

Injury Mitigation to Promote Vision-Zero Achievement - IMPROVA

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**Artificial Intelligence
for Road Safety and Mobility Workshop**

8th UN Global Road Safety Week

Athens, 15 May 2025



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The IMPROVA project

IMPROVA

➤ IMPROVA:



"Injury Mitigation to Promote Vision-Zero Achievement"

improva-roadsafety.eu

➤ Project partners:

13 partners across 7 EU countries, involving:
National Technical University of Athens

➤ Duration of the project:

48 months (June 2024 – May 2028)

➤ Framework Program:

This project has received funding from the Horizon Europe programme under grant agreement No GAP-101146652



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Background

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- Every year, **20 to 50 million people** around the world **suffer life-altering injuries** due to road traffic crashes (WHO)
- These are **more than just numbers** - they represent lives forever changed, families disrupted, and communities impacted
- It's time we shift our focus beyond survival to **address the lasting consequences** that diminish quality of life
- We must tackle the long-term consequences (LTC) of road traffic injuries to **truly protect and support all road users**



Objectives

IMPROVA

- Assess the impact of **serious injuries and long-term consequences** (LTCs) from road traffic crashes
- Develop and refine **methods and tools** for virtual testing using Human Body Models (HBMs)
- Improve **risk assessment and prediction** of LTC-related injuries through physical, virtual, and field data
- Support **evidence-based policy** and behavior-change strategies to reduce serious road traffic injuries



Methodological Approach



Expected Results

IMPROVA

- Adapted LTC scales and predictive IMPROVA formula for assessing LTC likelihood
- Structured codebook for collecting LTC-related crash data
- Classification of injury mechanisms linked to long-term consequences
- Enhanced HBM tools and virtual testing procedures for regulatory applications
- Guidelines and recommendations addressing psychological LTCs and supporting consumer safety policies



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- Prevention of **life-altering injuries** beyond the goal of zero fatalities
- Protection of **all road users**, including vulnerable groups like VRUs and PTW riders
- Inclusion of **physical and psychological impacts** in road safety strategies
- Safer **mobility environments** enabled by virtual testing and improved assessment tools
- **Human-centered approach** to long-term road safety and well-being



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Scientific and Social Impact

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- Enriched **scientific understanding** of injury mechanisms and long-term effects
- **Validated tools and models** for predicting LTC-related injuries
- Comprehensive **policy support** addressing both physical and psychological LTCs
- **Cross-disciplinary collaboration** via an open-access knowledgebase forum
- Social reintegration and **mental health focus** for crash survivors



Future Challenges

IMPROVA

- Standardization of **LTC definitions and scales** across data sources and countries
- Integration of **psychological consequences** into traffic safety frameworks
- Uptake of **protective technologies and PPE** among vulnerable road users
- Alignment of **virtual testing methods** with regulatory and consumer programs
- **Sustainability of long-term impact** through training, dissemination, and policy uptake



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