

Driving under the influence of drugs - report from the expert panel

Response from Brake, the road safety charity

8 March 2013

About Brake

[Brake](#) is an independent charity working across the UK to make roads safer, prevent road death and injury, and care for victims. Brake carries out research into road users' attitudes and behaviour in relation to road safety, engages schools and communities to spread road safety education, disseminates international research, guidance and case studies to fleet and road safety professionals through its Fleet Safety Forum and Road Safety Forum, and supports communities campaigning for road safety. It is also a national, government-funded provider of specialist support for people bereaved and seriously injured in road crashes, running a national helpline and providing packs that are handed to bereaved families by police following every road death.

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Response

Brake wholeheartedly welcomed the government's commitment to introducing tough laws against drug driving and the progress it has made so far to make this happen.

Brake welcomes the release of this report by the expert panel and particularly the recommendations relating to raising awareness among the public and medical profession, and blood testing drivers as soon as possible after a crash. Brake also encourages compilation of more information on drug driving in the UK, as recommended by the panel.

However, Brake is concerned by the approach of the panel to setting limits. It believes it is not appropriate to set limits at the average blood content found in drivers suspected of driving on drugs. This is not an accurate measure of risk, and means it is likely a large proportion of drivers who are on illegal drugs would not face prosecution. It also sends out the message that driving on lower amounts of illegal drugs is safe, when it is clear, from evidence collected by the panel, it is not.

The limits recommended in the panel's report for the most common illegal drugs are very significantly higher than those used in other countries, showing that much lower limits than those recommended by the panel are practical to implement. Most importantly, drivers who have taken illegal drugs but remain under the limits proposed by the panel still pose a very significant risk to the public, as demonstrated by much of the data discussed in this report.

Brake recognises the panel wishes to take into account that some of these drugs are also used for therapeutic reasons, and wishes to exempt these drivers in most circumstances, ensuring this law related to illegal drug use and driving only. However, in trying to do this, it has recommended levels that are very high, which would undermine the effectiveness of the new law.

Very high limits would degrade the message to drug drivers who would soon realise that it is legal to drive on certain levels of illegal drugs. Because the limits are so high it will result in fewer convictions and is therefore likely to deter police from investing in newly available drug testing equipment.

Brake believes it is vital the government adopt limits that are as low as possible, to send out a clear message that driving on illegal drugs at all levels is risky and will not be tolerated. Brake argues limits should be set at the lowest level possible where there is evidence of impairment, not an average level relating to use or impairment, and if no evidence is available on when impairment typically begins, then the limit should be at a zero tolerance level which is the lowest reliable levels which can be tested for. In all cases, there is evidence that the drugs discussed in this report impair driving significantly, and in the majority of cases at levels well below the limits proposed by the panel, which can have catastrophic consequences.

To address the issue of therapeutic use of some of these drugs, regulations could include exemptions should the driver be able to prove they are using prescribed medication. It should however be clear that drivers who are impaired by their medication would still be subject to prosecution through the existing law on drug driving and impairment. And if it is unsafe to drive on particular types of medication, it should be clearly explained to patients whose licences should be suspended by the DVLA when on this medication.

Brake would also recommend the government undertake a full review of therapeutic drugs and driving, DVLA policies relating to prescription drugs and driving, and reporting procedures by medical professionals to the DVLA on fitness to drive, to reduce the risks of patients who may be dangerously impaired driving on drugs. This could be done alongside the introduction of the new offence on drug driving. It is clearly vital that clear and consistent procedures are in place on this matter and followed appropriately by medical professionals.

Cannabis

Brake is concerned that drivers would be significantly impaired well under the limit recommended by the panel (5 µg/L). The report states a level of 3.7 µg/L is equivalent to alcohol impairment from 50mg alcohol/100ml blood¹ which we know from the North report can increase likelihood of dying in a crash by a factor of between three and six². The level recommended by the panel, 5.0 µg/L, is even higher than this and very significantly higher than that imposed by other countries (below).

Country	Approach to threshold	THC threshold in blood
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¹ Berghaus, G. Sticht, G. and W. Grellne, Meta-analysis of empirical studies concerning the effects of medicines and illegal drugs including pharmacokinetics of safe driving, EU Project DRUID Deliverable 1.1.2b, 2010

² Report of the Review of Drink and Drug Driving Law, Sir Peter North, June 2010

Sweden	Zero tolerance	0.3 µg/L
Switzerland	Threshold for prosecution	1.5 µg/L
Norway	Impairment limit	1.3 µg/L
Belgium	Analytical cut off	1.0 µg/L
Portugal	Analytical cut off	3.0 µg/L
Recommended by panel	Limit	5.0 µg/L

Cocaine

Brake is concerned the limit proposed by the panel is much higher than experience in other countries has suggested to be appropriate.

The panel explains it recommends 80 µg/L because this is the mean concentration of cocaine in blood found in drivers proven to have taken cocaine. Brake argues it is not appropriate to set a limit based on mean concentrations as this is not an accurate measure of risk, and is highly unlikely to represent average levels of use. Data from the UK shows the median cocaine drug drive level in the UK was 59 µg/L³, which means most drivers who had taken cocaine would remain legal to drive given this recommended limit.

It is also the case that the report explains ‘the National Forensic Institute (Netherlands) estimated that the median concentration of cocaine in blood was 60 µg/L when driving after taking an effective dose’. Setting the limit at 80 µg/L would be effectively allowing drivers to take a significant dose of cocaine and remain well under the legal driving limit, which Brake argues is unacceptable.

While the panel also states the recommendation of 80 µg/L is “a level associated with risk of a RTA or impaired driving in line with the evidence in the literature” there is no mention of this evidence in the report so it is impossible for Brake to scrutinise it. Indeed there is no section in this report which explains or analyses the risks associated with driving at different levels of cocaine in blood.

Country	Approach to threshold	Cocaine in blood	BZE
Portugal	Zero tolerance	5 µg/L	5 µg/L
Germany	Zero tolerance	10 µg/L	75 µg/L
Finland	Zero tolerance	15 µg/L	10 µg/L
Norway	Impairment limit	24 µg/L	
Netherlands	Threshold	50 µg/L	
Recommended by panel	Limit	80 µg/L	500 µg/L

Amphetamine type-drugs

Brake is concerned that drivers would be significantly impaired under the limit recommended by the panel.

The report explains the threshold was recommended in relation to the mean blood concentrations of amphetamine and metamfetamine found in individuals suspected of or proven to have been driving under its influence. For amphetamine the range of means (from different studies) varied from 456µg/L to 651µg/L and for metamfetamine the range of means varied from 142 µg/L to 300 µg/L.

³ DUID sample analysis undertaken for the FSS during 2004-2007.

Again, Brake argues it is not appropriate to set limits based on mean concentrations among apprehended drug drivers as this is not an accurate measure of risk and means many drug drivers would be under the limit. Research shows driving on these drugs causes a greatly heightened risk to the public, and some research indicates this is the case whatever the concentration⁴. The limits proposed by the panel are very significantly higher than those used in other countries.

If it is not possible from existing research to determine a typical impairing level, then it is appropriate for the government to set the limit at the lowest level, which takes account of very low concentrations used in prescriptions (normally less than 100 µg/L for amphetamine and between 10 µg/L and 50 µg/L for metamfetamine).

Country	Approach to threshold	Amfetamine (in blood)	Metamfetamine (in blood)
Netherlands	Threshold	50 µg/L	50 µg/L
France	Threshold	50 µg/L	50 µg/L
Sweden	Zero-tolerance		
Norway	Impairment limit	41 µg/L	45 µg/L
Recommended by panel	Limit	600 µg/L	200 µg/L

MDMA

The panel recommends a threshold limit of 300 µg/L because “at this concentration the drug is not compatible with the skills required for driving”. This decision was based on evidence that the median level of MDMA found in UK drivers suspected of drug driving was 305 µg/L, and this level of blood concentration could be expected from a dose of 1.5mg MDMA/kg which is an average dose. However, other evidence considered by the panel showed much lower concentrations impairs driving.

In the panel’s report it cites The Netherlands Forensic Institute⁵, which explains the concentration in blood of MDMA known to be a hazard when driving is between 100 – 400 µg/L, with a MDMA dose of 100mg. This is the only research cited that directly looks at evidence of impairment from MDMA as opposed to average concentrations found in drivers suspected of drug driving.

Again, Brake argues the limit should be set at the lowest level possible where there is evidence of impairment, not an average level, and if no evidence is available on when impairment begins, then at a zero tolerance level which is the lowest reliable levels which can be tested for. Given the evidence, Brake recommends a level of 100 µg/L or less, in line with evidence relating to impairment scrutinised by the panel.

Ketamine

⁴ Logan BK, Methamphetamine and driving impairment, Journal of Forensic Sciences, 1996, Vol. 41(3): pp. 457-464.

⁵ Netherlands Forensic Institute (NFI). Toxicological investigation into drugs and medicines in traffic incidents, draft 0112209

Evidence on impairment from ketamine shows that even at low levels, of between 50 and 200 µg/L ketamine in blood, users experience drowsiness, perceptual distortions and intoxication⁶. The Norwegian Academic Advisory Group in 2010, in preparing for drug driving legislation, recommended a prohibition limit in blood of 48 µg/L.

The panel recommends a threshold level in blood of 200 µg/L because it explains “at this concentration the drug is not conceivably compatible with the skills required for driving” and “a concentration of 200 µg/L ketamine would capture 70% of those drivers tested positive for ketamine in the UK”.

Brake is deeply concerned by the reasoning behind this recommendation. By setting a limit ‘which is not conceivably compatible’ with safe driving, the authors acknowledge that at lower levels drivers are also unsafe. Brake argues this is the wrong logic to use when setting limits for drug driving. Instead of setting limits high, limits should be based on the evidence available showing at which level impairment begins, or where there is not enough evidence, zero tolerance limits set.

Brake urges the government to implement a lower limit of no higher than 50 µg/L ketamine in blood, based on the evidence in the panel’s report on levels at which drivers are negatively affected by the drug.

Opioids

Brake is concerned limits recommended for methadone and morphine are too high for safety. Evidence on the impact of all types of opioids on driving shows they negatively influence driver safety when used illegally or legally⁷. Therefore Brake urges the government to set zero tolerance limits at detection thresholds, as well as working alongside the DVLA and medical professionals to ensure drivers taking opiates for medicinal purposes are aware of this limit.

- Methadone

The panel recommends “a threshold should be set at 500 µg/L methadone in blood, indicative of high dose consumption as high doses have been shown to have greater risk of a RTA than low doses”.

This appears to be in recognition of the fact patients taking methadone have an average of 400 µg/L blood. However evidence provided in the panel’s report states that even at prescription doses

⁶ Bowdle TA, Radant AD, Cowley DS, Kharasch ED, Strassman RJ, Roy- Byrne PP, Psychedelic effects of ketamine in healthy volunteers: relationship to steady- state plasma concentrations, *Anesthesiology*, 1998, vol. 88(1): pp. 82-88.

⁷ DRUID results showed the risk of serious injury or death for drivers who were tested positive for illicit opiates was between OR: 2 and 10, whereas the risk for those tested positive for medicinal opioids (including methadone) was between OR: 4.8 and 9.0 compared to drivers who did not have a positive opiates/opioids test result. See, DRUID, summary of main DRUID results: driving under the influence of drugs, alcohol, and medicines, 2012, TRB 91ST Annual meeting, USA Dutch Forensic.

methadone users' driving is impaired⁸ and researchers concluded that patients taking methadone are generally not fit to drive⁹.

Norway has low threshold limits of 0.9 µg/L in blood for this reason. Brake recommends the government sets a zero tolerance limit because of evidence that individuals taking methadone are generally not fit to drive¹⁰. It should work closely with the DVLA and medical bodies to ensure this is clearly conveyed to legal methadone users.

- **Morphine**

The panel recommended a threshold of 80 µg/L morphine in blood in recognition “of the greater risk associated with use of illicit opiates” compared to therapeutic use where 80 µg/L is at the higher end of therapeutic use. However evidence in the panel’s report indicates that levels as low as 20 µg/L result in an odds ratio of over eight¹¹.

Brake recommends a zero tolerance level of 20 µg/L in line with other European countries and the evidence that even at this threshold level for detection drivers are shown to have a greatly increased risk of crashing¹². The government should work closely with the DVLA and medical bodies to ensure this message is clearly conveyed to people prescribed morphine for medical use.

Country	Approach to threshold	Morphine
France	Legal cut-off	20 µg/L
Norway	Impairment Limit Limit for graded sanctions equivalent to BAC 0.5 g/L Limit for graded sanctions equivalent to BAC 1.2 g/L	9 µg/L 24 µg/L 61 µg/L
Netherlands	Limit of quantification threshold	20 µg/L
Poland	Limit of quantification	20 µg/L
Recommended by panel		80 µg/L

⁸ Schindler SD, Ortner R, Peternell A, Eder H, Opgenoorth E, Fischer G. Maintenance therapy with synthetic opioids and driving aptitude. Eur Addict Res 2004;10(2):80-7

⁹ Staak M, Berghaus G, Glazinski R, Hoher K, Joo S, Friedel B, Empirical studies of automobile driving fitness of patients treated with methadone- substitution, Blutalkohol, 1993, vol. 30: pp. 321-323

¹⁰ ibid

¹¹ Mura P, Kintz P, Ludes B, Gaulier JM, Marquet P, Martin-Dupont S, et al., Comparison of the prevalence of alcohol, cannabis and other drugs between 900 injured drivers and 900 control subjects: results of a French collaborative study, Forensic Science International, 2003, vol. 133: pp. 79 - 85

¹² ibid