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69 – Contribution of Drugs and Somnolence to Car Accidents with Victims: A Family Practice Study

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Somnolence at the wheel

- is a major cause of severe car-accidents
- is in most cases preventable
- Family practitioners can detect and prevent most cases
- therapy is expensive but cost effective.

In 2004 and 2010, the UN General Assembly and World Health Organisation (WHO) (1) reviewed the costs of traffic accidents, and unanimously approved a policy statement urging that in the years 2011 to 2020, increased attention be given to the issue of road safety. The road traffic injury fatality rates per 10.000 population were 16,6 in South-East Asia; 32,2 in Africa; 32,2 in Eastern Mediterranean; 15,8 in the Americas; 13,4 in Europe and 15,6 in Western Pacific. In Australia it has been shown that driver fatigue is responsible for 17% of all accidents, 30% of which resulted in deaths. In 2010, 41% of a sample of US drivers who responded to a telephone survey admitted to having “fallen asleep or nodded off” at the wheel. Road transport causes over 95% of travel accidents and 90% of travel fatalities in Europe (2). Obstructive sleep apnoea, excessive workload and lack of physical and mental rest are preventable causes of sleep restriction, driver fatigue, sleep attacks and falling asleep at the wheel. Run-off-the-road single car collisions and head-on collisions by failure to brake make up 16% to 20% of serious highway accidents (3). Drivers aged 18-22, nurses, medical residents, medical doctors and police officers are especially at risk. Of the medical residents who drove after a night shift, 29% reported falling asleep at least once while driving and 14% reported a motor vehicle accident (4). 61% of accidents and injuries and 36% of fatalities occur between 00 and 08 hours, most of these between 03 and 06 hours. Benzodiazepine hypnotics and zopiclone significantly impair next morning driving performance. Less than 6 hours nocturnal sleep is associated with increased risk of rear-end collisions and single-car accidents (5).

Maggie’s Law in the state of New Jersey, US, is the toughest and most detailed law regarding driver fatigue. A driver who causes a fatal accident after being awake for more than 24 consecutive hours can be convicted of second-degree homicide, and sentenced up to 10 years in prison. People in the state of heavy tiredness drive emergency vehicles and take “controlled” risks (6). Doctors far too often turn a blind eye to impaired driving ability of young attention deficit hyperactivity disorder patients, and of patients with a severe depression or mania (no reference). Different studies performed in many countries show a remarkable similarity of 8% to 10% of psychotropic substances in the blood of injured drivers: benzodiazepines, Z-drugs, antidepressants, antipsychotics, Parkinson drugs, antiepileptics, sedative antihistamines, antidepressants and thymo-regulators in people who were not warned at

all of the well known vigilance deficits they create, especially in combination with alcohol and illicit drugs such as cocaine, cannabis, designer drugs.

The Driving under the Influence of Drugs, Alcohol and Medicines project has the acronym DRUID.

Sleep apnoea syndrome has been identified as the major cause of habitual drowsy driving with a relative risk up to six times that can be reduced five times with continuous positive airway pressure and a major increase in health care expenses.

Restless legs syndrome, periodic limb movement in sleep, acute and chronic insomnia are preventable causes which cause dozing and micro-sleep at the wheel.

Focusing on these illnesses in primary care could reduce the toll of often very severe vehicle accidents up to 20 to 30%.

The EQUINOX cross-sectional study was carried out by primary care physicians across ten countries. It highlighted the link between insomnia and domestic accidents, work accidents and car accidents. Karolinska Drowsiness Score and Karolinska Sleepiness score correlate well with on-board expert driving instructor's judgement of prematurely terminated night drive as a result of sleep-related imminent danger.

Open window or loud music have little effect. Two or three cups of coffee, about 200 mg caffeine, can delay drowsiness for half an hour after nil sleep and up to two hours following sleep restriction. Prophylactic naps are effective, especially during night work.

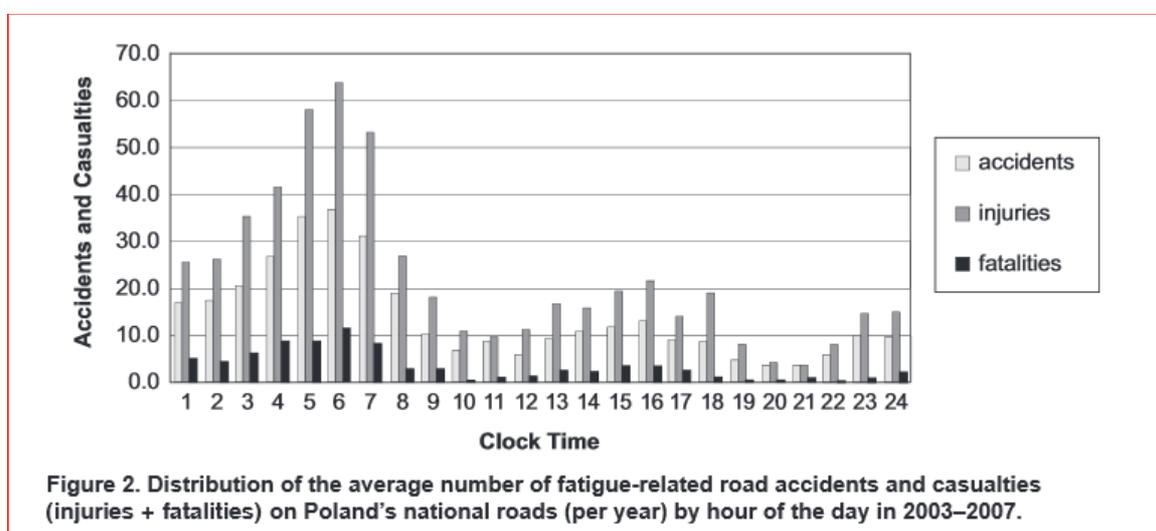


Figure 2. Distribution of the average number of fatigue-related road accidents and casualties (injuries + fatalities) on Poland's national roads (per year) by hour of the day in 2003–2007.

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An additional but until now never published caveat: many countries introduce a driving licence with points. The younger generation who have caused a single car accident while intoxicated with cocaine, cannabis, designer drugs, alcohol and most often a cocktail of these can press elderly to declare they were drowsy drivers.

Take home messages

- Family Doctors, surgeons, and police-officers are especially at risk;
- Not all single car accidents are suicide attempts;
- Sometimes, elderly drivers declare having fallen asleep at the wheel to hide alcohol and drug use of youngsters;
- As obesity increases, sleep apnoea increases accordingly;
- Family practitioners should motivate people to use CPAP.

Original abstract

<http://www.woncaeurope.org/content/293-contribution-drugs-and-somnolence-car-accidents-victims-family-practice-study>

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