How can the Air Quality Index help?

The Air Quality Index, or AQI is used to report levels of common air pollutants such as particle pollution and ground-level ozone. Many cities forecast for the next day's AQI. These forecasts help local residents protect their health by alerting them to plan outdoor activities when air quality is better. At this time, the South Carolina Department of Health and Environmental Control does not forecast for particle pollution, but does provide next-day forecasts for ground-level ozone. From April 1 through September 30, DHEC's forecasts for ozone are available at http://www.scdhec.gov/ozone.

The AQI is a national index, so the values and colors used to show local air quality and the levels of health concern will be the same everywhere you go in the United States. Look for the AQI to be reported in your local newspaper, on television and radio, on the Internet, and on local telephone hot lines.

AIRNOW

AIRNOW (http://www.airnow.gov) 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.

Daily air quality and health information are available on the AIRNOW Web site [http://www.airnow.gov]
**photo courtesy of The Weather Channel.*

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.

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PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control
Bureau of Air Quality
http://www.scdhec.gov/baq
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EPA-450/F-06-001 ML-025309 5/2010

EPA United States Environmental Protection Agency

Particle Pollution and Your Health

What Is Particle Pollution?

Are You at Risk?

How Can You Protect Yourself?

D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

Airborne particles, the main ingredient of haze, smoke and airborne dust, present serious air quality problems in many areas of the United States. This particle pollution can occur year-round—and it can cause a number of serious health problems, even at concentrations found in many major cities.

What is particle pollution?

Particle pollution is a mixture of microscopic solids and liquid droplets suspended in air. This pollution, also known as particulate matter, is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, soil or dust particles, and allergens (such as fragments of pollen or mold spores).

The size of particles is directly linked to their potential for causing health problems. Small particles less than 10 micrometers in diameter pose the greatest problems, because they can get deep into your lungs, and some may even get into your bloodstream. Exposure to such

particles can affect both your lungs and your heart. Larger particles are of less concern, although they can irritate your eyes, nose and throat.

Particles of concern include "fine particles" (such as those found in smoke and haze), which are 2.5 micrometers in diameter or less; and "coarse particles" (such as those found in wind-blown dust), which have diameters between 2.5 and 10 micrometers. As an example of this size of 2.5 micrometers, the thickness of a human hair is about 75 micrometers.

Are you at risk from particles?

People with heart or lung disease, older adults, and children are considered at greater risk from particles

than other people, especially when they are physically active. Exercise and physical activity cause people to breathe faster and more deeply—and to take more particles into their lungs.

People with heart or lung diseases—such as coronary artery disease, congestive heart failure, and asthma or chronic obstructive pulmonary disease (COPD)— are at increased risk because particles can aggravate these diseases. People with diabetes also may be at increased risk, possibly because they are more likely to have underlying cardiovascular disease.

Older adults are at increased risk, possibly because they may have undiagnosed heart or lung disease or diabetes. Many studies show that when particle levels are high, older adults are more likely to be hospitalized, and some may die of aggravated heart or lung disease.

Children are likely at increased risk for several reasons. Their lungs are still developing; they spend more time at high activity levels; and they are more likely to have asthma or acute respiratory diseases, which can be aggravated when particle levels are high.

It appears that risk varies throughout a lifetime, generally being higher in early childhood, lower in healthy adolescents and younger adults, and increasing in middle age through old age as the incidence of heart and lung disease and diabetes increases. Factors that increase your risk of heart attack, such as high blood pressure or elevated cholesterol levels, may also increase your risk from particles. In addition, scientists are evaluating new studies that suggest that exposure to high particle levels may also be associated with low birth weight in infants, pre-term deliveries, and possibly fetal and infant deaths.

How can particles affect your health?

Particle exposure can lead to a variety of health effects. Numerous studies link particle levels to increased hospital admissions and emergency room visits—and even to death from heart or lung diseases. Health problems have been linked to long- and short-term particle exposure.

Long-term exposures, experienced by people living for many years in areas with high particle levels, have been associated with problems such as reduced lung function and the development of chronic bronchitis—and even premature death.

Short-term exposures to particles (hours or days) can aggravate lung disease, causing asthma attacks and acute bronchitis, and may also increase susceptibility to respiratory infections. In people with heart disease, short-term exposures have been linked to heart attacks

and arrhythmias. Healthy children and adults have not been reported to suffer serious effects from short- term exposures, although they may experience temporary minor irritation when particle levels are elevated.

What are the symptoms of particle exposure?

Even if you are healthy, you may experience temporary symptoms, such as irritation of the eyes, nose, and throat; coughing; phlegm; chest tightness; and shortness of breath.

If you have lung disease, you may not be able to breathe as deeply or as vigorously as normal, and you may experience coughing, chest discomfort, wheezing, shortness of breath, and unusual fatigue. If you have any of these symptoms, reduce your exposure to particles and follow your doctor's advice. Contact your doctor if symptoms persist or worsen.

If you have asthma, carefully follow your asthma management plan when particle levels are high. If you don't have an asthma management plan, your doctor can help you with one.

If you have heart disease, particle exposure can cause serious problems in a short period of time—even heart attacks—with no warning signs. So don't assume that you are safe just because you don't have symptoms. Symptoms such as chest pain or tightness, palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these symptoms, follow your doctor's advice.

How can you avoid unhealthy exposure?

Your chances of being affected by particles increase the more strenuous your activity and the longer you are active outdoors. If your activity involves prolonged or heavy exertion, reduce your activity time—or substitute another activity that involves less exertion. For example, go for a walk instead of a jog. Plan outdoor activities for

days when particle levels are lower. And don't exercise near busy roads where particle levels generally are higher.

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. Look for HVAC return filters with a Minimum Efficiency Rating Value (MERV) of at least 8.

You can also 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.

Open burning also causes particle pollution, and burning trash is illegal in South Carolina. For yard debris, look for composting facilities in your area, arrange to have it picked up by the local solid waste authority, or reuse it on-site as compost, mulch or brush piles for birds and other wildlife.