WCHD
Winnebago County Health Department
Serving Our Whole Community

Air Quality
Guidelines for Addressing Poor Air Quality
6.28.2023

Guiding Principles Regarding Poor Air Quality

- The Illinois Environmental Protection Agency (IEPA) in partnership with the United States Environmental Protection Agency (USEPA) is the entity responsible for monitoring air quality and enforcing regulatory standards.
- USEPA has established an Air Quality Index (AQI) for five (5) major air pollutants:
    - Ozone
    - Particulate matter also knows as particle pollution including PM 2.5 and PM 10
    - Carbon monoxide
    - Sulfur dioxide
    - Nitrogen dioxide
- There are multiple factors that can lead to poor air quality including:
    - Ozone
    - Particulate matter
    - Chemicals released into the environment including natural and man-made
    - Sunshine
    - Air temperature
    - Rain
    - Wind speed, air turbulence, and currents
- WCHD will use the Air Quality Index (AQI) and measurements provided by the USEPA on its website AirNow in issuing guidance
- Winnebago County Health Department (WCHD) will provide guidance regarding measures to protect health including environmental mitigations and personal protection through social media including its website.
- Air Pollution – Particulate Matter is one of the metrics used to determine County Health Rankings. Winnebago County has historically exceeded the state of Illinois in an annual measurement of particular matter measured at 2.5 PM.

Layering Mitigations/Protection Strategies

- Individuals, businesses, organizations, and government entities should be aware of the current Air Quality Index (AQI) in the community posted on AirNow.
- Six Levels have been identified to assist in understanding the risks:
    - Good (green)
    - Moderate (yellow)
    - Unhealthy for Sensitive Groups (orange)
    - Unhealthy (red)
    - Very Unhealthy (purple)
    - Hazardous (maroon)

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AQI Basics for Ozone and Particle Pollution

Daily AQI Color	Levels of Concern	Values of Index	Description of Air Quality
Green	Good	0 to 50	Air quality is satisfactory, and air pollution poses little or no risk.
Yellow	Moderate	51 to 100	Air quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution.
Orange	Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is less likely to be affected.
Red	Unhealthy	151 to 200	Some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects.
Purple	Very Unhealthy	201 to 300	Health alert: The risk of health effects is increased for everyone.
Maroon	Hazardous	301 and higher	Health warning of emergency conditions: everyone is more likely to be affected.

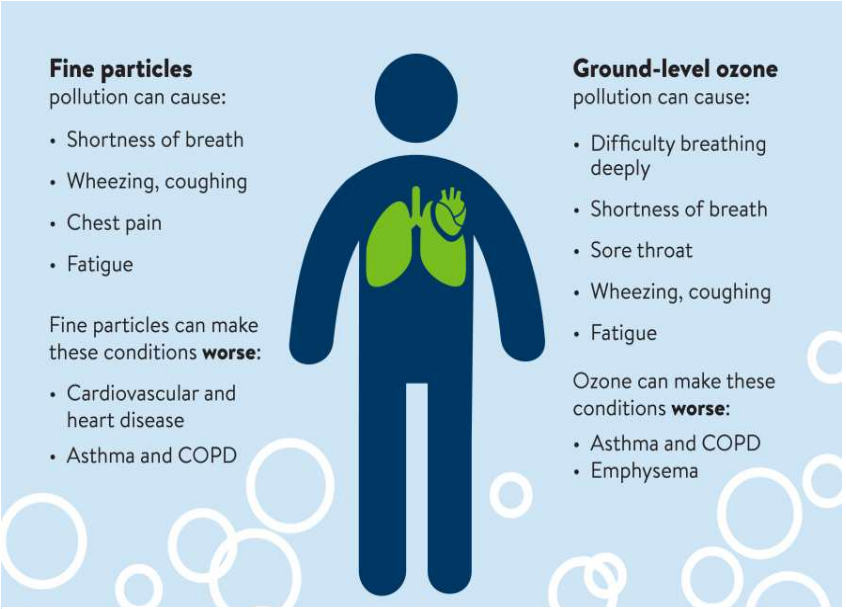
https://www.airnow.gov/aqi/aqi-basics

- Activity guides are available for Ozone, Particle Pollution (Particulate Matter), and Schools at https://www.airnow.gov/publications/activity-guides-publications/.
- Individuals most at risk to the health effects of poor AQI pollutants include
    - Infants, children, and adolescents
    - Pregnant women
    - Older adults
    - Individuals who work or exercise outdoors
    - Smokers or individuals exposed to second-hand smoke
    - Individuals with underlying health conditions including those who are immunocompromised.
    - Individuals in poverty and lack access to healthcare.
- HVAC systems should be adjusted to address the AQI and reduce the intake from outside air when AQI levels are in the unhealthy to hazardous levels identified in the table.
    - Close windows and doors.
    - Use HEPA air filtration units.
    - HVAC filters should have a MERV rating of 13 or higher to filter out pollutants.
- Limit time spent out of doors when AQI moves from orange (Unhealthy to Sensitive Groups) to red (Unhealthy) or higher.
- Avoid intense activities when AQI moves from orange (Unhealthy to Sensitive Groups) to red (Unhealthy) or higher.

- Individuals who need to work outside and/or have underlying health conditions should consider using an N95/KN95 mask to reduce exposure and take frequent indoor breaks when the AQI level is orange (Unhealthy to Sensitive Groups) or higher.
- Avoid the following activities that increase air pollution when levels are orange are higher:
    - Wood-burning residential fireplaces, stoves, or outdoor fire pits.
    - Charcoal grills.
    - Smokers.
    - Idling gas-powered vehicles and devices.
    - Car trips where traffic congestion is likely.
- Everyone can do something to improve air quality in Winnebago County regardless of the AQI level:
    - Drive the most fuel-efficient vehicle you can afford.
    - Take public transportation, car-pool, walk, or bike whenever possible.
    - Limit wood-burning activities.
    - Use electric lawnmowers and weed trimmers and other appliances rather than gas-based.

Health Effects of Exposure to Air Pollutants

- Short-term effects include:
    - Coughing
    - Trouble breathing normally
    - Stinging or watery eyes
    - Scratchy throat
    - Runny nose
    - Irritated sinuses
    - Wheezing and/or shortness of breath
    - Chest pain
    - Headaches
    - Asthma attacks
    - Fatigue/tiredness
    - Fast Heartbeat
    - Worsening of chronic heart and lung diseases



https://www.pca.state.mn.us/air-water-land-climate/air-quality-and-health

- Longer-term effects (months to years) include:
    - Premature death in individuals who have chronic heart or lung diseases
    - Reduced lung function growth in children

References

Air Pollution. Centers for Disease Control and Prevention. https://www.cdc.gov/climateandhealth/effects/air_pollution.htm.

Air Quality. Centers for Disease Control and Prevention. https://www.cdc.gov/air/default.htm.

Minnesota Pollution Control Agency. https://www.pca.state.mn.us/air-water-land-climate/air-quality-and-health.

Climate and Health. Centers for Disease Control and Prevention. https://www.cdc.gov/climateandhealth/default.htm.

Fine Particles (PM 2.5) Questions and Answers. New York State Department of Health. https://www.health.ny.gov/environmental/indoors/air/pmq_a.htm#:~:text=How%20can%20PM2.5%20affect,nose%20and%20shortness%20of%20breath.

Guide to Air Cleaners in the Home. United States Environmental Protection Agency. https://www.epa.gov/indoor-air-quality-iaq/guide-air-cleaners-home

Protecting Yourself from Wildfire Smoke. California Air Resources Board. https://ww2.arb.ca.gov/protecting-yourself-wildfire-smoke.