

## Air Quality Guide for Particle Pollution July 2007

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 (Alert Day)	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.
Hazardous	300-500	Health warnings of emergency conditions. The entire population is more likely to be affected.

## Beijing—Recent Air Quality History

Air Quality Index	Number of Polluted Days at Given AQI			Given as a Percentage	Prominent Pollutant
	2005	2006	Through May 31, 2007		
0-50	36	26	11	8.25%	--
				Good Air	
51-100	197	215	84	56.25%	PM10, SO2
				Moderate Air	
101-150	91	75	36	35.50%	PM10, SO2
151-200	31	30	17		Unhealthy
201-300	3	11	2		To Hazardous
300-500	6	10	1		Air Quality

Note that there were 7 days of an AQI that topped out at 500—off the charts unhealthy!

PM10 = Particulate Matter < 10 microns    SO2 = Sulphur Dioxide    NO2 = Nitrogen Dioxide

## 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 whose lungs are still developing and who are more likely to have asthma and are more active outdoors.

Particles of concern include both very small, "fine" particles (that 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 - 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 by 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 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. Long-term exposures of a year or more have been linked to the development of lung diseases, such as chronic bronchitis.

**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. For more information on indoor air pollution, visit [www.epa.gov/iaq](http://www.epa.gov/iaq)