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## Road Safety: Identifying the innovations that provide the best crash injury protection for all

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My vision is that by 2030 the injury protection capacity of new cars in the event of a crash shall be assessed equally for both the female and the male part of the population.

We have a road transport system which causes enormous loss of life and health. In addition to the 1.35 million people killed, approximately 20 to 50 million people are injured on our roads yearly<sup>1</sup>. Many of these injuries cause long-term consequences, resulting in considerable loss in health quality and high socio-economic costs. The safe system approach aims to ensure safe transport for all road users. A key pillar of this approach is that people are vulnerable, and that the road transport system needs to be designed to take this into account. Cornerstones are safe vehicles, safe infrastructure, and safe road users<sup>2</sup>. A lot is known about how we can reduce the loss of life and health, but injury preventive incentives could be stronger.

Demand for safety can, and should, be further stimulated. Related to when and how a crash occurs, we can, better than today, identify the innovations that provide the best injury protection. This will lead to improved innovative countermeasures reducing the loss of life and health in road crashes and will foster sustainable mobility that is safe for all.

Current safety evaluations do not account for our physical differences. Testing is restricted to a small number of crash tests, focusing on the 50th percentile male dummy (height: 175 cm; weight: 78 kg). In addition, in the global regulation applied in EU, the UNECE<sup>3</sup>, it is required that an average male model is used as the driver in all tests. Ideally, all safety assessments should account for sex, body height and weight, as well as age (ranging from younger to older) to ensure occupant protection for all.

A step in the direction of safety assessment that includes both the female and male part of the adult population has recently been taken in the EU-funded project VIRTUAL, where several FERSI partners participated<sup>4</sup>. In this project, both virtual models of the human (the VIVA+ models) and physical models (the Seat Evaluation Tools, SETs) were developed for enhanced safety assessment. Both average female and male models of the VIVA+ and the SETs were developed in addition to cost benefit analysis tools. In addition, the models and tools are provided open source to maximise the usage and sharing of knowledge. By working together with industry, as partners in the project, the likelihood of that knowledge being transferred into real life safety was maximized.

We should, and need to, work harder together so that our children and grandchildren will live in a society where losing life and health on the roads is as uncommon as being killed or injured in or by a crashing airplane.

*This column is written in a personal capacity and reflects only the author's view.*

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<sup>1</sup> WHO (2018). WHO's Global status report on road safety, 2018, <https://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries>

<sup>2</sup> European Commission (2022) Road Safety Thematic Report – Safe System Approach. European Road Safety Observatory. Brussels, European Commission, Directorate General for Transport.

<sup>3</sup> <https://unece.org>

<sup>4</sup> [www.projectvirtual.eu](http://www.projectvirtual.eu), [www.ovto.org](http://www.ovto.org)