PM stands for particulate matter (also called particle pollution): the term for a mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye. Others are so small they can only be detected using an electron microscope.

**Particle pollution includes:**

* **PM10**: inhalable particles, with diameters that are generally 10 micrometers and smaller; and
* **PM2.5** : fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller.
  + How small is 2.5 micrometers? Think about a single hair from your head. The average human hair is about 70 micrometers in diameter – making it 30 times larger than the largest fine particle.

**Sources of PM**

These particles come in many sizes and shapes and can be made up of hundreds of different chemicals.

Some are emitted directly from a source, such as construction sites, unpaved roads, fields, smokestacks or fires.

Most particles form in the atmosphere as a result of complex reactions of chemicals such as sulfur dioxide and nitrogen oxides, which are pollutants emitted from power plants, industries and automobiles.

**What are the Environmental and Human Health Hazards from Particulate Matter (PM)?**

Particulate matter contains microscopic solids or liquid droplets that are so small that they can be inhaled and cause serious health problems. Some particles less than 10 micrometers in diameter can get deep into your lungs and some may even get into your bloodstream. Of these, particles less than 2.5 micrometers in diameter, also known as fine particles or PM2.5, pose the greatest risk to health.

Fine particles are also the main cause of reduced visibility (haze) in parts of the United States, including many of our treasured national parks and wilderness areas.

**Environmental Effects**

**Visibility Impairment**

Fine particles (PM2.5) are the main cause of reduced visibility (haze) in parts of the United States, including many of our treasured national parks and wilderness areas.

**Environmental Damage**

Particles can be carried over long distances by wind and then settle on ground or water.  Depending on their chemical composition, the effects of this settling may include:

* making lakes and streams acidic
* changing the nutrient balance in coastal waters and large river basins
* depleting the nutrients in soil
* damaging sensitive forests and farm crops
* affecting the diversity of ecosystems
* contributing to [acid rain effects](https://www.epa.gov/acidrain/effects-acid-rain).

**Materials damage**

PM can stain and damage stone and other materials, including culturally important objects such as statues and monuments. Some of these effects are related to [acid rain effects on materials](https://www.epa.gov/acidrain/effects-acid-rain#materials).

**Human Health Issues with Particulate Matter**

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. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including:

* premature death in people with heart or lung disease
* nonfatal heart attacks
* irregular heartbeat
* aggravated [asthma](https://www.epa.gov/asthma)
* decreased lung function
* increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.

People with heart or lung diseases, children, and older adults are the most likely to be affected by particle pollution exposure.

**How to Prevent Particulate Matter (PM)?**

**Take Action**

When particle pollution levels are high, take steps to limit the amount of air you breathe in while you’re outside. For example:

* Think about spending more time indoors, where particle pollution levels are usually lower.
* Choose easier outdoor activities (like walking instead of running) so you don’t breathe as hard.
* Avoid busy roads and highways where PM is usually worse because of emissions from cars and trucks.
* When driving, decrease your speed when in areas that are known to kick up dust/dirt
* Burn wisely (gather your wood in the spring and season it through the summer days) studies show that burning dry wood decreases the amount of PM in smoke.