

EDITORIALS

Driving while under the influence of cannabis

It is currently unclear whether roadside drug testing reduces cannabis impaired driving

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The findings of the linked paper by Asbridge and colleagues (doi:10.1136/bmj.e536) add weight to the argument that cannabis users should be deterred from driving while intoxicated because of the risk of injury or death to themselves and others.¹ This systematic review of nine case-control studies and culpability studies found that recent cannabis use almost doubled the odds of having a motor vehicle crash (odds ratio 1.92, 95% confidence interval 1.35 to 2.73). The increased risk was marginally larger in better designed studies (2.21 v 1.78), in case-control rather than culpability studies (2.79 v 1.65), and in studies that examined deaths rather than injuries (2.10 v 1.74). The authors note that, although residual confounding is possible, their results are consistent with experimental evidence that cannabis use leads to dose related impairments in simulated driving, psychomotor skills, and on-road driving.^{2,3}

Public health education about the dangers of driving while under the influence of cannabis is unlikely to be enough to deter cannabis users from driving—they will also need to be persuaded that they are at risk of their cannabis use being detected.⁴ Governments in Australia, western Europe, and the United States have therefore introduced roadside drug testing for cannabis (and other drugs such as methylenedioxymethamphetamine and methamphetamine).⁵ The Australian state of Victoria, for example, introduced roadside drug testing for cannabis in 2004, and other Australian states and 13 states in the US have also done so.^{5,6}

Roadside drug testing has been modelled on roadside random breath testing for alcohol impaired driving, but a saliva test rather than a breath test is used to detect recent use of cannabis. A simple association exists between alcohol breath concentration, blood alcohol values, and level of impairment: the risk of having a crash doubles above an alcohol breath concentration of 0.05%. The rationale behind roadside drug testing is less clear, however, owing to the lack of a simple association between blood concentrations of tetrahydrocannabinol and driving impairment, and a cut off value of drug detected in the saliva has not been defined.³ Most governments that have introduced roadside drug testing have instead pursued a “zero tolerance” strategy in defining cannabis impaired driving.⁵ Recently though—on the basis of

meta-analyses of laboratory and epidemiological studies—researchers have proposed a concentration of tetrahydrocannabinol below which driving is not impaired.³ Current practice follows the assumption that any detectable amount of cannabis in saliva (which is indicative of recent use) is sufficient to establish impairment.

Legislators in countries that use roadside drug testing assume that it will substantially reduce road crash deaths in the same way that rapid breath testing did for alcohol related crashes.⁷ This view is probably too optimistic. Alcohol breath testing in Australia, for example, was widely publicised, highly visible, and sustained in its enforcement. The high volume of testing created the credible view that anyone who drove while intoxicated risked detection.⁸ Roadside drug testing, by contrast, has typically been introduced on a much more modest scale, with less publicity, and with uncertain deterrent effects.⁴

Nearly a decade after its introduction, political support for roadside drug testing still depends on borrowed evidence of effectiveness from rapid breath testing (and the attraction of being seen to do something to tackle the problem). An analysis of data from the Australian state of Victoria showed that roadside saliva testing can detect those who are driving under the influence of cannabis and other drugs,⁹ and such studies often report that drug impaired drivers are detected at higher rates than alcohol impaired drivers. However, there is no evidence that roadside drug testing has reduced deaths related to cannabis or other drugs or deterred drug users from driving while impaired.

It is difficult to evaluate the impact of roadside drug testing on preventing deaths linked to cannabis impaired drivers, but comprehensive evaluations must be done. We need studies of trends over time in the prevalence of intoxication with cannabis and other drugs in people who are accidentally injured or killed, analysed alongside random roadside drug sampling studies that estimate the prevalence of drug use among drivers. Any trend towards a decline in the prevalence of illicit drug use among drivers or people involved in crashes would then need to be assessed in the light of alternative explanations (such as a concurrent decline in the prevalence of illicit drug use in the population). Ideally, such evaluations would also take into

account evidence from surveys asking drivers if roadside drug testing deterred them from driving while impaired.

Better evidence is essential if lawmakers in countries that have already implemented roadside drug testing are to make informed decisions about whether it has produced public health benefits at an acceptable social and economic cost,¹⁰ and to inform those in countries that are considering introducing such testing.

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