Emerging Public Health Facts About Diesel Pollution YOU Should Know

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BY NOW, you may have heard that diesel exhaust pollution is toxic, and contains over 40 pollutants such as PM$_{2.5}$, black carbon, benzene, arsenic, carbon dioxide, hydrocarbons, and formaldehyde. But what you may not have known is that recent scientific studies all show that the health and climate impacts of air pollution are worse than experts initially thought.

WE HAVE known for a long time that diesel exhaust is toxic. It is linked to:

- Cancer$^{[1]}$
- Higher risk of stroke
- Cognitive impairment and Alzheimer’s
- Asthma attacks, more severe asthma symptoms and respiratory illnesses$^{[2]}$
- Worsened allergies
- Impaired lung growth in children, low-birth weight and premature birth$^{[3]}$
- Birth anomalies
- Male infertility
- Lung disease.

AND SINCE OREGON ENVIRONMENTAL COUNCIL published its Dirt on Diesel report in 2016,$^{[4]}$ new scientific evidence deepens understanding of how diesel impacts health and points to additional harm from air pollution generally and diesel pollution specifically:

- **Cardiac Arrest:** A new 2020 study found that there is a 1-4% increase of cardiac arrest associated with every 10 μg/m$^3$ (micrograms per cubic meter) increase in PM$_{2.5}$ exposure.$^{[5]}$
- **Hair loss:** linked in a 2019 study by the American Thoracic Society.$^{[6]}$
- **Neurological diseases, dementia and amyotrophic lateral sclerosis:** linked in a 2019 study.$^{[7]}$
- **Autism:** a 2018 study found prenatal exposure can cause autism-like behaviors.$^{[8]}$
- Another study from 2019 indicated that almost every cell in the body may be affected by air pollution.$^{[9]}$
What makes diesel exhaust so deadly is that it emits particulate matter—tiny sooty particles called PM$_{2.5}$, 100 times thinner than a human hair. Because these particles are so small, they can avoid all of the body’s natural defenses. They are inhaled deeply into the lungs and absorbed into the bloodstream where they can impact all of the organ systems in the body. More than 40 hazardous air pollutants (such as benzene, arsenic and formaldehyde) are also attached to these particles.

A 2019 study by the International Council on Clean Transportation concluded that 385,000 people worldwide died prematurely from pollution caused by vehicle exhaust emissions, with almost 50% of those deaths caused specifically by diesel emissions. Here in Oregon, diesel exhaust prematurely kills an estimated 460 Oregonians, costs over 25,000 lost work days, and costs the state $3.5 billion, every year.[10] It is responsible for 154 heart attacks; 5,376 asthma in children; 119 asthma hospital visits for children; 5,652 respiratory symptoms in children.[11]

A 2020 study found that there is no “safe” level of air pollution.[12] Cancer risks among truck drivers, railroad workers, and heavy-equipment operators has been found to be 40% higher than the average population.[13]
Because of incomplete combustion, diesel engine releases what’s called “black carbon.” It’s a potent contributor to climate change because it absorbs solar radiation and converts it to heat. It also influences cloud formation and impacts regional circulation and rainfall patterns. Black carbon has a warming impact on climate 460-1,500 times stronger than CO2 per unit of mass.\[14\] While black carbon is a very potent climate forcer, it is also short-lived, and only remains in the atmosphere for days or weeks. This means that short-term reductions in diesel black carbon emissions can help reduce temperatures in the near-term while we mitigate long-lived greenhouse gas emissions.\[15\]

Cutting diesel saves lives, money and climate change

On a national level, the EPA estimates that lowering diesel emissions would prevent 8,300 premature deaths, 9,500+ hospitalizations and save 1.5 million work days and $296 billion per year nationally.\[16\]

In Oregon, 1.6 billion could be saved a year in avoidable public health impacts including treatment for illness, hospitalizations, lost work days and premature death.\[17\]

We must do all we can to reduce diesel exhaust and other air pollutants from transportation, smokestacks and chimneys.
SOURCES:


