Reducing speed: Why does it matter so much?
Pay-as-you-speed – an insurance initiative to reduce speed

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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

![Graph 1: Number of crashes vs. change of velocity (km/h)](image1)

![Graph 2: Injury risk (MAIS2+) vs. change of velocity (km/h)](image2)
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  Reduction of 5km/h  Reduction of 2,5 km/h
⇒ 40 % reduction of severely injured  ⇒ 20 % reduction of severely injured  ⇒ 10 % reduction of severely injured
Importance of reducing speed
Power models

<table>
<thead>
<tr>
<th>Percent difference in average speed</th>
<th>Accident</th>
<th>Injury</th>
<th>Serious injury</th>
<th>Fatality</th>
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<tbody>
<tr>
<td>Power 1.5</td>
<td>-10</td>
<td>-10</td>
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</table>
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"
Folksam

“Green light” – a pilot of “Pay as You Speed” concept
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 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 Telia 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
Thank you for your attention