

CHOOSING A SAFE CAR

How safe is your next car?

Buying a safe car

There is a safe car for every budget. Whether you buy new or used, it's important to check safety ratings.

Find out more: www.howsafeisyourcar.com.au

Buying your first car is exciting and a big decision. To help guide that decision, we have developed a list of safe first cars that are affordable for young drivers.

Go to: www.howsafeisyourfirstcar.com.au

Safety ratings

There's a lot to consider when buying a car. Safety ratings can help make your decision easier. Vehicles with 5-star ratings are always the safest choice.

There are two ratings systems in use:

- Australian New Car Assessment Program (ANCAP)
- Used Car Safety Ratings (UCSR).

Australian New Car Assessment Program (ANCAP)

www.ancap.com.au

ANCAP publishes safety ratings for a range of new passenger, sports utility and light commercial vehicles entering the Australian and New Zealand markets. Safety is rated from zero to five stars.

Currently, vehicles are rated on four sets of criteria:

- Adult occupant protection
- Child occupant protection
- Pedestrian protection
- Safety assistance technologies, such as Autonomous Emergency Braking (AEB), lane departure systems and Intelligent Speed Assist (ISA).

Adult, child and pedestrian protection are determined by performance in a series of internationally recognised, independent crash tests. Safety assistance technology relates to the performance of vehicle technologies which can help prevent crashes from occurring in the first place.

ANCAP testing and scoring protocols have changed regularly over the years to keep up-to-date with new technology and safety issues. For more about the rating changes, go to: www.ancap.com.au/safety-ratings-explained

Used Car Safety Ratings (UCSRs)

UCSRs inform us how well vehicles have performed in real world crashes. Monash University's Accident Research Centre analysed millions of vehicles involved in police-reported road crashes in Australia and New Zealand to determine the safety ratings. www.howsafeisyourcar.com.au/Rating-Process/What-is-UCSR/

To achieve a five-star or 'Safer Pick' rating, vehicles must:

- result in lower injuries to other road users with which it may collide, including other drivers, pedestrians, cyclists and motorcyclists
- provide excellent protection for its driver
- be fitted with Electronic Stability Control (ESC).

Safe car design

Frontal crash testing demonstrates the importance of structure in protecting a vehicle's occupants.

- **Crumple zones** – the very front and rear parts of the vehicle crumple easily in a crash to absorb the main impact force and prevent it from being passed onto the vehicle's occupants.
- **Occupant compartment** – to protect its occupants in a crash, the cabin of a vehicle should keep its shape and limit vehicle parts and external objects intruding into the cabin space. The steering column, dashboard, roof pillars, pedals and floor panels should not be pushed excessively inwards, where they are more likely to injure drivers and passengers. Doors should remain closed during a crash and should be able to be opened afterwards to assist in quick rescue. Strong roof pillars can provide extra protection in rollover crashes.

Vehicle airbags, seatbelts and restraints

Airbags, seatbelts and restraints help manage the forces of impact in a crash and reduce the risk of occupants striking the internal surfaces of the vehicle. Wearing a correctly adjusted seatbelt reduces the risk of fatal or serious injury by up to 50%.

- **Side curtain airbags** – In the event of a side-impact collision, side curtain airbags drop like a curtain from the railing above the door. They cushion the head against the full impact of another vehicle or object. Driver fatalities have reduced by 37% in side-impact crashes¹.
- **Frontal airbags** – In conjunction with wearing a properly fitted seatbelt, frontal airbags work to protect the driver and passenger from striking interiors during a frontal crash. As a result of frontal airbags, driver fatalities have reduced by 29%, and front seat passenger fatalities by 32%.²
- **Knee airbags** – Designed to cushion the knees of the driver and front seat passenger in the event of a crash, knee airbags also reduce the chance of slipping down under the seatbelt.
- **Pedestrian protection** – Pedestrian airbags are fitted under the vehicle's bonnet near the windscreen and inflate to protect pedestrians during frontal collisions. Pop-up bonnets can reduce the likelihood of a pedestrian's head hitting the rigid engine underneath. Research shows that vehicles with technologies such as these are associated with less severe injuries to pedestrians in crashes³.
- **Seatbelt pretensioners** – Tighten and reduce slack in front seatbelts to protect occupants from rapidly moving forward during a crash. These are most effective when combined with airbags to reduce the potential for impact with vehicle surfaces. Research shows that seatbelt pretensioners are associated with a reduction in abdominal injuries⁴.
- **Head restraints** – Along with safety-conscious seatback designs, head restraints can prevent excessive rearward head movement, reducing the likelihood of neck injury and whiplash in a rear end crash⁵.
- **Child restraint tether points** – Enable child restraints to easily and safely be secured to the vehicle. Child restraints perform better in crashes when a top tether strap is used⁶.

¹ McCartt, A., & Kyrychenko, S. (2007). Efficacy of side airbags in reducing driver deaths in driver-side car and SUV collisions. *Traffic Injury Prevention*, 8, 162-170.

² <http://www.iihs.org/iihs/topics/t/airbags/topicoverview>

³ Strandroth, J., Rizzi, M., Sternlund, S., Lie, A. & Tingvall, C. (2011) The correlation between pedestrian injury severity in real-life crashes and Euro NCAP pedestrian test results. *Traffic Injury Prevention*, 12, 604-613.

⁴ Frampton, R., Lenard, J. & Compigne, S. (2012). An In-depth study of abdominal injuries sustained by car occupants in frontal crashes. *Annals of Advances in Automotive Medicine*, 56, 137-149.

⁵ <http://www.iihs.org/iihs/ratings/ratings-info/rear-head-restraints-test> and https://ec.europa.eu/transport/road_safety/specialist/erso/safety-issues_en

⁶ Lumley, M. (1997). Child Restraint Tether Straps: A Simple Method of Increasing Safety For Children. SAE Technical Paper 973305. <https://www.sae.org/publications/technical-papers/content/973305/>