

## Health and Environmental Impacts of Diesel Exhaust

Pollution from older diesel engines has the potential to harm human health and the environment.

- Diesel exhaust contains significant levels of small particles known as fine particulate matter, or PM 2.5. These particles are so small that several thousand of them could fit on the period at the end of this sentence.
- Diesel exhaust contains pollutants that contribute to ozone and smog formation, acid rain and other environmental impacts.
- PM 2.5 from diesel engines contributes to haze which restricts our ability to see long distances.
- Diesel exhaust contains both carbon particulates and 40 chemicals that are classified as hazardous air pollutants under the Clean Air Act.
- Fine particulate matter poses a significant health risk because it can pass through the nose and throat and lodge in the lungs. These particles may cause lung damage and also aggravate conditions such as asthma, bronchitis and heart disease.
- According to EPA, particulate matter from all sources, especially PM 2.5, is responsible for thousands of premature deaths every year nationwide.
- EPA has determined that diesel exhaust is a likely human carcinogen. Diesel exhaust can also contribute to other acute and chronic health effects (see EPA's Health Assessment Document for Diesel Exhaust at <http://www.epa.gov/nscep>).

### Who is at risk?

People with existing heart or lung disease, asthma or other respiratory problems, as well as elderly and children are most sensitive to the health effects of PM 2.5.

### How are children affected?

It is important to state that air pollution from diesel vehicles has health implications for everyone, but children are more susceptible to this pollution because they breathe at a faster rate than adults. Diesel fumes from idling school buses exacerbate asthma, allergies and chronic bronchitis, and contribute to a compromised immune system and cancer. More than 480,000 diesel school buses transport and estimated 26 million students in the United States to and from school every day.\*

\*<https://www.nysbca.com/fastfacts.html>

### According to the American Lung Association

- 9.8 percent of children in Oklahoma have asthma (about 88,700 children).



# Diesel Exhaust Impacts



- Children breathe 50 percent more air per pound of body weight than adults, making their developing respiratory systems especially vulnerable to air pollution.
- The average daily bus ride duration for students is one hour, during which time they may be exposed to 5-15 times the particulate pollution found along a roadside.

## Protecting Children from Bus Diesel Exhaust

- Position vehicles away from air intake vents so pollution does not accumulate in the building.
- Limit caravanning – position vehicles so tailpipes do not blow directly toward other vehicles.
- Encourage children to sit near the front of the bus when not full.
- Keep bus windows up and bus doors closed as much as possible.
- Reduce the amount of time children must wait near idling buses, or have children wait indoors.
- Adopt an anti-idling policy or anti-idling zones at school. For more information on school bus idle reduction visit <https://go.usa.gov/xQUtz>.

## Contact Us

If you have further questions, please contact the Oklahoma Department of Environmental Quality's Air Quality Division at (405) 702-4100.