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## HEADREST

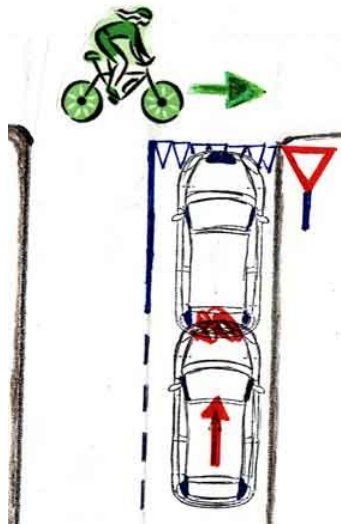


### Headrest

General information and advices.



The most frequent road car accident is collision from the back, that is a crash at the back of the vehicle caused by another vehicle, an impact to the rear end of the vehicle caused by another vehicle. It seems to be the most frequent type of road accident, as it happens more often than frontal and lateral side crashes.



## COLLISION from back Rear end collisions



The headrest serves to **avoid or to diminish damages at the cervical column**, that is a WHIP OF HIT during an accident, specifically during a rear end collision. During a rear end collision a thrust called DELTA V occurs. If a standing vehicle, e.g. at a stoplight, gets hit from behind by a car travelling at a speed 25 km/h, the Delta V will be of 12 km/h. It seems (appears) that between speeds of 0 to 25 km/h 0 and 25 km/h most neck injuries occur. During low speed collisions it is possible that no material damages happens to the vehicle, while the passengers suffer neck injuries.

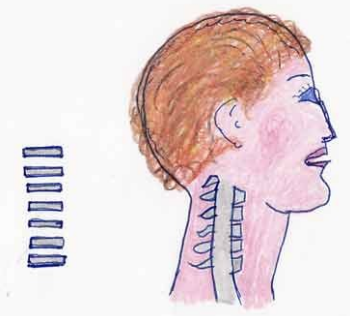
It appears that neck injuries constitute 70% of damage claims. Approximately 60% of the insurance fees (received) are consumed by these damages.

During a road accident collision, both the driver as well as the passengers, whose headrests are improperly adjusted, are exposed to greater risks.

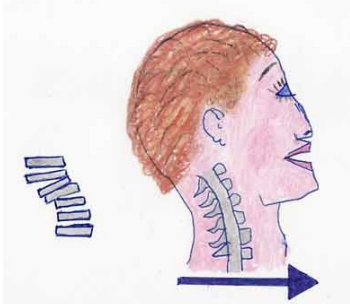
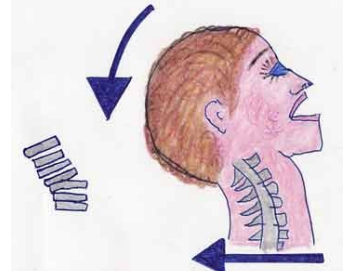
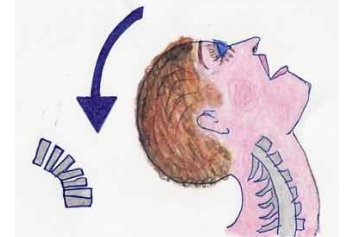
During a rear end collision, the head will be violently forced backwards and the cervical column will suffer. So there will be an extension and a flexion of the neck.

Consequently, all the components of the cervical column may be damaged: the bones, tendhines, muscles, ligaments, nerves and blood circuits.

It is very important use the headrest and position it correctly.

	<p>During driving, the cervical column, in the normal position.  (before collision).</p>
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WHAT HAPPENS DURING A REAR END COLLISION, in a few seconds.

	<p>The head is still in the normal position, while the body is being accelerated forward due to the violent impact from the rear.</p>
	<p>The head gets bent backwards, while the upper part of the cervical column is no longer under tension.</p>
	<p>There is further stretching of the neck which slows down the rotating movement of the head.</p>

The headrest prevents the back-ward bending movement of the head. The headrest is also useful in frontal crashes, as it stops the head move backwards, while the entire body is forced forward against the seatbelt.

### **SYMPTOMS of a neck ache trauma.**

Most common symptoms are: headache, lack of concentration, dizziness, nausea, uneasiness, vision impairments.

### **How to ad just the headrest properly.**

It appears that 60% of all drivers don't adjust their headrests properly. If headrests are well adjusted, the severeness of bodily damages is decreased.

It appears that 28% of neck injuries could be avoided by proper headrest adjustments.



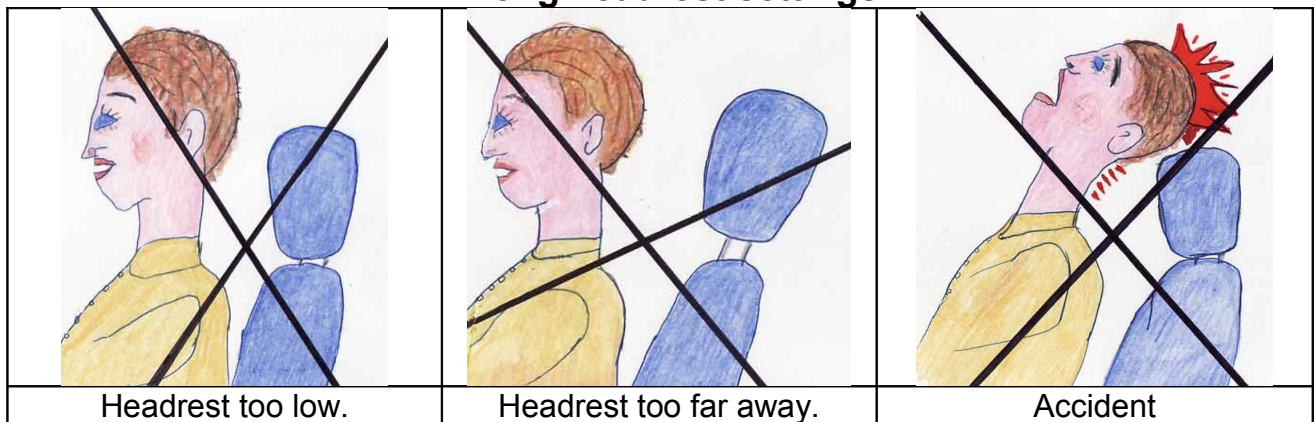
- 1) The BACKREST: must be positioned as vertical as possible.
- 2) The HEIGHT of the headrest: an imaginary line must be drawn from the upper tip of the headrest to the top of the head.

Important: the headrest adjustment needs to be sturdy, it shouldn't move when force is applied from above; otherwise it is bad quality and is of no use during the case of an accident.

- 3) Adjustment of the DISTANCE. I recommend the **least possible distance** between head and headrest: a max. of 4,0 cm or two fingers wide.

If the headrest isn't adjustable, find the best possible position.

### Wrong headrest settings.



I recommend, prior to driving, to control the headrest setting.

It is important to adjust ALL headrests in the correct manner, including the passengers side and rear seats: in the event of a rear end collision they may also suffer the neck column injuries.



**Fasten seat belts, correctly adjust headrests for every occupant, and place children in proper car seats.**

Remember that the airbag can only function properly if the seatbelts are worn.

I recommend observing the rear-view mirror in case of a stop.

If you presume the following car cannot stop in time, I suggest fully pressing the brake pedal, to warn the passengers to look forward, to press their backs into the backrests, and their heads against the headrests.

Always maintain safety distance, with the proper distance you avoid sudden brake manoeuvres, hence the danger of accidents can be reduced.

Needless to say, the social costs of trauma injuries are high: it is better to prevent than face the consequences of an accident.

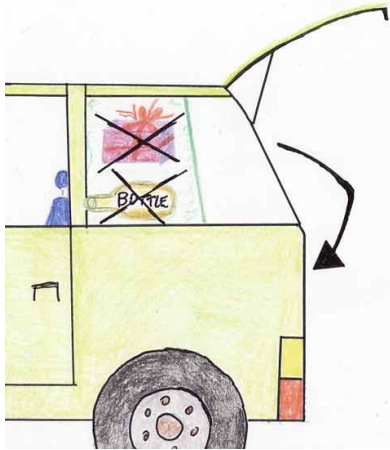
A properly adjusted headrest reduces the influence of traumas by up to 20%, and decreases severity of injuries if they occur.

If you purchase a car, I recommend to check that headrests can be properly adjusted: this can avoid injuries of the neck column trauma in case of an accident.

Some of the newer vehicles feature active headrests, more convenient and efficient, this is an extension of the WIL seat concept: the seat and headrest frame adapts simultaneously to head and body parts.

During the collision the body is pressed against the backrest of the seat and triggers a lever inside the shell that makes the headrest move up and forward a few centimetres.

This way the risk of injuries is reduced.



Finally, NEVER leave obstacles lying (bottles, packets) on the rear shelf. It is better to tidy or secure objects into luggage rack or boot of the car, so they can't move (they could disturb the driver).

During an accident an object on the rear shelf, go through one of the windows or can hit the driver or passengers.

Also big objects (ex. cases) positioned behind the driver, during violent braking, can cause damage to the backrest, making driving difficult.

**Remember** always: latch up your seat belt, position your headrest correctly, be cautious, stay calm, keep an overall look, drive at a moderate speed and drive at the safety distance.



Have a good trip! 😊

Up dated:  
17 September 2007

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