eurocare
European Alcohol Policy Alliance

EUROCARE'S RESPONSE TO DG TREN's CONSULTATION ON DRIVER TRAINING AND TRAFFIC SAFETY EDUCATION

EUROCARE (The European Alcohol Policy Alliance) is an alliance of non-governemental and public health organisations with around 50 member organisations across 21 European countries advocating the prevention and reduction of alcohol related harm in Europe.

Europe is the heaviest drinking region in the world, with a consumption level of 11 litres of alcohol per adult per year. This is over 2,5 times the rest of the world average. Alcohol is a key health determinant and is responsible for 7,4% of all ill-health and early death in Europe, which makes it the third leading risk factor after tobacco and high blood pressure.

Eurocare welcomes DG TREN's consultation on Driver Training and Traffic Safety Education. Because Eurocare is primarily concerned with the prevention and reduction of alcohol-related harm, this response gives most attention to those parts of the consultation which seem most pertinent to these issues.

Eurocare's key recommendation: Information on drink driving, the harm that result from drinking and driving and the penalties should be included in driving lessons, driving tests and in published driving codes

The European Transport Safety Council estimated in 2003 that 2%-3% of all journeys in the EU15 Member States have a driver who has consumed alcohol.

Although alcohol-related traffic accidents have been decreasing throughout the European Union (EU)[1], driving whilst under the influence of alcohol continues to be a major contributory factor in road accidents.

The World Health Organization best estimate from the Global Burden of Disease study, suggests that more than 1 in 3 road traffic fatalities in the European Union are due to alcohol.

[1] Data from the Health for all database of the World Health Organization (2007) shows that road traffic accidents involving alcohol have decreased in the European Union from some 34 per 100,000 population in 1980 to below 20 in 2004, with at present, very small differences between older and newer Member States.

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Alcohol contributes annually to at least 17,000 deaths on EU roads. Further, a high proportion of the deaths caused by drink driving are to people other than the drink drivers themselves; it is estimated that 10,000 deaths in drink-driving accidents are for people other than the drink-driver[2].

Contrary to what is often supposed, it is not the hard core "misusers" who pose the main danger. In relation to impairment of driving skills, it is actually young, inexperienced drinkers who are the most affected by alcohol.

Many young drivers involved in crashes are under the influence of alcohol.

The age group most affected is the 14-25 year olds, for whom road accidents are the prime cause of death. Young and novice drivers are more susceptible to risk factors such as alcohol and speeding. At any blood alcohol concentration, drivers 16-20 years old are three times more likely to crash than drivers older than 30 years. Irrespective of age, risks increase exponentially relative to no alcohol when the BAC exceeds 0,04 d/dl (Peden et al., 2004).

Deaths are only the tip of the iceberg; for every person who dies an estimated 20 more people require hospital admission for their serious injuries, 70 more people require hospital outpatient treatment and many are permanently disabled (Gill et al., 2006; Roberts, 2005).

Traffic accidents due to drink-driving directly **cost** the European Union 45 billion euro (€10bn are from property damage). Indirect costs (including physical and psychological damage suffered by the victims and their families) are three to four times higher. The annual figure is put at 160 billion euro, equivalent to 2% of the Union's GNP (Anderson & Baumberg 2006).

DRINKING AND DRIVING

Impairment of driving-related skills, including decreased vigilance, increased drowsiness, and impaired vision, psychomotor skills, information processing, and

[2] Data from the United Kingdom suggest that less than half of the people killed or seriously injured in alcohol-related traffic crashes are the alcohol-influenced drivers themselves (Department for Transport 2004),while similar results have been reported in the US (Miller, Lestina, and Spicer 1998). Applying the UK proportion to the Global Burden of Disease figures above gives the estimate that some three fifths of the 17,000 alcohol-related traffic deaths in the EU each year are deaths to people other than the driver, including pedestrians, passengers and non-drinking drivers (Anderson & Baumberg 2006). Motorcyclists, cyclists and undetermined deaths/serious casualties are not included in these calculations as the division between riders under the influence of alcohol and others is not possible from the data. The UK data includes all crashes involving an alcohol influenced driver, while the mortality estimate is for the smaller number of deaths caused by (not just involving) alcohol- influenced drivers.

divided attention skills increase in a dose response manner with the level of alcohol in the blood[i].

The majority of the driving population is impaired in some important driving skills at blood alcohol levels as low as 0.2g/L BAL, and some fourth fifths of the driving population are impaired at blood alcohol levels of 0.5g/L.

This is reflected in the relationship between blood alcohol level and the risk of a crash, which increases with increasing blood alcohol concentration, with no evidence for a threshold effect. The relationship is exponential, with huge increases in crash risk at high blood alcohol levels[3].

For all these reasons, Eurocare believes that it is very important that information on drink driving, the harm that results from drinking and driving and the penalties should be included in driving lessons, driving tests and in published driving codes

The message should always be: if you drink don't drive

This should be in addition to highly effective drinking-driving policies such as random breath testing, lower blood alcohol concentration limit (0,2 g/L for all drivers), automatic license suspension when over the legal limit and common penalties with clarity and swiftness of punishment, with penalties graded depending at least on the BAC level.

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[3] Comparison of Blood Alcohol Level (BALs) of drivers in accidents with the BALs of drivers not involved in accidents find that drivers who had BALs between 0.2g/l and 0.49g/l had at least a three times greater risk of dying in a single vehicle crash. The risk increased to at least 6 times with a BAL between 0.5g/L and 0.79g/L and 11 times with a BAL between 0.8g/l and 0.99 g/L.

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[i] [i] A systematic review of 109 studies on the effects of low doses of alcohol concluded that there is strong evidence that impairment of some driving-related skills begins with any departure from a zero BAL (Moskowitz & Fiorentino 2000). Moreover, those skills and abilities considered to be most important for driving were among the most sensitive to alcohol (Chamberlain & Solomon 2002).

Vision BALs between 0.3g/L and 0.5g/L interfere with voluntary eye movements and impair the eyes' ability to rapidly track a moving target (National Institute on Alcohol Abuse and Alcoholism1994). The ability to track objects is critical to driving, as drivers must be able to focus on objects and track them as they move in relation to their own vehicle. A driver's ability to focus is impaired by alcohol's relaxing effect on the muscle that controls the shape of the eye's lens (American Automobile Association 1994). In addition, drivers who have been drinking move their eyes less frequently and fixate on one area for longer periods of time. Drinking drivers may also suffer from double vision, which affects the driver's ability to judge distance, which has been found to be impaired at BALs of 0.47g/L (Moskowitz & Fiorentino 2000). As a result of this decreased depth perception, drivers may have difficulty changing lanes, passing other cars, or determining whether a vehicle is moving toward or away from them (American Automobile Association 1994).

Alcohol can also affect a driver's night vision (Institute of Alcohol Studies 2000). Drivers who have been drinking have a slower recovery rate from headlight glare, as it takes longer for their pupils to enlarge again after being exposed to bright light (American Automobile Association 1994).

Finally, drivers who have consumed relatively moderate amounts of alcohol have reduced peripheral vision, and are less likely to perceive or recognize objects and signals outside the central visual field, with a deficit in peripheral detection ability of 6% at a BAL of 0.2g/L, and 20% at BALs between 0.5g/L and 0.8g/L (Beirness (1995).

Vigilance and drowsiness - Low doses of alcohol have a negative effect on vigilance and drowsiness (Moskowitz & Fiorentino 2000), with impairment of vigilance tasks at BALs of 0.3g/L and above. Further, drivers with BALs as low as 0.1g/L are likely to fall asleep faster than sober drivers (Moskowitz & Fiorentino 2000). Even small amounts of alcohol can enhance the effects of drowsiness, and the risk patterns for drowsy and drinking drivers often overlap (NCSDR/NHTSA 1997). As with alcohol related crashes, driver fatigue crashes most often occur during late night hours (NCSDR/NHTSA 1997;Haworth & Rechitzner 1993) or on the weekend (Fell & Black 1996), involve a single vehicle (NCSDR/NHTSA 1997), and cause serious injuries or death (Hartley & Mabbott (1998). Alcohol related and driver fatigue crashes are also more likely to involve young male drivers than other types of crashes (NCSDR/NHTSA 1997).

Psychomotor skills - Low doses of alcohol can adversely affect the psychomotor skills related to driving, especially steering and braking. One study indicated that significant impairment of steering ability begins with BALs of 0.35g/L (Linnoila et al. 1980). Similarly, a Canadian study conducted on closed roads and airport taxiways found that subjects with a mean BAL of 0.6g/L had significantly impaired performance in steering accuracy (Smiley et al.1995). In another study, drivers with a mean BAL of 0.42g/L hit substantially more cones in an evasive manoeuvre at 50 km per hour (Laurell 1979). Finally, an American experiment, which tested impairment at various BALs on a closed driving course, found that braking ability was decreased by approximately 30% at BALs of 0.3g/L (Cormier 1995).

Information processing - Alcohol consumption adversely affects the brain's ability to process information. Drivers who have been drinking take longer to respond to stimuli like road signs and traffic signals. As a result, they tend to take notice of fewer sources of information than drivers with zero BALs (National Institute on Alcohol Abuse and Alcoholism1994). Alcohol also affects the ability to reason and form a decision, which results in drivers taking longer to respond to road hazards (Barzelay 1986).The risk of an inappropriate or inaccurate response occurs at BALs as low as 0.21g/L.Thus, drivers who have consumed even small amounts of alcohol are less likely to respond as quickly or appropriately when confronted by a hazard requiring a quick decision.

Divided attention skills - In addition to information processing, drivers' ability to recognize and respond appropriately to dangerous situations is also dependent on the ability to divide their attention between or among tasks. Experimental studies have reported that small amounts of alcohol have their greatest effects on divided attention sills, which may be impaired even at BAL levels below 0.1g/L (Moskowitz & Fiorentino 2000).These effects of alcohol were examined in a US study, involving 68 subjects of various ages with different patterns of drinking (Moskowitz e al. 2000). It required the subjects to perform both divided attention and diving simulator tasks. The divided attention test required the subjects to perform a tracking task in combination with a peripheral search and recognition task. During the divided attention tasks, the researchers measured reaction time, tracking error, and the number and percentage of incorrect responses on the peripheral search and recognition task. The measures most sensitive to low doses of alcohol were tracking error and reaction time. The driving simulator examined speed deviation, lane deviation, the number of times over the speed limit, reaction time, the number of collisions, and the number and percentage of incorrect responses to peripheral road signals. Of these, the most sensitive to small amounts of alcohol were lane deviation, speed deviation, and the number of times the subject exceeded the speed limit.

Overall, the study found that, at a BAL of 0.4g/L, more than half of the subjects were impaired in all but two of the 14 response measures. By 0.6g/L, more than half were impaired in all of the responses measured. The individual response measures for each part of the study were added together to produce a composite performance index for the divided attention skills and for the driving simulator tasks. As indicated in the figures above, the majority of the driving population is impaired in some important measures at BALs as low as 0.2g/L BAL.

[i] Comparison of Blood Alcohol Level (BALs) of drivers in accidents with the BALs of drivers not involved in accidents find that drivers who had BALs between 0.2g/l and 0.49g/l had at least a three times greater risk of dying in a single vehicle crash. The risk increased to at least 6 times with a BAL between 0.5g/L and 0.79g/L and 11 times with a BAL between 0.8g/l and 0.99 g/L.

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