



Met One Instruments

POWERED BY ACOEM



Particle counters measure for asthma triggers

Asthma Symptoms Increase with higher indoor particulate levels. According to the American Lung Association, 20.4 million American adults currently have asthma. Of these, 9.7 have had asthma flare ups. In addition, researchers from Johns Hopkins University have found an association between higher indoor particle levels and increases in asthma severity in children.

There is striking correlations between indoor particle concentration and increased asthma symptoms. For every 10 micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$) increase in coarse particle concentration, there was a 6% increase in the number of days of cough, wheeze or chest tightness. For every 10 $\mu\text{g}/\text{m}^3$ increase in fine particle concentration there was a 7% increase in wheezing severe enough to limit speech and 4% increase in days when rescue medication was needed. In many cases, the indoor levels of fine particle concentration were twice as high as the outdoor limits set by the EPA.





Common asthma triggers by particulate size

| < 0.1 Microns | 0.1-0.3 Microns | 0.3-0.5 Microns | 0.5-1.0 Microns | 1.0-2.5 Microns | 2.5-5.0 Microns | 5.0-10.0 Microns | 10.0-25.0 Microns | >25.0 Microns |
|----------------------------|---------------------------|--------------------|-----------------|-----------------|-----------------|------------------|-------------------|---------------|
| Viruses | | | | | | | | |
| | Bacteria | | | | | | | |
| | House Dust Mite Allergens | | | | | | | |
| | | | | | Pet Dander | | | |
| Soot | | | | | Mold | | | |
| Smog | | | | | | | Mold Spores | |
| Tobacco Smoke | | | | | | | Pollen | |
| Cooking Smoke | | | | | | | | |
| | Oil Smoke | | | | | | | |
| | Wood Smoke | | | | | | | |
| Auto Emissions | | | | | | | | |
| Suspended Atmospheric Dust | | | | | | | | |
| | | | Settling Dust | | | | | |
| | | Lung Damaging Dust | | | | | | |
| | | Asbestos | | | | | | |
| | | | | | | | Lint | |

There are several factors that trigger asthma attacks - many are encountered daily. The EPA notes: secondhand smoke, dust mites, mold, cockroaches and pests, pets, Nitrogen dioxide, chemical irritants, outdoor air pollution and wood smoke, etc. Factors such as secondhand smoke, dust mites, pet dander, mold and wood smoke can all be estimated based on their particulate size. (Refer to above chart)

Met One Instruments Powered by Acoem offers a line of particle counters and dust monitors that can identify the level of particulate / dust within an environment. Our units have a range of monitoring of 0.3 micron to 10 micron. Monitors are available as Particle Counter and Mass / Dust Monitor or Dust Monitor