

## **Your Car May Be Making You Sick**

By: Bob Lacivita (the *Family Handyman*, April 2002)

Your car may be making you sick. And it's a big problem. According to AllerDays—an information service that provides information on allergies and their causes—Americans spend an estimated a half-billion dollars each year on allergy treatments alone. In addition, allergy sufferers lose three million days of work and two million days of school each year.

To help alleviate these debilitating periods of discomfort, allergy sufferers often take fervent steps to clean their homes. They want a safe haven from the air borne invaders floating, or at times seem to be chasing them, in the air. But what about the place many of us spend several each day—our cars?

Our vehicles offer numerous damp, dark moist areas where mold and mildew not only survives, but flourishes. And that's just the beginning. Every car is a rolling warehouse of dust (dust mites), spoiled food, human and animal dander (flakes of dead skin), chemicals and fumes released from fabrics and other manmade materials.

Many allergic flare-ups also result from outdoor pollutants such as road dirt, construction dust, dead insects, brake dust and engine exhaust gases. However, recent EPA studies show our vehicles release indoor pollutants from foam padding, vinyl, plastics, carpeting and carpet padding. These culprits are known to bring on allergic and asthmatic attacks.

### **Where to look for these culprits:**

- Under the hood. Dirt, dust and grime love to accumulate on the top of the engine. Leaking engine oil and moisture from the cooling and air-conditioning systems attract and hold dust, mold and other allergens.
- The air intake near the cowl — the screened area usually right under the windshield wipers — and door frame weather stripping for dead leaves, trapped dirt and other debris that hold moisture cultivating mold and mildew growth.

- The passengers' compartment of any vehicle. Pet dander, spoiled food particles and fumes released from foam padding, vinyl, plastics, carpeting and carpet padding are abundant in every vehicle.
- Moisture making its way past deteriorated weather stripping, rusted through body panels, or a leaky windshield will find its way under the carpet. Mold and mildew will thrive in the wet jute (cloth) or foam rubber of carpet padding.
- A clogged air—conditioning evaporator drain hole filled with debris — or something so simple as parking on an incline — allows condensation and rain water to accumulate in the evaporator case, or worse, back—up into the passengers' area. Moisture left in the dark cool confines of an air—conditioning is the perfect condition for fungus and bacteria growth. Yuck!
- The trunk. Again, water from a leaky weather strip, a poor sealing gasket around a tail lamp, or a rusted body panel will allow moisture to build—up in the dark damp expanses of the trunk. Check the spare tire well. Often water will drain into this cavity, and you won't know it until you have flat tire — and not only is this bad for your health — it can cause the jack assembly to rust, leaving you stranded by the side of the road.

Most allergy sufferers automatically turn on the air conditioning when entering a car believing air conditioned air is cleaner. In reality, outside air is drawn through the air intake picking up additional irritants. To worsen matters, we further reduce ventilation by placing the air conditioner in re—circulation mode, trapping the contaminated air inside the car without it ever being recycled.

### **So what do you do to fight back?**

- Never let anyone smoke inside your car. Even if an allergy sufferer isn't in the car, these pollutants become trapped in the seats, trim, and carpets and are released over time.
- Don't eat in your car. Even tiny crumbs or a few drops of soda turn moldy.
- Many auto manufacturers and after market companies (Clean Indoor Air) manufacture specially designed A/C duct and passenger compartment filters.

These filters trap molecules that have evaporated from volatile sources by means of adsorption. These filters deep clean the air, rather than just straining out air borne particles. Chemist Richard Kunz and Consumers Union state that Ozone air cleaners have no effect on dust and other particles.

- Wash the exterior of the car. Scrub the door—jamb and weather stripping of dirt and dust. Pay close attention to the rubber weather strips around the door frames, trunk and door glass for tears, splits or leaks. Deteriorated rubber can trap and hold moisture. Clean and remove dust, dirt and accumulated gunk from water run—off or drip channels above the doors.
- Once a year have your car "housecleaned." Many car washes and detailing shops offer this service. They'll clean the entire engine compartment, inner fenders, radiator, battery and cowl area.
- Regularly wipe the entire interior of dust with a clean damp rag. Be certain to clean all the interior trim nooks and crannies where dust loves to hide.
- Although vinyl and plastic hold down the growth of dust mites, vapors — called "off—gassing" — are released from these materials. A major source of indoor pollution, these vapors themselves can be a source of allergens, and cover the inside glass with an oily coating. Wash all the vinyl and plastic trim with a sudsy solution of two tablespoons of a mild, perfume—free dishwashing detergent and two quarts of warm water. Dry with a clean cloth. Clean the glass with a mixture of 1/2—cup ammonia and one gallon of cold water. Leave the windows down until the interior dries out. If the haze reappears, repeat the process.
- Vacuum the entire interior with a high—efficiency particulate air (HEPA) vacuum cleaner. Make sure you vacuum between and especially under the seats. Remove the floor mats—vinyl floor mats are better than carpeted as they don't trap dust or dirt — and pound out any dirt before cleaning. A hot water power spray extraction carpet and upholstery cleaner can be used to shampoo the seats, carpets and carpeted floor mats. Many companies (Bissell) make solvents, when added to the hot water of the cleaner, claim to eliminate 90% of household allergens from dust mites, pollen and pet dander from the fabric.

- Clean out the trunk! Throw out old newspapers, cardboard boxes (many auto manufacture's use cardboard as finish trim in trunks), clothes, blankets, towels, sneakers, anything from inside the trunk capable of trapping and absorbing moisture. Clean the trunk carpet and wash the inside with a strong disinfectant.
- Don't be tempted to use air fresheners or deodorizers to give your car a "clean" smell. These products contain formaldehyde — and only confuse our noses by masking one pollutant with another.

Mold or mildew growing inside the air conditioning housing will create a stale musty odor. Take it to the dealer. They have the proper tools and equipment to safely flush the housing using a powerful two—part chemical mix sprayed under pressure to wash out and disinfect the evaporator case. Also, have your mechanic check factory service bulletins. Some automakers have an "after—run" blower motor relay add—on kit. This allows the A/C fan to run for a few minutes after the car is shut off, helping to dry out moisture in the air conditioner housing.

If you hear what sounds like water sloshing around inside your car it's a good bet water is trapped probably inside the spare tire well, inside a door panel or outer body panel. Many manufactures actually design interior panels to allow water to pass through and drain out of the car through strategically placed conduits and dip holes. Unfortunately, these holes can become plugged. Ask your mechanic to clear these exit points of debris using compressed air.

Beware of some commercial cleaners and laundry detergents. Many contain perfumes and dyes. These fragrances are irritants to many allergy sufferers and can cause an asthmatic attack. Instead, try this homemade recipe: 1/4 cup baking soda, 1/2 cup white vinegar, one gallon warm water mixed with one cup ammonia to remove mold and mildew. Borax (washing soda) and water are a very effective disinfectant. Vinegar, borax, and water make a fine all purpose cleaner. The old stand—by, warm soapy water is a great cleaner. However, soap—based products — if not completely rinsed clean — attract roaches and insects, which may trigger allergy attacks in many people. Always works in well ventilated areas (not in an enclosed garage), rinse with clean water, remove excess moisture with a clean towel, and then let dry completely.

Feel (and sniff) the carpets for dampness. Bacteria thriving in a nice damp dark corner of your car will cause a musty odor. In this case, it's best to take your car to your dealer or have a professional carpet—cleaning company clean the car's interior. In addition, the seats and carpet and padding must be removed, the floor pan washed with a strong disinfectant, and the old carpet pad will have to be replaced. The door trim panels and headliner may also have to be cleaned.

### **Other preventive steps**

Leave the dirt you accumulate at work, at work. Many occupations such as animal workers, bakers, granary workers, food processors, hairdressers and cosmetologists, welders, painters, chemical workers, woodworkers, heating ventilation and air conditioner workers and others, work where they are exposed daily to pollutants and other toxins. If not themselves, spouses or children can be affected by these irritants if carried into your car and you don't change out of your work clothes before driving home.

If you're unsure whether you have a problem inside your car, ask a friend or a family member who is not a regular passenger in your vehicle to sniff your car for any unusual odors. Unfortunately, many of us who suffer from allergies have been exposed to these irritants for such a prolonged period of time that now we have a decreased sense of smell due to bacterial infections and sinuses inflammation.

When it's time for your next new car, check if the vehicle manufacturer equips their cars with an air filtration system able to separate and trap allergens. Vinyl seats are easily washed and will not trap allergenic particles. Choose a car with the least amount of interior decorative trim and ridges. Smoother surfaces are easier to clean and are less likely to trap dust and dirt.

Finally, try and determine when your allergic symptoms appear most: At home, at work, while driving in your car, on mass transit, rainy days, dry days, as the seasons change? Many allergy sufferers are affected by what is known as "sick building syndrome" (irritants and infectious organisms that build up and circulate through the heating or cooling ventilation systems designed for newer well—insulated energy efficient homes and buildings where up to 80% of the air — the same as a car — is recycled to keep energy costs down). If your allergic symptoms tend to be more frequent

while in your car, thoroughly inspect your vehicle. You have the ability to control the air quality in your car and enjoy your daily commute.