

Lung Doctor's Perspective on Importance of Decreasing Air Pollution and Diesel Exhaust
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Save lives, save money, stabilize Care Oregon, and stimulate the economy
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Thank you for the opportunity to submit written testimony. I am working in lung clinic today and in the ICU overnight, or I would have been happy to be present to submit oral testimony about the importance of decreasing diesel exhaust in our communities. My clinic today will likely be full of patients who suffer from diseases that worsen when exposed to diesel exhaust, resulting in increased needs for doctor visits, ER visits, medications, missed work, and hospitalizations. Some of them may even have diseases caused by diesel exhaust. In the ICU tonight, I may certainly see someone who is critically ill because their COPD or asthma deteriorated due to an increase in traffic related air pollution. This is an area where policy works, and I include examples in the references below and will attach several. Decreasing diesel particulate matter saves lives, saves money, and helps keep us healthy and working.

Inhalation = In the bloodstream- Why do people inhale drugs like tobacco and marijuana? Think of inhaling anything as an IV injection. The "hit" is immediate because it goes straight from the air into your bloodstream and to your brain. This is true for PM 2.5, nitrogen dioxide, black carbon and many more traffic-pollution and diesel-related toxins that enter our bloodstream directly through the lungs. These particles can be found deposited in every tissue in the body, including in the brain, causing disease and cancer. These impacts are particularly acute for children and elderly, but they affect all of us. When you are sick, you can't work, and the healthcare costs hurt you, your family, your work, and the community paying for your healthcare.

Children hardest hit with lifelong illnesses- Damage from air pollution starts in the womb. Exposure of pregnant women to ambient air pollution causes premature and low birth weight children.¹ Traffic pollution causes asthma attacks in children, and likely causes asthma itself with impaired lung function.^{2,3} We can measure black carbon coughed up by children and see more lung damage with higher concentrations.⁴ Traffic related air pollution further causes deficits in memory, cognitive function,⁵ attention⁶ with a small study even showing MRI changes in children's brains.⁷ Children in high-emitting diesel school buses are particularly vulnerable, whether windows are open or closed. Low emitting school buses result in improved air quality for kids and fewer missed sick days.⁸

Lifelong damage for adults- Diesel is a human carcinogen and causes lung cancer and likely other cancers as well.⁹ Air pollution from traffic decreases adult lung function and increases risk of COPD.^{10,11} It also causes heart attacks and death.^{12,13} Air pollution hurts the elderly, not only by increasing risk of dementia¹⁴ and stroke,¹⁵ but it also increases osteoporosis and bone fracture risk.¹⁶ Our current "safe" allowed levels are still too high and many people are still dying in Oregon¹⁷ and in the United States of air pollution, even at levels currently deemed "safe."¹⁸

Policy works- Fortunately, programs and policies that decrease air pollution improve lung function in children.¹⁹ In Washington State, cleaning up diesel school buses resulted in fewer sick days in all children, particularly those with asthma.²⁰ Fewer sick days are important to children's school performance and a healthy economy. The implementation of the Clean Air Act is saving lives and decreasing deadly smog events, but we have much further to go.

Common and costly- The lung diseases that are caused or worsened by air pollution are very expensive and common. Around 6% of Oregon residents surveyed in 2011 stated they had been told that they had COPD, but the number is likely higher.²¹ Cost for this care will fall disproportionately on taxpayers, as patients with COPD are more likely to be unable to work and have a household income less than \$25,000.⁸ Inhaler costs are also skyrocketing.²²

Asthma is also a significant burden in our state, affecting 10% of adults and 7% of children totaling over 360,000 Oregonians²³ and responsible for over 2000 people hospitalized for asthma in 2012 alone. Healthcare costs will again fall disproportionately on taxpayers, since those affected by asthma often have lower income, and are more frequently enrolled in the Oregon Health Plan and CHIP. In addition to the toll on human health and direct healthcare spending, there are also costs in worker productivity. Over 25% of people in Oregon with asthma missed more than one day of work due to asthma,²⁴ and children are also likely to miss school because of asthma, particularly if their school is located by high traffic area and exposure to air pollution is high (which it often is).

Bottom line- We pay twice for air pollution and dirty diesel with both lost productivity with human illness, lost breadwinners, and the increased healthcare costs for sickened Oregonians. Cleaning up the air will grow the economy and cut healthcare costs. Just like economies and health have improved as tobacco use has declined, our communities will become healthier with cleaner air.

Action Items:

- Replace or retrofit older school buses and prohibit engine idling
- Bring Oregon up to standards on diesel emissions compared to California and Washington
- Decrease traffic congestion and idling, increase public transit, encourage cycling, etc
- Decrease occupational exposure to truckers, toll workers, miners, loggers, farmers around older diesel technology by cleaning up technology, hazard pay for dirty diesel work, sickness funds, etc
- Price healthcare costs of dirty diesel and traffic-related air pollution into fuel or vehicle costs

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