

# Drink-drive stops

Stopping drivers to assess their degree of alcohol impairment using behavioural, physiological, or chemical tests.

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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 |
|  Overall reduction |  Very strong |  Moderate |  Very strong |  Strong |               |

## Focus of the intervention

Sobriety checkpoints are aimed at reducing drink-driving. At checkpoints police officers stop drivers to assess their degree of alcohol impairment using behavioural, physiological, or chemical tests. Sobriety checkpoints focus on reducing injuries and fatalities resulting from alcohol-related crashes.

There are two types of testing at checkpoints:

- random breath testing, which involves stopping and checking all drivers
- selective breath testing, whereby selected drivers suspected of drinking and driving are stopped and checked

This narrative summary is based on three systematic reviews: Review one (40 studies), Review two (15 studies) and Review three (23 studies).??

## Effect – how effective is it?

Overall, the evidence suggests that sobriety checkpoints reduce alcohol related injuries and crashes.

After accounting for bias, Review one estimated that for every 100 crashes, an average of 14 crashes were prevented.

## How strong is the evidence?

The overall evidence is taken from a systematic review covering 40 studies (Review one). The review was sufficiently systematic that most forms of bias that could influence the study conclusions can be ruled out.

The review did not quantify an overall effect for unanticipated outcomes such as displacement caused by the intervention.

Review two (covering 15 studies) has a lower quality rating for the strength of evidence. The review was sufficiently systematic that some forms of bias that could influence the study conclusions can be ruled out.

## Mechanism – how does it work?

All three reviews note that checkpoints inhibit drink-driving by increasing the perceived risk of arrest.

Review two mentions that media campaigns accompanying checkpoints increase public awareness and intensify the perceived risk of arrest. It also suggests that more programmes would lead to a change in social norms, which would lead to a reduction in drink-driving and, in turn, a reduction in alcohol related crash fatalities.

Review three reports that any contact with checkpoints, either by being stopped, or passing by, reinforces people's perceptions of enhanced law enforcement activity and increases perception of risk.

These proposed mechanisms are not empirically tested in any of the reviews.

## Moderators – in which contexts does it work best?

There is good evidence that the effectiveness of checkpoints varies slightly by context.

In Review one, f??or every 100 crashes, there were:

- an average of 29 fewer crashes observed in the first three months of a Sobriety checkpoint programme (six studies)
- an average of 13 fewer crashes observed for programmes lasting one to two years (21 studies)
- 22 fewer crashes observed in Australia (19 studies) than in other countries (which ranged from 1 ??4 to 4 fewer crashes) suggesting checkpoints were more effective – this may be due to the introduction of 'booze buses' and enhanced publicity accompanying the programmes in Australia
- an average of 19 fewer crashes associated with increased intensity (either increased frequency of checks or increased numbers of check points or both) of enforcement (23 studies), whereas an average of 15 fewer crashes was associated with the introduction of new checkpoints (13 studies)

The largest crash reductions were found in the first six months of a programme.

Results indicated that the use of paid media publicity (26 studies) was not significantly more effective than non-paid media publicity (six studies). However both paid and unpaid publicity were more effective than programmes accompanied by no publicity (seven studies).

Review two found that checkpoints with fewer staff are as effective as those that are highly staffed (two studies).

Review three reported no significant ??difference in effectiveness between random breath testing (drivers are checked at random) (12 studies) and selective breath testing (police have reason to suspect drink-driving) (11 studies).

## **Implementation – what can be said about implementing this initiative?**

Review two lists some of the conditions necessary for implementing checkpoints, including securing necessary staff and resources to conduct effective checking – especially over weekends or late at night which requires staff availability and overtime payments. It also suggests that checkpoints using standardised methods for vehicle selection avoid concerns of racial profiling and gain?? more acceptability.

Review three suggests strong public support for the intervention can help ensure law enforcement agencies have adequate funds to devote to checkpoint programmes.

Review one found that highly visible checkpoints where many drivers are pulled over and tested are likely to be most effective.

Reviews one and three mention that Sobriety checkpoints programmes accompanied by high publicity, both paid and unpaid, are more effective than those without any publicity.?

Review two suggests checkpoints are harder and more dangerous to implement than roving patrols and may receive less support from police officers because of low arrest rates in forces where performance regimes demand high arrest numbers.

Review three found evidence that informing police officers about the general deterrence mechanism and providing regular feedback linking their efforts to crash prevention, may decrease an observed frustration over the low arrest rate.

## **Economic considerations – how much might it cost?**

There was no formal economic assessment but there is some information on costs reported in three studies from Review two. One reported a total cost of US\$1.25 million for the programme and an estimated cost per prevented alcohol-impaired fatal crash of US\$5,787. Another study ??estimated the cost incurred per percentage point reduction in night-time drinking drivers was US\$35,146 to \$40,168. The third study calculated a cost of US\$1,723 per percentage point reduction in self-reported drink-driving as a result of checkpoints.?

Review two also reports the operational costs of low-level staffing of checkpoints (US\$391 to US\$446 per checkpoint) and fully staffed checkpoints (US\$1470 to US\$3445).

Reviews one and three contain no information on costs of Sobriety checkpoints.

## **General considerations**

- The decision to introduce selective or random breath testing in sobriety checkpoint programmes will depend upon whether the local laws permit police officers to stop and check

individuals with or without suspicion.

- It is suggested that sobriety checkpoint programmes may not be effective if implemented below a certain threshold of intensity and publicity. This was not empirically tested because the reviews included only programmes that were well staffed and funded.
- Checkpoint?S entail some inconvenience and intrusion on driver privacy and also may not be feasible in certain locales.
- Further research is needed to determine the optimal configuration of checkpoints (number of officers, timing, and regularity) and optimal levels of enforcement and publicity in order to sustain their deterrent effect.
- Checkpoints ma??y be used to detect other offences such as driving with a suspended licence, or with prohibited weapons.

## Summary

Overall, the evidence suggests that sobriety checkpoints have reduced alcohol related injuries and crashes. High intensity, high publicity and greater numbers of drivers tested increases effectiveness. The overview does not consider the impact of checkpoints on the detection of drink-driving or other offences.

## Reviews

### Review one

| Quality of evidence       |                             |                                |                                |
|---------------------------|-----------------------------|--------------------------------|--------------------------------|
| Mechanism<br>How it works | Moderator<br>Where it works | Implementation<br>How to do it | Economic cost<br>What it costs |
|                           |                             |                                |                                |

|   |   |   |                |
|---|---|---|----------------|
|  |  |  | No information |
| Moderate  | Very strong   | Low   |                |

## Reference

- Erke A., Goldenbeld C. & Vaa T.: (2009), The effects of drink-driving checkpoints on crashes – A meta-analysis, Accident Analysis and Prevention, 41: 5; 914-923

## Review two

| Quality of evidence   |   |   |                                |
|---|---|---|--------------------------------|
| Mechanism<br>How it works   | Moderator<br>Where it works   | Implementation<br>How to do it  | Economic cost<br>What it costs |
|  |  |  | No information                 |
| Low   | Strong  | Strong  |                                |

## Reference

- Bergen G., Pitan A., Qu S., Shults R., Chattopadhyay S., Elder R., Sleet D., Coleman H., Compton R., Nichols J., Clymer J., Calvert W., and CPSTF: (2014), Publicized Sobriety Checkpoint Programmes: A Community Guide Systematic Review, American Journal of Preventive Medicine, 46:5; 529-539?

## Review three

| Quality of evidence       |  |  |                                |
|---------------------------|--|--|--------------------------------|
| Mechanism<br>How it works | Moderator<br>Where it works  | Implementation<br>How to do it   | Economic cost<br>What it costs |
| No information            | <br>Very strong | <br>Low | No information                 |

## Reference

- Elder R., Shults R., Sleet D., Nichols J., Zaza S. & Thompson R.: (2002), Effectiveness of Sobriety Checkpoints for Reducing Alcohol-Involved Crashes, *Traffic Injury Prevention*, 3:4; 266-274

## Summary prepared by

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