

Safety in the car

- how to protect yourself and your child



For your own safety

In this brochure you will find information about how to increase safety in your car. You get tips about how to ensure your child travels in the safest way, and how you can reduce the risk of injury to yourself.

Collision safety

How well a car survives a collision gives a good idea of how safe the car is. For this reason, various methods are used to find out how safe a car is in a collision, and consumers are then informed. In Sweden, consumer information about collision safety comes mainly from two sources – Euro NCAP and Folksam.

Whiplash the most common injury

Every year, around 20 000 Swedes suffer whiplash injuries. By far the most common cause of whiplash injury is when a car is driven into from behind. Whiplash injury can also occur in frontal collisions, accidents involving one car only and sometimes also outside the traffic environment. The best way to protect against serious whiplash injury is to choose a car that provides effective protection. Airbags, headrests and seat settings are important to protect against whiplash injury.

Remember to protect your neck

- Raise the backrest.
- Set the headrest so that the whole head is supported. The headrest should preferably extend up to the top of your head.
- Sit close to the backrest and headrest.
- Keep a proper distance to the car in front.
- If you have time to see in your rear view mirror that you will be driven into from behind, press your head against the headrest and do not turn your head.

Secure your load

In the event of a collision or rapid braking, all loose objects are thrown forward with violent force. People are kept in place by seatbelts, and loads are safest in the boot/trunk. Place the load as low as possible, either in the boot/trunk or behind a grille. Use load displacement protection or fastening loops. Never let heavy objects lie loose in the car, use the seatbelts to secure any load on the back seat.



A frontal collision at 90 kilometres an hour is like falling from the tenth floor

Driving too fast can be just as dangerous as falling off a cliff or from a tall building. But we do not perceive the speed as dangerous when we drive a car. We understand the danger of falling from a height, but not how dangerous it is to collide at 90 kilometres an hour.

The speed determines the injury

The speed at the moment of collision is crucial for how seriously you are injured in a road accident. High speed also contributes to accidents happening in the first place

Higher speed, longer stopping distance

When you increase the speed, the stopping distance of the car also becomes much longer. The stopping distance is divided up into a reaction distance and a braking distance. The reaction distance is the distance you travel during the second it takes to react. The braking distance is the distance the car rolls from the moment you step on the brake pedal until the car stops.

Seatbelt the most important safety feature

In Sweden, you have to wear a seatbelt by law. The seatbelt is by far the most important safety feature in the car – both in the front seat and the back seat. If everybody used a seatbelt, around 50 lives would be saved each year on Swedish roads. By using a seatbelt, you halve the risk of being killed or seriously injured in a collision.

Serious injuries already at low speeds

Without a seatbelt, you will at best cope with a collision at around 7 kilometres an hour, provided you are prepared for the collision and sufficiently strong to hold on. Already at speeds of less than 50 kilometres an hour, you will hit the steering wheel, windscreen or other parts of the car with great force unless you wear a seatbelt.

Passengers are heavy in a collision

Passengers in the back seat must also wear seatbelts. If you do not wear a seatbelt, you will be thrown forward with enormous force in a collision, and may kill the person sitting in front of you.

Airbags are part of the car's safety system

Airbags and seatbelt together provide a good safety system in the car, and you must always use the seatbelt for the airbags to have the correct safety effect. The greatest risk in a frontal collision is for the head or chest to hit the interior of the car, for example the steering wheel, instrument panel, windscreen or the front side posts. If you use a seatbelt, the risk of injury is considerably reduced. With airbags, the risk is further reduced.

Side airbags are not dangerous

Many cars also have airbags on the sides of the car. The risk is small that a child who is correctly strapped into a baby car seat or rearward-facing child car seat will be injured by the side airbag.

Warning sign

Cars with a front airbag in the passenger seat shall have a warning sign that clearly warns against fitting and using a child car seat in the passenger seat. If the sign is missing, these are available from the car's authorised dealer





Children need more protection than adults

Sharp braking, a collision at 40 kilometres an hour. Not much is needed for a child to be injured during a car journey. Every year, children are killed or injured because the seatbelt or some other child protection device has not been used properly.

Small bodies need extra support

A child's head is large and heavy in relation to the body, and the neck is fragile. When a car collides, the child's head is thrown forwards and backwards with violent force. In order for a child to cope with such a strain, extra protection in the car is needed.

Doctors and scientists recommend that children use a booster seat or booster cushion until they are 10–12 years old. By law, all children who are shorter than 135 centimetres shall use a special protective device, that is to say a baby car seat, child car seat, booster seat or booster cushion.

Rearward-facing is best

Until a child is around four years old, he or she is safer travelling facing the rear. A rearward-facing seat absorbs the violent forces and protects the child's sensitive head and neck. Small children who travel in forward-facing child car seats are five times more likely to be killed or seriously injured compared to children in rearward-facing child car seats. Therefore you should not turn your child around too soon. The recommendation is for children to sit facing rearwards for as long as possible, normally until they are around four years old.

Airbags are part of the car's safety system

Airbags and seatbelt together provide a good safety system in the car. But a connected front airbag in the passenger seat can be a deadly danger to a child. On the other hand, side airbags are no danger to a child in a child car seat.

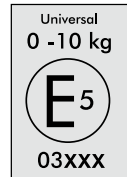
Disconnect the front airbag in the passenger seat

A rearward-facing child car seat and a front airbag in the passenger seat is a deadly dangerous combination. The force that pushes out the airbag in a collision is enormous and can be devastating. Therefore a baby car seat, child car seat, booster seat or booster cushion shall never be used in a passenger seat that has a connected front airbag. Get an authorised dealer to disconnect the front airbag, if you do not

have a car where you can disconnect it yourself with a key. In some cars, the front airbag cannot be disconnected. Only when the child is 140 centimetres tall is it safe for the child to sit in the passenger seat with a connected front airbag.

Choose approved equipment and test it

Use a shop where you can get information from trained staff and help to test the seat with the child in the car. The seat shall be approved for the weight of the child. Remember that there are rearward-facing child car seats that are not approved for use in the back seat. Ensure the baby car seat, child car seat or booster seat or cushion are approved for use in Europe and E-marked according to the EU Directive or ECE Regulations 44-03 or later versions. This means that the approval number shall begin with the digits 03 or 04.



What does the law state?

In Sweden, we have rules that state that everyone travelling in a car shall use a seatbelt. Also, all children who are shorter than 135 centimetres shall use a special protective device, that is to say a baby car seat, child car seat, booster seat or booster cushion.

Children younger than three years are not allowed to travel in a vehicle where there is no means of using a special protective device for children, other than temporary travel by taxi on short journeys. In this case, the child must not travel in the front seat.

Children who are three years or older and shorter than 135 centimetres are not allowed to travel in a vehicle where there is no means of using a special protective device for children. However, temporary travel over short distances is allowed. In such a case the child shall instead use the seatbelt where possible and must not travel in the front seat of a passenger car or a light truck.

All children who are older than three years and travel by bus shall use the bus safety belt or other protective device where available. Trafikverket, the Swedish Transport Agency, recommends that all children use a seatbelt, even children who are younger than three years.

There must not be more passengers in the car than the car is registered for. Passengers in a car shall travel in the space intended for passengers.

Remember

- The equipment shall fit both the child and the car.
- Always test before buying
- Follow instructions carefully.
- Check that the child is sitting securely with the seatbelt used correctly before starting the car.
- Children shall never sit in the passenger seat with the front airbag connected
- State that you want a child car seat, booster seat or booster cushion when you order a taxi
- Det• You as the adult are responsible for ensuring children in the car are using a seat belt or other protection, such as a child car seat or booster cushion.



Baby car seat

From birth to around 9 months

A baby car seat is safe and comfortable. As the baby grows, you may need to change to a larger size.

Choose with care

The baby car seat shall be of the correct size. The baby shall rest securely and comfortably, with protection for the entire head. Note that baby beds and protective nets for pram inserts do not provide good protection. If you still choose such a solution, the child shall be placed with the head towards the centre of the car. Baby car seats, baby beds and protective nets for pram inserts shall be approved for use in Europe and E-marked. You can read more under "Choose approved equipment and test it" on page 8.

Front or back seat

The baby car seat is placed facing rearwards on the front seat or back seat. If you are the only adult in the car, it is usually safer to have a small baby next to you in the front seat. The front airbag in the passenger seat shall then be disconnected. If there are two adults in the car, it is safest if the baby and one adult travel in the back seat.

The belt holds the seat in place

The baby car seat should fit securely. Do not angle it too much. The baby is held in place by the belt belonging to the baby car seat, and the baby car seat itself is fixed with the seatbelt. The distance to the instrument panel or the seat in front shall be as great as possible. The "lap section" of the seatbelt is usually pulled across the baby car seat, while the "diagonal section" goes behind the baby car seat. Note that there are many models, so follow the instructions carefully..

Check carefully

- The baby shall use the seatbelt belonging to the baby car seat..
- The car seatbelt that attaches the baby car seat shall be stretched tight.
- The baby seat is outgrown once the child's head reaches above the top edge.
- Children shall never sit in the passenger seat with the front airbag connected. Get an authorised dealer to disconnect the front airbag, if you do not have a car where you can disconnect it yourself with a key.

Rearward-facing child car seat

From around 7 months to 4 years

When the child can sit securely without support, it is time to change from a baby car seat to a rearward-facing child car seat. It is installed facing rearwards on the front seat or back seat. Check that the seat is approved for installation in the front seat or back seat. The child is held in place with the belt belonging to the child car seat. Remember that there is a greater risk of the child being injured in a collision if it is sitting in a forward-facing child car seat.

Follow the installation instructions

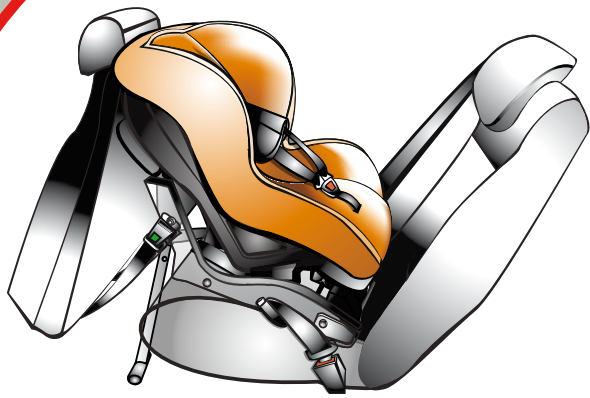
The rearward-facing seat is installed using special attachment devices. The seatbelt helps to keep the seat in place. In the front seat, the seat shall usually lean against the instrument panel (never against the windscreen). On child car seats intended for use in the back seat, it is common for the seat to have supporting legs that stand on the floor of the car. Note that there are many models, so follow the instructions carefully.

Do not turn the child around too soon

Children should travel facing rearwards for as long as possible. The seat is outgrown when the child's head does not get sufficient support, or when the weight limit is passed. You might then need to change to a larger rearward-facing model. For child car seats that are approved for forward-facing use, the belt of the seat and fixing device are usually removed. A safer choice is instead a booster seat that directs the seatbelt down across the child's lap and thighs.

Check carefully

- The child car seat shall be approved for use in Europe and E-marked. You can read more under "Choose approved equipment and test it" on page 8.
- Child car seats are usually installed using special attachment devices. Load the seat and tighten the belts so that the seat sits securely.
- The child shall use the seatbelt belonging to the child car seat. Tighten the belt. Make sure the "lap section" of the belt does not end up too high. It shall run across the child's thighs, not the stomach.
- Children shall never sit in the passenger seat with the front airbag connected. Get an authorised dealer to disconnect the front airbag, if you do not have a car where you can disconnect it yourself with a key.
- If you are unsure whether the seat is approved for use in the front seat or back seat, contact the retailer.





Booster seat/cushion

From around 4 years to 10-12 years

Doctors and scientists recommend that children use a booster seat or booster cushion until they are 10–12 years old. As long as the skeleton is not fully developed, children need to be raised in order for the car seatbelt to protect the body. By law, all children who are shorter than 135 centimetres shall use a special protective device, that is to say a baby car seat, child car seat, booster seat or booster cushion.

Make sure the belt ends up in the correct location

Help the child to tighten the belt correctly – close to the neck, across the breastbone and down across the thighs – not across the stomach. The closer it is to the body, the better the protection for the child. Try to unfasten heavy outer garments and pull the "lap section" of the belt under the clothes. .

Booster seat or booster cushion

The difference between a booster seat and a booster cushion is primarily the tall backrest. If a child is sitting in a seat that lacks a headrest, the booster seat is better. The seat also helps keep the belt in place when the child is asleep.

Disconnect the front airbag

A child sitting in a forward-facing child car seat or booster seat or booster cushion is at risk of injury if he or she is travelling with a connected front airbag. Only when the child is 140 centimetres tall is it safe for the child to sit in the passenger seat with a connected front airbag.

Check carefully

- The seatbelt shall keep both the child and the seat or cushion in place. Tighten the belt.
- Never let the child have the belt under the arm..
- The belt shall rest close to the neck.
- Make sure the "lap section" of the belt does not end up too high. It shall run across the child's thighs, not the stomach.
- Get an authorised dealer to disconnect the front airbag, if you do not have a car where you can disconnect it yourself with a key.
- The booster seat or booster cushion shall be approved for use in Europe and E-marked. You can read more under "Choose approved equipment and test it" on page 8.

Questions and answers about children in cars

Should children sit in the front seat or back seat?

The back seat is normally safest – if you only consider the risk in a collision. But this does not apply to children in rearward-facing child car seats. On condition the passenger seat front airbag is disconnected, there is no difference in collision safety between the front and back seats. Then you must of course consider the child's need for monitoring. If you are the only adult in the car, it might be better to have the child in the front seat.

What place in the car is the safest?

The middle seat in the back is the safest, provided there is a headrest and a three-point seatbelt. This is the position furthest away from any collision impact points.

Where can you buy child car seats?

In shops selling child safety articles and car accessory dealers. Make sure you speak to trained staff.

Which seat is best?

Test the seat with the child in the car. The seat shall be approved for the weight of the child, and be neither too large nor too small. Do buy a robust seat, with strong sides to protect against a side-on collision.

How do you know the child car seat is approved?

The child car seat or booster cushion shall be approved for use in Europe and E-marked according to the EU Directive or ECE Regulation 44-03 or a later version. This means that the approval number shall begin with the digits 03 or 04.

How do you know the child car seat is properly installed?

Different models are installed in different ways. Buy a seat where you can get information and help from trained staff. Follow instructions carefully.

When is a seat outgrown?

The baby car seat or child car seat is outgrown when the child's head does not get sufficient support. The child shall sit comfortably, have protection for the head and room for the legs. The seat shall be approved for the weight of the child.

When can children start to travel facing forwards?

Let the child travel facing rearwards for as long as possible (preferably to the age of 4). The child's head is large and heavy in relation to the body, and the neck is fragile. When a car collides, the child's head is thrown forwards and backwards with violent force. Travelling facing rearwards provides better protection in a collision.

Where can I find a car seat for a child with functional impairment?

Some children with functional impairment cannot use the standard products available on the open market. This applies in the first instance to children with mobility impairment of various kinds. The medical aids centre together with the habilitation service can provide advice and practical assistance with specially adapted child car seats or other seating devices in the car. The booklet "Åka säkert – om trafiksäkerhet för barn med funktionshinder" ("Travelling safely – about road safety for children with functional impairment") can be ordered from Hälsouniversitetet i Linköping (the Faculty of Health Sciences at the University of Linköping), Statens väg- och transportforskningsinstitut (VTI) (the Swedish National Road and Transport Research Institute) or Riksförbundet för rörelsehindrade barn och ungdomar (RBU) (the National Association for Disabled Children and Youths). .

When buying second-hand, what should you think of?

The seat shall be undamaged. Remove the cover and check that the shell and impact-absorbing sections are whole. All accessories and installation instructions shall be present. Make sure the child car seat is approved for use in Europe and E-marked with an approval number that begins with the digits 03 or 04. .

When pregnant, what should you think of?

Use the seatbelt, it is safest for both the mother and the unborn child. The belt should be stretched across the breastbone and under the stomach, down towards the thighs. If possible avoid driving yourself towards the end of pregnancy. The steering wheel and the front airbag may injure the baby if there is an accident. There are special seatbelts for pregnant women, but they do not increase safety and are purely for comfort.

When can the child sit in a seat with a connected front airbag?

Only when the child is 140 centimetres tall is it safe for the child to sit in the passenger seat with a connected front airbag.

Is the side airbag dangerous to children?

The risk is small that a child who is correctly strapped into a baby car seat or rearward-facing child car seat will be injured by a side airbag.

Are there any emergency solutions?

Can you place two children within the same belt? Can the baby sit on a lap? No, there are no safe emergency solutions. Each child needs his or her own seat, own seatbelt and own protective equipment. Children should never sit in the lap of an adult in a car.

What do you do if the child refuses to be strapped in?

Stop the car and take a break...

How many can travel in the car?

There must not be more passengers in the car than the car is registered for.

Passengers in a car shall travel in the space intended for passengers.



Safety in your car – how to protect yourself and your child

✓ **Try before you buy!**

The equipment shall fit both the child and the car.

✓ **Install it correctly!**

Find out how the child car seat should be installed and used. Follow the instructions carefully.

✓ **Do not turn your child around too soon!**

Let your child travel facing rearwards for as long as possible, preferably until the child is 4 years old.

✓ **Check carefully!**

Your child should sit securely with the car belt correctly fastened before you start the car.

✓ **Disconnect the front airbag!**

Check that the passenger front airbag is disconnected if the child is sitting in the front seat.

This brochure is free and can be ordered from the Swedish Transport Administration/Trafikverket by telephone on 0243-755 00.

Do you need more information? Please contact us.

Swedish Transport Administration/Trafikverket: www.trafikverket.se



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