



Enhanced Safety for Motorcycle Riders

Tejas Chandran

70 Years of Dedication to Saving Lives



Our Vision

Saving More Lives

Our Mission

**Providing World
Class, Life-Saving
Solutions for
Mobility and Society**

Our Ambition

100,000

Lives saved per year

2023 outcome:

35,000 lives saved

More than **450,000** injuries reduced

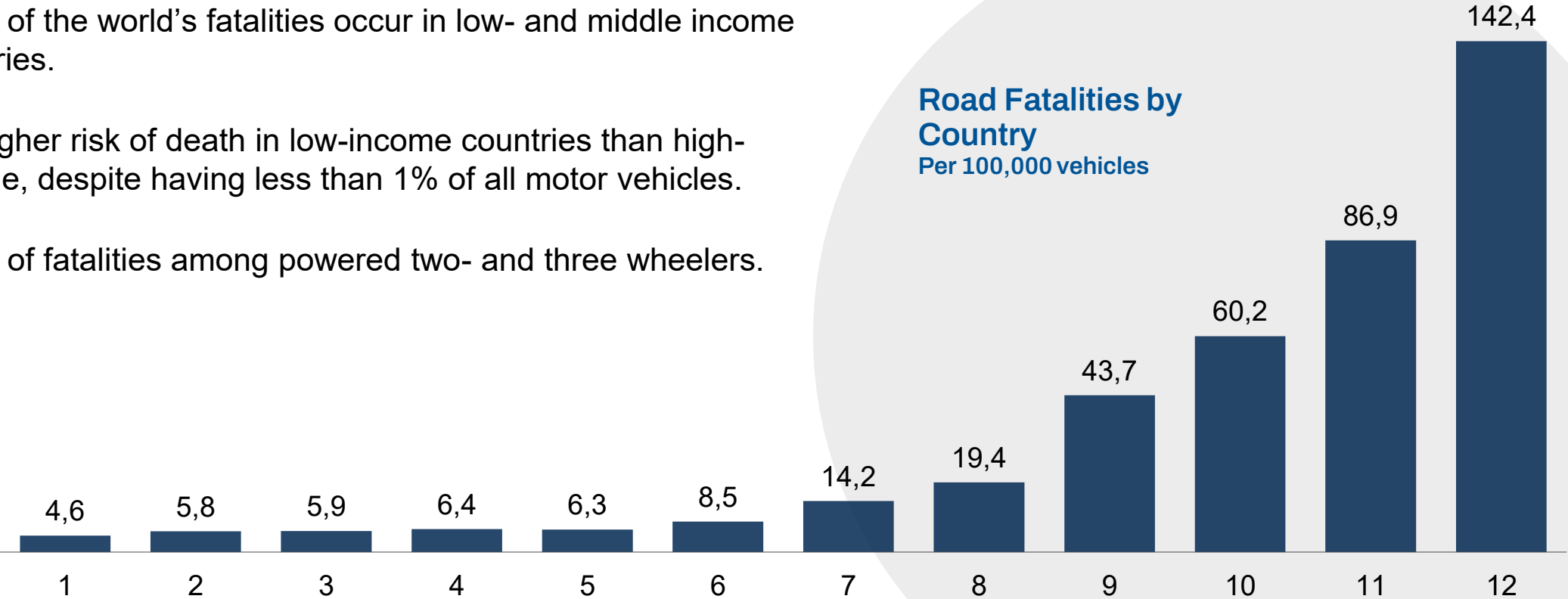


A Long Way to Go to Democratize Traffic Safety

92% of the world's fatalities occur in low- and middle income countries.

x3 higher risk of death in low-income countries than high-income, despite having less than 1% of all motor vehicles.

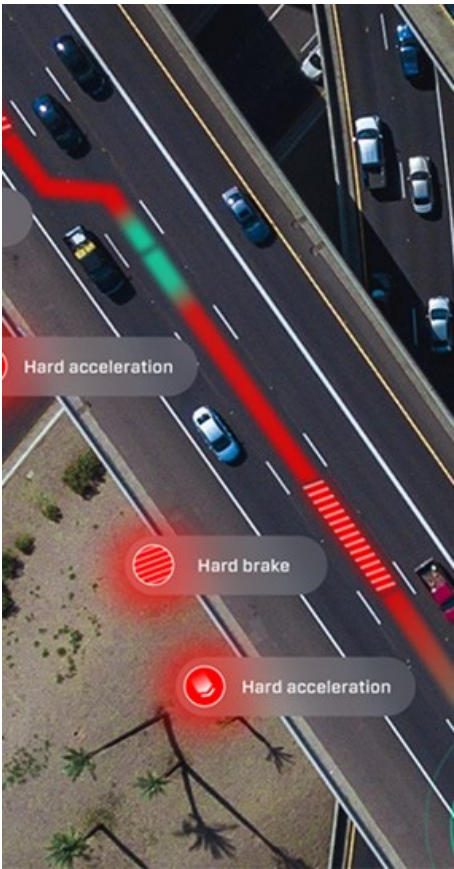
21% of fatalities among powered two- and three wheelers.



Source: WHO Global Status Report on Road Safety 2018, and 2023



Enhancing safety for Motorcycle Riders



Motorcycle Safety – Holistic approach

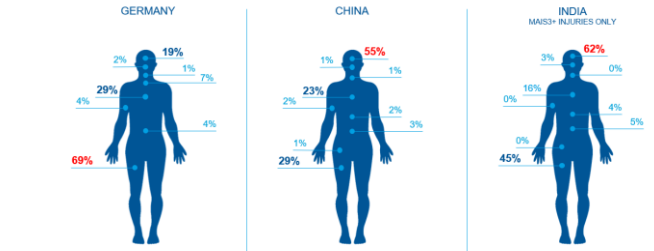


Test Methods / Validation

Countermeasures
On-vehicle | On-rider | Digital



PTW Riders – Most common injuries



Source: Autoliv analysis of GIDAS, CIDAS and RAISS



Autoliv

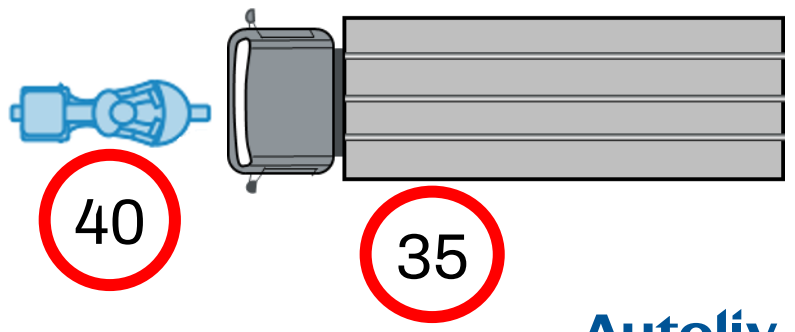
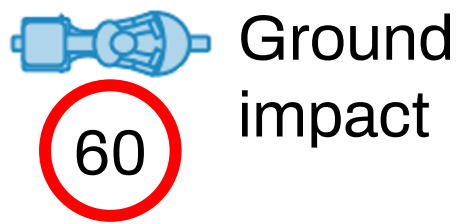
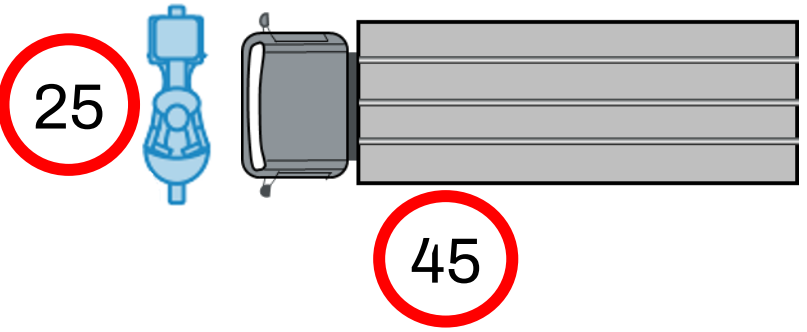
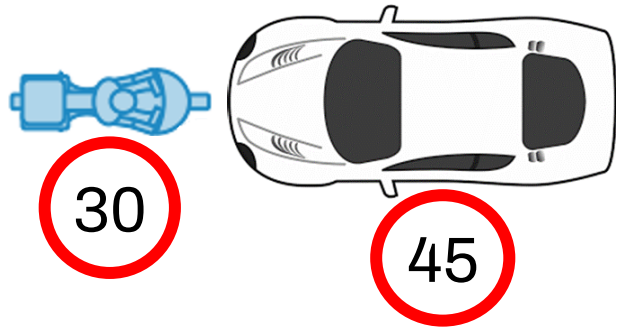
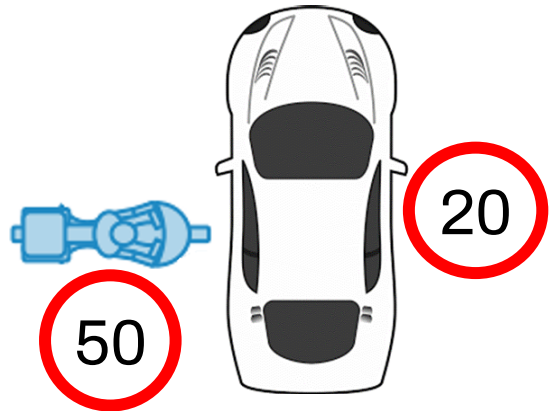
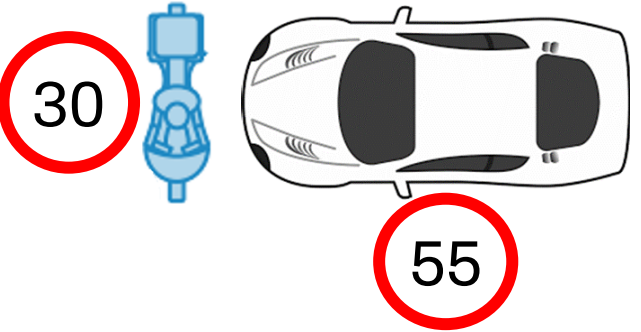
Data Analysis

CAE Simulations / Physical Testing



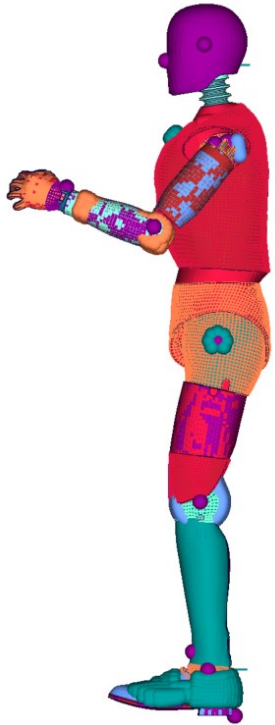
Traffic Safety Research: Most Frequent Load Cases

Source: Puthan et al. (2021). Defining crash configurations for Powered Two-Wheelers: Comparing ISO 13232 to recent in-depth crash data from Germany, India and China

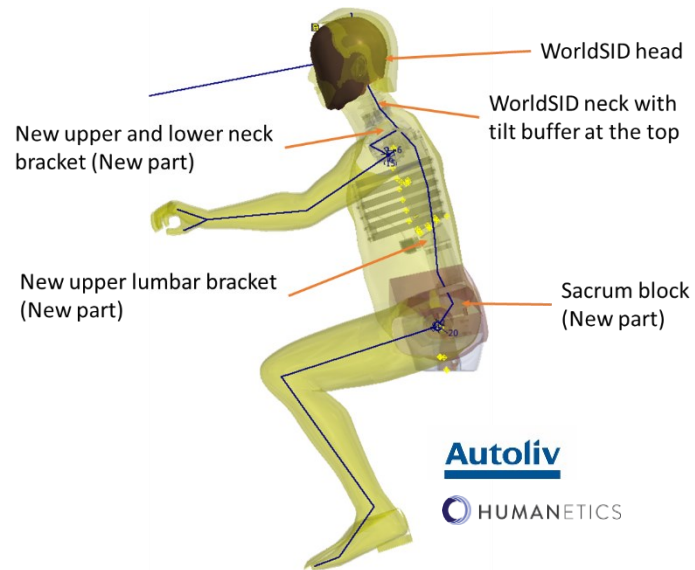


Testing and simulations

CAE Model

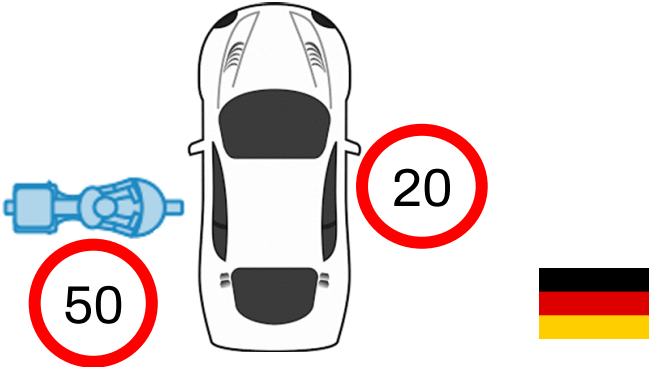


Modified HIII anthropometric testing device



Motorcycle-to-car crash test, partially funded by the Swedish Transport Administration

Physical & Virtual Evaluation



Solutions

On Vehicle Safety

Active and Passive Safety



On Rider Safety

Personal Protective Equipment

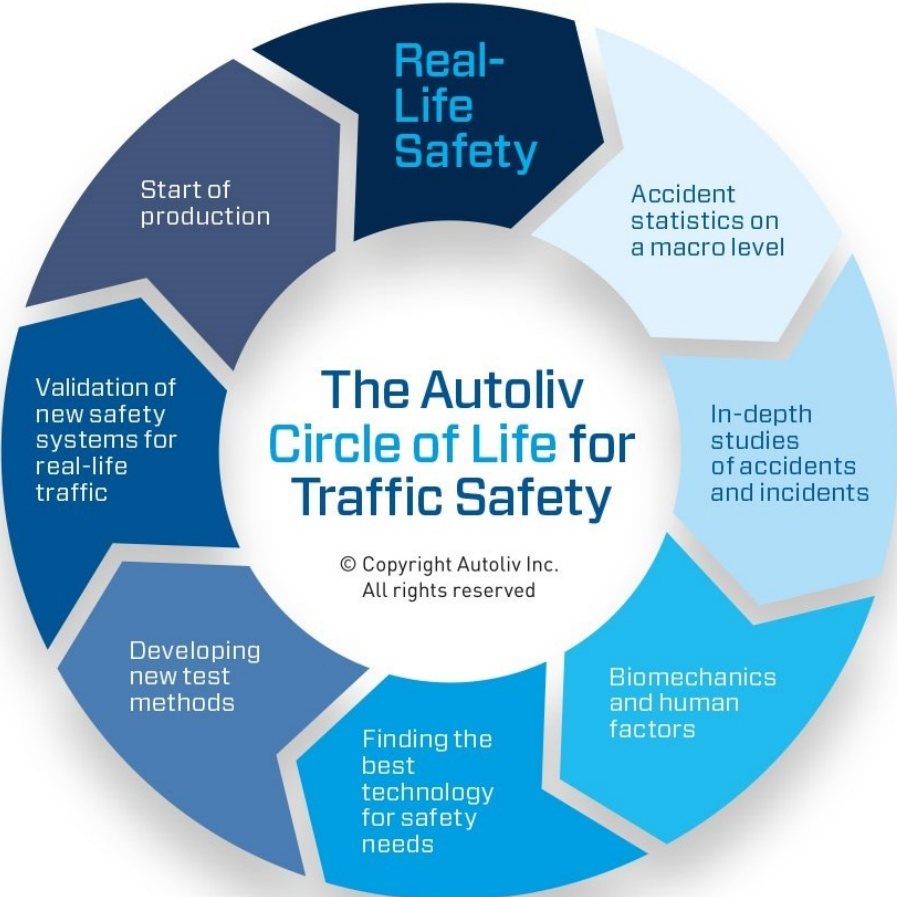


Safety Awareness

Connected Safety Systems



Safe Systems approach – for the safety of all Road Users





Saving More Lives