GLOBAL ROAD SAFETY PARTNERSHIP

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Speed

Speed is the most significant factor in road crashes, affecting the number of crashes as well as crash severity[1]. Speed is about kinetic energy and force. The higher the impact speed of a collision, the greater the forces that result. Human bodies are simply not adapted to withstand impact forces that occur in higher speed road crashes.

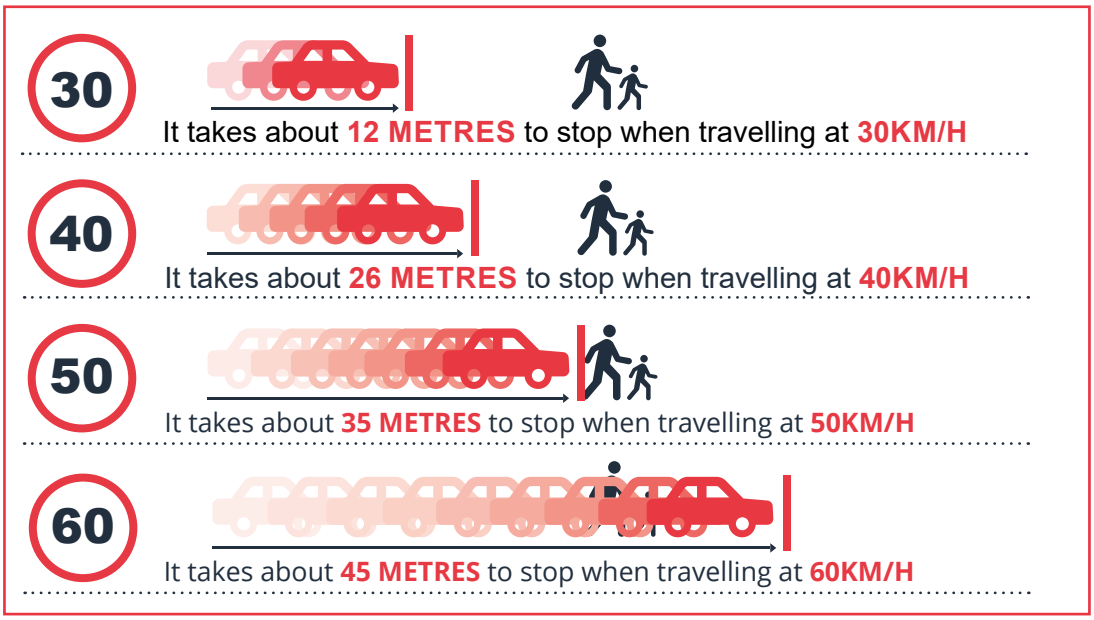
The faster a driver travels, the more likely they are to crash and the greater the risk of serious injury or death. No matter what causes a crash, vehicle speed directly affects the force of impact. As speed increases, there is an increase in the following factors and, in turn, an associated increase in the risk of crash involvement

- Stopping distance — both the distance travelled during reaction time and the distance travelled after the brakes are applied.
- The probability of exceeding the critical speed on a curve.
- The chance of other road users misjudging how fast the speeding driver is travelling.
- The probability of a rear-end crash if the driver has not accounted for the increased speed by increasing the following distance.

Key Facts

- The human body is not designed to absorb large physical forces. We can only withstand minor impacts before injury occurs. The physical impacts of a crash that occurs at a speed greater than 30km/h significantly increases the risk of dying.[2]
- Pedestrians and cyclists are particularly vulnerable to injury and death as a result of excessive vehicle speeds.[3]
- The risk of death is almost five times higher in collisions between a car and a pedestrian at 50 km/h compared to the same type of collisions at 30 km/h.[4]
- A speed of 50km/h is too high in environments where motorised vehicles and vulnerable road users (e.g. children, pedestrians, cyclists, elderly) interact and share the same space. In those cases, e.g. in residential areas, school zones, a limit of 30 km/h is preferred.[5]
- Countries that apply a 70 or 80 km/hour speed limit on rural, non-motorway roads tend to have a significantly lower mortality rate – Less than the European Union average of 5 deaths per 100,000 population.[6]
- Even small reductions in speed positively affect fatal and serious injury crash risk and the effectiveness of road and vehicle interventions to prevent death and serious injury.[7]

Speed



- The effect of speed limit reductions, without enforcement measures is relatively small. Countries that have robust speed enforcement programmes tend to have a lower rate of road crash fatalities.[8]
- One of the most effective, evidence-based, low-cost opportunities to reduce speeds and save lives and injuries is the introduction of speed cameras combined with the promotion of enforcement activity.[9]
- Speed limits should apply to all vehicle types, including micromobility★ modes.[10]
- The benefits of lower speeds in fuel consumption depend on factors such as the type of car, driving patterns, and the frequency of speeding. Simulation results overall suggest that significant fuel savings can be achieved by encouraging drivers to maintain a consistent speed and restrict their speed, including through effective enforcement of speed limits.[11]
- Lower driving speeds benefits our quality of life, especially in urban areas because reduced speed mitigates air pollution, greenhouse gas emissions, fuel consumption and noise.

★ *In this fact sheet, micromobilty is defined as vehicles with a mass of no more than 350 kilograms (771 pounds) and a design speed no higher than 45 km/h (International Transport Forum, 2020).*

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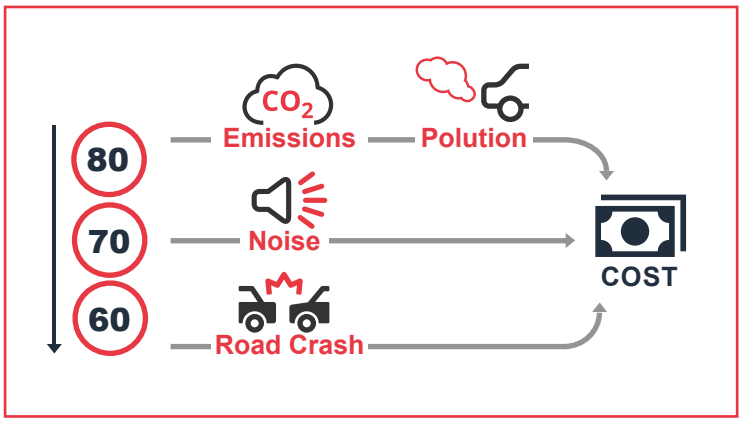

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- It is important to leverage the synergies between reduction in speed and potential benefits that relate to the Sustainable Development Goals. One example of such a success story comes from France where the reduction of speed limits in urban motorways was achieved not from general concerns over road user safety but because of environmental concerns over greenhouse gas emissions and air pollution.[12]

Key Messages

- Excessive (above the posted speed limit) and inappropriate (within the speed limit but not appropriate for the conditions) speeds are dangerous and are major causes of traffic crashes resulting in death and serious injury.
- Setting and enforcing appropriate speed limits is one of the most effective measures in reducing road traffic crashes, deaths and injuries.
- Speed limits should be appropriate for the type of road, roadside conditions and the volume and type of road users.
- Special attention should be paid to the speed limits on urban roads and roads with high concentrations of pedestrians and cyclists, such as around schools or residential areas.
- Where there are many pedestrians and/or cyclists using a road, measures need to be taken to reduce vehicle speeds in order to improve safety for these vulnerable road users.
- Engineering approaches to limit travel speeds range from environmental countermeasures (such as road design) to improvement of road surfaces.[13]
- Targeted social marketing campaigns, when conducted together with effective law enforcement and engineering approaches, can help reduce excessive speeding.
- The effectiveness of police enforcement is larger if police enforcement is: accompanied by publicity, unpredictable and difficult to avoid, a mixture of highly visible and less visible activities, primarily focused on times and locations with high violation (maximum feedback to potential offenders), continued over a longer period of time.[14]

Speed

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