

Car breathalyser lock

A lock device that prevents individuals from drink-driving.

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Effect scale	Quality of evidence				
	Effect Impact on crime	Mechanism How it works	Moderator Where it works	Implementation How to do it	Economic cost What it costs
 Overall reduction	 Strong	 Low	 Moderate	 Strong	No information

Focus of the intervention

Alcohol ignition interlocks are a type of situational prevention measure aimed at reducing drink-driving (also known as drunk driving, driving under the influence (DUI) and driving while intoxicated (DWI)) and the harm caused by alcohol-related crashes. They are commonly prescribed in sentencing decisions by courts or judges, or used as a prerequisite for a driving licence reinstatement.

To operate a vehicle with an interlock device, the driver must give a breath specimen with an acceptable blood alcohol concentration (BAC). If the BAC in the specimen is over a certain threshold, the vehicle will not start. Advances in interlock technology in the 1990s added features that made it more difficult to outwit or bypass the device.

This narrative summary is based on three systematic reviews – Review one (14 studies), Review two (15 studies) and Review three (6 studies). None of the primary studies were carried out in the UK and although at least one UK bus company uses them as standard in their new coaches, it is

not clear whether this intervention is available at the present time.

Effect – how effective is it?

Overall, the evidence suggests that ignition interlocks reduce drink-driving reoffending while the device is installed.

Review one estimated that for every 100 alcohol-related traffic violations committed by drivers without alcohol interlocks on their vehicles, an average of 36 violations would be expected among drivers with interlocks. This beneficial effect disappeared when the ignition interlock device was removed.

Descriptive analysis in the three reviews suggests that similar effects were found for drink-driving rearrest rates (Review one, 13 studies; Review two, nine studies; Review three, five studies). Review two provided limited evidence that alcohol-related crashes may also decrease when interlocks are installed in vehicles (based on three studies).

How strong is the evidence?

?The overall evidence is taken from a systematic review covering 14 studies (Review one). The review was sufficiently systematic that many forms of bias that could influence the study conclusions can be ruled out.

However, the meta-analysis in this review was conducted on only one randomised control trial (RCT) study, which is problematic. The authors further note that the cohort studied in the RCT could be considered to be highly motivated to change their behaviour and not representative of less motivated offenders, further skewing the effect size. The results of this review should therefore be treated with caution.?

The supporting evidence? from reviews two and three presented descriptive results and is therefore considered weaker.

Mechanism – how does it work?

Little information regarding mechanism is provided in any of the reviews. Review one notes that the ignition interlock modifies the offender's habits relate???d to drinking and driving, as it provides immediate feedback on inappropriate alcohol consumption.

Moderators – in which contexts does it work best?

There is little evidence to show that the effectiveness of ignition interlocks varies by context. Reviews one and two found that interlocks are as effective with first-time offenders as they are with repeat offenders.

Moderators suggested (but not tested) were:

- mandatory compared to voluntary participation (Review one)
- whether the ignition interlocks were implemented with other support services (for example, alcohol rehabilitation programs) (Reviews one and two)
- whether judges have discretion in prescribing the intervention (Review two)
- the point at which the intervention is offered (after arrest compared to after sentencing) (Review two)
- the length of the intervention period (Review two)

Implementation – what can be said about implementing this initiative?

Ignition interlocks are implemented within the context of the sentencing frameworks of the USA, Canada, Australia and Sweden (where the primary studies were carried out), and require substantial resources to administer (Review two). The main challenges to implementation are participation rates, compliance and the durability of the effect – especially once the interlock is removed (Review one).

Participation rates were low across all the reviewed studies. Even mandatory participation only resulted in 62% of the recruitment of offenders in a sample (Review one, one study). Incentives for using interlocks include reduced insurance premiums and reducing the time taken to get a license reinstated (Review 1). Other strategies to increase participation rates include increasing the number of offenders eligible for the interlock intervention and offering alternative sanctions, such as home confinement (Review two).

Compliance can be enhanced by implementing interlocks with features that counter avoidance and by collecting data on how the interlock is used (Review three). Participants should be trained in

using the interlock and be required to bring their vehicle to an authorised service centre regularly for maintenance, inspection and downloading of the recorded interlock data (Reviews one and two). These data can be checked for signs of attempts to outwit or bypass the device (Review two). The negative consequences of failing to participate in the programme should be increased to ensure compliance (Review two).

All three reviews reported that the beneficial effect of the interlock intervention disappears when it is removed. It therefore has no lasting change on drink-driving behaviour. Review two reported that using the interlock in conjunction with alcohol rehabilitation programmes appeared to increase the effectiveness of the intervention (one study).

Economic considerations – how much might it cost?

The review does not mention costs and/or benefits and no formal economic analysis is provided. However, the following points are made relating to costs.

- Review one notes that the cost of installing and maintaining the interlock is borne by the driver.
- Review two states that the intervention requires substantial administrative resources to lease, install and monitor the device.

General considerations

- The low participation rates in ignition interlock programmes are problematic and consequently, the evidence base on the effect on different subgroups of drink-drivers is weak.
- The situational crime prevention framework suggests that ignition interlocks might increase the effort needed to commit crime, rather than achieve long-lasting behaviour change. This can explain why:
 - we do not see contextual variations across different types of participant
 - the effect disappears when the ignition interlocks are removed

- ?Displacement of crime – from one vehicle to another – was not reported, but should be considered a possibility.

Summary

Overall, the evidence suggests that ignition interlocks reduce drink-driving reoffending while the device is installed, but this effect disappears when the interlocks are removed.

Participation rates were noted to be a problem in all three reviews.

The quality of the evidence is weak and further studies are needed to test the mechanism, the context in which the intervention might work, and to provide economic analysis of the intervention.
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Reviews

Review one

Quality of evidence			
Mechanism How it works	Moderator Where it works	Implementation How to do it	Economic cost What it costs
█ █ █ █ Low	█ █ █ █ Low	█ █ █ █ Moderate	No information

Reference

- Willis C, Lybrand S, Bellamy N. (2004). [Alcohol ignition interlock programmes for reducing drink driving recidivism](#). Cochrane Database of Systematic Reviews, Issue 3. Art. No.: CD004168. DOI: 10.1002/14651858.CD004168.pub2.

Review two

Quality of evidence			
Mechanism How it works	Moderator Where it works	Implementation How to do it	Economic cost What it costs
  Low	  Moderate	  Strong	No information

Reference

- Elder R W, Voas, R, Beirness, D, Shults, R A, Sleet, D A, Nichols, J L, Compton, R. (2011). **Effectiveness of Ignition Interlocks for Preventing Alcohol-Impaired Driving and Alcohol-Related Crashes**. American Journal of Preventative Medicine. 40(3): pp. 362-376.?

Review three

Quality of evidence			
Mechanism How it works	Moderator Where it works	Implementation How to do it	Economic cost What it costs
  Low	No information	  Low	No information

Reference

- <https://production.copweb.aws.college.police.uk/research/crime-reduction-toolkit/car-breathalyser-lock>

Coben, J H & Larkin, G L. (1999). [Effectiveness of Ignition Interlock Devices in Reducing Drunk Driving Recidivism](#). American Journal of Preventative Medicine 16 (1) Supplement 1, Jan 1999, p.81-87.

Summary prepared by

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