Questions and Answers About Diesel Exhaust

Q. ***What are the health problems associated with exposure to diesel exhaust?***

A. Diesel exhaust contains more than forty hazardous air pollutants, of which twenty-one have been identified by the U.S. Environmental Protection Agency (EPA) as known or suspected carcinogens, including benzene, formaldehyde, acetaldehyde and 1,3 butadiene. Exposure to diesel exhaust and its particulate matter has also been proven to exacerbate asthma symptoms and recent findings suggest that it may also be a causal agent for this disease. The EPA has stated that there is no safe level of exposure to diesel exhaust.

Q. ***How are children exposed?***

A. Diesel exhaust from idling school buses enters vehicles through doors and windows when children are loading and unloading. The amount of exhaust entering buses depends on how many buses are queued up one behind the other, how long they idle and whether the proximity of buildings or overhangs helps to trap diesel fumes. The exhaust may also enter the school building through open doors and windows or through air ventilation systems.

Q. ***Are children more vulnerable than adults to diesel exhaust exposure?***

A. Yes. Children are especially vulnerable to air pollution because their lungs are still developing - a process which is not complete until they reach their late teens. Respiratory development includes rapid rates of cell differentiation, cell division and airway branching. The average diameter of diesel particulate matter is tiny (0.2 micrometers), which means they can penetrate deeper into a child's lungs where they are more likely to be retained. Children also breathe at a higher rate, taking in 50% more air per pound of body weight than adults.

Q. ***Who else should be concerned?***

A. Bus drivers and staff who regularly monitor bus loading and unloading are also at increased risk. Pregnant women should be extremely careful about their exposure to diesel exhaust, as recent studies have shown that the developing fetus is highly vulnerable to airborne toxins. The federally funded Long Island (NY) Breast Cancer Study showed a positive association between exposure to PAHs (polycyclic aromatic hydrocarbons), key combustion by-products, and a higher incidence of breast cancer. Recent studies show that people with underlying heart disease should also avoid exposure.

Q. ***Is there any reason that buses must idle to function properly?***

A. No. With current technology, properly maintained diesel buses should have no problem starting up, even during winter months (except in extremely cold conditions - below 0 degrees F). In situations when engine operation is necessary to operate safety equipment, buses can idle to permit battery operation. There are grants available to retrofit school bus diesel engines to reduce pollution.

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Q. ***Will it cost more money to shut off bus engines?***

A. No. According to the EPA, the adoption of a no-idling policy in a district with a fleet of 50 buses would save up to $2,250 per year in reduced fuel costs. Additionally, since school aid formulas are measured in part on school absenteeism, this effort to help keep our children healthy would also help the district: asthma and related respiratory illnesses are the leading cause of school absenteeism and the number one cause of hospitalization of children in the United States.

Q. ***Have any states enacted policies to prohibit the idling of diesel vehicles?***

A. Many states have laws or regulations that address the idling of diesel vehicles, including school buses. In some cases, the law or regulation may limit idling to two, three or even five minutes, but it is important to remember that, according to the EPA, there is no safe level of exposure to diesel exhaust. A vehicle idling even less than a minute can generate dangerous levels of toxic fumes. Therefore, the best idling policy is to prohibit idling.

Limitations on idling are difficult to enforce and would involve agencies or authorities that have no additional resources to monitor at schools. Depending on the state, the authority to enforce idling limits may belong to the Department of Transportation, the local police, the Department of Motor Vehicles or state environmental authorities.

Several states have programs to encourage the reduction of school bus idling. Maine, Massachusetts and Minnesota are among those that provide educational materials and other resources for school staff, teachers and parents to successfully limit or prohibit bus idling at schools. Other states, including New Jersey, New Hampshire and Rhode Island, also have programs to retrofit buses with better pollution control devices. The New York State Commissioner of Education enacted regulations that prohibit all idling on school grounds. Parents and school officials are working together to see that this zero idling policy is strictly enforced.

Q. ***If my state already has a law or regulation limiting idling, should my school still enact its own policy?***

A. Yes, individual district or school policies are best at protecting children from this chronic and dangerous exposure. State idling laws that limit idling to several minutes are difficult to enforce and do not take into consideration the unique school environment and the special vulnerability of the children. A zero idling policy is easy to enforce utilizing educational materials for parents, administrators and bus drivers, as well as signage at the school and bus dashboard reminders.

This document is part of **The ChildSafe School Program** created by Grassroots Environmental Education, a science-based non-profit organization.

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