

DRUG & ALCOHOL FINDINGS *Review analysis*

This entry is our analysis of a review or synthesis of research findings considered particularly relevant to improving outcomes from drug or alcohol interventions in the UK. The original review was not published by Findings; click [Title](#) to order a copy. Free reprints may be available from the authors – click [prepared e-mail](#). The summary conveys the findings and views expressed in the review. Below is a commentary from Drug and Alcohol Findings.

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► Effectiveness of brief alcohol interventions in primary care populations.

Kaner EFS., Beyer FR., Muirhead C. et al.

Cochrane Database of Systematic Reviews, 2018

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Update of a key document forming the basis of claims that brief interventions work in 'real-world' settings. Combined findings from randomised trials confirm that brief advice in primary care can reduce drinking, but will those reductions be realised in contemporary routine practice?

SUMMARY The featured review updates one published in 2007 ► [Effectiveness Bank entry](#). Both were conducted under the rigorous procedures specified by the Cochrane Collaboration. For the update an additional 42 studies were included, bringing the total to 61, but there was less of a focus on the crucial issue of whether more real-world tests characterised as 'effectiveness' trials reflected findings from more tightly controlled 'efficacy' trials ► [skip to relevant section](#).

The aim was to assess the effectiveness of **brief interventions** – typically counselling or advice on risky behaviours, delivered in five to 30 minutes – at reducing drinking among patients identified as drinking at hazardous or harmful levels at primary care and emergency medical services. It addressed this issue by analysing the outcomes of trials which had randomly allocated patients to these interventions versus an alternative procedure. Though not seeking treatment for problem drinking, the patients had been identified through screening questions or tests as drinking excessively or experiencing harm as a result of their drinking. On average they drank 244 g of alcohol a week, equivalent to 30 UK units, lower than the previous review's average of 310 g of alcohol a week or nearly 39 UK units. Most of the trials compared a brief intervention to minimal or no intervention (88%) other than usual care, and were conducted in general practice (55%) or emergency care (39%) settings.



Key points From summary and commentary

The featured review aimed to assess the effectiveness of brief interventions in reducing heavy drinking.

There was moderate-quality evidence that brief interventions, delivered in general practice and emergency care settings, can reduce alcohol consumption in hazardous and harmful drinkers.

As was the case in an earlier 2009 review, the issue now is whether in normal practice supposed benefits will be realised on a grand enough scale to create public health gains.

Main findings

The main analysis was a **meta-analysis** which amalgamated results from 34 studies totalling 15,197 participants on the effects of brief interventions on the amount of alcohol consumed per week. From this there was 'moderate-quality' evidence (ie, though the true effect might be substantially different, we can be moderately confident that the study's findings approximate reality) that after one year, participants assigned to a brief intervention averaged 20 g less alcohol a week than those assigned to minimal or no special interventions. However, there was evidence that this might have been an overestimate because the search for trials had disproportionately missed those which found little or no effect.

There was also moderate-quality evidence that brief interventions generated very small but statistically significant reductions in the frequency of 'binge drinking' and of days on which patients drank alcohol, but no significant impact on the amount drunk during a drinking day.

Twenty studies reported a measure of alcohol-related harm. Differences in the measures were said to preclude an amalgamation of these findings, but it was noted that in 16 of the trials the intervention had not generated a significantly greater reduction in harm than among comparison patients.

Overall, both men and women experienced significant drinking reductions from brief interventions, with no significant difference between the sexes.

On average the reduction in weekly drinking attributed to brief intervention was greater in trials set in

primary care practices than in emergency departments (26 g per week versus 10). However, no significant difference remained after adjusting for the year when the results had been published.

When some kind of alcohol advice or information (eg, a leaflet) had been provided to patients in the comparison group, the 20 g a week advantage for brief interventions fell to 13 g a week. Across studies which made this comparison, extended brief interventions had not led to a statistically significant greater reduction in alcohol consumption than more minimal interventions (more on this issue [below](#)).

'Real world' representativeness

Like its predecessor, the featured review offered reassurance that results from the included trials were applicable to routine practice. Underpinning this was a rating of the trials on a [spectrum](#) from 'efficacy' to 'effectiveness':

- Low scores indicated an efficacy trial, testing interventions under relatively optimal or ideal conditions such as with expert, well trained staff, and selected participants.
- High scores indicated an effectiveness trial – a more clinically relevant and real-world tests of the intervention.

Efficacy–effectiveness scores ranged from 4.5 to 12. Half the studies which could be included in the analysis scored below 8.5, half above. The former were considered the less 'real world' efficacy trials, the latter the more 'real world' effectiveness trials. Unchanged from the previous review, the most 'real world' trial was a 2006 [nurse-led brief intervention](#).

Across 18 efficacy trials with 8,106 participants, those allocated to a brief intervention drank 14 g/week less alcohol a year later than those allocated to minimal or no special intervention.

Across 16 effectiveness trials with 7,091

participants, the corresponding figure was 27 g/week less. With each increase in the efficacy–effectiveness score, the average difference in consumption between participants allocated to a brief intervention versus minimal or no intervention increased by 4.1 g. Though neither of these findings was statistically significant, meaning a chance result could not be ruled out, "Trials that were more clinically representative tended to demonstrate greater effectiveness" – the reassurance that overall findings were not merely a product of a controlled-trial 'hot house' inapplicable to normal conditions.

Duration and intensity

Further (and less robust) analyses found that a year later patients allocated to an extended brief intervention had reduced their consumption more than those offered minimal or no intervention, but provided no evidence that this reduction differed from that achieved by briefer interventions. Derived from trials which had tested both intervention variants, this finding was based on much smaller groups of participants than the main analysis, and may be complicated by the fact that attendance at multiple sessions was not always reported and some participants may not actually have received a full extended intervention.

Extended interventions differed from brief interventions not only in contact time but because they were more likely to involve counselling; shorter interventions may draw on counselling methods, but are likely to be too short to make full use of them. Assessing the impact of both duration and type of intervention (advice versus counselling) on drinking, the reviewers found little evidence of a link between treatment exposure time and alcohol consumption, in line with the finding above of little difference in impact between conventional versus extended brief interventions. They also found that counselling-based brief interventions did not better minimal or no intervention in terms of consumption reductions. In contrast, and despite generally being less intensive and providing less contact with participants, advice-based brief interventions did generate a significantly greater reduction in drinking. However, this advantage for brief interventions focused on offering advice did not survive an adjustment for the year the results were published, suggesting it might have been due to counselling-based interventions tending to be reported on more recently.

Taken together, these analyses offer little evidence of a 'dose–response' effect – whereby the greater the exposure to treatment, either in terms of duration, intensity or sophistication of approach, the greater the effect.

The authors' conclusions

This review identified moderate-quality evidence that brief interventions reduce alcohol consumption in hazardous and harmful drinkers compared to usual care, screening or assessment only, or

'Efficacy' and 'effectiveness' trials

Efficacy trials are more likely than effectiveness trials to recruit participants who share similar characteristics, and to involve practitioners more skilled in delivering alcohol interventions or behavioural change work than generalists working in routine primary care. They may also occur in specialist healthcare or university settings, and be resourced, supported and closely monitored in such a way that the interventions are delivered precisely as intended.

In contrast, effectiveness trials are closer to a real world situation and more representative of routine clinical practice, tend to have a broader range of participants, involve clinicians who routinely work in primary care, and allow more flexibility in the way the intervention is delivered.

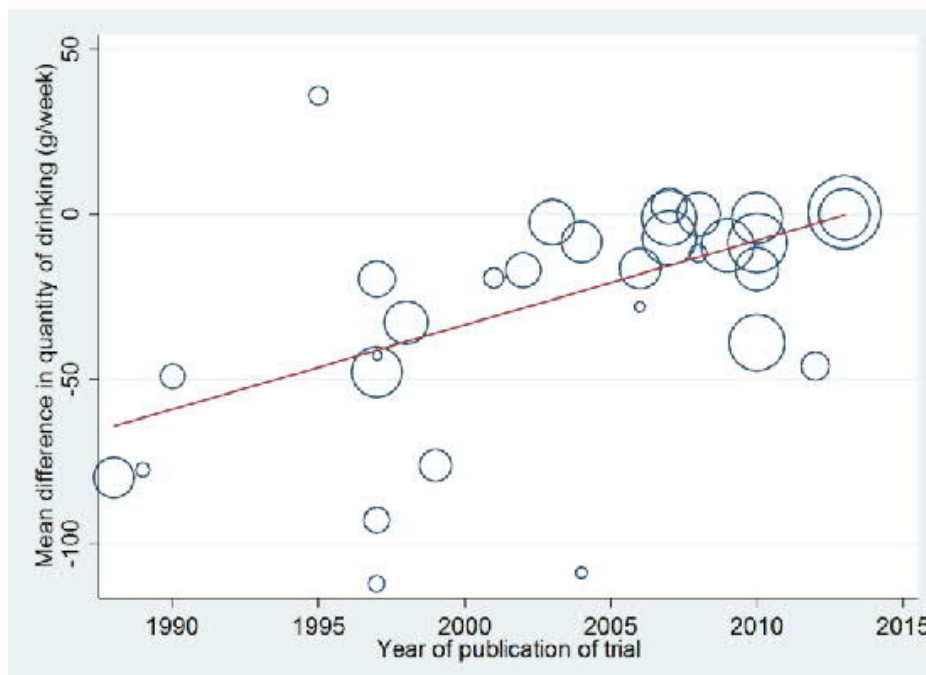
minimal alcohol advice, and found that longer or more intensive or sophisticated interventions have little extra effect on outcomes.

FINDINGS COMMENTARY Like its predecessor, the featured review raised questions about whether benefits observed in trials translate to real-world practice, and whether those benefits will be realised on a grand enough scale to create public health gains. A big gap was its inability to come to a conclusion about the effect of brief interventions on alcohol-related harm, ultimately the outcome targeted by brief intervention programmes. It meant the review could offer no reassurance that small drinking reductions associated with brief interventions have any clinical significance in terms of preventing ill health. When this was measured, in 16 of 20 trials no significant effect was found on alcohol-related harm, and in two others, only fleeting reductions.

Still effective?

The earlier (2007) review was an important document in the field, providing a benchmark for the effectiveness of brief interventions which was fed into

Figure 5. Meta-regression of quantity of drinking at 12 months on year of publication of trial.



Over the years findings of the impact of brief interventions on drinking a year later steadily diminished until by 2014 they averaged near zero

cost-effectiveness calculations which influenced national policy. At the time of the previous version of the review, that benchmark was a reduction in drinking amounting to 38 g a week. Collecting its evidence 11 years later, in the featured review that had nearly halved to 20 g a week. Part of the reason was a significant tendency for studies published most recently to record lesser effects. In fact, by 2014–2015 the 'best fit' graph of this tendency (► chart) suggested studies were on average finding zero effect. A number of credible explanations were given for this tendency, but it does mean that contemporary practitioners should have much less confidence than their predecessors that diverting the scarce resource of time to formal brief intervention programmes in primary care settings is worthwhile – and primary care (in this review taken to include emergency departments) is the pre-eminent setting for these programmes.

Really 'real-world'?

The earlier review had also formed the basis for the reassuring assertion that brief interventions not only work in the unrealistic context of a tightly controlled research study with expert, well-trained staff, and selected participants, but also in the less controlled context of routine primary care. The verdict that the research would generalise to routine practice rested largely on the finding that impacts in the more real-world trials did not significantly differ from those of the more tightly controlled trials. However, the Effectiveness Bank analysis of the review (and in greater detail the background notes) cast considerable doubt over whether the average drinking reduction seen in the trials would be replicated if the interventions were 'scaled up' to practices in general, and applied by the general run of doctors to the general run of patients. In essence, after combing through the studies labelled the most indicative of routine practice, it questioned whether they were indeed 'real-world' or just relatively less 'unreal-world' within the constricted range offered by the evidence base.

The updated review no longer majored on this issue, but like its predecessor, also found no

significant difference between the pooled findings of efficacy versus effectiveness trials. Despite an additional 42 studies being considered, what was judged to be the most real-world trial (rated 12 on the scale) remained unchanged. It illustrates the potential lack of applicability to routine practice even in supposedly real-world trials. In this [nurse-led brief intervention](#) only a quarter of the practices approached were recruited and just over 1 in 10 contributed data to the analysis, suggesting that the results may not be reflective of what would happen in a practice less motivated or less well placed to get involved in, and complete, a brief intervention trial.

Close behind was an [Australian trial](#) of screening and brief intervention delivered in an emergency department by clinicians, rated 11.5. This trial was indeed real-world in many ways: in its modest training programme for department staff, who conducted both screening and brief intervention, and in its formal criteria for excluding patients from the trial. However, it found no impact from a brief intervention compared to usual care. The trial was also real-world in its inability to persuade staff to screen more than a minority of patients despite “sustained effort over more than 1 year to encourage universal screening”. There were large differences in screening rates – one clinician screening 700 attendees, others none – which the authors acknowledged may have been affected by the requirement of the research (not the intervention itself) to obtain consent from patients to participate in the trial if they screened ‘positive’ for risky drinking. What this means is that even if the brief intervention had been found to work, we could not be confident that a successful effort to widely implement screening and brief intervention in emergency departments would have similar effects.

Seven trials were rated 11 on the efficacy–effectiveness scale, two of which were analysed in the extensive [background notes](#) prepared for the previous review:

- [One study](#), which selected practices from among those affiliated to a special health promotion network, was only able to gain data from under a quarter of the doctors it recruited, and able to follow up half of the patients they saw. The authors observed that only the most motivated practitioners contributed data to the study.
- [Another](#) selected its practices on the basis of their expressed interest in alcohol research; screening and assessment was conducted by a researcher and the results were used in the intervention; and around a third of patients could not be followed up.

Five new additions were also rated as clinically-relevant effectiveness trials:

- The [SIPS study](#) (1 2), led by the primary author of the featured review, was intended to be the definitive test of brief interventions in England. To maximise real-world applicability, usual staff were designated to undertake screening and intervention, with the exception of lifestyle counselling, which in probation and emergency departments was delegated to a specialist alcohol worker, presumed to mimic what would happen in routine practice. Usual staff also undertook the research tasks involved in recruiting patients to the trial and collecting baseline information. Despite these strengths as an effectiveness trial, the fact that the average practice identified just two risky drinkers per month suggests implementation problems and/or considerable selectivity in the recruitment of patients to the trial.
- The generalisability of the [results](#) of a brief motivational intervention in primary care in Thailand was limited by a failure to report the total number of people screened, from which 126 participants were then recruited, and the brief intervention itself being unusually composed of three scheduled sessions.
- Although doctors delivered the brief interventions in [Project SHARE](#) (Senior Health and Alcohol Risk Education) (3 4), a specialist and specially trained health educator provided three scheduled follow-up telephone counselling sessions, offering patients assessment and feedback, negotiation and goal-setting, behavioural modification techniques, self-help-directed bibliotherapy, and reinforcement.
- In a self-declared ‘pragmatic’ [trial](#), a term indicating measurement of the benefits of an intervention in routine clinical practice, participating doctors were self-selected and therefore likely to have had higher levels of motivation than would be found in a universally implemented programme.
- Recruitment in another trial (5 6 7) was limited to five health care providers that served a predominantly employed population with health benefits through medical insurance, limiting generalisability.

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REVIEW 2012 [Behavioral counseling after screening for alcohol misuse in primary care: a systematic review and meta-analysis for the U.S. Preventive Services Task Force](#)

STUDY 2014 [A multisite randomized controlled trial of brief intervention to reduce drinking in the trauma care setting: how brief is brief?](#)

REVIEW 2015 [A comparison of the efficacy of brief interventions to reduce hazardous and harmful alcohol consumption between European and non-European countries: a systematic review and meta-analysis of randomized controlled trials](#)

STUDY 2003 [Injury rate cut in heavy drinking accident and emergency patients](#)

REVIEW 2015 [Single-session alcohol interventions for heavy drinking college students: A systematic review and meta-analysis](#)