

# Road Safety Factsheet

August 2017

## Head Restraints Factsheet

A head restraint is designed to limit the movement of the head and provide support in an accident. A properly adjusted head restraint will help to protect you against whiplash, and potentially save you from a long-term injury.

### How to adjust your head restraint

**It is important to always ensure your head restraint is adjusted properly, as either a driver or a passenger.**

In order to correctly adjust a head restraint you should:

- Ensure that the top of the head restraint is as high as the top of your head
- Position the head restraint as close to the rear of your head as possible

A properly adjusted head restraint will help prevent whiplash by reducing the distance between the back of the head and head restraint, stopping the neck from bending back. It will also reduce the amount of time it takes your head to initially contact the head restraint, and increase the amount of time that your head is supported during an accident.

Having a locking head restraint is important. A head restraint that cannot be locked in position may move during an accident. This can compromise the amount of protection the restraint offers. There is also the danger that rear seat occupants getting in and out of the vehicle could accidentally move the restraint out of position.

When buying a car - especially second hand vehicles - it is important to ensure that the head restraint can be properly adjusted so that it rests behind your head.

The following pages show pictures of properly adjusted, and poorly adjusted, head restraints.

Pictures 1 and 2 show an example of a well adjusted head restraint, and then show the same restraint positioned too far away from the back of the head. Pictures 3 and 4 give a comparison between a well adjusted head restraint and a head restraint that is positioned too low. In the real world, many people have poorly adjusted head restraints that are both too low, and too far back from their head.

## Examples of well and poorly adjusted head restraints

**Picture 1**

This picture shows a well-adjusted head restraint, which will reduce the risk of suffering a whiplash injury.

The seat back angle is relatively upright, and this allows the head restraint to be positioned close to the back of the head.

The top of the head restraint is level with the top of the occupant's head, which will also help to prevent injury.

**Picture 2**

This picture shows a poorly adjusted head restraint.

Even though the top of the head restraint is level with the top of the occupant's head, a large gap exists between the back of the occupant's head and the head restraint.

This gap – which is marked using the yellow arrow – means that the head can move and tilt further back, increasing the risk of injury.

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**Picture 3**

This picture shows another example of a properly adjusted head restraint.

As in Picture 1, the two main points to note are that the head restraint is as high as the top of the occupant's head, and the restraint is close to the back of the head.

**Picture 4**

This picture is an example of a poorly adjusted head restraint.

The yellow arrow shows the distance between the top of the occupant's head and the top of the head restraint, which would increase the risk of an injury.

**The head restraint should be moved higher in order to adjust it correctly, as shown in picture 3.**

## Safer Head Restraints

Whenever you get into a vehicle, you should ensure that a head restraint is properly adjusted, as shown above.

However, you should also think about head restraints and whiplash prevention when purchasing a vehicle. You should always sit in the vehicle, before purchasing it, to ensure that the head restraint can be adjusted properly.

## Euro NCAP

Euro NCAP created a five-star safety rating system to help consumers compare vehicles more easily and help them to identify the safest vehicle for their needs.

To determine the safety rating of a vehicle, Euro NCAP carry out a number of vehicle tests, including the testing of seats and head restraints.

Seats and head restraints are tested on a sled using a low speed rear-impact dummy. Three dynamic tests are carried out, which represent common accident severities known to cause injury. This test helps determine how effectively the seat and head restraint operate to provide whiplash protection. Euro NCAP also carry out an assessment of the geometry of the front and rear head restraints to see whether or not the head restraint can be positioned to prevent excessive head movement and provide effective support<sup>1</sup>.

You can view the latest safety ratings for vehicles [here](#).

## Technology to help prevent whiplash

There are two common systems to help prevent whiplash that are becoming more common on vehicles.

### Active Head Restraint

An active head restraint consists of a pressure plate and a pivot system in the seat back. Active head restraints are adjustable like standard head restraints and you still need to ensure that it is properly positioned behind your head.

As the occupant's body moves into the seat back in the initial stages of the collision, it contacts the pressure plate in the seat back and triggers the active head restraint. The head restraint moves towards the occupant's head creating an earlier contact time between the two, and a longer period of support for the head during the accident.

### WHIPS Seat

WHIPS seats have a fixed, integral head restraint, which cannot be adjusted, as the entire seat back has been designed to offer good geometry and protect the occupant from whiplash injuries.

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During a rear impact, the seat moves backwards and becomes reclined and an expandable hinge at the base of the seat back controls its movement. This ensures that the movement of the head and body are similar and increases the length of time that the occupant is in contact with the head restraint.

The expandable hinge is designed to only be used once and should be replaced following the accident.

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## References

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<sup>1</sup> Euro NCAP (2017) 'Whiplash'

URL:<http://www.euroncap.com/en/vehicle-safety/the-ratings-explained/adult-occupant-protection/whiplash/>

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