2 you and your vehicle

in this chapter

- Adjust for safety
- Hand controls
- Foot pedals
- Control panel
- Pre-trip check
- Periodic check
- Driving and the environment

crash fact

Each year on average, just over 70 per cent of people injured in collisions report a soft tissue injury such as whiplash. Many also had other injuries. A study of seven Canadian provinces found that 53 per cent of the drivers observed have head restraints that are so inadequately adjusted that they would not protect the occupant from injury in a rear-end collision.

Source: MSN: Autos: Head Restraints: Saving Your Neck

In **chapter 1, you in the driver's seat**, you learned how important it is to make good choices when driving. It's also important to learn how your vehicle operates. Mastering the controls is one of the first steps to safe driving.

Adjust for safety

To drive safely, you need to be able to comfortably reach your vehicle's controls and see clearly around you. Before you start the engine, always adjust your seat, head restraint and mirrors. Never adjust your seat or the steering wheel while the vehicle is moving.

Seat

Your seat should be upright and in a position where you can:

- push the small of your back into the seat
- sit upright, never with a reclined seat
- with your right foot, reach the floor behind the brake pedal and still have a slight bend in your leg
- turn the steering wheel and keep your arms slightly bent
- reach all the controls
- keep your left foot comfortably on the space to the left of the brake pedal or clutch pedal.

You should also be at least 25 cm (10 in) away from the driver's airbag.

Head restraints

Head restraints can help prevent soft tissue injuries such as whiplash. Whiplash is an injury to the neck, head and or shoulders after being subjected to a snapping motion. Adjust your head restraint so the top is at least level with the top of your head. Position your head restraint as close to the back of your head as possible. It may be necessary to adjust your seat back position to do this. Closer head restraints can be twice as effective in preventing injuries than if they're set too far back.

Make sure your head restraint is adjusted to the height that is right for you.

If you are in a crash and your head restraint is not properly adjusted, this can be the result.

Seatbelts

There are two good reasons to wear your seatbelt:

- Wearing your seatbelt significantly reduces your chance of serious injury or death in a crash.
- It's the law in B.C. — you can be fined for not wearing your seatbelt.

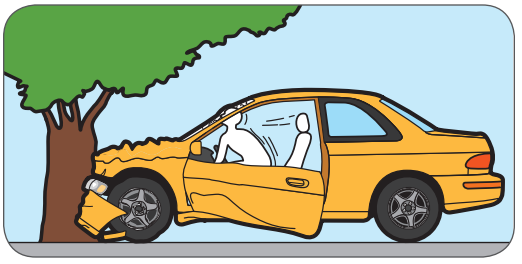
Adjust your seatbelt so that it fits snugly over your chest and low over your hips. Do not wear the shoulder strap under your arm or behind your back or with a reclined seat because putting this belt over the wrong part of the body could cause serious internal injuries if you are in a collision. Pregnant women should make sure the lap belt is snug and below the baby.

It's also your responsibility as a driver to make sure that all passengers are properly secured with seatbelts or child restraint systems.

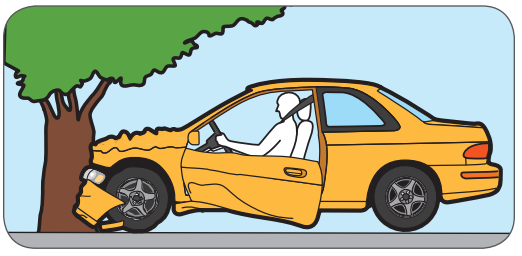
Even at low speeds, a crash forces a pressure of hundreds of kilograms against your body. If you are wearing a seatbelt, especially one with a lap belt and a shoulder strap, you're much less likely to be injured, knocked unconscious or ejected. Even if your vehicle catches fire or ends up in water, you have a better chance of getting out quickly if you stay conscious.

If your vehicle rolls over or if you're ejected, it's likely you'll be seriously injured or killed. Wearing your seatbelt can help prevent you from being ejected from the vehicle. Wearing your seatbelt also helps keep you in control of your vehicle by supporting you behind the steering wheel.

When your car stops suddenly, your body will continue to move forward at the same speed the car was travelling. Without a seatbelt, your body will not stop until you hit the dashboard, windshield or something outside of the car.



The lap belt holds you down, and the shoulder belt holds you back. Wearing a seatbelt causes you to stop when your vehicle stops.



Buckle up even on short trips, since most injuries and deaths occur close to home.

Safety restraints for children

crash fact

A correctly used child safety seat reduces the risk of fatality by 71 per cent and the risk of serious injury by 67 per cent. It's your responsibility as the driver to make sure that children are seated in the appropriate child safety seat and you may be ticketed and fined for failing to do so.

Every year in B.C., an average of 1,300 children under age nine are injured and three are killed in motor vehicle crashes. Every time a child travels as a passenger in a motor vehicle, they are at risk of being involved in a collision.

The correct use of a Canadian Motor Vehicle Safety Standards (CMVSS) — approved child safety seat will ensure a child is properly restrained and significantly reduce their risk of serious injury or death in the event of a crash. It's your responsibility as the driver to make sure that all your passengers are properly secured with seatbelts or child-restraint systems.

stage 1 — rear-facing

- From birth until **at least** one year old and 9 kg (20 lbs).
- Place in back seat.
- Position centre-rear.
- Rear-facing as long as possible.
- NOT on front seat with an active airbag.

stage 2 — forward-facing with tether

- Must be over one year old and over 9 kg (20 lbs).
- Up to **at least** 18 kg (40 lbs).
- Place in back seat.
- May remain rear-facing if allowed by manufacturer's weight limits.
- Always use with a tether strap.

stage 3 — booster seat

- Booster seats ensure proper seatbelt fit. They raise the child to correctly position the adult seatbelt across the bony structures of the chest and pelvis. It's safest if a child remains in a booster seat until they reach 145 cm (4'9").
- Must be over 18 kg (40 lbs).
- Required until **at least** nine years old **or** 145 cm (4'9"), whichever comes first.
- Place in back seat.
- Booster is used with a lap/shoulder seatbelt.
- Position lap belt low over hip bones and shoulder belt over shoulder and in front of chest.
- Do not use a booster seat with only a lap belt.

stage 4 — seatbelt only

- It's recommended you keep children in the back seat until 12 years of age.
- The lap belt should fit low over the pelvic bones.
- Shoulder belt should fit over the shoulder and snug across the chest.
- Never put the shoulder belt under the arm or behind the back. This could cause serious injury in the event of a crash.
- Keep the seat in an upright position, not reclined. Seatbelts were designed for upright seating. A deeply reclined seat can cause a passenger to slide out from under the seatbelt in the event of a crash.

Note: It's okay to exceed the legal requirements if in accordance with the manufacturers' maximum height/weight specifications for a seat.

For more information on child restraints call the Child Seat Information line toll-free at 1-877-247-5551 or online at www.childseatinfo.ca.

warning!

Do not place rear-facing infant or child restraint systems in a passenger seat equipped with an active frontal airbag. Children in these seats could be killed or seriously injured if the airbag inflates.

Airbags

All new vehicles are equipped with airbags. They have been shown to reduce injuries and fatalities in collisions. Airbags work by inflating and then deflating to reduce the shock of a collision. And they do this very quickly — in less than a blink of an eye, an airbag inflates, and then begins to deflate again.

Airbags can be mounted in front of and beside the driver and front seat passenger. If your vehicle is equipped with airbags, you should position your seat so you're at least 25 cm (10 in) from the steering wheel.

This allows room for the airbag to inflate and protects you from further injury.

Consult your owner's manual for safety precautions.

In a few instances, you may need to deactivate an airbag. You must contact Transport Canada to do this. For more information, call Transport Canada at 1-800-333-0371.

Airbags do not replace seatbelts. Always use your seatbelt even if your vehicle is equipped with airbags. Check your owner's manual for instructions about the airbags in your vehicle.

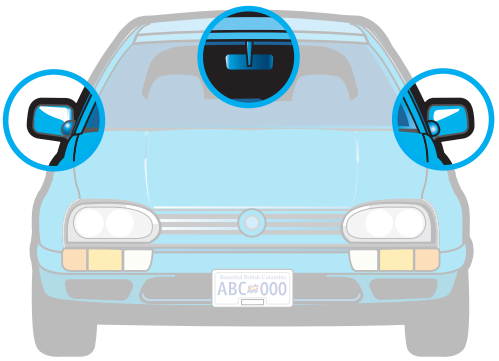
warning!

Some cars have convex mirrors. They provide a wider field of view but make things look smaller and farther away than they actually are. Check to see how accurate your vehicle's mirrors are.

Mirrors

Make sure you can see all around your vehicle when driving:

- Adjust the rear-view mirror so you can see as much as possible behind you.
- Adjust your side-view mirrors to reduce the blind spots as much as possible. (Blind spots are the areas beside the vehicle that you cannot see in the mirrors.) Usually this means that only a slight part of the side of your vehicle is visible. See **chapter 5, see-think-do**, for more information about blind spots.



Most cars have three mirrors to help you see what's going on around your vehicle. Some cars do not have an outside mirror on the passenger side.

Hand controls

Now that your vehicle is adjusted to fit you, think about all the controls that your hands operate. Get to know how each operates before you try to drive. Even when you are an experienced driver, you will need to get used to these controls each time you drive a different vehicle.

Make sure you know how to operate all the controls in each vehicle you drive. You may need to check the owner's manual.

Steering wheel

The steering wheel controls the direction of the vehicle by turning the front wheels. If your steering wheel is adjustable, make sure it's in the right position for you before you begin to drive.

Ignition switch

Get to know all the positions of the ignition switch in your vehicle. They may include:

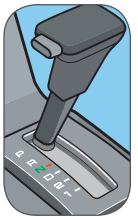
- **Lock** — steering is locked and ignition is off
- **Off** — ignition is off but the steering is not locked
- **Acc** — ignition is off but some electrical components may be used (for example, radio)
- **On** — ignition is on
- **Start** — turn to this position to start the engine, then release switch so that it returns to the On position.

warning!

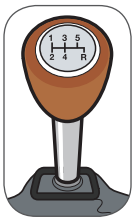
Don't turn your vehicle's ignition switch to the "lock" position while it is still in motion. This can cause the steering to lock if you try to turn the steering wheel and you could lose control.

Gearshift lever

The gearshift lever lets you control the vehicle's transmission. There are two types of transmissions: automatic and standard. Both control the connection between the engine and the wheels.



An automatic transmission automatically chooses the most efficient gear. In a vehicle with a standard transmission, the driver chooses the best gear. Using the best gear keeps the engine from stalling and allows it to operate as efficiently as possible for fuel economy.

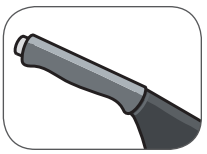


A standard transmission is always used with a clutch. The gearshift is mounted on the floor or on the steering column. Standard transmissions are built in three-, four-, five- or six-speed models. Check your owner's manual when learning to use your vehicle's gearshift.

Comparing automatic and standard transmissions

Gear	Automatic*	Standard*
P – Park	Use when starting the vehicle and when parked. Locks the transmission.	
R – Reverse	Use when backing up. Turns on reverse (white) lights.	Use when backing up. Turns on reverse (white) lights.
N – Neutral	If vehicle stalls while moving, use to restart the engine.	Use when vehicle is stopped or when starting the engine.
D – Drive	Use for normal forward driving.	
1 – First gear	Use when pulling heavy loads or when going up or down very steep hills.	The lowest gear. Use it from a stopped position to speeds of 10 – 15 km/h. Use when pulling heavy loads or when going up or down very steep hills.
2 – Second gear	Use when pulling heavy loads or when going up or down very steep hills.	Use from speeds of 15 – 30 km/h, for hills and when driving on snow or ice.
3 – Third gear		Use for speeds between 30 – 60 km/h.
4 – Fourth gear		Use for highway speeds on 4-speed models.
5 – Fifth gear		Use for highway cruising on 5-speed models.
6 – Sixth gear		Use for highway cruising on 6-speed models.
O – Overdrive	Use at speeds of over 40 km/h to save fuel.	

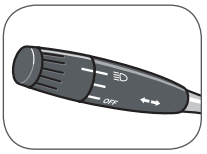
* The speed guidelines are approximate and will depend on your vehicle.



Parking brake

This brake keeps the vehicle from moving when it's parked. Depending on your vehicle, you may have a foot or hand-operated brake. Make sure you fully apply the parking brake when parking and fully release it before moving.

The parking brake is sometimes called an emergency brake because it can be used to slow the vehicle if the foot brake fails. See **chapter 8, emergency strategies**, for more information on these situations.



Turn signal lever

This lever turns the left- and right-turn signals on and off. You use your turn signals to communicate to other road users that you want to change direction or position.

driving tip

Drive with the low beam headlights on during the day if your car does not have automatic daytime running lights.

driving tip

Daytime running lights do not activate the tail lights. Do not use them for nighttime driving or for low visibility conditions.

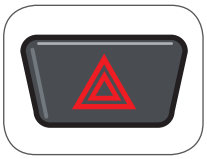
Lights

The first position of the light switch controls the tail lights, parking lights and side-marker lights, as well as the dashboard and licence plate lights. The second position controls the headlights.

Your vehicle will have another switch position or separate switch that controls the two brightness settings of the headlights — low beam and high beam. Use the high beam setting only on unlit roads at night when there aren't any vehicles approaching or in front of you.

Use the parking lights when you are stopped and want to make sure your vehicle is visible. Don't use these lights when your vehicle is moving — put the headlights on instead.

Vehicles made after 1991 have automatic daytime running lights (DRL), a safety feature that makes your vehicle easier for other drivers to see during daylight hours. Daytime running lights do not activate the tail lights. Do not use them for nighttime driving or for low visibility conditions. Use the low or high beam lights.



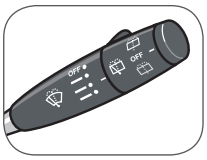
Hazard light switch

The hazard light switch activates both turn signals at the same time. These flashing lights tell other road users to be careful near your vehicle because you may have stopped for an emergency.

Cruise control

Cruise control lets you pre-set a speed that will stay the same. Use it only under ideal highway driving conditions. Never use the cruise control feature:

- on wet, slippery, snowy or icy surfaces
- in urban traffic
- when you are tired
- on winding roads.



Wipers and washer control

Practise finding the different wiper speed settings. Make sure you know how to turn on the windshield washer. The wipers should always be in top working condition to give you a clear view during rainy and snowy weather conditions.

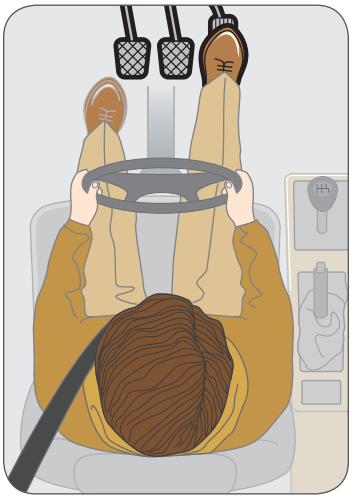
Horn

Your horn is an important way to communicate warnings to other road users. Be sure to use it wisely.

Heater, defroster and air conditioning controls

The panel of levers that control the defroster, incoming air and air conditioning are located within easy reach of the driver. Check your owner's manual to see how they work. Practise with them so you can easily turn on the defroster without looking at the controls.

Foot pedals

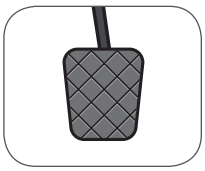


You will operate two or three controls with your feet, depending on whether your vehicle has an automatic or a standard transmission.

Use your right foot to operate the brake and gas pedals, and your left foot to operate the clutch. Practise doing this until you can find each pedal easily. This will help you react quickly in an emergency.

Accelerator

The accelerator controls the amount of fuel going to the engine. The more fuel the engine gets, the faster the vehicle will go. You need to practise putting the right amount of pressure on the pedal so you keep control over the speed and acceleration of your vehicle. Always operate the accelerator with your right foot.



Brake

The brake pedal is located to the left of the accelerator and is used to slow down and stop the vehicle. Always use your right foot to operate the brake. You need to learn to apply the right amount of pressure on the brake so that you can stop the vehicle smoothly and precisely.

Be familiar with the braking system of your vehicle. Power brakes need less pressure than standard brakes.

warning!

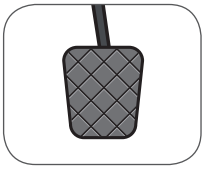
Always wear shoes when driving so you have good contact with the brake and the accelerator. Avoid driving in shoes that have high heels or platform soles.

Anti-lock brakes

Most vehicles have an anti-lock braking system (ABS). Look for an indicator light on the dash. This electronic system keeps the wheels from locking.

Vehicles with anti-lock braking systems also have regular braking systems. The anti-lock braking system is activated only when you press heavily on the brake pedal — for example, during an emergency stop. Read your owner's manual for more information about your vehicle's anti-lock braking system and how to use it properly. Also see **chapter 8, emergency strategies**, for more information on ABS braking.

If your ABS indicator light stays on after you start the vehicle, the system may be malfunctioning. Take the vehicle in for repair.



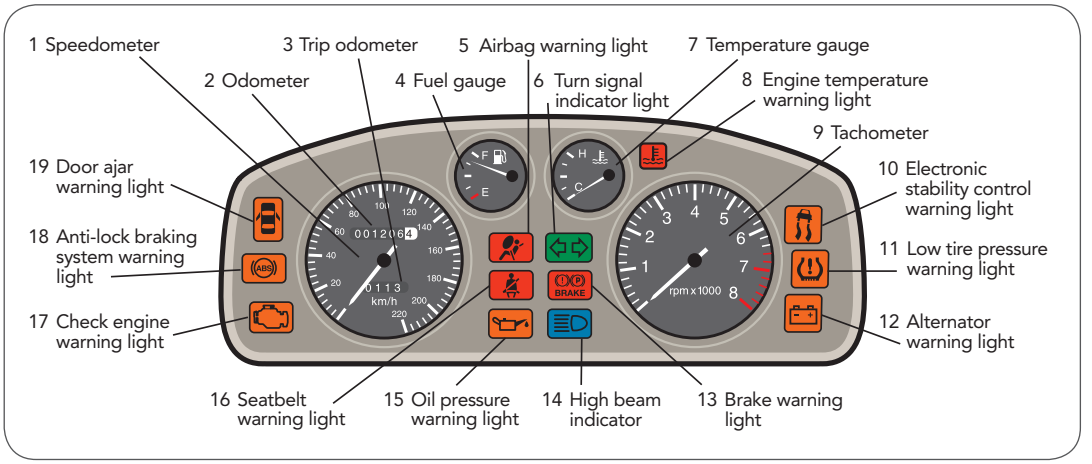
Clutch

In a vehicle with a standard transmission, pressing the clutch pedal disconnects the engine from the transmission so you can shift gears. You use your left foot to press the pedal when changing gears. Do not keep the clutch pedal pressed part-way down ("ride the clutch") when the vehicle is moving because this causes unnecessary wear.

When you begin moving after a stop, release the clutch slowly and smoothly to avoid stalling the car. When you stop, use the brake first and then depress the clutch just before you stop. This will avoid coasting with the clutch in.

Control panel

When you sit in the driver's seat, you'll see the control panel directly in front of you. Match the numbers in the chart to the numbers in the illustration to find out what each item does. Remember that control panels are different in each vehicle.

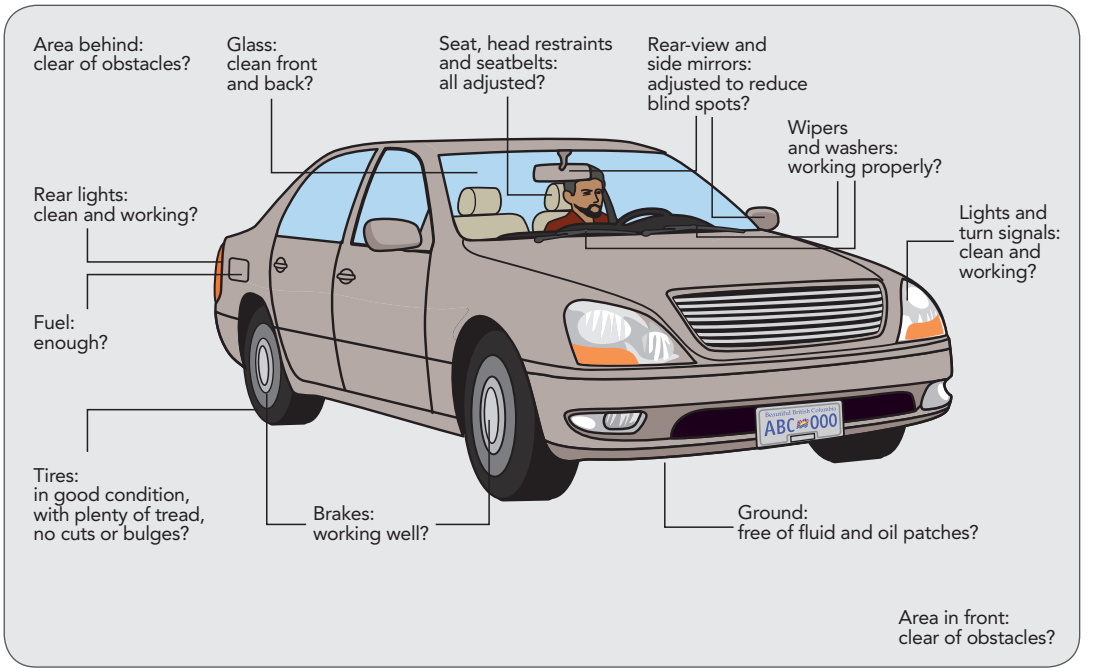


The control panel

Number	Indicator/Gauge	Function
1	Speedometer	Shows the speed the vehicle is travelling.
2	Odometer	Displays the distance that the vehicle has travelled since manufacture.
3	Trip odometer	This can be set when you start on a trip to show you how far you have travelled.
4	Fuel gauge	Indicates the amount of fuel in the fuel tank.
5	Airbag warning light	Indicates that the vehicle is equipped with air bags. If it comes on while driving, there may be a fault in the air bag system. Have it checked by a mechanic.
6	Turn signal indicator light	Shows whether a turn signal is on. Both will flash when the hazard lights are on.
7	Temperature gauge	Shows the temperature of the engine coolant and whether the engine is overheating.
8	Engine temperature warning light	Shows the temperature of the engine coolant and whether the engine is overheating.
9	Tachometer	Displays the engine speed in revolutions per minute (r.p.m.)
10	Electronic stability control warning light	Indicates the vehicle is equipped with an electronic stability control system.
11	Low tire pressure warning light	Comes on if one or more tires have low air pressure.
12	Alternator warning light	Shows whether the battery is charging.
13	Brake warning light	Reminds you to release the parking brake before moving. If the light comes on while using the foot brake, it means the brake system is not working properly. Have it checked by a mechanic.
14	High beam indicator	Usually a blue light that indicates the high beam headlights are on.
15	Oil pressure warning light	Indicates the oil pressure in the engine. It does not tell you how much oil is in the engine.
16	Seatbelt warning light	Reminds you to fasten your seatbelt.
17	Check engine warning light	Indicates there is a possible fault in the engine. Have it checked by a mechanic.
18	Anti-lock braking system warning light	Indicates the vehicle is equipped with anti-lock brakes. If the light stays on after starting the car, there may be a fault in the anti-lock braking system. Have it checked by a mechanic.
19	Door ajar warning light	Indicates a door is not properly closed.

Pre-trip check

Even if you're in a hurry, you should always check your vehicle to make sure it's safe to drive. The pre-trip check doesn't take long, and will soon become a habit. It will help prevent a vehicle breakdown.



Use this illustration as a guide when you do a pre-trip check.

driving tip

Just as you check the safety of your vehicle before starting out, check your planning:

- Do you know your route? Use a map if necessary.
- Do you have enough time? It pays to allow a few extra minutes.

Periodic check

Your pre-trip check will help you feel confident that your vehicle is safe as you set out for your destination. However, to ensure good maintenance, you need to do a more thorough check every few weeks. How often you do the periodic check will depend on how much you drive.

Checklist

Use the following checklist to keep your vehicle in good running order:

- ❑ Is the engine oil at the proper level? Is it clean?
- ❑ Is the radiator coolant topped up?
- ❑ Do you have enough washer fluid?
- ❑ Is the brake fluid level okay?
- ❑ Is the power steering fluid level okay? Are the other fluid levels okay?

- ❑ Is the parking brake properly adjusted?
- ❑ Are the engine hoses cracked or leaking?
- ❑ Are the engine belts in good condition?
- ❑ Are all the lights working? (Remember to check both the brake and backup lights too.)
- ❑ Are the wipers in good condition?
- ❑ Do you have enough fuel?
- ❑ Are the tires properly inflated?
- ❑ Are the tires in good condition?

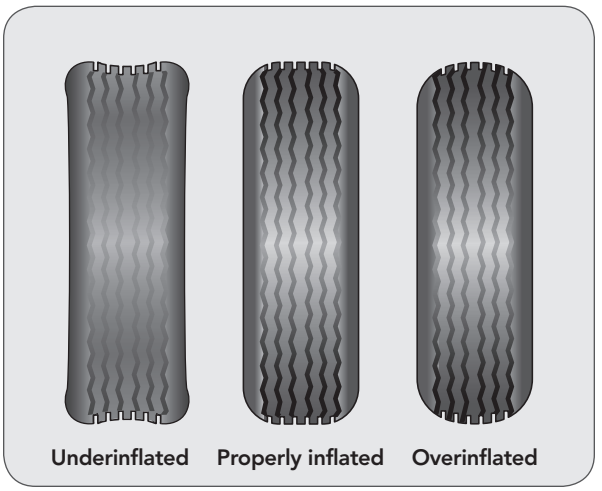
Tire tips

Tires are key pieces of safety equipment, so remember to:

- Keep your tires inflated to the recommended pressure level.
- Check that the tread isn't too worn.
- Replace any tires that show bumps, bulges, cuts, cracks or exposed belts.
- Use only tires that match the specifications for your vehicle.
- Make sure all four tires are similar so they work together.
- Keep the spare tire at the required air pressure. A space-saver spare tire has the correct air pressure marked on its side. When you use this type of spare tire, never drive faster than 80 km/h.
- Rotate tires regularly for even wear.
- Avoid sudden starts and stops — they reduce the life of your tires.

driving tip

Check tire inflation when the tires are cold. Refer to the owner's manual or the sticker on the driver's door for the proper inflation level. Do not use the numbers on the side of the tire.



Properly inflated tires help keep you safe by increasing your vehicle's traction.

Prepare for winter driving

In B.C., we need to make sure our vehicles are prepared for winter driving conditions:

- Make sure your car's battery is in good condition.
- Check the exhaust system. Any leaks can be extremely dangerous because carbon monoxide can collect in cars when the windows and vents are closed.
- Replace oil and other fluids with winter-grade products.
- Install four snow tires. This will improve vehicle handling and control when you're driving through slippery conditions.

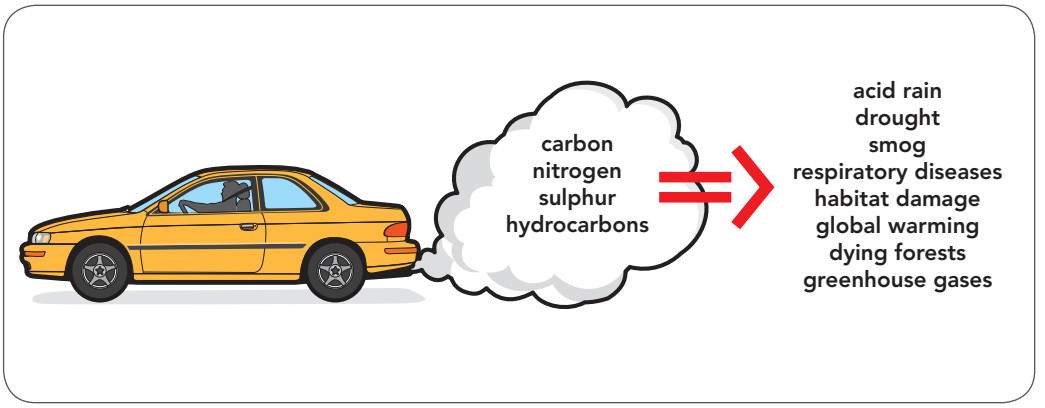
Using chains on icy roads is a good idea. Make sure you are familiar with how to mount chains on tires — practise putting them on your vehicle before you need to use them.

In extremely bad conditions, it may be safer to park your vehicle than to continue driving.

Driving and the environment

Cars and trucks use over half the world's yearly oil supply. We know there is a limited supply of oil. *Automobiles and light-duty trucks emit almost two-thirds of the common air pollutants in the Lower Fraser Valley (Greater Vancouver Regional District, 1998 Emissions Inventory).*

Most air-conditioned vehicles manufactured before 1995 also contain chloroflorocarbons (CFCs) which are a major cause of the depletion of the ozone layer of the earth's atmosphere.



One out of every two Canadians owns a car or light truck and drives about 19,800 kilometres per year, according to Environment Canada statistics. Exhaust emissions from cars and trucks are one of the leading causes of climate change, urban smog and acid rain. On average, each vehicle releases over four metric tonnes of air pollutants per year.

Here are some things you can do to help protect the environment — you'll save money, too:

Use other forms of transportation

- Walk, cycle or take public transit whenever possible.
- Arrange carpools. Instead of driving children to school, walk or cycle with them or enroll them in a walking school bus.

Reduce fuel consumption

Driving safely reduces fuel consumption and saves money, too:

- Be a smooth operator — avoid "jackrabbit" starting and stopping, drive at a steady speed.
- Slow down and save — keep to posted speeds or below.
- Plan your route — combine several errands into one trip, and plan the route so that you go to the destination that is farthest away first — this will allow your vehicle to warm up to normal operating temperature which helps reduce fuel consumption.
- Avoid idling — turn the motor off if stopped for more than 60 seconds, such as when stopped at the side of the road.
- Check tire pressure at least monthly — under-inflated tires increase fuel consumption.
- Avoid excess weight — remove any items in the car that you don't need, such as things in the trunk.
- Roll down your windows — refrain from using air conditioning under 50 km/h. Use your vehicle's flow-through ventilation rather than air conditioning on the highway.
- Remove roof racks and roof boxes to reduce drag.

Reduce emissions

Choose a fuel-efficient vehicle.

- Keep your vehicle tuned up to reduce emissions.
- Change the oil regularly and use the right grade. Have any oil leaks fixed.
- Keep the air filter clean.
- Make sure your air conditioning system doesn't have any leaks.

driving tip

Good safe-driving habits can reduce your fuel consumption by as much as 30 per cent, save wear and tear on your car, and reduce emissions.
For more smart ways to be fuel-efficient, visit the Natural Resources Canada Office of Energy Efficiency website at www.oee.nrcan.gc.ca or call 1-800-387-2000.

Do not pour motor oil, gas, antifreeze or battery acid down drains. Take these fluids to recycling locations.