

Children and road traffic injury

As children grow and their world extends beyond the home and out into local roads, they are exposed to hazards and risks. Despite the fact that children use roads as pedestrians, cyclists, motorcyclists and vehicle passengers, the road environment is rarely developed with consideration for their needs. Some children work, play or live on the road, and this exposure, along with other risk factors inherent to childhood, make them particularly vulnerable in traffic. The result is millions of fatal or disabling injuries each year. In most countries, road traffic injuries are one of the top two causes of death from unintentional injury, with the highest rates among 15–19 year olds.

Scale of the problem

Mortality

- In 2004, road traffic crashes resulted in more than 260 000 deaths in children and youth aged 0–19 years. Children accounted for 21% of all road traffic injury related deaths worldwide.
- Globally, road traffic injuries are the leading cause of death in 10–19 year olds.
- About two thirds of child road traffic injury deaths occur in the South-East Asia and the Western Pacific regions, however Africa and the Eastern Mediterranean regions have the highest rates of fatalities.
- Even in European Union countries, where rates are not as high, road traffic injuries still account for 1 in 5 childhood injury deaths.
- Low-income and middle-income countries account for 93% of child road traffic deaths.
- Although road traffic injury deaths have decreased in some high-income countries, by 2030 it is predicted that they will be the fifth leading cause of death worldwide, and the seventh leading cause of Disability Adjusted Life Years (DALY) lost.

Child road traffic injury mortality rates per 100 000 population^a by WHO region and country income level, 2004

Africa		Americas		South-East Asia	Europe		Eastern Mediterranean		Western Pacific	
LMIC	HIC	LMIC	LMIC	LMIC	HIC	LMIC	HIC	LMIC	HIC	LMIC
19.9	8.7	7.7	7.4	7.4	5.2	8.3	18.3	17.4	4.2	8.6

^a These data refer to those under 20 years of age.
 HIC = High-income countries;
 LMIC = Low-income and middle-income countries.
 Source: WHO (2008), *Global Burden of Disease: 2004 update*.

Children and young people as road users —

As pedestrians:

- children are the most likely to be injured or killed
- 5–14 year olds are most at risk
- children account for 5–10% of all road traffic deaths in high-income countries
- children account for 30–40% of all road traffic deaths in low-income and middle-income countries.

As cyclists/motorcyclists:

- child cyclists make up 3–15% of injured children, and account for 2–8% of all child road traffic deaths
- in some countries in Asia they account for one third of all child traffic deaths
- in Asia, motorized two-wheelers are the leading cause of death among teenagers.

As vehicle occupants:

- children in vehicles account for up to 50% of all child road traffic deaths in high-income countries
- unrestrained children are more likely to be killed in collisions than those using appropriate child restraints.

As drivers:

- teenage drivers are a high risk group in high-income countries
- they are 15–33 times more likely to crash than older drivers
- in some countries, 20–30% of road traffic fatalities occur in this risk group.

Morbidity

- The number of children injured or disabled as a result of road traffic crashes is estimated to be around 10 million each year. Recent estimates from South-East Asia suggest the figure could be higher, as for every child who dies, 254 need hospital treatment – four of whom are left with a permanent disability.
- Most common non-fatal injuries include head injuries and fractured limbs, with 10–20% of children involved in road traffic crashes sustaining multiple injuries.
- Road traffic injuries are a leading cause of disability for children. A recent estimate from South-East Asia of the permanent disability rate for children aged 1–17 years is 20 per 100 000.
- Being involved or injured in a road traffic crash can result in mental health impairment in children, such as post-traumatic stress disorder. It can also indirectly have a profound psychological effect if a child is orphaned as a result of a crash.

Risk factors

- Globally, children aged 15–19 are at greatest risk of road traffic injury, with the road traffic fatality rate increasing with age. This reflects both increasing exposure and differences in the way children of different ages use the road.

Fatal child road traffic injury rates per 100 000 population^a by age and sex, World, 2004

	Age ranges (in years)					
	Under 1	1–4	5–9	10–14	15–19	Under 20
Boys	11.5	9.7	13.3	8.7	23.4	13.8
Girls	7.4	8.3	9.3	4.5	7.9	7.5

^a These data refer to those under 20 years of age.

HIC = High-income countries; LMIC = Low-income and middle-income countries.

Source: WHO (2008), *Global Burden of Disease: 2004 update*.

- Boys are almost twice as likely as girls to be involved in road traffic crashes. This difference starts at a young age and grows with age until adulthood, with an overall death rate of 13.8 per 100 000 for boys and 7.5 per 100 000 for girls.
- Road traffic injury is strongly associated with poverty in all countries, irrespective of income level.
- Children under 11 are less able to make safe decisions on the road.
- In many low-income and middle-income countries, children are at increased risk because the road is a shared space for playing, working, walking, cycling and driving.
- Unrestrained children are at increased risk of severe injury or death in the event of a crash. Appropriate restraint use varies from nearly 90% in the USA to almost nil in some low-income countries. Even in high-income countries where prevalence is high, correct restraint use remains problematic.

- Teenagers and young adults have the lowest seat-belt-wearing rates in the world.
- Unhelmeted cyclists, motorcyclists or motorcycle passengers are at greater risk of severe head injury or death. The correct use of helmets among motorcyclists and their pillion passengers is low in many countries, and is a significant risk for head injuries in the event of a crash.
- Other risk factors that increase the risk for vulnerable road users include riding or walking in mixed traffic, cycling on pavements or footpaths and not wearing reflective clothing.
- Teenage drivers are at increased risk because of their age and risk-taking behaviour, including drinking and driving, speeding, distractions while driving, and fatigue.
- Other risk factors for road traffic injuries include: poor supervision, poor vehicle design; the road environment as it relates to volume of traffic; poor land use and road network planning; lack of playgrounds, sidewalks and bicycle lanes; lack of safe and efficient public transport and excessive speed.

Interventions

Proven effective approaches to reducing road traffic injuries —

- ✓ Establishing and enforcing a minimum legal drinking age for alcohol.
- ✓ Encouraging the use of helmets for cyclists and motorcyclists. Compliance can be enhanced through legislation requiring use by all ages, public awareness campaigns and making helmets affordable.
- ✓ Establishing and enforcing lower blood alcohol concentration levels for novice drivers and zero tolerance for drink-driving offenders of all ages.
- ✓ Establishing and enforcing reduced speed limits for vehicles around schools, residential and play areas.
- ✓ Establishing and enforcing graduated driver licensing systems.
- ✓ Establishing infrastructure to separate road users. For example, separate traffic lanes for cyclists and motorcyclists, and sidewalks for pedestrians.
- ✓ Encouraging the use of protective equipment in vehicles such as child passenger restraint systems, booster seats and seat-belts, and a rear seating position for children. Compliance can be enhanced through the introduction of legislation and enforcement, public awareness campaigns, and strategies addressing issues of access and affordability.
- ✓ Establishing and enforcing daytime running lights to increase visibility of motorcyclists.

What does not work?

- ✗ There is limited evidence to support the implementation of designated driver programmes or instruction for children on the perils of drinking and driving.
- ✗ School-based driver education programmes have led to earlier licensing of novice drivers with resultant increases in teenage driver deaths.
- ✗ Putting babies or children on the front seat of a vehicle where there is an air bag that will deploy in a crash is strongly discouraged.

Source: This fact sheet is based on the *World report on child injury prevention*.

To download a copy of the report please go to http://www.who.int/violence_injury_prevention/child/en/

Copies of this document are available from: Department of Violence and Injury Prevention and Disability, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland, Email: childinjury@who.int