term health risk.

The type and amount of toxins released depend on the type of vegetation and materials burned, as well as the fire's intensity.



To protect yourself from wildfire smoke, which can contain toxins, stay indoors with windows and doors closed, use air conditioning or air purifiers, and avoid strenuous activities. If you must be outside, wear an N95 mask, and monitor air quality alerts.

1. Stay Indoors and Keep Windows and Doors Closed:

Reduce Exposure:

Staying indoors with windows and doors closed minimizes the amount of smoke entering your home.

Create a "Clean Air Room":

If you have a portable air purifier or HEPA filter, create a room with cleaner air by using it while keeping the doors and windows closed.

2. Utilize Air Conditioning and Air Purifiers:

Air Conditioning:

If you have air conditioning, use it with the fresh air intake closed to recirculate indoor air.

Air Purifiers:

Portable air purifiers with HEPA filters can effectively remove fine particles from the air.

3. Reduce Strenuous Activities and Seek Medical Advice:

Limit Outdoor Activities:

Reduce the intensity and duration of outdoor activities, especially during peak smoke periods.

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Seek Medical Advice:

If you experience symptoms like difficulty breathing, coughing, or eye irritation, seek medical attention.

4. Wear an N95 Mask if Outdoors:

Protect Your Airways: An N95 mask can help filter out smoke particles when you must be outside.

5. Monitor Air Quality Alerts:

Stay Informed: Pay attention to local air quality alerts and forecasts to know when air quality is unhealthy.

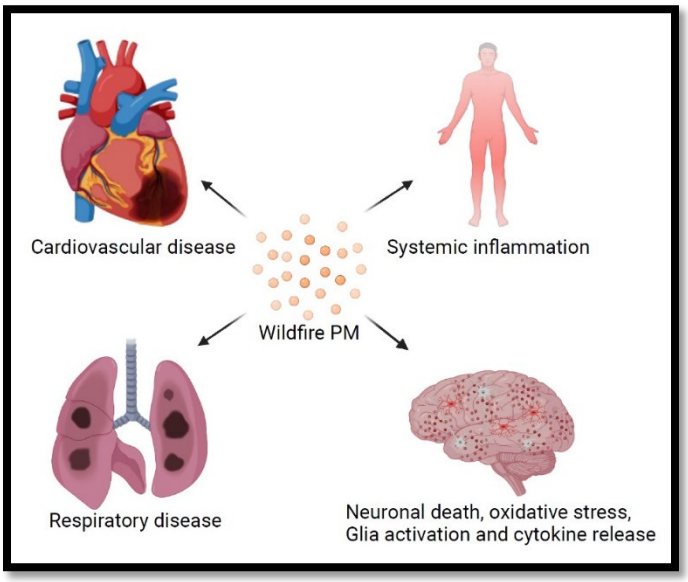
6. Consider Evacuation if Necessary:

Follow Local Authorities: If authorities advise evacuation, be prepared to leave.

7. Other Precautions:

Avoid Wood-Burning Appliances: Avoid using wood stoves or fireplaces, as they can further degrade indoor air quality.

Limit Indoor Combustion Sources: Avoid using candles or incense that can contribute to indoor pollution.



Consider Community Shelters: If air quality is extremely poor, seek shelter in a public building with air filtration systems.

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