

# Air Quality Guide for Particle Pollution

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

## Key Facts You Should Know About Particle Pollution

- Particles in the air can cause or aggravate a number of health problems and have been linked with illnesses and deaths from heart or lung diseases.
- At highest risk from particle pollution are people with heart or lung disease, older adults (possibly because they may have undiagnosed heart or lung disease), and children (because their lungs are still developing, they are more likely to have asthma, and they are more active outdoors).
- Particles of concern include both "fine" particles (that are so small they can only be seen through an electron microscope) and somewhat larger "coarse" dust particles. Fine particles have been more clearly linked to the most serious health problems.

## What are particles? Where do they come from?

Particles in the air are a mixture of solids and liquid droplets that vary in size and are often referred to as "particulate matter." Some particles - those less than 10 micrometers in diameter - tend to pose the greatest health concern because they can pass through the nose and throat and get deep into the lungs. Ten micrometers in diameter is just a fraction of the diameter of a single human hair. Particles larger than 10 micrometers do not usually reach your lungs, but they can irritate your eyes, nose and throat.

Very small particles with diameters less than 2.5 micrometers are called "fine particles." They are produced any time fuels such as coal, oil, diesel or wood are burned. Fine particles come from fuel used in everything from power plants to wood stoves and motor vehicles (e.g., cars, trucks, buses and marine engines). These particles are even produced from construction equipment, agricultural burning and forest fires.

"Coarse" dust particles range in size from 2.5 to 10 micrometers in diameter. Particles of this size are produced during crushing or grinding and from vehicles traveling on paved or unpaved roads.

## How can particle pollution affect you?

Fine and coarse particles can cause a variety of serious health problems. When exposed to these small particles, people with heart or lung diseases and older adults are more at risk of hospital and emergency room visits or, in some cases, even death. These effects have been associated with short-term exposures lasting 24 hours or less. Health effects, such as the onset of respiratory disease, also have been linked with prolonged exposures of a year or more.

**Particles can aggravate heart diseases** such as congestive heart failure and coronary artery disease. If you have heart disease, particles may cause you to experience chest pain, palpitations, shortness of breath and fatigue. Particles have also been associated with cardiac arrhythmias and heart attacks.

**Particles can aggravate lung diseases** such as asthma and bronchitis, causing increased medication use and doctor visits. If you have lung disease, and you are exposed to particles, you may not be able to breathe as deeply or vigorously as normal. You may have respiratory symptoms including coughing, phlegm, chest discomfort, wheezing and shortness of breath. You also may experience these symptoms even if you're healthy, although you are unlikely to experience more serious effects. Particles can also increase your susceptibility to respiratory infections.

## How can you reduce your exposure to particles?

Air pollution levels can vary throughout the day. Your local air quality forecast can tell you when particle levels are high in your area. You can reduce your exposure to particles by 1) planning strenuous activity when particle levels are forecast to be lower, 2) reducing the amount of time spent at vigorous activity, or 3) choosing a less strenuous activity (e.g., going for a walk instead of a jog).

When particle levels are high outdoors, they also can be high indoors. Certain filters and room air cleaners are available that can help reduce particles indoors. You also can reduce particles indoors by eliminating tobacco smoke and reducing your use of candles, wood-burning stoves and fireplaces. For more information on indoor air pollution and filter devices, visit [www.epa.gov/iaq](http://www.epa.gov/iaq).

## You Can Help Keep the Air Cleaner!

### Everyday tips:

- Conserve electricity. Consider setting your thermostat a little higher in the summer and lower in winter. Participate in local energy conservation programs. Look for the ENERGY STAR label when buying home or office equipment.
- Keep car, boat and other engines properly tuned, and avoid engines that smoke.
- Car pool, use public transportation, bike or walk when possible.
- Combine errands to reduce "cold starts" of your car and avoid extended idling.
- Consider using gas logs instead of wood. If you use a wood-burning stove or fireplace insert, make sure it meets EPA design specifications. Burn only dry, seasoned wood.
- Mulch or compost leaves and yard waste.

### Tips for days when particle pollution is expected to be high:

- Reduce the number of trips you take in your car.
- Reduce or eliminate fireplace and wood stove use.
- Avoid using gas-powered lawn and garden equipment.
- Avoid burning leaves, trash and other materials.



For your local forecast visit EPA's  
Web site at: [www.epa.gov/airnow](http://www.epa.gov/airnow)

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