



What is a Vulnerable user?

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Global Road Safety Partnership

Working for a world free of road crash death and injury



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Presentation Outline

- What makes a road user vulnerable?
- Who is a Vulnerable Road User?
- What can be done to protect Vulnerable Road Users?



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Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable:

11.2. By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, **with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.**



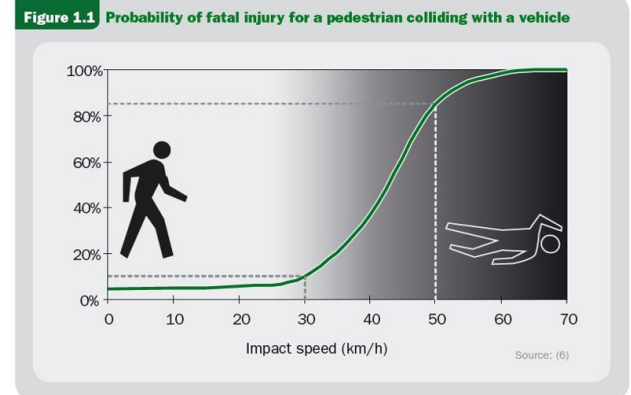
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What do we mean by 'Vulnerable'?

- Everyone is at risk of death or injury in a road crash - **but some are more at risk than others**
- The human body can only tolerate certain physical forces
- Larger impact force equals greater injury to the body



Speed management: A road safety manual for decision-makers and practitioners (2008), GRSP



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Defining ‘Vulnerable’

‘Vulnerable road users’ can relate to

1. Protection from physical forces

- road users exposed to greater danger in a crash because there is no protection from impact forces (no physical ‘shell’ protecting them)
 - pedestrians, 2 & 3 wheeled riders/passengers

2 Task capability

- road users most at risk of death/injury due to physical capability
 - Children, elderly, disabled
 - Inexperienced road users (e.g., young or novice drivers/riders)



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1 Protection from Physical Forces

Which road user types are most vulnerable?

- Pedestrians
- Bicyclists
- Non-motorized 2 & 3 wheelers
- Motorized 2 & 3 wheelers



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The Numbers



Source: World Health Organisation. 2015. Global Status Report Road Safety



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2 Task capability

Which road users are vulnerable because of physical condition/level of capability?

- Children
- Older people
- People with a disability



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What contributes to Motorized & Non-motorized Two-wheeler users vulnerability



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Motorized & Non-motorized Two-wheeler users vulnerability

- Lack of lane separation between faster, heavier 4 wheelers & 2 wheelers
- Weight of 4 wheelers results in greater forces in a crash
- Limited visibility of 2 wheelers
- Lack of road safety related policies around E-bikes
- Lack of use of protection: helmets & clothing
- Head and upper body takes the force of the crash
- Lower limbs exposed and unprotected



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What contributes to Pedestrian's vulnerability?



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Pedestrian vulnerability

- Human body can only withstand limited force
- No external shell for protection
- Low visibility compared to vehicles
- Roads designed for motorized vehicles, with little safe passage for people



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What contributes to Children's vulnerability?





Children's vulnerability

- Body is less able than adult body to cope with impact forces
- Inability to judge vehicle speeds
- The road network is constructed without considering children
- Children cannot always control their own safety

Children's Limitations

Physical development

- Size, height, growth patterns, co-ordination, balance

Cognitive development

- Mastering concepts, judgements, decision making, reasoning, impulse control

Risk taking behaviour

Peer influence



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What contributes to the Elderly's vulnerability?



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Elderly's vulnerability

- Slower walking speeds
- Slower reactions to unexpected situations
- Impaired hearing, sight, judgement
- Frail - body is less able to cope with impact forces than younger adults
- Recovery can be difficult due to presence of other health issues



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What can be done to protect VRUs?

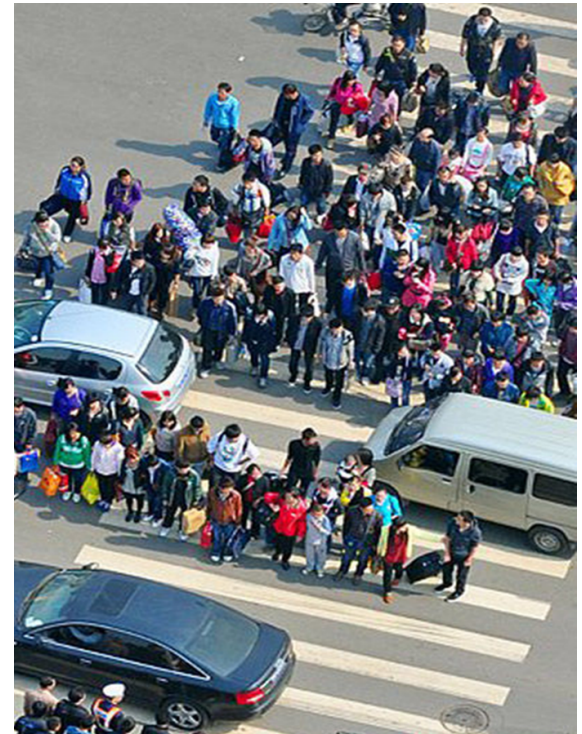
- Protective equipment use
- Helmets & restraints
- Safer vehicle design and adherence to regulations
- Improved ambulance, emergency and trauma care services
- Distracted driving and walking policies





What can be done to protect VRUs?

- Infrastructure that is built considering safety of all road users
- Appropriate (slower) speed limits & speed calming
- Reduce trading & parking on pavements to allow access for pedestrians
- Enforcement of road safety related policies and appropriate penalties (e.g. policy and enforcement of correct helmet wearing, enforcing standards relating to helmet manufacture)
- Increase availability of reliable/affordable public transport (modal shift)



Thank You

Global Road Safety Partnership

c/o International Federation of Red Cross and Red Crescent Societies

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