Screening in brief intervention trials targeting excessive drinkers in general practice: 
systematic review and meta-analysis

Beich A, Thorsen T, Rollnick S

CRD summary
This review found that screening in general practice does not appear to be an effective precursor to brief interventions targeting excessive alcohol. The conclusion is supported by the results presented. However, poor reporting of the review methods make it difficult to confirm the reliability of this conclusion.

Authors' objectives
To review the effectiveness of screening programmes for excessive alcohol use that incorporate brief interventions in general practice.

Searching
MEDLINE, EMBASE, PsycINFO, the Cochrane Controlled Trials Register and the ETOH database were searched from inception; the search terms were reported. The searches were restricted to English language studies. Reference lists of retrieved papers were screened and European experts were contacted for additional relevant studies.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials in which recruitment involved screening or a procedure similar to screening were eligible for inclusion.

Specific interventions included in the review
Studies that recruited participants through some form of screening and then compared brief interventions to no or less intervention were eligible for inclusion. Interventions had to involve minutes rather than hours of interaction and had to focus on excessive alcohol use (hazardous or harmful drinking); studies that focused on a specific disease or alcohol dependency were excluded. The included studies used general health or lifestyle questionnaires that included questions on alcohol consumption to screen patients. The questionnaires were provided to patients when they visited their general practitioners (GPs), although some studies also invited patients by mailing out questionnaires or telephoning patients. The brief interventions ranged from a 10-minute consultation to up to five consultations lasting 5 to 20 minutes. Intervention protocols all included feedback on present drinking, education on risk and strategies for changing drinking, and the practitioner's advice to cut down on drinking.

Participants included in the review
Studies carried out in general practice settings were eligible for inclusion. Studies carried out in hospital wards, emergency rooms or in ad hoc research clinics were excluded.

Outcomes assessed in the review
Studies had to report at least one discrete outcome measure reflecting a clinically significant change in alcohol consumption and the number screened to obtain the study sample to be included in the meta-analysis. The outcome measures reported in the review were the percentage of patients who screened positive and the percentage who were given the brief intervention. The screening effect, i.e. the proportion of patients who would benefit from the screening programme, was also reported. In most studies, the duration of follow-up was 1 year (range: 6 months to 4 years).

How were decisions on the relevance of primary studies made?
Two reviewers conducted the searches and retrieved studies. The authors did not state any further details of the selection process.

Assessment of study quality
The studies were assessed for internal and external validity. Internal validity was assessed in terms of selection bias,
performance bias, attrition bias and detection bias. External validity was assessed in terms of losses from screening to follow-up and reasons for these losses. The authors did not state how many reviewers performed the validity assessment.

Data extraction
For each study, the absolute risk reduction (ARR) in the proportion of people drinking below defined weekly limits at follow-up, the number-needed-to-treat (NNT) and the screening effect (defined as the proportion of patients who would benefit from the screening programme) were calculated, together with their respective 95% confidence intervals (CIs). An intention-to-treat approach was used: 12 months' follow-up was used as the typical period. The screening effect was calculated as the prevalence of excessive alcohol use (number admitted for brief intervention divided by number screened) multiplied by the ARR.

The authors did not state how many reviewers performed the data extraction.

Methods of synthesis
How were the studies combined?
A fixed-effect Mantel-Haenszel model was used to calculate the pooled ARR and 95% CI. The pooled NNT and the pooled screening effect value were also calculated, with their 95% CIs.

How were differences between studies investigated?
The Mantel-Haenszel heterogeneity statistic was used to investigate heterogeneity.

Results of the review
Eight studies were included in the meta-analysis (134,693 patients screened, 3,250 patients included).

All studies found it impossible to adequately blind patients to the intervention (brief intervention or control). Follow-up rates for the brief intervention studies were generally high. Limitations of the brief intervention studies included self-reporting of outcome measures and self-selection in some studies.

There was no statistical evidence of heterogeneity between studies (p=0.18). The ARRs for proportion of sensible drinkers at follow-up ranged from 1.6 to 15.4%; the pooled ARR was 10.5% (95% CI: 7.1, 13.9). The NNTs ranged from 5 to 61; the pooled NNT was 10 (95% CI: 7, 14).

The average proportion of patients screened who screened positive was 9% (range: 3.3 to 18). Further assessments identified 2.5% (range: 0.9 to 5.4) who were given brief interventions.

The pooled screening effectiveness was 2.6 patients per 1,000 screened (95% CI: 1.7, 3.4) for achieving sensible drinking. This means that if a GP screens 1,000 patients, carries out further assessment in 90 patients who screen positive and gives a brief intervention to 25 who qualify, 2 to 3 patients can be expected to have reduced their alcohol consumption to below recommended maximum levels after 12 months.

Authors' conclusions
Brief advice can reduce excessive drinking. However, screening in general practice does not appear to be an effective precursor to brief interventions targeting excessive alcohol use. The feasibility of screening in general practice for excessive alcohol use is questionable.

CRD commentary
The review addressed a focused question that was supported by clearly defined inclusion criteria. A detailed literature search was conducted, but since the review was restricted to English language studies it may be subject to language bias. No details of the review process, such as the number of authors independently involved in the different stages of the review, were reported; it is therefore not possible to determine whether appropriate steps were taken to minimise bias. The methods used to analyse the results were appropriate, and study details and results were clearly reported in tables.
and figures. The authors' conclusions appear to be supported by the results presented, but the incomplete reporting of review methods make it difficult to confirm the reliability of the authors’ conclusion.

**Implications of the review for practice and research**

**Practice:** The authors stated that 'this review brings into question the model of universal screening in general practice as a case finding approach. Alcohol screening, assessment, and intervention are laborious and time consuming activities that only two or three people of out 1,000 screened will benefit from'.

**Research:** The authors stated that 'further research should focus on other ways than systematic screening of addressing excessive drinking among patients in general practice. More attention should be paid to the preconditions of and skills for successful interviewing, exchange of information, advice giving, and counselling'.

**Funding**

Alkoholpuljen, Alkoholpolitisk Kontakudvalg (Danish Ministry and Board of Health) and Forskningsfonden (Association of County Councils in Denmark).

**Bibliographic details**

Beich A, Thorsen T, Rollnick S. Screening in brief intervention trials targeting excessive drinkers in general practice: systematic review and meta-analysis. BMJ 2003; 327: 536

**PubMedID**

12958114

**DOI**

10.1136/bmj.327.7414.536

**Original Paper URL**

http://www.bmj.com/content/327/7414/536

**Other publications of related interest**

This additional published commentary may also be of interest.

Bazian Ltd. Excessive drinkers may benefit from brief interventions, but screening in general practice for case finding is not efficient. Evid Based Healthcare 2004;8:10-1.

**Indexing Status**

Subject indexing assigned by NLM

**MeSH**

Alcoholism /prevention & control; Bias (Epidemiology); Family Practice; Humans; Mass Screening /methods /standards; Prognosis; Psychotherapy, Brief; Randomized Controlled Trials as Topic; Risk Reduction Behavior

**AccessionNumber**

12003008671

**Date bibliographic record published**

11/11/2003

**Date abstract record published**

09/08/2008

**Record Status**

This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on
the reliability of the review and the conclusions drawn.