

Reducing speed: Why does it matter so much?

Pay-as-you-speed – an insurance initiative to reduce speed

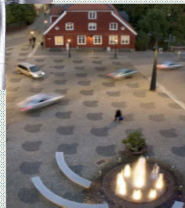
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Adj. Professor, Chalmers

Folksam

The road transport system

Cars/vehicles

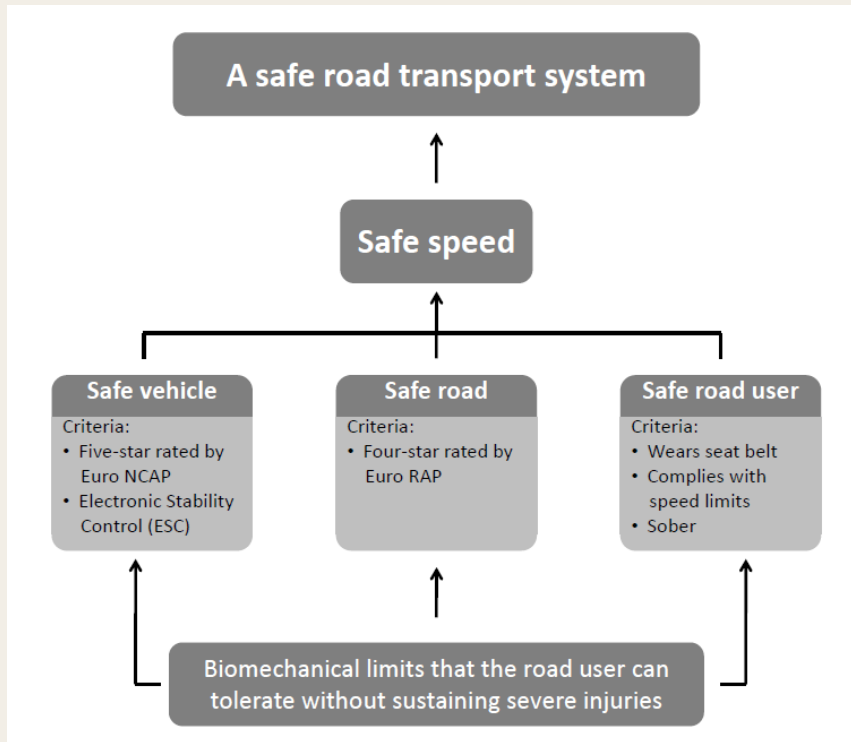


Roads



Road Users

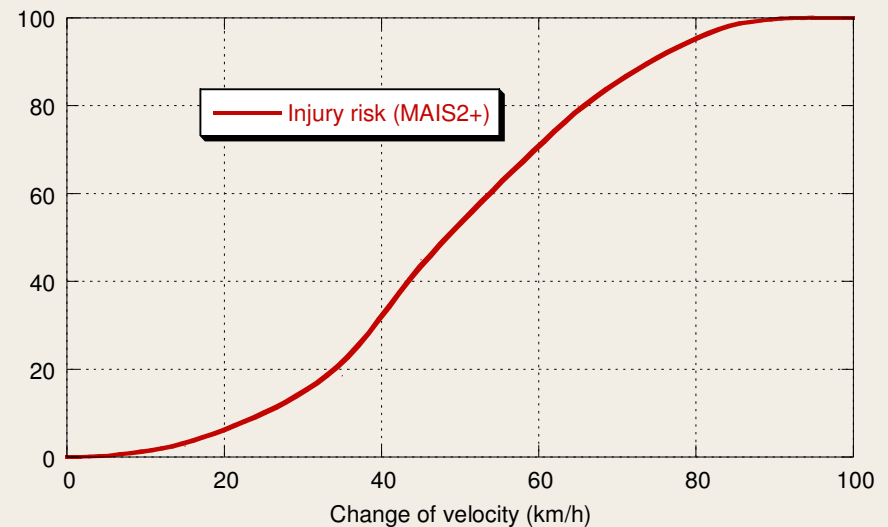
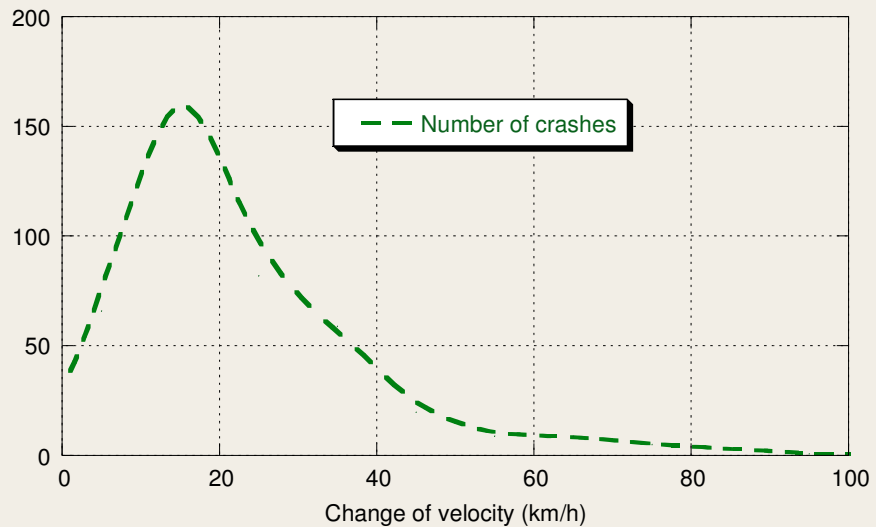
Criteria for designing a safe road transport system



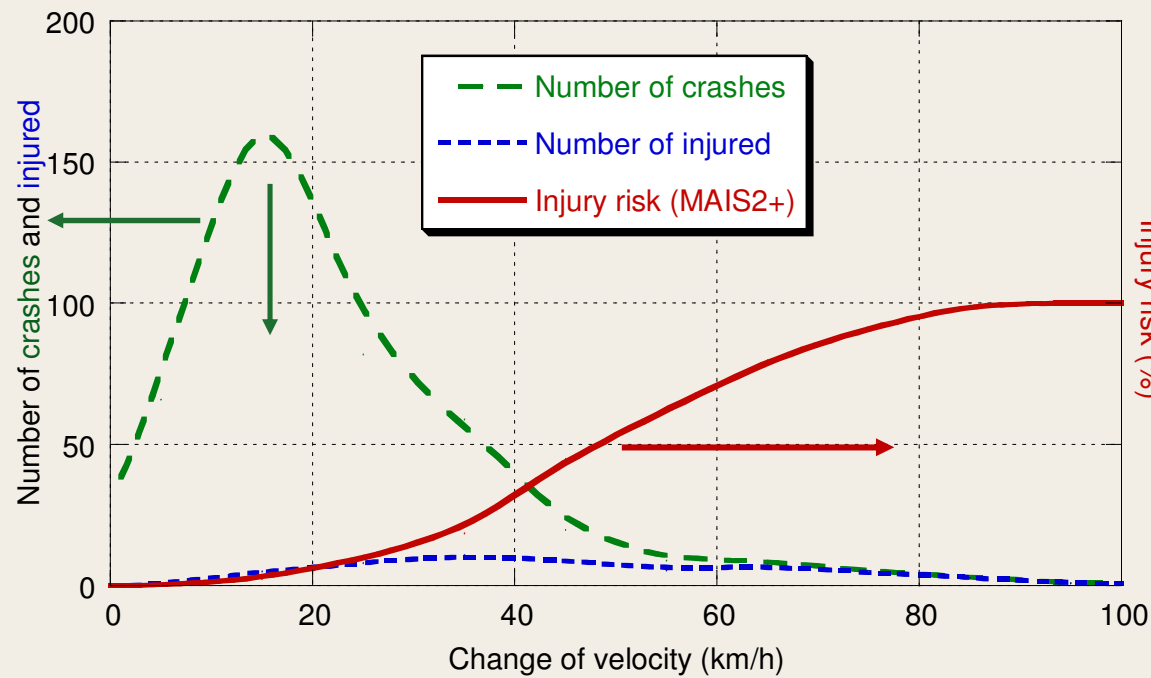
- Human injury tolerance to forces
- Speed and acceleration

Influence of speed on injury risk

Analysis based on dose-response models using crash recorder data



Number of injured as a function of distribution and injury risk



- Reducing injury risk – safer vehicles and roads
- Reducing crashes
- Reducing speed

Influence of reduced impact speed

Dose-response model

Reduction of 10 km/h

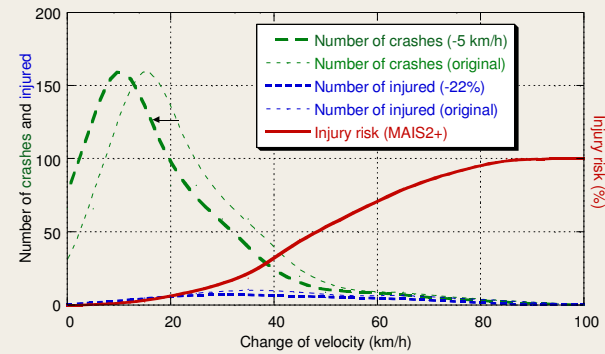
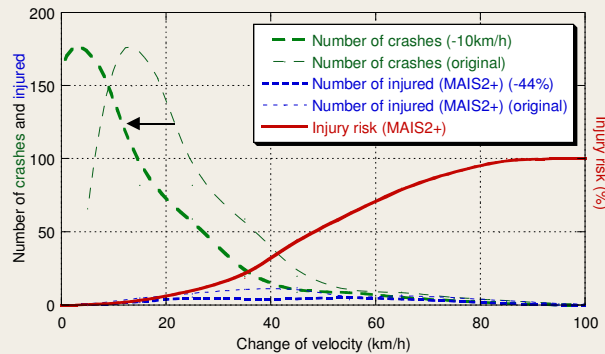
⇒ 40 % reduction of severely injured

Reduction of 5km/h

⇒ 20 % reduction of severely injured

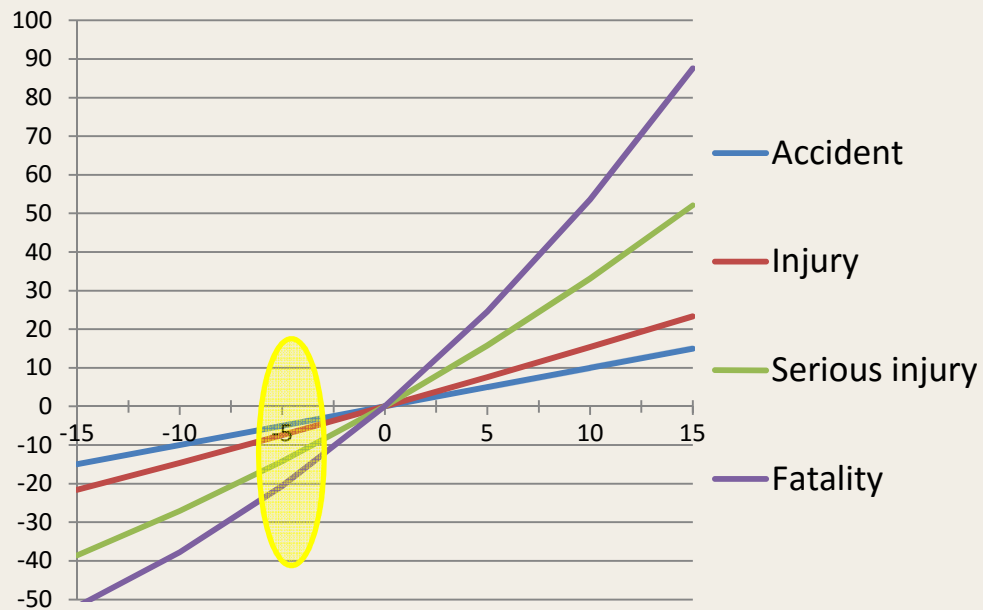
Reduction of 2,5 km/h

⇒ 10 % reduction of severely injured



Importance of reducing speed

Power models



Percent difference in average speed	Accident	Injury	Serious injury	Fatality
Power 1	1	1,5	3	4,5
-15	-15	-22	-39	-52
-10	-10	-15	-27	-38
-5	-5	-7	-14	-21
0	0	0	0	0
5	5	8	16	25
10	10	15	33	54
15	15	23	52	88

Some ways to reduce the impact speed

- AEB (Autonomous Emergency Braking) and other advanced driver support technologies
- Enforcement – Speed cameras, police
- Information
- Insurance solution – "Pay-as-you-speed"

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“Green light” – a pilot of “Pay as You Speed” concept

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Pay as You Speed – ISA with incentive for not speeding

- Is it possible to change driver behavior by economic incentives and thereby reducing crash risk and CO₂ emissions?
- Started 2010
 - Folksam, the Swedish Transport Administration and MHF (a major Swedish motor club)
 - PAYS concept with informative ISA linked to economic incentives for not speeding

One year trial with over 200 drivers

- Target group included members of the Swedish Motor Club MHF
- The participants were private Folksam customers
- Randomized trial
 - 141 participants in the test group
 - 86 participants in the control group





The ISA (Intelligent Speed Adaption) system

- Informs the driver of the speed limit and warns the driver only visually when the speed limit is being exceeded
- Based on a GPS receiver, continuously identifies the position of the vehicle, connected to a national road database including the speed limits of the national road network
- The system is automatically activated when the engine is started
- Records speeding measured through automatic count of whenever speed limit is exceeded

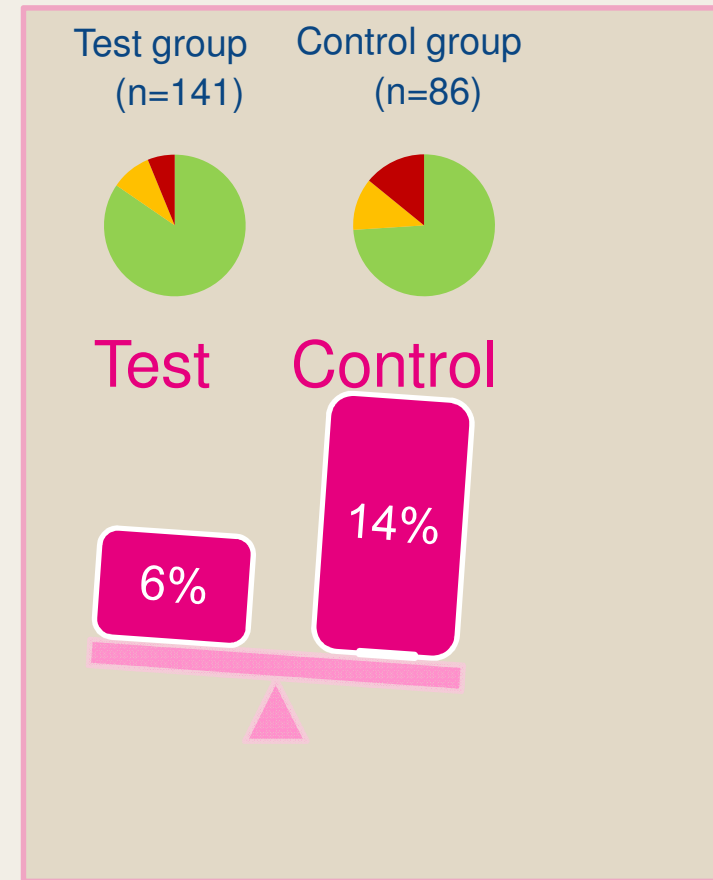


Economic incentives

- Maximum 30% discount of the insurance premium for drivers with less than 1% of the distance driven above the speed limit
- Participants in the control group got 20% discount regardless of their driving behavior

Results – test group lower proportion of speeding

- More than 50% reduction in speeding
- The higher speeding the larger reduction
- Constant over time





Effect on saved road casualties if all cars were fitted

- 20% reduction of fatalities
(40 - 60 per year in Sweden)
- 5-10% reduction of severely injured
(200 – 300 per year in Sweden)

Acceptance of Green Light

- 9 out of 10 - Green Light is an effective tool to keep speed limits
- 1 out of 5 annoyed of the digital maps (when posted speed limit didn't correlate with the ISA)
- Only a few - integrity threat and 8% lower "freedom"
- 75% would be interested in an insurance product of this kind

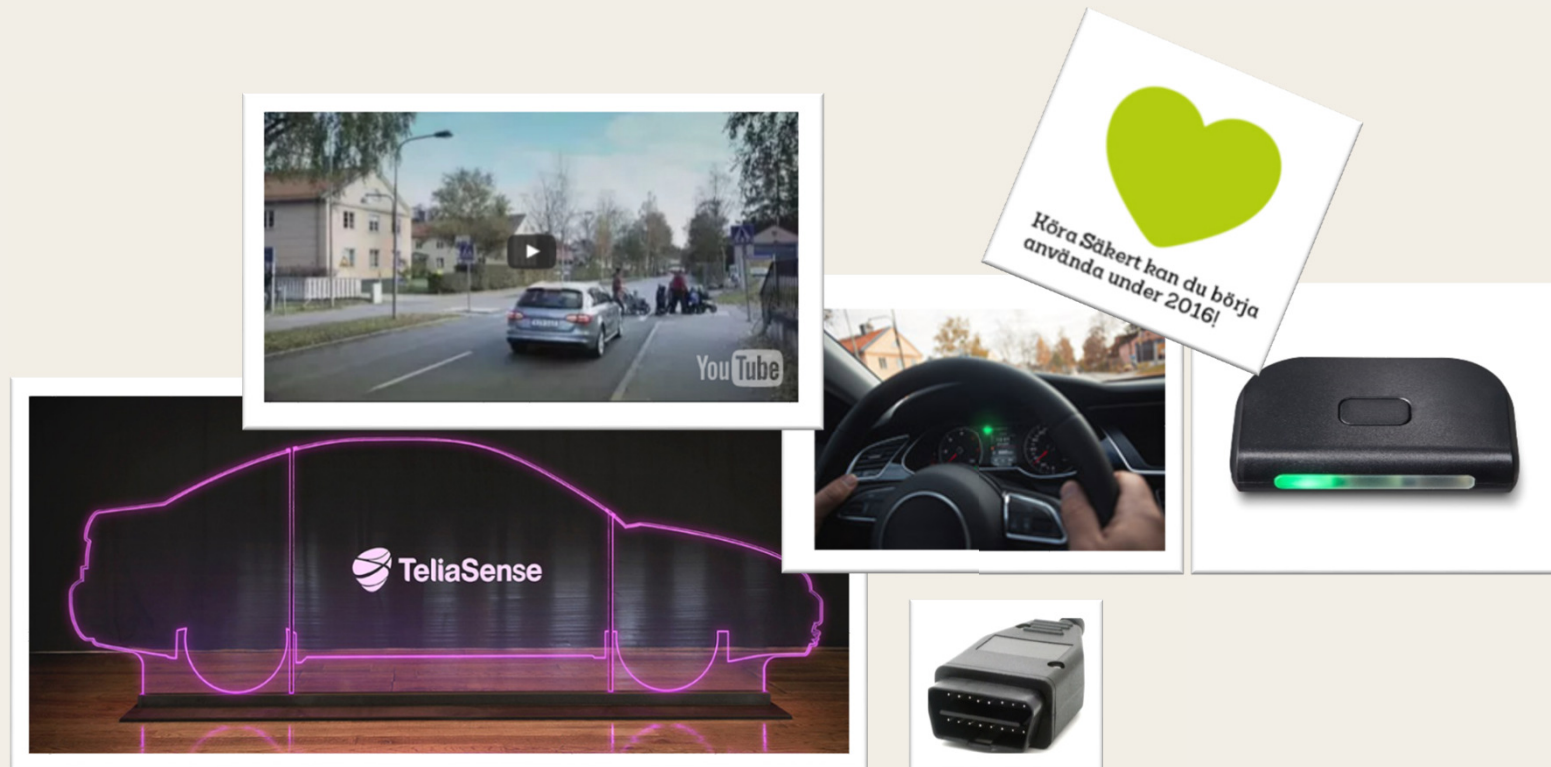




Findings Pilot Green Light

- ~20% fatality reduction
- Lower CO₂ emissions ~300 kg CO₂ per year
- Lowered costs for customers ~300 € per year
- Very little influence on travel time (< 1 min/hour travelled)
- 9 out of 10 test drivers like the system

Folksam "Köra Säkert"- a connected insurance



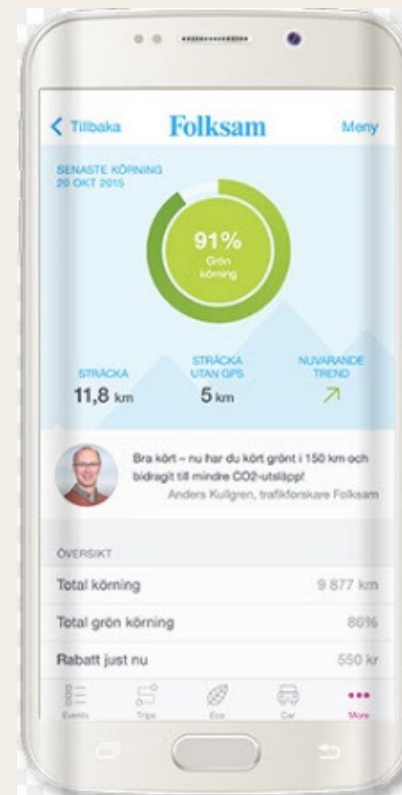
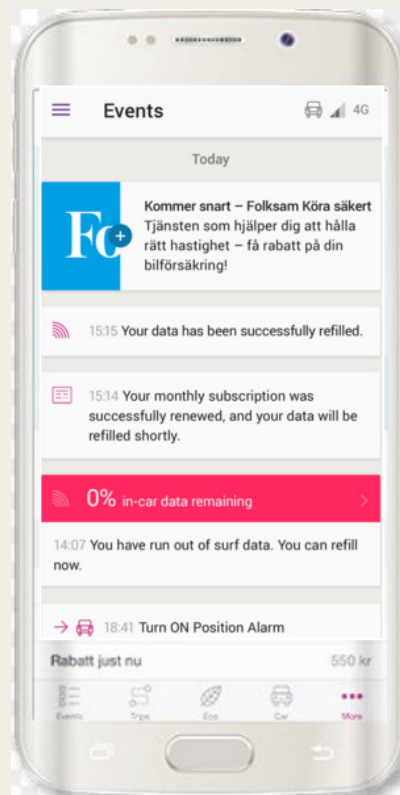
Source: Folksam's Köra säkert, www.telia.se

The indicator – supports you to keep the speed limit

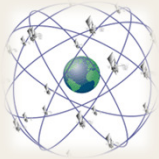
- The indicator is easily installed in the vehicle and gives immediate feedback on speeding
- **Green** light means that you are keeping the speed limit. **Yellow** or **Red** means – slow down! (**Red** = +5 km/h)
- The driver data is collected via Teli Sense and is the basis for possible premium discounts depending on your ability to keep the speed limit.
- The discount and driving data is presented in an app making it possible for you to see how your driving behaviour is affecting your insurance premium.



Feedback in the app



GPS



NVDB (digital map)



Research & Pricing

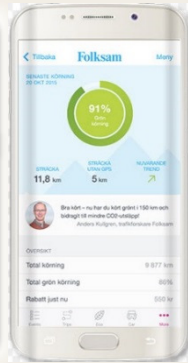


Folksam database

5
Forsäkringsskade
Bilförbrukning för
Folksamäggarare

År	Pris
2015	7 150 kr
2016	7 150 kr
2017	7 150 kr
2018	7 150 kr
2019	7 150 kr
2020	7 150 kr
2021	7 150 kr
2022	7 150 kr
2023	7 150 kr
2024	7 150 kr
2025	7 150 kr
2026	7 150 kr
2027	7 150 kr
2028	7 150 kr
2029	7 150 kr
2030	7 150 kr

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Thank you for your attention

