

Oregon Thoracic Society - Importance of Clean Diesel and Control of Air Pollution for Health and Controlling Healthcare Expenditures

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Dear Oregon Legislators-

Thank you for the opportunity to submit testimony, and thank you all for your service to our State. The Oregon Thoracic Society is comprised of lung doctors, thoracic surgeons, and healthcare professionals who care for patients suffering from respiratory diseases. We witness the health toll of air pollution and diesel in our practices on a daily basis, as we frequently care for those who suffer from some of the many diseases caused by diesel and other air pollution. We are particularly concerned about the health burden of diesel on children, who frequently attend school by high traffic corridors around the state. This is not only a problem for urban children and adults.

Long term exposure to air pollution increases risk of COPD.¹ Diesel is particularly toxic, listed as a human carcinogen, and children are especially vulnerable to the long-term and short-term health effects of air pollution due to their higher respiratory rates, increased activity, and vulnerable developmental windows. I know the American Lung Association (for whom we are the Oregon Medical Advisory Board), has already testified regarding this earlier in the legislative session. People who work with diesel (eg truckers, miners, other industrial work) are also very vulnerable, as are those who spend a great deal of time commuting in traffic for other reasons or live by high traffic roads.

Traffic pollution causes asthma attacks in children and may also increase absolute asthma with impaired lung function.² There is increasing research on childhood asthma and air pollution associations.³ Fortunately, we can make it better. Decreasing air pollution improves lung function in children.⁴ Washington State, when cleaning up its diesel fleet, decreased the particulates to which children were exposed and also decreased missed school days, particularly in children with asthma!⁵

Air pollution causes heart attacks and death in adults^{6,7} and traffic pollution decreases lung function in general.⁸

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.⁹ 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 Asthma is also a significant burden in our state, affecting 10% of adults and 7% of children totaling over 360,000 Oregonians¹⁰ 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 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,¹¹ 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).

COPD and asthma cost more than \$100 billion per year, over \$50 billion for COPD in the US¹² and \$56 billion for asthma in 2007,¹³ likely more since that time, with estimates of asthma in Oregon alone at 3 billion (our state is one of the worst for asthma). Inhaler costs are skyrocketing.¹⁴ These are likely LOW estimates since increase in inhaler costs and medical costs in general have not been factored in last 7 years. List price for dual inhaler therapy for asthma and COPD is currently around \$11,000 per year, not including rescue medications, doctor visits, etc. Oregon has a significant budget shortfall currently - this will only worsen as more people move to the state, traffic congestion around the state worsens, and idling and air pollution by schools both urban and rural increases. For every dollar we invest in cleaner diesel, we will reap many multiples in health benefits.

The Oregon Thoracic Society endorsed the former version of SB1008, which accelerated transition away from older diesel engines to ones built since 2007. Trucks built within the last decade are 95-99% cleaner and much less likely to contribute to the devastating and expensive diseases we treat. We appreciate current improvements on the stripped-down bill; however, further amendments are needed. We need a firm timeline to retire and retrofit older diesel engines. Specifically, we must prohibit the addition of any pre-2007 diesel engines to our Oregon fleet. We are at risk of this, since many old dirty diesel trucks are no longer allowed in California and Washington, and are being sold here. We must also allow local ordinances to prohibit idling in areas where sensitive populations breathe, especially our children.

Thank you for your consideration and your service to our State.

Sincerely,

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References- *There is a large wealth of data on the health effects of air pollution and diesel. These are a representative few, several particularly chosen for strength and reputation of journal (eg New England Journal of Medicine, American Journal of Respiratory and Critical Care Medicine) as well relevance to Oregon. Please contact OTS and ALA if you would like to discuss further. ALA Oregon = InfoMTP@Lung.org; 503-924-4094*

¹Andersen ZJ, Hvidberg M, Jensen SS, Ketzel M, Loft S, Sørensen M, Tjønneland A, Overvad K, and Raaschou-Nielsen O. Chronic Obstructive Pulmonary Disease and Long-Term Exposure to Traffic-related Air Pollution: A Cohort Study. *Am J Respir Crit Care Med.* 2011; 183: 455-461.

² Health Effects Institute Panel on the Health Effects of Traffic-Related Air Pollution, *Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects.* Health Effects Institute: Boston, 2010. Available at www.healtheffects.org.

³ Gref et al. "Genome-Wide Interaction Analysis of Air Pollution Exposure and Childhood Asthma with Functional Follow-up." *Am J Respir Crit Care Med.* 195(10) 2017.

⁴ Gauderman. "Association of Improved Air Quality with Lung Development in Children." *NEJM* 2015; 372:905-913

⁵ Adar et al. "Adopting Clean Fuels and Technologies on School Buses: Pollution and Health Impacts in Children." *Am J Respir Crit Care Med.* 191(12) 2015.

⁶ Peters A, von Klot S, Heier M, Trentinaglia I, Cyrys J, Hormann A, Hauptmann M, Wichmann HE, Lowel H. Exposure to Traffic and the Onset of Myocardial Infarction. *N Engl J Med.* 2004; 351: 1721-1730.

⁷ Finklestein MM, Jerrett M., Sears M.R. Traffic Air Pollution and Mortality Rate Advancement Periods. *Am J Epidemiol.* 2004; 160: 173-177; Hoek G, Brunkreef B, Goldbohn S, Fischer P, van den Brandt. Associations between

mortality and indicators of traffic-related air pollution in the Netherlands: a cohort study. *Lancet*. 2002; 360: 1203-1209.

⁸ Suglia SF, Gryparis A, Schwartz J, and Wright RJ. Association between Traffic-Related Black Carbon Exposure and Lung Function among Urban Women. *Environ Health Perspect*. 2008;116 (10): 1333-1337.

⁹ "Chronic Obstructive Pulmonary Disease Among Adults—United States, 2011." *MMWR*. 2012;61:938-943. <http://www.cdc.gov/mmwr/PDF/wk/mm6146.pdf>.

¹⁰ Behavioral Risk Factor Surveillance System (BRFSS)- survey. Referenced in Oregon Asthma Leadership Plan.

¹¹ "Oregon Asthma Leadership Plan-2014-2019." Oregon Health Authority.

¹² Guarascio et al. "The clinical and economic burden of chronic obstructive pulmonary disease in the USA." *ClinicoEconomics and Outcomes Research*. 2013;5:235-245.

¹³ Barnett et al. "Costs of asthma in the United States: 2002-2007." *J Allergy Clin Immunol*. 2011 Jan 127(1):145-52.

¹⁴ Rosenthal. "Soaring Cost of a Simple Breath." *The New York Times*. October 12 2013.