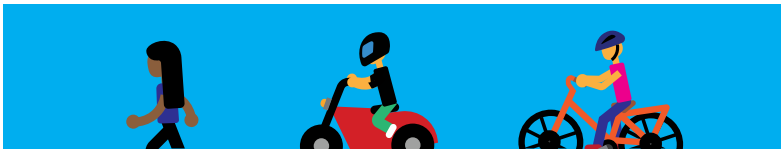
Toolbox Talks

A partnership between: Monash University Accident Research Centre | NRSPP

Roads are For Everyone

Look out for each other!

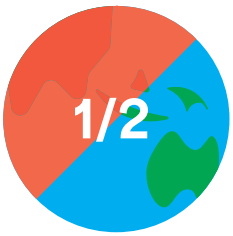
Pedestrians, motorcyclists and bicycle riders made up 37% of the Australian road deaths in 2023[1].



In recent years, more Australians have embraced walking and cycling, whether for commuting, leisure or exercise[2]. This shift has increased interactions between different types of road users. Any person who lacks the protective shield of a vehicle such as a pedestrian, motorcyclist, personal mobility device user, or cyclist is classified as a vulnerable road user due to their heightened risk of injury in the road system.

According to the World Health Organization (WHO), vulnerable road users account for more than half of all global road fatalities[3].

Vulnerable Road Users represent



of all global deaths

Chance of Pedestrian surviving an impact

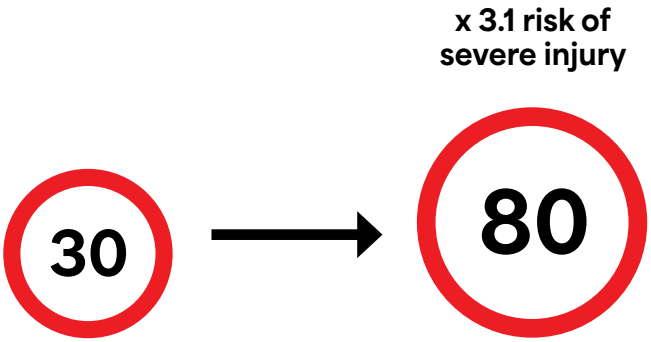
90% Chance of survival

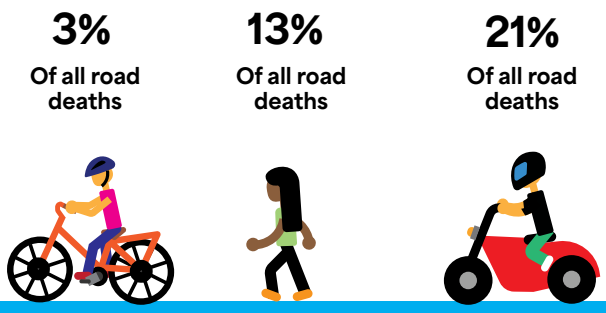
60% Chance of survival

10% Chance of survival

Among the most at-risk groups are pedestrians - particularly children, elderly and people with any disability, motorcycle and bicycle riders who ride alongside traffic, and road workers. Without the protection of a vehicle, the human body is far more susceptible to severe injuries. Survivability in crashes sharply declines with higher impact speeds[4]. For instance, the chances of a pedestrian surviving an impact with a vehicle decrease rapidly above 30km/h, from 90% to 60% at 40km/h, and 10% at 50km/h[5].

Severe injuries can have profound physical and emotional impacts that often last a lifetime. A recent study concluded that pedestrians are 3.1 times more likely to sustain severe injuries on roads with speed limits of 80 km/h or higher and traffic volumes of 40,000 vehicles per day, compared to roads with a 30 km/h speed limit[6]. Emerging evidence also indicates that even lower impact speeds, around 20 km/h, can result in serious injuries[7].

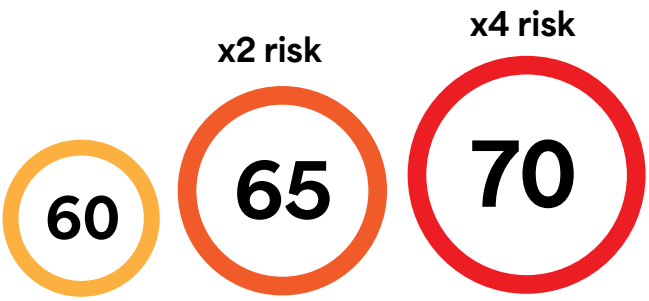




In 2023, motorcyclists accounted for 21% of all road fatalities, followed by pedestrians at 13%, and cyclists at 3%[1]. Vulnerable road users also made up a significant portion of injury hospitalisations. According to the Australian Institute of Health and Welfare, 54% of hospitalisations due to road-related injuries in the 2021-22 period involved vulnerable road users[8].

Driver behaviours significantly contributes to the risk of injury and death among vulnerable road users. The most common risk factors include distraction, driving under the influence of alcohol or drugs, and dangerous driving behaviours, such as speeding[9].

Crash risk doubles with each 5km/h increase when travelling at 60km/h[10]



Research shows the likelihood of a crash resulting in casualties doubles with every 5km/h increase in speed when travelling at 60km/h[10].

Additionally, road infrastructure often prioritises vehicles leading to minimal separation between road users, poor lighting, limited visibility, and inadequate crossing opportunities for pedestrians. These factors further amplify risks for vulnerable road users[11].

Vehicle design

Vehicle design also plays a critical role in protecting vulnerable road users. The shape of a vehicle's front end significantly influences its energy-absorption capacity during a collision, with some designs better suited to protect the head upon impact.

Similarly, in-vehicle safety technologies, such as Advanced Driving Assistance Systems (ADAS) and Vehicle-to-Everything (V2X) communication systems, are creating new opportunities to reduce injuries and enhance safety for vulnerable road users[12].

Types of vehicle front-end shapes

Pedestrian distractions

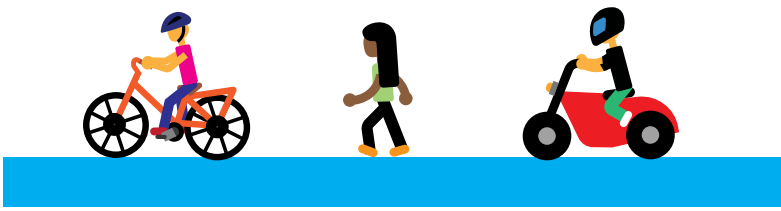
The increasing prevalence of personal devices competing for attention on the road has also become a significant risk. A study revealed that approximately 20% of pedestrians crossing streets in Melbourne's CBD were using smartphones[13].

In-ear headphones have long been recognized as a risk factor for crashes involving pedestrians and cyclists. Recent research confirms that these devices also pose dangers to light vehicle drivers by compromising awareness of surroundings and creating distractions that detract from the primary task of driving safely[14].

Recommendations for Drivers

Toolbox Talks

Stay Alert for Less Visible Pedestrians: Some pedestrians, such as children or individuals using wheelchairs, may be harder to see due to their height. Others might be distracted by listening to music with noise-cancelling headphones or texting on their phones.



Respect the Right of Way: Always yield to other road users, especially at intersections. Failing to do so can lead to serious crashes, particularly with motorcyclists.

Be Cautious on Roads Without Footpaths: These roads often force pedestrians and cyclists onto the carriageway. Drive carefully and leave extra space.

Be Aware of A-Pillar Blind Spots: The A-pillar, located on either side of the windshield, can block your view of pedestrians, cyclists, or motorcyclists—especially during turns. Always approach intersections and turns with caution.

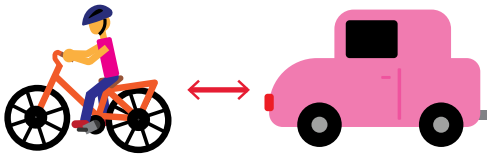
Practice the 'Dutch Reach': Open your car door with the hand furthest from the door to prevent "dooring" (hitting a cyclist with your door). This habit forces you to check for approaching cyclists.

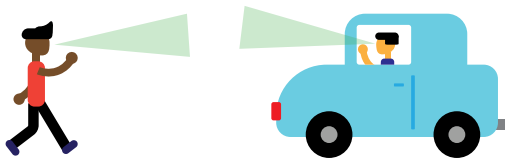
Use Mirrors and Technology Wisely: Mirrors, sensors, radars, and cameras can reveal areas you might otherwise miss. However, be mindful that objects may appear distorted, and their locations can be misjudged.

Perform Head Checks: Turn from your waist to look over your shoulder, especially when changing lanes, turning, or pulling out from the curb. This minimizes blind spots and ensures a clear view of your surroundings.

Allow Safe Passing Distances for Cyclists: When overtaking a bicycle rider, leave at least 1 metre on roads with speeds up to 60 km/h, and 1.5 metres on faster roads.

Adjust to Road Conditions: Drive at safe speeds—especially in areas with vulnerable road users. Speeds under 30 km/h allow for better communication through eye contact or gestures. Ensure other road users have noticed you.

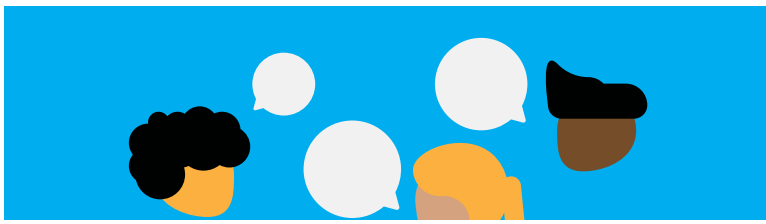




Recommendations for Managers

Plan to minimise risks. Avoid busy city centres when possible. If unavoidable, choose times and routes that minimise high-risk interactions with vulnerable road users.

Hold regular team discussions. Educate drivers about emerging mobility devices, their unique characteristics, and areas where they are commonly use.



Provide hands-on training. Incorporate role-playing exercises where drivers experience the road as pedestrians or cyclists. This fosters empathy and understanding of other road users' perspectives.