

Driver fatigue in Switzerland

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Uwe P. Ewert, PhD MPH, Research Associate
u.ewert@bfu.ch – www.bfu.ch

Structure

- Causes of driver fatigue
- Judicial aspects
- Accident statistics
- Prevention campaign
- Evaluation
- Conclusion

Causes of driver fatigue

- Lack of sleep
- Circadian rhythm
- Long-term demands
- Sleep disorders (insomnia, apnoea, depression)
- Substance abuse (medication, drugs, alcohol)
- Environmental factors (monotonous driving, warm temperatures)

Judicial aspects

«Everybody has to behave in traffic in such a way that he does not hinder or endanger others in orderly using the roads.» (art. 26, Road Traffic Law)

«A person that ... does not have the necessary physical and mental capability may not drive a vehicle.» (art. 31, Road Traffic Law)

«A person that is not able to drive because of overfatigue, influence of alcohol, medication or narcotics or any other reason may not drive a car (art. 2, Traffic Regulation Ordinance)

There is no further explanation when somebody is considered overfatigued.

Judicial aspects

- There have been several decisions of the federal court that include the basic conviction that fatigue can not be unnoticed by the driver.
- There is some doubt from the medical side that this is indeed the case.
- The responsibility is solely on the side of the driver.

Accident Statistics

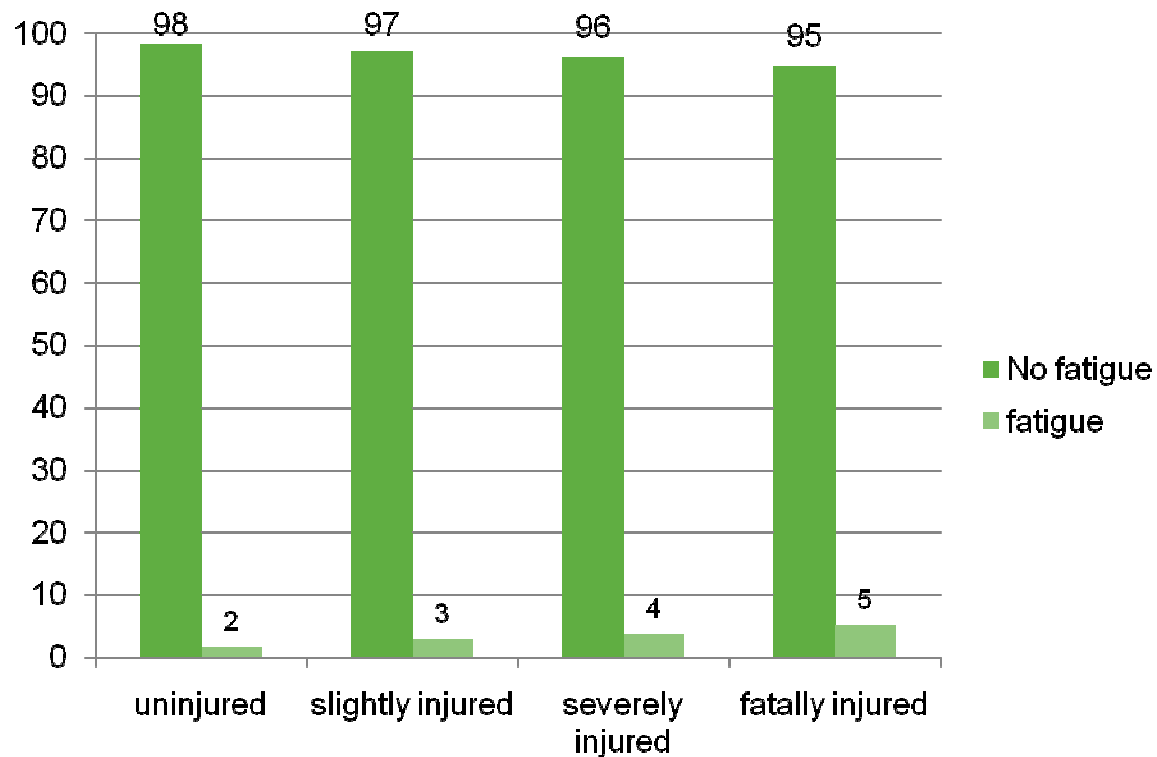
- In the Swiss accident statistics we have so-called insufficiencies or deficits, considered as possible causes
- Deficits can relate to
 - the driver
 - external influences (road)
 - technical problems of the vehicle or
 - traffic regulations that were not observed
- Deficits are attributed to the object (vehicle) i.e. normally the driver
- Categorized by policemen
- Used as a proxy for being at-fault
- Not identical to the final judicial decision who caused the accident

Accident statistics

- According to the Swiss data, accidents due to fatigue are rare: 1.8% of all persons registered were involved in crashes due to fatigue
- Much less than mentioned in the literature: usually 10 – 20%
- Difficult for the police to identify fatigue as possible accident cause

Accident statistics

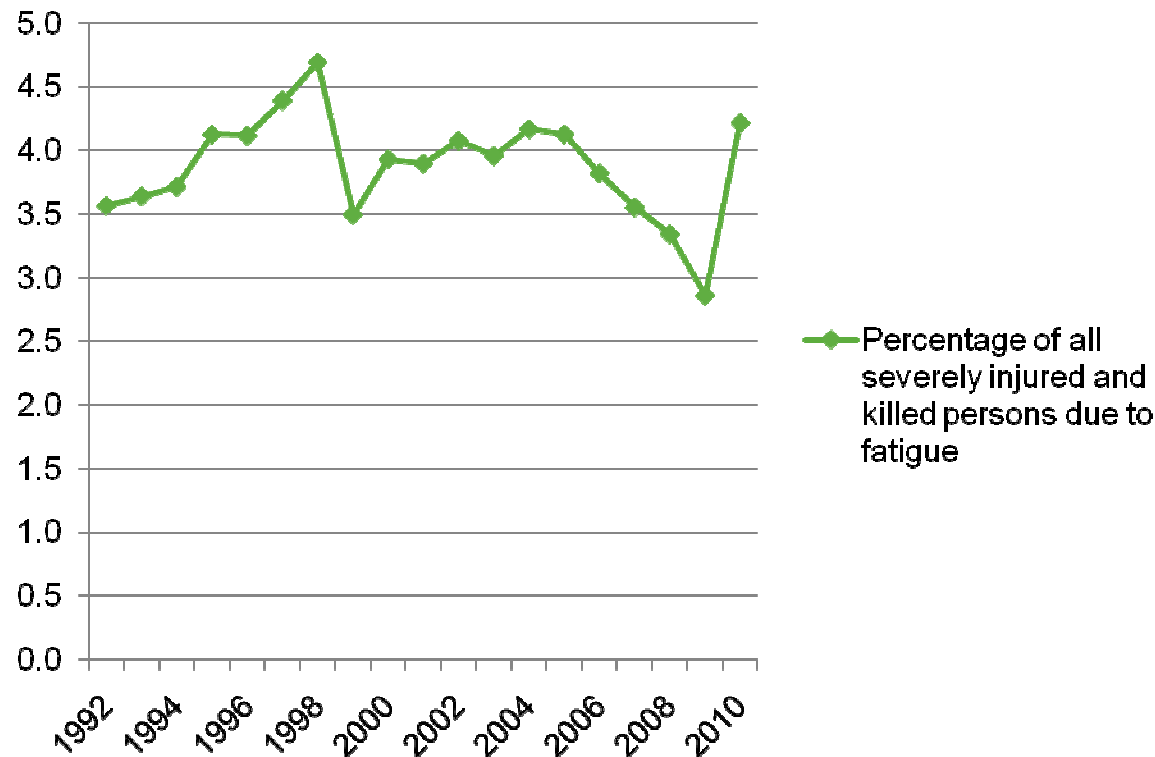
Percentage of fatigue increases with severity



Further analyses include only fatally and severely injured persons

Accident statistics

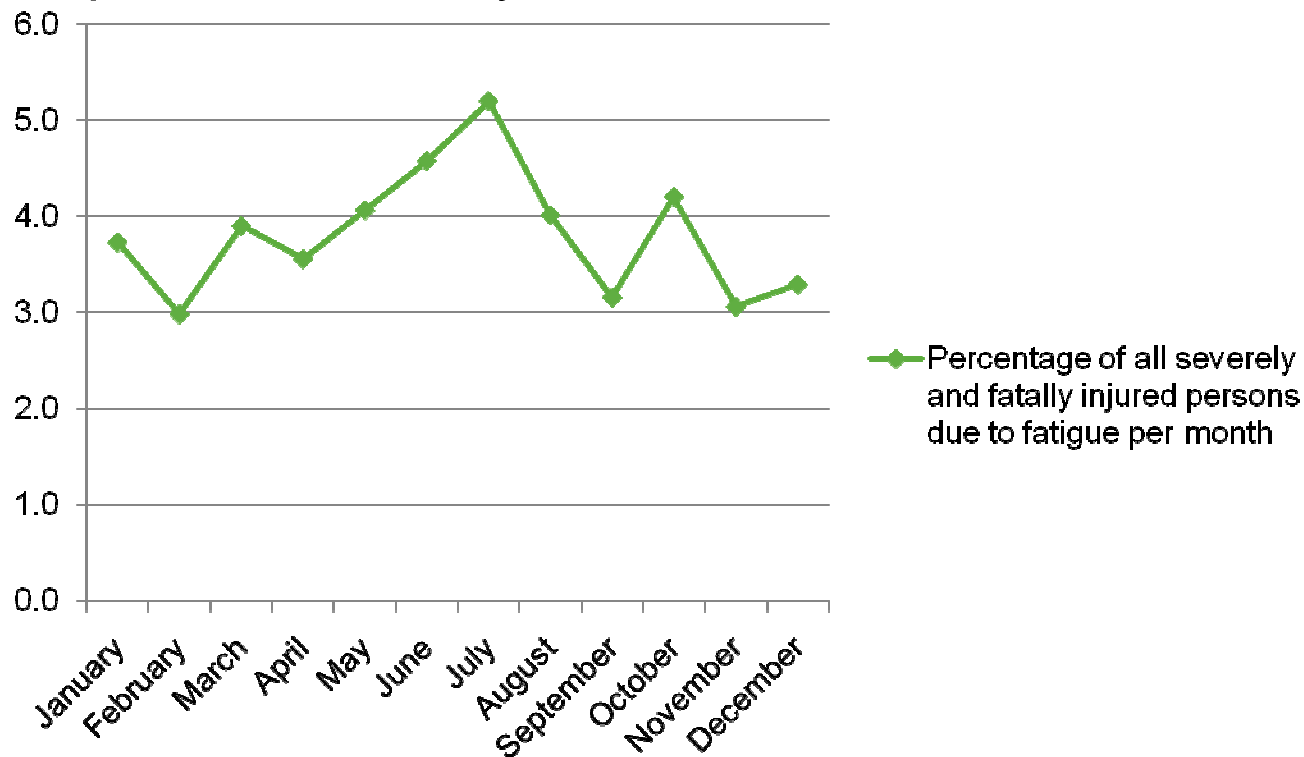
- Development over time



- No clear trend, increase in 2010 possibly due to new protocol

Accident statistics

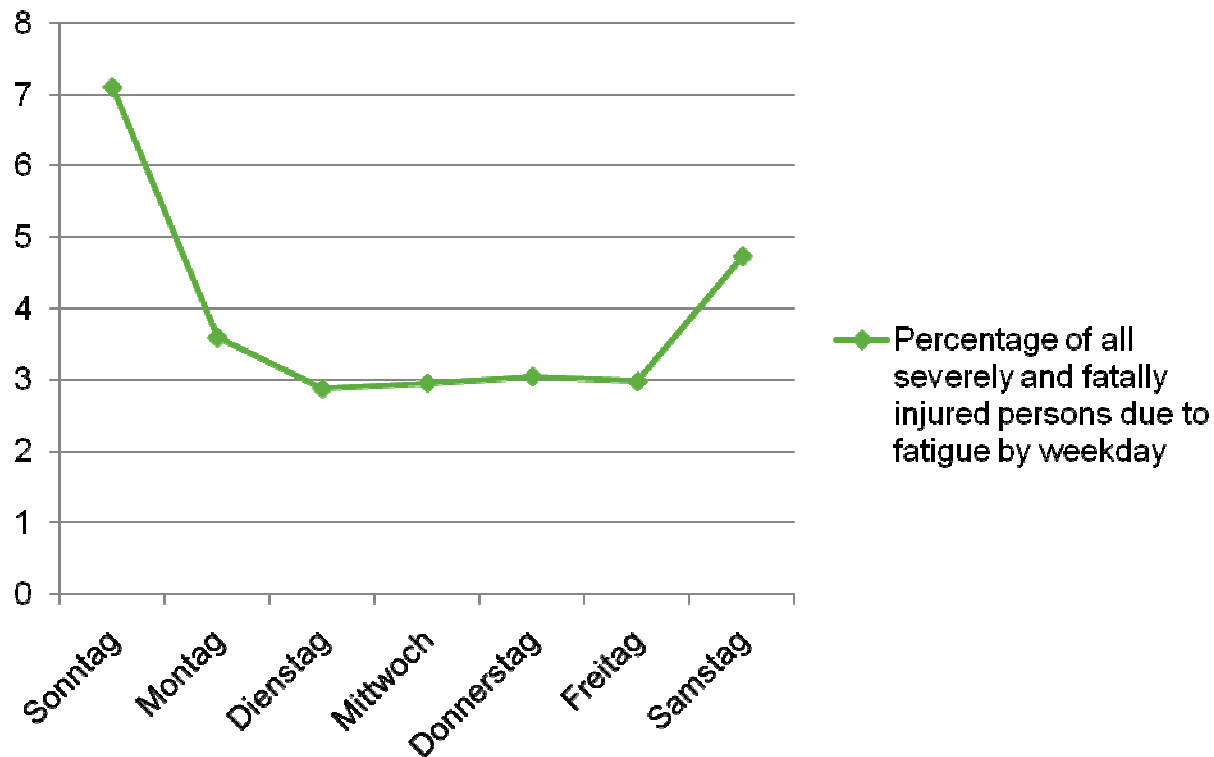
- Development over the year



- Peak in the summer months, low in winter

Accident statistics

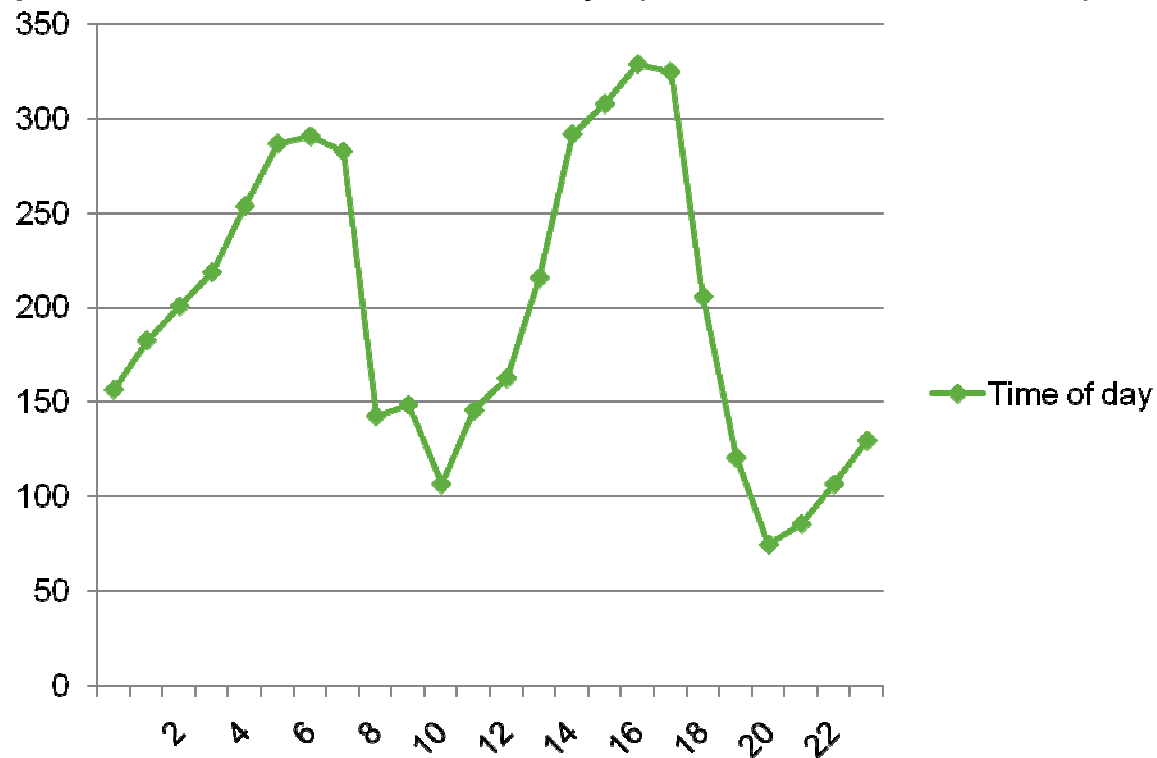
- Development over the week



- Peak on the weekend, especially sunday

Accident statistics

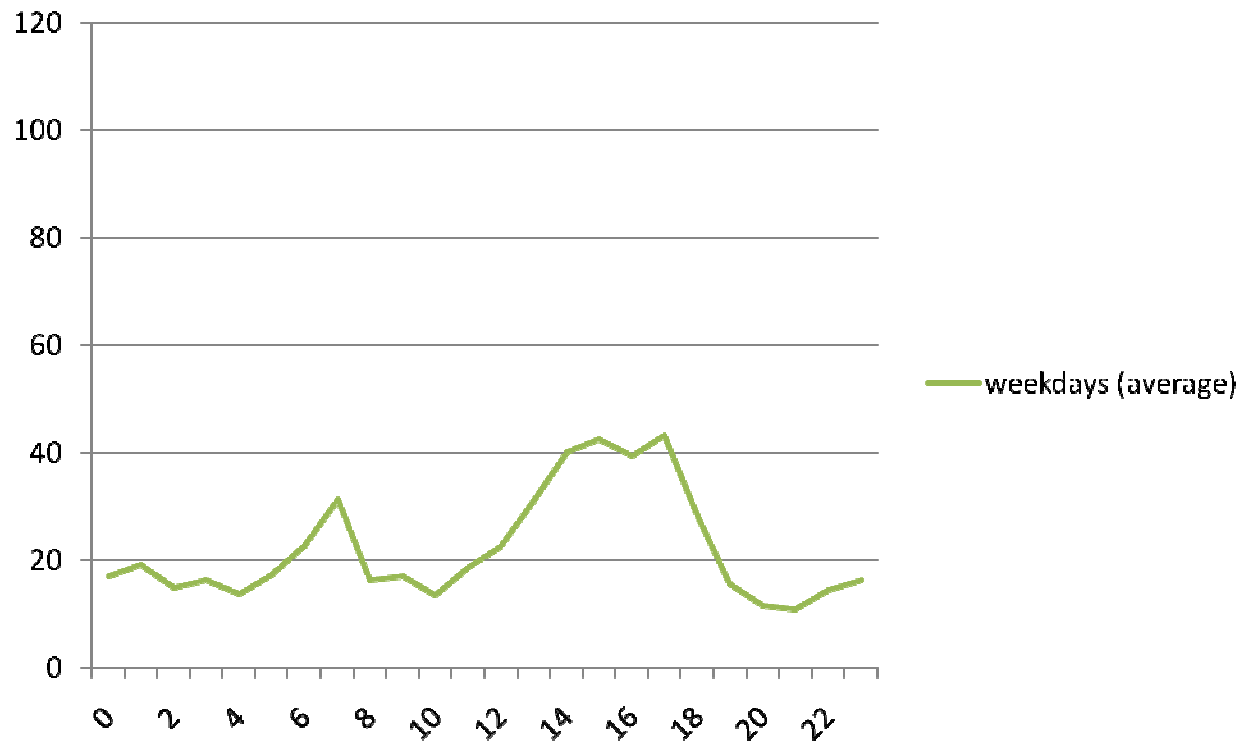
- Development over time of day (number of cases)



- Two peaks: early morning and afternoon

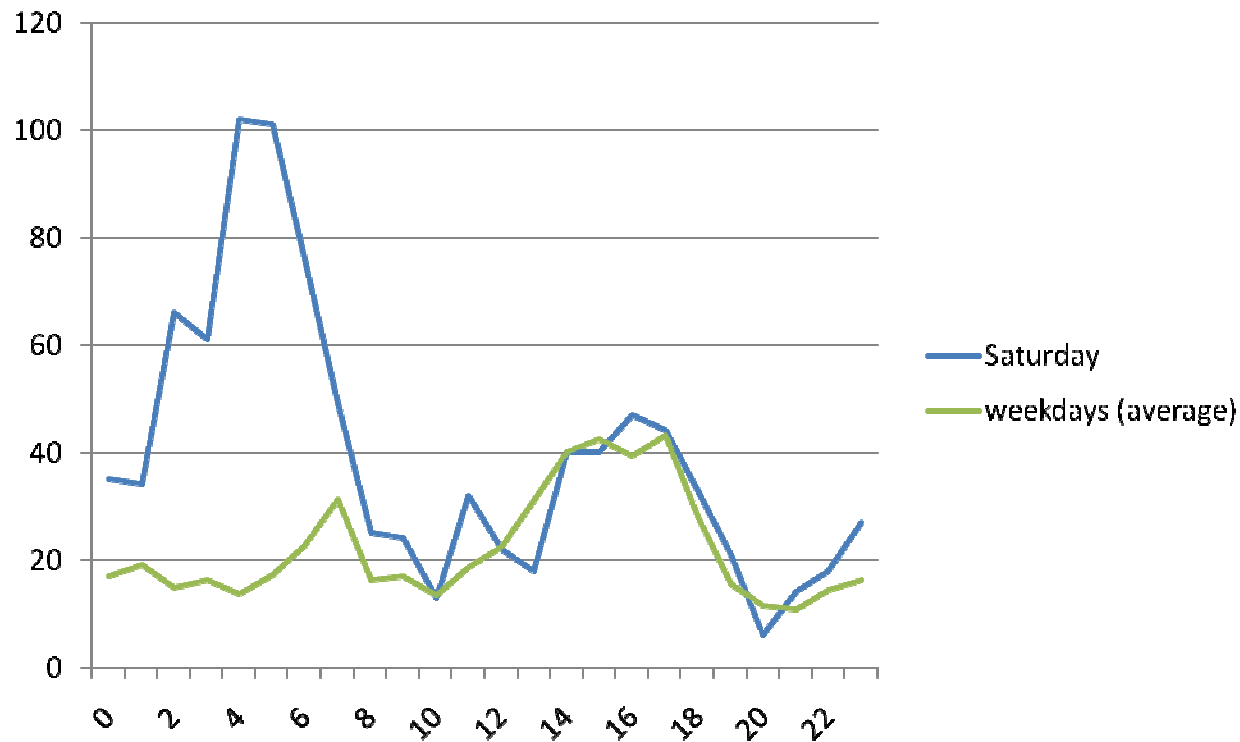
Accident statistics

- Development time of day and day of week (number of cases)



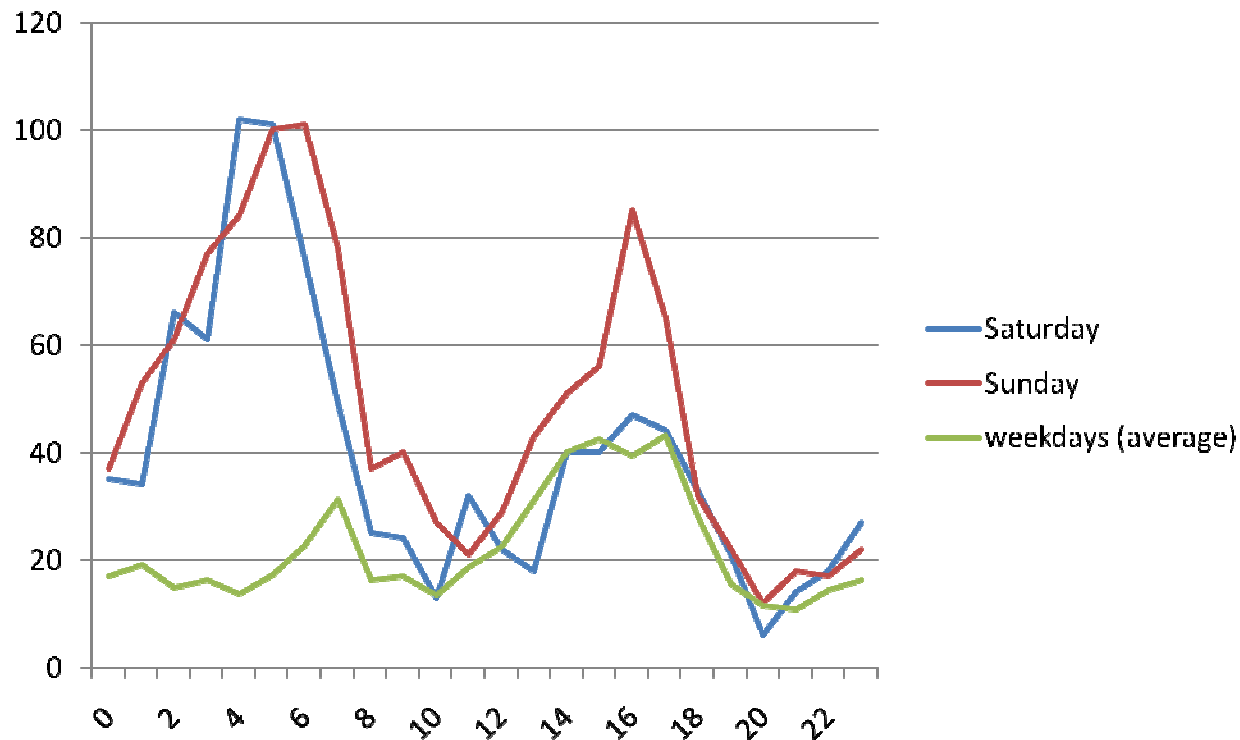
Accident statistics

- Development time of day and day of week (number of cases)



Accident statistics

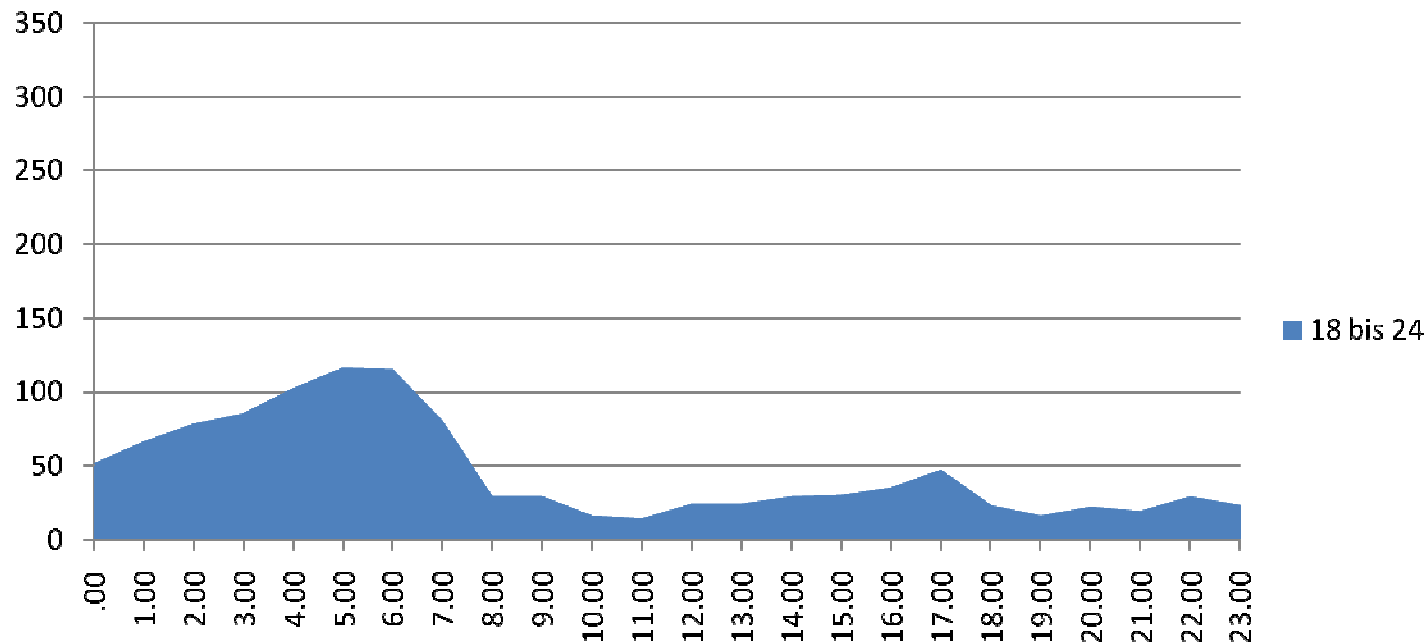
- Development time of day and day of week (number of cases)



- Peak in weekend nights and all afternoons (esp. sunday)

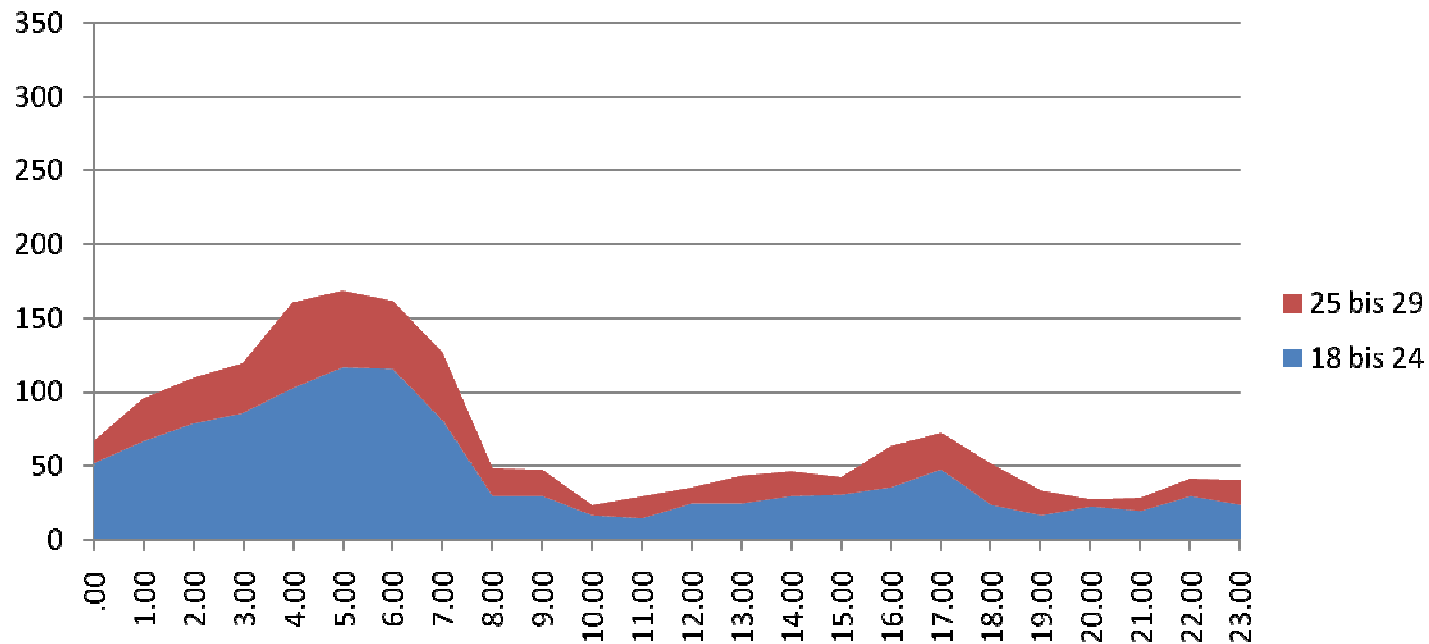
Accident statistics

Killed and severely injured by time of day and age (number of cases)



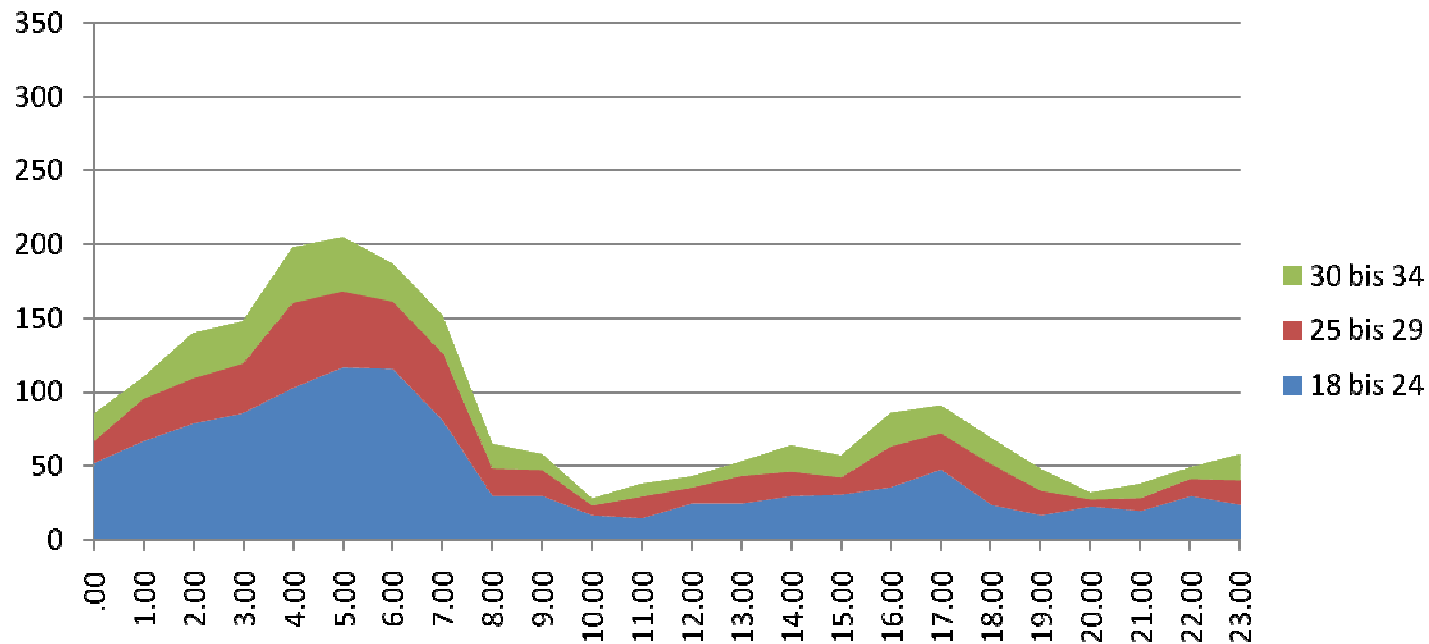
Accident statistics

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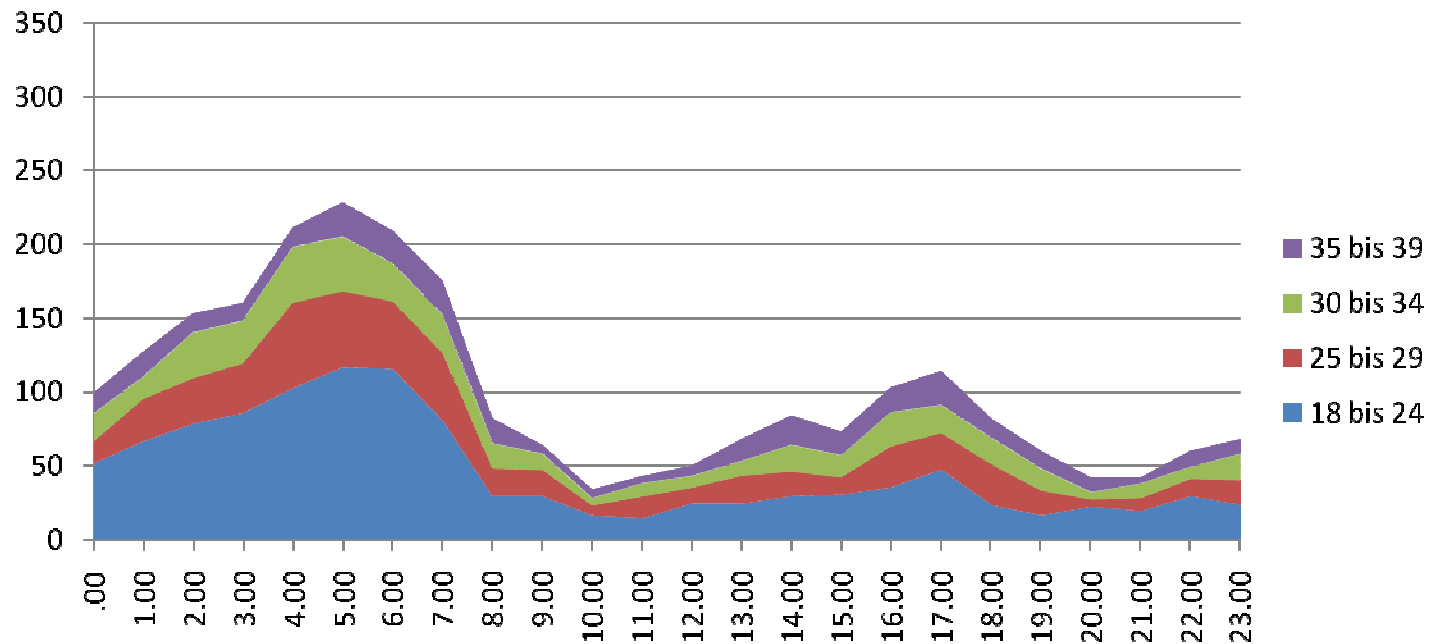
Accident statistics

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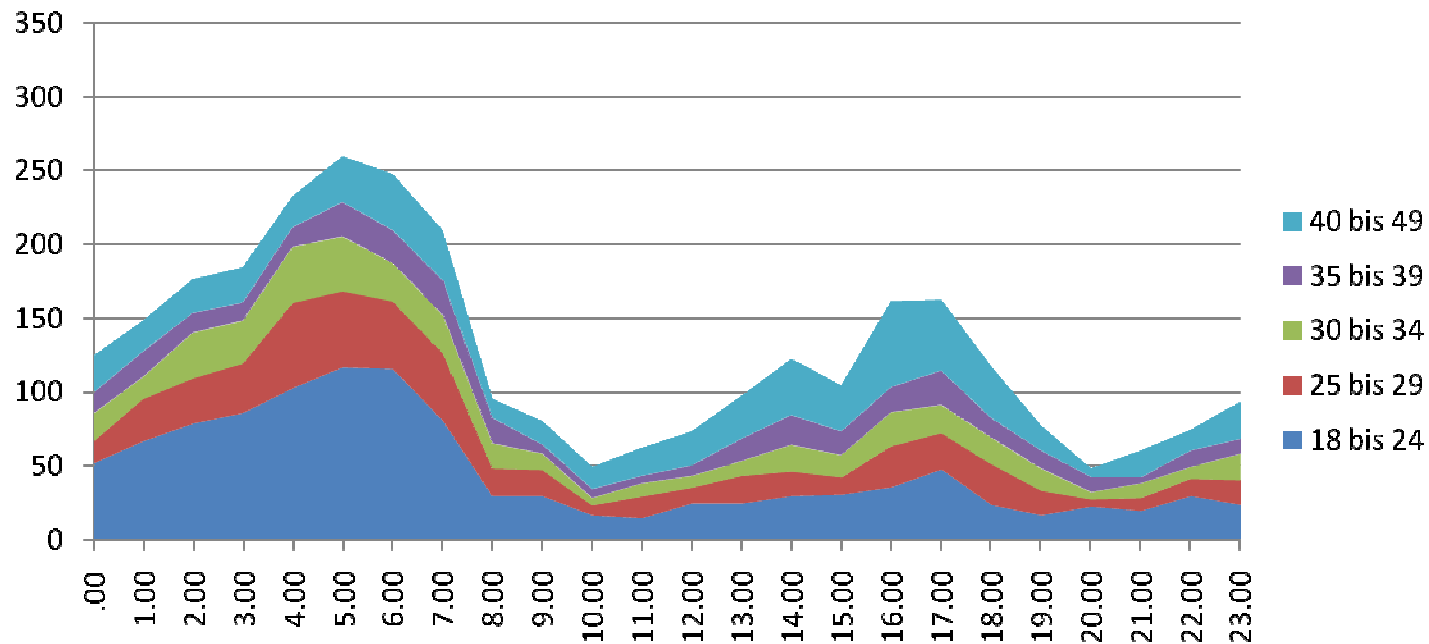
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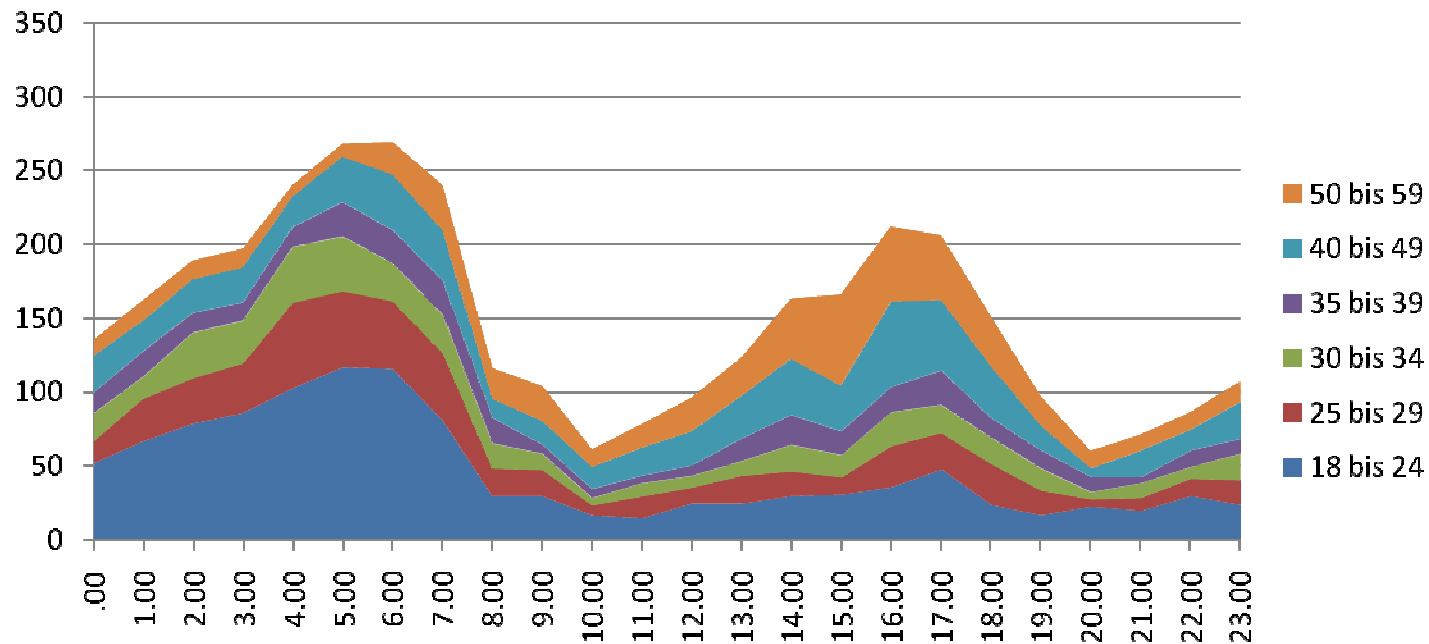
Accident statistics

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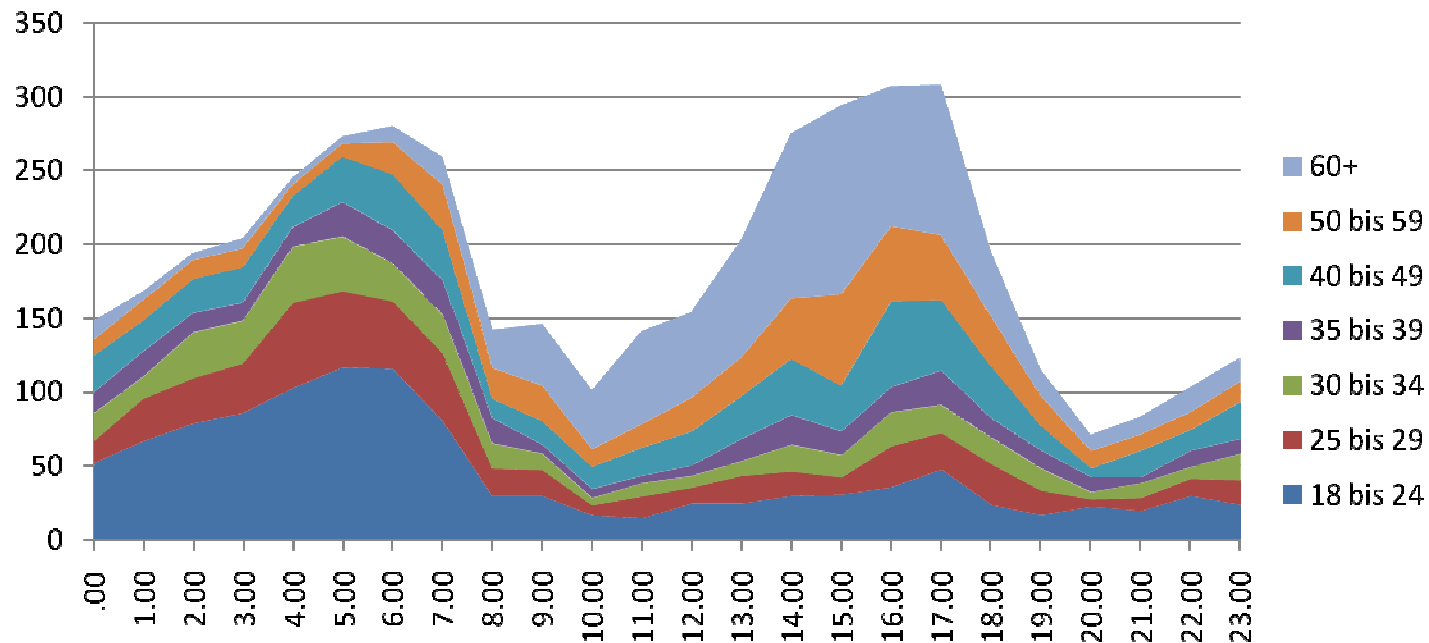
Accident statistics

Killed and severely injured by time of day and age (number of cases)



Accident statistics

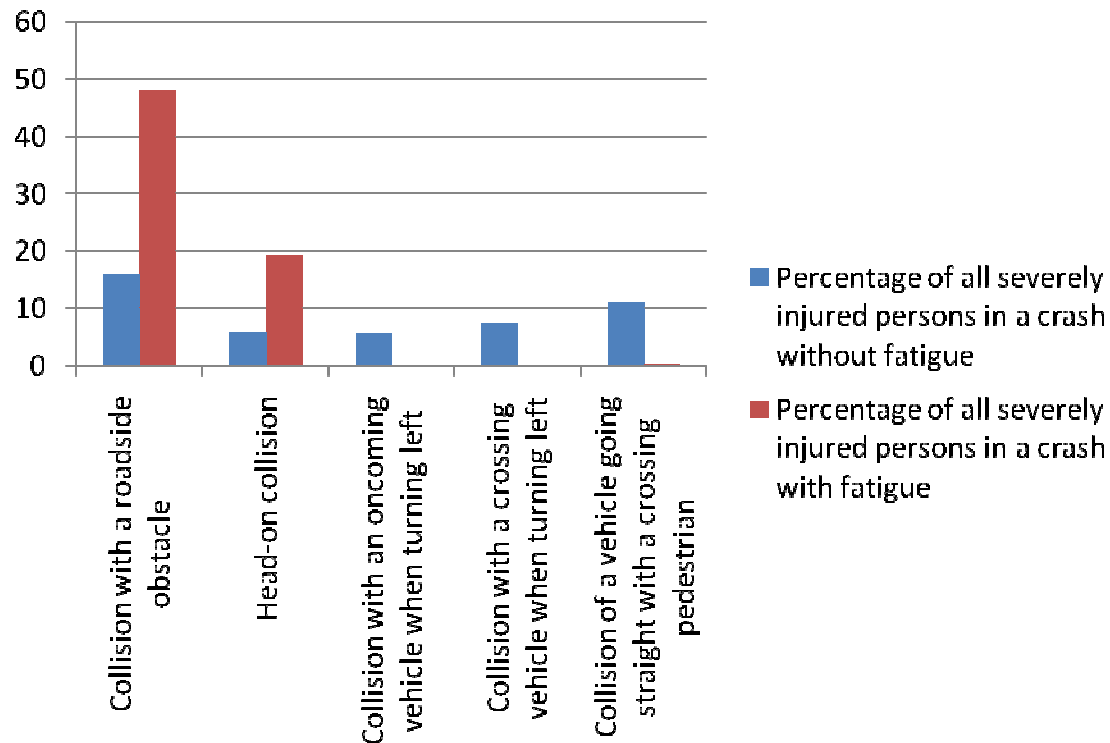
Killed and severely injured by time of day and age (number of cases)



Nighttime crashes by younger drivers, afternoon crashes by older drivers, turning point around age 35

Accident statistics

- Type of accident



- Especially collisions with roadside obstacles and head-on

Accident statistics

- By far the most typical car involved in a crash due to fatigue is the passenger car – 82% compared to 36% in other severe crashes (very few pedestrians, bicyclists and motorcyclists)
- Males somewhat higher percentage (4.0% versus 3.7%)
- Higher percentage of seat belts used in severe fatigue crashes (52% versus 63%)

Prevention campaign

What can actually be done against fatigue?

- Sufficient sleep
- Appropriate sleeping behavior (within circadian rhythm)
- Check for medical problems and treat them
- Power nap when needed
- Consume caffeine in sufficient amounts if needed

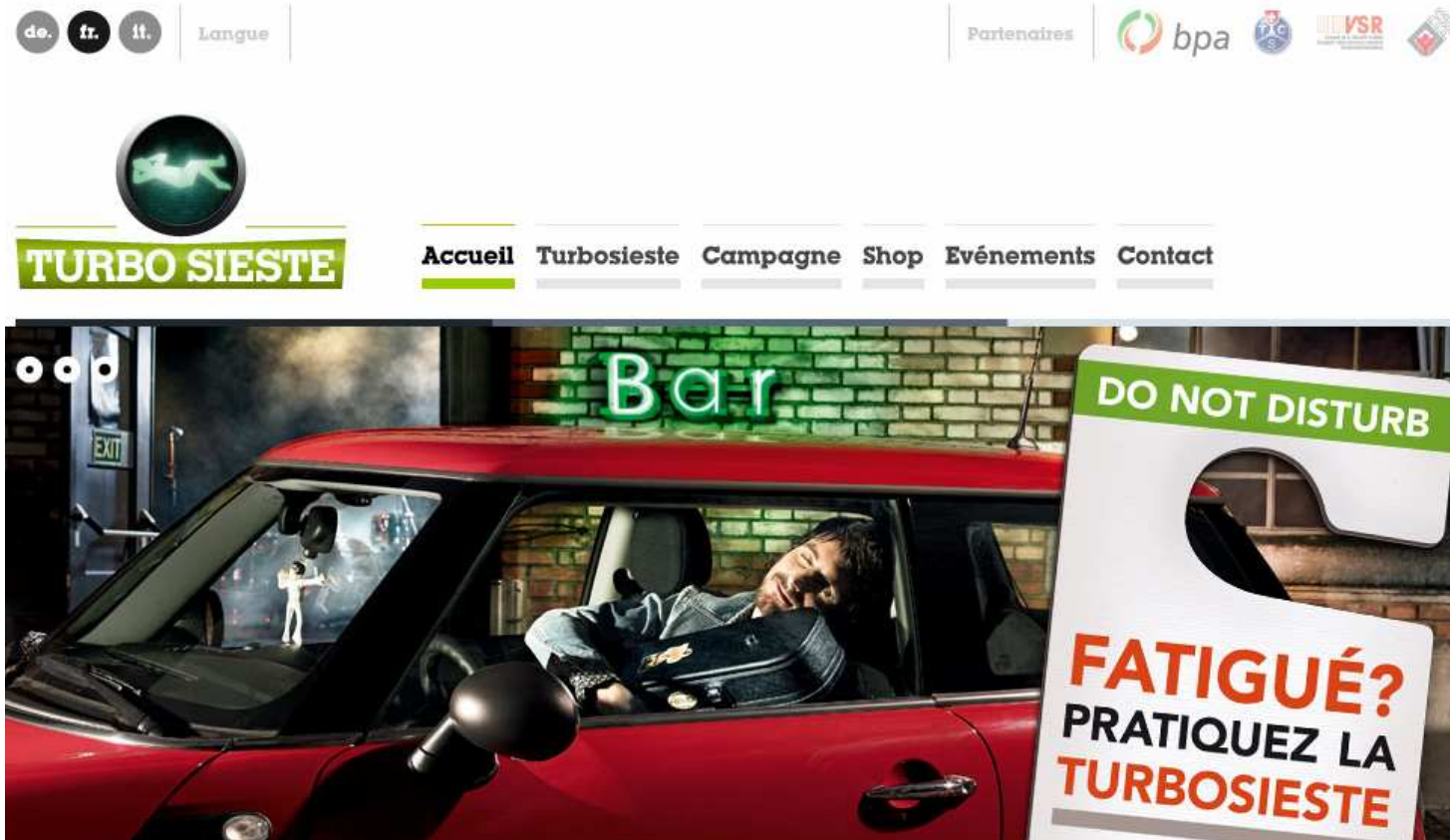
Prevention campaign

What can be done against falling asleep while driving?

- Inform drivers about the problem and possible solutions
- Install rumble strips at the edge and the middle of the road, more guard rails
- Teach younger and older drivers about their specific risks
- Wider application of technical solutions (i.e. Attention Assist)
- Teach professional drivers and employers on fatigue
- Enforce rest periods of professional drivers

Prevention campaign

Swiss Council for Accident Prevention started a campaign in 2010



Prevention campaign

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Main focus on

- power napping (so-called turbo-siesta)
- consume caffeine
- avoid alcohol
- avoid trip if possible
- Collaboration with transport companies

Focuses three problem groups:

- Younger drivers (up to age 30, weekend night-time crashes)
- Elderly drivers (age 60 and older, afternoon crashes)
- Professional drivers (all ages, afternoon crashes)

Duration: 3 years, financed by Swiss Fund for Traffic Safety

Prevention campaign

<http://www.youtube.com/watch?v=sOqWCtNfQiE>

[http://www.youtube.com/watch?v=v2ki3lWqhv0&rel=0&width=640
&height=390](http://www.youtube.com/watch?v=v2ki3lWqhv0&rel=0&width=640&height=390)

<http://www.turbosieste.ch/fr/accueil/bienvenue##>

Evaluation

- Conducted by Büro Vatter AG – Political research and counseling
- Repeated survey, so far 2 measurements
- Before campaign and six weeks after the beginning

Evaluation

Preliminary results:

- 50% find it useful to conduct a campaign on driving and fatigue
- Danger of fatigue considered to be between alcohol and cell phone use

The four main measures have different acceptance:

- Avoid alcohol or consume caffeine: 60%
- Take a power nap or avoid the trip when tired: 1/3

- Spontaneous recall: 3%
- Prompted recall: 30 - 50% (decreasing with age)

Evaluation

Preliminary results (continued):

What is recalled?

- Poster: 42%
- TV-spot: 17%
- Report on TV or radio: 15%
- Ad in newspaper or journal: 12%
- Facebook: 1%

Evaluation

Thinking about whether one is too tired to drive has

- increased significantly in the morning (from 32% to 35%)
- increased significantly in the afternoon (34% to 43%)
- has not changed in the evening (76%)

What to do best when tired while driving? Answer: Power nap.
Increase from 59% to 66%

What else can be done? Answer: drink coffee, let somebody else drive

Increase from 67% to 73%

Evaluation

Self-reported behavior:

No significant changes in driving when tired

Conclusion

- Fatigue is recognized in Switzerland as a major traffic safety problem
- The true proportion in road traffic accidents is not known
- Prevention has just begun