



CONASET
Ministerio de
Transportes y
Telecomunicaciones

Gobierno de Chile

NEW DRIVER'S HANDBOOK



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Presentation

This document, written in an easy to understand language and designed with practical aspects, contains basic information that new driver's license applicants need to know.

This manual is a comprehensive guide of current traffic regulations in Chile and helps future drivers to internalize safe and responsible traffic behaviors.

It is not enough to memorize questions and answers, now the applicant has to study this book and understand, integrate and handle general and specific knowledge to get a driver's license.

To not exceed speed limits, drink and drive, to always fasten the seatbelt in every seat of the vehicle and to transport our children in child restraint systems, are some of the basic aspects that must be incorporated into our road culture. It is imperative that drivers read this book, understand its content and have it around to look over and keep the knowledge updated.

To learn to share the roads, to have a good road coexistence and be always aware of the road conditions, are key factors to achieve what that everyone wants: to move responsibly to arrive safely at our destination.

1. THE PROBLEM WITH TRAFFIC ACCIDENTS

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THE PROBLEM WITH TRAFFIC ACCIDENTS

More than 3000 people die each day around the world as a result of traffic accidents. Traffic accidents represent the primary cause of death for young people. Due to this, international organizations, like the World Health Organization (WHO), classify the situation of traffic accidents as a worldwide public health priority.

In Chile, as in the rest of the world, traffic accidents represent one of the main causes of death, especially among people between 15 and 29 years old, for whom accidents represent the second cause of death after suicide.

The general population is not aware of the importance of the problem of traffic accidents around the world. Nor is it possible to quantify the number of people who, as a result of a traffic accident, are permanently disabled and nonetheless, show up in statistics just as "injured". In addition, it is difficult to assign a numerical value to the suffering associated with losing a loved one. Studies show that for each death, an average of 100 people (relatives, friends, etc.) are impacted.

In addition to the loss of human life, traffic accidents also create an enormous economic impact, which is directly or indirectly assumed by all citizens. It is estimated that in Chile the cost of traffic accidents represents 2% of GDP, according to data from the WHO.

If this money were invested in education, living conditions, health, or social programs, imagine the benefit that would represent for our society. If you do the math, each citizen pays on average a little more than 6 million pesos annually, only taking into consideration the calculable costs of traffic accidents.

Have you ever considered that if a driver doesn't wear a seatbelt, a helmet, or drives while intoxicated, it's not just a "personal decision"? If that driver is in an accident it affects everyone, since we all pay directly or indirectly for his decision.

The following table enumerates the main costs caused by accidents. It is important to remember that not all accidents can be assigned a monetary cost.

COSTS OF TRAFFIC ACCIDENTS	
Material costs	• Damage to vehicles and their cargo. • Damage to public property. • Damage to private property. • Damage to the environment.
Health costs	• First aid, ambulance fees. • Medical treatment for wounds and injuries. • Rehabilitation.
Administrative costs	• Police and firefighters. • Insurance administration. • Legal costs: judges, lawyers, etc.
Human costs	• Loss of productivity (during treatment and rehab). • Loss of future productivity of deceased. • Physical and psychological suffering of the injured. • Physical and psychological suffering of friends and relatives.

Source: Seguridad Vial para Nuevos Conductores (INTRAS, DGT, España).

They're Avoidable

It is confirmed that calling traffic accidents "accidents" is a misnomer. Accident is defined as "a sudden event that is not planned or intended and that causes damage or injury" and is associated with being unpredictable and uncontrollable.

However traffic accidents are rarely random or unpredictable, and can be avoided. There is information about where, when and why road crashes occur.

If traffic accidents were really "accidental", how could we explain why they increase when it rains? Why are there so many deaths caused by traffic accidents during the night, when there are fewer cars on the road? Why do people who have been drinking cause more accidents?

If a traffic accident were a sudden, unintended event, the probability of getting in a crash would depend only on the amount of time a person spends behind the wheel.

The majority of deaths caused by traffic accidents are avoidable. In order to reduce the possibility of getting in a traffic accident, you must avoid risk factors, detailed throughout this text.

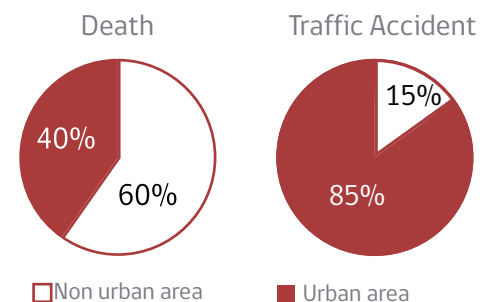
Accident Statistics in Chile¹

Annually in Chile more than 86,000 accidents are recorded. As a consequence, approximately 1,600 people die, which means that each day between 4 and 5 people die on the road. On average, 550 of these deaths are involving pedestrians.

- The probability that a pedestrian dies as a result of being hit by a car increases eight-fold when the speed of the vehicle increases from 30 to 50 km/h.
- Pedestrians have a 90% chance of surviving an impact at 30 km/h or slower, but less than 50% chance of survival for a crash at 45 km/h or more.
- This means that at a speed of 65 km/h the most probable outcome of a crash involving a pedestrian will result in the loss of the pedestrian's life.

Also, over the last 5 years, on average 8,000 people are seriously injured in more than 86,000 accidents.

The majority of deaths caused by traffic accidents occur on interurban roadways, not urban zones.



Although the majority of deaths caused by traffic accidents occur on motorways and highways outside of urban areas, **the majority of accidents** – around 85% – occur on roadways in urban areas. Of these, the **majority occur in intersections**. **Only 15% of accidents occur in rural (non-urban) areas**.

The majority of injuries also occur **on urban roadways**, over 40,000 on average annually, however these are generally less severe than injuries produced in freeway crashes.

Long weekends make up the periods of most frequent accidents. The most dangerous days are weekends (normal or long), while the most dangerous time of day is during nighttime and the early hours of the morning, and these in general coincide with situations of lower traffic flow.

(1) These data are based on national police statistics from "Carabineros de Chile". Deaths are counted up to 24 hours after the traffic accident has occurred.

The age group with the highest accident rate is young people between 18 and 29 years of age. This group represents approximately 27% of all driver deaths in traffic accidents in the past years.

AGE RANGE	Driver Deaths Percentage
0-17	2%
18-29	27%
30-39	20%
40-49	18%
50-59	16%
60 and over	16%
Age unknown	1%
TOTAL	100%

Finally, it is important to add that close to 92% of driver deaths due to traffic accidents are males and that human error is present in over 90% of accidents. Consuming alcohol while driving and disobeying road signs are two of the most common factors causing traffic accidents.

2. THE PRINCIPLES OF DRIVING

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THE PRINCIPLES OF DRIVING

Automobile Operation

In order to safely drive your automobile, you must maintain it in good working condition. In order to achieve this, you need to understand how your automobile is constructed and how it operates.

The Engine

The engine is the heart of the vehicle; it is almost always situated in the front part of the car. In the majority of cases, the fuel used is gasoline, with the use of diesel and natural gas being less frequent.

On the instrument panel of the vehicle, the tachometer shows the number of revolutions of the engine.

The Lubrication System

An engine is comprised of many moving parts that require lubrication, which is carried out under pressure. The purpose of oil is to diminish the friction and corrosion between the moving parts. When the engine is not being lubricated, an oil pressure indicator light will come on in the instrument panel. If this light turns on, stop the engine immediately, and do not start it again until the problem is fixed. If you do not do this, repairing the vehicle may become very expensive.

- Control the oil levels. Add more oil if the level is low. It is important to periodically change the oil and the filter, in accordance with manufacturer recommendations.

- Always use recognized oil brands. Check the oil container's seal.

The Electrical System

The electricity that a vehicle needs is produced by the alternator, which is moved using a belt in the engine. This energy is stored in the battery. The effect of the alternator diminishes when the belt is loose. If the battery charge is insufficient, you will be alerted via a warning light or a corresponding needle on the instrument panel.

All accessories that use electricity are almost always armed with fuses to prevent fires or damage to the electrical system. If any electrical unit stops working, check first to see if the fuse is blown or damaged.

If any bulbs stop working or if the emergency light indicator flashes faster than usual, it is probable that the bulb has burnt out.

A poorly charged battery makes it difficult to start the engine, especially when the temperature is low.

If the vehicle's engine does not start when turning the key, it is probable that the battery is either drained or disconnected.

CHECK

- The level of battery fluid. Add distilled water if necessary.
- That the alternator belt is sufficiently taut.
- That the battery cables are connected correctly.
- The charge light during driving. If it turns on or flashes, there may be a problem.

Warning! Battery acid is highly corrosive; exercise caution with your clothing and skin

Fuel System

The fuel system is made up of a fuel tank, tubes and a pump. Fuel is mixed with air in the carburetor or through the injection system, and then is aspirated by the engine. These days, the majority of engines do not have a carburetor; instead the fuel is directly injected into the intake manifold.

Sometimes, when the engine is cold, you will have to reduce the amount of air in the mixture so that the engine will start. This is done using a regulator, or choke. Some vehicles have an automatic regulator, while others, with injection engines, lack a choke because they are controlled by a microprocessor.

Gasoline fumes can be carcinogenic. Avoid opening the fuel cap more than necessary.

Be sure to fill the tank with fuel each time you go to the gas station. This will cause less contamination by liberating less gas. Use the appropriate octane for your vehicle's engine (according to manufacturer's regulations).

REMEMBER WHEN FUELING:

- Turn off the engine.
- Avoid inhaling gasoline fumes.
- Do not light cigarettes.
- Do not use your cellular phone.

Frequent braking and accelerating while driving cause high fuel consumption.

If while driving you detect a strong gasoline odor, stop the vehicle to investigate the origin of the problem. This will prevent risk of a vehicle fire.

The Cooling System

The cooling system is designed to cool the engine in order to maintain an adequate temperature. The engine is cooled with a coolant (distilled water and antifreeze) that circulates through lines in the engine block and into the radiator. A high engine temperature can be caused by a blockage in the cooling system, lack of liquid, or a broken or loose water pump belt. If the engine temperature rises, stop immediately and repair the issue.

These days the majority of vehicles have electric fans that activate when the temperature is high, especially when driving at low speeds. If this does not occur, it could be due to a damaged fuse or a defective connection. If the vehicle temperature is rising more than normal it is probably due to a broken or damaged fan belt.

In below-freezing temperature conditions, it is important that the coolant contain a sufficient proportion of antifreeze, which will keep the engine and the radiator from becoming damaged by freezing water (ice).

The Exhaust System

Exhaust fumes contain carbon monoxide, which is poisonous, colorless and odorless. The first symptoms of carbon monoxide poisoning are headache and vomiting. Exhaust fumes also contain numerous other toxic substances, which are dangerous to your health and the environment.

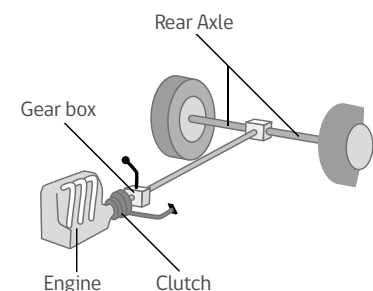
Remember that there is a high risk that the exhaust system might rust or break, which can cause carbon monoxide to enter the vehicle interior. An abnormally loud noise emitting from the exhaust pipe is a signal of breakage or holes in the silencer.

Remember:

- Protect the environment.
- Do not keep the engine running longer than necessary (modern automobiles do not need to be warmed up in order to run).
- At the first sign of carbon monoxide poisoning, exit the vehicle immediately and get fresh air.
- Carbon monoxide can penetrate the vehicle interior if the trunk (boot) is open.
- Stop the engine during long standstills.
- Be aware of changes in engine sounds.

The Transmission

The engine's energy is transmitted to the traction wheels through the clutch. There are forward drive and rear drive vehicles. There are also four-wheel drive vehicles.



The Clutch

The clutch is found between the engine and the gear box. Upon pressing the clutch pedal the transmission is disconnected from the power of the engine to the gear box, therefore energy is not being channeled to the traction wheels.

It is important to know that if you drive while pressing the clutch pedal for long periods of time, your control of the vehicle is reduced.

The Gear Box

The gear box multiplies the force of the engine. It can have 3, 4, 5 or more gears. Each gear is used for a range of speeds. Driving in the appropriate gear for the corresponding speed saves fuel and emits fewer contaminants.

Each gear has a speed range, which varies from one vehicle to another.

Automatic transmissions, which are more and more common, do not have a clutch pedal.

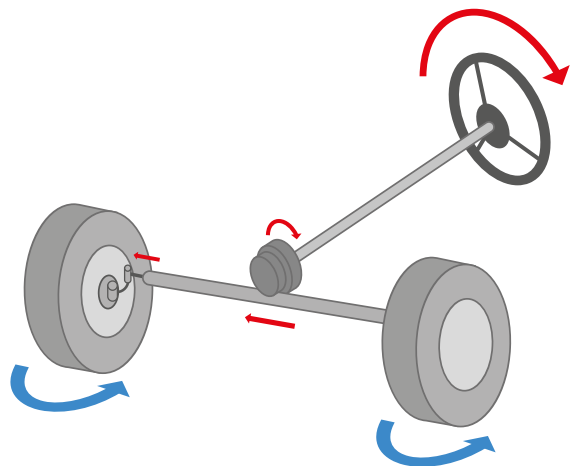
Steering

Steering becomes misaligned faster when the vehicle is subject to excess weight, as well as when it falls into or hits potholes.

The misalignment of the wheels produces vibrations and increases wear and tear on the tires. This can put the steering mechanism in jeopardy.

If you feel that steering is difficult, while driving through a flat terrain the vehicle tends to drift to one side, or if upon turning the wheel shakes excessively, this indicates that there is a defect in the steering mechanism or that one of the front wheels has low air pressure.

Many automobiles are equipped with power steering. This consists of an auxiliary hydraulic device that facilitates the control of steering.



Suspension and Shocks or Shock Absorbers

The shock and suspension systems are responsible for constantly maintaining contact between the tires and the road, guaranteeing stability and comfort to the driver. These systems play an essential role in maintaining the vehicle on its desired path and absorbing the irregularities present in asphalt. These systems are responsible for an important part of active safety.

Although many drivers may not be aware of them, shocks in bad conditions can have dangerous consequences, for example:

- The vehicle can lose stability, especially in curves, with lateral winds, or when driving on a wet surface (increasing the risk of aquaplaning, e.g.).
- Braking or stopping distance is increased, especially on uneven or wet roadways. If the vehicle has an ABS system, it loses effectiveness.
- Other parts of the car wear down and malfunction more frequently.
- Driving comfort is diminished, causing a more rapid onset of driver fatigue.

Given their relevance to the safety of the driver and others, it is important to learn to oversee these systems and identify possible problems that require the attention of a mechanic. The following symptoms and signs may indicate that the shocks are in poor condition:

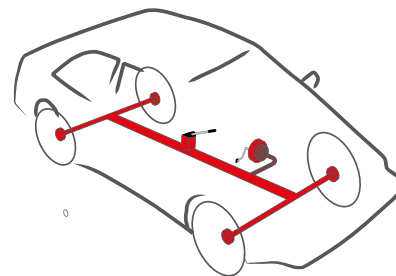
- Upon braking, the vehicle lurches forward and backward excessively.
- While driving, the vehicle rocks excessively on well-maintained roadways and leans excessively when taking a curve.
- When applying pressure on the front portion of the vehicle, it bounces or rocks.
- While driving, any small imperfection in the road (for example, potholes), or lateral winds are significantly noticeable.
- The tires wear out unevenly.
- While driving at night, the lights move or oscillate obviously.

It is very important to periodically check the condition of the shocks, always following the vehicle manufacturer's instructions, and replace them when they become unsafe.

The Brakes

The brakes allow the vehicle to reduce speed or come to a complete stop, and it is therefore important to oversee and maintain the brakes in addition to knowing how to react in the situation of brake failure in order to avoid an accident.

On the other hand, you must learn to use the brakes correctly in dangerous situations, like a complete emergency stop. Also, you must keep in mind that conventional brakes do not work the same way as an Anti-Lock Braking System (ABS).



If in some situations you are overrun by fear or panic and break heavily, the Anti-Lock Braking System has the advantage of preventing that the wheels from locking up and avoiding uncontrolled skidding. With this system you can more easily maintain control of the vehicle, as long as you are not traveling at excessive speeds.

Vehicles have two braking systems that act independently from one another. The brake pedal is usually hydraulic and works on all four wheels. Older vehicles have hydraulic circuit braking systems, which in the case of a breakage or leak in the brake drum, all of the fluid is eliminated, and with it the ability to brake on all four wheels. Modern vehicles come equipped with a two-circuit braking system. This way, if there is a rupture or failure in one of the circuits, the braking effect can still be applied though the other circuit.

The parking brake (hand brake or emergency brake) is mechanical, and usually acts on the rear wheels. Many vehicles have a servo brake, which considerably increases the strength of the brake.

The servo only works when the engine is running. You must be careful when towing or when the engine turns off on a downhill.

Check:

- The level of brake fluid periodically, in accordance with manufacturer recommendations. Brake fluid is not consumed by the vehicle; if it is low it is because there is a problem or mechanical defect. Also, if the brake fluid is low, you could cause an accident.
- That the length of the brakes is not too long. You should be able to press the pedal only until about half the distance between the pedal and the floor.
- That the pedal position doesn't descend when you are pressing the brake down. If this happens, there may be a leak.
- That the pedal feels rigid and not elastic. If the pedal gives when pressed down, there is probably air in the system.
- That the brake lights are functional.
- That the parking break works correctly. It should maintain the vehicle stopped on a hill or prevent the vehicle from moving when placed in the activated position.
- That the brakes work evenly across all four wheels. If they are misaligned, during a heavy break the uneven effect can make the vehicle drift to one side.

In below-freezing temperatures it is important to test the brakes at low speeds. If you are on a flooded road or have recently washed your vehicle, you must eliminate, by braking, the humidity on the brake drums or pads, especially if the vehicle has been parked.

Recommendations for Avoiding Brake Failure

Although you can perform some of the recommended checks yourself, some require the assistance of a mechanic.

- Check for possible cracks in the hoses that circulate brake fluid, making sure there are no stains on the pavement due to leaks.
- Change all of the brake fluid at the intervals recommended by the vehicle manufacturer.
- Periodically check the state of brake pads/shoes and disks, and be alert for sounds emitted while braking.

One maneuver you must know is how to make an emergency stop, or come to a complete stop as quickly as possible, safely.

One of the biggest risks of an emergency stop or heavy braking is that the wheels may lock up and slide or skid over the pavement. When this happens, the braking distance is noticeably increased. Also, in these conditions it is impossible to control or steer the vehicle, which greatly diminishes the probability of avoiding obstacles.

The Anti-Lock Braking System (ABS) is able to detect the instant that the wheels lock, and lightly reduces the pressure on the brakes, even while the pedal is still pressed down. This allows the wheels to maintain tractive contact with the road surface and allows the driver to maintain control of the vehicle. **Even if the ABS fails, the brakes will continue to work.**

You should be aware that if a vehicle has ABS, the braking distance for an emergency stop could be longer compared to the braking distance without ABS.

The Tires

The tires are the only point of contact between the vehicle and the roadway. The traction of the tires provides the necessary safety under any meteorological conditions, even in difficult situations.

In order for the tires to correctly perform braking, traction and steering, the treads should have a minimum recommended depth of 3 mm. When the depth of the treads is very low (less than 1.6 mm), friction is decreased on wet pavement, increasing the risk of losing contact with the roadway because of the wedge of water that forms in front of the tires. Get in the habit of periodically checking your tires and confirming that the depth detectors on the treads do not indicate a depth inferior to 1.6 mm.

Of all the elements of a vehicle, the tires are those that require the most inspection by the driver.

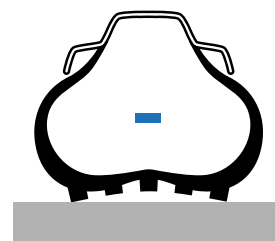
Also check tire pressure regularly. Uneven wear can be caused by alignment or suspension problems, or due to driving with the inappropriate tire pressure. You must keep a vehicle's tires at the pressure recommended by the manufacturer to avoid sliding.

Noticeable wear down the center of the tire means that the tires have been used with an excess of air pressure, while wear only on the edges of the tire indicates that they have been used with less pressure than recommended.

Low air pressure in one or both of the back tires can significantly increase the tendency to drift. With low air pressure in the front tires, steering becomes more difficult and the vehicle is more difficult to control. Low pressure in one of the front tires will tend to make the vehicle drift or twist towards that side.

When the air pressure exceeds that recommended by the manufacturer, the tires lose traction.

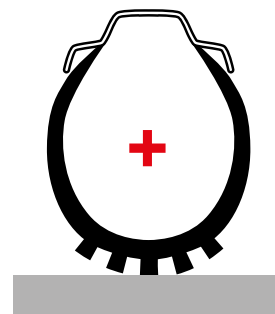
The best tires should always be placed on the rear of the vehicle, independent of whether the vehicle is forward- or rear-drive, to assure optimum stability.



Low air pressure



Correct air pressure



Excessive air pressure

Reducing the air pressure in the tires below that indicated by the manufacturer during the winter decreases the life of your tires.

Other recommendations

- Check the tire pressure when the tires are cold and always respect the recommendations of the manufacturer. If the pressure is adjusted when the tires are warm or hot, the effective pressure will be lower than recommended. Inadequate tire pressure contributes to the risk of skidding.
- Periodically check the tire treads. They should not have deep cuts or cracks.
- Drive at a moderate speed; this lengthens the life of your tires.
- Keep in mind that situations like hauling or driving on uneven roads or during hot weather can accelerate the wear and tear on your tires.
- If you see something abnormal about the tires or the behavior of the vehicle (e.g., vibrations) it is recommended to seek a professional's opinion. There could be a problem with imbalance.

- Tires should be changed at least every 5 years. Even if they have little use and their treads are good, the material ages and tires lose the properties that allow them to roll safely. It is recommended that you go to a professional to assess changing your tires.
- Driving up on the sidewalk or over the curb can cause deformations in the wheels and cuts or ruptures in the tires.
- Slightly increase tire pressure when hauling a heavy load.
- When you leave your replacement tire in your vehicle, be sure that it is stored with the highest tire pressure recommended by the manufacturer.
- check that the tires are properly balanced.

Important:

If a rear tire ruptures or breaks while you are driving, turn the steering wheel in the same direction as the tail is swerving. On the other hand, if a front tire ruptures or breaks, you should brake slowly, holding the steering wheel firmly.

Lights

All vehicles must be equipped with headlights and exterior lights in order to see and be seen by others while driving in the dark or at times of reduced visibility. Lights are also important for warning others about certain situations or one's intention to make maneuvers.

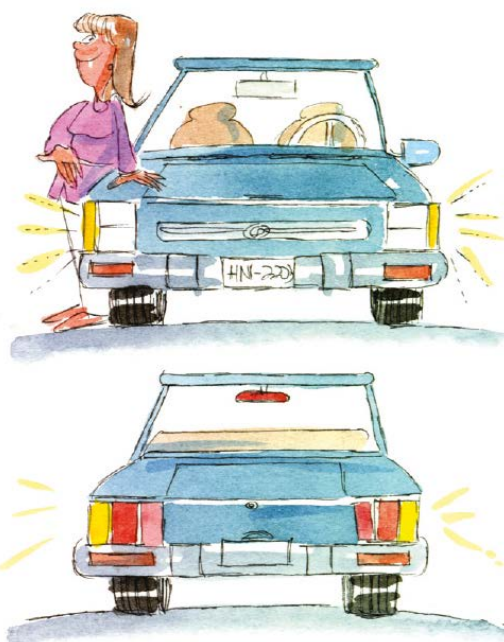
In general, motor vehicles with 4 or more wheels must possess the following headlights and exterior lights:

Front of the Vehicle: Two headlights that project low and high beams, two parking lights and two turn signals.

Rear of the Vehicle: Two parking lights, two turn signals, two reverse lights, two stable red lights, two brake lights, and one light that illuminates the license plate.

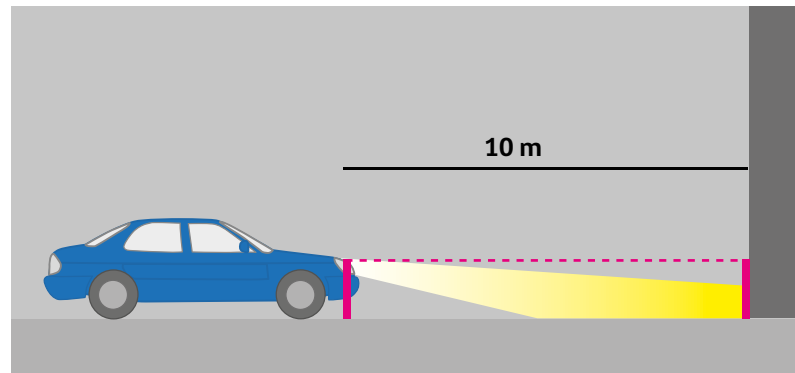
Additionally, the vehicle must have a third brake light at the center of the back window of automobiles, jeeps, vans, station wagons, pick-up trucks, and school transport vehicles.

Be sure that the lights are clean, functional and that the forward beams, both low and high, are correctly adjusted. A misalignment can temporarily blind other drivers and cause an accident.



You can ensure that your lights don't blind:

- Park your vehicle on a flat surface about 10 m (30 feet) from a wall or similar surface.
- Turn on your low beams and verify that the height of the beams on the wall is lower than the height of the headlamp with respect to the floor.



Fog Lights

Some vehicles, in addition to the aforementioned obligatory lights, are also equipped with fog lights. These can only be used when visibility is considerably reduced, either due to fog or torrential rain and should be turned off as soon as visibility improves.

Hazard Lights

Hazard warning flashing lights should only be used when the vehicle is stopped due to failure or breakdown, in order to warn other drivers that the vehicle is temporarily obstructing traffic, as well as to warn other drivers behind you that there is a hazard or obstruction ahead. They should be used only for the amount of time necessary to warn other drivers of the hazard, and never as an excuse for illegal or dangerous parking.



Mirrors

Mirrors allow the driver to see traffic behind him and to the left and right of the vehicle. The majority of side mirrors are convex, which means that **images in the mirror are closer than they appear**.

Be aware that even when your mirrors are well regulated, there will always be a spot behind you which you cannot see. These are known as dead angles or blind spots.

Before Driving

In order to drive your vehicle safely it will be necessary for you to perform some simple tests and periodically review:

- Seatbelts/safety belts
- Windshield wipers
- Ventilation
- Windshield wiper fluid
- Tires
- Rear window defrost
- Lights
- Brakes
- Mirrors
- Doors
- Horn

Check:

- You have good visibility through the front windshield, back window, and side windows. If not, turn on the ventilation system, adjust the fans and turn on the rear window defrost.
- You have adjusted the mirrors for optimum visibility behind you and to the sides. You must be able to see the largest possible proportion of the road and other vehicles.
- The doors are closed. If you are transporting children, be sure that they are secured safely in their seats and they cannot open the doors from inside.
- You have reflective objects in case of emergency, a fire extinguisher, a replacement tire and tools necessary to change tires.
- You don't have anything loose in the vehicle that could harm someone in case of a sudden stop.
- Your shoes are appropriate for controlling the pedals.

Before starting your vehicle, look around and check your blind spots.

Energy and the Laws of Physics

The Energy of Movement

A vehicle approaching a curve tends to continue its movement in a straight line. By moving the steering wheel, you force the vehicle to deviate from the straight course it would follow due to inertia, but if you are driving too fast, you may not have sufficient friction to maintain the vehicle on the road.

In the photograph, you can see a skid mark, which indicates that the driver braked until the wheels were locked. As a result, the vehicle didn't obey the movement of the steering wheel, but rather continued its course straight ahead.



When doubling speed, the energy of movement increases four fold, which you should be aware of when approaching a curve, for example.

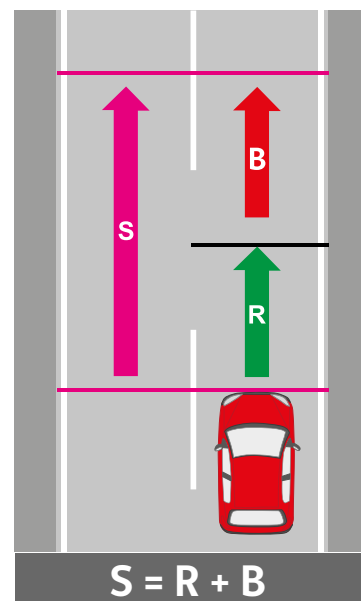
It is always very important that you try to anticipate the state of the road, that you estimate the radius of the curve and that you are aware of any surprises you might encounter, like fallen leaves, fuel leaks, or anything else that could make the roadway slippery. **Reduce your speed well before a curve and accelerate slowly upon leaving the curve.**

The magnitude of centrifugal force (or the sideways force in a curve that tends to push a vehicle off the roadway (depends directly upon the speed of the vehicle and the sharpness of the curve..

Stopping Distance

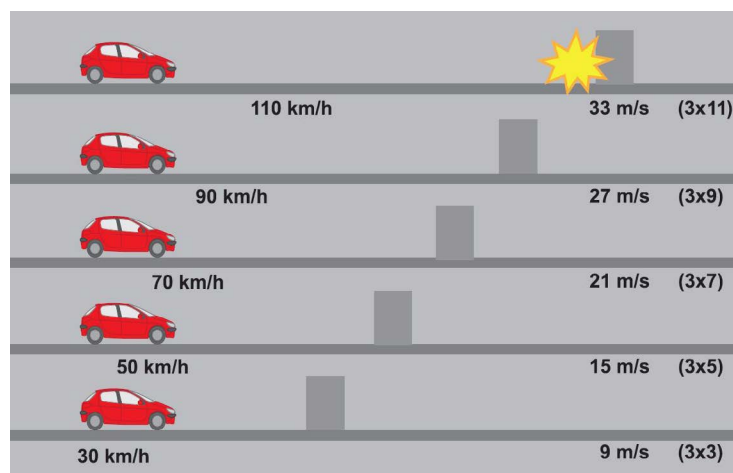
Stopping distance (S) consists of two parts:

- **Reaction distance (R)**
- **Braking distance (B)**



The reaction distance depends on the reaction time of the driver and the speed of the vehicle. A normal reaction time is one second. A vehicle traveling at 36 km/h covers 10 meters in one second, 20 meters if it is traveling at 72 km/h, etc.

Beginners, due to their lack of experience, tend to doubt themselves, leading to longer reaction distances.



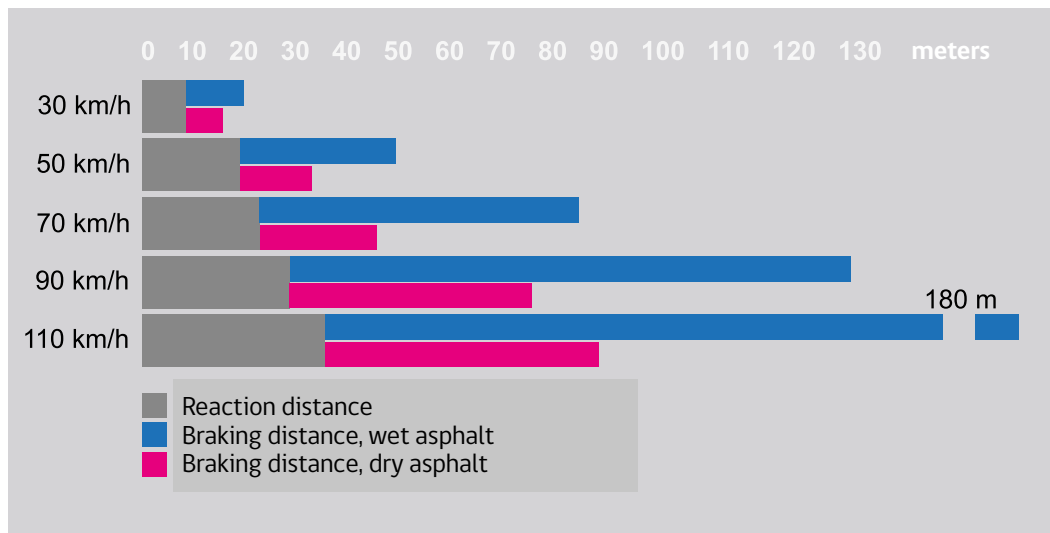
You can estimate the approximate reaction distance, multiplying the first digit of your speed by three.

The braking distance depends on the speed, the state of the road, the incline, the state of the brakes and the tires, and the manner of braking.

The braking distance increases by the square of the increase in speed. That is, if you double the speed, the braking distance increases four times; if you triple your speed, the braking distance increases by nine times, etc.

As for the manner of braking, there are various ways to brake. A driver, who plans their driving, diminishing the pressure on the accelerator on time and reducing their speed, saves their brakes and increases their safety.

In unexpected situations it is necessary to know how to brake correctly. It has already been mentioned that **locked wheels impede control of the vehicle**. Due to this, when you begin to brake you must press the brake with the most pressure possible. If the vehicle doesn't have ABS brakes and the wheels lock, you must immediately release the brake pedal.



The Force of Gravity

If you have ever ridden a bicycle and tried to brake on a steep downhill, it is probably that you have experienced forces that can cause difficulties. This same phenomenon occurs when you drive a motor vehicle. As a result, when you see signs that warn you to steep grades (downhill) take your time to go down them. At times it is necessary to drive in a lower gear so that the engine slows the vehicle and the brakes do not overheat.

Remember that when you take the vehicle out of gear, you lose control of the vehicle.



Vehicle Characteristics and their Influence on Driving

Despite the fact that many vehicles look alike, in reality they have differences that you must keep in mind when you drive. Before getting behind the wheel of an unknown vehicle, ask yourself these questions: Does it have forward drive, rear drive, or 4-wheel-drive? Does it have safe tires?

A vehicle with a forward engine is normally heavier at the front, and so has a tendency to spin less. If you place a heavy load in the rear part of the vehicle, you will tend to spin more; upon losing tractive contact with the pavement, you will spin 180° and the rear end of the vehicle will be pointed forward. This is important to know in order to understand the risks involved with offsetting the center of gravity.

If you drive a vehicle with the center of gravity placed in the forward part of the vehicle, it will tend to follow a straight line when taking a curve; if it loses traction it will continue along the line of movement.

Try to throw an arrow with the point facing back and you will see that the arrow turns in the air, with the point facing forward. This happens because the heavier part has more kinetic energy and attempts to reach the target more quickly.

The same thing happens when a vehicle has its center of gravity in the rear. When you take a curve, the vehicle turns more than expected, and if you lose traction with the pavement, it will fishtail and continue on in the direction of the original movement, but with the rear facing forward.

The drive or traction wheels are important to the behavior of the vehicle.

A vehicle with front-wheel drive starts to slip on the front wheels if the effect of acceleration is larger than friction will permit, which can cause the vehicle not to turn when you move the steering wheel and instead continue on in the same line of movement. If this happens, stop accelerating and continue on your course.

Similarly, if the rear wheels lose friction, various fishtails can occur. In these circumstances, continue accelerating and turn the steering wheel towards the direction of the tail.

Four-wheel-drive allows for considerably better driving on difficult roads. Also, vehicles with four-wheel-drive behave the same as the rest.

Another factor that can influence a vehicle to spin more or less than expected is the air pressure in the tires.

Elements of Passive Safety

The tires, brakes and lights, among others are elements of something known as “active safety”, since they help prevent accidents from occurring. There are also other elements, known as “passive safety”, which don't prevent the occurrence of an accident, but they do contribute to minimizing their consequences.

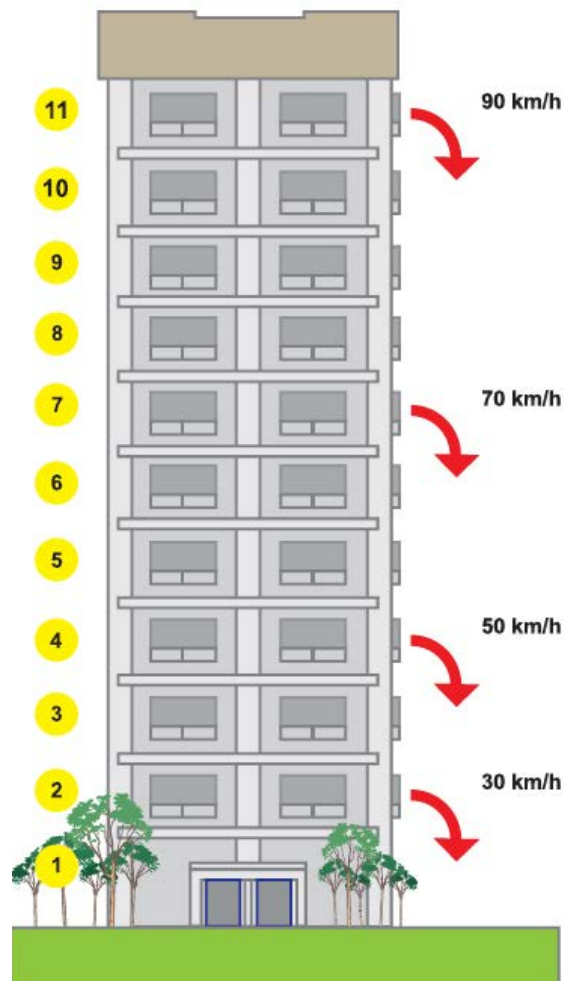
Seatbelts

A crash at 50 km/h without a seatbelt (safety belt) is like jumping off the fourth floor of a building without a safety net. At a speed of 70 km/h, the impact is like jumping off a seventh story. **Seatbelts are your life insurance, since they reduce deaths caused by traffic accidents.**

In addition to saving lives and reducing the possibilities of injuries in an accident, seatbelts provide more comfort, better control and they contribute to reducing sleepiness.

Those who travel in automobiles must be well secured. However, never allow two people to travel using the same seatbelt.

If the vehicle is equipped with seatbelts in the back seat, it is



important that those who are seated in the back also use safety belts, despite it only being obligatory in vehicles manufactured in 2002 or later.

Passengers who are pushed forward from the back seat not only can hurt themselves but also the driver or the person traveling in the passenger seat.

Seatbelts are only effective when worn correctly; if used incorrectly they can cause serious injury.

Correct Use of a Seatbelt

Shoulder Harness: crosses the body from the top of the shoulder to the hip		
		The shoulder harness should pass over the clavicle , halfway between the shoulder and the neck and should descend along the center of the chest .
		If it is placed over the neck or over one breast , it can cause serious injuries in an accident.
		If it is placed over the shoulder, it can slip out during the accident and reduce the efficacy of the seatbelt to its minimum.
Lap Belt: between the two inferior points of attachment		
		The lap belt should be placed over the hip bones, always beneath the abdomen.
		If it is placed over the abdomen , it can cause serious injuries in an accident.
Once buckled		
		Once your seatbelt is buckled you should pull it lightly upwards so that it fits snugly across your body . You should always be sure that it is not caught or twisted and that the buckle is in good condition.
		If the belt fits loosely , you will move a farther distance during the accident, which could result in you impacting with the steering wheel or the windshield. If the belts are not pulled tight, the belt will lose efficacy and could cause injuries during an accident.

Source: DGT/INTRAS.

After being in a traffic accident, the seatbelt can be damaged and its use no longer safe. In this case you must replace it with a new one.

Important Recommendations for the Correct Use of a Seatbelt:

• Submarine Effect:

This is one of the risks produced by the incorrect use of the seatbelt or the vehicle seat and occurs when the driver, during the accident, slides underneath the lap band. To avoid the Submarine Effect:

- ✓ Put your seatbelt on correctly; if you place the lap belt incorrectly it is more likely you will slide beneath it.
- ✓ Be sure that the seatbelt is taught. The submarine effect occurs more easily if the belt is not correctly adjusted to the body. Due to this, it is also important to avoid driving with bulky clothing (e.g. a coat).
- ✓ Do not use towels or pillows (neither on the seat nor behind the back), or special cushions. All of these elements may facilitate the driver sliding, canceling out the seat characteristics designed to avoid the submarine effect.
- ✓ You should always drive with proper posture; do not recline the seat excessively, as you should not drive "half lying down". Always remember that the proper posture behind the wheel facilitates the correct functioning of the seatbelt.

• Excuses and Myths about Seatbelts

Drivers who are reluctant to using seatbelts give unrealistic excuses about the efficacy of these devices, including the following:

- ✗ **"I'm not going to get into an accident, so I don't need to wear a seatbelt"**
No one expects to get into a traffic accident, but the fact that we haven't gotten into an accident before doesn't mean that it won't happen.
- ✗ **"Surviving a traffic accident depends on luck or coincidence, so a seatbelt is not helpful"**
Studies of thousands of accidents shows that drivers who don't wear a seatbelt have twice the probability of dying as a cause of the accident.
- ✗ **"In case of an accident, it's much safer to be thrown from the vehicle"**
If you get into an accident, and are ejected from the vehicle due to not wearing a seatbelt, the probability of receiving a spinal injury increases by 1,300%, while the probability of dying increases by 300%, which clearly shows that it is much safer to stay in the vehicle.



"In a lot of accidents, people are trapped in the vehicle by their seatbelt and die because they can't get out on time"

Studies and statistics reveal that in only one in a million accidents, wearing a seatbelt can be negative. Experience shows that in the majority of accidents that are produced daily, the seatbelt can save the life of the occupants of the vehicle or avoid serious injury.



"Seatbelts aren't necessary when driving on urban streets, where speeds are low"

Close to 50% of accidents with victims occur in an urban area. For example, a frontal impact at only 30 or 40 km/h can easily be fatal if the head of the driver impacts the windshield or steering wheel, which happens frequently.



"If the trip is short, it's not necessary to put on a seatbelt"

We have already shown that suffering an accident is always possible, so it is important to use a seatbelt on all trips. Also, the majority of accidents with victims occur within a few kilometers of the home of the driver.



"My vehicle already has many safety features, so seatbelts are not that important"

No safety feature in a vehicle can take the place of a seatbelt, even those that are designed to work in parallel with seatbelts. For example, if the airbag activates in case of a head-on collision and you're not wearing a seatbelt you can suffer serious injuries when the airbag inflates.



"Seatbelts are uncomfortable"

If you use your seatbelt frequently, the initial discomfort that some drivers experience will diminish. Many people over time come to feel uncomfortable and unsafe when they are not wearing a seatbelt.



"During pregnancy you shouldn't wear a seatbelt because it is dangerous for the fetus"

Pregnant women are also required to wear seatbelts, since the risk of injury and losing the fetus during an accident is higher than if they don't use it (e.g., if she hits her belly against the steering wheel).



Source: DGT/INTRAS.



"In the back seat it is not necessary to wear a seatbelt"

In an accident, the occupants of the back seats who are not wearing seatbelts can be ejected from the vehicle, which can cause a fatal impact with other passengers or the driver; the seatbelt not only can save the lives of the occupants of the back seat, but also prevents them from causing serious injuries to the other occupants of the vehicle.

In a head-on collision, the probability that an occupant of the back seat with unfasten seatbelt fatally wounds another passenger in the front seats can be 8 times higher.

Before starting your vehicle, adjust your mirrors and adjust your seat and backrest, if necessary – when grasping the steering wheel, your arms should remain lightly flexed – and **always put on your seatbelt**. Be sure that the other occupants of the vehicle also put theirs on.

Airbag

The airbag is a bag of air that inflates in just a few milliseconds after an impact, protecting the occupants of the vehicle for the following reasons:

- It lightly slows the movement of the occupants, preventing that the forces of deceleration cause injuries, especially head injuries (e.g. reducing the probability of the occurrence of spinal injuries).
- It prevents the occupants of the vehicle from impacting against objects inside the vehicle: the steering wheel, the dash-board, the windshield, or the windows.
- It protects the face and eyes from glass fragments or other objects that could come loose, like the windshield.

The airbag is not efficient if not used in conjunction with the seatbelt. Upon impact, the airbag inflates at a speed of up to 300 km/h, so if the seatbelt does not restrain the driver and the airbag impacts against him before having inflated fully, it can cause serious injuries due to the enormous force of the impact.

The efficacy of the front airbag is based on the combination of the use of the seatbelt, a good hand position on the driving wheel and the adjustment of the headrest to ear level. It has been estimated that the use of the front airbag in conjunction with the seatbelt can reduce the probability of suffering fatal injuries by 20%. Airbag function is based on the principal of cushioning of the kinetic energy from the crash through the absorption produced by a bag filled with gas. Upon impact with the bag, which should be fully inflated at that moment, the body transmits its energy to the bag, while the bag prevents that the person moves and becomes injured. After contact with the body of the occupant, the bag deflates automatically.



Source: www.todomecanica.com

After an accident, the airbag system should be replaced even if it has not been deployed. The battery should be changed according to the manufacturer's recommendations.

To avoid risks and obtain the maximum benefits of this system, you should always remember:

- Never put a child seat in the front seat if there is an airbag on the passenger side.
- If the airbag light is on, the airbag should be checked.



Source: www.todomecanica.com

There are different kinds of airbags: side, head and intelligent (which are activated in different kinds of impacts) so it is recommended that when buying a new vehicle you familiarize yourself with the airbag system and its function.

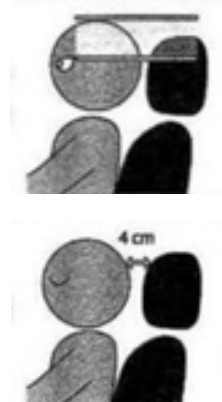
The effectiveness of the airbag is associated to the use of the seatbelt. This system is only efficient if you are safely secured by your seatbelt.

Headrest

The headrest is used to prevent spinal injuries when your vehicle is impacted from behind. Its position should be adjusted to each driver behind his or her head. Unfortunately headrests are often placed in their lowest position, which drastically reduces their effectiveness, and can even make them counterproductive. You should adjust all of the headrests of the vehicle you are going to use, for both front and back seats.

When a vehicle is impacted from behind it is subjected to a forward acceleration, which causes the seat to push the body of its occupant forward as well. If the head is not supported, it oscillates relative to the torso, which causes a violent change in direction on the neck, which forms an "S" shape initially and then moves backward. This movement is known as whiplash.

The headrests should be adjusted in such a way as to maximize their contribution to the safety of every person in case of rear impact.

Height of headrest: The top of the headrest should be situated between the top of the head and the eye line. Distance from the head: The distance between the head and the headrest should be as short as possible and never more than 4 cm.	
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Source: DGT/INTRAS

Neck sprains are often produced as a result of whiplash; these are much more dangerous and frequent than we think. A neck sprain can affect different structures in the neck, like muscles, joints or ligaments, and causes muscular aches and headaches, diminished neck mobility, vertigo or dizziness, which can often last for months.

Sometimes injuries caused by whiplash can be much more serious. For example, if the cervical vertebrae are damaged, the driver can suffer permanent disability (e.g., quadriplegia).

3. ROAD COEXISTENCE

NEW DRIVER'S HANDBOOK

ROAD COEXISTENCE

In order to have a good and true Road Coexistence among vehicle drivers, pedestrians, passengers and other road users, where individual rights as well as those of others are respected and consistent, it is essential that all road actors have an appropriate level of **Road Education**.

Road Education and Road Safety

Road Education is much more than just learning the rules of conduct (Traffic Laws), or recognizing numerous road signs that affect traffic. It goes further than observing speed limits or complying with the requirement of wearing a seatbelt.

Road Education is defined as acquiring values in order to achieve a better coexistence. Values such as respect (respecting your life and that of others), solidarity, understanding, forgiveness and tolerance are essential to driving. Road Education favors and promotes Road Coexistence.



Road Safety has as its goal the total elimination of traffic accidents, starting with their reduction and lessening of their consequences. For this to occur, the road user must have an appropriate and accurate perception of risk. Most drivers' risk perception tends to underestimate real risks, leading drivers to even believe there are no risks in situations in which there are.

A risk that is not perceived, does not exist

You must know that while you drive a vehicle you are at risk, and that any inappropriate behavior under these circumstances could put your life and that of others at risk. The biggest risks when driving a vehicle are: inexperience, recklessness and lack of driver's education.

The country's vehicle fleet has grown continuously during these last years, consequently there has been an increased in the number of accidents. To fight this growth in traffic accidents, everyone's cooperation is needed. First, you must remove from your mind the idea that "traffic accidents are just something that happens to other people".

YOU MUST KNOW THAT...

Nearly 90% of traffic accidents with victims are a result of human error, mistakes made by drivers with a false perception of risk.

Accidents in their majority are not accidental in nature. A shift in mindset is needed, to be more aware, to develop an objective risk perception and realizing that the majority of accidents can be avoided.

To practice safe and responsible vehicle driving and to reduce the likelihood of having a traffic accident, whenever possible, all risk factors must be eliminated.

YOU MUST KNOW THAT...

The main risk factors are:

- Distractions, an important factor and one of the main causes of accidents.
- Drugs and Alcohol, they reduce the ability to drive.
- Inappropriate speed, present in a quarter part of all accidents with victims.
- Fatigue, tiredness, sleepiness or somnolence, consuming medications or driving under stressful situations.

Road Coexistence

Many times, to brag of their abilities at the wheel, drivers are not aware of the risks they exposed other road users when doing these reckless actions such as, driving above the speed limit, overtaking in areas where it is prohibited or not respecting other road signs. By not respecting a red light or a pedestrian crossing road sign, drivers are not only infringing traffic law, but they are also attempting against road coexistence, putting themselves at risk as well as other road users.

These kinds of misbehaviors attempt against orderly coexistence in traffic and against the trust principle that inspires it; where all drivers expect that each of the participants comply with their role, which is to respect the rules of road coexistence and conduct.

Be aware that these actions or infringements do not go unpunished, even if you think "great, no one saw me and nothing happened". These incidents do repeat themselves and end up turning into accidents where something DOES happen. A driver's reckless behavior ends up having consequences for the own driver and unfortunately, most likely for others as well.

A person who goes through a red light is not ignorant of the meaning of the regulation for that red light and knows what sanctions would have as consequence if a police saw it. There isn't in this case ignorance of the existing regulations, there is a will to disobey them, a resistance to comply with laws and some disregard for other road users that move around the same area.

Education gives us the knowledge about the laws and rules of behavior that every person needs when moving through the different roads, streets and highways. But the most important thing is that education instills values, tries to inculcate habits and positive attitudes toward coexistence, quality of life, environmental quality and road safety.

Road Education is essential in people's social and individual education, since we will all be pedestrians, vehicle users or drivers at some point in our lives. We need Road Education to coexist in an orderly and respectful manner with others, and in a kind, positive and fair environment.

Road Environment

When thinking about traffic, images of highways, streets and vehicles come to mind. Nonetheless, in these vehicles travel and are also driven by people, the streets and highways are used by people, and **these people are actually traffic**. All of us are traffic, we move through roads jointly with others and for that mobility to be orderly, safe and not cause accidents, there are rules that must be followed and that are supported on a series of principles such as **Trust**.

Without this principle nobody could go out on the streets, if there was no trust that others will do their share of the game no one would dare to drive a car. When moving, it is expected that others will respect their traffic direction and not occupy someone else's, that they will respect traffic lights, yield when appropriate, etc.



Road Coexistence demands a compromise with Road Education, a compromise with others and a compromise with ourselves. Drivers must be aware that they are just another participant of traffic, along with pedestrians and cyclist that are more vulnerable users.

The roads on which vehicles go create the road environment. But this road environment is much more than just the streets or highways on which cars ride. That road environment is a space of social coexistence, an environment in which people develop as human beings.

Precaution is the fundamental principle for driving a vehicle. One must be conscious and accept that anybody could be wrong and make a mistake, so one must be alert in case these mistakes happen. **Preventive and defensive driving** must be practiced to guarantee your safety.



Your driving attitude must be respectful towards others and yourself. Even if others make wrong decisions, you must be prepared for that. You must drive with a safe, responsible and calm manner that would help you drive better.

Finally, **Solidarity** is the best virtue you can practice while driving, the motivation of helping others and not seeing the rest of drivers and road users as your enemies is key.

Keys to road coexistence:

- When you have to drive, do not turn the occasion into a moment for annoyance or angst.
- To drive safely you must be adequately protected. Always use your seatbelt, and make sure that those accompanying you also use it, regardless of the position in which they are seating in the car.
- You must always drive at an appropriate speed. Keep a safe speed that would allow you to react on time to any unforeseen event. Your rush must not put your life or the life of others at risk. Take all the time that is necessary to drive.
- Adapt your driving to weather, environmental and pavement conditions.
- Keep a sufficient and safe distance with other vehicles and road users. Do not trust that other drivers have noticed your presence. Drive defensively.
- Always respect traffic regulations and learn their meaning.
- Keep your vehicle in perfect working order.
- Focus only on driving.
- Drive only if you are in good physical and mental conditions.
- Be considerate and kind to other road users.
- Always remember to see and be seen. Prevention will always be your main defense.

4. INDIVIDUALS IN TRAFFIC

NEW DRIVER'S HANDBOOK

INDIVIDUALS IN TRAFFIC

Driving a Vehicle is Highly Demanding

Why do accidents happen? It is known that human abilities have limits. However, it is easy to forget when someone gets behind the wheel. That is why it is important for you, as you become a new driver, to be conscious of how people act. The information in this chapter can be essential to your life and the lives of others.

Did you know?

- International statistics show that novice drivers are involved in traffic accidents (in which no other cars are involved) 10 times more often than experienced drivers.
- Statistics also show that the majority of people are involved at some point in their lives in a traffic accident with personal injuries.

Imagine that a driver is on a highway and wishes to pass another vehicle. Can he do it? To answer this question, the driver must judge the length of the passing distance and whether the available space is sufficient. Visual perceptions must give rise to safe decisions.

Traffic requires that one can trust in other users on the road. It also requires us to recognize that we can be responsible for the injuries or deaths of other people, and that we ourselves could also be victims of the errors or irresponsibility of others.

To help drivers get along in traffic, there are rules. Driving a vehicle is like being in a state of constant problem-solving. In effect, you are the one who must observe and calculate what must be done, and you must be the one to put your plans into action. These plans must be in accordance with those of the other drivers on the road. However, the rules cannot always offer clarity in terms of how to resolve certain situations. Common sense, good judgment and responsibility on the part of drivers often play a decisive role in the resolution of such situations.

The responsibility with which you take on your role as a driver helps contribute to traffic culture. If there are a lot of irresponsible people on the road, it will no doubt result in more violent and aggressive traffic, which is more dangerous.

Are People Prepared to Confront the Demands of Traffic?

Join the following driver through a few kilometers:

It's getting dark, it's cloudy and visibility is reduced. The highway seems to disappear at the end of the slope (position 1). The driver is traveling at 90 km/h and observing the roadway ahead. He is expecting there to be a curve to the left. He decides to change the radio station.

Soon he gets a surprise: the road curves to the right, forcing him to maneuver quickly, while at the same time letting up on the accelerator. Luckily, the pavement is dry and has good traction.

After the curve to the right, there is a curve to the left, and shortly after, in position 2, he approaches something that looks like a motorcycle but turns out to be an automobile whose left headlight is out.

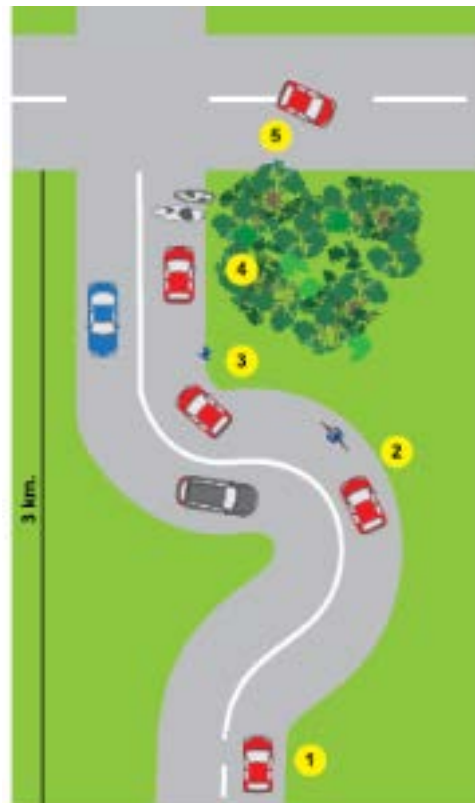
Soon our motorist is forced to slow down because he is going to pass a cyclist and the road is too narrow to accommodate three vehicles; the risk is very high.

After a few hundred meters, in position 3, our driver comes upon a vehicle whose low beams are very bright – perhaps poorly adjusted – and suddenly sees a pedestrian walking a few meters in front of his vehicle. This pedestrian is not wearing anything reflective, but he is walking on the side of the road, so an accident can be avoided.

The driver starts to get an unsettling feeling. He thinks about what has happened in the last kilometer, and at the same time, at 90 km/h, enters an area with forest and bushes on both sides of the road.

In position 4 and somewhat distracted, he comes upon two animals that are crossing from left to right, about 100 meters ahead of his vehicle. The driver brakes lightly and continues on at a lower speed, since he will soon turn right.

He rapidly reaches the intersection and upon turning right, in position 5, crosses the center line that marks the division between lanes. However, no accident occurs because no vehicles were coming in the other direction.



Along these kilometers, important aspects of traffic and driver behavior have arisen. Below, we will examine the situations that arose and conjecture as to what could have happened.

In position 1, the driver misinterpreted the terrain; he was expecting a curve to the left, but the curve was to the right. Then, he mistook a car with one headlight for a motorcycle.

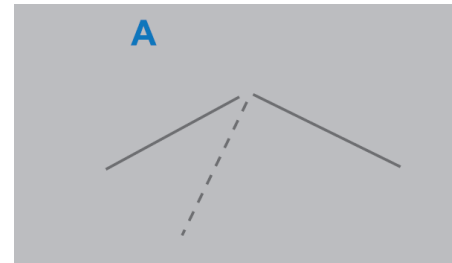
These misinterpretations of the surroundings, which are fairly common, can be very dangerous. They arise when the indicators for distance and shape are insufficient or unclear.

Other examples of misinterpretations are: when driving through mountainous or winding roads, one has the sensation of going downhill when in fact traveling uphill; or when dirty or weak headlights from another vehicle make it appear farther away than it is.

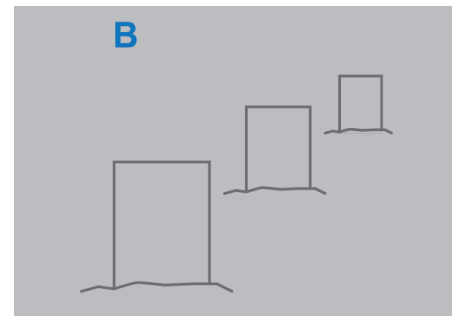
A sort of stereoscopic image appears when the brain has made an interpretation, but the ability to perceive distances only works for short distances. At distances longer than 50 m the indicators and clues in the environment become more and more important for judging distances.

Why is it important to know this?

Because you will sometimes partially lack certain indicators, they will appear confusing, or they may not even exist, for example when there is fog, when it is dark or when you are temporarily blinded by light. These factors can result in dangerous misinterpretations of your surroundings. Therefore, a good rule is not to be too confident in your own perceptions and not to drive when you are tired.



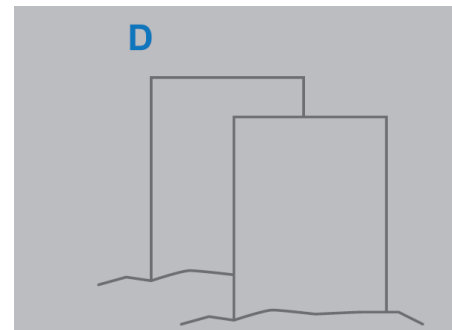
In A, you can see linear perspective; that is, the converging lines seem to be at a longer distance from the eye in the narrowest point.



B illustrates so-called "relative size", which means that even if objects are the same, they can appear to be different sizes; one believes that the object that looks smaller is farthest away.



C is called a density pattern; that is, the denser the objects appear, the farther away they seem to be.



In diagram D we see overlapping; this is when an object that covers another object appears closer to the eye.

Lack of Concentration

Let us return to the case of the driver presented previously. One of the causes that surely contributed to his surprise at the curve to the right was the fact that he became distracted by changing the radio station.

Doing two things at the same time can be very risky, especially when it comes to novice drivers. Firstly, this is because an inexperienced driver can lose control of the vehicle more easily and secondly because novice drivers have a harder time facing difficult situations.

In addition to keeping both hands on the wheel, it is important to concentrate on traffic. Therefore, you shouldn't drive if you find yourself annoyed or upset by something that has happened, and avoid fighting or arguing while driving. Emotional problems that distract your thoughts, busying yourself with the radio, looking at your phone, smoking or eating while driving have a negative impact on traffic safety.

Becoming distracted and diverting your attention away from what you're doing – through thoughts or other aforementioned examples – is something that happens frequently. Distracted driving is the cause of many accidents. If you are distracted you will have less time to react to an unexpected situation, since you will need more time to take in information.

Driving requires your complete attention!

Ability to React

The driver reacted quickly when he was close to going off the road in the first curve; he demonstrated a good ability to react. Moving the steering wheel and reducing speed were key in reacting to the situation.

A driver's reaction time is important when confronting a difficult situation. However, you must be aware that in a comparison between a person with low reaction time and one who drives at a low speed, for example when it comes to who stops first, the person traveling at a lower speed will win. People often think that young drivers react more quickly to all situations than older drivers. This is false. That reaction time for younger drivers tends to be lower refers only to simple reaction; that is, the reaction to a stimulus that everybody knows will present itself. However these kinds of situations do not occur frequently in traffic.

In real-life situations that require complex reactions, where you have to rapidly interpret many stimuli, expert drivers have much faster reactions. The "fastest" age group is people between 35 and 50 years. Beyond that, as age increases, reaction time also increases.

Visual Ability

The driver in our example was surprised to see a cyclist a few meters ahead of his vehicle. This leads us to consider visual abilities such as seeing in the dark and detecting important objects in the road.

Human beings do not have the sharp vision of a hawk, nor the cat-like ability to see in the dark.

When driving in the dark, blinding effects can present themselves; even when you avoid looking into the lights of an oncoming vehicle it is possible for rays of light to be reflected in the eye, temporarily worsening vision. The figure shows how this blinding effect manifests itself in these cases.



Once more we are reminded of our limits.
If the eyes were perfect, we would see a
different world.

You know that adapting to light changes takes some time. When you go into a dark room from the bright daylight at first you can't see well; sometimes you can't see anything for a few moments.

Real temporary blindness that occurs from looking directly at the lights of an oncoming vehicle has a much longer and prolonged effect and can create serious risks for an accident.

Other types of blindness can occur, for example when you drive out of a tunnel into sunlight, or when the sun shines directly in your eyes around sunset.

The driver saw the pedestrian a few meters away. This might be due to the fact that the lights of the oncoming car were poorly adjusted. The truth is that visibility distance at a vehicle crossing when the vehicles are using low beams does not exceed 15 to 20 meters; when there is no oncoming traffic, it is possible to see the markings in the road up to 70 meters. After a blinding effect occurs, visibility distance is 0 meters.

From the above information we can deduce that detecting people or animals in the roadway can be very difficult in certain circumstances. Therefore, you should always expect to see them and be prepared.

It is important to know that a dark coat reflects only 5% of light; white clothing reflects 80%, and reflective materials between 90 and 98%.

Selective Perception

Up to this point we have seen the limitations of the eye to see in the darkness, given that the driver took time to notice the pedestrian walking ahead of him. But there are other causes that limit vision. In effect, we cannot always see the most important things in time. Put another way, what we are not expecting to see we will not notice or will take longer to detect.

Most likely, the driver had no idea that animals could appear on the highway, which is why he was not prepared for it. Being in a hurry was also an important factor, because people in a hurry try to dispense with everything that gets in their way.

The perceived necessity of arriving early to your destination has the effect of eliminating everything that “doesn’t matter” from your consciousness. When this happens, a repression mechanism tends to dominate. Being conscious of everything and considering the appearance of risks should lead to reduced speed, but that goes against the goals of a driver who is in a hurry.

The above can be summarized as follows:

Drivers are often exposed to a large number of sensory stimuli. It is impossible to process all of these stimuli while driving, so certain stimuli and inputs are selected as more important. Neither the selection nor the interpretation of stimuli depends on chance, but rather they are influenced by the expectations, needs and state of vigilance of the driver.

The above is applicable to all people and is commonly called “selective perception”. However, there are differences between people in terms of how much they take in and interpret in a situation. What one person has seen may not have been perceived by another, and the interpretation of a fact may differ greatly from person to person.

After going through the perceptive process, which is very rapid, a decision is made to take action. This action, in combination with other drivers and people on the road, leads to a result, which provides us with experience and new knowledge.

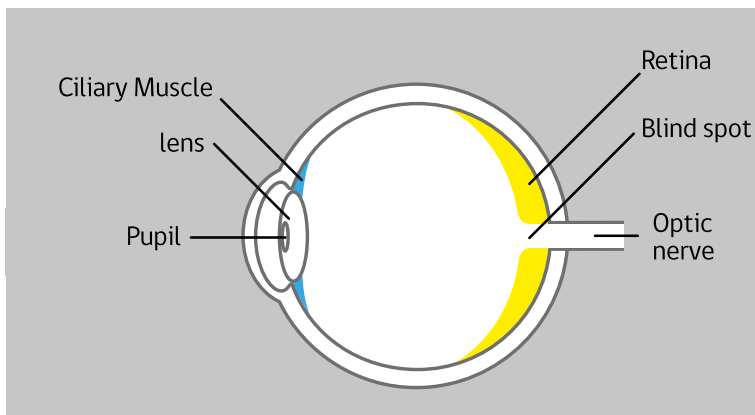
Due to selective perception, we run the risk of ignoring important traffic circumstances.

Location

Remind yourself that the driver failed frequently in the identification of important objects. In part, that was due to the limitations of the eye to see in the dark, as well as the phenomenon of selective perception. But there is also another important factor: the way the driver observes while driving.

Where, in what order, and for how long, does the driver look? These three factors depend on the ability of each person and vary with experience.

To better understand, you must know how the eye works:



- The pupil regulates the entrance of light by varying its size; it increases in darkness
- The lens refracts light towards the retina (in a normal eye).
- The lens' refraction capacity can be modified by muscles and fibers that contract and relax.
- The retina covers a large part of the back of the eye and contains cells that transform rays of light into electrical signals, which are transmitted through the optic nerve to the brain, where images are perceived.



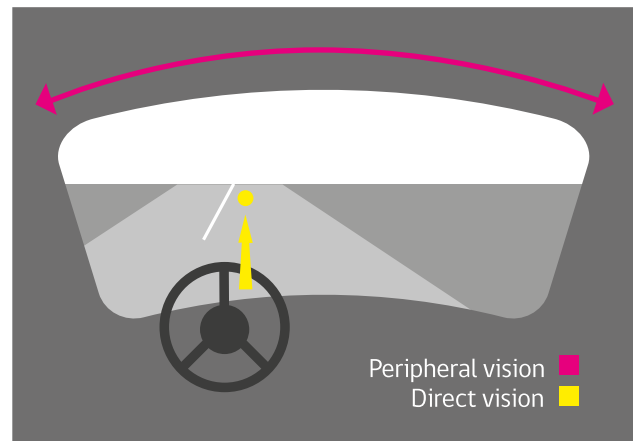
Close your left eye and look directly at the circle with your right eye. Maintain the book 30 cm away from your eye. You will see the X in your peripheral vision. Slowly move the book closer to your face. At a certain distance, the X will disappear. This is because it has become reflected in the blind spot.

In the external parts of the peripheral vision, the sharpness or visual clarity is less than 0,1%, even in people with normal vision. If you want to illustrate this with the help of the previous drawing, the circle corresponds to the zone in which there is the most visual acuity. With this in mind, it is easier to understand the importance of targeting your gaze in traffic.

The most important thing is the relationship between direct vision and peripheral vision. Things are detected in peripheral vision and recognized with direct vision. For example, if you discover something at a right angle from your head and then move your head, the eyes will recognize it.

Although peripheral vision is not acute, it is fundamental to sight. Normally we have a field of vision a little larger than 180°. A significant reduction in peripheral vision can cause serious problems in orientation.

Experienced drivers take advantage of their peripheral vision more than novice drivers, in addition to a more systematic location technique. In contrast, novice drivers almost always see what is near the vehicle and concentrate their gaze on fixed objects.



- Any kind of reduction in vision can significantly influence the capacity of the driver. A satisfactory field of vision and sight that permits a driver to clearly perceive objects at differing distances during day and night are essential to resolving complicated traffic situations.
- Pay attention and take measures to prevent any kind of alteration to your vision.

Processing Limited Information

Let us return one last time to the case of the driver: in the intersection, he crossed the center line. It is probable that was due to an underestimation of the speed at which he was traveling.

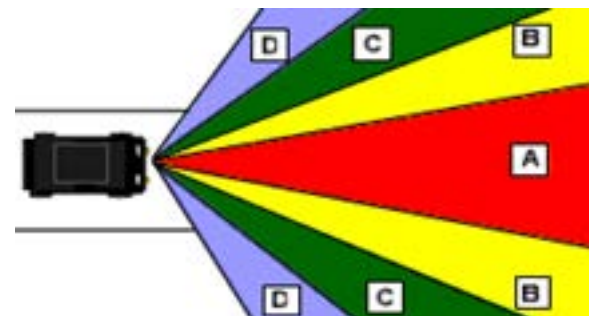
Among other causes, this underestimation occurs as a result of becoming accustomed to a certain speed and no longer processing the sensory stimuli to realize the speed at which you are traveling. Modern automobiles run fairly quietly and smoothly, which does not alert the driver to the speed at which she is traveling. Similarly, repetitive driving on a straight highway in good conditions does not present variations in visual stimuli.

Underestimating speed can be very dangerous, most of all because you can misjudge the braking distance.

The limitations of the brain's capacity to process information are not only reflected in misinterpretations of speed, but also in terms of judging distance between vehicles and processing stimuli.

A good example of this is tunnel vision, in which the visual field shrinks as speed increases. The higher the speed, the further away your gaze is fixed, leading to a decreased field of vision in which the sides of the road are not visible.

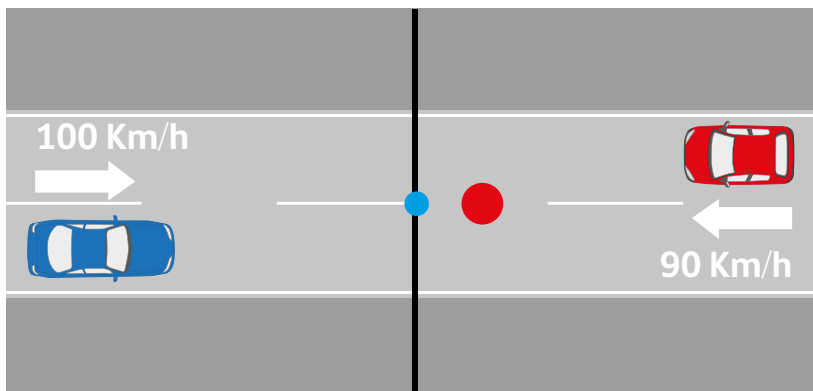
Tunnel vision also presents itself when the driver is in a stressed state.



SPEED	VISUAL FIELD
A-130 Km/h	30°
B-100 Km/h	42°
C-65 Km/h	70°
D-35 Km/h	100°

Studies show that it is very difficult to calculate the speed of oncoming vehicles and that judging the place where an encounter between two vehicles will take place is an estimation of the midpoint between yourself and the approaching vehicle; that is, the brain assumes that both vehicles are traveling at exactly the same speed, which rarely happens in reality.

If you are traveling at 90 km/h and will meet an oncoming vehicle traveling at 100 km/h, the real point of encounter (RP) will be closer from you than estimated (EP). The magnitude of error, or the difference between RP and EP, will rise the greater the difference in speed is between you and the oncoming vehicle.



- Estimated point of encounter (EP)
- Real point of encounter (RP)

If the brain were capable of doing these kinds of calculations, many traffic accidents would not occur.

Safe Driving Requires Emotional Balance

Maturity

Why must you be 18 (or 17 in some cases) to obtain a driver's license? The obvious answer to this question is that society expects that at that age the individual has reached the level of maturity required to be a safe and responsible driver. Unfortunately, the reality is different. We know that young drivers are more frequently involved in traffic accidents than older, more experienced drivers. How can this be explained?

Youth tend to have characteristics related to their place in the life cycle, which causes them to be more vulnerable to traffic accidents. Among these characteristics we can highlight the following:

- **An excessive need for self-affirmation**, which makes them more competitive and willing to break the rules of the road.
- **An overrated sense of driving ability**, which leads them to reject certain safety measures like wearing a seatbelt.
- **"Peer-pressure" behavior**, which leads them to attempt risky maneuvers when with friends.
- **An increased assumption of risk while driving**, which is related to competition with other vehicles.
- **Influenced by advertising**, especially those that incite risk.

Young people are prone to taking on risks while driving, due to a low perception of susceptibility to risk.

There are 5 factors that affect the evaluation and acceptance of risk, and that could explain the behavior of young people, who have a higher tendency to be involved in traffic accidents.

- **Attitude towards traffic.** As they do not perceive driving as something that could be dangerous, so that it is unlikely that they will adopt prudent driving behaviors.
- **Responsibility for behavior.** Many believe that they drive better than others, and assign blame to other people.
- **Driving experience.** Many do not have much experience driving, which makes it difficult for them to perceive risks correctly.
- **Level of control.** They trust their own abilities to control the vehicle in dangerous situations, so they assume more risks.
- **Low perception of risks.** Many don't see risky situations as dangerous (e.g., driving after drinking alcohol), which makes their behavior riskier.

Young people who have recently obtained a license “interpret” and misunderstand traffic situations due to their limited experience as drivers.

Young drivers overestimate their capability or their ability to drive more than adults.

Many young drivers show deficiencies in personal maturity.

Being a good driver requires a lot of knowledge and skills; you must be able to perceive multiple stimuli in a short period of time; the brain must be able to interpret these stimuli and quickly make a decision; you must put yourself in other people's shoes, be able to act correctly and with determination, and something very important: **you must have foresight.**

In reality, one can barely comprehend the quantity of processes that the brain must perform, and it is assumed that everything will work automatically when complicated situations arise while driving. However, with something as small as an increase in speed, the limits of human capacity are exceeded and in the blink of an eye a driver can make a mistake. Young drivers do not always know where this limit is, which leads them to make more errors than expert drivers. In addition, young drivers have a harder time “correcting” their mistakes while driving.

Without a doubt, a skillful athlete has undergone thousands of hours of training. This allows us to conclude that you will need tens of thousands of kilometers behind the wheel to be considered a driver with relative experience.

Adapting to Reality

Adapting to reality, that is, being able to distinguish the appropriate action for each context, indicates a person's maturity.

Many drivers demonstrate insufficient personal maturity. How should we judge a driver who on the highway or even in the city, tries to imitate a famous racecar driver, rapidly passing and exposing himself to risks? The only thing that driver is displaying are deficiencies in the development of his personality. Perhaps, he thinks that racecar drivers deserve admiration and tries to imitate them, to represent a role for which he is unprepared, and what is more, he does it in a completely inappropriate place – public roadways – instead of a racetrack.

Identity

Having an identity implies having a clear idea about who you are, what principles and values you have, what you want, what you know and what your limitations are. During the period before establishing an identity, in which one searches for one's limits, it is possible to make mistakes, which at times can be fatal. In the case of a young driver, this can unfortunately mean testing the maximum speed of the vehicle, trying to pass on a closed curve at 80 km/h or trying to break the record of another driver for a certain route.

Knowing Yourself

In order for your knowledge of yourself to be adequate, it must be true. That is, young people must know what their abilities and limits are and be able to accept that they have shortcomings, which at any given moment could cause a mistake.

However, surveys in other countries have given us information about how recently licensed youths judge their own driving abilities. Analyzing the results, we can conclude that in general women consider themselves as mediocre or subpar. To the contrary, survey results allow us to verify that men tend to overestimate their skills.

For all young men, the common denominator is that they believe they are more skilled than the average person. However, the large number of accidents in which they are involved does not coincide with the opinion they have of their own driving abilities.

Self-Control

Knowing how to control yourself in situations that affect your vulnerability is also evidence of personal maturity. When children get angry, their anger is uncontrolled. They shout, kick or hit objects or people. If drivers show that kind of uncontrolled aggression, the consequences could be catastrophic. Instead, you must control any eventual irritation or anger that can arise when another driver on the road acts inappropriately or you perceive their behavior as inappropriate.

Aggression leads to bad behavior. In the first place, because it leads to misperception and misjudgment of the situation, and second because it causes people to make impulsive decisions. Also, when a person displays aggressive behavior, he is only generating new conflicts.

It is preferable that you, as a driver, consider that the poor behavior of other drivers or pedestrians is a product of ignorance and is not intentional.

Another quality that a good driver must possess is the capacity to maintain attention and concentration for long periods of time. Daydreaming is an example of a negative behavior, which diminishes attention.

Responsibility

Maturity is directly related to a responsible attitude. A mature person cannot be an irresponsible person. We live in a society with many rights but also many obligations. In order for society to work adequately, people must display responsibility and respect towards others. How would traffic be if everyone drove according to their own rules and with no consideration towards others?

The evolution of traffic accidents will depend to a large extent on you as a driver showing consideration towards others, following traffic regulations, and assuming the consequences of your actions.

The Development of Morals

During infancy, everyone displays egocentrism, but little by little those feelings begin to diminish and gradually we understand that in order for society to live in harmony there need to be rules.

Over time, we can reach an even greater level, a level that is represented by service and understanding towards others, and by generosity and tolerance. One begins to realize the limitations of others and begins to feel a sense of humility.

This attitude leads to us trying to help others as drivers, to a feeling of community with the rest of the people on the road, including cyclists and pedestrians. Be nice. It's not enough to just know the rules; what matters is the spirit of them.

Unfortunately, however, self-centered behavior is still alive and well in some people, or they regress too easily to a previous stage of development.

The deficiencies of personal maturity leave their mark on traffic accident statistics, not only in terms of quantity, but also in terms of severity. Vehicles these days have great potential, which many people feel tempted to take to the limit.

A driver who wishes to show his "power" or "superiority" feels as though his vehicle is an instrument with which he can strengthen his personality, be more daring and be more independent. Although drivers may not consciously think this way, it can occur subconsciously and under these conditions it won't take long until a driver finds himself in a critical situation that in the worst case will exceed the limits within which he or she can adequately act.

Peer Pressure and Inner Strength

Sometimes, when you find yourself in the company of others, you react in a way you may not be accustomed to. You do things that you perhaps would not do if you were alone. Somehow, the presence and opinions of other people are very significant. **Being a driver when in the car with friends can require much higher demands than when driving alone.**

As a driver you should be aware of your own reactions. Does the presence of your friends affect the way you drive? Do you want to impress them? Do you feel insecure or afraid of making a mistake that will provoke criticism and jokes?

The influence of a group can be highly negative and contribute to the driver doing unexpected things. People talk about "peer pressure", to refer to the process of social influence that a group has on people, which leads them to act according to the desires of the group. This is not always negative. Peer pressure can also have a positive effect if the values and principles of safety and responsibility towards others take precedence.

Some people are more vulnerable than others to peer pressure. These people in generally feel very insecure about themselves and are afraid of “looking stupid”, so they choose to follow the patterns of the group. Other people, on the other hand, can resist peer pressure more easily; they are more autonomous and have the strength to defend their opinions. If your passengers or people in your group have ingested alcohol, it is probable that more than one person will express their ideas in a rowdy, aggressive or primitive way. Will you be able to turn down the demands of the group to drive faster, accelerate rapidly and perform risky maneuvers? Or will you be unable to take them calling you a chicken if you refuse to take more passengers than your vehicle can hold, or laughing at your conservative driving? **The recommendation for a group like this should be: reflect and change your style! Or, in the worst case scenario, you may need different advice: Change groups!**

In many cases of traffic accidents, it is appropriate to ask yourself: to what extent was the group responsible for the accident occurring? Despite the aforementioned, the majority of young people display responsible attitudes and positively influence each other, and if they learn and practice the basic rules of road safety that are contained in this book, over time they will become autonomous and safe drivers.

Behaviors that Imply Risk

Studies have concluded that there are behaviors or variables, like those described below, which facilitate traffic accidents or conflictive situations.

Impulsivity

Impulsivity, which means “acting without thinking”, or not foreseeing consequences, is almost always negative. It frequently leads to actions that cause the driver to lose control of the vehicle or to be surprised by other people using the roads, resulting in increased risk of accidents. Impulsive actions are typical of children, who almost always let their impulses run free.

Avoiding Blame

Certain people have a tendency to blame others and deny their own behavior in the unfolding of events. They avoid blame with excuses, which in the majority of cases irritates other people. These people blame others for what has happened and don't accept responsibility; as a result they don't change their behavior or have true experiences, slowing their personal development by not learning from their mistakes. Realizing that you have made a mistake and understanding that driving behavior must constantly improve is very important when you want to progress and become a safe driver.

Repression

In different life situations people try to repress or push their thought aside, which to some extent impedes them from reaching their objectives. Contemplating and understanding reality correctly, instead of distorting or repressing it can be decisive when driving a vehicle. Do you accept the risk of continuing to drive at the same speed even when it has gotten dark or when the highway is shining due to a fine layer of water or ice? Or are you reckless enough to believe that passing will be fine despite limited available space?

Do you understand the risks or do they not matter? Deep down we all know that how to recognize high-risk situations. However, other things, like getting home at a certain time, seem more important. In the majority of drivers this repression, or ignoring risk, happens sometimes, but in others it happens frequently, reducing the consciousness of the risk and increasing the tendency to run risks and enormously elevating the probability of getting into an accident.

Reaction Formation

During youth, many people are shy or feel afraid of looking foolish, harboring contradictory feelings about themselves; on one hand they want to seem self-assured and even daring, but on the other they feel insecure. How do you resolve such a conflict? Clearly there are various ways to react, but it is not strange for one of the feelings to overtake the other, resulting in an insecure person displaying aggressive behavior. Under these circumstances, a shy person might wish to seem daring in order to stand out and receive esteem and praise from others.

Many traffic accidents are the consequence of this mechanism, which is called reaction formation.

Stand Up For Yourself

Let us suppose someone wants to show their passengers how competent he or she is as a driver. Then their actions will frequently be reinforced with words so that the passengers know how to drive an automobile. Another way to stand up for yourself can originate from the desire to defend your rights at any cost. Feeling superior to others or thinking that you have more rights frequently leads you to think of some behaviors as “challenges” or to think, when another driver performs a maneuver you disagree with, that “he should get what he deserves”. Independent of whether you are right or not “accepting the challenge” quickly or “giving someone what they deserve” increases the risks of being involved in or causing an accident.

Alcohol

What the Law says about “Drinking and Driving”

In the year 2012 a modification to the traffic law was enacted, this modification was known as “Law Zero Tolerance of Alcohol and Driving” and it reduced the allowable levels of alcohol in the body to define what is understood as driving under the influence of alcohol and in state of intoxication, increasing the sanctions related to driving with alcohol.

Under the Influence of Alcohol	0,31 – 0,79 G/L
Intoxication	0,8 or more G/L

Driving under the influence of alcohol is punished with fines and with driver’s license suspension. Driving while intoxicated or driving under the influence of narcotics or psychotropic drugs is punished with fines, driver’s license cancellation and incarceration (jail).

Sanctions increase significantly in the case of reoccurrence, or if the driver, in addition to drinking is involved in an accident that results in damages or people killed or injured.

G/L	ETHYL ALCOHOL	DAMAGE TYPES	REOCCURRENCE	LICENSE CANCELLATION PERIOD
0,31 – 0,79	UNDER THE INFLUENCE OF ALCOHOL	WITHOUT DAMAGE OR INJURY	1 ST TIME	3 MONTHS
0,31 – 0,79	UNDER THE INFLUENCE OF ALCOHOL	SEVERE INJURY OR DEATH	1 ST TIME	3 – 5 YEARS
0,8 +	INTOXICATION	WITHOUT DAMAGE OR INJURY	1 ST TIME	2 YEARS
0,8 +	INTOXICATION	WITHOUT DAMAGE OR INJURY	2 ND TIME	5 YEARS
0,8 +	INTOXICATION	WITHOUT DAMAGE OR INJURY	3 RD TIME	CANCELLATION
0,8 +	INTOXICATION	SEVERE INJURY OR DEATH	1 ST TIME	CANCELLATION FOR LIFE

A new legal modification in 2014 (Emilia's Law), punishes with effective incarceration of at least a year all drivers that, in state of intoxication, cause serious injuries or death to a third party. Also, recurrence, driving with a cancelled or suspended license and driving freight or passenger vehicles will be considered a felony offense.

Also, if the driver involved in an accident refuses to take an alcohol detection test (breath test or another scientific test) without any justification, he or she will be sanctioned with suspension of license, fines and actual incarceration depending on the consequences of the accident.

When alcohol is consumed, traffic law violations increase for two reasons: because the person's abilities deteriorate or diminish, and because there is less sense of responsibility and caution.

Effects of Alcohol on the Body

The brain is influenced by alcohol much more than other organs in the body. What most people do not know is that the first effects of alcohol manifest themselves psychologically, for example: attention, perception and information processing. Even with small amounts of alcohol, perhaps a blood alcohol content of 0.1 g/l, behavior is affected, certain inhibitions are lowered, and self-confidence and the tendency to overestimate one's own abilities are increased. This represents a significant danger, since many people want to increase the pleasurable feeling by drinking more.

The ability to react and coordination are also affected by small quantities of alcohol.

Alcohol perturbs mood, slows communication in the nervous system and inhibits the ability to distinguish between different stimuli, which negatively affects a driver's reaction time when confronted with an unexpected situation.

Also, most people may notice a reduction in their vision after having a few drinks, with respect to direct vision. However, what is not noticeable is that peripheral vision is decreased. What's worse is that you don't realize you do not perceive things until it is too late. With higher concentrations of alcohol, the worsening of vision is evident, especially in the form of double vision. The muscles of each eye do not work well together and the muscles of the lens function worse, which makes focusing difficult. Also, the pupils begin to function poorly.

In summary, peripheral vision, attention, reaction time, interpretative ability and decision making are all affected before motor functions; that is, the truly essential functions needed for driving are affected before you start to realize the state in which you find yourself.

The only safe concentration of alcohol for driving is 0. Therefore, if you are going to drive, avoid consuming alcohol and if you end up drinking, DO NOT DRIVE; find an alternate form of transport.

Variation in Blood Alcohol Level

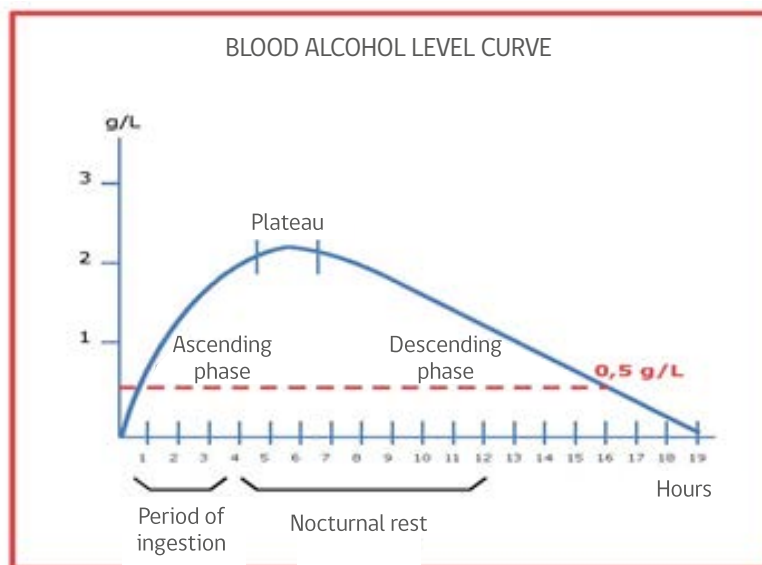
To know the level of alcohol in your body at a given moment, you have to analyze a blood sample – blood alcohol level – or do a spirometric test with equipment specially designed by “Carabineros de Chile”.

Blood alcohol level varies according to various factors. The main factors are:

- The amount of alcohol a person consumes.
- Body mass. A person with lower body mass will have a higher blood alcohol level. This means that if two people drink exactly the same amount, the person who weighs less will have a higher blood alcohol level.
- Sex. There are physiological differences between men and women that give rise to the following phenomenon: if a man and a woman have the same weight and drink the same amount of alcohol, it is probable that the woman will have a higher blood alcohol level than then man.

If two people ingest the same type and quantity of alcohol, they will not necessarily have the same blood alcohol level, nor will they experience the same effects.

- The duration of drinking. The amount of alcohol accumulated in the body (maximum point on the curve: plateau) will be higher if you drink in a short period of time. If you drink more slowly and/or allow time to pass between drinks, the body will eliminate some alcohol before receiving more. The following figure shows an example in which a person ingests alcohol in a period of four hours and the sleeps for eight hours.



Alcohol can be detected in the blood 5 minutes after being ingested. In the body, the blood alcohol level increases very quickly until reaching its maximum level, which is reached, on average, an hour after having ingested alcohol.

The body releases alcohol through **metabolism**. In an **average healthy person** weighing 70 kilos the presence of alcohol decreases at a rate of **between 0.10 and 0.15 grams of alcohol per liter of blood per hour**. But it is important to keep in mind that this figure is just an average, and does not necessarily apply to you. **Metabolism** cannot be rushed. This process occurs at a constant rate that cannot be sped up with home remedies like coffee, eating candy, smoking a cigarette, taking a cold shower or doing physical exercise. All these things will only result in turning a sleepy drunk person into an alert drunk person. Only time will bring sobriety.

Sleeping a few hours may not be enough to guarantee safety.

- **Food ingested.** The concentration of alcohol in the blood varies according to how much or how little a person has eaten before or while imbibing. Food reduces the amount of alcohol that passes from the stomach to the bloodstream. Also, alcohol mixed with carbonated drinks increases absorption in the stomach.
- **Age.** People under 18 and over 65 perceive the effects of alcohol more intensely. The effects of alcohol are more dangerous for novice drivers, due to the fact that many of the movements necessary to driving are not yet automatic because of lack of practice.

As you can see at this point, with so many factors it is very hazardous to predict a priori the results of a blood alcohol level test.

With a blood alcohol level between 0.3 and 0.5 g/l the risk of being in an accident is double what it would be without alcohol. However, with a blood alcohol level between 0.5 and 0.8 g/l the risk is five times what it would be without alcohol.

Drugs and Narcotics

The greatest risk of driving after having consumed drugs is given by the fact that all drugs act on the brain in some way, and can alter perception, cognition, attention, balance, coordination, reaction time and other faculties required to drive safely. The effects of each specific drug differ depending on the mechanism of action, the quantity consumed, the history of the consumer, and other factors.

Drugs can cause physical and psychological dependency.

Some of the most commonly used illegal drugs are marihuana, cocaine, ecstasy, amphetamines and hallucinogens. Consuming them, in addition to being a health risk, can lead to real dangers when driving under their influence, which is why it is necessary to know the risks.

Marihuana

It is classified as a depressant and a hallucinogen. It is not a stimulant. Its effects on the body appear rapidly and vary according to the dose, the kind of marihuana and both the physical and emotional state of the individual,

The main consequences of its consumption are:

- It alters your perception of your surroundings (e.g., colors).
- It alters your perception of time, space and speed. Distances are harder to calculate.
- It is difficult to maintain concentration, and therefore there is a high probability of being distracted behind the wheel.
- It increases reaction time, and therefore stopping distance in high-risk situations.
- It produces strong soporific effects.

Cocaine

It is a stimulant whose main effects are:

- It produces more competitive and even aggressive behavior.
- The behavior of a person who consumes it can become impulsive, which could cause serious errors behind the wheel.
- It causes an overestimation of abilities, leading to greater assumption of risk, committing more violations, and driving dangerously.
- It alters the perceptions of surroundings and decreases concentration, causing the person to be easily distracted.

Cocaine base paste

The effects of smoking cocaine paste depend on the mode of preparation, dose, frequency of use, and impurities and adulterations it contains, among others.

The effect after smoking is fast and intense; it appears in a matter of seconds and lasts a few minutes. There are four stages associated with its consumption:

- **Euphoria stage:** characterized by a state of euphoria, lowering of inhibitions, sensation of pleasure, ecstasy, intensification of mood, changes in attention levels, hyperactivity, false sensation of abilities and competence, acceleration of thought processes, and a decrease in hunger, tiredness and fatigue.
- **Dysphoria stage:** feeling of anguish, depression, insecurity, sadness and apathy, among others. In this stage there is also an uncontrollable desire to continue consuming.
- **Stage** in which the person begins **uninterrupted consumption**, while they still have a dose in the blood, to avoid dysphoria.
- **Psychosis and hallucinatory stage:** loss of contact with reality, which can occur days or even weeks after consumption, and can last weeks or months. Sensory hallucinations that can be visual, auditory, olfactory or cutaneous.

In all of these stages, the risks of driving are high and obvious. Among the physical effects are: lack of coordination, dizziness, dilation of pupils, tremors, nausea and/or vomiting.

Ecstasy

It is possible to experience optical illusions, such as flashes in the peripheral field of vision, which can cause brusque, evasive and dangerous maneuvers.

Ecstasy can manifest itself in the following ways: periods of heightened sensitivity to light (at least higher tendency to temporary blindness) or episodes of blurry vision, difficulty to maintain concentration, episodes of depression or anxiety and, once symptoms have disappeared, periods of physical and mental exhaustion.

A Summary...

Physiological effects	Marihuana	Cocaine	Ecstasy	Cocaine Paste
Difficulty paying attention	X	X	X	X
Sensory alteration	X	X	X	X
Motor skills alteration	X	X	X	X
Impulsivity		X	X	X
Alteration in speed of thinking	X	X	X	X
Cardiac effects	X	X	X	X
Manifestation in Driving	Marihuana	Cocaine	Ecstasy	Cocaine Paste
Difficulty calculating distances	X	X	X	X
Distractions behind the wheel due to lack of concentration	X	X	X	X
Increase in reaction time	X			
Panic while driving			X	
Altered perception of surroundings	X	X	X	X
More competitive or aggressive behavior with other drivers		X	X	X
Impulsivity when confronting unexpected situations		X	X	X

From the above we can conclude:

- If you have consumed any kind of drug, DO NOT DRIVE, always remember that all consumption involves risk.
- Know that waiting for the effects to disappear or diminish is not a solution.

Illnesses and Prescription Drugs

Amphetamines are among the drugs that increase the state of vigilance. These produce an excess of activity and good mood, which in general brings as a consequence an ephemeral and strong sensation of self-confidence. After a short time, its consumption has effects like irritation and lack of concentration.

Sleeping agents, like sedatives, belong to a group of products that reduce vigilance. Their consumption produces a sensation of relaxation and drowsiness. When they are consumed frequently for long periods of time they provoke a kind of apathy and in extreme cases can lead to unconsciousness.

Risks of Illnesses and Medications while Driving

Each day there is more social awareness of the effects of driving under the influence of drugs and alcohol; however the dangers of driving under the effects of many medications are unknown. There is also little awareness about the risks that certain illnesses can have when operating a vehicle.

Some medications decrease attention and increase reaction time while driving.

With varying frequency, we have all suffered from and probably will continue to suffer from illnesses. Not all of illnesses demonstrate the same risks to driving; for example neurological disorders have the highest risk of causing accidents, followed by addiction to prescription medications (similar to drug addiction) and diabetes. Other pathologies that present risks to driving are cardiovascular disease, problems with the motor system, arthritis, hearing difficulties and some vision problems.

If you have any illnesses or diseases it is your responsibility to ask your treating physician about the consequences and risks of driving with that pathology. This will allow you to take the necessary precautions to avoid an accident. In the same vein, if you take prescription medicines, you should be informed of the possible effects they may have on your driving, by asking your treating physician or reading the information included in the prescription.

Illnesses that Can Affect Driving

Driving a vehicle safely requires all of our concentration and the ability to react adequately in a high-risk situation; therefore our faculties must be in good condition.

ILLNESSES WITH HIGH RISK OF AFFECTING DRIVING ABILITIES

	Illness	Possible risks to driving ³
Cardiovascular Diseases	High blood pressure	Dizziness; sudden loss of consciousness.
	Arrhythmia	Loss of attention.
	Angina of the chest	Loss of concentration.
	Heart attack	Not advised to drive for three months after the incident.
	Cardiac insufficiency	Lack of concentration; somnolence.
Respiratory Illnesses	Hay fever	Loss of attention, loss of concentration; diminished visual coordination; ocular irritation.
	Common cold/flu	Loss of attention; loss of concentration; somnolence.
	Bronchial asthma	Loss of attention; difficulty moving.
	Chronic bronchitis	Loss of attention.
	Obstructive sleep apnea	Loss of attention; somnolence.
Neurological and Mental Disorders	Dementia (Alzheimer's)	Severe cognitive deficit; disorientation.
	Epilepsy	Loss of concentration; poor coordination of movements; possibility of sudden seizures.
	Depression	Loss of concentration; poor coordination of movements; possibility of sudden seizures.
	Anxiety disorders	Impulsivity; loss of concentration; loss of attention; aggression.

Source: DGT/INTRAS

(3) Primarily during the symptomatic phase and without proper treatment.

If you have a chronic illness, you can decrease your risk of being in an accident by:

- Familiarizing yourself with your illness.
- Knowing the side effects of any medications you take.
- Knowing how to recognize the symptoms of a crisis and knowing how to act.
- Avoiding situations that lead to crises.
- Avoiding driving during a crisis or an acute period of the illness.
- Not modifying or abandoning treatment without prescription medicines.
- Not consuming alcohol in conjunction with medications.
- Consulting your treating physician about the risks of your pathology for safe driving.

Respiratory Allergies

The most common symptoms of respiratory allergies are very similar to the common cold: a constant need to blow your nose, runny eyes, blurred vision, sneezing (sometimes persistent), fatigue and headache, among others. These symptoms are so normal that we don't consider them dangerous when we get behind the wheel.

There is evidence that some of these symptoms could cause errors in judgment of distances and a diminished capacity to maintain concentration in traffic, among others. In addition, antihistamines, frequently consumed to alleviate these symptoms, can cause increased drowsiness behind the wheel.

It is important to know that this type of illness can seriously affect driving safety. On a highway trip, driving at 90 km/h during a sneeze that lasts one second, the vehicle moves 25 meters without the driver being aware of the conditions of the road. How many meters would you end up advancing if you sneezed 10 times in a row? You can make your own conclusions.

USEFUL ADVICE FOR DRIVERS WITH ALLERGIES:

- Try not to open the windows while driving; air currents containing pollen can worsen an attack.
- Be careful with the air conditioning; direct air blasts can provoke allergic attacks.
- Maintain the ventilation ducts and the vehicle interior clean; clean the vehicle frequently, particularly if you transport animals.
- Try not to take very long trips if possible; consult your treating physician about the possibility of varying your medication or postponing a dose.
- Wear sunglasses, as they protect the eyes from allergens.
- Avoid driving around sunrise and in humid areas, as under both circumstances there are high concentrations of pollen.
- Do not self-medicate; consult your physician. Advice from friends and family may not result in the best medication.

Stress

Stress is the body's defense mechanism against threatening or demanding situations. In this sense the reactions of stress can help us to overcome adverse situations; however, if the stressful situation is maintained during a long period of time, it can cause sleep disorders, anxiety, digestive problems and even heart attacks.

Stress implies that mental energy is converted into anguish, provoking poor reactions. Instead of concentrating your energy on solving a difficult problem, stress worsens problem-solving abilities. However, it is important to remember that not all stress is necessarily negative. On the contrary, a certain level of stress can contribute to improved performance.

The negative influence of high levels of stress originates in the fact that a driver can have impulsive reactions and/or reduce his or her field of attention, holding on to certain thoughts and actions. This causes the driver to be affected by cerebral and muscular rigidity.

Another reaction to stress is "giving up". The feeling of failure is unconsciously converted into the dominant emotion, and drivers become passive; in the worst case scenario, this can lead to a sort of out-of-body experience, in which you view the unfolding of events as though you were a spectator.

The possibility also exists that a person under stress can panic. Emotions will take hold of her, unraveling a series of unnecessary or inappropriate actions. A driver overtaken with panic has no way of resolving the situation on his own.

All of these states are extraordinarily severe. You should always avoid driving when you are under stress, and also try not to become stressed while you drive.

Depression

Depression is a common illness in our society. Its main characteristic is suffering a mood changes that cause episodes of anguish, sadness, and lack of energy, among others. If you think you might be suffering from depression, you should seek the help of a health care specialist immediately, in order to determine the correct course of treatment.

Depression can cause suicidal thoughts. There is evidence of people with depression deliberately causing traffic accidents.

In addition, depression affects driving as follows:

- Mood changes can cause the driver to be lost in their own thoughts and not focused on traffic conditions.
- The driver is less worried about looking for information in their surroundings, which can cause a delay in detecting risky situations, like a pedestrian entering the roadway.
- Depression leads to a higher probability of suffering states of exhaustion and fatigue, which is why it is not recommended to drive at night, during long periods of time, or in monotonous environments.
- A person suffering from depression can become easily upset under certain circumstances and react impulsively or disproportionately towards others on the road.
- Depression causes insecurity, which leads to making mistakes or acting unexpectedly while driving.
- Normally people with depression take medications that can affect their ability to drive.

Medications that Can Affect Driving

A large percentage of the population regularly takes some kind of medication, and as was already mentioned, people tend to be unaware of the effects their medications can have on their ability to safely operate a vehicle.

The incorrect use of medications can cause numerous accidents.

Not all medications alter a person's ability to drive safely, which is why it is important for you to ask a professional about the effects that your medications may have. The following is a list of undesired effects of some common medications.

Antihistamines

Very commonly used to treat allergies, there are many kinds of antihistamines; some of them have secondary effects on the body that can be especially dangerous for driving.

It has been shown that the risk of driving under the effects of some of these medications is equal to the risk of driving with a blood alcohol level of 0.5 to 0.8 g/l; that is, driving under the influence of alcohol.

Modern antihistamines are much safer for driving, since they normally do not produce drowsiness, like some of the older ones.

Never take antihistamines in combination with alcohol or other medications, as this could cause other undesired effects.

Psychotropic Drugs

Psychotropic drugs are those medications used to treat mental conditions like depression, anxiety, or sleep disorders, and many of them can significantly alter the ability to drive safely.

There are many kinds of psychotropic drugs:

- Anxiolytics (tranquilizers), sedatives and hypnotics, which are used to alleviate symptoms of anxiety, diminish states of elevated activity and induce sleep.
- Antidepressants mainly used to treat depression.

- Neuroleptics or antipsychotics, used to treat psychotic disorders (e.g., schizophrenia). Can cause drowsiness and low blood pressure.
- Psychostimulants, which have an activating effect on the central nervous system and on mental functions (e.g. some types of amphetamines).

Some of these medications have such significant effects on the body that in some countries it is illegal to drive while consuming them.

In conclusion:

When you take medications, especially those mentioned above, you must consult your physician about the possible risks to safe driving, so that you can take the appropriate safety measures.

▲ If you are treating		Drowsiness					Other effects
		Drowsiness	Euphoria	Dizziness	High Blood Pressure	Blurry Vision	
Pain	Analgesics						
	Narcotic analgesics						
Sleep and anxiety	Sedatives and hypnotics						
	Antidepressants						Altered coordination
	Antipsychotics						Fatigue
	Psychostimulants						Dyskinesia
Diabetes	Antidiabetics						Nervousness/Tremors
Colds, Cough & Bronchia	Cough medicine						Hypoglycemia
	Antihistamines						
	Antibiotics						Anxiety/Insomnia
Circulation	Anticoagulants and antiplatelet						
Circulation and Pressure	Vasodilators and anti-hypertensives						
Others	Anticholinergic						Confusion
	Anticonvulsive						Ataxia
	Anti-Parkinsons						Confusion / Reduced reflexes

Exhaustion, Drowsiness and Fatigue

Exhaustion, drowsiness and fatigue are states that are familiar to the everyday driver. However, when you are driving a vehicle, you are usually unaware of the risks associated with these factors, which are common causes of accidents. Rear-end crashes, going off the road, and head-on collisions are often the consequence of a drowsy or fatigued driver who could not avoid the accident in time.

What Happens When a Driver is Exhausted or Drowsy?

International statistics show that between 15 and 30% of all traffic accidents are caused either directly or indirectly by drowsiness and many have severe consequences.

Although you might think that falling completely asleep behind the wheel is the mistake that causes accidents associated with exhaustion, risks of drowsiness appear much earlier.

Another myth is the belief that drowsiness only comes on at night, when in reality drivers can become sleepy during the day and for a variety of reasons.

Exhaustion is an important cause of traffic accidents, mainly those that occur on the freeway.

Effects of Exhaustion, Drowsiness and Fatigue on Driving

Drivers have a huge responsibility when they feel exhaustion coming on. When you begin to get tired or sleepy, among other effects, the following happens:

- **Reaction time increases.** This explains accidents like rear-end crashes, when the vehicle in front brakes and the rear vehicle is not able to brake in time.
- **Increase in number of distractions behind the wheel,** since drowsiness makes concentration difficult in traffic and distractions come up more easily. This is especially dangerous when you are driving in a monotonous environment or with little traffic.
- **Judgment and the ability to make decisions behind the wheel are altered.** When people are tired, they take longer to make a decision, increasing the probability of getting into a high-risk situation. Exhaustion also contributes to errors, especially when you need to respond quickly in a complicated situation, like getting on a highway or freeway. Exhaustion and drowsiness increase errors in estimating speeds.

- **Psychomotor coordination worsens and driver mobility is altered.** Muscles relax, creating slower and less precise movements. We have the tendency to make movements automatically, without thinking, which can result in maneuvers performed without thought that are not necessarily appropriate for the traffic situation. For example, driving through an intersection controlled by a traffic signal without being sure the light is green.
- **"Microsleeps" can occur,** which are periods of a few seconds in which the driver, without realizing it, falls lightly to sleep and is completely unaware of his or her surroundings. Usually the driver is not aware of having fallen asleep, not even after awaking; microsleeps go completely unnoticed. Many accidents are caused by **microsleeps**.
- **Perceptions of surroundings are altered.** With exhaustion, vision becomes blurred, making it more difficult to focus your gaze, which can cause ocular fatigue. It is easier to become temporarily blinded by another vehicle's high beams when you are drowsy.
- **Changes in behavior.** When you are tired, you can become uneasy or more hostile than other drivers on the road. It is possible to assume a higher level of risk, for example increasing velocity, especially when you are close to your destination and are anxious to be there.

Exhaustion can occur for many reasons. When it comes to driving a vehicle, the most common cause is the combination of physical strain and monotony. Driving for long periods of time requires a certain amount of muscle work. Remaining seated for long periods worsens blood circulation (lowering the oxygenation of the blood) and driving becomes heavy on the eyes. In addition, different noises can contribute to drowsiness.

Phases of Exhaustion

The first sign of exhaustion shows itself as a lack of interest and indifference towards intellectual activity. Little by little the first yawn presents itself.

It is not strange for your mouth to become dry and for you to start to feel cold. The sensation of cold is very treacherous, since it makes you want to increase the temperature of the interior of the vehicle, which will only make you drowsier. Yawns become more frequent and even deeper. Your eyelids start to close and your speed becomes irregular. The driver becomes disoriented and asks questions like "Did I already pass City X or am I close to arriving?"

In these final phases, you see things that are not there; neck muscles relax and your head starts to fall uncontrollably. The desire to sleep becomes stronger and your exhaustion cannot be dominated even by your strongest willpower.

You have probably already come to the conclusion that it is essential to pull over to rest, stretching your legs, getting fresh air, or sleeping for a few hours. Never allow yourself to be in such a hurry that you put your life and the lives of others at risk.

If at any point you begin to feel tired while driving, while you are looking for a place to stop be sure that you are getting fresh air inside the vehicle.

Factors that Lead to Drowsiness

Among the most common situations that can lead to the appearance of exhaustion are:

- **Time of day.** The early morning (especially between 3 and 5 AM) and late afternoon (between 2 and 4 PM) are especially conducive to drowsiness, even if you have slept enough.
- **Sleeping fewer hours than usual.** Everyone knows how many hours of sleep they need in order to awake feeling rested, able to think clearly and prepared to perform well all day. Exhaustion can set in if you have slept only a few hours, especially if you sleep for less than half the time your body needs. If you get one or two fewer (than normal) hours' sleep each night, in a few days you will be extremely **drowsy**.
- **Changing your sleep pattern.** The more consecutive hours you are awake, the longer it is to resist exhaustion. Drowsiness or sleepiness can set in much more easily at the time you are accustomed to going to sleep, and after that point exhaustion will be even more extreme. Avoid driving under these conditions, as the risk of accident will be even greater.

People who work in jobs with changing shifts (like health care professionals or emergency services), whose periods and quantity of sleep vary frequently, often experience periods of extreme exhaustion while awake. These people in particular should exercise extreme caution while driving.

- **Quality of sleep.** When your sleep is not restorative, the next morning you wake up tired and groggy, which means you are not in a perfect state to drive.

Also, if your sleep is light and you do not achieve deeper stages of sleep, you do not get sufficient rest. Although you may not awake during the night, the next day you will still be very sleepiness.

- **Monotonous driving,** like driving at night along a straight freeway with no traffic for many kilometers, leads to exhaustion. However, on roadways where the environment is constantly changing, like urban streets with heavy traffic, it is easier to remain alert and active.
- **Consumption of sedatives and stimulants,** like alcohol or certain medications, can lead to drowsiness. A large meal can also cause exhaustion or grogginess, so you should avoid eating large quantities if you are going to drive.
- **Stimulants,** such as coffee and energy drinks, can be useful in the moment in some situations, however when their effect wears off it can produce a rebound effect, that is, exhaustion will appear suddenly.
- **Sleep disorders,** like insomnia, can cause extreme exhaustion during the day, which has a negative influence on road safety.

Fatigue Behind the Wheel

Fatigue is one of the most frequent causes of accidents, especially among professional drivers.

Fatigue and drowsiness are two phenomena that tend to appear frequently together; driving while exhausted generates drowsiness and driving while drowsy leads to the appearance and intensity of fatigue.

Effects of Fatigue on the Driver

The most dangerous effects of fatigue on driving are:

Alteration of sensations and perceptions, like:

- Blurred vision that prevents you from adequately perceiving your surroundings.
- Diminished auditory sensitivity, which affects adequate perception of sounds in the environment.
- The possibility of experiencing brusque and disproportionate reactions to sudden sounds, like heavily braking when hearing a horn.
- Feelings of dragging, neck and back pain, migraines, cramps and other irritating or unpleasant sensations.

The ability to focus your attention on your surroundings is affected, complicating your ability to concentrate on traffic and leading to distractions.

Changes in movements:

- They are slower and less precise.
- The number of maneuvers is reduced, for example you may correct your course fewer times.
- Movements indicative of fatigue appear: frequent changes in posture, stretching, yawning, constant seat adjustments, hand movements (like scratching), or so-called playful behaviors (like singing, whistling or drumming on the dashboard).

Changes in behavior

- You may start to drive automatically and more passively (paying less attention to your surroundings, for example).
- It is normal to take more significant risks behind the wheel.
- It is possible to be more nervous or irritable, which increases hostile or aggressive behavior towards other drivers on the road.

Changes in driver's decision-making, to some extent as a consequence of the factors mentioned above:

- The quantity and quality of information that you take in regarding your surroundings diminishes, which makes it easy to misinterpret situations or the behavior of others.
- Your reasoning is severely affected and you will not make the safest or most appropriate decisions.
- Reaction time is increased.

Situations that can favor the Appearance of Fatigue Behind the Wheel

The appearance of fatigue behind the wheel is a matter of time, so if you drive for a long time, sooner or later you will become fatigued.

As a result, it is very important to know which circumstances favor or lead to the appearance of fatigue and increase its intensity. Avoiding these circumstances while driving or increasing the number of rest stops can help to guarantee your safety and the safety of others.

Circumstances of the road and surroundings:

- Driving on a road with heavy traffic, as this requires increased concentration.
- Driving on a poorly paved road, as this makes driving less comfortable, for example due to vibrations in the vehicle.
- Driving down an unknown road, as you must be aware the entire time.
- Driving at night or under adverse meteorological conditions (rain, fog or snow), as driving becomes more difficult requiring heightened attention.

Circumstances in the vehicle:

- Poor ventilation or high temperatures inside the vehicle.
- Driving a poorly maintained vehicle (e.g., suspension or steering problems), makes driving uncomfortable.
- Poor ergonomic design of the seat or other elements inside the vehicle also makes driving uncomfortable and difficult.

Circumstances of the driver:

- Driving for a long period of time without resting or resting inappropriately is the main cause of fatigue behind the wheel.
 - Maintaining excessive speed for a long time.
 - Previous changes in the driver's state, for example driving while already fatigued, tired, under the effects of alcohol or feeling sick.
 - Changing normal driving habits, like driving at night when you are only accustomed to driving during the day.
 - Being a novice driver, as many of the processes necessary to driving are still not automatic, you need more concentration.
 - Maintaining inappropriate posture in your seat makes driving uncomfortable and difficult.
-
- If you are tired or drowsy while driving, the best thing to do is stop to rest in an appropriate place and sleep; 20 or 30 minutes of sleep is usually sufficient. If you continue driving under these conditions, the risk of being in an accident will increase.
 - On long trips, rest for at least 20 or 30 minutes every 2 hours or 200 kilometers (maximum).
 - Pay attention to the appearance of signs or symptoms of exhaustion or fatigue that have been explained above. If you are in doubt, it is always safest to stop and rest a little.

The Experienced Driver

People continue to learn throughout their entire lives. There are different ways to learn and learning can take place in a variety of different ways, but in order for learning to be effective you must have a positive attitude towards it, and recognize the gaps in your own knowledge.

Willingness and Need to Learn

The belief that knowledge of traffic consists simply of knowing the rules of the road and how to drive a vehicle reflects only a superficial understanding of the level of difficulty that safe driving implies.

Being a good driver requires more than just superficial learning. Many situations that can come up while driving must be experienced, discussed and analyzed with experienced drivers. It is not enough to learn the rules by heart, but rather you must reflect on the different kinds of problems that can present themselves while driving.

Although you may have received excellent training and gotten your driver's license, you should consider yourself a novice who must obtain significant experience in order to become a safe driver. Accident statistics regarding people who recently obtained a driver's license are gloomy, but clear. Therefore, if **you are young and especially if you are a man, do not overestimate your speed thinking that you can "beat the clock", as you will not only be putting your own life at risk, but also the lives of innocent people. Your mission should be to contribute to change.** Many studies show precisely that a driver's behavior changes as he or she acquires experience. The majority of expert drivers and drivers of a mature age have already learned that the best way to avoid accidents is by taking your time.

5. VULNERABLE USERS

NEW DRIVER'S HANBOOK

VULNERABLE USERS

Although everyone who uses public roads is likely to suffer some kind of accident or another, certain people are more vulnerable. These include children, pedestrians in general – particularly elderly or inebriated people – cyclists, motor-cyclists, and others.

Pedestrians, cyclists and drivers of two-wheeled motorized vehicles and their passengers account for almost half of traffic-related fatalities worldwide

Source: Global Status Report on Road Safety, WHO.

Pedestrians

In Chile, crashes involving pedestrians account for approximately 15% of all accidents; however deaths as a cause of these accidents account for approximately 40% of all traffic-related deaths.

The high risk of accident associated with vulnerable parties is related to their unpredictability, which means that their movements are less predictable than those of other people on the roads. Therefore a driver will find it harder to anticipate pedestrian behavior. Additionally, pedestrians tend to commit many infractions, including:

- Suddenly stepping into the road.
- Crossing the road inappropriately. Failing to use pedestrian crosswalks or overpasses and not respecting traffic signals.

As a driver you must always be alert and anticipate possible infractions of pedestrians.

If you are driving in the left lane and you see a vehicle stopped in the right lane before a crosswalk (zebra crossing), you should slow down and be prepared to stop, as pedestrians may have begun to cross.

You must also slow down and be prepared to stop when approaching a stopped bus. A pedestrian could suddenly appear in the road in front of or behind the bus, or could be running to get on the bus.

Show consideration for pedestrians. Drive carefully and slowly when near pedestrians, especially on busy commercial streets, in residential areas, near bus stops, educational establishments, food trucks or sales carts or driving through small towns.

Be cautious with pedestrians; you may not see them and they could appear suddenly, usually behind or in front of parked vehicles.

Also, pay special attention in the presence of inebriated people. It is preferable that an inebriated pedestrian gets their own way rather than being struck by a car or run over.

You should also be aware that people can suffer some kind of impediment, whether visible or invisible. A pedestrian can have problems with vision or hearing or mobility problems. Those who have impediments are not required to announce them.

As a result, always reduce your speed when you suspect a pedestrian could have some kind of difficulty. Drive carefully and show consideration towards elderly people or those with disabilities. Generally, roadways are not well adapted for people with difficulties. Give them time to cross and do not assume that a pedestrian or cyclist can hear your vehicle; they may be hard of hearing.

Elderly Pedestrians

Due to their unique characteristics, people of advanced age have a higher probability of dying as a result of being hit by a car compared with younger people.

Drivers should be especially respectful with this group of pedestrians in order to avoid getting into accidents or striking someone with their vehicle. In addition, it is important to understand the principal problems that many seniors or elderly people face as pedestrians:

- **Excessive noise in the environment**, which can make hearing more difficult.
- Difficulty assessing **vehicle speed**.
- Reduced mobility and **slower reaction time**.
- On some occasions, there is a **difficulty to distinguish between the colors of traffic lights**.
- **Scarcity of pedestrian crosswalks** in some areas.
- **Roads can be too wide** to cross and may be **poorly illuminated**. An elderly person may need 4 seconds more than a young person in order to cross a street 16 meters wide.
- They may have **orientation problems** when they do not know the streets well.

Upon crossing the street, an elderly person could return to the sidewalk before fully crossing, or stop in the middle of the road, or could be unaware of traffic and suddenly step off the sidewalk onto the street.

People Who buy their Impediments

A lot of people listen music using earphones, and we often observe pedestrians and cyclists who travel on the streets using these devices, completely acoustically isolated from everything around them. Another implement that technology has provided in the past few years is cellular telephones. A pedestrian using his or her cellular phone will most likely be more occupied with the conversation than with traffic. It is probable that these people can step onto the roadway without warning. **As a result, use extreme caution in these cases.**

Children

Many accidents happen when children run across the street. Children live in their own world, and which is why you as a driver should know how they act.

Warning!

- Children are small; because of that they are difficult to see when playing behind a parked vehicle.
- Children do not have completely developed vision until they are 15 years old. Their visual field is limited and they only see one thing at a time.
- Children act impulsively; they do what they want, without thinking about the consequences.
- Children are always playing; to them everything is a game. They don't consider that traffic can be dangerous.
- Children are relatively safe in traffic starting around 9–12 years of age.
- Children have difficulty judging distance and speed.

The presence of a child in the roadway is in and of itself a warning sign. As a driver you are responsible for avoiding accidents. You are the one who should have the knowledge and be on the watch, not the child. **A child cannot be the cause of an accident!**

Be especially cautious and be prepared to stop:

- In residential areas where children play on the roadways and sidewalks.
- When children get out of a vehicle on the inappropriate side.
- Close to educational establishments around the start and end of school.
- When passing a stopped school bus or transport vehicle; there may be children getting on or off.
- When near a vehicle selling candy or ice cream. Children are more interested in these things than paying attention to traffic.

Children in Cars

Driving with children in the vehicle can be very demanding. It can be difficult to listen to them fighting or playing as you drive.

As a result, stimulate them to travel calmly, and do not forget to use child safety locks, which prevent children from opening the doors from the inside.

Get your children accustomed to wearing seatbelts from a young age and try to always set a good example. Children always imitate their parents.

Reward children when they behave correctly. We all need some words of praise now and then.

The safe transport of children in a motorized vehicle is a challenge and an obligation for the vehicle's driver, since it is driver's responsibility the use of an appropriate Child Restraint Systems when transporting children in a car.

Traffic accidents are one of the main causes of premature death in children in Latin America and Caribbean countries. In Chile, during the last decade, 760 children and adolescents under 12 years of age died –49% of them died as passenger in a vehicle in a traffic accident– and 49.500 were injured.

To reduce risks of injuries, it is necessary to use Child Restraint Systems (CRS), appropriate to the weight, height and age of the child that is going to be transported.

Since 2006, the transport of children in CRS is mandatory. Nonetheless, starting march 2016, these requirements were increased, banning the transport of children under 12 years of age in the front passenger seat (except for single-cab cars), hence making it an obligation for children under 12 to travel on the back seats using a CRS appropriate to their weight, height and age, or just the seatbelt if this one fits the child properly.

Moreover, since march 2017 Traffic Law mandates vehicle drivers to transport in a CRS all minors up to 8 years of age inclusive (meaning until they turn 9), or of a height lower or equal to 135 centimeters and a weight of 33 kilos or less. This requirement is mandatory for private vehicles, exempt of this obligation are public transport, school transport and vehicles of similar characteristics.

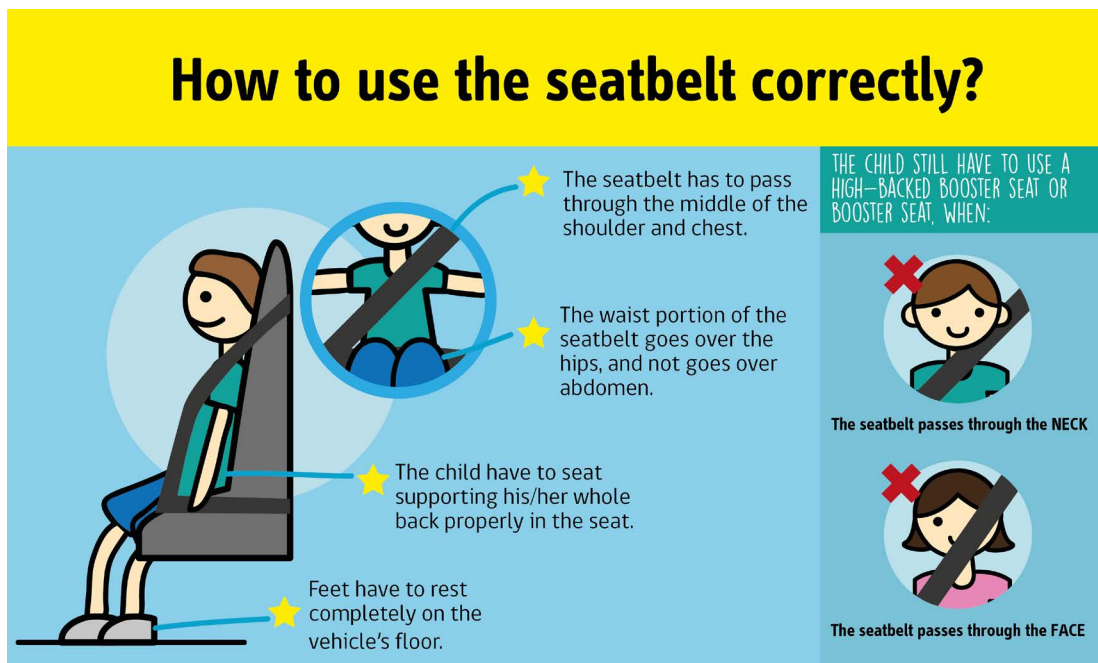
Noncompliance with these regulations is sanctioned as a severe traffic violation, which carries a fine to pay of 1.5 to 3 UTM and a driver's license suspension of 5 to 45 days.

What are Child Restraint Systems (CRS)?

Child Restraint Systems, such as rearward-facing baby seat, forward-facing child seat, high-backed booster seat, booster seat and seatbelt, are devices designed to safely transport children inside a vehicle in all types of trips.

One must keep in mind that it is not enough to use a Child Restraint System, but to use it correctly, since a device not properly installed does not give the necessary protection to children to travel safely, generating a false sense of safety. Because of this, the car seat must be well fixed to the vehicle seat, carefully following the instructions written in the user's manual of the CRS, and the child well fasten to the car seat through the harness or seatbelt.

These devices must be used since the child's first trip; meaning, since they come out of the health center where they were born, and up until they can use the car's seatbelt directly, just as shown in the following illustration:



The incorrect use of seatbelt causes important injuries in organs located in the abdominal area such as liver, intestines, bladder and kidneys, that can seriously compromise a person's life.

Considerations to choose a Child Restraint System

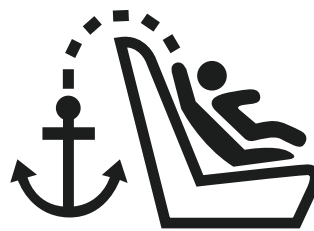
Many aspects must be considered when choosing a Child Restraint System for the child you will be transporting. The relevant aspects to consider are the following:

1. Weight, height and age of the child: You must choose a Child Restraint System according to the child's developmental stage, selecting a model suited to the child's weight, height and age. It is recommended that for the child's first stages of life - that go from birth until turning 4 years of age - the CRS be installed facing backwards, so that children travel looking back until they reach the weight and height limits indicated by the manufacturer.

2. Vehicle characteristics: You must make sure that the CRS can be installed in your vehicle, taking into account the car's size and the car seat to be used, plus the type of anchor (ISOFIX, LATCH or seatbelt) that the vehicle has. Remember to review your vehicle's manual to check the features it has.



Indicator of Isofix or LATCH anchor



Indicator of vehicle tether

3. Family group characteristics: You must make sure that all vehicle passengers travel with a restraint system that is appropriate for them, therefore the installation of a CRS must not interfere with the correct adjustment of the other restraint systems that are to be used by other passengers.

4. Easy to install: It is recommended that CRS can be easily installed in your vehicle. These can be anchored to the vehicle through LATCH or ISOFIX systems or with the car's seatbelt. If they are correctly installed, any of these three systems are safe by itself, therefore it is not necessary to use two systems at the same time, unless it is indicated by the CRS manufacturer.

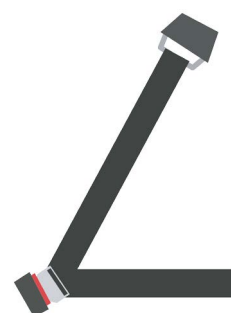
LATCH AND TETHER



ISOFIX

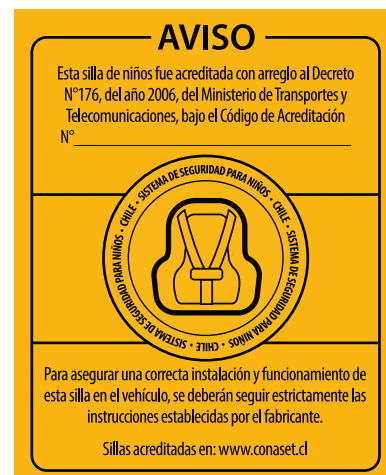


SEATBELT



5. **Must meet known regulations:** You must make sure that the CRS to be used is certified, according to current regulations.

Child Restraint Systems have to get accredited by the Ministry of Transport and Telecommunications and must have a yellow label like the one shown below:



Cyclists

A bicycle is one more vehicle on the roadway, and they are more and more common in our country as a form of transportation. Cyclists, just like other drivers, should know the rules that regulate traffic, but unfortunately this is not always the case. Many cyclists do not know the rules of the road and take a lot of risks, which is why you as a driver should not trust their conduct and when necessary should yield to cyclists.

Head injuries are the most important kind of injury in accidents involving cyclists. Wearing a helmet reduces the probability of suffering these kinds of injuries. Unfortunately, many cyclists do not wear helmets.

Precautions you should take in the presence of cyclists:

- When passing near a cyclist, leave a lateral space of at least 1.5 m, since bicycles can deviate, swerve or wobble. This is more likely to happen when there are strong winds or on hills, due to the increased effort required of the cyclist.
- When in the presence of a cyclist on the sidewalk, be prepared to stop, as he or she could suddenly enter the roadway.
- Don't be sure when a cyclist doesn't signal that he or she will or will not turn. When you are behind a cyclist be especially aware at intersections.
- Remember that cyclists generally do not have rear-view mirrors.
- Do not overtake a cyclist before or in the middle of an intersection, especially if you are going to turn right. Wait until the cyclist has passed the intersection.



At night, be especially careful in sectors that cyclists frequent. Cyclists do not always use lights that allow us to see them well.

Other Vulnerable Users

Animal drawn vehicles

Reflect when you encounter someone on horseback on a road or a highway and prepare to slow down. If the horse is traveling in the same direction as you, and at the same time there are many vehicles coming in the other direction, do not get too close and wait until the oncoming vehicles have passed in order to pass the rider. Maintain a good lateral distance. A person on horseback may not be aware of traffic rules or the horse may get spooked for any reason, just as you are passing.

Do not make light or sound signals or accelerate the engine when near a horse. This also holds in the presence of other animals on the road, such as sheep or livestock.

In rural areas, where it is more common to find people on horseback, be aware of their presence, especially on right-hand curves.

Elderly Drivers

In general, elderly people have a lot of experience as drivers and are cautious behind the wheel. However, there are physiological changes that occur with age, which can affect driving capacity.

The deterioration of the psychomotor abilities necessary for driving can mean, for example, the loss of force upon braking, worse control of the steering wheel, diminished capacity to maintain attention, slower processing of information on the road or an increased reaction time. Because of this, many senior citizens have an increased risk of getting into accidents in complicated traffic situations that require quick reactions. However, in situations where there is enough time to react, they have the same problems as young people. As a result, it is important to give them enough time and not pressure them to act.

Motorcyclists

Motorcycles are a means of transportation that is becoming more and more popular. Their ease of driving, mobility, reduced size and comfort are more than enough reason to choose this vehicle as your means of transportation.

Despite their advantages, due to their characteristics, accidents involving this kind of vehicle can easily be fatal for motorcyclists. The probability of death is much greater in a two-wheel vehicle than in a standard four-wheel vehicle.

Collisions in intersections involving motorcycles are frequent; because of this you should take special care when approaching intersections, as due to the high speed of these vehicles it is difficult to see them in time.

As a driver be especially careful with motorcycles, because they are small and difficult to see.

6. TRAFFIC REGULATIONS

NEW DRIVER'S HANDBOOK

TRAFFIC REGULATIONS

Instructions in Traffic

If you dominate a language you will be able to easily understand others and be understood. The same is true in traffic. The language and instructions related to traffic can be expressed in four different ways:

- Signals of Police Officers (Carabineros).
- Traffic Lights.
- Traffic Signs: vertical signs and road markings.
- Rules of Traffic.

Police (Carabinero) Signals

When there is a high amount of congestion, there has been an accident, or a traffic light doesn't work, among other reasons, it is probable that Carabineros de Chile will regulate or direct traffic.



Carabinero seen from the front or from behind: indicates to stop.



Carabinero with arm held up: means warning. Those who are stopped should be prepared to move forward once the Carabinero stands to the side and those in movement should stop.



Carabinera seen from the side: authorizes to move forward.

On some occasions you may face more than one kind of instruction, for example, the indication of a police officer (Carabinero) and a traffic light. In that case, the indications given by Carabineros de Chile take precedence over all others.

Traffic Lights

At busy intersections, traffic lights are installed in order to regulate vehicle movement and increase safety. However, in these intersections many accidents take place.

Meaning of the Lights

Green light: indicates go. Vehicles that come upon this light can continue in the same direction or turn, unless there is a traffic sign prohibiting turns.

Even with a green light, do not advance if you do not have at least 10 clear meters in your lane on the other side of the intersection.

Pedestrians who also have a green light have the right of way. If you are going to turn, you must yield to them.



Red light: means stop. Vehicles that come upon a red light must stop before the painted (or imaginary) stop line, before the pedestrian path, and must not advance until the green light appears.



Yellow light: means caution. Vehicles must stop before entering the intersection, as the yellow light is a warning that the red light will appear soon. If the yellow light surprises you so close to the intersection that you cannot stop safely, continue cautiously.



Along the same lines, if the light surprises you in the middle of the intersection, continue forward with caution.

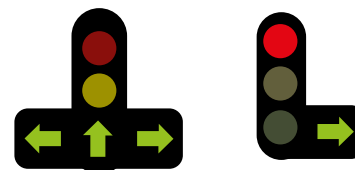
Flashing red light: Indicates yield. Vehicles that come upon a flashing red light may continue once they verify that other vehicles are not approaching on the roadway they intend to cross.



Flashing yellow light: means danger. Vehicles that come upon a flashing yellow light must approach the intersection slowly and continue with precaution.



Red light and green arrow: Vehicles that come upon these lights can enter the intersection carefully, but only to continue in the direction indicated by the arrow, and they must respect pedestrians that are crossing, as well as other vehicles in regular movement.



If the green light is an arrow, you can only advance in the direction indicated by the arrow(s).

Traffic light with signal for cyclists: When there is a bicycle lane or a bicycle path, that is a path designated specifically for cyclists, controlled intersections have special signals to ensure safe crossing for cyclists. If you are turning, even when you have a green light, they have the right of way.



Pedestrian signals: Traffic lights are not only used to regulate the movement of vehicles and pedestrians in intersections. They are also installed in specific areas of some roads, with the goal of allowing pedestrians to cross safely. These traffic lights are normally activated by pedestrians themselves.



Traffic lights with Railroad Crossings: There are also places where streets or roads cross railroad tracks. However all of these crossings are particularly dangerous, some of them, due to their dangerous characteristics, have light signals that are automatically activated when a train approaches and that can be accompanied by auditory signals and/or barriers.



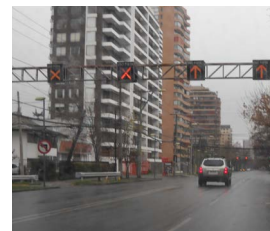
Light signals at railroad crossings are white and red. The red light can be two alternating flashing red lights that warn an approaching train, while the white light indicates that no trains are close, which doesn't necessarily mean that you can pass safely. Do not always trust the safety systems, as they can fail.

Despite coming up on a white light at these crossings, always verify for yourself that there are no trains approaching, stopping before the train tracks.

Public Transit Traffic Light: On roadways where there are lanes for the exclusive use of buses, there can be special traffic lights to regulate traffic at intersections. These traffic lights only affect vehicles traveling in the exclusive lanes. The meanings of the colors of the lights are not different from those of a traditional traffic light, except that green can be replaced by white.



A lane can sometimes be temporarily closed to traffic. In this case various message signals placed upon the roadway may be used. An "X", usually red, indicates that the lane is closed. The arrow shows that the lane is open to traffic.



Traffic Signs

Signs are used to indicate to drivers and pedestrians the correct and safe way to use the roads. To make them easier to read, they have symbols. There are signs that indicate prohibition or commands, others warn about existent dangers and others provide important information. Signs are therefore divided into different groups, which have been assigned different colors and shapes.

First learn the different groups and everything after that will be easier.

Regulatory Signs: Regulatory signs have the main objective of notifying roadway users about priorities, prohibitions, restrictions, obligations and authorizations.

In general, these signs are circular or rectangular; containing symbols and/or numbers written inside a red circle or border. The exceptions to this are Stop Signs, Yield Signs, End of Restriction, Obligatory Direction, Right Turn Allowed on Red, and Bicycles Only, among others that demonstrate obligations and authorizations.

People tend to think that the END RESTRICTION sign indicates and end to the speed limit. This is not the case, since it only ends the restriction shown inside the circle. In the example, that is "Do Not overtake".



Warning or Danger Signs: Preventative, warning or danger signs have the objective of warning the driver to the existence of danger or permanent risks. With the exception of the so-called "Cruz de San Andres", they are square signs placed like diamonds. Their background color is yellow with black symbols.

Exceptionally, some of these signs, in particular those related to the most vulnerable populations – children, pedestrians and cyclists – can be a different yellow color than others, with a slightly green hue.

Given that these signs warn of danger, avoid passing once you have passed the sign and take the necessary precautions, either by slowing down or making the appropriate moves for your safety and the safety of others.



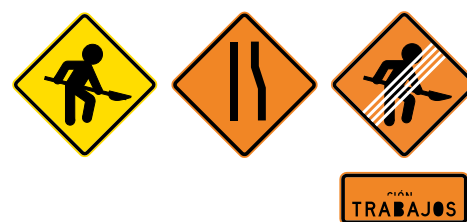
Informative Signs: Informative signs are designed to orient and guide drivers, so they can arrive at their destinations as safely, easily and directly as possible.

They can be classified in two groups: those that guide the driver to their destination and those that contain information of interest, like services, tourist attractions and others. They are rectangular or square and blue – the in case of freeways and highways – and green in the case of another type of road. However, those containing information about tourist attractions can also be brown.



Transitory Signs: In addition, there is another group of signs: transitory signs. These can be preventative or informative and the respond to the presence of temporary risks or hazards due to road work or construction. They are orange, with the exception of the first sign that warns drivers of upcoming road work, which is yellow.

Watch your speed in work zones, slowing down if necessary. The possible presence of workers, materials like sand, rocks or gravel, or even machinery, can be a hazard.



Markings

The markings or road surface markings clarify and strengthen regulations. They can, therefore, serve as warnings, to divide the roadway, and also to indicate prohibitions.

The markings can be longitudinal or transversal lines, arrows, symbols, legends, and others.

Lane, center and side markers

Roadways are marked using longitudinal dashed white lines, which can be accompanied by reflectors of the same color. You can cross these lines and change lanes, previously signaling to other drivers your intention to do so, and as long as this maneuver will not cause risks to others. The longitudinal white line that marks the center of the road and separates vehicles traveling in opposite directions can be solid or dashed.

In the first case, in which it can be complemented with red reflectors, this indicates conditions unsafe for passing or crossing the line – insufficient visibility before a curve or before a change in gradient, for example. When it is dashed, and as we will see, you can overtake another vehicle, crossing the line, as long as you first verify that the safety conditions necessary are present. The dashed line can be accompanied by reflective raised pavement markers.

On some occasions, this dividing line can be mixed; that is, both dashed and solid. In these cases, the center line can only be crossed by those vehicles traveling on the side of the road where the line is dashed.



Another important longitudinal line is the one that indicates the side of the road. In rural areas, you can only cross this line in case of emergency to remain on the shoulder.

The line that marks the side of the road can also be dashed when there is a widening of the road upon approaching intersections, where there is a parking area, or when there is a deceleration or acceleration lane. These lines are distinct from other dashed lane markers, and in the case of freeways, being in general wider. These are often called continuity lines.

On mountain roads where snow is frequent, the center line and the line delineating the shoulder can be yellow.

In addition, in urban areas, the edge of the road or the curb itself has a continuous yellow line, whose purpose is to indicate that parking is prohibited along the entirety of the line.

Intersection Markings: At controlled intersections, the transverse white lines correspond to the stop line (before which vehicles must stop), as well as the white lines that indicate the pedestrian crosswalk.

The stop lines can also be associated to Stop Signs or Yield signs, in addition to crosswalks and bicycle crossings.



Crosswalk Markings: Crosswalks in places not controlled by traffic lights; that is "zebra crossings" or pedestrian crosswalks, are marked with white stripes parallel to the road, preceded by a horizontal stop line, and in many cases zigzag lines along the border of the road.

In zebra crossings and unmarked crosswalks at controlled intersections, there is always a stop line. Although it may not always be painted, it is imaginarily located no less than one meter before the crossing area.



Remember: In a zebra crossing, the pedestrian has the right of way.

Do not block markers: some intersections can be marked with diagonal yellow lines that form squares. These marks, used on congested roads, warn motorists that they should take the necessary steps in order to not stop in the intersection.



Symbols and Words: These marks indicate to drivers the maneuvers permitted and actions that must be taken, in addition to warning about hazards. Arrows are included in this group of markings, which indicate the direction(s) to follow, or the obligation to change lanes. Yield and Stop Signs and the word LENTO (slow), are also included.



Other Markings: Among these are longitudinal lines that delineate bus stops, bicycle lanes and lanes reserved for emergency vehicles, in addition to diagonal markings or crosshatching. You may not drive, nor much less park, on these areas.

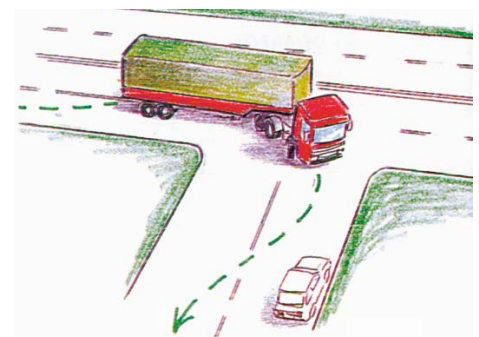


If you are driving in a lane with these marks due to an emergency, leave the lane as soon as you can safely manage to do so.



The space required for a large vehicle to turn can exceed the width of a lane.

Stop if you are in a situation such as that shown in the drawing, or if you are behind the truck, and wait until it finishes its maneuver.



Traffic Regulations

Apart from instructions given by the Carabineros, traffic lights and signs, there are also other rules and regulations that govern the circulation of vehicles on streets and roads, making them safer. These rules are described in the following sections and chapters.

The obligation to yield

Encounters at intersections, in general, imply certain risks. Many traffic accidents take place in these places. This occurs for various reasons: sometimes the driver has not paid attention to traffic; other times, the driver misinterprets his distance, speed or ability to stop in time. In order for traffic to be safe at intersections, there are rules that govern the right of way.

When you come upon a STOP (PARE) sign, you must stop your vehicle and allow others to continue. You may only start driving again when there is no possibility of causing an accident.



When you come upon a YIELD (CEDA EL PASO) sign, you must slow down to stopping if necessary and yield the way to vehicles driving on the other road and whose proximity constitutes risk of accident.



- When approaching an uncontrolled intersection or a Carabinero regulating traffic and in the absence of STOP or YIELD signs, you must give the right of way to vehicles that are approaching the intersection on the other road from the right.
- When you have the intention of turning, you forfeit your right of way and you must respect the right of way of the rest of the vehicles and pedestrians in the intersection.
- Upon entering a traffic circle – roundabout, rotary or mini-rotary – you must yield to other vehicles coming in the roundabout.
- In rural areas, when you approach a main thoroughfare from a more secondary road, you must yield to the vehicles driving on the main road.
- When you approach an uncontrolled intersection and you have the obligation to yield, reduce your speed with enough time to stop if necessary. You must show your intentions clearly.

Be aware also that yielding means that the person with the right of way should not be obligated to modify his or her path nor speed as a consequence of the actions of the yielding driver.

Other Obligations of Yielding

- Upon approaching a crosswalk where someone is waiting to cross, you must stop and yield to the pedestrian.
- When pulling into traffic from a private driveway or property or a parking lot, you must yield to vehicles on the road, including cyclists and pedestrians.
- When beginning to drive from a stopped position, you must yield to vehicles and pedestrians in movement.
- When leaving the roadway to enter a private driveway, into a building or parking lot, you do not have the right of way over pedestrians and moving vehicles.

When the lane you are driving in is suddenly blocked, you also do not have the right of way over other vehicles in order to change lanes.

Emergency Vehicles

When an emergency vehicle is approaching – such as a police car, a fire truck, an ambulance or vehicles belonging to Policia de Investigaciones – with lights and sirens, you must yield the road to them, either moving to one side of the road or allowing them to pass through an intersection. If under these circumstances you are in a lane marked specially for emergency vehicles, you must exit the lane as soon as you can safely do so.

Signs and Signals

Sometimes, either because of lack of knowledge or due to misinterpretation of the signals of others, misunderstandings can arise.

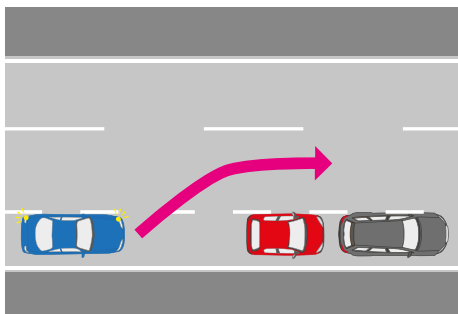
You have the obligation of letting the driver behind you know what you plan to do, so that he or she may adjust. However, the fact that you make signals on time does not relieve the other driver of the obligation to be careful. Pay close attention to the signals of other drivers and try to interpret their intentions.

If a vehicle signals with its left blinker, it means that it is going to turn left. If you interpret the situation incorrectly and believe that he is indicating that you can pass him, there could be an accident.



SIGNALS MUST BE MADE TO HELP OTHERS

Signals must be made an appropriate amount of time before starting the intended maneuver, and must be visible and unequivocal. The fact that you signal does not free you from the possibility of being in an accident. Concentrate your attention on what you are doing and always consider what other people are doing.



Signal when you are going to move from the side of the road.



Signal with anticipation when you are going to change lanes and when you intend to pass or overtake.



Signal when you plan to turn.

When you are changing lanes, do not start to signal until you are sure that you will be able to safely complete the maneuver. Remember this sequence: MIRROR – SIGNAL – MANEUVER.

ARM SIGNALS

Alternatively, turning and lane-changing maneuvers can be signaled by the driver using arm signals.



Arm extended horizontally indicates a left turn.

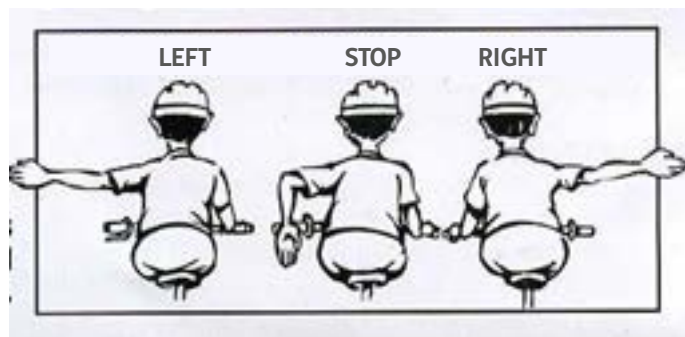


Arm at a right angle upwards indicates a right turn.



Arm extended down indicates slowing or stopping.

However, when it comes to cyclists, right-hand turns can also be signaled using the right arm extended horizontally out from the body.



Other Signals

- Brake lights automatically come on when you step on the brake pedal. Sometimes a light tap on the brake pedal is necessary to alert those behind you.
- Emergency flashers – hazard lights – warn others that your vehicle is stopped. Use them only when your vehicle has suffered a breakdown or has been in an accident.
- White rear lights come on when you back up.
- In order to prevent an accident and only when absolutely necessary, you can use your vehicle's horn. Never use your horn in a tunnel, or upon entering or leaving one. You should also never use your horn when passing or overtaking animals.

Vehicle Location

Maintaining a sufficient distance from the vehicles in front of you and situating your vehicle correctly before turning are another way of communicating between drivers.

A lane provides the necessary space to drive a four-wheel vehicle. Maintain your automobile within the lanes of traffic.



WARNING!

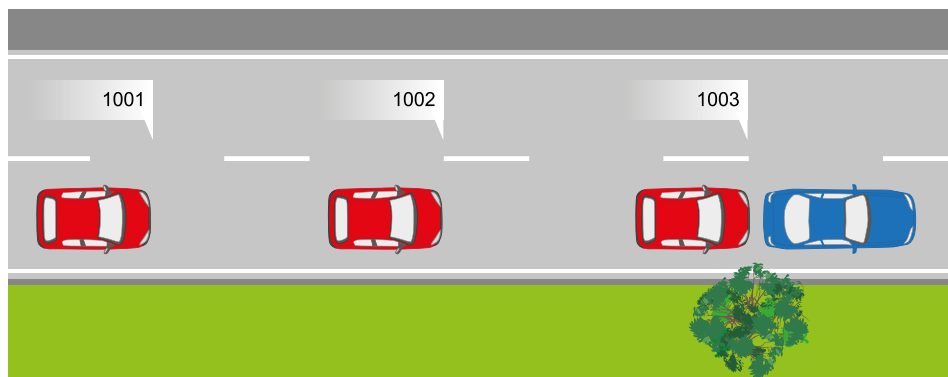
- Lanes at times are not delineated.
- The center of the road, which determines the directions of traffic, can be painted with a solid or a dashed line.
- The center of the road may not be marked. In this case, the road is divided in two equal parts.
- The shoulder is a safety strip to the side of the road, and cannot be driven on.

Distance from the Vehicles Ahead

Knowing the correct distance to put between yourself and the vehicle ahead of you can be difficult. One rule to use on the freeway is that you should maintain a measured distance of metros equal to the speed in kilometers per hour. For example, if you are driving at 80 km/h you must maintain a distance of 80 meters between yourself and the vehicle in front of you. On urban roadways, the distance can be reduced to half that (40 meters).

Maintaining a short distance increases the risk of accident, and is one of the factors that tend to contribute to accidents. Forward visibility is reduced, making overtaking more difficult. Driving can become irregular and less economical.

Another rule that applies on freeways that allows you to measure if your distance is adequate is the so called "Three-Second Rule". In order to use it, look at one point, for example a tree. As soon as the vehicle in front of you passes the tree, begin to count... one thousand one, one thousand two, one thousand three. If you pass the tree before reaching "one thousand three" it means that the distance you are keeping is very short. Diminish the pressure on your accelerator!



Add extra time if the climatic or freeway conditions are adverse.

When you discover that a vehicle ahead of you has begun to brake, about one second will pass before you begin to brake. In this time frame you and your vehicle will advance about 15 meters if you are going 50 km/h, 20 meters if you're going 70 km/h and 25 meters if you are traveling at 90 km/h.

In general, bumper-to-bumper crashes - or pile-ups - are due to drivers maintaining a short distance between themselves and the vehicles in front of them, which does not allow them to brake in time.

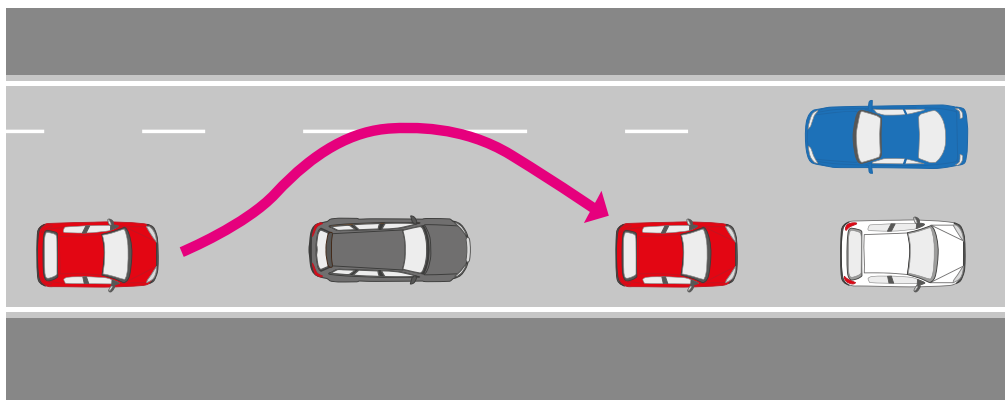


Vary the distance between your vehicle and the one in front of you depending on your speed and the state of the pavement. On city streets, traffic jams tend to form. Distances diminish and the risk of crashes and collisions increases. This requires a higher level of vigilance, attention and preparation in order to react in time.

You can reduce the risks:

- Maintaining an adequate distance from the vehicle ahead of you. Remember the three second rule.
- Being ready for action: paying special attention to those situations that can become dangerous.
- Being prepared to brake: change your foot from the gas pedal to the brake pedal.

On this matter, the law says that when two or more vehicles circulate in the same direction on the right, each driver must maintain a distance between himself and the vehicle ahead that is sufficient to allow another vehicle to pass, entering the space between the two vehicles. The same law exempts funeral caravans from this consideration.

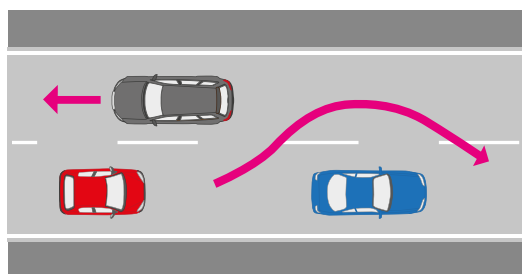


Increase your distance if you are driving in the city behind a vehicle with a foreign license plate. The driver may not know the area well and could brake suddenly to read the name of a street, pass a signal or turn unexpectedly

Lateral Distance

Overtaking with oncoming vehicles imply certain risks. The risk is greater when there is reduced or poor visibility, like on curves, hills, in darkness or when there is fog. Therefore, position your vehicle in such a way that permits you to be prepared for overtaking and oncoming vehicles.

When you drive on a two-lane highway with one lane per direction, stay as close as possible to the right side of the road. Other drivers could make mistaken judgments. Oncoming vehicles as well as those coming from behind can pass inappropriately.



Stay to the right when you are coming upon an oncoming vehicle and overtake on the left.

Parked Vehicles

Leave sufficient space – equal to the width of a door – when passing near parked vehicles. Someone could suddenly try to get out of the car onto the road, or a vehicle could leave its parking space. Reduce your speed and be aware of pedestrians that may appear between vehicles with the intention of crossing.

Correct Use of Lanes

Situate yourself completely within one lane, in order not to present an obstacle to traffic in other lanes.

Always drive on the right side of the road, unless you are in one of the following situations:

- When you need to pass the center line in order to overtake another vehicle.
- When traffic on the right side of the road is blocked by road work or other accidents that alter normal traffic patterns.
- When in city traffic the road has three or more lanes in the same direction.
- When in city traffic the road is marked for one way traffic.
- On freeways and highways in general, drive in the right lane and leave the left lane(s) to those who wish to overtake or pass you.

Respect the signs that designate lanes designed to channel traffic in a certain direction, as well as those that reserve certain lanes as high or low speed.

Changing Lanes

As was mentioned earlier, in some cases you can position your vehicle in any of the lanes. You can change to the adjacent lane as long as you do it safely and without creating unnecessary obstacles for the rest, but you cannot pass through that lane to enter the next one immediately.



The arrows on the road let you know that you must leave the acceleration lane and join traffic.



Informative traffic signs placed high above the road make it easier to choose the correct lane.

Measures to take

- Make plans for long trips.
- Adapt your speed.
- Verify, using the rear-view mirror, the side mirrors and looking over your shoulder, that no vehicles are coming that will get in your way.
- Warn other drivers of your intention to change lanes using your arm or your signaling lights with sufficient anticipation.

REMEMBER:

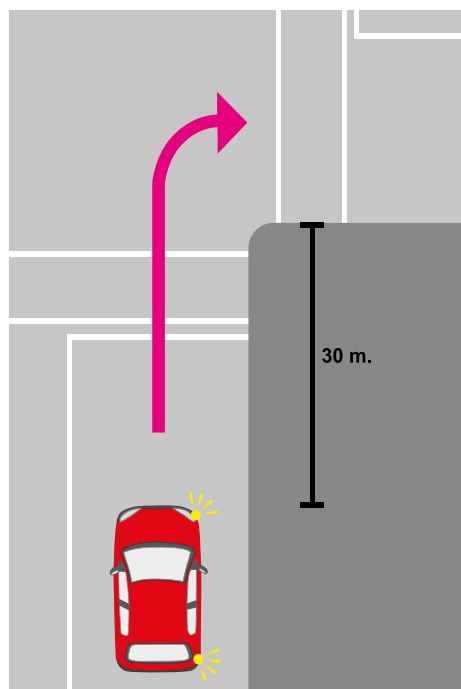
- Help those around you to change lanes.
- Avoid changing lanes unnecessarily (each movement implies a risk).
- Look long distances ahead and behind your vehicle.

Turning

Right turns

When you are going to turn right:

- Get as close as you can to the right side of the road.
- Turn as closely as possible to the right-hand curb and the side of the road.
- After turning, choose the most convenient location in order to continue.



REMEMBER

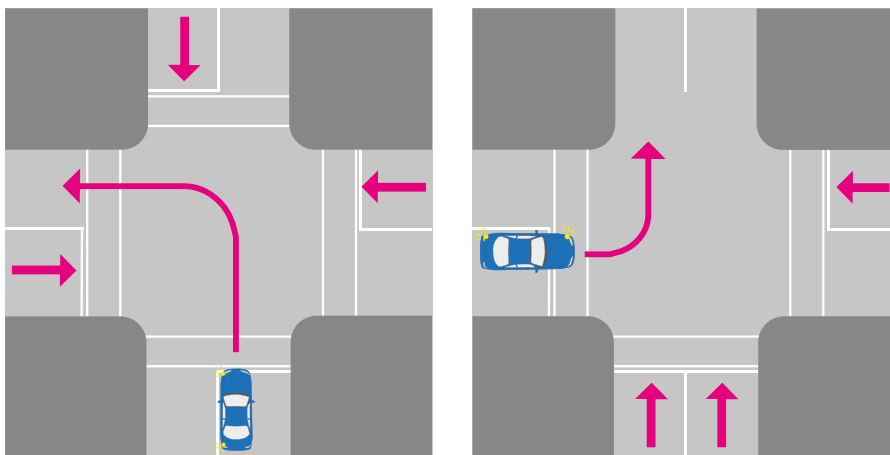
You must signal your intention to turn with sufficient anticipation: at least 30 meters before.

- Positioning yourself correctly will facilitate your own maneuver and the safety of other users.
- Upon positioning yourself correctly you will signal to others that your trajectory will continue.
- You should yield to pedestrians crossing in a crosswalk.
- You should also quickly plan your position after turning
- You should turn off your signaling light once you have finished turning.

Remember that your preparations for making a turn must begin with anticipation, so that other users will not be surprised by the maneuver that you have decided to make. The promptness with which you must maneuver depends on the speed of each occasion. On a freeway where the speed limit is 100 km/h it can be 300 to 400 meters.

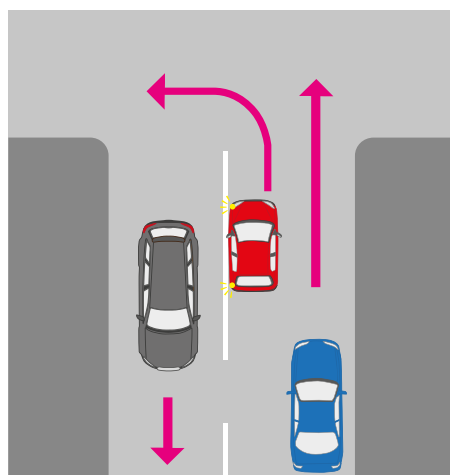
Left turns

Long before turning left, use your mirrors to be sure you are aware of the positions of vehicles behind you. Signal your intention to turn at least 30 meters before turning and be aware of pedestrians.



To turn from a two-way road, approach the right side of the center line safely. As it is difficult to judge the speed of oncoming vehicles, if you do not feel sure you can turn safely, adjust your speed or stop and continue when oncoming traffic has subsided. If you must stop, do it a few meters before the intersection with your front wheels facing forward.

If you were crashed into from behind and your wheels were turned to the left, you would be thrown into a lane of oncoming traffic, which could cause a head-on collision. Do not position your car at an angle. Enter the intersection when you have the sufficient space and time and then enter the other road, taking the right side of the center line, or the left lane if the road you are turning onto is one-way.



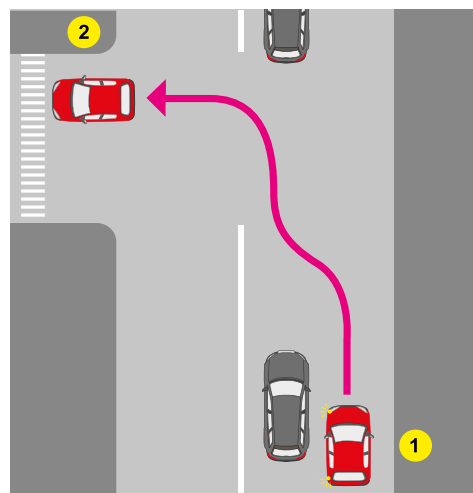
Before turning left it is especially important to concentrate your attention on both oncoming cars and vehicles behind you.

You must yield to oncoming vehicles avoiding creating unnecessary obstacles for vehicles approaching from behind.

Turning left with oncoming cars

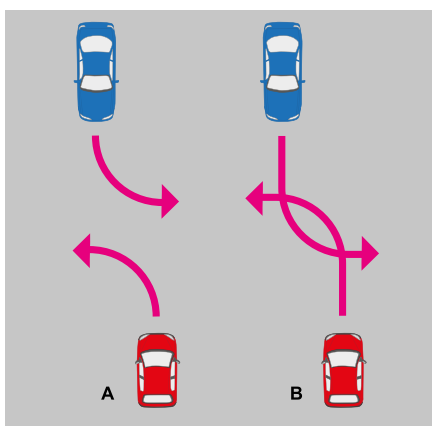
Reduce the risk associated with intense traffic at high speeds.

- Position yourself to the right and allow those coming behind to pass if necessary.
- Turn left when the road is clear.



When you are going to turn left and you find yourself facing an oncoming car that will also turn left, pay special attention.

Try to maintain eye contact with the other driver and look behind your vehicle to see if those behind you will continue forward.



A. This is the easiest way for two vehicles to turn left at the same time.

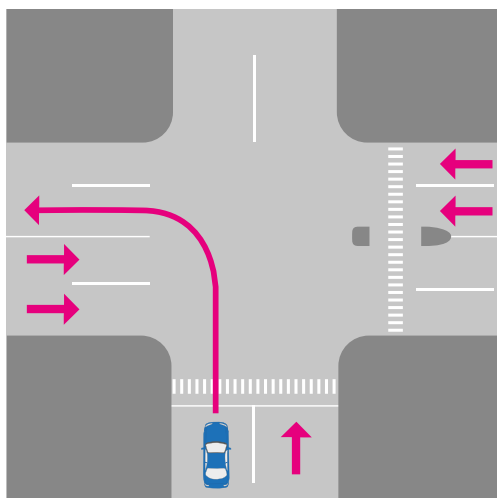
B. This is another permitted form of turning, but is very rare.

A large number of accidents that occur when a vehicle is going to turn left are rear-end crashes.

To make traffic safer left-hand turns are often prohibited, suggesting alternate routes as shown in the photograph.



There are some occasions in which you must give up turning left. Abstaining from turning left is not only convenient when there is a change in gradient, but also when the road onto which you will turn is close to a curve with limited visibility. Always be prepared for the possibility that there may be someone hidden, and who could appear suddenly.



To turn from a one-way road onto a two-way road, enter the intersection when you can do so safely and then, once you have done this, take the right side of the center line of the two-way street.

U-Turns

A U-Turn is a maneuver in which the vehicle turns 180°, going in the opposite direction from whence one came. These turns can be made on two-way streets when there is no solid center line, as well as on avenues with central medians, as long as it is not expressly forbidden.

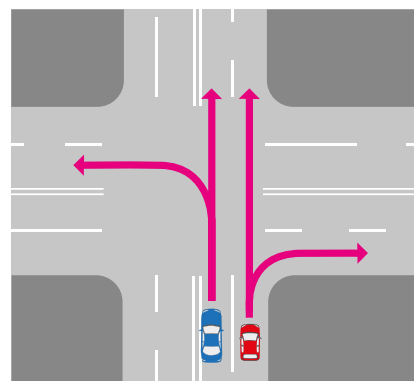
Proceed with caution before beginning a U-Turn. Use your mirrors to familiarize yourself with the position of those who are behind you and signal. Be sure you have sufficient visibility and space.

You should not make a U-Turn:

- At intersections.
- At crosswalks.
- At least 200 meters from a curve, hill or grade, railway crossing, bridge, tunnel or viaduct.
- When there are signs prohibiting them.

Several lanes in the same direction

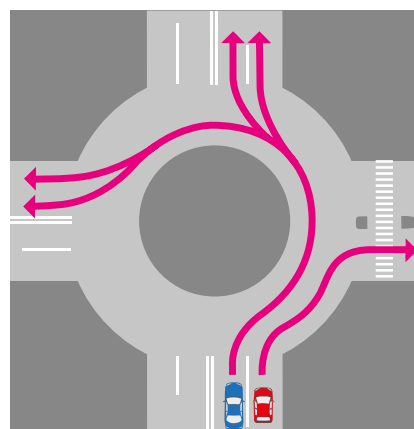
When there are several lanes that travel in one direction, choose the right lane in time: take the right lane to turn right and the left lane to turn left. Take the most convenient lane when you are going to continue straight.



Roundabouts

Upon approaching a roundabout (rotary), decide as soon as possible which exit you will need, in order to enter the correct lane. Reduce your speed. When entering the roundabout, you must yield to vehicles already moving through the roundabout.

When you are driving through the roundabout, signal to the right as soon as you have passed the exit immediately before the exit you plan to take.



Special Lanes

Lanes reserved for public transit

In some cities and areas it is common to privilege public transportation services, assigning exclusive lanes. Do not enter them unless you are allowed to in certain places, where the separation is made with a dashed line and it is absolutely necessary in order to be able to turn.



Special lanes for cyclists

In some places there are special lanes for cyclists. These bicycle lanes cannot be used by other vehicles, even when in some cases they are delineated only with markings on the side of the road.



Lanes with reversible traffic

These lanes are used throughout the day with different directions for traffic. For example, in the morning the direction of traffic could be north to south, while during other hours vehicles may drive only from south to north.



Exclusive Lanes

In order to favor public transport, it is also common for exclusive lanes to be designated during hours of higher vehicular flow. Do not drive on these lanes during those hours when it is not permitted.

Emergency Lanes

These lanes are commonly used on roads with pronounced hills for emergency cases, such as brake failure.

Speed

It is easy to get used to high speeds and let yourself be blinded by them. After a while driving on a freeway, speed begins to feel comfortable and you don't realize how quickly you are traveling until, when taking an exit, speed limit signs of 50 km/h. Then it is easy to doubt the speedometer. When you have braked to 50 km/h, it appears that the vehicle is nearly stopped. You will surely feel the same. That's why it is important for you to remember that the speedometer is rarely wrong and that, on the contrary, it is easy for you to be tricked or blinded by speed.

When you are preparing to stop is when you notice your speed. At 50 km/h you need about 25 meters to stop if the pavement is in good conditions and is dry. If the speed is increased to 100 km/h, you will need about 80 meters. This distance, needed to stop, is what you should be aware of when you increase your speed.



Remember that as you increase your speed, your visual field is decreased.

Speed Limits

If everyone followed the speed limits, many lives could be saved. The speed limit must always be reasonable and prudent, that is, never higher than the speed at which the driver can maintain control of the vehicle and stop adequately when faced with an obstacle within his field of vision.

Maximum permitted speeds vary according to the area (e.g., urban v. rural), and the type of vehicle. **In urban areas, the speed limit is 50 km/h** for light vehicles, such as automobiles and motorcycles. For buses, trucks, and school transport vehicles, the limit is 50 km/h.

In rural zones, and when the road is only one lane per direction, the speed limit for light vehicles is 100 km/h. When there are 2 or more lanes in the same direction, the limit is raised to 120 km/h. In all cases, buses, trucks, and school transport vehicles cannot travel at more than 90 km/h, and interurban buses have a limit of 100 km/h.

However, the authorities can modify the aforementioned speed limits on certain roadways by installing corresponding signs.

In the following situations and/or places you must reduce your speed due to an increased risk of accidents:

- In densely populated areas.
- When visibility is reduced due to bad weather or poor lighting.
- When approaching or entering a curve.
- When approaching the top of a hill.
- When there is risk of being temporarily blinded due to changes in lighting or when confronting another vehicle on a narrow road.
- When the pavement is slippery.
- When a public transit vehicle or school transport vehicle has stopped to pick up or drop off passengers. In the case of the latter, you must stop if necessary.
- When approaching children in or near the road, and especially when approaching squares, parks or children's games, etc.
- You must reduce your speed to no more than 30 km/h when you drive outside a school during the beginning or the end of the school day.
- When you approach animals walking along the side of the road or the highway.
- When passing through a road work zone.
- When passing through a place where there has been an accident.

Suppose you are driving under conditions of dense fog, with a visibility of 50 meters and on dry pavement. If you travel at 70 km/h, stopping distance is 45 meters.



Driving defensively means that you:

- Drive with caution.
- Do not trust in others.
- Maintain a safe following distance.
- Plan with time.
- Brake in time.
- Look first and drive second.

Some other Rules about Speed

An appropriate speed means that you, in risky situations, drive slowly enough to be able to give the right of way to others, although the regulations do not specifically state this. (You should never crash.)

When you are obligated to yield, reduce your speed in time, until stopping if necessary, so that other drivers understand clearly that you are yielding.

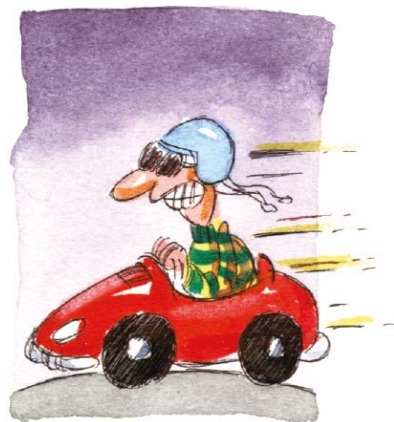
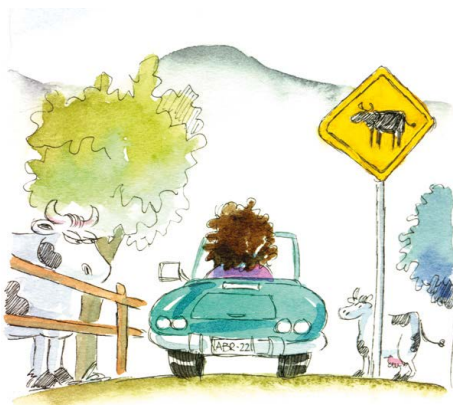
Do not forget that you must adjust your speed to the prevailing conditions of the pavement, the weather, and visibility, the state of the vehicle, its load, and the intensity of traffic. Reduce your speed when visibility changes due to light and shadow on a shaded street on a sunny day. This type of condition makes it harder to see other people on the road as well as calculate distances.

Hidden Dangers

You must be able to stop when you come across any kind of obstacle imaginable. As a driver, always count on the fact that there can always be something or someone behind a parked car, behind a bush, or around the next curve. This is an ability that must be trained.

Our Limitations

You should never drive at a speed that impedes your ability to control your vehicle. Many drivers think they are much more skilled than they really are and as a result they drive faster than their skill level permits. Many freeway accidents are single-driver accidents; that is, they occur without the participation of other vehicles or pedestrians.



The Vehicle

Driving varies from one vehicle to another. That's why it is so important that you drive a borrowed, unknown vehicle calmly.

The Roadway

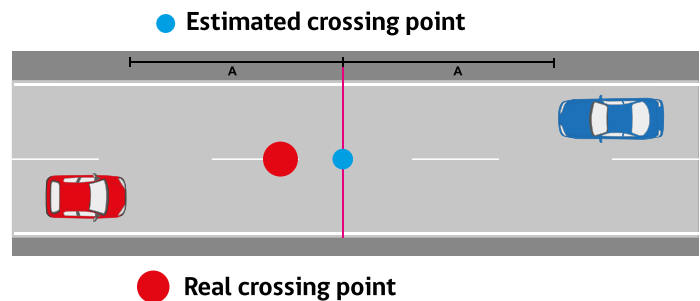
You have to adjust your speed to the conditions and characteristics of the roadway. On a gravel or dirt road, the braking distance is significantly longer than on an asphalt roadway. Wet asphalt is slipperier than when it is dry. Look ahead, as far ahead as you can, to anticipate curves or other hazards and diminish your speed in time. Learn to "read" on the road, so that you can discover hazards (e.g., curves, changes in gradient, puddles of water, etc.).

Decrease your speed before reaching a curve. Once you are in the curve do not allow the vehicle to operate on its own inertia. Accelerate gradually to pick up speed on the way out of the curve.

Encounters and Overtaking

Encounters

The risks of accident upon encountering or crossing paths with another vehicle are higher as the road or freeway is narrower. As you already know, it is difficult to calculate the distance of the oncoming vehicle, and it is commonly believed that the encounter will take place farther away than in reality.



Frequently, people erroneously estimate that the crossing will happen at the midway point between both vehicles, which is true only when both vehicles are traveling at the same speed.

The higher the speed, the less time you will have to make a correct judgment, make a decision and react.

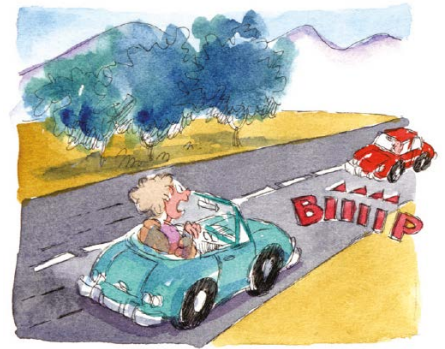
HAZARDS OF THE ENCOUNTER

Always be suspicious of vehicles that are coming in the opposite direction: they can suddenly make unexpected maneuvers or veer onto the side of the street where you are driving.



A vehicle in a line of oncoming traffic can leave the lane to pass others. **Measure: stay to the right and decrease your speed.**

An experience that can be very unpleasant is when an oncoming vehicle is driving in your lane. **Measure: brake quickly, making signals with your lights and horn.** As a last measure, try to squeeze out to the right. Never pass the car on the left side; the driver may suddenly realize his mistake and return to his correct lane.



An encounter with a large vehicle when approaching the top of a hill; the driver coming behind the large vehicle may be reckless and try to overtake before reaching the top of the hill. **Measure: be prepared to move to the right and reduce your speed.**



The driver of the oncoming vehicle appears to have fallen asleep at the wheel. **Measure: never drive too close to the center line.**



The oncoming vehicle may slide. **Measure: when the pavement is slippery and you are going to cross paths with another vehicle, reduce your speed, move away from the center of the road and do not brake in panic.** In the worst of cases, exit the road to the right.



A sudden encounter with a truck on a narrow and windy road. **Measure: reduce your speed and move calmly to the right.** In the majority of cases, it is possible for the vehicles to pass one another. Do not brake brusquely out of panic.



If two vehicles are driving in opposite directions, they will approach one another at a speed equal to the sum of the individual speed of each vehicle.

SUGGESTIONS AND ADVICES

- Oncoming vehicles are always a hazard. The closer you are to the center of the road, the higher the risk associated with the encounter. Therefore, stay as close to the center line as possible.
- Do not look at the oncoming vehicle. Try to look farther ahead, along the right side of the road.
- On narrow roads, lateral distances between vehicles and pedestrians are shorter. Reduce the risk of accident by driving more slowly.
- Under some circumstances there may be fixed obstacles in the road, for example when road work is being done or a vehicle has stopped due to emergency. As a general rule in these cases, the person driving on the side of the road with the obstacles should let any oncoming vehicles pass unless there is a traffic control system in place related to road work.



OVERTAKING

The situation seen in the drawing occurs frequently on our distances when overtaking, which can cause a collision or can cause someone to go off the road.

Thinking that maintaining the speed limit implies gaining significant time is a big mistake, which also causes stress and unnecessary haste.

Look at the following graph, which shows the amount of time that you gain by increasing your speed, and compare that gain with the loss of safety:



What you gain in minutes and seconds for every 10 kilometers:

Your speed	And increase your speed to								
	50	60	70	80	90	100	110	120	130 l
40	3	5	6:26	7:30	8:20	9	9:33	10	10:2
50	-	2	3:26	4:30	5:20	6	6:33	7	7:23
60	-	-	1:26	2:30	3:20	4	4:33	5	5:23
70	-	-	-	1:04	1:54	2:34	3:07	3:34	3:57
80	-	-	-	-	0:50	1:30	2:03	2:30	2:53
90	-	-	-	-	-	0:40	1:13	1:40	2:03
100l	-	-	-	-	-	-	0:33	1:00	1:23
110	-	-	-	-	-	-	-	0:27	0:50
120	-	-	-	-	-	-	-	-	0:23

For example: if you drive at 60 km/h and increase your speed to 80 km/h, in 10 kilometers you will have gained 2 minutes and 30 seconds.

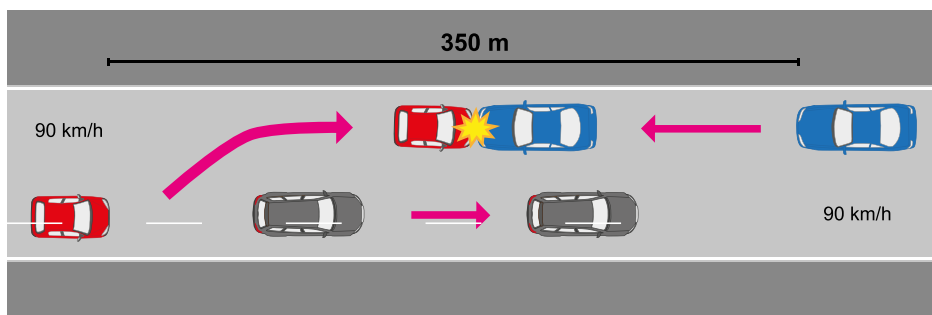
When you think about overtaking another vehicle, and in order to do that you have to cross the center line of the road, **always ask yourself the following questions:**

- What do I gain by overtaking?
- How much free space do I have ahead?
- How long a passing distance do I need?
- How fast is the vehicle ahead travelling?
- How fast can I accelerate?
- At what speed can I overtake?

Whenever a vehicle comes in the other direction, imagine that he does so at a higher speed than you think he does, and don't assume you will get help from the vehicle you are overtaking this vehicle may increase speed.

Never overtake your own reason!

Suppose you are driving at 90 km/h and you are going to overtake the vehicle in front of you. Suddenly, at a distance of 350 meters, a vehicle appears in the opposite direction and is also traveling at 90 km/h. Overtaking takes 8 seconds. In that amount of time, you and the oncoming vehicle travel 200 meters each: the vehicle you are overtaking travels 160 meters. The accident is unavoidable.



When you are going to overtake

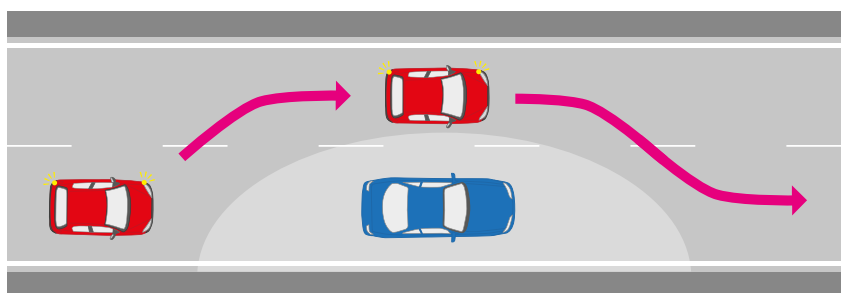
- Look far ahead and be prepared.
- Look in your rear-view mirror and over your shoulder to be sure that no one has begun to overtake you.
- Signal before changing lanes.
- Move quickly into the left lane, to reach an appropriate speed difference in comparison to the vehicle you are going to overtake.
- Assure yourself that the vehicle you are going to overtake does not have any obstacles in front of it.
- Look far ahead. Do not forget that a vehicle can appear from a side street.



When you are going to overtake a large vehicle, stay sufficiently behind him, in order to have a better visual of the road ahead. Be aware that passing a long vehicle is riskier.

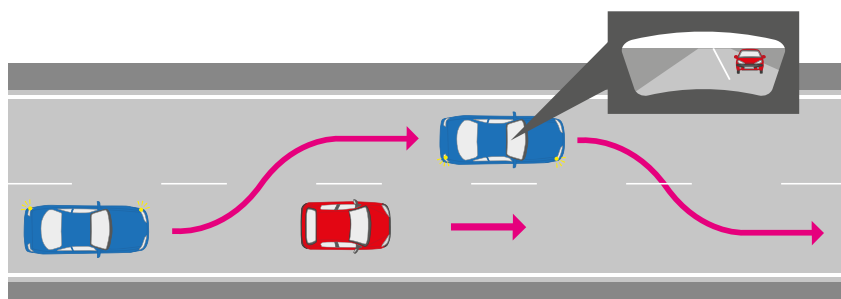
While Overtaking:

- Try to overtake quickly without passing the maximum allowed speed limit.
- Maintain a sufficient lateral distance with respect to the vehicle you're overtaking.
- If an oncoming vehicle appears or you feel insecure, abort the overtaking maneuver rather than tempting fate.
- Do not look at the vehicle you are overtaking. There is always a risk of veering towards it if you do so.
- Signal your intention to return to the right lane.



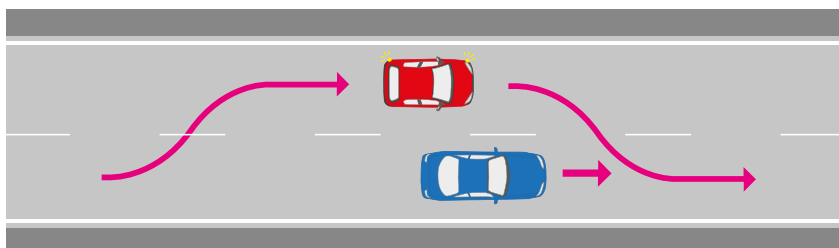
After overtaking

- Continue to the right once you see the vehicle you passed in your interior rear-view mirror and part of the road in front of it.
- Once you reach the right lane, turn off your turn signal.
- Return to your normal speed.



When being overtaken:

- Facilitate the overtaking by staying as far right as possible.
- Do not increase your speed.
- In case of danger do everything you can to help the person overtaking you.



The Rules of Overtaking

Overtaking should always be done on the left.

You should not overtake other vehicles, crossing the center line in the road:

- When you do not have enough space ahead; this would allow you to perform the maneuver safely and without interfering with oncoming traffic.
- When you are driving on a bridge, viaduct, through a tunnel or over a railway crossing or when approaching any of these places at less than 200 meters.
- When the signs or markings prohibit it.
- When approaching the top of a hill or gradient, or on a curve.
- When approaching an intersection, or in the intersection, or in a crosswalk, unless they are regulated by a traffic light. Do not pass in these cases, even if in order to do so you do not need to cross the center line.
- When the driver of the vehicle ahead of you has signaled that he intends to overtake or move to the left.
- When a vehicle behind you has begun to overtake.



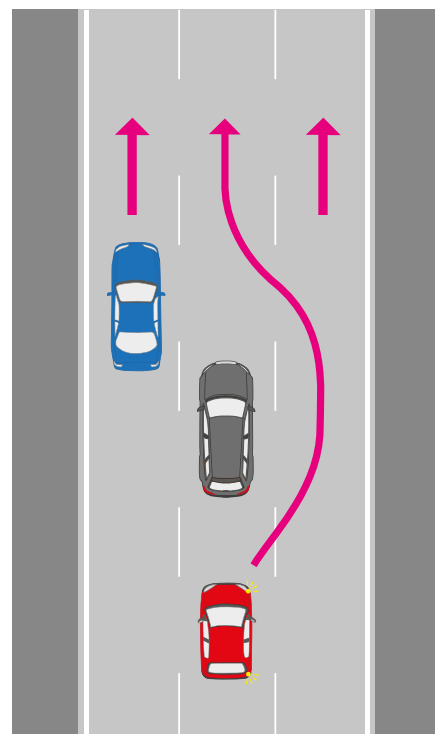
Exceptions to the rules of overtaking

You can pass a vehicle on the right only in two situations:

- When the vehicle ahead is turning or about to turn left.
- When you drive on a city street with three or more lanes in the same direction.

Current regulations distinguish these overtaking circumstances from those that occur when you cross the center line, referring to this situation as “passing”. This way, it is understood that you “pass” a vehicle when you move in front of it without crossing into a lane of oncoming traffic. Legally, these maneuvers are not considered “overtaking”.

You should not drive on the shoulder to make a “pass” maneuver.



Parking and Stopping

You should not park or stop your car where it can be a hazard to others.

A parked vehicle can stop or upset others' driving. For that reason, when you need to park use, as much as possible, designated parking areas off the public roads. When it is not possible and as long as signs do not prohibit it, park on the right side of the road in the same direction as traffic. Only exceptionally and when signage permits, you can park on the left side of the road.

Unless another form of parking is permitted, you must park parallel to the curb – no more than 30 centimeters away – in order to create as few obstacles as possible to traffic, and leaving a minimum distance of 60 centimeters between your vehicle and other parked vehicles.

On rural roads park so that the entire vehicle is on the shoulder. If there is no shoulder, always park on the right side and as close to the curb as possible.

Signs that Regulate Parking and Stopping



Where this sign is posted you may not park nor stop to pick up or drop off passengers.



Where this sign is posted you may not park.



Places where parking of any vehicle is always permitted are indicated with this sign.



The prohibition of parking may not be applicable to certain vehicles: people with disabilities, members of an embassy, etc.



The previous sign can be complemented by words that limit the scope of the prohibition to certain times or days of the week.



Where this sign is posted you can park but you must remain in your vehicle in order to be able to move it when a car with the reserved right to park arrives.

Places where Parking and Stopping is Prohibited:

- Where official signs prohibit it.
- On sidewalks, in crosswalks, or places designated only for pedestrians.
- Double parking, with respect to other stopped or parked vehicles next to the sidewalk.
- To the sides, on top of or between pedestrian areas, grassy areas separating the sidewalk from the road, or medians.
- In an intersection.
- To the side or on the opposite side of a traffic obstruction, excavation or road work.
- On bridges, in tunnels, on elevated structures or under/over passes.
- On roads or shoulders of public roads with two or more lanes in one direction.

When you stop behind a vehicle waiting for the green light, maintain a safe distance. It is estimated that this distance is adequate if you can see the back tires of the vehicle ahead of you.

In addition, you should not park:

- At less than 5 meters from a fire hydrant.
- At less than 10 meters from the entrance to a fire station, urgent care facilities or hospitals.
- At less than 20 meters from a railway crossing.
- In front of private residence or commercial garage doors.
- At less than 15 meters from the main entrance to military, police or other law enforcement premises.
- At less than 10 meters of a corner.
- Where there is a yellow solid line painted along the curb.
- At less than 3 meters from the doors to churches, educational establishments, hotels and performance halls, during the hours of public activity.
- At less than 10 meters of a STOP (PARE) or YIELD (CEDE EL PASO) sign; hazard signs, like SCHOOL (ESCUELA), NARROW BRIDGE (PUENTE ANGOSTO), CURVE (CURVA), etc.

You can park in a space reserved for another vehicle as long as you remain in your vehicle in order to leave the spot when the person who has the spot reserved arrives. You can also stop in a place where parking is prohibited, but only for the minimum amount of time to pick up or drop off passengers.

When you park, remember:

- On inclined roads, leave your wheels turned towards the curb or towards the center of the road, depending on whether you're facing downhill or uphill, respectively, so that if the vehicle started to roll it would be stopped.
- Stop the engine, leave the vehicle in gear and activate the hand brake.
- Remove the key from the ignition.
- Look behind you before opening the door, to be sure that you will not force another driver to swerve suddenly.
- Leave the vehicle locked.
- You should never leave small children or animals inside your vehicle.

Parking at Night or with Low Visibility

When you park at night on a dimly lit public street or when visibility is reduced, be sure other vehicles can see you, by keeping your parking lights on.

Emergency Parking

When you must park in an unauthorized area due to breakdowns, mechanical failures or other similar emergencies, adopt all of the necessary measures for your safety and the safety of others, placing emergency reflective devices on the road. If possible, also keep your emergency hazard lights on. If you must get out of the vehicle and you have a high-visibility safety vest with reflective material, use it.

Backing

You should not drive backwards, unless it is absolutely necessary and **only in the following situations**:

- To keep traffic circulating.
- To try to get into traffic.
- To park.

However, you should never back up in an intersection, even if you pass the stop line, unless you receive specific instructions from a Carabinero.

Before backing, be sure there are no pedestrians – especially children – or obstacles behind you. Back slowly and carefully. Do not trust your mirrors to judge distances behind you.

Railway Crossings

Respect signs at railway crossings and only cross them when you are sure that there are no trains coming. Some crossings have barriers that are activated manually by a crossing guard; other crossings have automatic barriers or light and sound signals that activate when the train approaches. But you should never trust that these systems are foolproof; always stop, take your time, look both ways and listen before crossing.

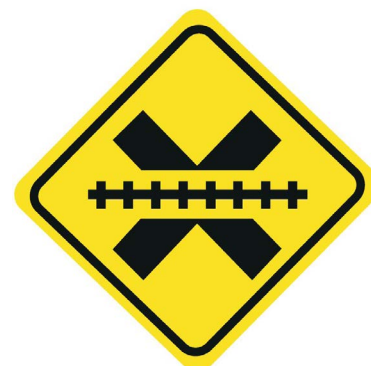
Many crossings do not have a crossing guard or security systems such as those mentioned above; they only have traffic signals. Pay special attention before crossing; stop your vehicle, look and listen.



- **If the vehicle's radio is on, turn it off.**

Remember that trains cannot stop easily. A train traveling at 100 km/h will need between 800 and 1000 meters to stop.

The train always has the right of way and in practice cannot stop in time. The responsibility lies completely with you as the driver of a motor vehicle.



If you have already begun to cross and the light or sound signals come on or you hear a coming train, do not stop.

Never cross a railway crossing if you do not have enough space on the other side of the railway(s). Never stop in a crossing or just after it; do not park within 20 meters of it. You should also not overtake another vehicle in a railway crossing, or within 200 meters of it.

If your vehicle breaks down in the middle of a railway crossing:

- Get everyone out of the vehicle.
- If it is possible and you have a short time before a train approaches, move the vehicle, clearing the crossing. On the contrary, exit the crossing.

7. DRIVING UNDER SPECIAL CIRCUMSTANCES

NEW DRIVER'S HANDBOOK

DRIVING UNDER SPECIAL CIRCUMSTANCES

In the Dark

In the dark, a vehicle is driving close to 90 km/h. The driver is looking directly ahead. Suddenly, he feels something hit the body of the vehicle and wonders what it could have been. Then he thinks that it might have been a small animal. The next day, he reads in the newspaper that a pedestrian was killed in a hit-and-run accident. The scene of the accident coincides approximately with the place where he felt something hit his vehicle, and a terrible thought comes to mind. A few days later he goes to the police, where it is confirmed that he must be the driver who hit and killed a pedestrian.

Unfortunately this story is not fictional; it has happened in real life and could happen to anyone who doesn't have the sufficient knowledge and experience necessary to drive in the dark.

The risk of an accident is higher at night because of, among other causes, our limited ability to see in the dark. Our eyes take some time to adapt to the darkness when we leave a lit room. Likewise, as we have already seen, when driving in the dark despite not looking directly into the headlights of oncoming vehicles, it is easy for effects of temporary blindness to worsen our vision momentarily.

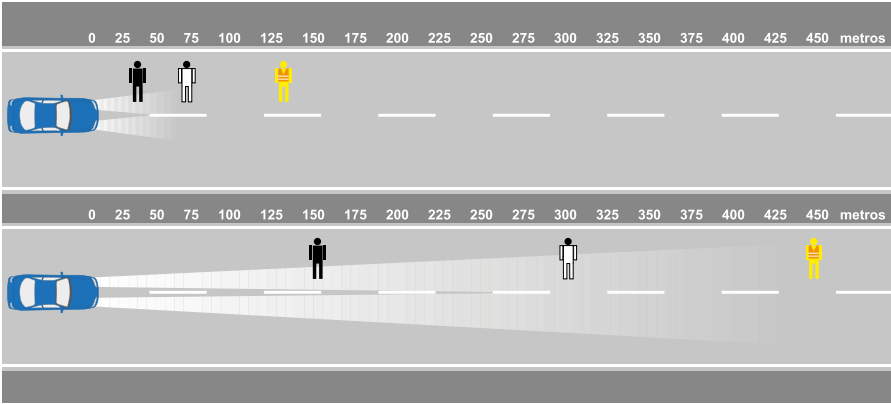
Our ability to calculate distances depends on seeing colors and clear outlines. In the darkness, these things are blurred. The same thing happens when visibility is reduced due to fog or rain. Under these conditions, oncoming traffic appears to be farther away than it really is. This can make you misinterpret distances when attempting to overtake another vehicle.

When driving in the dark, your chances of detecting an obstacle depend, among other things, on the following factors:

- The power and adjustment of your headlights.
- Your visual capacity.
- The obstacle's ability to reflect light.
- Rain, fog or snow.
- The power of the lights of oncoming vehicles.

Visibility Distances

	Dark clothing	Light clothing	Reflective clothing
Low beams	25 m	60 m	125 m
High beams	150 m	300 m	450 m



Using Headlights

In order to see and be seen, from thirty minutes after sunset until thirty minutes before sunrise, and at any time when visibility conditions require, vehicles are required to travel with lights on: low beams on city streets – that is, those roadways with public lighting – and high beams on rural roads. However, and as has been reflected by international and national experiences, it is advisable that even during the day vehicles drive with their low beams turned on, since this makes them more visible, increasing the probability of being seen in time by pedestrians and other drivers.



Motorcyclists should always drive with their lights on. **On interurban roads and highways, even when it is not dark, and visibility is not impaired by rain or other causes, you should always drive with your lights on.**

Under no circumstances should you drive with your parking lights on.

Light Management during Encounters

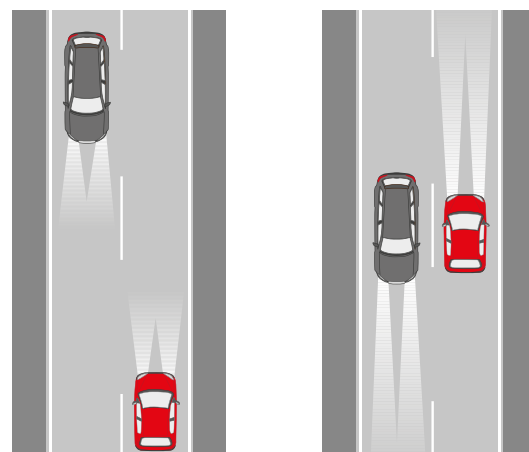
When you find yourself in the dark on a rural road with an oncoming vehicle approaching, you should change your head-lights to low beams to avoid blinding the other driver. This applies to encounters with all types of vehicles; that is, also for cyclists. Direct your gaze to the right side of the road ahead of the oncoming vehicle.

It is not necessary to lower your high beams when you encounter pedestrians.

Lower your high beams with enough anticipation, but not too soon. Unless one of the drivers is temporarily blinded by the lights of another, the entire space between the two vehicles should be lit.

It is also important for you to lower your high beams at the time of the actual encounter, in order to recover visibility of possible obstacles or pedestrians walking along the right side of the road. Move away from the right shoulder to avoid hitting an obstacle and reduce your speed, since your visibility is limited.

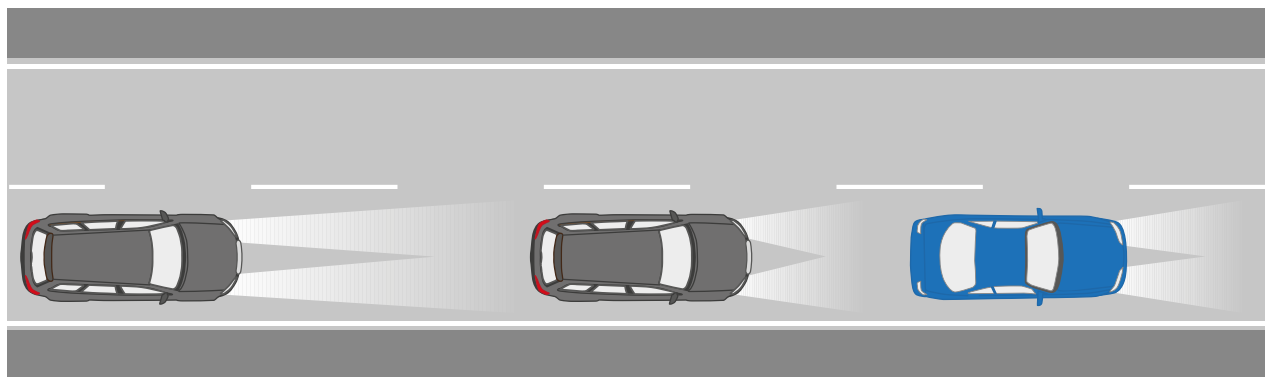
If the road or highway is wide, you can wait longer before lowering your high beams. In other situations, the change must happen earlier, for example, when coming upon a bus or truck on a change in gradient. Their drivers are seated higher up than drivers of automobiles.



Light Management while Overtaking

When you come upon a vehicle ahead of you, lower your high beams so as not to temporarily blind the driver through his rear-view mirror.

Buses and trucks have larger rear-view mirrors. As a result, you should lower your high beams earlier. When overtaking, change back to high beams as soon as you are confident you will not blind the driver of the vehicle ahead of you. There may be obstacles to the left or right side of the road that you cannot see with low beams.



When being overtaken, help the person who overtakes you by driving with high beams for as long as possible, until the person overtaking you appears diagonally to your left. The high beams of your vehicle should illuminate the roadway for both parties during the overtaking maneuver.

When parking on an unlit public street, turn on your parking lights. To make it easier to be seen by others, you can also turn on your internal lights. Always park on the right side of the road facing in the same direction as traffic. If your vehicle has any kind of failure, it is important that you put emergency triangles around your vehicle as soon as possible. If the electrical system is working, turn on your hazard warning flashers as well.

If you lower your high beams momentarily in curves or changing gradients, you can see pedestrians or other obstacles lit by oncoming vehicles' headlights.

Other Vehicles' Lights

When driving in the dark it is important for you to be able to recognize, using your lights, the different types of vehicles that you may encounter.

Motorized vehicles with four or more wheels

- Front area: two head lamps that project high and low beams, two parking lights and two flashing turn signals
- Rear area: two parking lights, two flashing turn signals, two backing lights, two fixed red lights, two brake lights and one light for the license plate. Most of vehicles have a third brake light.

Cargo/hauling vehicles and public transit

- Cargo and public transit vehicles also have forward yellow lights on both sides of the top of the body that indicate their width and maximum height.
- They must also have red lights in the top corners of the rear end of the vehicle.

Motorcycles and scooters

- Front area: one headlight that projects high and low beams.
- Rear area: fixed red light, brake light and two flashing turn signals.

Tricycles and Bicycles

- Front part: one light that projects forward light
- Rear part: one fixed red light

Animal-drawn vehicles and hand carts

These vehicles should have a lamp on the front part of the vehicle and one at each side that protrudes from the structure and projects white light forwards and red light backwards.

Be aware that all forward-projected lights are white or yellow, and rear-projected lights are red, with the exception of reverse (backing) lights, which are white, and the rear turn signals, which can be red or yellow.

Reflective tape is another element that, although not a light, helps us to identify other vehicles in the dark. This tape is found on the rear and side areas of cargo and other large vehicles, in addition to school transport vehicles.

WARNING!

Always be aware that bicycles and carts may not have the appropriate regulation lighting.

Driving at Night in Publicly Lit Areas

When driving through a publicly lit urban area, you should not have your high beams on. In these areas, be aware that pedestrians, cyclists, children or other parties may not be sufficiently visible. In addition, they act as though it were daytime, believing they can be seen sufficiently by street lamps. Under these circumstances it is necessary to be particularly alert, as it can be difficult to detect people in time.

Loading the Vehicle

A heavy load may modify the maneuverability of your vehicle. As a result, don't expect the vehicle to function the same way as you are accustomed to under normal circumstances. Acceleration will be slower and stopping distances will be longer. You will find that the vehicle veers to the side more in curves and you will need more space to overtake.

With a heavy load in the rear of your vehicle you will feel that the steering wheel is lighter and the vehicle will tend to turn more than expected; it is also possible that the headlights will be askew. With a heavy load in the front of the vehicle, the vehicle will tend to turn less. A roof rack or a small trailer will allow for more uniform distribution of your cargo.

When placing cargo on the inside of your vehicle, do not obstruct the visual field of the rear-view mirror or the rear corners. Never haul hard, pointy or heavy objects on the rear deck (rear dash), as a small crash or heavy brake can transform them into dangerous projectiles.

When hauling additional cargo the pressure and size of the tires is very important. For your safety it is probable that the tires need more air or even that they be larger. Consult your owner's manual for more information.

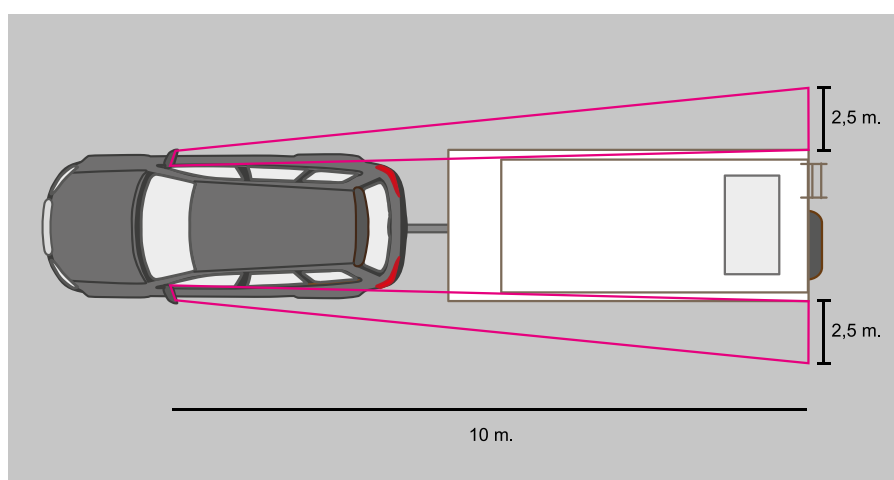
- Check the rack restraints.
- Be sure that your load cannot move upon braking, turning or accelerating, but rather is firmly secured. If you cover the load with a tarp, consider the effects of wind or speed.
- Do not overload the rack. Be aware of the stability of the vehicle and the strength of the roof.

Driving with a Trailer

A Class B (Clase B) driver's license allows you to drive an automobile with a light trailer, whose weight does not exceed the tare of the engine unit, and as long as the total weight does not exceed 3,500 kilograms.

In general, trailers are wider than automobiles. Because of this and in order to see adequately, install extra rear-view mirrors in your vehicle or extend the existing side mirrors with special arms. Do not forget to remove the extra mirrors or extension arms when you disconnect the trailer.

When hauling a trailer, always check your rear-view mirrors.



Brakes

When trailers have a hauling capacity above 750 kilos, they must have brakes, with surge brakes being the most common. With these brakes, braking occurs when the trailer pushes the car. Surge brakes can be hitched to all vehicles that have an adequate trailer hitch. Electric brakes require a hauling vehicle with a plug for electric brakes.

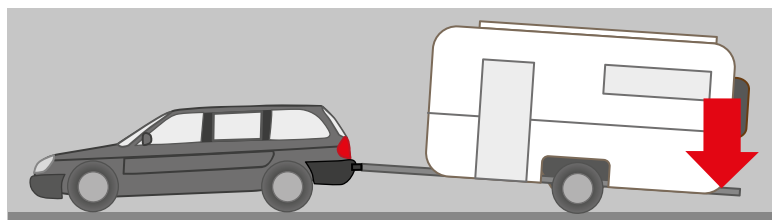
In addition, trailers with brakes should have an emergency brake that functions automatically in case the trailer hitch breaks.

Tow Ball

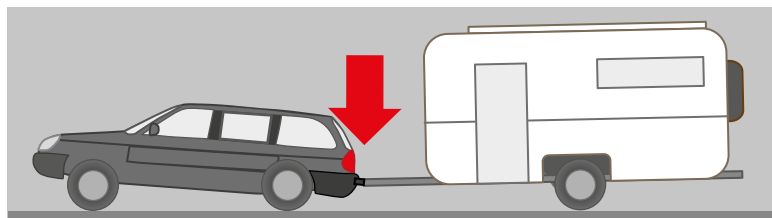
Always check that the trailer hitch is in good shape and that the hook up is in the correct place.

Load the trailer in such a way that the pressure on the tow ball is correct. For more information consult manufacturer recommendations.

When the pressure on the tow ball is low or absent, the rear part of the vehicle lifts. The pressure on the rear wheels decreases and the reach of headlights is diminished. The entire vehicle begins to snake and the trailer can flip.



If the pressure on the tow ball is too high, the rear of the vehicle will be pressed down. The pressure on the front wheels diminishes and the low beams can temporarily blind oncoming drivers.



Before Beginning to Drive, Check:

- That the load in the trailer is well distributed and the pressure on the tow ball is adequate.
- That the trailer is hitched correctly.
- That the lights (and electronic brakes) are plugged in correctly.
- That all of the lights are clean and in working order.
- That the trailer's parking brake is off.
- That the support legs and wheel are secured and bolted.
- That the vehicle's rear-view mirrors are correctly adjusted.
- That the brake system works.

If the trailer starts to zigzag, let up on the accelerator slowly until you recover stability.

On Freeways

On freeways and highways vehicles drive at higher speeds than on other roadways. Because of this, you also have to think faster. It is especially important that you use your mirrors constantly and that you are more aware of the road conditions that you might be on other roads or streets.

When you are going to enter a freeway, be sure that your vehicle can reach an adequate speed, and has correct tire pressure and sufficient fuel, oil and water in order to reach at least the next service station. Verify that the windshield, mirrors, lights and headlights are clean.

Plan your trip. Know where you are going to get on the freeway and where you will get off.

Do not use the freeway if your vehicle cannot reach a speed that will avoid putting other people at risk.

Getting on the Freeway

To get on the freeway, there is a special lane called the acceleration lane. You should remain in this lane while you adapt your speed to the flow of the freeway and until there is a break between vehicles that allows you to enter traffic safely. Drivers already on the freeway have the right of way. If you cannot find a safe break in traffic, stop until one presents itself.

Use your mirrors and double-check by looking over your shoulder before leaving the acceleration lane. Once you have left the acceleration lane stay in the right lane for as long as necessary to get used to the speed of the freeway, before overtaking or changing lanes.

On some freeways, the tolls are not paid conventionally, but rather there is an electronic payment system. For these systems, the bill will arrive at your home. You cannot get onto a freeway with an electronic toll system if your vehicle does not have a special device – *televía* – or other complementary system up to date.



This sign informs the driver that there is an electronic toll system.

On the Freeway

When you have good visibility and road conditions are good, drive at a cruise control speed, at which you can maneuver easily. Do not exceed the speed limit. Maintain a reasonable and prudent distance between your vehicle and the one ahead of you. The three second rule is very important when traveling at high speeds.

When you drive on a freeway try to facilitate access for entering vehicles:

- Lighten pressure on the accelerator and let the entering vehicle in.
- Increase your speed when it is more convenient.
- Change lanes.

Good, fast freeways are not only advantageous. Driving on them can be monotonous, which can easily lead to sleepiness or drowsiness. To help avoid this, be sure to ventilate your vehicle well. When you feel tired or sleepy, leave the roadway and find a safe place to rest.

Another risk of driving on the freeway is that after a few dozen kilometers you begin to be blinded by speed. We tend to think that our speed is lower than it really is, which makes us drive too close to those in front of us. That's why it is important to constantly check your speed by looking at the speedometer.

Do not pass another vehicle unless you confirm that it is safe to do so. Use your mirrors. Remember that traffic behind you may be coming very quickly. Always signal before changing lanes.

REMEMBER:

- Mirrors-signal-maneuver. Be especially careful at night and when there is limited visibility since under those circumstances it is harder to perceive distances and speeds.
- On freeways and highways you should drive in the right lane when your speed is under the speed limit.
- You should drive in the right lane unless you are going to overtake a vehicle.
- You should pass other vehicles only on the left.
- If you pass a motorcyclist you should leave a safe lateral distance.
- You should not drive on the shoulder.
- Traffic signs are there to protect you. Respect them, do what they indicate and drive carefully when you are warned of a hazard.

Stopping and Parking

Do not stop on the freeway, unless:

- There is an emergency.
- A Carabinero asks you to.

Do not park on the freeway, including the shoulder or onramps.

Do not pick up or drop off passengers on an onramp or any other part of a freeway or high-speed roadway. Do not walk on these roads unless you are in an emergency situation.

Mechanical Failures

If your vehicle presents a problem, get off the freeway at the next exit or a rest stop. If you cannot do so, you should:

- Try to stop near a telephone.
- Position your vehicle on the shoulder, stopping as far from the road as possible.
- Turn on your hazard warning flashers.
- Keep your parking lights on if it is dark or there is limited visibility.
- Exit the vehicle on the right-hand side, and ensure your passengers do the same.
- Be sure that your passengers wait near the vehicle, but keep them away from traffic and the shoulder, and be sure that children are supervised.
- Walk to a telephone and call Emergency Services or Carabineros.
- Wait near your vehicle, but far from the road and the shoulder.

If you believe you are in some kind of danger, return to the vehicle, always entering and exiting through the right-hand side of the vehicle. Fasten your seatbelt while inside the vehicle.

If you cannot get your vehicle to the shoulder:

- Turn on your hazard warning flashers.
- Get out of the vehicle only when it is safe to do so. If you are unsure, remain in your vehicle with your seatbelt fastened until emergency services arrive. If it is night time, make yourself visible wearing the reflective vest.
- Do not try to place a triangle or other reflective device on the freeway or do any repairs on the vehicle.

Show solidarity to other motorists who find themselves in this situation, calling Carabineros.

How to Exit the Freeway

Unless signs indicate that a lane leads directly off of the freeway, you must exit the freeway using an off-ramp on the right-hand side. Look at informative signs about your exit and get in the right lane early. Signal to the right and reduce your speed when necessary.

The deceleration lane on the freeway is distinguishable by a broken line that is wider than normal.

When getting off the freeway your speed could be higher than you think. If you're traveling at 80 km/h, it could feel as though it were 50 km/h. That is why it is important that you check your speed by looking at the speedometer.

Distances of 300m, 200m and 100m at the beginning of the deceleration lane leading to the off-ramp are marked by special signs.

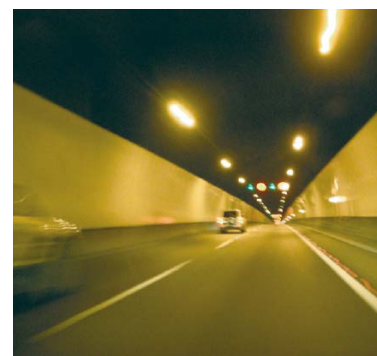
Also, be aware that many freeway off-ramps have pronounced curves, which is why it is very important to reduce your speed.



Driving in Tunnels

Building freeways in cities also means that these days it is more and more common to drive through long tunnels. Correct behavior inside tunnels means taking some extra precautions.

- When you must drive through a tunnel, be sure you have enough fuel so that you will not run the risk of your vehicle stopping inside the tunnel.
- If your lights are not on upon entering the tunnel, turn them on, even when the tunnel is well-illuminated. Lights should be turned on early to avoid drivers behind you from confusing your tail lights with your brake lights.
- If you are wearing sunglasses, remove them.



- Close your windows and turn on your fan or air conditioning.
- Pay attention to any signs present within the tunnel.
- Be careful in the presence of puddles caused by drips or water leaks.
- If there is a traffic jam, turn on your hazard warning flashers immediately and maintain a safe distance from the vehicle ahead of you, even if you are driving slowly or are stopped. Turn off the engine if traffic has stopped.

If your Vehicle Suffers a Problem:

- Turn on your hazard warning flashers.
- If you cannot move your vehicle, remain inside with all other occupants with your seatbelts fastened and wait for assistance.
- If you can move your vehicle, get it out of the tunnel, or get as close as possible to the right-hand side, ideally a place specially designed for emergencies.
- Turn off the engine and wait for help.
- If you require assistance, do it exclusively from an SOS telephone, since cellular phones do not give information about the location of the call.
- Follow the instructions of tunnel employees.

In Case of a Vehicle Fire:

- If possible, exit the tunnel. If you cannot, move to the right and turn off the engine.
- Exit the vehicle immediately.
- Use your fire extinguisher or one available in the tunnel.
- If you cannot put the fire out, ask for help using an emergency telephone.

In Adverse Weather Conditions

When weather conditions are unfavorable, the first rule of safety is to ask yourself if it is absolutely necessary to use your vehicle. If you must drive, make sure the vehicle is in perfect condition.

Rain

Rain is an atmospheric condition that can negatively impact driving and that requires the driver to take necessary safety precautions, since the roadway becomes slippery when wet or covered in a layer of water.

However, it is always with the first rain that we must be more cautious, because when water mixes with dirt or oil on the asphalt, the road becomes very slippery, especially when it rains after long periods of drought until the roadway is cleaned. This represents a serious hazard to driving safety. **Reduce your speed at the first signs of water on the roadway.**

Under these circumstances, **worn tires are incompatible** with safe driving, since shallow treads do not provide as much traction and the vehicle can slip and skid.

The most important effects of rain are:

- It reduces the traction of the tires, which is why there is danger of sliding, which is accentuated when the tires are worn.
- Visibility is reduced.

Measures to take to improve traction and prevent sliding:

- Frequently check your brakes while driving, because when wet they lose efficiency and it becomes important to “dry” them. In order to do so, without slowing significantly, step lightly and repeatedly on the brake pedal (pump effect).
- **Brake slowly**, progressively and pressing the pedal in short bursts, not brusquely, because harsh braking can cause the wheels to lock and the vehicle to slide on them as if they were skates. (This effect doesn't occur when the vehicle has an ABS system).
- **Increase your following distance**, to have, in case of emergency, more room to stop. Your braking distance will be at least double what it would be under normal conditions.
- **Reduce your speed**; this recommendation is especially important when nearing a curve or on roads with layers of water, puddles or fallen leaves, in order to alleviate the diminished traction of your tires.

Aquaplaning or Hydroplaning:

When rain is very intense, a film or layer of water comes between the road and the tires, making it difficult to maintain tractions.

When the layer of water on the road is more than the tires can displace using treads, the following occurs:

- Water accumulates in front of the wheels.
- Tires lose traction and contact with the road.
- The vehicle slides, glides and moves without making contact with the road surface.
- The driver loses control over the vehicle; the steering and brakes do not respond to driver commands. The vehicle seems to float.



This phenomenon is commonly known as **"aquaplaning"** or **"hydroplaning"**.

At high speeds, more water must be displaced by the tires and more water accumulates beneath them, which can saturate the treads. Because of this, in order to avoid **"aquaplaning"**, **the best advice is to moderate your speed**, so that the tires can displace the water well and keep contact with the ground, avoiding braking and accelerating.

When there are puddles on the road:

- **Avoid driving over them**, either placing them between your wheels or to one side, if doing so is possible and not risky.
- **Moderate your speed.** When it is not possible to avoid puddles, or you must drive over them with the wheels on one side of the vehicle, reduce your speed so that the vehicle does not lose stability. This way, you will also avoid splashing other cars with water, which can affect their visibility.

When the road is flooded:

- If you have no alternative and must drive through a flooded section, drive slowly in first gear and at a constant speed.
- When you exit the water, before returning to the advisable speed given the conditions, check your brakes, stepping lightly on the brake pedal. If they do not brake well, dry them by slowly braking.

Measures you must take to improve visibility:

Rain reduces visibility not only because there is less light but also because the windshield and the side and rear windows are covered on the outside with water drops – in some cases, even with flecks of mud – and on the inside the windows fog up. Also, the rear-view mirrors and the lights are affected.

To improve visibility:

- Keep the windshield, the back window and all your lights clean. If necessary, stop to clean them.
- Turn on the windshield wipers and the back wiper, if your vehicle has one.
- Use windshield washers when necessary. (For better cleaning, adding a little soap to the windshield wiper fluid is recommended).
- Eliminate the vapor on the inside of the windshield, using the heating and air condition system directed towards the windshield; activate the rear window defrost.

Make yourself more visible to others. Turn on your lights!

Snow

When the first flakes of snow fall, driving is as dangerous as during the first rain, because when the snow mixes with dirt, oil and other debris and then vehicles drive over it, a layer of mud forms that transforms the pavement into a very slippery road.

When the snow is soft and recently fallen it creates a light layer that slowly melts, causing the road to become slippery. Snow **reduces the traction of the tires, diminishes contact and as a result there is danger of sliding. Also, when it is snowing, visibility is reduced.**

When snow freezes or has been on the road for a time and has become hard and packed, its effects are similar to those of ice.

Measures you should take to improve traction and prevent sliding:

- As a general rule, when there is snow drive slowly and gently, as if in “slow motion”, without moving the steering wheel or changing gears suddenly.

- The brakes, accelerator, clutch, gear shift and steering wheel should be used delicately and softly.
- Check the efficiency of your brakes frequently.
- Increase your safe following distance from the vehicle ahead of you; on slippery pavement your stopping distance is much longer than under normal conditions.
- Use chains on the drive wheels.
- At times, some of the snow the tires displace sticks to the mud flaps; remove it as many times as necessary.
- Follow the tracks left by other vehicles, careful not to damage the undercarriage of your vehicle with the mounds that accumulate at the center.
- Do not overtake.
- Go up hills slowly and at a continuous speed, because when you try to make up for lost speed it can cause sliding or skidding of the drive wheels, and then if the vehicle stops it will be very difficult to start driving again.
- Use the highest gear you can reasonably manage, as this way you will achieve the minimum increase in speed of the drive wheels and the risk of sliding will be reduced. Avoid changing gears.
- Go down hills slowly, at a moderated speed and in a low gear. Slow using gears, only using brakes when absolutely necessary, softly and early to avoid skidding.
- When entering a curve, do so at a speed that does not require you to brake in the curve, because the front wheels have a high probability of locking if you brake while turning the steering wheel.

At sunset, when the sun and temperature go down, the snow on the road starts to freeze quickly, forming a very dangerous thin layer of frost. If it gets late before you head home, you must be extremely cautious and pay attention to the changes in shine of the snow; where there is more shine it is harder and there may be ice.

Measures to take to improve visibility:

When snow accumulates on the windshield, side and rear windows, your view of the road and surroundings will be diminished. At the same time, you will be less visible to other drivers. To compensate for reduced visibility:

- Use the windshield wipers and, if your vehicle has one, the rear wiper.
- Wash the windshield as often as necessary to help melt the snow. However, if the temperature is below zero the

water squirted onto the windshield can freeze, forming a layer of ice on the windshield and defeating the purpose of washing the windows. It is essential to add antifreeze to the windshield washing liquid.

- Because your windshield wipers cannot clean the entire surface of the windshield, stop as many times as necessary to remove snow from the windshield, windows and lights.
- Even at night, it is not recommended to use high beams, as light does not cut through the curtain of snowflakes, the light is reflected back at the driver and you could be temporarily blinded.
- If it is snowing and your vehicle has fog lights, turn them on.

Sometimes after the snow, the sun comes out and the bright of solar rays on the snow can be bothersome and even damage your sight. To avoid this, protect yourself using tinted sunglasses that prevent direct penetration of intense light into your eyes.

Ice

Ice is very dangerous, because it makes the road very slippery and turns it into an “ice rink” where prudence, skill and driver reflexes are tested, so you should take extreme precautions.

Ice reduces, if not eliminates, traction, causing a severe risk of sliding.

When and where is a road most likely slippery?

- On cold and wet days, shadows on the road made by trees can hide icy parts of the road from view. The parts of the road in the shade are the first to freeze and the last to defrost and dry.
- Bridges can also conceal frozen areas. Their surfaces tend to freeze far before the rest of the road.

If you notice that steering becomes excessively light, as if floating, you should be aware.

You can also verify if there is ice on the road, without putting yourself at risk, by braking softly while driving slowly.

Measures you should take to improve traction and prevent sliding:

The aforementioned about snow is equally applicable to when driving on icy roads.

It is important to highlight that when the road is icy, **braking distance can increase up to 10 times over normal**, which is why you must drive at a greater distance from the vehicle ahead of you and reduce your speed, avoiding braking and accelerating.

As a general rule, keep in mind that there is nothing that will allow you to drive on ice or snow in safety conditions that are even close to those that occur on dry and clean pavement. However, traction can be improved by using special tires or **driving with chains**.

Fog

Fog reduces visibility and when it is very thick, it practically eliminates visibility. Also, it reduces tire traction when the pavement is wet and as a result there is a risk of sliding similar to when it starts to rain.

Fog requires calm and that you not try to see more than can really be seen.

Measures you should take to improve visibility and traction:

The aforementioned about rain and snow can also be applied to fog. Also, it stands to note that if it is important to see it is also important for you to be seen by other drivers in time.

- Keep your low beams on. Because they project directly to the ground you can see more, better.
- It is not advisable to use high beams, as they are parallel to the road, and small droplets of water and suspended particles cannot be penetrated, instead reflecting the light like a mirror.
- If your vehicle has forward fog lights, use them in addition to the low beams.
- Rear fog lights are very important to be seen by drivers behind you, but you should use them only when the fog is thick, as they could cause vision problems for other drivers.
- Increase your safe following distance. You will have more space to react in case the driver in front of you brakes has reduced visibility, or maneuvers unexpectedly.

- Reduce your speed, not only to improve traction and prevent sliding, but especially to be able to stop the vehicle within the visible area ahead of you.
- Do not overtake other vehicles if visibility is so reduced that you cannot see ahead.
- Pay special attention to road surface markings. Longitudinal central or side lines will be very helpful in seeing the path to be followed.

If it is dangerous to drive in the fog, stopping on the road is also dangerous because the reduced visibility can cause an accident

High Winds

High winds, especially on mountain roads, when they blow side to side, are another risk for driving since they can cause you to leave the roadway or can overturn the vehicle.

Measures you should take:

Reduce your speed: The stronger the wind, the lower gear you should use. This way the weight of the vehicle helps to keep it secured.

Correct deviations to correct your trajectory. To do this, hold the steering wheel firmly and turn it against the wind.

Gusts of wind worsen the problem. Drive with extreme caution and be alert so as to avoid possible deviations from the road.

8. EFFICIENT DRIVING

NEW DRIVER'S HANDBOOK

EFFICIENT DRIVING

In this chapter we want to give you the necessary tools to reduce fuel consumption while driving. The importance of this is rooted in that improving your driving habits will produce benefits, not only for you but also for the environment, and will benefit the safety of roads and highways in the country.



What do we understand for efficient driving?

We use the concept of Efficient Driving to make reference to an attitude and to a type of driving that will allow you to obtain greater energy performance in your vehicle.

The information contained in this chapter has as main objective to help you develop habits that will allow you to improve your driving continuously, as well as to look at some basic aspects of vehicle maintenance, which in the end will have an impact on fuel consumption reduction.

Putting into practice habits that make up Efficient Driving will lead you to substantially reduce your energy consumption, since optimizing the way one drives can save up between 10 to 15% of fuel, which will reduce your final energy output.

How does Efficient Driving have an impact on consumption?

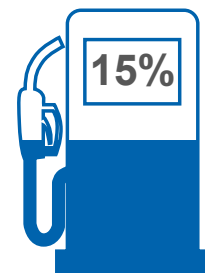
The benefits from Efficient Driving appear in lower cost per trip, lower cost in vehicle maintenance and a reduction of stress while driving, which leads to greater safety, for you as well as for those with whom you share the road.

At the same time, the way one drives is essential in the reduction of various air pollutants, among them carbon dioxide, one of the main sources of the greenhouse effect, phenomenon that consists in heat retention as a result of gas accumulation in the atmosphere.

Next we will see some techniques to be an efficient driver. Not all techniques apply while driving, but also before getting inside the vehicle. Because of this we present recommendations that apply before you go and while driving.

Consumption reduction applying Efficient Driving

Many studies done by AChEE have proven that applying Efficient Driving techniques allows you to reduce between 10 and 15% of fuel consumption
(Source: Chilean Agency of Energy Efficiency - AchEE in spanish).



Before you go

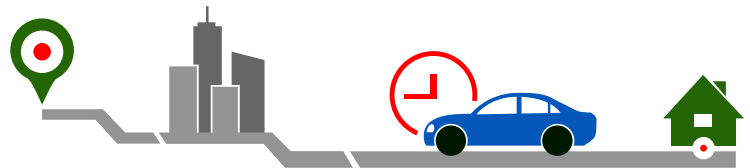
An efficient driver does not worry only about how he or she drives, but also about other aspects previous to driving itself that will affect directly on the final fuel consumption of each trip. Next, some recommendations before you go.



Plan your trip

The first thing that must be considered to have efficient driving is to plan your route and to leave with time. It is possible that you may not know the existence of shorter routes to get to a same destination. It is because of this reason that we recommend reviewing the map beforehand with the purpose of identifying and choosing alternatives that shorten your journey. That way you will avoid driving extra kilometers that make you spend more fuel than what is needed.

If you look for the least congested routes and avoid, as much as possible, times of greater traffic, you could decrease your fuel consumption as well as time spent in your trip. This implies being less time with the engine on consuming fuel.



Also, a route with lower traffic congestion will allow you to keep a constant speed and, hence, obtain better performance.

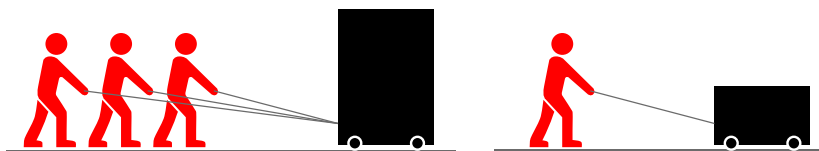
Be foresighted and make sure you gather several errands in the same trip, that way you avoid unnecessary trips, reducing the times you have to take your vehicle to the streets. Energy efficiency is not doing less, is doing the same but spending less. Why make two trips if with only one you can do all your errands?

If you have a GPS or mobile phone with GPS included, use it to plan your route before your trip. There are GPS systems and mobile phone applications that, also, give indications while you are driving to make it even easier to follow the wanted route. Remember not to use your phone while you are driving.

Prepare your vehicle for the trip

To move a big load you need more strength than to move a small one. In the same way, the greater the load or weight the vehicle has, the greater the strength this one will require to move it. This strength is obtained thanks to the energy contained in its fuel.

The **greater the load** there is in vehicle, the **greater for the effort** it must do to move it.

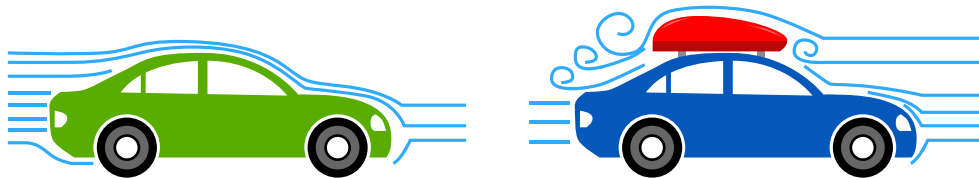


With a **smaller load**, a **smaller effort** is required. In the vehicle, this translates to less consumption.

That way, the greater the weight your vehicle has, the greater fuel consumption will be. Each kilogram counts! Check you don't have objects of excessive weight for your trip, such as toolboxes or a roof rack, when is not really necessary. Keep these items in another place where they do not create energy output.

Watch the aerodynamics

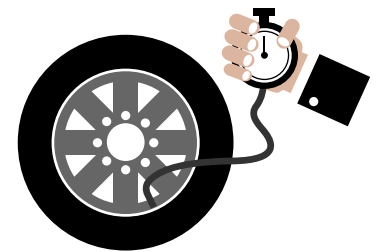
Roof racks and cargo in the roof have an additional effect that increases fuel consumption. Especially at high speeds, some aerodynamic resistance is produced, that has to do with wind resistance to vehicle movement. If you have a roof rack or cargo in the roof, consumption of fuel can increase about 20% in highways. (Source: IDAE).



Control the air pressure of tires regularly

When a tire has less air than necessary, it demands greater effort to move the vehicle. Imagine what it means to ride a bike with a flat tire; it requires greater effort on your part, doesn't it? In the case of a vehicle, it requires greater amounts of fuel.

It is necessary to check tire pressure regularly, in the frequency recommended by the manufacturer, or at least every two weeks. Also check before starting a long trip such as vacation or other trips outside the city. Is it estimated that a 5 PSI reduction from the optimum air level in tires can increase fuel consumption by 3%. (Source: IDAE).



Benefits of good maintenance

Just as it was mentioned in the automobile operation section of chapter The Principles of Driving, good maintenance will allow you to drive your vehicle safely and also to increase the lifespan of its various components, as well as having good fuel performance, and to have greater availability of your vehicle.

Additional to tires, there are other key elements to keep a good performance. A fuel filter in bad shape could increase fuel consumption by 0.5%, due to the pump making greater efforts to take fuel to the engine. Eventually, there will not be the necessary amount of fuel when facing an acceleration demand of the engine. This could generate an incomplete combustion; this is, when the total of energy available is not fully used.



A dirty air filter could affect by 1.5% performance, since if there is not enough air available, or if it is contaminated, fuel is not fully used to 100%. There is an optimum proportion of air and fuel that allows extracting the maximum amount of energy in fuel during combustion. If this proportion is not met because there is not enough air then part of the energy resource will not be utilized.

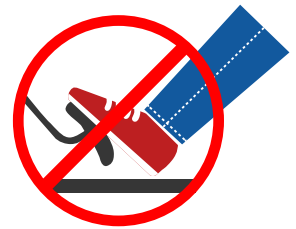
On your way

An efficient driver is that who is capable of applying some basic techniques while driving. Because of habit, it will surely not be possible for you to take into practice all the recommendations contained in this chapter immediately. For that reason we recommend you to apply the following techniques gradually, so they become more natural to you and then become habit. When this happens, **you will be an efficient driver!**



Turn on the engine without touching the accelerator

When you turn on the engine, choose not to step on the accelerator, since that action only causes an increase in fuel consumption. Modern vehicles are equipped with an electronic system that allows you to regulate the start and fuel injection to the engine.



Accelerate softly

Avoid accelerating fully. Full accelerations generate excessive fuel consumption. A driver that usually accelerates fully will have an energy output greater than one who is moderate. **Use a feather foot, not a lead one!**

Optimum speed

Even though in highways speed limits allow 90, 100 or even 120 km/hr., you must keep in mind that high speeds reduce considerably fuel performance, about 10% and more. Sure, if you travel great distances you could justify driving at the maximum speed allowed. But in the case of distances smaller than 100 km, the time gain is pretty low. We invite you to see how much time you gain by increasing your speed by 10km/hr. in the table shown in **Encounters and Overtaking** section of chapter Traffic Regulations. **Is it worth to increase your consumption that much for a few minutes?**

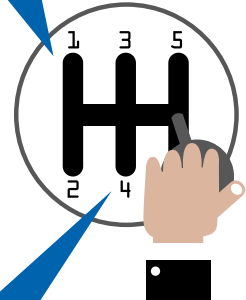
Avoid straining the engine

An overloaded engine at higher revs will have greater fuel consumption. Because if this it is recommended to keep revs in relatively low ranges.

This is achieved by keeping higher gears while driving (3rd, 4th or higher). For example, to drive at 70km/hr., although it can be done in 4th or 5th gear, choose the highest gear (5th), where you could reach higher performance.

This advice is only applicable if the vehicle you drive has a manual gear box. In case of automatic transmission, if you avoid accelerating fully, the vehicle generally chooses the highest gear possible. To the contrary, if you are used to pressing the accelerator fully, the vehicle could choose lower gears to increase power, which will in the end increase consumption.

Lower gears
have greater fuel
consumption



Higher gears
will have better performance
since the engine works at
lower RPMs

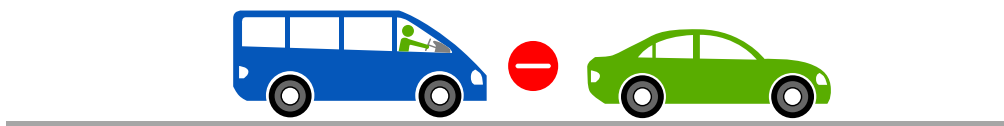
Keep a safe distance

To determine the necessary distance with respect to the vehicle before you on the road, you should consider not only the **stopping distance** that was discussed in chapter **Energy and the laws of physics**. You should also consider that keeping enough distance will avoid braking and accelerating constantly. This last practice entails a repeated demand to the engine power, generating greater fuel consumption. For this reason, to keep a good performance, it is necessary to keep a safe distance.

Then, what would be a safe distance?

This has to be analyzed considering circulating speed, traffic flow, weight being carried and the braking capacity of your vehicle, which will in turn depend on the condition of tires, brakes and pavement. This could be equal or greater to the suggested distance in **Vehicle Location** section of chapter Traffic Regulations.

Keeping **little distance** with the vehicle before you forces you to brake and accelerate repeatedly, increasing fuel consumption

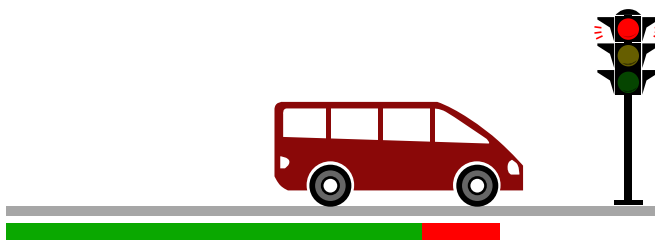


A **greater distance** allows you to brake in advance, or even avoid doing so in some occasions, only by holding the vehicle and letting go of the accelerator, and with a gear on.

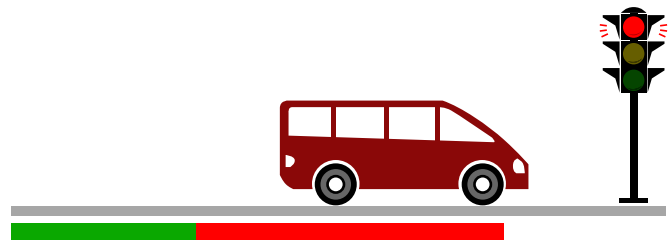
Avoid last minute brakes

In order to reduce energy consumption, it is recommended braking in advance always when possible. That way, you will reduce the time you keep your foot in the accelerator unnecessarily. If you see a red traffic light or a Stop sign, you could start reducing your speed slowly and using the gear box. Initially you must keep the gear on (without stepping in the clutch or shifting to neutral), and then reduce gears one by one if you need a faster braking.

Reducing speed by keeping a gear on cuts fuel injection, hence its final consumption in the trip will be less if you adopt this as practice. Also, it increases the vehicle's braking capacity, as seen in section The force of gravity of chapter The Principles of Driving.



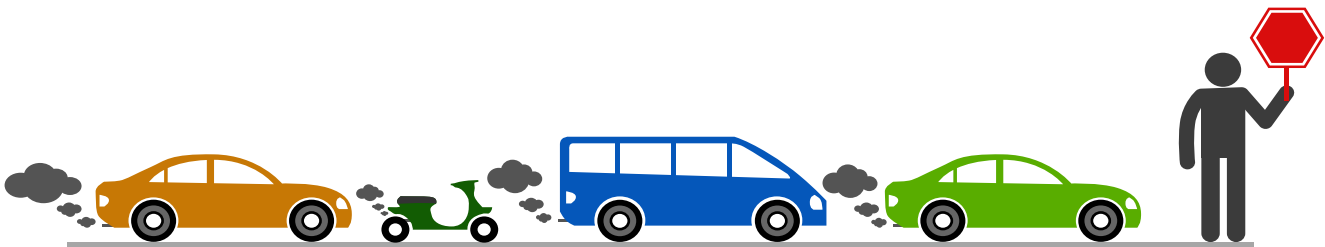
If you **plan your braking** before an imminent stop, you will save fuel during great part of the manoeuvre. Remember to accelerate slowly after.



If you **brake at the last minute**, besides exposing yourself to an accident, you could lose the opportunity to save up and gain no time.

If you stop for over a minute, turn off the engine

It is common that during your trip some lengthy or unexpected stops come up. A flagman, an accident or making a purchase demands stopping for longer time than usual. In these occasions and, as general rule, in any stop **longer than a minute**, it is more cost-effective to turn off the engine and turning it back on after. Red stop lights, in general, last shorter than a minute, so, in that case, it is not cost-effective to turn off the engine.



Overtaking and emergency situations

In overtaking or emergency situations, safety must be above economy, meaning some Efficient Driving recommendations can be overlooked to avoid putting at risk your trip's safety. It is recommended to overtake only when you have enough distance to not strain the engine and not put yourself or others at risk.

Now well, as it was mentioned in Chapter Individuals in Traffic, being under a lot of stress constitutes an important risk factor, as well as becoming a cause of excessive fuel consumption. For this reason, we repeat the recommendation of avoiding driving under severe stress conditions.

Safety

It is not coincidence that the principles of safe driving give as result an efficient driving that allows to reduce energy consumption. Moreover, safe driving is the basis for an efficient driving, which contemplates principles and techniques that, along with protecting personal and others' safety, leads to the proper use and functioning of the vehicle, which entails a reduction in consumption.

Next there is a summary of the principles that promote safety and efficiency.

- **Attention to the conditions surrounding the driver:** will allow you to react appropriately and avoid accidents. At the same time, braking with enough anticipation and the proper use of the gear box reduce fuel consumption.
- **Overtaking:** you must have certainty that you have enough distance to manoeuvre. This will avoid increasing the vehicle's RPM, generating excessive consumption.
- **Minimum distance with the vehicle ahead:** it refers to the necessary stopping distance to not collision, as well as to avoid braking and accelerating constantly, which would generate greater consumption.
- **Health, stress and tiredness:** being less alert constitutes a risk factor since it effects on erratic behavior, such as delaying shifting gears, braking with the wrong technique, among others. Frustration and/or stress states turn the person into a potential aggressive driver, who becomes more daring and ignores the efficient driver's techniques, incurring in greater fuel consumption and risking not only his or her own safety but also the safety of other users of the road.

All the recommendations seen in this chapter of Efficient Driving will help you increase the safety of your trips, take better care of your vehicle and decrease fuel consumption, benefiting not only yourself but also the environment. A joint effort is necessary to be able to reduce consumption of energy resources at a national level, as well as air pollution levels. You could be a key part in this effort for having a cleaner and more efficient Chile.

If you would like to learn more about efficient driving, go to www.conduccioneficiente.cl

9. IMPORTANT INFORMATION

NEW DRIVER'S HANDBOOK

IMPORTANT INFORMATION

How to Behave in the Case of an Accident

What does the law say? Independent of who is at fault, anyone who is involved in a traffic accident that results in injury or death is required to stop driving, provide help possible and inform the nearest law enforcement authorities.

Not complying with the previous behavior will be sanctioned, depending on the damages and injuries that may result, with fines, suspension of license or permanent ineligibility to drive vehicles and actual incarceration sentences.

In case of accident, the driver is obligated to:



STOP
DRIVING



PROVIDE
HELP
POSSIBLE



INFORM TO LAW
ENFORCEMENT
AUTHORITIES

Fleeing and not reporting to the police authorities is a crime that could be sanctioned even with life ineligibility to drive vehicles and actual incarceration sentences of at least a year.

And what should you do if you witness an accident? Should you continue driving or stop and help? It is easy to put your mind at ease thinking that others have already stopped and continue driving, but is this correct?

It is unknown how many lives could be saved by the help of other drivers or persons on the road. Perhaps more than 100 accident victims could be alive today if they had received help. This should make us reflect and feel more willing to give our help, unless it is unnecessary.

When stopping to help, as a first step be aware that there is a risk of collisions as well as fires occurring after the main accident. As a result, alert others to this danger if possible, using reflective devices. Turn off the engine of your vehicle and be sure that the engines of other involved vehicles are also off. Do not smoke or allow others to do so.

Panic often presents itself during accidents, and can be very negative. Try to remain calm and be sure to call 133 (Carabineros) as soon as possible; specify as precisely as possible the location of the accident as well as the number of vehicles and victims involved.

The recommended procedures are presented below, in order that you as the first to arrive on the scene of a traffic accident, can help prevent the situation from getting worse and ensure that first aid procedures are initiated as quickly as possible.

First Aid

When dealing with injured, avoid moving them, unless there is an imminent danger threatening their life, like fire, explosion, or being struck by another vehicle.

The victim may be in shock, but appropriate treatment will minimize this. Speak calmly and confidently. Avoid unnecessary movements and do not allow the person to become cold. Maintain him or her warm and comfortable. Do not abandon victims, unless you must do so to get help.



Do not give victims anything to drink.

If the Victim has Stopped Breathing

Remove any obvious obstruction from the injured person's mouth (dental prosthesis, dirt, etc.) and loosen clothing (shirt collar buttons, tie, belt or other items) that could be constricting the victim's airway. If possible, slowly and gently, place the person on his or her side; breathing can start and color can improve. If this does not happen, gently place the person on his or her back again, squeeze the nostrils with one hand and with the other lift the chin and apply artificial breathing (mouth-to-mouth), blowing air through the mouth until the chest expands; rest. Repeat this process regularly every 4 seconds until the victim can breathe without assistance. Air can also be breathed into the victim's nose and in the case of children through mouth and nose at the same time.

If the Victim is Unconscious and Breathing

Moving the victim can worsen a back injury, so only move the victim in case of imminent danger. If breathing becomes difficult or stops, repeat the process describe above.

If the Victim is Bleeding

Apply firm manual pressure to the wound, preferably with clean material, without introducing any foreign objects into the wound. Place a bandage or large cloth over the wound.

- If the victim is a motorcyclist wearing a helmet, NEVER remove it.
- You should also never transport victims in private vehicles; wait until emergency services arrive with personnel trained in moving the injured.
- Never give victims food or drink.
- If an arm or leg is bleeding, elevate the limb to reduce bleeding.

It is very important that you accompany and speak with the injured. Try to make them feel safe and calm. Imagine that you are in their situation and try to imagine how you would feel; this will make it easier to be helpful to the victim at hand. Try to keep victims conscious and try to find out exactly how the accident occurred. It is also important to keep the injured wrapped up.

Accidents with Vehicles Transporting Hazardous Materials

Many trucks with hazardous cargo drive on our freeways: explosives, inflammables, corrosives, etc. Vehicles that carry this kind of cargo should have special signs or markings, like those that are shown as examples below:



Explosives



Poison



Radioactive



Combustible Liquid

When faced with a traffic accident in which a truck or big rig with the above signs is involved, you should exercise extreme caution. Stay upwind of the truck and at a safe distance; do not ignite any fires, lighters, or be smoking, and do not allow others to do so. Help warn others to the dangers present.

Take notice of the specific hazardous material involved before calling emergency services.

Vehicle Regulations

Motorized vehicles cannot circulate on the roads without a Vehicle Registration Plate and Permission to Drive Around issued by the corresponding municipality and a certificate of Mandatory Vehicle Insurance (SOAP, Seguro Obligatorio de Accidentes Personales). Failing to meet these requirements is cause for the vehicle to be removed from the roads by the police, and passed into the custody of the corresponding local police court.

At the same time, the technical inspection certificate or official approval must be up to date and kept inside the vehicle at all times.

Vehicle Registration Plate

Unique license plates are issued by the Civil Registry and Identification Service, which maintains the National Registry of Motor Vehicles, where records of the vehicle and its owner are kept. Each time you acquire a vehicle, you must file the registration in your own name with the aforementioned Registry. Here you can also register the necessary taxes, fees, embargos and precautionary measures that apply to all vehicles.

New vehicles, among other exceptions, can circulate without a license plate for no more than five days, but with the bill of sale, for the sole purpose of acquiring the license plate and the Permission to Drive Around.

Permission to Drive Around

“Permission to Drive Around” (Permiso de Circulación), is an annual tax which must be paid for each car in order to be able to use it on the roads of Chile. Each car (not each driver) has its own Permiso or ‘permission’ which is a piece of paper that must be carried whenever you drive it (to prove that the car has its tax paid). It doesn’t matter whether the car is yours or borrowed, you must have the Permiso for that specific car.

Technical Inspection

Technical inspections are like a physical for your vehicle. They include, among other things, a check of the steering system, brakes, lights, tires and internal combustion.

Considering that, unless when it comes to new vehicles, Permission to Drive Around should be paid during specific months according to different categories (March, in the case of private automobiles and motorcycles) a technical inspection calendar has been established, according to the last digit of the license plate, with the purpose of not overwhelming authorized technical inspection establishments in the weeks leading up to the payment the Permission.

Last digit of the license plate	Month of technical inspection
9	January
0	February
1	April
2	May
3	June
4	July
5	August
6	September
7	October
8	November

Despite the above, technical inspection can also be renewed the month before that indicated in the above table.

Mandatory Vehicle Insurance (SOAP)

Independent of who is at fault in a traffic accident caused by a motor vehicle, mandatory insurance covers risk of death and bodily injuries suffered by the driver of the vehicle, its passengers, and any other affected third party.

This insurance must be obtained annually, and must be accredited to the municipality at the time of paying the Permission to drive around with an insurance policy card issued by the insuring agency.

Driver Responsibility

Driver responsibility is not limited to maintaining the vehicle in good working order and understanding and following traffic regulations. Using the roadways in an automobile or motorcycle is a comfortable mode of transportation used at the same time as countless other people, which is why respect, consideration and solidarity are part of the rules of the game.

Think of two situations: when you are walking you are a pedestrian, so why would you not yield to other pedestrians when you are behind the wheel? On the other hand, although damages caused by a crash can be repairable, how should you face the fact that you can be the cause of severe injuries and even the death of another person? How can you get past the psychological damage and fear that you or the members of your family will drive after the accident?

Getting from one point to another should not be the source of constant fear of the aggression you could face, nor should you constantly behave with aggression towards others because you want to arrive first or show you are the best.

Although traffic regulations do not indicate specifically how to coexist with other vehicles from a human point of view, they do give you a frame of reference within which you can act.

A driver's license is the document that authorizes you to use a vehicle, and it is therefore your obligation to carry it with you every time you drive, unless it has been withheld from you and in its stead you have a provisional license or a summons to a court because of a traffic violation.

17 Year old Drivers

As an exceptional case, these drivers can to obtain a Class B license as long as he or she has permission from parents or guardians and has passed a course given by a driving school.

Until the young person reaches the age of 18, he or she must always drive accompanied, in the front seat, by a driver who could replace him if necessary. The companion must have a valid driver's license that is not less than 5 years old, which enables him/her to drive automobiles covered by a Class B license.

Suspension and Cancellation of a Driver's License

Notwithstanding the fines that correspond to committing a traffic violation, a driver's license can be suspended when the holder is caught driving under the influence of alcohol – suspension for three months – or while inebriated or under the influence of narcotics or psychotropic drugs – suspension for 2 years . These periods can be raised in the case of reoccurrence or if there is an accident that causes minor or severe injuries or death, with the result being up to a lifetime ban from driving.

A license can also be suspended – between 5 and 45 days – when the driver is responsible for a severe traffic violation: exceeding the speed limit by more than 20 km/h or not stopping at a red light or a stop sign, driving with children under the age of 12 years in front seat or under 8 years or 135 cm of height and 33 kg of weight, without a Child Restraint System or driving a vehicle manipulating a mobile phone device or any other electronic or digital artifact that does not come incorporated from the manufacturer, except if the action is done through a hands free system, according to the specifications determined by the regulation.

Similarly, a driver's license is suspended due to the accumulation of two "severe" or "serious" traffic violations in the period of one year.

Serious Violations Include, Among Others:

- Driving a vehicle in poor physical or mental conditions.
- Exceeding the speed limit by 11 to 20 km/h.
- Driving a vehicle with a license different from that required; if the vehicle requires a professional license in order to be driven, the violation is more serious.
- Passing or overtaking another vehicle on a bridge, viaduct, in a tunnel or on a railway crossing, or approaching these places.

- Passing on the shoulder and passing or overtaking in a crosswalk or an uncontrolled intersection.
- Passing or overtaking another vehicle when approaching the top of a hill or grade, or on a curve.
- Driving without a seatbelt or with passengers not wearing seatbelts, as they should.
- Driving a vehicle without a license plate.
- Disobeying signals or orders of a Carabinero.
- Disobeying signs and signals that control traffic, with the exception of a stop sign and traffic lights.
- Driving a motorcycle and holding on to other vehicles in movement.
- Driving a motorcycle in a group of two or more deep in tunnels, on bridges and overpasses, and at night or when visibility is limited.
- Driving against the direction of traffic.
- Driving on the left side of the road on a two-way street, unless you are overtaking in a way that complies with the regulations that govern this maneuver.
- Parking or stopping your vehicle in an intersection, on a bridge, in a tunnel, on an elevated structure, an overpass or an underpass, in a curve or on a slope.
- Parking or stopping on the shoulder of a road with 2 or more lanes per direction.
- Disobeying right of way of a pedestrian or another driver.
- Turning incorrectly.
- Driving a vehicle with deficient steering or braking systems.
- Driving a vehicle without lights on under the required circumstances.
- Driving a vehicle with one or more tires in poor conditions.

- Driving a vehicle whose cargo or passengers are obstructing the driver's visual field to the front, rear or side of the vehicle, or impeding the driver's control over the steering, safety or braking systems.
- Not lowering high beams on a roadway when encountering an oncoming vehicle or approaching a vehicle from behind.
- Not stopping the vehicle before crossing a railway line.
- Not carrying an up-to-date mandatory automobile insurance card or vehicle registration card.
- Failing to comply with regulations concerning emissions standards.
- Driving without a current technical inspection certificate.

In addition to the above serious violations, there are others that are considered less serious, or minor. It is important that you also know that there are traffic violations that carry an incarceration sentence. For example, the following instances will result in incarceration: anyone driving with a driver's license that is falsified, obtained fraudulently or belonging to another person; or driving with a blacked-out, hidden or adulterated license plate; or presenting falsified certificates for obtaining a driver's license; or driving while inebriated or under the influence of narcotics or psychotropic drugs.

The violations and sanctions mentioned above are just some examples. As a result – regardless of the fact that you may be a good driver, and will most likely not be in any unpleasant situations due to not following traffic regulations or not showing consideration towards others – it is your responsibility to be informed about all the facts involved in violations and the sanctions that can be applied, which can be – in some cases – cancellation of your driver's license. **It is therefore essential that you know the Traffic Laws.**

Recommendations for Hard Breaking

Hard breaking could be caused by an abrupt reduction in the speed of the vehicle that comes before or by the appearance of a pedestrian that crosses the road recklessly.

The breaking technique depends on if the vehicle has ABS brakes.

Without ABS	With ABS
• You should press the brake pedal energetically, reducing your force progressively as your speed decreases. • If the wheels block, you should lightly remove pressure from the pedal, until the wheels stop sliding and your tires regain traction on the pavement.	• You should press the brake pedal energetically, maintaining maximum pressure until the end of the maneuver. • The ABS system will free wheels when they are blocked, allowing you to maintain control over steering. • With ABS, there is a slight shaking in the brake pedal. You should not be concerned by this if you notice it.

In both cases it is recommended to press down the clutch before the vehicle comes to a complete stop. This way you will prevent the engine from turning off when the revolutions are low.

IT IS ALWAYS BEST TO AVOID HARD BRAKE MANEUVERS, MAINTAINING A SAFE DISTANCE BETWEEN YOUR VEHICLE AND THE ONE AHEAD OF YOU, AND ALWAYS DRIVING DEFENSIVELY.

If you are driving and your vehicle suffers complete brake failure, that is, when you press the pedal it goes all the way to the floor without resistance, you can take action as recommended below. These maneuvers should be used progressively; that is, if the desired effect is not achieved with the first measure, proceed to the second, and so on.

What you should do in the case of brake failure:



1st

Press and release the pedal various times. If there is air in the brake system, this maneuver will cause it to begin working again.



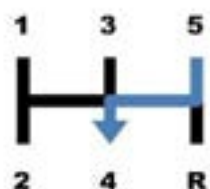
2nd

If you suspect an overheating of the brake system (for example if you are going down a large hill or grade and you have braked repeatedly), release the brake pedal and allow the system to ventilate. At the same time, decrease gears in order to slow the vehicle with the engine.



3rd

Drive as closely as possible to the right side of the road.



4th

Release the accelerator and change to the lower gears as soon as possible, allowing the engine to slow the vehicle.



5th

You can use the hand (emergency) brake, always slowly and progressively.



6th

If none of the above maneuvers are effective, look for an emergency lane. You will be able to stop your vehicle safely in one of these lanes.



7th

If you find yourself in immediate dangerous, you can try to graze the side of your vehicle along the side of the hill, bushes, the curb or a road barrier. You should first turn off the engine and hold the steering wheel firmly.

Traffic and the Environment

Another external effect of transport, apart from traffic accidents, is the contribution of transit vehicles to air pollution. In effect, motorized vehicles are responsible for the following pollutants:

Carbon Monoxide: It affects the cardiac and vascular system. The first signs of carbon monoxide poisoning are vomiting and headaches.

Carbon Dioxide: It contributes to the greenhouse effect, which causes climate change.

Hydrocarbons: Many substances that affect human health and the environment are hydrocarbons. Some hydrocarbons are carcinogenic. Hydrocarbons also form photochemical oxidation effects that can cause damage to forests and crops.

Nitric Oxide: It irritates the mucus membranes and respiratory system. Practically all nitric oxides contribute to acidification, forest damage, and ocean pollution.

Lead: A heavy metal that causes damage to the central nervous system.

Sulfur dioxide: Irritates mucus membranes and causes allergies in high concentrations. Contribute to acidification.

Exhaust fumes destroy our environment and are damaging to our health.

Driving style is highly relevant to exhaust emissions. High speeds cause high emissions – as well as fuel consumption. At low speeds, the biggest problems are abrupt changes. Rapid acceleration also increases emissions; idling also contributes to unnecessary emissions and should be avoided.

Warning! If your vehicle is emitting black smoke from the exhaust pipe, your air filter is probably dirty.

How to contribute to a better environment while driving:

- Accelerating slowly.
- Taking advantage of the speed of the vehicle, coasting more frequently.
- Not braking unnecessarily
- Lowering speeds, avoiding abrupt acceleration.
- Driving gently.
- Limiting idling time.
- Keeping your vehicle and engine well-maintained.
- Not overloading your vehicle.
- Avoiding congested roadways.

Stop the engine when you are going to be stopped for a long time; it will contaminate less and you will save fuel. You will also save fuel by moderating the use of your air conditioning system.



TRAFFIC SIGNS

NEW DRIVER'S HANDBOOK

TRAFFIC SIGNS

Vertical Signs

Regulatory signs

The purpose of regulatory signs is to notify drivers and other motorists about the priorities of roadways, and also about prohibitions, restrictions, obligations and existing authorities. Violating these regulations is a violation of traffic regulations.



YIELD



STOP



STOP FOR
CHILDREN



DO NOT ENTER



NO LEFT TURN



NO RIGHT TURN



NO U-TURN



NO OVERTAKING



NO LANE
CHANGE/STAY
IN LANE



NO HEAVY
LOADS



NO MOTORIZED
VEHICLES



NO BUSES



NO BICYCLES



NO
MOTORCYCLES



NO
AGRICULTURAL
EQUIPMENT



**NO
ANIMAL-DRAWN
VEHICLES**



NO HANDCARTS



SILENCE *Do not
sound horn or gene-
rate excessive noise
with the motor*



**DO NOT BLOCK
INTERSECTION**



**NO STOPPING
OR PARKING**



NO PARKING



NO PARKING



**NO
PEDESTRIANS**



SPEED LIMIT



**MINIMUM
SPEED**



**MAXIMUM LOAD
PERMITTED**



**TWO-WAY
TRAFFIC**



**MAXIMUM LOAD
PER AXLE**



**MAXIMUM
HEIGHT/CLEARANCE**



**MAXIMUM
WIDTH**



**MAXIMUM
LENGTH**



**END
RESTRICTION**



**ONLY TELEVIA OR
COMPLEMENTARY
SYSTEM**



**ONE-WAY
TRAFFIC**



**TWO-WAY
TRAFFIC**



**PEDESTRIAN
STREET**



**KEEP TO THE
RIGHT LANE**



**HEAVY VEHICLES
KEEP TO RIGHT
LANE**



**MANDATORY
DIRECTION**



**ONCOMING
TRAFFIC HAS
RIGHT OF WAY**



**PEDESTRIAN
TRAFFIC**



KEEP RIGHT



KEEP LEFT



**FORK (DRIVE IN
EITHER SIDE)**



**MINI
ROUNDBOUT**



CHECKPOINT



**CHAINS
REQUIRED**



TURN ON LIGHTS



**ONLY
MOTORCYCLES**



**ROAD DIVIDED:
BUSES**



**ROAD DIVIDED:
BUSES**



**ONLY PUBLIC
TRANSIT**



**ROAD DIVIDED:
MOTOR VEHICLES
- BICYCLES**



**ROAD DIVIDED:
PEDESTRIANS -
BICYCLES**



**RIGHT TURN
ALLOWED ON
RED**



**LEFT TURN
ALLOWED ON
RED**



**RESERVED
PARKING**

Warning or Hazard Signs

Their purpose is to warn drivers of the existence and nature of risks and/or unforeseen situations present on roadways or adjacent areas, whether permanent or temporary. They are also known as Preventive Signs.



RIGHT CURVE



LEFT CURVE



SHARP RIGHT CURVE



SHARP LEFT CURVE



RIGHT CURVE ZONE



LEFT CURVE ZONE



CURVE AND SHARP
RIGHT CURVE



CURVE AND SHARP
LEFT CURVE



CURVE AND VERY
SHARP CURVE TO THE
RIGHT



CURVE AND VERY
SHARP CURVE TO THE
LEFT



EXTREMELY SHARP
RIGHT CURVE



EXTREMELY SHARP
LEFT CURVE



GRADE



GRADE



TUNNEL AHEAD



HILL



HILL



UNPROTECTED
CLIFF/BANK



AIRPORT/AERODROME



LATERAL WINDS



ROAD NARROWS



RIGHT LANE MERGING
*ROAD NARROWS TO
THE RIGHT*



LEFT LANE MERGING
*ROAD NARROWS TO
THE LEFT*



NARROW BRIDGE



ROAD WIDENS



ROAD WIDENS
TO THE RIGHT



ROAD WIDENS
TO THE LEFT



MAXIMUM
WEIGHT



MAXIMUM
HEIGHT/CLEARANCE



MAXIMUM WIDTH



MAXIMUM LENGTH



MEDIAN BEGINS



HIGH VOLTAGE
LINES NEARBY



SPEED BUMP



LOCATION OF
SPEED BUMP



SUCCESSIVE SPEED
BUMPS



POTHOLES/DIPS



LOOSE GRAVEL



AVALANCHE ZONE



PELIGRO
DANGER!



BARRIER



END OF MEDIAN



RAILWAY CROSSING,
NO BARRIERS



RAILWAY CROSSING
WITH BARRIERS



SAINT ANDREW'S
CROSS



APPROACHING
ROUNDBOUT



INTERSECTIONS,
FORKS, AND MERGES



INTERSECTIONS,
FORKS, AND MERGES



INTERSECTIONS,
FORKS, AND MERGES



INTERSECTIONS,
FORKS, AND MERGES



INTERSECTIONS,
FORKS, AND MERGES



INTERSECTIONS,
FORKS, AND MERGES



INTERSECTIONS,
FORKS, AND MERGES



INTERSECTIONS,
FORKS, AND MERGES



INTERSECTIONS,
FORKS, AND MERGES



TWO-WAY TRAFFIC



CYCLISTS ON
ROADWAY



AGRICULTURAL
EQUIPMENT



HANDCARTS ON
ROADWAY



ANIMALS ON
ROADWAY



**ANIMALS ON
ROADWAY**



PEDESTRIAN ZONE



**APPROACHING PEDES-
TRIAN CROSSWALK/
ZEBRA CROSSING**



SCHOOL ZONE



CHILDREN PLAYING



**TRAFFIC LIGHT
AHEAD**



YIELD AHEAD



STOP AHEAD



BICYCLE CROSSING



**FIRE ENGINES
ENTERING**



FALLING ROCK



SLIPPERY ROAD



UNEVEN PAVEMENT

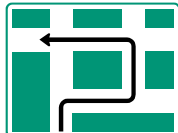
Informative Signs

The purpose of informative signs is to orient and guide motorists and others on the road, giving them necessary information to arrive at their destinations safely, easily and as directly as possible.

Examples:



ALTERNATIVE ROUTE



IMMEDIATE EXIT



DISTANCE MARKERS



STREET NAME AND
ENUMERATION



CONFIRMATION



DIRECTIONS



LOCATION



HIGHWAY / ROAD
NUMBER SHIELD

Among these signs are also those that inform the driver about services and brown signs that alert the driver to tourist attractions or recreational areas.

Examples:



AIRPORT



RESTAURANT/FOOD



LODGING



PUBLIC TELEPHONE



HOSPITAL/FIRST AID



RESTROOMS



CLIFF



CASINO



HORSEBACK RIDING



HANDICRAFTS



CANOEING/ROWING



CANOPY/ZIP-LINE

Included in informative signs are some that are typical on freeways, such as the following:



RIGHT EXIT



BEGIN FREEWAY



END FREEWAY



FREEWAY
TURNAROUND



EMERGENCY
TELEPHONE



FREEWAY WITH
TELEVIA¹ OR COMPLE-
MENTARY SYSTEM

Another kind of informative sign is that which signals where parking is permitted, and those that provide information of interest to drivers.



PARKING ALLOWED



TOLL BOOTHS AHEAD



MIXED BUS STOP²



BUS LANE ONLY



CAMERA
CONTROLLED ZONE

Temporary transit signs

When road work is in progress, signs are placed to warn drivers to hazards and provide road users other information; these signs are orange. This color determines the temporary nature of the sign. Only the first sign that marks road work is yellow.



ROAD WORK



FIN
TRABAJO

END ROAD WORK



FLAGGER AHEAD



CONSTRUCTION
EQUIPMENT
ON THE ROAD



CURVE TO THE RIGHT



EXTREME CURVE TO
THE LEFT



DIP/POTHOLE



MAXIMUM WIDTH



FALLING ROCK



LOOSE GRAVEL



PELIGRO

WARNING!



DETOUR



DETOUR AHEAD



END DETOUR

¹Televia is an electronic toll system use on Chilean freeways

²A mixed bus stop is an area for both buses and taxis to stop and pick up passengers.

Horizontal Signs

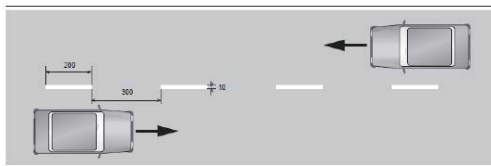
Horizontal signals or road pavement markings are classified according to shape:

Longitudinal lines

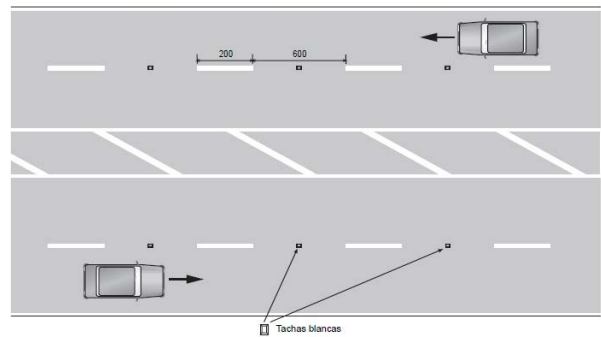
These lines are used to delineate lanes and roadways, to indicate zones with and without overtaking prohibitions, no-parking zones, and to delineate lanes intended for exclusive vehicles. Continuous (solid) lines cannot be passed by vehicles. They are usually complemented by red, yellow or white reflector dots. Red reflector dots are associated to continuous lines that cannot be crossed.

Examples:

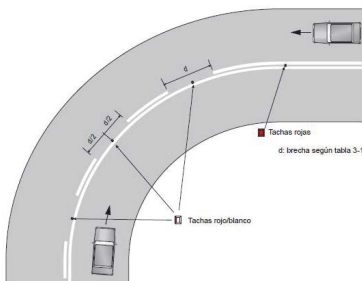
CENTER DASHED LINES



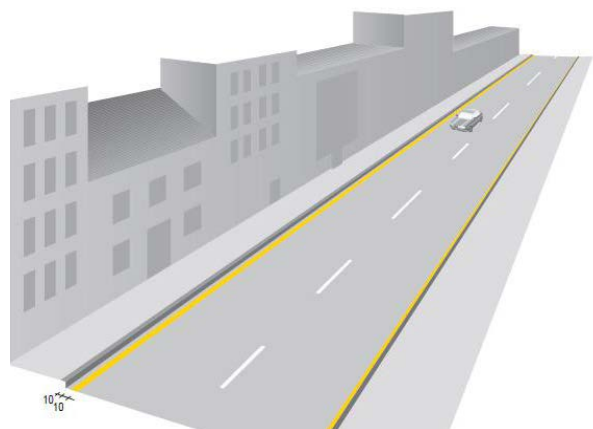
DASHED LANE DIVIDER LINES



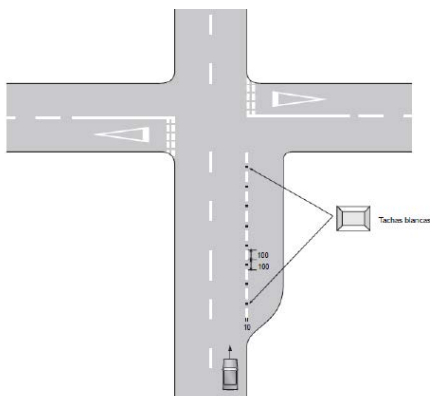
CENTRAL ROAD DIVIDERS



NO PARKING LINES



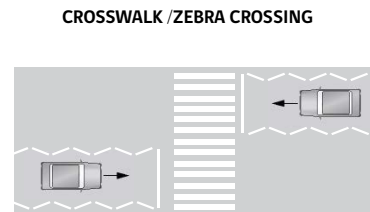
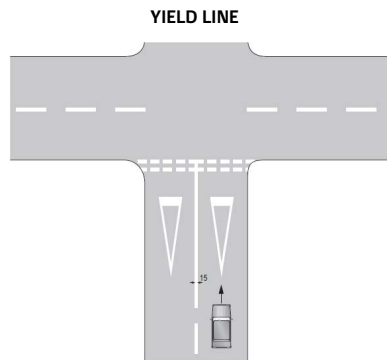
DASHED RIGHT SIDE LINE



Transverse Lines

These lines are used mainly in intersections, whether controlled or prioritized with YIELD or STOP signs, to indicate the place before which vehicles must stop and in order to mark paths destined for pedestrians or bicycles.

Examples:



Legends and Symbols

These are used both to guide and to warn motorists and to regulate driving. They are classified in arrows, legends, and other symbols.

Examples:

STRAIGHT ARROW



SLOW *LENTO*



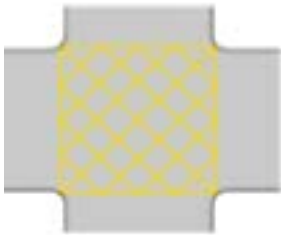
Other Markings

There are also other road markings, such as: cross-hatching, convergent and divergent traffic markings, oncoming obstacle markings, "do not block" intersection markings, bus lane, parking, and emergency priority vehicle markings.

Examples:

Do not block intersection

Avoid stopping on the yellow lines.



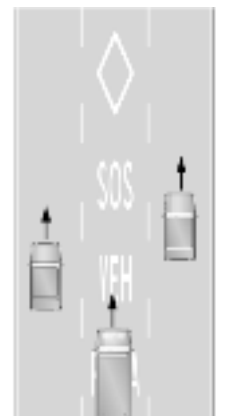
Cross-hatches

Do not drive over cross-hatched areas.



Priority lanes for emergency vehicles

Exit the priority lane in the presence of an emergency vehicle with lights and sirens on.



In this chapter, in reference to traffic signals, we have resumed the contents of the Manual of Traffic Signals. Given the extensive nature of this manual, that which is represented here only allows us to deliver a brief idea of said regulations. It is your responsibility to know the regulations that govern the material in the aforementioned manual.

REFERENCES:

- Manual "El Conductor Seguro", CONASET.
- Seguridad Vial para Nuevos Conductores, INTRAS, Instituto de Tráfico y Seguridad Vial, Universidad de Valencia. Dirección General de Tráfico, Ministerio Interior, España.
- Conduciendo en la Montaña, CONASET.
- Manual de Señalización de Tránsito, Ministerio de Transportes y Telecomunicaciones, Chile.
- Ley de Tránsito, Chile.
- Guía Preventiva de los Efectos del Alcohol y las Drogas en la Conducción, CONACE, CONASET.
- Libro sueco: "El libro del Permiso de Conducir" (Körkortsboken).

