



ing else matters.

Is Diesel Exhaust Harmful to me?

- Diesel emissions contain 40 hazardous pollutants ^{1, 2}, Including:
 - Nitrogen Oxide – can cause damage to respiratory airways ³
 - Particulate Matter – linked to deaths and numerous health problems ⁴
 - Hydro Carbons – toxic compounds that can cause cancer ⁵



Air inside the bus...

contains 10 – 15 times
more toxic soot than the
outside air ⁶



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When you can't breathe, nothing else matters.

Everyone is affected

- Some more than others.
 - Students ride the school bus 1-2 hours per day for approximately 180 days per year ⁷
- Research shows this can lead to:
 - Exposure to 4 times more exhaust fumes ⁸
 - 23 – 46 additional cancer deaths/million children ⁹
 - Absenteeism due to asthma ¹⁰
 - Rise in chronic respiratory illnesses ¹⁰



As a school bus driver

How often are you
exposed?



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What are the Health Effects?

- Short Term:
 - Eye, nose and throat irritation,
 - Runny nose and sneezing,
 - Coughing
 - Itchy eyes
 - Brief reduction in lung capacity ¹¹



Most of these symptoms may
clear up at home...

that does not mean they
are not damaging



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What are the Health Effects?

- Chronic Effects:
 - May promote or worsen allergic rhinitis (sneezing and stuffiness)
 - Can trigger or make asthma attacks worse in vulnerable individuals
 - May cause new cases of Asthma ¹¹

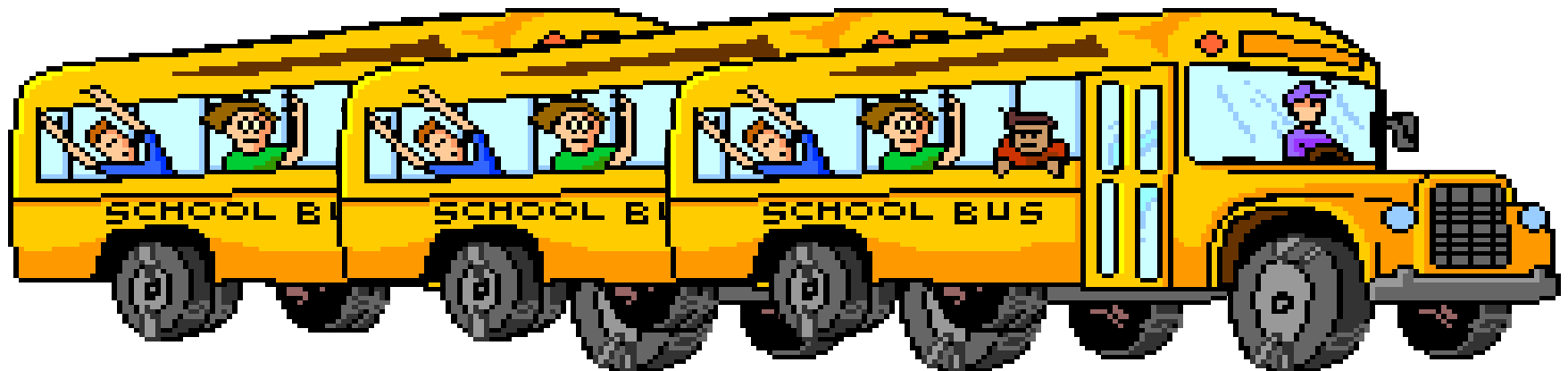


What are the Health Effects?

- Long Term Effects
 - Extended inhalation of diesel exhaust at either low or high levels is linked to elevated cancer levels ¹²
- The risk of lung cancer appears to increase with the years of exposure to diesel fumes ¹¹



What does this mean to me?



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What are you driving?

- The age the bus can be a factor in determining its emission hazards.
- Buses built prior to 1990 and 1991
 - Emit 6 times more toxic soot and 3 times more smog forming nitrogen oxide than today's models. ¹³
- Standards for emissions have decreased particulate matter by more than 50% ¹⁴



Does your bus measure up?

- Retrofitting buses built after 1991 will assist in emission reductions as a first measure to replacement ¹⁵
- In the United States emission standards for buses built in 2007 required to release 90% less soot and 95% less smog-causing emissions ¹⁶



What can I do?

- Turn off engine at the school or other destination
- For morning start up, follow manufacturer suggested idle times, usually less than 5 minutes ¹⁷
- Turn off the engine instead of idling while waiting for students and other passengers



What Can the Districts Do?

- Implement a “No-idling” policy for all vehicles on school grounds
- Avoid Caravanning buses
- Reduce the number of stops
- Use newer or retrofitted buses on longer routes
- Retrofit diesel buses for lower emissions
- And more...



