

# DELAWARE HEALTH ALERT #501: Air Quality Reaches Hazardous Levels in Delaware Due to Canadian Wildfires

## Summary

The Delaware Division of Public Health (DPH) is issuing this health alert to inform clinicians and public health care providers in Delaware of poor air quality. Wildfires in Canada and current weather conditions are bringing wildfire smoke into our region. Wildfires are continuing to burn due to dry and windy conditions that increase the potential for fine particulate matter, also known as particulate matter, less than 2.5 micrometers in size (PM2.5), to accumulate at the ground-level. This increases the likelihood of inhalation exposure to PM2.5. Health effects from wildfire smoke or PM2.5 exposure include respiratory symptoms and effects, irritation of the eyes and respiratory tract, cardiovascular effects. Poor air quality may increase visits and calls to doctor's offices, visits to emergency departments, urgent care centers, and hospitalizations. As of 8am on June 8, 2023, all of Delaware is experiencing, "unhealthy," "very unhealthy," or "hazardous" conditions. Visit [www.airnow.gov](http://www.airnow.gov) for up-to-date air quality levels and recommendations.

## Background and Recommendations

The State of Delaware is currently experiencing "unhealthy" to "hazardous" levels of air quality with the primary pollutant of fine particulate matter (PM2.5). The PM2.5 has entered the region from the smoke of numerous wildfires in Canada. During a wildfire, short-term exposure (over a few days) to PM2.5 is the principal exposure of concern. It is important to note that wildfire smoke is a complex mixture of gaseous pollutants (carbon monoxide), hazardous air pollutants (e.g., polycyclic aromatic hydrocarbons [PAHs]), water vapor, and particle pollution. Particle pollution is the main component of wildfire smoke and the primary public health threat. Smoke or PM2.5 inhalation may exacerbate underlying respiratory (breathing) diseases, such as asthma or emphysema, chronic obstructive pulmonary disease (COPD), or cardiovascular diseases.

The website [www.airnow.gov](http://www.airnow.gov) or [AirNow Mobile App | AirNow.gov](https://www.airnow.gov/mobile) can give you location-specific air quality index, which uses categories to provide recommendations for outdoor and indoor activity for the general population and sensitive populations (people with heart or lung disease, older adults, children and teens, pregnant people, outdoor workers, people of low socio-economic status). Individuals with short-term exposure from wildfire smoke or PM2.5 may experience the following symptoms: eye, skin, and/or throat irritation, sinus irritation, runny nose, cough, shortness of breath, phlegm, and/or wheezing, difficulty breathing, headaches, tiredness, and rapid heartbeat.

The following respiratory and cardiovascular effects have been attributed to short-term wildfire smoke exposure: bronchitis, reduced lung function, increased risk of asthma exacerbation and aggravation of other lung diseases, heart failure, heart attack, and stroke. Air quality guidance from the US Environmental Protection Agency for subgroups and schools are provided below.

Contact DPH at [hspcontact@delaware.gov](mailto:hspcontact@delaware.gov) or 302-744-4700.

# Air Quality Guide for Particle Pollution

Harmful particle pollution is one of our nation's most common air pollutants. Use the chart below to help reduce your exposure and protect your health. Visit [AirNow.gov](http://www.airnow.gov) for your local air quality forecast ([www.airnow.gov](http://www.airnow.gov)).

Air Quality Index	Who Needs to be Concerned?	What Should I Do?
Good (0-50)		It's a great day to be active outside.
Moderate (51-100)	Some people who may be unusually sensitive to particle pollution.	<b>Unusually sensitive people:</b> Consider making outdoor activities shorter and less intense. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier. <b>Everyone else:</b> It's a good day to be active outside.
Unhealthy for Sensitive Groups (101-150)	Sensitive groups include <b>people with heart or lung disease, older adults, children and teenagers, minority populations, and outdoor workers.</b>	<b>Sensitive groups:</b> Make outdoor activities shorter and less intense. It's OK to be active outdoors, but take more breaks. Watch for symptoms such as coughing or shortness of breath. <b>People with asthma:</b> Follow your asthma action plan and keep quick relief medicine handy. <b>People with heart disease:</b> Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact your health care provider.
Unhealthy (151-200)	<b>Everyone</b>	<b>Sensitive groups:</b> Avoid long or intense outdoor activities. Consider rescheduling or moving activities indoors.* <b>Everyone else:</b> Reduce long or intense activities. Take more breaks during outdoor activities.
Very Unhealthy (201-300)	<b>Everyone</b>	<b>Sensitive groups:</b> Avoid all physical activity outdoors. Reschedule to a time when air quality is better or move activities indoors.* <b>Everyone else:</b> Avoid long or intense activities. Consider rescheduling or moving activities indoors.*
Hazardous (301-500)	<b>Everyone</b>	<b>Everyone:</b> Avoid all physical activity outdoors. <b>Sensitive groups:</b> Remain indoors and keep activity levels low. Follow tips for keeping particle levels low indoors.*

**\*Note:** If you don't have an air conditioner, staying inside with the windows closed may be dangerous in extremely hot weather. If you are hot, go someplace with air conditioning or check with your local government to find out if cooling centers are available in your community.

**Table 5. Recommended actions for consideration by public health officials**






AQI Category (AQI Values)	PM <sub>2.5</sub> <sup>1</sup> µg/m <sup>3</sup> 24-hr avg	Recommended Actions for Consideration
Good (0–50)	0–12	If smoke event forecast, implement communication plan.
Moderate (51–100)	12.1–35.4	Prepare for full implementation of School Activity Guidelines ( <a href="https://www3.epa.gov/airnow/flag/school-chart-2014.pdf">https://www3.epa.gov/airnow/flag/school-chart-2014.pdf</a> ). Issue public service announcements (PSAs) advising public about health effects, symptoms, and ways to reduce exposure. Distribute information about exposure avoidance.
Unhealthy for Sensitive Groups (101–150)	35.5–55.4	Evaluate implementation of School Activity Guidelines If smoke event projected to be prolonged, evaluate and notify about possible sites for cleaner air shelters. If smoke event projected to be prolonged, prepare evacuation plans for at-risk populations.
Unhealthy (151–200)	55.5–150.4	Full implementation of School Activity Guidelines Consider canceling outdoor events (e.g., concerts and competitive sports), based on public health and travel considerations.
Very Unhealthy (201–300)	150.5–250.4	Move all school activities indoors or reschedule them to another day. Cancel school physical activities (e.g., physical education, athletic practice) unless the school is able to provide cleaner indoor air for the students. Consider closing some or all schools Cancel outdoor events involving activity (e.g., competitive sports). Consider canceling outdoor events that do not involve activity (e.g. concerts).
Hazardous (> 300)	250.5>500	Consider closing schools <sup>2</sup> . Cancel outdoor events (e.g., concerts and competitive sports). Consider air quality in indoor workplaces and take measures to protect workers as needed <sup>3</sup> Consider curtailment of outdoor work activities unless the workers have a fully implemented respirator plan in place and clean air respite breaks. If PM levels are projected to remain high for a prolonged time, consider evacuation of at-risk populations.

<sup>1</sup> If only PM<sub>10</sub> measurements are available during smoky conditions, assume that the PM<sub>10</sub> is composed primarily of fine particles (PM<sub>2.5</sub>), and that therefore the AQI and associated cautionary statements and advisories for PM<sub>2.5</sub> may be used.

<sup>2</sup> See school considerations in section on Protecting Children, above. Newer schools with a central air cleaning filter may be more protective than older, leakier schools. Also, being at school may mean children's activity levels can be better monitored. It is important to make schools a safe place for children.

## Air Quality and Outdoor Activity Guidance for Schools

Regular physical activity — at least 60 minutes each day — promotes health and fitness. The table below shows when and how to modify outdoor physical activity based on the Air Quality Index. This guidance can help protect the health of all children, including teenagers, who are more sensitive than adults to air pollution. Check the air quality daily at [www.airnow.gov](http://www.airnow.gov).

Air Quality Index	Outdoor Activity Guidance
 green GOOD	Great day to be active outside!
 yellow MODERATE	Good day to be active outside! Students who are unusually sensitive to air pollution could have symptoms.*
 orange UNHEALTHY FOR SENSITIVE GROUPS	It's OK to be active outside, especially for <b>short activities</b> such as recess and physical education (PE). For <b>longer activities</b> such as athletic practice, take more breaks and do less intense activities. Watch for symptoms and take action as needed.* Students with asthma should follow their asthma action plans and keep their quick-relief medicine handy.
 red UNHEALTHY	For <b>all outdoor activities</b> , take more breaks and do less intense activities. Consider moving <b>longer or more intense activities</b> indoors or rescheduling them to another day or time. Watch for symptoms and take action as needed.* Students with asthma should follow their asthma action plans and keep their quick-relief medicine handy.
 purple VERY UNHEALTHY	Move <b>all activities</b> indoors or reschedule them to another day.

For more information related to wildfire smoke for health care providers or patient education, visit the following resources:

- <https://www.cdc.gov/disasters/wildfires/smoke.html>
- <https://www.epa.gov/wildfire-smoke-course/why-wildfire-smoke-health-concern>
- <https://www.epa.gov/wildfire-smoke-course/health-effects-attributed-wildfire-smoke>
- <https://www.epa.gov/wildfire-smoke-course/wildfire-smoke-and-your-patients-health-air-quality-index>
- <https://www.epa.gov/wildfire-smoke-course/importance-educating-patients-wildfire-prone-areas>
- <https://www.oregon.gov/oha/ph/Preparedness/Prepare/Documents/OHA%208626%20Wildfire%20FAQs-v6c.pdf>