

facts

Road safety - Visibility

Seeing and being seen are fundamental prerequisites for the safety of all road users. Inadequate visibility is an important factor that influences the risk of a road crash among all types of road user.

HOW DOES VISIBILITY AFFECT ROAD TRAFFIC COLLISIONS?

In highly-motorized countries, inadequate visibility plays an important role in three types of crash:

- at night, vehicles that run into the rear or sides of slowly moving or stationary vehicles;
- during the day, angled or head-on collisions;
- at all times, rear-end collisions that occur in poor weather conditions.

In low-income and middle-income countries, the poor visibility of pedestrians and vehicles is a serious problem. The mix of motorized and non-motorized traffic, together with poor street lighting, increases the risk of unprotected road users not being seen. Non-use of low-cost interventions such as bicycle lamps or reflective equipment exacerbates already unsafe conditions.

The extent to which poor visibility contributes to road traffic crashes varies between countries, between types of road user and types of studies.

- In the state of Victoria, Australia, poor visibility was a factor in 65% of crashes between cars and motorized two-wheelers, and the sole cause in 21% of them.
- Nearly 5% of severe truck crashes in Germany can be traced back to poor night-time visibility of the truck or its trailer.

- Motorized two-wheelers, because of their size and shape, are harder to see than other motor vehicles and are poorly visible, even during the daytime. For example, most motorcycle crashes in Malaysia occur during daylight hours.
- European research found that one third of pedestrian casualties had difficulty seeing the vehicle that had struck them, while two fifths of drivers had difficulty seeing the pedestrian.
- A large proportion of pedestrian and cyclist collisions in low-income countries occur around dusk, dawn or at night, possibly because of poor visibility. However, research in this area is limited.



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WHAT CAN BE DONE TO IMPROVE VISIBILITY?

For two-wheelers

- 'Daytime running lights' are those used on the front of motorized vehicles (two-wheeler or four-wheeler) to improve visibility while travelling during daylight hours. Some countries have made the use of daytime running lights mandatory.
- Daytime running lights for motorized two-wheelers have been shown to reduce visibility-related crashes in several countries by between 10% and 15%.
- A New Zealand study found that wearing white helmets and highly visible clothing would reduce visibility-related motorcycle collisions by 45%.
- Reflective vests used by riders of motorized two-wheelers can increase visibility. However, some reflective vests used in high-income countries may be inappropriate for many low-income and middle-income countries because of the differences in climate and cost. Brightly coloured clothing or accessories may be suitable alternatives.

For four-wheelers

- Laws requiring mandatory daytime running lights can reduce the incidence of daytime crashes of four-wheeled vehicles by 10–15%. The use of car daytime running lights can also reduce pedestrian and cyclist collisions.
- Daytime running lights have been shown to be a cost-effective intervention in many countries in the northern hemisphere.
- High-mounted brake lights, positioned on the back windscreen of cars, increase their visibility. The use of these brake lights has led to a 15–50% reduction in rear-end crashes. These lights have been adopted in many countries.

For cyclists and pedestrians

- Improving the visibility of non-motorized vehicles is an effective strategy for reducing collisions, especially in poor daylight and in darkness.
- To increase the visibility of cyclists, many high-income countries now require that bicycles are equipped with lights and with front, rear, and wheel reflectors. Studies in the Netherlands suggest that use of bicycle lighting could reduce the incidence of bicycle collisions by 30%.
- Colourful clothing, accessories and vehicle parts can make pedestrians, riders and non-motorized vehicles more visible to all road users. Brightly coloured clothing or accessories may be suitable alternatives to the reflective vests that are used in high-income countries. The use of bright colours for wheels and rear ends of non-motorized vehicles (e.g. rickshaws) may also have the potential to increase visibility. However, the actual effectiveness of such measures has yet to be determined.



WHO recommends that member countries implement daytime running lights for two-wheeled vehicles. They should also consider the use of daytime running lights on four-wheeled vehicles.