

Diesel Exhaust and Air Pollution



CURES | CLEAN AIR | SMOKEFREE KIDS
Improving Life, One Breath at a Time

WHY IS DIESEL EXHAUST AN AIR POLLUTION PROBLEM?

Diesel exhaust is a mixture containing over 450 different components, including vapors and fine particles. Over 40 chemicals in diesel exhaust are considered toxic air contaminants by the State of California. Exposure to this mixture may result in cancer, exacerbation of asthma, and other health problems.

For the same load and engine conditions, diesel engines spew out 100 times more sooty particles than gasoline engines. As a result, diesel engines account for an estimated 26 percent of the total hazardous particulate pollution (PM10) from fuel combustion sources in our air, and 66 percent of the particulate pollution from on-road sources. Diesel engines also produce nearly 20 percent of the total nitrogen oxides (NOx) in outdoor air and 26 percent of the total NOx from on-road sources. Nitrogen oxides are a major contributor to ozone production and smog.

WHAT ARE THE HEALTH EFFECTS?

Diesel exhaust has been linked in numerous scientific studies to cancer, the exacerbation of asthma and other respiratory diseases. A draft report released by the US EPA in February 1998 indicated that exposure to even low levels of diesel exhaust is likely to pose a risk of lung cancer and respiratory impairment. And in August 1998, the State of California decided that there was enough evidence to list the particulate matter in diesel exhaust as a toxic air contaminant - a probable carcinogen requiring action to reduce public exposure and risk.

Dozens of studies link airborne fine particle, such as those in diesel exhaust, to increased hospital admissions for respiratory diseases, chronic obstructive lung disease, pneumonia, heart disease and up to 60,000 premature deaths annually in the US.

The health risk from diesel exposure is greatest for children, the elderly, people who have respiratory problems or who smoke, people who regularly strenuously exercise in diesel-polluted areas, and people who work or live near diesel exhaust sources. Studies have shown that the proximity of a child's residence to major roads is linked to hospital admissions for asthma, and there is a positive relationship between school proximity to freeways and asthma occurrence. Truck and traffic intensity and exhaust measured in schools were significantly associated with chronic respiratory symptoms.

WHAT IS THE SOLUTION?

Cleaner alternatives to diesel engines are readily available. Alternatives include electric, liquefied natural gas (LNG) or compressed natural gas (CNG) buses and trucks. Although initial purchase prices may be higher for alternative fuel buses and trucks, federal, state, and local funds are available to offset these higher costs. These funds are specifically earmarked for clean technologies and would not otherwise be available for these purchases.

FOR MORE INFORMATION

For more information on diesel emissions and air pollution, as well as on federal regulatory initiatives, visit the US Environmental Protection Agency Office of Mobile Sources website at www.epa.gov/oms.

For a comprehensive look at the health and environmental problem of diesel emissions, see the Natural Resources Defense Council report, Exhausted by Diesel at www.nrdc.org/nrdcpro.

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