

Indoor air quality frequently asked questions

A guide for childcare providers

How can polluted air make children sick?

We might worry about outdoor air when we think about air pollution, but indoor air can be much worse. We spend 60 to 90% of our time indoors, so it's important to make sure the inside air is clean where kids live, learn, and play.

Polluted air can harm the health of children whose bodies are still growing and developing. It can cause:

Short-term health effects:

- Eye, nose, throat, and lung irritation
- Headaches, dizziness, and fatigue
- Trouble concentrating

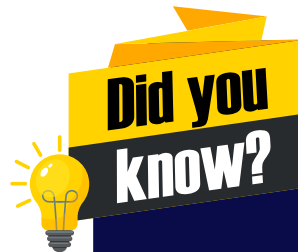
Long-term health effects:

- Lung disease
- Heart disease
- Worsens existing health conditions such as asthma and bronchitis

What are common indoor air pollutants?

Common indoor air pollutants include:

- Outdoor air pollution
- Mold, pollen, dander, and dust
- Volatile organic compounds (VOCs)
- Radon
- Carbon monoxide (CO)
- Particulate matter (PM)



We spend about 60-90% of our time indoors.

Indoor air can be 2-5 times more polluted than outdoor air!

What is particulate matter (PM)?

Particulate matter (PM) is any solid or liquid material present in the air. It can come from both indoor and outdoor sources. These particles can be generated indoors or enter indoor spaces through doors, windows, and "leakiness" in building structures.

PM is categorized by size. PM smaller than 10 micrometers (μm) is called **PM10**. PM10 pollutants include dust, pollen, and mold.

PM smaller than 2.5 μm is called **PM2.5** or fine particulate matter. The main indoor sources of PM2.5 comes from the combustion or burning of fuels and other household items. Using a gas burning stove or a wood burning fireplace are examples of how PM2.5 can be generated indoors. PM2.5 is especially harmful because it can penetrate deep in to the lungs and enter into the bloodstream.

What activities can cause higher PM levels indoors?

The following activities can increase the levels of PM pollution indoors:

- Some **cooking activities** (broiling, frying, or grilling)
- Some **cleaning activities** (sweeping, vacuuming, and dusting)
- Use of **cleaning products** such as air fresheners, oil diffusers, and aerosol sprays
- **Combustion activities** such as candle or incense burning or use of fireplaces

Can outdoor sources of PM effect IAQ ?

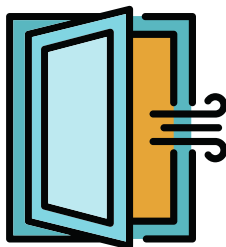
Yes! Emissions from combustion of gasoline, oil, diesel fuel or wood produce most of the outdoor PM pollution. Similarly, PM pollution comes from construction sites, landfills, wildfires, brush/waste burning, and industrial sources. Windblown dust is also a source of PM pollution, and can come from open or disturbed land. PM pollution from any of these outdoor sources can “leak” into buildings.

Wildfire smoke can also be a significant source of indoor and outdoor PM2.5 during wildfire events.

How can I improve indoor air quality?



Check the local air quality conditions at [AirNow.gov](https://www.airnow.gov)



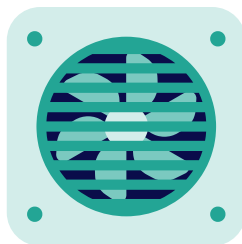
Increase ventilation by opening windows on good air quality days



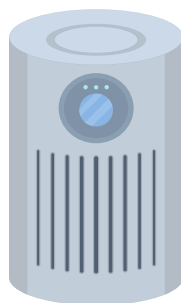
Keep windows closed on poor air days



Avoid activities that increase indoor PM



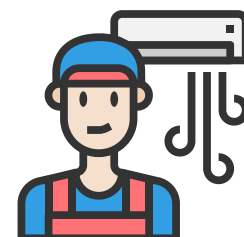
Use a home-made HEPA-filter box fan



Use a portable air cleaner with a high-efficiency (HEPA) air-cleaning filter



Consider using cleaning products with the EPA's Safer Choice label



Perform regular HVAC maintenance and ensure your filter is changed at recommended intervals