



# How is the Air Treating You?

Thursday, January 19, 2023  
7:00-8:00 p.m. ET

Presented by:

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NEA ESPQ SISP Fellow

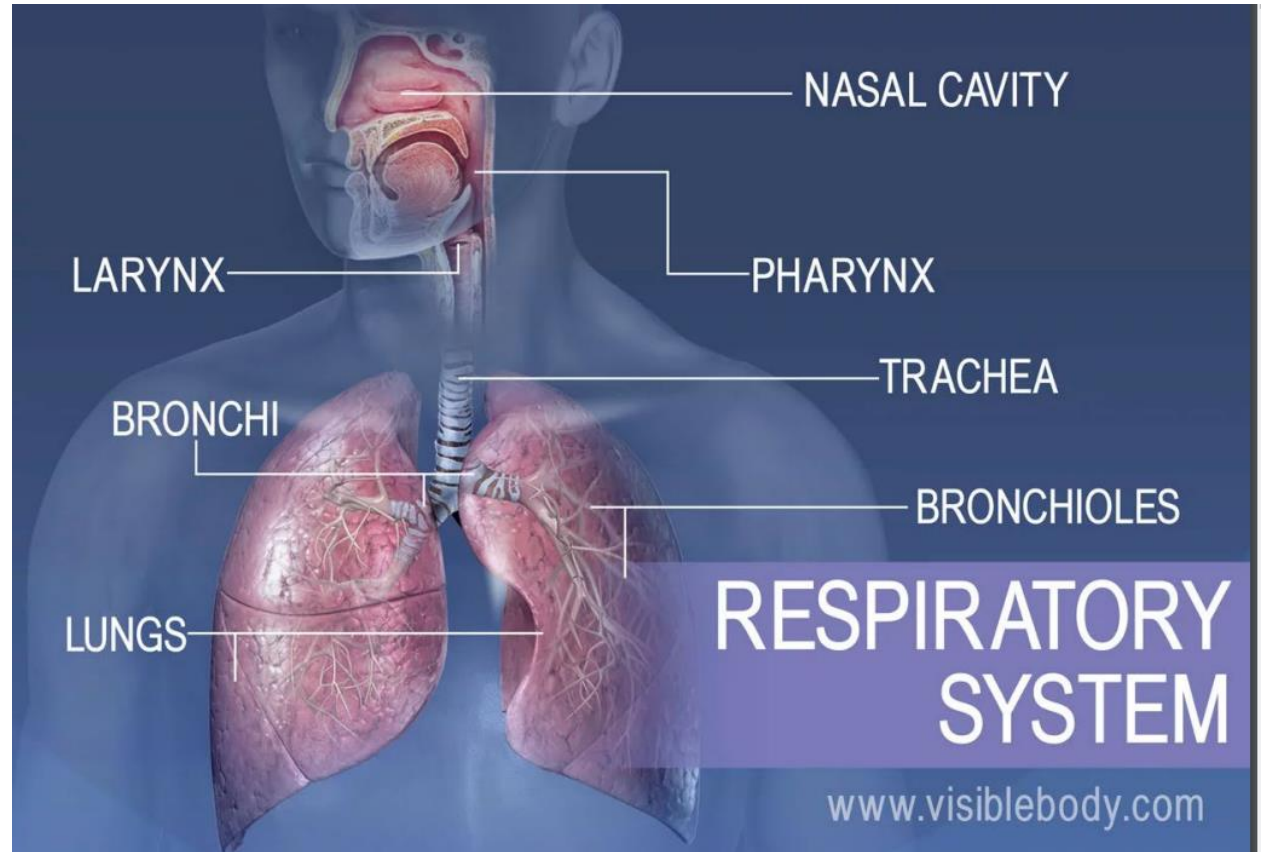
**NEA ESP**  
*LEARNING NETWORK*

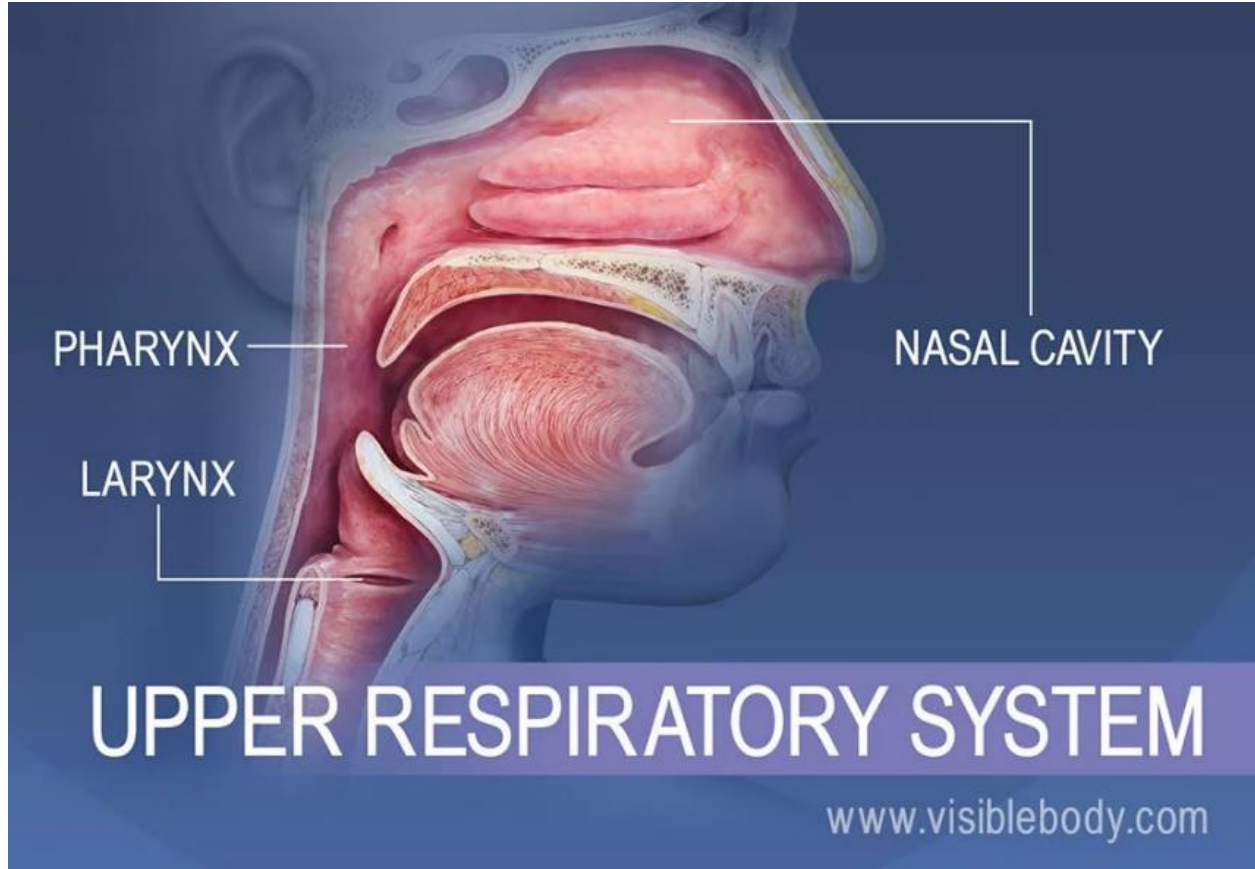


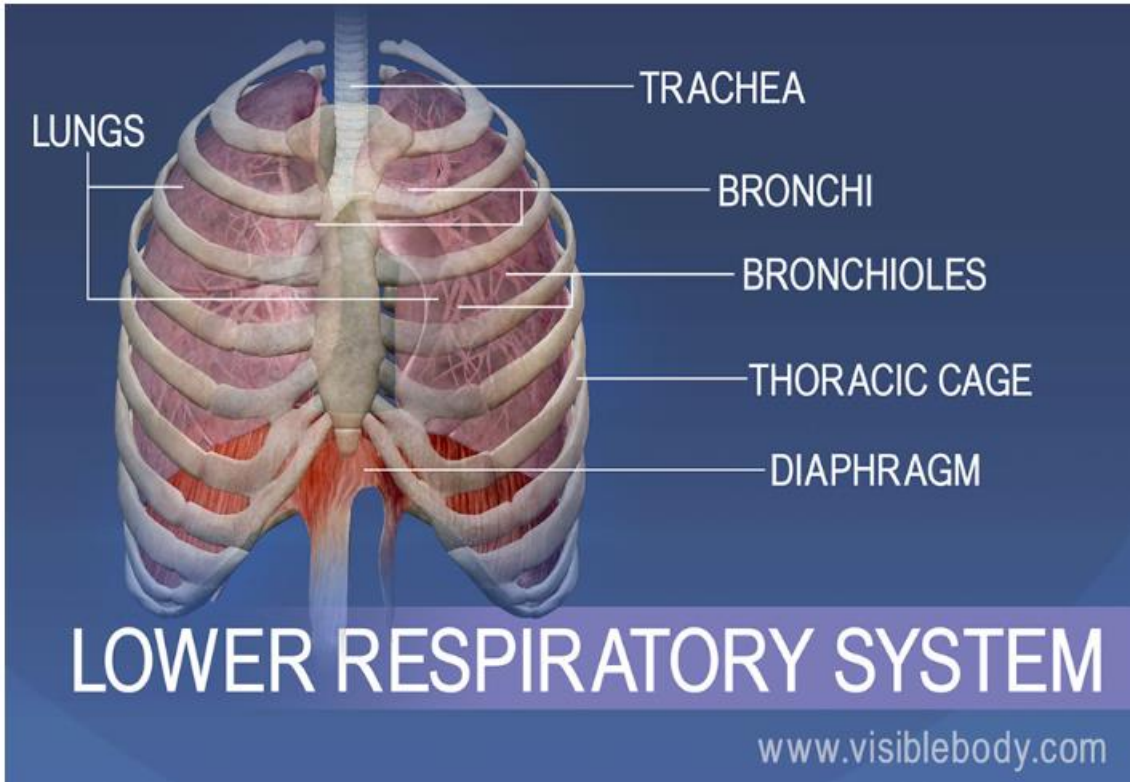
# Objectives

- Attendees will understand basic anatomy and functions of the Respiratory System
- Attendees will learn about “air” issues
- Attendees will be able to list 2-3 conditions that affect the Respiratory System
- Attendees will learn some treatment options
- Attendees will be provided with resources concerning “air” issues













<https://www.biologyonline.com/tutorials/birth-of-a-human-baby>



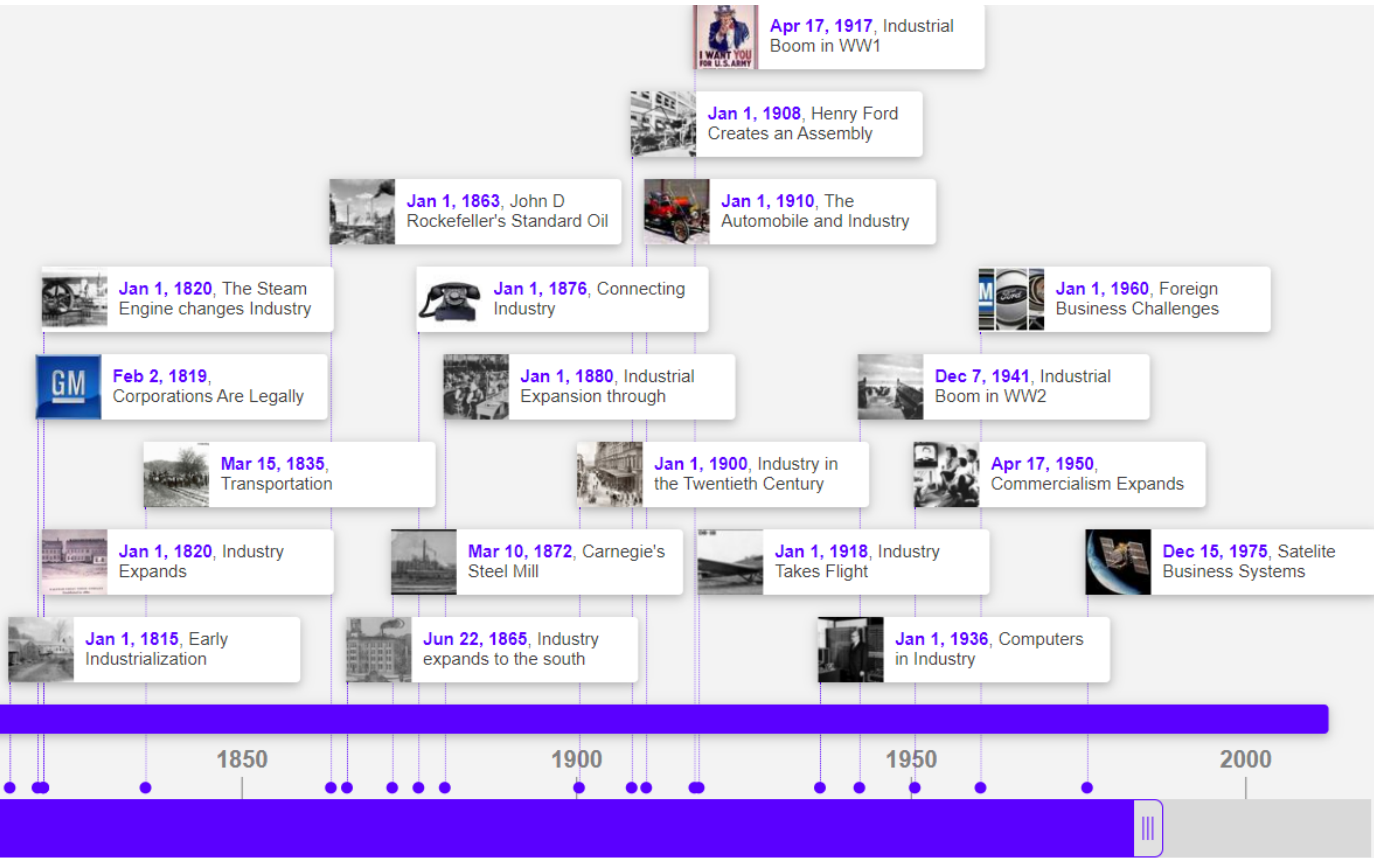




<https://www.dreamstime.com/>







<https://www.timetoast.com/timelines/industrialization-in-america>



<https://www.dreamstime.com/>





# CORONAVIRUS SYMPTOMS



	COVID-19	Allergies	Influenza	Common Cold
FEVER	COMMON		COMMON	SOMETIMES
COUGH	COMMON		COMMON	COMMON
SHORTNESS OF BREATH	COMMON			
MUSCLE ACHES	COMMON		COMMON	SOMETIMES
SORE THROAT	SOMETIMES		SOMETIMES	COMMON
DIARRHEA	SOMETIMES		SOMETIMES	
CONGESTION	SOMETIMES	COMMON	SOMETIMES	COMMON
LOSS OF SMELL	SOMETIMES	SOMETIMES	SOMETIMES	SOMETIMES
RUNNY NOSE	SOMETIMES	COMMON	SOMETIMES	SOMETIMES
SNEEZING		COMMON		
ITCHY EYES		COMMON		

Source: <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>

Symptoms may vary from person to person and may range from mild to severe. Symptoms usually occur from 2-14 days after exposure. If you have a cough with fever or shortness of breath, call your physician's office **BEFORE** visiting.

# Hay Fever

*If you sneeze a lot, if your nose is often runny or stuffy, or if your eyes, mouth or skin often feels itchy, you may have allergic rhinitis, a condition that affects 40 million to 60 million Americans.*

<https://acaai.org/allergies/allergic-conditions/hay-fever/>





**WEAR A MASK**  
 N95, KN95, KF94  
 or double-mask,  
 especially indoors.



**VENTILATE**  
 Gather outdoors.  
 If indoors: open windows  
 & doors, use fans & air filters.



**AVOID CROWDS**



**RAPID TEST**  
 before gathering;  
 stay home if positive or sick  
 and tell your provider.





# DISEASES OF THE LUNG

**Influenza (Flu)**  
The flu is a contagious viral infection of the nose, throat, and lungs. The flu leaves the body susceptible to other lung diseases if not properly treated.

**Signs and Symptoms:**

- Fatigued, achy body
- Nasal congestion
- Sore throat
- Muscle aches
- High fever
- Cough

**Chronic Obstructive Pulmonary Disease (COPD)**  
COPD is a disease in which the lungs are damaged, making it hard to breathe. It is usually associated with chronic bronchitis and emphysema.

**Emphysema**  
Emphysema is a disease that affects the airways and tiny blood vessels (capillaries) of the lung. The lung tissue loses its stretch ability and the air sacs become collapsed.

**Signs and symptoms:**

- Prolonged expiration (breathing out)
- Barrel chest
- Clubbing of fingers
- Wheezing
- Tissue destruction of lungs with emphysema and later air, even at rest
- Cough

**Chronic Bronchitis**  
Chronic bronchitis is caused by inflammation of the bronchial tubes. The inflammation leads to increased mucus production and narrowed or blocked airways.

**Signs and Symptoms:**

- Frequent clearing of the throat
- Shortness of breath
- Chronic cough
- Increased mucus

**Tuberculosis (TB)**  
Tuberculosis is an infectious disease caused by the organism *Mycobacterium tuberculosis*. TB is characterized by pulmonary infections that in the lungs; formation of granulomas, tubercle, inflammatory reaction, fibrous scar tissue, and cavitation (formation of a hollow space in the lung tissue).

**Signs and Symptoms:**

- TB usually without any symptoms that may produce:
- Low-grade fever
- Loss of appetite
- Night sweats
- Weight loss
- Fatigue

**Lung Cancer**  
Cancer is a disease in which uncontrolled growth of abnormal cells (tumors) invade and destroy cells and destroy healthy tissue. Lung cancer may develop in the wall of epithelium of the bronchial airway or in the lung tissue itself.

**Signs and Symptoms:**

- Hoarseness of the voice and coughing
- Coughing up blood
- Weight loss
- Frequent cough
- Loss of appetite
- Fatigue
- Chest pain

**Cystic Fibrosis**  
In cystic fibrosis, a defective gene causes the body to produce an abnormally thick, sticky mucus that clogs the lungs and leads to life-threatening lung infections. These thick mucus also obstructs and weakens the pancreas, preventing digestive enzymes from reaching the intestines to help with break down and absorption of food.

**Signs and Symptoms:**

- Persistent cough and mucus production
- Wheezing and shortness of breath
- Chronic, bulky stools
- Salt-crystal deposits on skin
- Poor weight gain
- Recurrent sinus infections

**Asthma**  
Asthma is a disease in which the bronchial airways of the lungs become narrow. An asthma episode in the body's reaction to an irritating substance or allergen that has been inhaled. During an asthma episode, the walls of the airways in the lungs become narrowed, thick, and secrete with sticky mucus, making breathing difficult.

**Signs and Symptoms:**

- Tightness in the neck and/or chest area
- Wheezing or coughing, especially at night or after exercise
- Difficulty breathing
- Frequent dry-cough during an upper respiratory or sinus infection

**Pneumonia**  
Pneumonia is an infection in which the air sacs in the lungs become filled with pus or other fluids. The air sacs no longer oxygen efficiently through the lungs; in other times, air sacs can collapse or become over-inflated.

**Signs and Symptoms:**

- Sputum (yellow) production
- Chest pain on inspiration
- Shortness of breath
- Marking chills
- Cough
- Fever

© 2005 Anatomical Chart Company, Skidde, Illinois  
Medical Illustration by L.B. Koenig, M.D., in consultation with Dr. David Lipson, M.D.

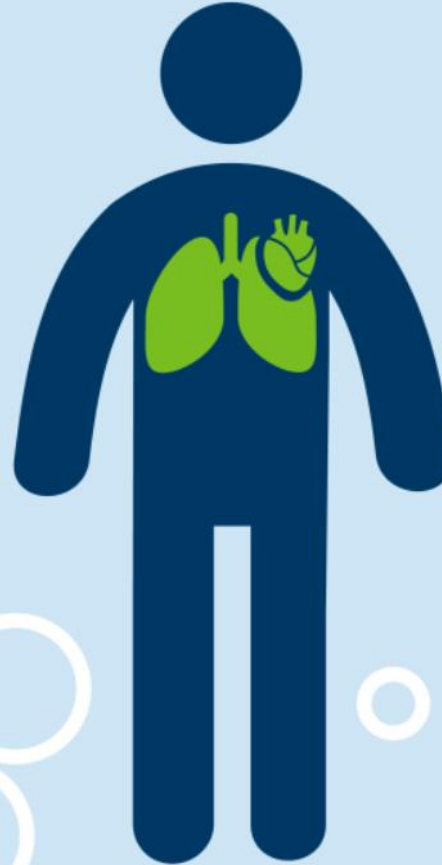
### Fine particles

pollution can cause:

- Shortness of breath
- Wheezing, coughing
- Chest pain
- Fatigue

Fine particles can make these conditions **worse**:

- Cardiovascular and heart disease
- Asthma and COPD



### Ground-level ozone

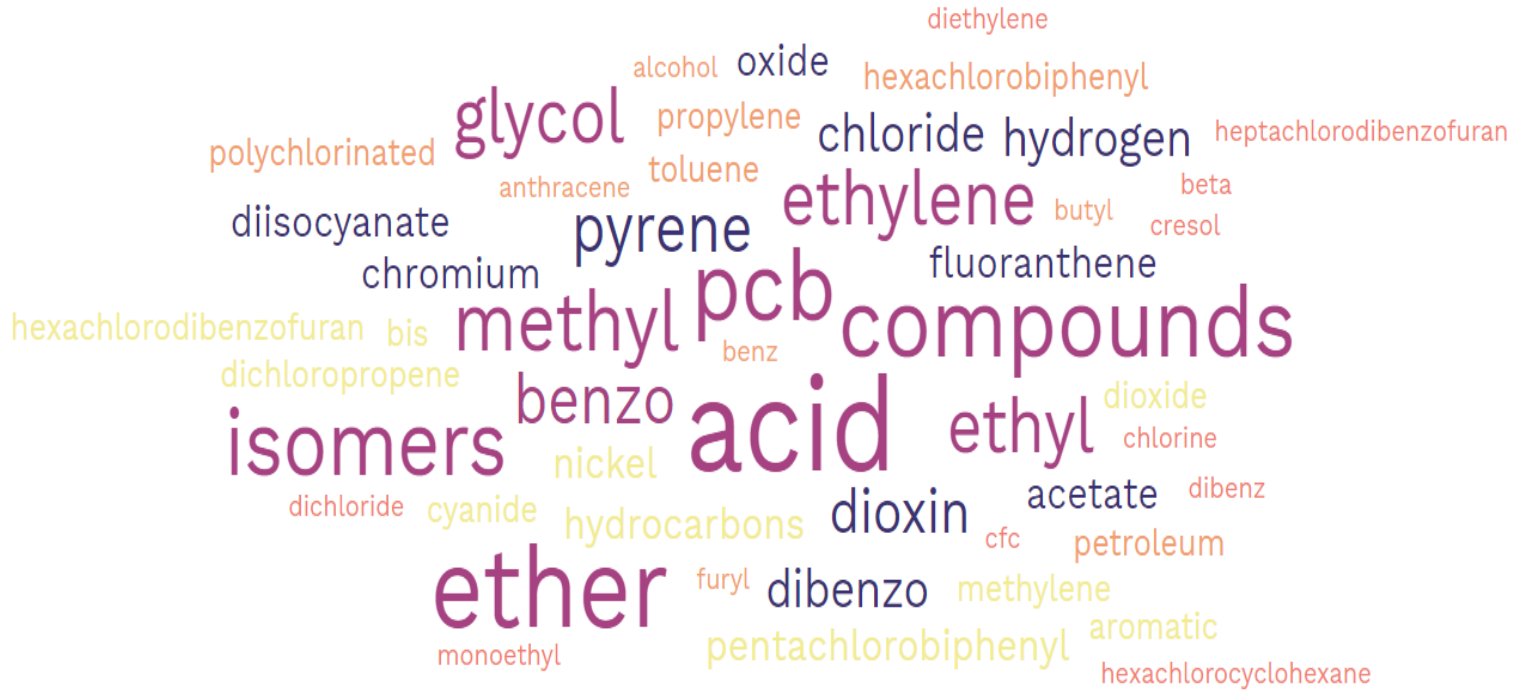
pollution can cause:

- Difficulty breathing deeply
- Shortness of breath
- Sore throat
- Wheezing, coughing
- Fatigue

Ozone can make these conditions **worse**:

- Asthma and COPD
- Emphysema

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





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



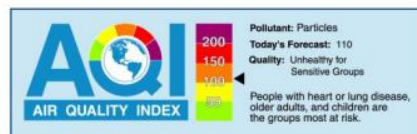


Particle levels can be elevated indoors, especially when outdoor particle levels are high. Certain filters and room air cleaners can help reduce indoor particle levels. You also can reduce particle levels indoors by not smoking inside, and by reducing your use of other particle sources such as candles, wood-burning stoves, and fireplaces.

### How can the Air Quality Index help?

In many areas, local media provide air quality forecasts telling you when particle levels are expected to be unhealthy. Forecasts use the same format as EPA's Air Quality Index, or AQI, a tool that state and local agencies use to issue public reports of actual levels of particles, ground-level ozone, and other common air pollutants.

Using the AQI's color-coded scale, these forecasts help you quickly learn when air pollution is expected to reach unhealthy levels in your area. In the newspaper forecast below, for example, the black arrow points to the "orange" range, indicating that particle levels are expected to be unhealthy for sensitive groups. On television, you might hear a meteorologist say something like this: "Tomorrow will be a code orange air quality day, with particle pollution at levels that are unhealthy for sensitive groups. If you have heart or lung disease, or if you're an older adult or a child, you should plan strenuous activities for a time when air quality is better."



AIR QUALITY INDEX FOR PARTICLE POLLUTION		
Air Quality Index	Air Quality	Health Advisory
0 to 50	Good	None.
51 to 100	Moderate	Unusually sensitive people should consider reducing prolonged or heavy exertion.
101 to 150	Unhealthy for Sensitive Groups	People with heart or lung disease, older adults, and children should reduce prolonged or heavy exertion.
151 to 200	Unhealthy	People with heart or lung disease, older adults, and children should avoid prolonged or heavy exertion. Everyone else should reduce prolonged or heavy exertion.
201 to 300	Very Unhealthy	People with heart or lung disease, older adults, and children should avoid all physical activity outdoors. Everyone else should avoid prolonged or heavy exertion.



Daily air quality and health information are available on the AIRNOW Web site.

### AIRNOW

AIRNOW ([www.epa.gov/airnow](http://www.epa.gov/airnow)) is a Web site that gives daily information about air quality, including ground-level ozone and particles, and how they may affect you. AIRNOW contains:

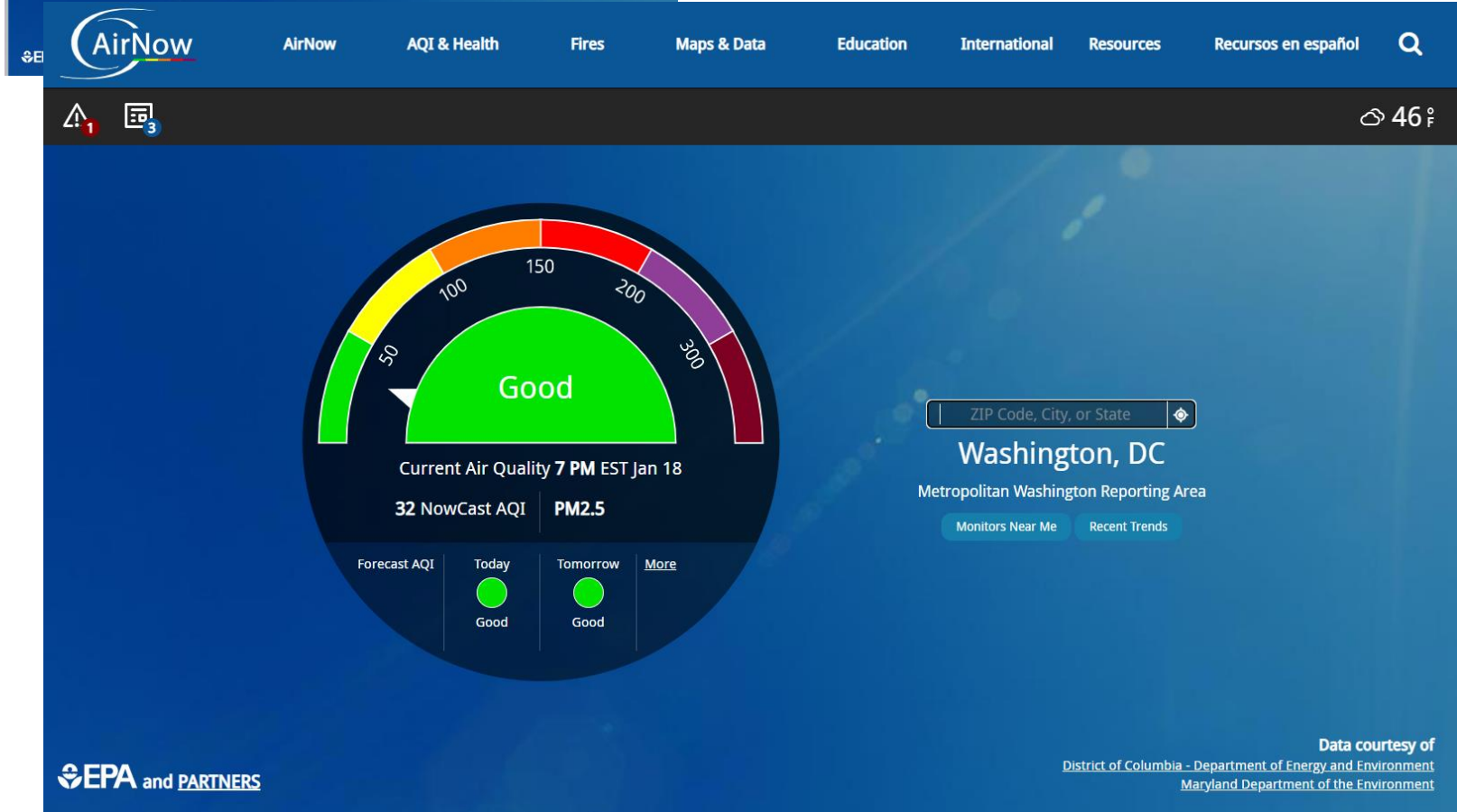
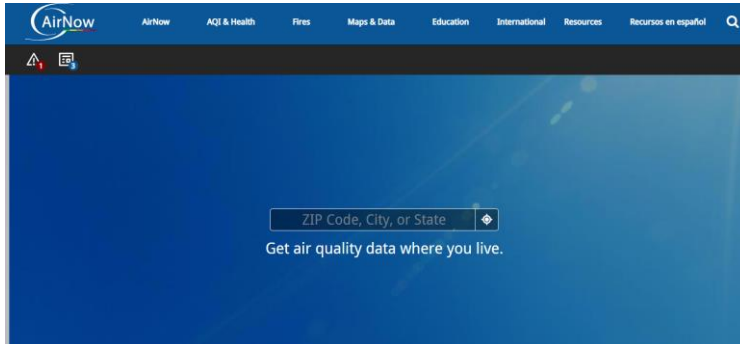
- Real-time particle levels for many locations.
- Air quality forecasts for many cities across the country.
- Kids' Web page and associated teacher curriculum.
- Smoke Web page.
- Links to state and local air quality programs.
- Ideas about what you can do to reduce particles. For example, you can keep your car, boat, and other engines well-tuned, and avoid using engines that smoke. You can also participate in local energy conservation programs.

\*Photo courtesy of The Weather Channel.

Office of Air and Radiation  
[www.epa.gov/air](http://www.epa.gov/air)  
September 2003  
EPA-452/F-03-001

<https://www.airnow.gov/sites/default/files/2018-03/pm-color.pdf>







# Office of Environmental Justice in Action

[www.epa.gov/environmentaljustice](http://www.epa.gov/environmentaljustice)



## Find out more about what our regional offices are doing for environmental justice in your community!

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## Q&A

