



Wellness Letter

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Open the Window—No, Close It

In many ways American motorists are exposed to less pollution than a generation or two ago. Back then cars ran dirtier—releasing more pollutants, including lead from gasoline. Few cars were air-conditioned, so on hot smoggy days people drove with windows wide open, letting in all the car emissions. And far more Americans were smoking then, often in their cars and with the kids in the back seat. Even 40 or 50 years later it's hard to forget that mix of smoke and fumes in the family car.

But today there's more traffic, including more trucks, and people spend longer hours driving to work and during leisure time. So in-car exposure to pollution remains a problem for millions of Americans. Most don't even realize that some pollutants are at higher levels inside their cars than outside on the road.

Unwanted passengers

Pollutant levels are higher inside because cars take in emissions from surrounding vehicles and recirculate them. Researchers have found that as much as half of the pollutants inside test cars come from the vehicles immediately ahead, especially if those vehicles are highly polluting, such as heavy-duty diesel trucks. The California Air Resources Board and the South Coast Air Quality Management District have reported that levels of some pollutants and toxic compounds can be as much as 10 times higher inside vehicles than at fixed monitoring stations along the road. Levels depended on the amount of traffic, the type of vehicles driving ahead of the test cars, and other factors.

In 2000 the International Center for Technology Assessment reviewed 23 studies and concluded that in-car pollution levels frequently reach unhealthy levels. The pollutants, from gasoline and especially diesel exhaust, include volatile organic compounds such as benzene and formaldehyde (carcinogens), carbon monoxide (which interferes with the blood's ability to transport oxygen), nitrogen oxides, and particulate matter (linked to increased death rates over long periods of exposure). Some of these are especially hazardous for people with respiratory problems or heart disease. But even in healthy people these compounds can affect heart rate and other cardiovascular functions, as well as increase markers for inflammation and blood clotting. Particulate matter can cause congestion, sinus and throat irritation, and chest discomfort; it can aggravate asthma. Some pollutants, such as benzene and toluene, can also cause drowsiness, dizziness, nausea, and headaches in sensitive people.

Volatile organic compounds can also come from carpets, vinyl, leather, foam cushions, and sealants inside a car. This is particularly true in new cars and in hot weather. Deodorizers, cleaning agents, and conditioning products also pollute indoor air in cars, as they do in homes.

Studies have found that opening or closing a vehicle's windows and vents can reduce some pollutants while increasing others. Using the air conditioner (set to use recirculated air, not outdoor air) can filter out most particulate matter, but keeps in volatile organic compounds, especially if vapors come in during refueling or if the engine is malfunctioning.

To reduce in-car pollution

- Don't smoke in your car (or anywhere else), and don't travel with people who smoke.
- Keep a safe distance from vehicles ahead of you, especially diesel trucks or obviously polluting cars. Or pull over to let such vehicles get far ahead.

- Properly maintain your car. A poorly maintained car is more likely to pollute the air inside it, as well as the air around it.
- If you have the option, choose less congested roads, even if they take a little longer. Or try to avoid rush hour. The more traffic, the more pollutants.
- Drive in the carpool lane, when possible. Carpool lanes tend to have less traffic, so there's less in-car air pollution.
- Take public transportation such as a subway, if it's available. Not only will you avoid pollutants, you'll also help reduce traffic congestion and emissions. Buses, however, can be very polluting—and the air inside them is often quite polluted.
- Don't count on in-car air filtration systems. Some car dealers offer charcoal (carbon) filters on select new models. These may help reduce allergy symptoms from pollens, for instance, but they are not effective in removing fine particulates, volatile organic compounds, carbon monoxide, or other pollutants.
- Beware of "new car smell." Many people like that smell of new vinyl and carpeting, but it's a sign of a problem. For the first two months, keep your windows open as much as possible.
- Don't use air fresheners or deodorizers in your car.

Bottom line: There's only so much individuals can do about outdoor and in-car air pollution. The government should ensure the manufacture of cleaner, fuel-efficient cars, as well as cleaner diesel fuel and diesel technologies.

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