Diesel Pollusion and Health Impacts on School Children

Diesel exhaust is bad for everyone’s health:
Exposure to diesel engine exhaust causes cancer; increases the risk of heart attack, stroke, and cardiovascular disease, exacerbates asthma and can lead to low-weight and preterm births. Multnomah County has the 4th highest concentration of diesel exhaust of all United States’ counties.

Although there are no areas of Multnomah County with safe levels of diesel pollution, the pollution “hot-spots” are in neighborhoods with higher proportions of residents who are people of color. The disproportionate exposure to diesel mirrors health disparities in the community, particularly asthma, cardiovascular disease and low birth-weights.

School kids are particularly at risk from diesel exhaust:
Children are especially vulnerable to air pollution because their lungs are still in the developmental phase and they breathe, on average, 50 percent more air per pound of body weight than adults.

School children who ride on older diesel school buses that lack pollution controls have a 4% increased likelihood of developing cancer due to diesel particulate matter in their lifetime. In addition, exposure to diesel exhaust enhances allergic response, can induce new allergies to airborne allergens, and exacerbate asthma. Studies have also shown that diesel exhaust gets caught in the school bus cabin, increasing children’s exposure. Although bus commutes only comprise a fraction of a child’s day, the bus ride can represent up to 1/3 of child’s daily diesel pollution exposure.

This problem can be solved:
Diesel school buses that are model year 2007 and newer are 99% clean and virtually eliminate harmful sources of pollution. Even though 68% of school buses in use by east Multnomah County school districts are pre-2007, these buses can be retrofitted with pollution controls that will reduce pollution levels between 30–95%, depending on the retrofit type.

A recent study in Washington State found that children riding on cleaner school buses reduced a marker for inflammation in the lungs by 16 percent over the whole group, and 20-31 percent among children with asthma, depending on the severity of their disease. Moreover, children riding on cleaner buses had a 6-8% reduction in the risk of absenteeism. Bottom line, cleaner buses means healthier kids who are more ready to learn.

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3 Fitz et al, Characterizing the range of children’s pollutant exposure during school bus commutes, California Air Resources Board, 2003.
7 Adar et al, Adopting Clean Fuel and Technologies on School Buses: Pollution and Health Impacts in Children, Respitory and Critical Care Medicine, 2015.