

# It All Adds Up to Cleaner Air

## Statistics Gathered from Literature and Primary Source Research

- 1 hour of idling = about one liter, or 0.26 US gallons, of gas burned. (Swiss program)
- Idling consumes ½ gallon to 1 gallon per hour. (Fuelmax Fuel Saving Tips)
- Don't press gas pedal when re-starting, or you could undo the good you did by turning it off. (Swiss program)
- With catalytic converters, the air quality benefits start at 15 seconds of no idling. (Swiss program)
- More than 10 seconds of idling uses more fuel than starting the engine. (Natural Resources Canada, Office of Energy Efficiency)
- It is more economical to stop engine even if you only have to wait for 30 seconds. (Waterford County Council)
- 75%+ of Puget Sound residents perceive auto emissions as contributing a great deal to air pollution in the area. (Puget Sound Clean Air Agency)
- Respondents indicate the most important reason for maintaining or improving air quality is to avoid the health risks of poor air quality. (Puget Sound Clean Air Agency)
- Respondents rated air pollution in the region as (51%) somewhat serious and (25%) slight problem—points three and two on a four-point scale. (Puget Sound Clean Air Agency)
- 50%+ rated the following sources as contributing “a great deal” to poor air quality: auto emissions, emissions from diesel trucks and buses, population growth and emissions from industry and business. (Puget Sound Clean Air Agency)
- Vehicle exhaust is the leading source of hazardous air pollution in Washington. (National Transportation Library)
- In the past ten years, residents have increased the amount they drive by more than 70%. (National Transportation Library)
- Diesel exhaust contains microscopic soot, about 200 times smaller than the period at the end of this sentence. (Oregon Department of Environmental Quality)
- 47% of respondents, when asked what reasons should people or organizations be allowed to pollute the air, answered “none.” 17% said “transportation/people should be able to drive their cars.” (Puget Sound Clean Air Agency)
- Respondents indicated they use radio more frequently than other media with 71% listening daily compared to 56% watching TV news daily and 54% reading a paper daily. (Puget Sound Clean Air Agency)
- World Health Organization reports three million people now die each year from the effects of air pollution. This is three times the one million who die each year in auto accidents. (Earth Policy Institute)
- Air pollution costs citizens at least \$1 billion annually in hospital admissions, emergency room visits and worker absenteeism in Ontario. (Earth Policy Institute)

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- Elderly people who live in the most polluted areas are nearly 20% more likely to be admitted to a hospital for a respiratory condition than those who live in cities with the least air pollution. (WebMD article)
- Residents of the most polluted areas had 7% higher overall inpatient care usage rates and 18% higher overall outpatient care usage rates than those in the least polluted areas. (WebMD article)
- Asthma costs an average of \$500 per child per year for medications, doctor care and hospital treatment, but doesn't include indirect costs like school absenteeism and lost work time for parents caring for kids. (Oregon Department of Environmental Quality memo to superintendents and transport supervisors)
- Nationally, the number of people afflicted with asthma has more than doubled since 1980. (Campaign to Reduce Asthma in New England)
- Children breathe 50% more air per pound than adults. (EPA sheet on school bus idling)
- Each of us takes 20,000 breaths each day. (American Lung Association of Washington website)
- The average American breathes 3,400 gallons of air a day. (American Lung Association)
- A typical diesel vehicle burns approximately one gallon of fuel for each hour it idles. Thus, if a fleet of 25 buses reduces idling time by 30 minutes per day, at \$1 per gallon, the company saves \$2,250 per year in fuel. (EPA sheet on school bus idling)
- Idling isn't an effective way to warm up your vehicle, even in cold weather. Driving is the best way to warm it up. With modern engines you need no more than 30 seconds of idling on winter days before starting to drive. (Natural Resources Canada, Office of Energy Efficiency)
- Excessive idling can damage your engine's components, including cylinders, spark plugs and the exhaust system. (Natural Resources Canada, Office of Energy Efficiency)
- Frequent restarting has little impact on engine components like battery and starter motor. Component wear caused by restarting is estimated to add \$10/year to the cost of driving, money likely recovered several times over in fuel savings. (Natural Resources Canada, Office of Energy Efficiency)
- The average long-haul truck idles away up to U.S. \$1,790 in profits each year. (Natural Resources Canada, Office of Energy Efficiency)
- The amount of idling a driver does tends to increase in relation to the number of people in a household: more kids = more idling. (Natural Resources Canada, Office of Energy Efficiency)
- Idling reduction signs alone are ineffective, but a combo of signs, stickers and info cards reduce idling 32% and reduce by more than 70% the duration of idling. (McKenzie-Mohr "Turn It Off" project case study)
- Idling your vehicle with the air conditioning on can increase emissions by 13%. Your car will stay cool for a few minutes after you turn the engine off. (Oregon's Clean Air Action Day fact sheet)

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- Excessive idling can be hard on your engine. Because the engine isn't working at peak operating temperature, fuel doesn't undergo complete combustion. This leaves fuel residue that contaminates engine oil and makes spark plugs dirty. (Oregon's Clean Air Action Day fact sheet)
- About 40% to 50% of toxic air pollutants in Oregon come from vehicle exhaust, while large industries are responsible for only about 5% to 8% of the pollutants. (Oregon's Clean Air Action Day fact sheet)
- The following percentages of the public consider these vehicles as "major" sources of environmental information: TV news 60%, TV documentaries 54%, newspapers 46%, magazines 33%, friends and other people 33%, advertising 31%, federal government 30%, state and local government 28%, local schools 16%. (EPA's Public Environmental Information Needs & Access Preferences)
- The same percentages hold true for the belief that government should provide incentives for industries and vehicle owners in our state to take voluntary actions to reduce air pollution (DOE/WSU report on Public Opinion of Air Quality Issues). When asked if government should ask industries in our state to take voluntary actions to reduce air pollution levels, 66% strongly agree and 25% somewhat agree (DOE/WSU report on Public Opinion of Air Quality Issues). During an air advisory, 55% are very unlikely to take the bus instead of driving a car, but 64% are very likely to be willing to not use a wood stove or fireplace under air advisory conditions (DOE/WSU report on Public Opinion of Air Quality Issues).
- When asked what they think about motorists being the ones to pay for dealing with air pollution problems caused by motor vehicles, 46% strongly agree and 33% somewhat agree. (DOE/WSU report on Public Opinion of Air Quality Issues)
- Estimating medical care use in the 37 most polluted and 37 least polluted areas in the United States, researchers found on average that: 1) respiratory admissions and use of outpatient care were nearly 20% higher in the most polluted areas; 2) medical admissions were 10% higher; and 3) use of inpatient care was 7% higher. (Health Affairs media release)
- 4-5% increase in the rate of asthma hospital admissions in non-elderly one day after an interquartile range change in PM. In single-pollutant models the study found a 6% increase in the rate of admission three days following an interquartile range change in CO. The CO link is important because it shows a link to vehicle emissions as opposed to wood stoves, dust and other pollutants. (Carbonmonoxide Headquarters; Environmental Health Perspectives)
- On average, overall mortality increases by 0.5% for every 10 microgram per cubic meter increase in PM10 measured the day before death. The effect is slightly greater for deaths due to heart and lung disease than for total deaths. (National Morbidity, Mortality and Air Pollution Study)

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- Average annual means for PM10 in Seattle have been in the range of 12-25 micrograms per cubic meter in recent years with highs in the range of 48-75 according to the Department of Ecology. (Burning Issues)
- Idling buses tested had higher concentrations of particulates and carbon than moving buses. (Environment and Human Health Inc.)
- Queued idling buses had the highest levels of particulates and black carbon measured. Idling buses tend to accumulate diesel exhaust, which may be retained during the ride, depending up on bus ventilation rates. (Environment and Human Health Inc.)
- A bus idling for one hour a day during the school year adds the equivalent of 1,260 of wear on the engine. (Oregon Department of Environmental Quality)
- Toxic air pollutants account for an additional 700 cases of cancer for every million Washington residents. (American Lung Association)
- Carbon Monoxide reduced the ability of blood to bring oxygen to body cells and tissue. (National Transportation Library)
- The risk of death is 17% larger in higher polluted areas. (American Cancer Society)
- Diesel exhaust is classified as a probable human carcinogen by many governmental authorities, including the International Agency for Research on Cancer (WHO), the U.S National Toxicology Program, the U.S. EPA, and as a known carcinogen by the State of California. (Environment and Human Health Inc.)
- Diesel exhaust contains both carbon particulates and 40 chemicals that are classified as "hazardous air pollutants" under the Clean Air Act. (Environment and Human Health Inc.)
- Asthma is the most common chronic illness in children and the cause of most school absences. (Norris; American Lung Association)
- Children's asthma symptoms increase as a result of car exhaust. (American Lung Association)
- In the Unites States nearly 600,000 school buses transport 24 million students to school daily. (Environment and Human Health Inc.)
- For one child, a half-hour ride to school, and half-hour ride home each day amounts to 180 hours per school year; 90 full 24-hour days over 12 years of school. Annually, U.S. children spend 3 billion hours on school buses. Connecticut children spend 50 million hours on buses each year. (Environment and Human Health Inc.)
- In 1952 death rates increased by five times over four days from air pollution that was trapped by fog in London. (Department of Biostatistics; Johns Hopkins)
- Approximately \$100 million is spent each year in the United States to address the uncertainties in the understanding of the health effects of particulate matter. (Department of Biostatistics; Johns Hopkins)