

Health and Environmental Effects of Driving

The list of detrimental health effects from vehicle air pollution sounds like a shop of horrors. Outdoor air pollution from cars, SUVs, trucks, and buses:

- Cause acute respiratory problems, temporary decreases in lung capacity, and inflammation of lung tissue
- Impair the body's immune system
- Reduce the release of oxygen to body tissues
- Increase a person's risk of cancer-related death
- Contribute to birth defects, low birth weight, and infant deaths
- Harm blood vessels in healthy individuals
- Make healthy active children 3 to 4 times more likely to develop asthma



Personal masks are becoming a common sight in urban areas with the worst air quality.

If the air pollution doesn't kill you, getting run over just might. During the 20th century, 250 million Americans were maimed or injured in automobile accidents. Car crashes are the top killers of children in the United States and elsewhere. Every day in the U.S., an average of over 120 people are killed in car accidents.

And we all run the risk of a slow death (or at least a diminished quality of life) as a result of driving-related stress (a.k.a. road rage) and our lazy "drive everywhere" attitude. A century ago, the typical American walked three miles a day. Now, we drive our SUVs to the gym. Cars undoubtedly have contributed to the decline of exercise in America, and the advance of our obesity epidemic.

Pollutants

Jump in the car, start your engine, and you're off. But do you give any thought to what's coming out of the tailpipe as you go about your drive? You should. Here's what your beloved car is producing:

Carbon dioxide is the dominant greenhouse gas that causes global warming. The effects of global warming are uncertain, but they potentially include disruption of global weather patterns and ecosystems, flooding, severe storm, and droughts.

Sample comparison (based on 14k miles per year/EPA ratings):

| | |
|---|--|
| 2005 Toyota Camry 3.0L, 6 Automatic | 2004 Toyota Prius 1.5L, 4 CVT |
| 11,100 pounds of Carbon Dioxide per year | 4,800 pounds of Carbon Dioxide per year |



Every day, you are driving in and through--and contributing to--a lethal cocktail of air pollution.

Carbon monoxide, when inhaled, combines with hemoglobin in our blood, impairing the flow of oxygen to our brain and other parts of the body. Carbon monoxide is colorless, odorless, and poisonous even to healthy people (at high levels in the air). It can seriously affect people with heart disease, and can affect the central nervous system. Motor vehicles remain the number one source of carbon monoxide pollution in many countries.

Sample comparison (based on 14k miles per year/EPA ratings):

| | |
|--|--|
| 2005 Cadillac SRX SUV 3.6L, 6 Automatic Bin 5 | 2005 Ford Escape Hybrid 2.3L, 4 CVT Bin 4 |
| 330 pounds of Carbon Monoxide per year | 230 pounds of Carbon Monoxide per year |

Sulphur oxides contribute to respiratory illness, particularly in children and the elderly, and aggravate existing heart and lung diseases. It contributes to the formation of acid rain, which damages trees, crops, and buildings; and makes soils, lakes, and streams acidic.

Nitrogen oxide is a noxious pollutant. It is a lung irritant and reacts with compounds in the air to cause acid rain and ozone (the main reason for smog). Nitrogen oxide is one of the main ingredients involved in the formation of ground-level ozone (which can trigger serious respiratory problems), and contributes to global warming.

Sample comparison (based on 14k miles per year/EPA ratings):

| | |
|---|--|
| 2004 Volkswagen Jetta 1.9L, 4 Automatic Bin 10 | 2004 Honda Civic Hybrid 1.3L, 4 CVT Bin 9 |
| 49 pounds of Nitrogen Oxide per year | 17 pounds of Nitrogen Oxide per year |

Particulate matter, consisting of tiny particles of smoke, soot and dust--primarily from engines, car parts, tires, and diesel exhaust--are an established cause of lung problems, from shortness of breath to worsening of respiratory and cardiovascular disease, damage to lung tissues, and cancer. The EPA estimates that particulate pollution kills more than 60,000 people per year. In addition, particulates are associated with increased hospital admissions and emergency room visits for people with heart and lung disease, as well as work and school absences. Particulates can travel deep into the lungs, or in smaller form, directly into the bloodstream.

Sample comparison (based on 14k miles per year/EPA ratings):

| | |
|--|---|
| 2005 Range Rover 4.4L, 8 Automatic Tier 1 | 2005 Honda Accord Hybrid 3.0L, 6 Automatic ULEV II |
| 670 grams of Particulate Matter per year | 240 grams of Particulate Matter per year |

Hydrocarbons, in their many forms, are directly hazardous, contributing to what are collectively called "air toxics." These compounds directly irritate the lung and other tissues, can cause cancer, contribute to birth defects, and cause other illnesses.

Sample comparison (based on 14k miles per year/EPA ratings):

| | |
|--|---|
| 2005 Hummer H2 6.0L, 8 Automatic HDT-Bin 11 | 2005 Honda Insight 1.0L, 3 Manua Bin 9 |
| 29 pounds of Hydrocarbons per year | 8 pounds of Hydrocarbons per year |

Lead damages organs, affects the brains, nerves, heart, and blood. Although overall blood lead levels have decreased since 1976, urban areas with high levels of traffic or industrial facilities that burn fuel may still have high lead levels in air. In 1999, ten areas of the country did not meet the national health-based air quality standards for lead.

Rolling Up Your Window Won't Help

Exposure to some car pollutants may be much higher inside your car than outside. Commuters driving in rush hour get the highest exposure, often from pollutants emitted by vehicles ahead of them. You are basically driving in and through--and contributing to--a lethal cocktail of air pollution.