



# The safety of pedestrians

The theme of safety is not only addressed to vehicle occupants. It also concerns all other road users and among them, one group that is **particularly vulnerable – pedestrians.**



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## BASIC FACTS

**Pedestrians have no means of protection during an impact with the front of a vehicle and therefore they are particularly vulnerable.** To take account of this, the bumpers and bonnets of current cars deform to dissipate the energy from the impact to as great an extent as possible.

In the same way, the shape of the front bumper is designed so that the point of impact is level with the lower part of a pedestrian's legs, a zone containing no vital organs. In addition, this low impact point causes the leg to bend, making it possible to minimise the risk of injury to the knees, which can be potentially crippling.

### IN SHORT >>>

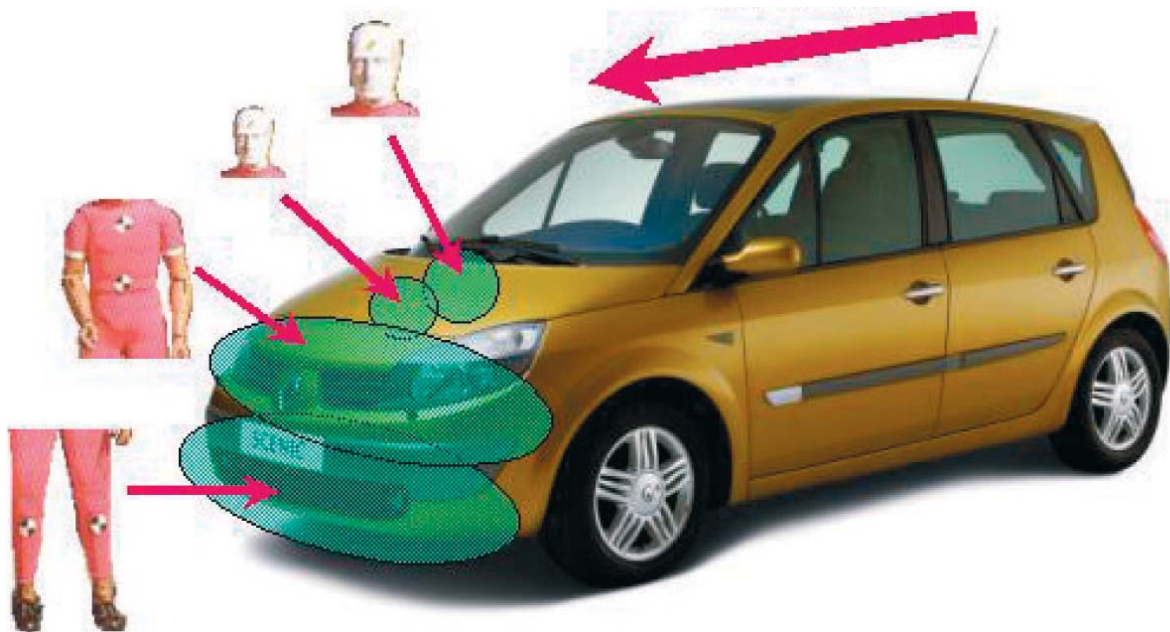
The shapes and materials that make up the front end of the vehicle – bumper, radiator grille and bonnet – are designed to limit the seriousness of injuries they may cause to pedestrians in the event of an impact.



## ▷ HOW DOES IT WORK?

**Numerous studies** of impacts involving pedestrians are carried out at the time of crash tests, in particular during those that Euro NCAP practises (see sheet). Several tests are carried out that make it possible to evaluate the level of protection of the front of the vehicle when pedestrians are involved – head-against-bumper tests, femur-hip against “bonnet nose”, adult head and head child against bonnet and windshield. These

tests are representative of a vehicle hitting a pedestrian at 40 kph. Studies such as these have made possible the development of elements with mechanical behaviour and shapes that are optimised to effectively deaden the shock at the time of a collision with a pedestrian and thus reduce the risk of exposing them to serious injury. Euro NCAP takes these results into account in a specific “pedestrian impact” test score.



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