

Cancer from Cars, Trucks and Buses

We are a car-loving world, driving over 600 million passenger vehicles. Our cars represent wealth, pride and fun, while giving us comfort and convenience, so we have a blind spot when it comes to their downside. A *big* blind spot.

Globally, cars kill 1.2 million people a year — over 3,000 a day — and injure a further 50 million.¹ For anyone who has been impacted by a car crash, it is horribly real.

Cars also fuel the fires of global warming, since they burn fossil fuels. Our concern here, however, is the link with cancer. There are 225 different toxic pollutants in petroleum products — and they all end up somewhere.²

In his superb book *Lives Per Gallon*, Terry Tamminen (past Secretary of the California Environmental Protection Agency and Special Advisor to California Governor Arnold Schwarzenegger) laid out the true cost of our addiction to oil. We have grown so used to filling up at the pump that we rarely think what happens to the fuel when it's burnt.

The First Villain: Particulate Matter (PM)
These are the tiny particles of black soot that get belched out of tailpipes when vehicles accelerate. The smallest (2.5 microns) are the most dangerous

- California Diesel Activities: www.arb.ca.gov/diesel
- Diesel's Cancer Risk: www.rag.org.au/buc/cancerrisk.htm
- *Lives Per Gallon: The True Cost of Our Addiction to Oil*: www.terrytamminen.com
- Plug-in Hybrids: www.pluginpartners.org

Across the state, cancer risk is driven greatly by benzene, and a large source of benzene emissions is automobiles.

— Paul Dubenetsky,
Indiana Office of Air Quality

because they penetrate deep into our lungs (a human hair is 100 microns thick). A 2002 study that examined the impact of air pollution over 16 years found that deaths from lung cancer increased by 8% for every 10 micrograms of fine particulate matter per cubic meter.³ In 2000 the average in New York was 16 micrograms per cubic meter, so New Yorkers faced a 16% increased risk of lung cancer from air pollution. It was 20 in Los Angeles, 18 in Chicago and 15 in Washington DC.

“The risk of dying from lung cancer as well as heart disease in the most polluted cities was comparable to the risk associated with non-smokers being exposed to second-hand smoke over a long period of time,” the study reported. The tiny particles also cause many other ailments, including asthma.

The Second Villain: Volatile Organic Compounds (VOCs)

That smell of diesel or gasoline fumes is not the healthy smell of fresh flowers. What you smell are compounds within fuels that evaporate, which is why they are called “volatile.” They include the highly toxic benzene, 1,3-butadiene and polycyclic aromatic hydrocarbons — all of which are known to cause cancer, as well as birth defects and lung diseases.⁴ Benzene is particularly harmful, even at very low levels.⁵ In California, gas stations are obliged to post a warning that the fumes can cause cancer.

The Third Villain: Diesel Exhaust

The villains work together, but it's important to line up diesel exhaust separately in the identity

parade because it contains hundreds of different chemicals, “dozens of which are recognized human toxicants, carcinogens, reproductive hazards or endocrine disruptors.”⁶

Researchers found that a child riding inside a diesel school bus may be exposed to as much as four times the level of toxic diesel exhaust as someone riding in a car ahead of it. These exposures pose up to 46 times the cancer rate considered significant under US federal law.⁷

On Southern California’s south coast, as many as 8,800 people die from exposure to diesel exhaust every year — four times more than are killed in auto accidents.⁸ Overall, diesel exhaust from cars, buses, trucks, off-road equipment and cruise liners contributes to more than 125,000 cases of cancer a year,⁹ almost 9% of all cancer cases in the US.

The problems begin at the wellhead, where a single drop of oil can change the taste of 14 gallons of water, and a single exploratory well dumps 25,000 pounds of toxic metals into the ocean.¹⁰ Whenever there’s a large-scale oil spill, the clean-up workers get very sick. In Ecuador, where oil is drilled for export to refineries in Los Angeles and San Francisco, the locals call it “the excrement of the devil.”¹¹ The problems continue at refineries, where fugitive emissions poison the air of people living nearby, and cancer rates are elevated as far as 30 miles downwind from a facility.¹²

The solution is remarkably simple: stop using oil. By switching to plug-in electric hybrid vehicles powered by clean electricity from the sun, wind, tides, and deep rock’s geothermal



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energy, of which North America has an ample supply, and by rediscovering walking, cycling and the bus or train, we can leave this fossil-fuelled world and enter a world where oil no longer causes cancer, asthma, global warming and warfare.

The challenge is not technical: hybrid vehicles already exist, and plug-in hybrids are just one step away from mass production. (See Solution 82). The challenge is political, to shake people out of the cancer-causing comforts that oil has given us, realize that a world without oil will be far more healthy, peaceful, sustainable and civilized, and make it happen.