Systematic review of alcohol screening tools for use in the emergency department

Lucy A Jones1,2

ABSTRACT
To ascertain which alcohol screening tool is most accurate in identifying alcohol misuse in patients in the emergency department a systematic review of diagnostic cohort studies of appropriate alcohol screening tools was performed. A thorough search of medical databases and relevant peer journals was conducted. Citation and author tracking was also utilised due to an initial paucity of relevant literature. Seven relevant papers were identified from this search, which allowed a review of the quality of the following alcohol screening tools: the fast alcohol screening tool (FAST), the Paddington alcohol test (PAT), the rapid alcohol problem screen (RAPS-4) and the TWEAK (where TWEAK is an acronym of the first letter of the key words in the questions of this screening tool: tolerance, worried, eye-opener, amnesia, K (cut-down)). The most sensitive screening tool within this review appears to be the FAST (93–94%), which has a specificity of 86–88% with a positive predicted value of 86–87%. Although the FAST appears to be the best for accurately identifying alcohol misuse within emergency department patients, it was assessed as a universal screening tool, and it may not be feasible (time or cost) to screen all who present to this service. In contrast, the PAT has been developed to be used on a select population within the emergency department and has already been shown to be cost-effective.

It has been estimated that annually a third of the 14 million people who attend the UK’s emergency departments present with a condition related to alcohol consumption.1 According to government figures this proportion increases after midnight to 70% of all attendances.2 This is against a background of increasing mortality rates afforded to alcohol.3

The government has attempted to combat these problems with various campaigns and initiatives. In 1992, the White Paper ‘Health of the nation’4 advised the public to restrict their weekly alcohol intake to 21 units or less for a man and 14 units or less for a woman. Three years later in response to concerns related to binge drinking, the Department of Health recommended that daily consumption should be limited to three to four units for a man and two to three units for a woman.5 Despite these guidelines it has been reported that in the UK ‘10 million people drink above the Government’s recommended limits’.6

The 2004 ‘alcohol harm reduction strategy’7 focused on the early intervention and management of alcohol use disorders. It acknowledged the role of the emergency department as a facilitator of preventive medicine for alcohol misuse with the use of screening and brief intervention. In 2005 the Department of Health was given £32 million to spend on these new initiatives.8

With this in mind, Patton et al6 surveyed emergency departments in England in 2006 to assess the extent to which these recommendations had been adopted. They had a 98.9% response rate to their questionnaire. Their results showed that 73.9% offered advice on alcohol and 44.4% offered treatment for alcohol problems, but only 16.9% had access to an alcohol health worker. However, only four departments were using a formal screening tool to identify these patients (2.1%).9

At present there does not appear to be a gold standard tool for screening for alcohol misuse within the emergency setting. With this in mind a systematic review was undertaken of the available literature to ascertain: ‘Which alcohol screening tool is most accurate in identifying alcohol misuse in patients in the emergency department?’

LITERATURE REVIEW
Inclusion criteria
Screening programmes have a primary goal of identifying disease at an early stage in its natural history in order for subsequent intervention to prevent the disease from developing further or by curing it completely. ‘Alcohol use disorders’ is a term used to encapsulate the full spectrum of alcohol misuse, which includes binge drinking, harmful drinking behaviours, hazardous alcohol drinking and alcohol dependence.

The UK National Screening Committee10 states that a screening test should be ‘simple, safe, precise and validated’ and ‘should be acceptable to the population’. For a screening tool to be used effectively within the time-pressured environment of the emergency department it needs to be short. Therefore, the interventions chosen for this review were: the fast alcohol screening tool (FAST),11 the Paddington alcohol rest (PAT),12 the rapid alcohol problem screen (RAPS-4)13 and the TWEAK (where TWEAK is an acronym of the first letter of the key words in the questions of this screening tool: tolerance, worried, eye-opener, amnesia, K (cut-down))14 (see Appendices 1–4). The search was limited to these tools because of their brevity and because they are designed to identify a spectrum of alcohol use disorders from hazardous drinking through to alcohol dependence.

The AUDIT-C, the short version of the alcohol use disorders identification test (AUDIT) was not included in this review. The only paper identified within the literature search, which was based in an emergency setting, was tested on a select adult population of 18–20 year olds.15 The older screening tools—the CAGE (where CAGE is 
acronym of the first letters of the key words in the questions of this screening tool: cut-down, annoyed, guilty, eye-opener,16 and the brief Michigan alcoholism screening test (MAST)17—were excluded from the review because they were designed to screen for alcohol dependence alone. In addition, the papers that are included in this review showed these tools to be less efficient than the newer tools when used on an emergency department population.18 19

The comparators for these studies were either standardised diagnostic criteria, or the WHO’s AUDIT20 as a reference standard. The diagnostic criterion used within the studies for alcohol abuse/dependence was derived from either the WHO International Classification for Diseases, 10th revision (ICD-10)21 or the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)22, which is produced by the American Psychiatric Association. These criteria were elicited from an additional set of questions within the study interview, the composite international diagnostic interview (CIDI).23 This diagnostic interview was produced by the WHO and the US Alcohol, Drug Abuse and Mental Health Administration. The AUDIT was developed in the early 1990s by investigators from six countries.24 They produced a multiculturally sensitive, 10-item screening tool (score of $8$), with a sensitivity of 92% (score of $8$), with a specificity of 94%. The AUDIT is not considered within the context of an ‘intervention’ in this review, because of its length. Despite its extensive validity within the general population,20 in the emergency setting it has been shown to be less accurate in detecting harmful and dependent drinking behaviours within the female population (sensitivities of 72% and 66%, respectively).24

The study population was targeted to include only adult patients (age ≥18 years) attending the emergency department with an alcohol-related injury or illness. Papers that have studied children, inpatients within a hospital setting or patients in a primary care setting were excluded.

The outcome measures for these tools were their sensitivity, specificity, positive predictive value and negative predictive value for identifying harmful or hazardous drinking behaviours within patients of the emergency department.

### Search strategy

The search was commenced using the core health databases, Medline via OvidSP (Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R) 1950 to Present). The following search terms were used: [([emergency department &).mp. OR (accident & emergency$).mp. OR (emergency room &).mp. OR (trauma centre$).mp.] AND [(screen$ OR screening$ OR identify$ OR detect$ OR question$ OR questionnaire$).mp.] AND [(alcohol OR alcoholism$ OR addict$ or hazardous drinking$ OR harmful drinking$ OR drunk$ OR intoxicated$).mp.] AND [(intervention$ OR intervention$ OR brief intervention$ OR motivational interview$ OR advice or alcohol health worker$ OR counselling$).mp.] LIMIT to English Language and Human studies.) This produced a list of 179 papers. Similar searches were applied to ‘Cinahl’ by means of EBSCO, the nursing and allied health literature database and ‘PsychINFO’, the international database for psychology and related fields. They yielded 18 and 75 related papers, respectively. The Cochrane database was also searched using the term ‘alcohol screening’, which produced nine reviews (non-Cochrane), 354 clinical trials, 11 method studies, two technology assessment papers and 10 economic evaluations (figure 1).

### Data extraction and analysis

The literature search found a total of 2382 papers. Using the inclusion criteria described above, seven relevant and appropriate papers were found to review.11 15 18 19 25–27 These papers were critically appraised using Greenhalgh’s checklist for appraising papers that looks ‘to validate a screening test’.28 Using the questions involved in the appraisal tool the key features of these studies were extrapolated in order to synthesis the data.

Table 1 shows the main features of the seven evaluation studies using the ‘PICO’ model. For each brief screening tool under review, there are two comparative studies; except RAPS-4, which has three evaluation studies. The first two papers by Cherpitel18 25 utilise the same population sample but assess different outcomes—the first assesses available screening tools, whereas the second assesses the newly developed rapid alcohol problem screen against these known tests.

Table 2 shows the participants’ characteristics within the studies. The majority of studies were similarly matched for sample size—between 400 and 500 participants. The studies from the 1990s had a sex ratio of 5:2 in favour of women. This effect was reversed in the papers from 2000 onwards. The

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**Figure 1** Modified QUORUM statement. ED, emergency department; EMJ, Emergency Medicine Journal.

During the appraisal of the papers retrieved from the above searches, a paucity of papers was found actually addressing the research question, and so a review of papers found within their reference lists was used to expand the capture of all relevant articles. In addition, a search of the relevant peer journals was performed using the search term: ‘alcohol screening’. These journals included: Academic Emergency Medicine (26), Addiction (163), Alcohol and Alcoholism (648), Alcoholism: Clinical and Experimental Research (225), Annals of Emergency Medicine (370), Emergency Medicine Australasia (21) and Emergency Medicine Journal (273).

To ensure that all the relevant papers had been extrapolated on these screening tools, a search using the following terms was also performed: Paddington Alcohol Test and PAT; Fast Alcohol Screening Tool and FAST; TWEAK; Rapid alcohol problem screen, RAPS-4 and RAPS-QF; and Alcohol Use Disorder Identification Test and AUDIT. For completion, author tracking and citation tracking was also performed.
performance of the evolving RAPS against its derivative. The following two studies also review the reliability of the results when these tests are in direct comparison. Brief MAST (see Appendix 3), and brings into question the actually administering it to this population is peculiar. The tool with a positive predicted value of 86%.

A better positive predictive value (90%). However, the use of the same cohort to criteria for ICD-10 as the gold standard means that there is no work-up bias. However, the use of the same cohort to works as well as including a new screening tool, the RAPS, which had to be calculated from the given data.

The research papers from the USA are of dubious quality. The first paper by Cherpitel is a relatively good diagnostic cohort study. The results were elicited from a randomly selected patient cohort. There is no evidence of work-up bias—all patients received both the ‘intervention’ screening questions as well as the gold standard comparator, CIDI. The use of the diagnostic criteria for ICD-10 as the gold standard means that there is no incorporation bias. However, the use of the same cohort to assess Cherpitel’s new screening tool, the RAPS, without actually administering it to this population is peculiar. The tool is composed of items directly taken from the TWEAK, AUDIT and brief MAST (see Appendix 3), and brings into question the reliability of the results when these tests are in direct comparison with this tool. The following two studies also review the performance of the evolving RAPS against its derivative tests.

The research studies from the UK utilised two different population samples—the studies on the FAST, the PAT and the MAST had participants who were recruited consecutively by the triage nurse of the emergency department, whereas the PAT study from 2004 used an opportunistic sample of all emergency department attendees (n=468). All the UK-based studies used the AUDIT as their reference standard. This is a dubious choice considering the FAST is essentially a shortened version of the AUDIT, which may have introduced incorporation bias as the reference standard is not independent of the intervention. The PAT has been developed from the CAGE and the MAST so should not encounter this bias.

None of the studies commented upon blinding or observer bias, and there were no \( \kappa \) scores to assess interobserver reliability on using these questionnaires; which were all undertaken within an interview-based setting. The results of all the studies included sensitivities and specificities for each tool, but the positive and negative predicted values within table 3 were not reported and had to be calculated from the given figures. The CI were also calculated from the results.

**Table 1** Outline of studies eligible for systematic review

<table>
<thead>
<tr>
<th>Author, date and country</th>
<th>Population</th>
<th>Screening tools</th>
<th>‘Gold standard’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cherpitel, 1995, USA</td>
<td>Probability sample from ED (level 1 trauma centre in Mississippi); n=1330</td>
<td>CAGE, brief MAST, TWEAK, AUDIT, history of trauma scale</td>
<td>ICD-10 criteria for harmful drinking and alcohol dependence</td>
</tr>
<tr>
<td>Cherpitel, 1995, USA</td>
<td>Probability sample from ED (level 1 trauma centre in Mississippi); n=1330</td>
<td>RAPS, CAGE, brief MAST, AUDIT, TWEAK, history of trauma scale</td>
<td>ICD-10 criteria for harmful drinking and alcohol dependence</td>
</tr>
<tr>
<td>Cherpitel, 2000, USA</td>
<td>Probability sample from ED in USA; n=1952</td>
<td>RAPS, RAPS-4, CAGE, brief MAST, AUDIT and TWEAK</td>
<td>ICD-10 and DSM-IV criteria for harmful drinking, alcohol abuse and dependence</td>
</tr>
<tr>
<td>Hodgson et al, 2002, UK</td>
<td>Opportunistic sample for validation from London ED; n=100</td>
<td>FAST</td>
<td>AUDIT</td>
</tr>
<tr>
<td>Cherpitel and Bazargan, 2003, USA</td>
<td>Probability sample from ED, from which only Hispanic and African-American populations were analysed; n=412</td>
<td>AUDIT, RAPS-4, RAPS-GF</td>
<td>DSM-IV criteria for alcohol dependence and alcohol abuse</td>
</tr>
<tr>
<td>Hodgson et al, 2003, UK</td>
<td>Random sample from 4 ED: London, Cardiff, Bristol, Southampton; n=2185</td>
<td>FAST, PAT, CAGE</td>
<td>AUDIT</td>
</tr>
<tr>
<td>Patton et al, 2004, UK</td>
<td>Opportunistic sampling from London ED, St Mary’s Hospital; n=468</td>
<td>PAT</td>
<td>AUDIT</td>
</tr>
</tbody>
</table>

AUDIT, alcohol use disorders identification test; DSM-IV, Diagnostic and Statistical Manual of Mental Disorders; ED, emergency department; FAST, fast alcohol screening tool; ICD-10, International Classification for Diseases, 10th revision; MAST, Michigan alcoholism screening test; PAT, Paddington alcohol test; RAPS, rapid alcohol problem screen.

Prevalence of alcohol misuse (abuse and dependence) appeared similarly matched across the studies—range of 36%–45%.

Table 3 summarises the results of the seven studies. The most sensitive screening tool within the review appears to be the FAST (93%–94%), which has a specificity of 86%–88% with a positive predicted value of 86%–87%. However, the RAPS-4 has a better positive predictive value (90%–92%).

The research papers from the USA are of dubious quality. The first paper by Cherpitel is a relatively good diagnostic cohort study. The results were elicited from a randomly selected patient cohort. There is no evidence of work-up bias—all patients received both the ‘intervention’ screening questions as well as the gold standard comparator, CIDI. The use of the diagnostic criteria for ICD-10 as the gold standard means that there is no incorporation bias. However, the use of the same cohort to assess Cherpitel’s new screening tool, the RAPS, without actually administering it to this population is peculiar. The tool is composed of items directly taken from the TWEAK, AUDIT and brief MAST (see Appendix 3), and brings into question the reliability of the results when these tests are in direct comparison with this tool. The following two studies also review the performance of the evolving RAPS against its derivative tests.

The research studies from the UK utilised two different population samples—the studies on the FAST, the PAT and the MAST had participants who were recruited consecutively by the triage nurse of the emergency department, whereas the PAT study from 2004 used an opportunistic sample of all emergency department attendees (n=468). All the UK-based studies used the AUDIT as their reference standard. This is a dubious choice considering the FAST is essentially a shortened version of the AUDIT, which may have introduced incorporation bias as the reference standard is not independent of the intervention. The PAT has been developed from the CAGE and the MAST so should not encounter this bias.

None of the studies commented upon blinding or observer bias, and there were no \( \kappa \) scores to assess interobserver reliability on using these questionnaires; which were all undertaken within an interview-based setting. The results of all the studies included sensitivities and specificities for each tool, but the positive and negative predicted values within table 3 were not reported and had to be calculated from the given figures. The CI were also calculated from the results.

**Table 2** Study characteristics

<table>
<thead>
<tr>
<th>Author, date and country</th>
<th>Number analysed</th>
<th>Age (years)</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>Alcohol problems diagnosed (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cherpitel, 1995, USA</td>
<td>492/1498</td>
<td>45% 18–29</td>
<td>M 38%</td>
<td>Black 2%</td>
<td>58% current drinkers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>39% 30–39</td>
<td>F 62%</td>
<td>White 18%</td>
<td>–17% harmful</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40% &gt;40</td>
<td></td>
<td></td>
<td>–19% dependent</td>
</tr>
<tr>
<td>Cherpitel, 1995, USA</td>
<td>492/1498</td>
<td>45% 18–29</td>
<td>M 38%</td>
<td>Black 2%</td>
<td>58% current drinkers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>39% 30–39</td>
<td>F 62%</td>
<td>White 18%</td>
<td>–17% harmful</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40% &gt;40</td>
<td></td>
<td></td>
<td>–19% dependent</td>
</tr>
<tr>
<td>Cherpitel, 2000, USA</td>
<td>1429/1952</td>
<td>No information</td>
<td>M 49%</td>
<td>Black 1%</td>
<td>9% harmful drinkers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>F 51%</td>
<td>White 25%</td>
<td>13% dependent</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hispanic 30%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Other 26%</td>
<td></td>
</tr>
<tr>
<td>Hodgson et al, 2002, UK</td>
<td>100</td>
<td>69% &gt;25</td>
<td>M 58%</td>
<td>No information</td>
<td>No information</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>F 42%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cherpitel and Bazargan, 2003, USA</td>
<td>412/579</td>
<td>37% 18–29</td>
<td>M 59%</td>
<td>African-American 4%</td>
<td>46% current drinkers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>41% 30–49</td>
<td>F 41%</td>
<td>F 1%</td>
<td>–19% dependent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>22% &gt;50</td>
<td></td>
<td></td>
<td>–24% abuse</td>
</tr>
<tr>
<td>Hodgson et al, 2003, UK</td>
<td>2169/2185</td>
<td>28% ≤25</td>
<td>M 59%</td>
<td>No information</td>
<td>39% alcohol misuse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>72% &gt;25</td>
<td>F 41%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patton et al, 2004, UK</td>
<td>468</td>
<td>No information</td>
<td>No information</td>
<td>No information</td>
<td></td>
</tr>
</tbody>
</table>

However, this tool has yet to be tested against valid diagnostic criteria for alcohol problems. The TWEAK and RAPS-4 were used as universal screening tools within the American emergency department setting. Despite the fact that the TWEAK was originally developed to assess hazardous drinking within pregnant women in an antenatal setting, it worked well as a screening test within a mixed gender cohort. While its sensitivity was relatively good within this population (84–87%, with tight CI), the calculated positive predicted values were poor (54–62%). In comparison its negative predicted values were good. The RAPS-4 has a similar profile to the TWEAK, but it appears to be more effective in detecting alcohol dependence compared with alcohol misuse.

The PAT is an evolving screening tool for identifying hazardous and harmful drinkers that was developed within the emergency department of St Mary’s Hospital in London. The tool has undergone a number of improvements since it was developed in 1996. It is not a universal screening instrument—it has been developed to target certain emergency room presentations that have been found to be associated with a high risk of alcohol misuse (the ‘top 10’ conditions). Within the literature found for this review, the PAT was only found to have been validated against the AUDIT in 2004. The more recent updates have not been validated in a similar manner. When compared with the FAST, it was applied as a universal screening tool, which may account for its low sensitivity in this study. Despite the fact that this is a well-established screening tool within an emergency department, there needs to be further research to prove its effectiveness when applied to all emergency departments.

**CONCLUSION AND RECOMMENDATIONS**

From the literature found for this review, the FAST appears to be the best for accurately identifying alcohol misuse within emergency department patients, having been tested in the largest multicentre trial. However, this tool was used for universal screening, and it may not be feasible (time or cost) to screen all who present to our service. A study undertaken in Chesterfield Royal Hospital looked at the value of employing universal screening and found that in a 6-month period only 28% of those attending the department had been questioned. In contrast, the PAT has been developed to be used on a select population within the emergency department and has already been shown to be cost-effective.

A randomised cluster trial is currently taking place within nine UK emergency departments (screening and intervention programme for sensible drinking; SIPS). Part of the trial is going to assess the effectiveness and cost-effectiveness of different screening approaches—universal screening (FAST) versus targeted screening using the PAT. This more robust method of research—the randomised controlled trial—should bring good quality evidence to direct our practice in the future. However, in the meantime we should not be discouraged from implementing alcohol screening within our emergency departments. There is already good evidence to suggest that screening alone has a positive impact on drinking behaviours.

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**Competing interests** None.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**REFERENCES**


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**Table 3 Results from evaluation studies**

<table>
<thead>
<tr>
<th>Author, date and country</th>
<th>Sensitivity (95% CI)</th>
<th>Specificity (95% CI)</th>
<th>Positive predicted value (%)</th>
<th>Negative predicted value (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cherpitel, 1995, USA18</td>
<td>Harmful drinking</td>
<td>TWEAK 86% (84% to 88%)</td>
<td>TWEAK 54%</td>
<td>TWEAK 97%</td>
</tr>
<tr>
<td></td>
<td>Alcohol dependence</td>
<td>TWEAK 86% (84% to 88%)</td>
<td>TWEAK 59%</td>
<td>TWEAK 96%</td>
</tr>
<tr>
<td>Cherpitel, 1995, USA25</td>
<td>Harmful drinking and alcohol dependence</td>
<td>TWEAK 86% (84% to 88%)</td>
<td>TWEAK 59%</td>
<td>TWEAK 96%</td>
</tr>
<tr>
<td></td>
<td>Alcohol dependence</td>
<td>TWEAK 85% (82% to 88%)</td>
<td>TWEAK 62%</td>
<td>TWEAK 93%</td>
</tr>
<tr>
<td>Cherpitel, 2000, USA13</td>
<td>Harmful drinking</td>
<td>RAPS 78% (74% to 82%)</td>
<td>RAPS 64%</td>
<td>RAPS 95%</td>
</tr>
<tr>
<td></td>
<td>Alcohol dependence</td>
<td>RAPS 79% (77% to 81%)</td>
<td>RAPS 64%</td>
<td>RAPS 95%</td>
</tr>
<tr>
<td>Hodgson et al, 2002, UK11</td>
<td>Hazardous drinking</td>
<td>FAST 91% (85% to 97%)</td>
<td>FAST 85%</td>
<td>FAST 98%</td>
</tr>
<tr>
<td></td>
<td>Alcohol dependence</td>
<td>RAPS 4 93% (90% to 96%)</td>
<td>RAPS 4 79%</td>
<td>RAPS 4 94%</td>
</tr>
<tr>
<td>Hodgson et al, 2002, UK11</td>
<td>Hazardous drinking</td>
<td>RAPS-4 55% (52% to 58%)</td>
<td>RAPS-4 51%</td>
<td>RAPS-4 99%</td>
</tr>
<tr>
<td></td>
<td>RAPS-QF 48% (97% to 99%)</td>
<td>RAPS-QF 48% (97% to 99%)</td>
<td>RAPS-QF 65%</td>
<td></td>
</tr>
<tr>
<td>Hodgson et al, 2003, USA26</td>
<td>Hazardous/harmful drinking</td>
<td>FAST 88% (84% to 90%)</td>
<td>FAST 83%</td>
<td>FAST 95%</td>
</tr>
<tr>
<td></td>
<td>Alcohol dependence</td>
<td>PAT 70% (64% to 75%)</td>
<td>PAT 72%</td>
<td>PAT 83%</td>
</tr>
<tr>
<td>Patton et al, 2004, UK27</td>
<td>Hazardous/harmful drinking</td>
<td>PAT 88% (85% to 91%)</td>
<td>PAT 79%</td>
<td>PAT 99%</td>
</tr>
</tbody>
</table>

FAST, fast alcohol screening tool; PAT, Paddington alcohol test; RAPS-4, rapid alcohol problem screen.
APPENDIX 1
The fast alcohol screening tool (FAST)\textsuperscript{19}

For the following questions please circle the answer which best applies:

1 drink = ½ pint of beer or 1 glass of wine or 1 single spirits

1. MEN: How often do you have EIGHT or more drinks on one occasion?
   WOMEN: How often do you have SIX or more drinks on one occasion?

   NEVER	LESS THAN	MONTHLY	WEEKLY	DAILY OR
   MONTHLY	ALMOST DAILY

2. How often during the last year have you been unable to remember what happened the
   night before because you had been drinking?

   NEVER	LESS THAN	MONTHLY	WEEKLY	DAILY OR
   MONTHLY	ALMOST DAILY

3. How often during the last year have you failed to do what was normally expected of you
   because of drinking?

   NEVER	LESS THAN	MONTHLY	WEEKLY	DAILY OR
   MONTHLY	ALMOST DAILY

4. In the last year has a relative or friend, or a doctor or other health worker been concerned
   about your drinking or suggested you cut down?

   NEVER	LESS THAN	MONTHLY	WEEKLY	DAILY OR
   MONTHLY	ALMOST DAILY

*Cut-point of the scale for identifying potential alcohol problem is \textgreater;3.
APPENDIX 2
The Paddington alcohol test (PAT)²⁹

PADDDINGTON ALCOHOL TEST  PAT 2003

Consider PAT for ALL of the TOP 10 reasons for attendance. Circle number(s) below for any specific trigger(s):

1. FALL (inc. trip)  2. COLLAPSE (inc. fits)  3. HEAD INJURY  4. ASSAULT
5. ACCIDENT  6. UNWELL  7. NON-SPECIFIC G.I.  8. CARDIAC
9. PSYCHIATRIC (inc. DSH & OD, please specify)  10. REPEAT ATTENDER Other (specify):

Proceed only after dealing with patient’s ‘agenda,’ i.e. patient’s reason for attendance.

We routinely ask all patients with (state reason for screening) about their use of alcohol.

1 We routinely ask all patients in A&E if they drink alcohol - do you drink?

<table>
<thead>
<tr>
<th>Yes (go to #2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No (end)</td>
</tr>
</tbody>
</table>

2 Quite a number of people have times when they will drink more than usual; what is the most you will drink in any one day? (Total units/day) =

<table>
<thead>
<tr>
<th>Beer /lager/cider</th>
<th>Pints (2)</th>
<th>Cans (1.5)</th>
<th>Litre bottles (4.5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong beer /lager /cider</td>
<td>Pints (5)</td>
<td>Cans (4)</td>
<td>Litre bottles (10)</td>
</tr>
<tr>
<td>Wine</td>
<td>Glasses (1.5)</td>
<td>75cl bottles (9)</td>
<td></td>
</tr>
<tr>
<td>Fortified Wine (Sherry, Port, Martini)</td>
<td>Glasses (1)</td>
<td>75cl bottles (12)</td>
<td></td>
</tr>
<tr>
<td>Spirits (Gin, Vodka, Whisky etc)</td>
<td>Singles (1)</td>
<td>75cl bottles (30)</td>
<td></td>
</tr>
</tbody>
</table>

3 How often do you drink more than twice the recommended amount?

<table>
<thead>
<tr>
<th>Once a week or more</th>
<th>PAT +ve</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least once a week</td>
<td>PAT +ve</td>
</tr>
<tr>
<td>&lt; 1/12</td>
<td>PAT +ve</td>
</tr>
</tbody>
</table>

(every day? Pabrinex)

(trumped by 4)

4 Do you feel your attendance here is related to alcohol?

<table>
<thead>
<tr>
<th>Yes (PAT +ve)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No (PAT –ve)</td>
</tr>
</tbody>
</table>

PAT positive indicates a need for referral to an alcohol health worker.

PAT negative negates a need for referral at this time.
APPENDIX 3
The rapid alcohol problem screen (RAPS-4 and RAPS-QF). RAPS-4

1. During the last year have you had a feeling of guilt or remorse after drinking? (REMORSE)
2. During the last year has a friend or family member ever told you about things you said or did while you were drinking that you could not remember? (AMNESIA)
3. During the last year have you failed to do what was normally expected from you because of drinking? (PERFORM)
4. Do you sometimes take a drink in the morning when you first get up? (STARTER or “eye opener”)

*Cut-point of the scale for identifying potential alcohol problem is ≥1.

RAPS-QF

RAPS plus:

QUANTITY: During the last year, have you had five or more drinks on at least one occasion?

FREQUENCY: During the last year, do you drink as often as once a month?

*Cut-point of the scale for identifying potential alcohol problem is ≥1 of RAPS-4 or both QF positive.
APPENDIX 4
TWEAK\textsuperscript{16}

TOLERANCE Can you hold six or more drinks?
WORRIED Are your friends and relatives worried about your drinking?
EYE OPENER Have you ever had a drink in the morning to get rid of a hangover?
AMNESIA Have you ever awakened the morning after some drinking the night before and found that you could not remember a part of the evening before?
CUT DOWN Have you ever felt you should cut down on your drinking?

*Cut-point of the scale for identifying potential alcohol problem is $\geq 3$.\textsuperscript{190}
APPENDIX 5
The alcohol use disorders identification test (AUDIT)20

1. How often do you have a drink containing alcohol?
   (0) Never    (1) Monthly or less    (2) 2 or 4 times a month    (3) 2 or 3 times a week    (4) 4 or more times a week

2. How many drinks containing alcohol do you have on a typical day when you are drinking?
   (0) One or two    (1) Three or four    (2) Five or six    (3) Seven or nine    (4) Ten or more

3. How often do you have six or more drinks on one occasion?
   (0) Never    (1) Less than monthly    (2) Monthly    (3) Weekly    (4) Daily or almost daily

4. How often during the last year have you found that you were not able to stop drinking once you had started?
   (0) Never    (1) Less than monthly    (2) Monthly    (3) Weekly    (4) Daily or almost daily

5. How often during the last year have you failed to do what was normally expected from you because of drinking?
   (0) Never    (1) Less than monthly    (2) Monthly    (3) Weekly    (4) Daily or almost daily

6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?
   (0) Never    (1) Less than monthly    (2) Monthly    (3) Weekly    (4) Daily or almost daily

7. How often during the last year have you had a feeling of guilt or remorse after drinking?
   (0) Never    (1) Less than monthly    (2) Monthly    (3) Weekly    (4) Daily or almost daily

8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?
   (0) Never    (1) Less than monthly    (2) Monthly    (3) Weekly    (4) Daily or almost daily

9. Have you or someone else been injured as a result of your drinking?
   (0) No    (2) Yes, but not in the last year    (4) Yes, during the last year

10. Has a relative, friend, doctor, or other health worker been concerned about your drinking or suggested that you should cut down?
    (0) No    (2) Yes, but not in the last year    (4) Yes, during the last year

*Cut-point of the scale for identifying potential alcohol problem is 8/40.
Systematic review of alcohol screening tools for use in the emergency department

Lucy A Jones

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doi: 10.1136/emj.2009.085324

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- Alcohol dependence (30)
- Drugs misuse (including addiction) (114)

Notes

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