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**▶ Alcohol assessment and feedback by email for university students: main findings from a randomised controlled trial.**

**McCambridge J., Bendtsen M., Karlsson N. et al. British Journal of Psychiatry: 2013, 203, p. 334–340.**

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*A rare 'real world' trial of whether a routine and feasible brief alcohol intervention can have population-wide public health benefits found that among university students in Sweden, web-based screening had very minor impacts which were not enhanced by feeding back the results.*

**SUMMARY** Heavy drinking among university students is a global phenomenon also seen in Sweden, where students drink heavily, and heavy episodic drinking with its associated risks is the norm. Brief feedback of an assessment of the severity of the student's drinking allied with computerised interventions can alter behaviour and reduce alcohol problems in student populations. Sweden became the first country to implement both in a national system; it is now routine for university students to receive an email from student healthcare services inviting them to participate in a brief online alcohol intervention. Other regions and countries have implemented similar programmes or plan to do so.

The featured study aimed to evaluate this element of national alcohol policy in Sweden. A distinctive feature was its ability to assess the degree to which merely being screened led to changes in drinking, even when nothing intended to be an intervention was on offer. It did this by incorporating a [control](#) group of students whose first contact with the study was to be assessed at the three-month follow-up point. Their drinking could be compared with that of another two sets of students, who three months before had been sent emails asking them to complete [on-line alcohol screening](#); one of these two sets also received an intervention in the form of feedback on the results of the screening tests.

None of the students were told they were part of a study. The initial invitation to the screening site was presented as a routine communication from the universities' health care service, and at follow-up all three sets of students were led to believe they were engaging in a lifestyle survey bearing no relation to the screening invitation three months before. As they would be in routine practice, students were free to accept the invitation to be screened and to look at the feedback or not, and all the students were included in the analysis, regardless of whether they accepted these offers. The trial's design enabled it to assess the impact of screening and the added impact of also receiving feedback on the results of that screening relative to no screening and no intervention at all, and to do so in a way largely reflecting how these procedures would be implemented in practice. The study did not limit itself to risky drinkers or just to those students who complied with the screening request, and the results were uncontaminated by the influence of consent to join a study and awareness that one's drinking was being monitored.

In more detail, at two universities in Sweden the email addresses of all 14,910 students in terms one, three and five of their studies in Autumn 2011 were randomly allocated to no screening, screening only, or screening plus feedback of the results. About a third of the two sets of students invited to be screened completed the process, answering ten questions including how much they drink and the consequences of their drinking. For one of these two sets that was where the process ended; the other proceeded to feedback (see [sample](#)) on the results of the screening test and advice on whether and how to alter their drinking habits to reduce risk. Three months later just over half the 14,910 students completed an online 'lifestyle survey' sent by the researchers which included the [three questions](#) which constitute the [AUDIT-C](#) screening questionnaire about typical current drinking patterns. Typically in their early twenties and towards the start of their university courses, their responses provided the outcome data for the study. Of the students who three months before had been offered screening, only about half the followed-up sample had actually completed that process. It meant that any impacts of screening and intervention across the entire followed-up sample would be diluted because a high proportion of the students intended to experience these procedures had not, and some who had experienced them would be unlikely to be affected because they were not drinkers or not [risky drinkers](#) – limitations which would probably also be the case in the normal practice approximated by the trial.

**Main findings**

On no measure did offering feedback as well as screening appreciably or significantly improve outcomes, but offering the full package did lead to nearly 4% fewer students (about 45% v. 48%) scoring as risky drinkers compared to offering no screening and no intervention at all, and to slightly fewer heavy drinking episodes – a difference of 0.06 on a scale from 0 to 4. The same difference in heavy drinking episodes was found between students offered screening only and those offered no screening and no



**Key points**

This Swedish study asked whether offering online alcohol screening and brief intervention to university students would have impacts noticeable across the entire student body, even if many did not take up the offer, and some who did had little reason to reduce their drinking.

It constitutes a rare 'real world' trial of whether a routine and feasible brief intervention might have population-wide public health benefits.

Effects were minor and generally statistically insignificant, and suggested that screening itself has an impact which may not be enhanced by adding intervention in the form of feedback of screening results.

This trial and others indicate that web-based screening and brief intervention should not be relied on alone to address unhealthy drinking among students, but should be supplemented by environmental interventions such as restricting the availability and promotion of alcohol.

episodes was found between students offered screening only and those offered no screening and no intervention. Screening-only students also had slightly lower total AUDIT-C scores – about 3.4 v. 3.6 on a scale ranging up to 12.

Another analysis was confined to the followed-up students who had undertaken screening three months before and, if allocated to this, received an intervention in the form of feedback, giving the intervention element the maximum chance to show that it really did add value. Still there were no statistically significant advantages from adding intervention to screening, until the research team added an unplanned comparison of weekly consumption, calculated by multiplying how often the student said they drank with how much they said they typically consumed. The difference amounted to 7.5g of alcohol or about one UK unit per week – about 73g per week for students offered screening only compared to 66g for those also offered feedback. This was the only one of six tests of whether feedback further reduced drinking to meet the conventional criterion for statistical significance.

### The authors' conclusions

The very small differences between drinking outcomes consistently favoured both screening and feedback and screening only programmes in comparison to doing neither. Some of these differences attained statistical significance, providing evidence of an effect across the student population of the universities achieved by a very brief and simple individual-level intervention, reflecting the possible impact of a national system based on university health services sending emails to students. A striking finding is the impact of screening alone, confirming other findings that being asked about one's drinking can in itself lead to apparent reductions in drinking. Given low costs and the high numbers reached, it is reasonable to assume that the intervention would prove cost-effective, and reductions in risky drinking and alcohol screening test scores can also translate into reductions in the prevalence of problem drinking.

The results also suggest that such interventions should not be relied on as the sole component of a university's alcohol strategy, but integrated with measures which limit the affordability and availability of alcohol and its promotion.

Despite some statistically significant findings, it cannot be said that the evidence of an effect from either screening or this plus feedback was strong, and any effects there were after three months can be expected to erode in the longer term. The reliability of the findings as an indication of university-wide impact is limited by the fact that just 52% of students completed the follow-up assessment, and some data from the study suggest the missing students may have tended to be the heavier drinkers. The only outcomes available to the trial were those reported by the students themselves, reports which may not be an accurate account of their drinking. Also, the study offered multiple opportunities for screening and feedback to result in statistically significant differences.

**FINDINGS COMMENTARY** It is important to appreciate that the trial did not test the impact of being screened and receiving feedback on individual risky-drinking students, but whether *offering* these services to all students at a university would have impacts on drinking and related problems noticeable across the entire student body, which included students who did not take up the offers, and some who did but had little or no reason to reduce their drinking. It amounts to a rare test of the population-wide impact of screening and brief intervention as a public health tool.

The results offer little encouragement to universities considering this route to encouraging less risky drinking among their students. They were notable mainly for minor and generally statistically insignificant differences between drinking in the three sets of students, differences which might not have been sustained had more students been able to be followed up, and which were vulnerable to possible biases the study was unable to eliminate. Of the 10 tests of whether offering screening with or without feedback reduced drinking more than offering neither, only four produced statistically significant results. Had the criterion for significance been stricter to adjust for offering so many opportunities for chance statistically significant differences to emerge, it seems likely that just one of these four differences would have remained significant. This more robust finding was the small extra reduction in the proportion of risky drinkers due to offering screening plus feedback compared to neither.

The other statistically significant support for offering feedback as well as screening emerged from the analysis confined to the followed-up students who had undertaken screening three months before. However, testing impacts on weekly consumption was not planned in advance of the results of the trial being known, reducing confidence in the finding because it opens up the possibility of capitalising on a chance significant result.

As the authors comment, this trial and others (see below) indicate that web-based alcohol screening and brief intervention should not be relied on alone to address unhealthy drinking among students, but should be used in conjunction with environmental interventions such as restricting the availability and promotion of alcohol. Even face-to-face brief interventions **add little** and patchily to any effects from screening and research participation alone.

### Other trials of computerised brief alcohol interventions for students

Impacts were also at best minor in a [trial](#) of internet-based alcohol screening and brief intervention at seven of New Zealand's eight universities, which also used screening and intervention procedures feasible in normal practice. Unlike the featured trial, of the 14,991 students invited to participate in the trial, the analysis confined itself to the 3,422 who completed the **AUDIT-C** screening questionnaire and who scored as at least heavy or hazardous drinkers, a restriction which gave the intervention (further questions about the student's drinking plus feedback of the results) tested in the study a greater chance to demonstrate its worth.

At follow-up five months later, all alcohol-related measures favoured the intervention students, but only slightly and the differences were generally not statistically significant. Even among these study volunteers and risky drinkers, the impact of a well structured assessment and brief intervention was so small that – given possible biases – in reality it might have been zero.

A **UK trial** among university students also offered only weak support for supplementing online alcohol screening with brief intervention based on the results. Only on one of the two measures of drinking at one of the three follow-ups was intervention associated with a greater reduction in drinking than screening and research processes only, and this was at the final follow-up when just a third of students responded. Attempts to compensate for this degree of loss to follow-up by estimating

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In finding at best small effects, these trials were typical of trials of computer-based brief intervention among students. A [review](#) of such interventions among students and non-students found a much smaller reduction in drinking among student populations. Though amalgamated across all the trials the reduction was statistically significant, in most of the individual trials it was not. Possibly because in these studies the students were drinking less than older people, and perhaps too in a setting where heavy drinking is an accepted rite of passage, students have less incentive to act on information and advice which would lead heavier drinkers responsible for families and jobs to cut back.

Across the spectrum of populations targeted, settings and intervention methods, truly real-world trials of brief interventions are few ([1](#) [2](#) [3](#)) and, like the trial in New Zealand and the featured study, they tend to find that the interventions are often not delivered and do not affect drinking to a statistically significant degree. More promising results from trials more selective about their participants and in which there is non-routine support to promote implementation seem not to survive the loss of these controls and supports.

### Just ask?

For the researchers, the results of the featured study revealed the "striking" impact of merely being asked about your drinking in a screening test, an effect also identified in other trials including a [randomised study](#) of British university students. It found that adding the alcohol screening questions of the [AUDIT questionnaire](#) to a health survey was associated with changes in the self-reported degree of hazardous drinking of the same order as when on other studies assessment has been supplemented by brief advice.

This was one of the five trials whose results [were amalgamated](#) to give a pooled estimate of the impact of asking about drinking among university students in brief alcohol intervention trials. The estimate was a statistically significant reduction of about 22g of alcohol per week, apparently due to less frequent drinking rather than drinking less on each occasion. However, none of the trials could eliminate the possibility that it was research processes such as obtaining consent to participate in the trial and knowing one was to be followed up which generated reductions in drinking, rather than the screening questions. The featured study was able to eliminate this possibility. It found some effects apparently attributable to screening, that these were minor and differences on other measures were not statistically significant, and that there was no consistent evidence that doing more than screening in the form of feedback and advice created further reductions.

For more on the degree to which brief alcohol interventions can improve population health see this Effectiveness Bank [hot topic](#).

*Thanks for their comments on this entry in draft to research author Jim McCambridge of the University of York in England. Commentators bear no responsibility for the text including the interpretations and any remaining errors.*

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