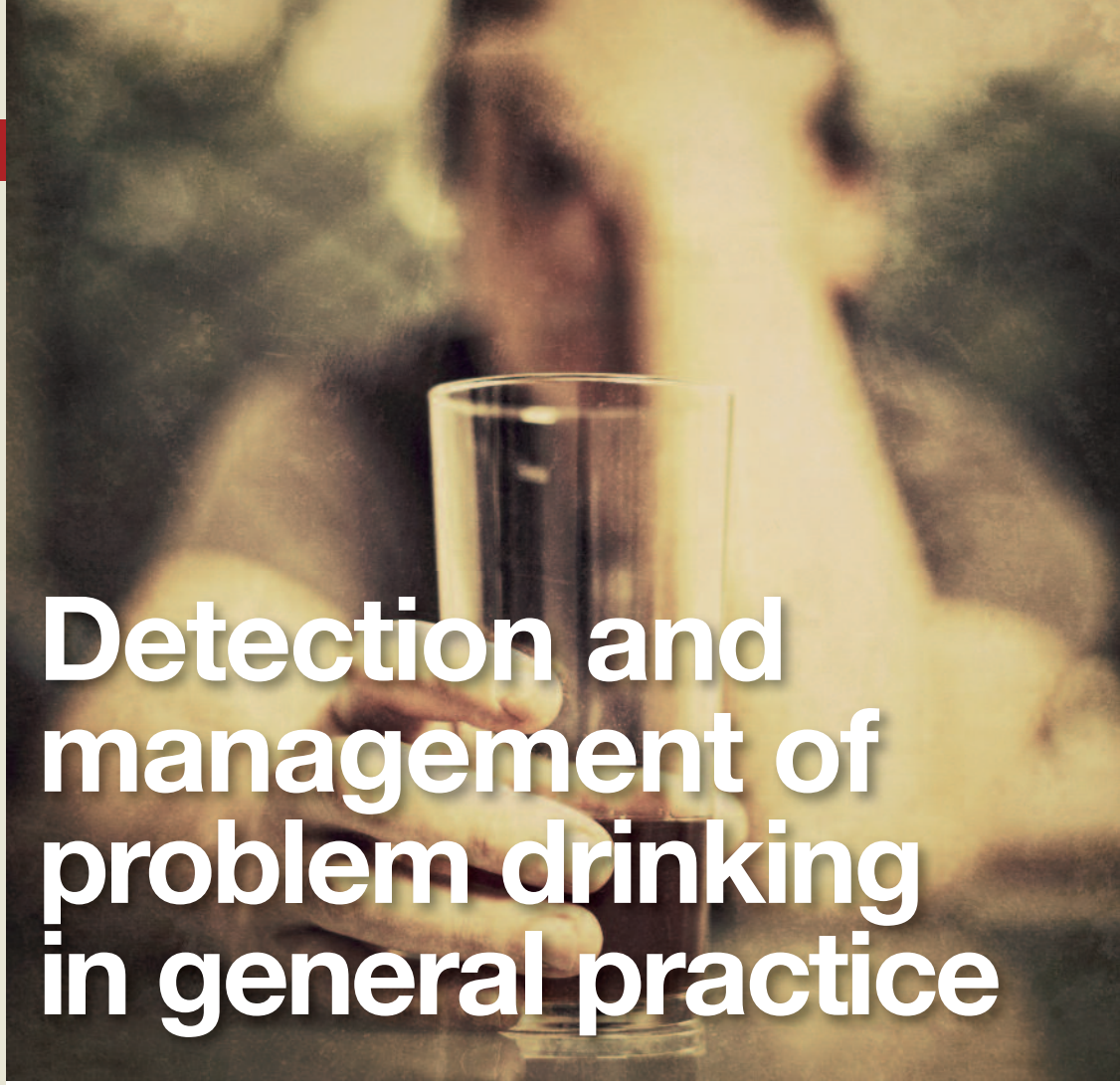
MedicineToday 2012; 13(7): 44-52

PEER REVIEWED FEATURE
POINTS: 2 CPD/2 PDP



Detection and management of problem drinking in general practice

BEN SCHWARZ MB BS(Hons)
PAUL S. HABER MD, FRACP FAChAM

Key points

- Alcohol consumption is a leading cause of morbidity and mortality in Australia.
- Screening for alcohol-use disorders is both effective and cost-effective but many cases are still missed.
- Brief intervention is moderately effective for nondependent heavy drinkers.
- Alcohol dependence is best treated using a comprehensive approach after identifying active physical and mental health issues and psychosocial concerns using counselling and medications.

GPs are ideally placed to identify patients with drinking problems. Offering counselling and advice on the reduction of alcohol consumption are key roles in general practice.

General practitioners come into contact with more than 85% of the Australian population at least once a year and are uniquely positioned to identify and initiate the management of those with drinking problems. Indeed, counselling and advice relating to alcohol are two of the most common clinical treatments provided by GPs in Australia.[1]

RISKS OF PROBLEM DRINKING

The *2010 National Drug Strategy Household Survey* revealed that one in five people aged 14 years or older consumed alcohol at a level that put them at risk of harm over their lifetime.[2] The risks of excessive drinking are much more than just the physical risks with major social, occupational and legal consequences (Table 1). The harms to others are almost as great as those to the patients themselves.

The case scenario on page 46 gives an example of the management of a problem drinker.

WHAT IS PROBLEM DRINKING?

In 2009, the National Health and Medical Research Council (NHMRC) published the *Australian Guidelines To Reduce Health Risks From Drinking Alcohol* including updated

Dr Schwarz is an Orthopaedic Registrar, Central Coast Local Health District. Dr Haber is Director of Drug Health Services at Royal Prince Alfred Hospital; and Head of the Discipline of Addiction Medicine at the University of Sydney, NSW.

TABLE 1. AUDIT-C: A SIMPLE THREE-QUESTION SCREEN FOR ALCOHOL PROBLEMS*

1. How often do you have a drink containing alcohol?				
Never	Monthly or less	2 to 4 times a month	2 to 3 times a week	4 of more times a week
(0)	(1)	(2)	(3)	(4)
2. How many drinks containing alcohol do you have on a typical day when you are drinking?				
1 or 2	3 or 4	5 or 6	7 to 9	10 or more
(0)	(1)	(2)	(3)	(4)
3. How often do you have 6 or more drinks on one occasion?				
Never	Less than monthly	Monthly	Weekly	Daily or almost daily
(0)	(1)	(2)	(3)	(4)

The score for each response is given in brackets. A score of five or more suggests the presence of an alcohol-use disorder and that further assessment of drinking and related problems is indicated.

* Reproduced from *Guidelines for the Treatment of Alcohol Problems*, used by permission of the Australian Government.[3]

definitions of the risks involved with drinking alcohol.[4] The guidelines recommend that for healthy men and women:

- drinking no more than two standard drinks on any day reduces the lifetime risk of harm from alcohol-related disease or injury.
- drinking no more than four standard drinks on a single occasion reduces the risk of alcohol-related injury arising from that occasion.

Consumption above this level is associated with a long-term mortality rate of more than 1%, which increases dramatically as consumption rises.[4]

DETECTING PROBLEM DRINKING

Most people who drink excessively are only recognised when serious complications develop. Abnormal liver tests and triglyceride levels and other potentially alcohol-related medical or psychiatric presentations should precipitate a careful alcohol history. Routinely obtaining a quantified drinking history (recording average consumption in grams or standard drinks per day; Figure 1)[5] from all new patients helps to avoid delays in diagnosis (see the flowchart on page 48).[3] Episodic heavy drinking is now common in young people so this applies to all patients aged 12 years and above.

A quantitative alcohol history is the most sensitive and reliable method of detecting risky patterns of alcohol consumption. Such a history comprises details of:

- the average daily consumption of alcohol (grams or standard drinks per day)
- the number of drinking days per week (or month).

Where use exceeds that recommended in the NHMRC guidelines[4], a more detailed assessment is indicated to exclude harmful use and/or dependence.

Screening in primary care settings is cost-effective. One established method for detecting people with risky drinking habits is the use of a standard questionnaire. Many questionnaires have been designed to screen for alcohol dependence, but only a few have been devised specifically to detect risky drinkers who may be nondependent. The simplest of these is the consumption questions of the Alcohol Use Disorders Identification Test (AUDIT-C; Table 1).[3] A score of five or more suggests the presence of an alcohol-use disorder and that further assessment of drinking and related problems is indicated.

Assessing the severity of a drinking problem

Questions should be asked in a nonjudgemental, nonconfronting way and with the consent

CASE SCENARIO

John, a 45-year-old man, presents to his GP complaining of feeling tired most Mondays with occasional absenteeism, and with a background of high blood pressure. On questioning, he admits to drinking between four and six 375 mL cans of full-strength beer (six to 10 standard drinks) most days and more on weekends (often 12 cans per day) when he goes out with friends. He has no history of treatment for his drinking or for other mental health concerns and does not describe alcohol withdrawal symptoms. The GP explains that his alcohol use may be contributing to his high blood pressure and mild 'hangovers' experienced on Monday mornings. She advises him to cut down (brief intervention). At his next appointment one month later, John reports no change in his drinking. She suggests a course of naltrexone, which he commences but ceases after two days.

His GP refers him to the Community Health Centre for counselling. John attends his appointment at the clinic where he is assessed and is offered a few sessions of motivational interviewing and a controlled drinking program with the drug and alcohol worker. John engages well with his counsellor, improves temporarily (drinking two cans per day) but then, after attending a social function, relapses. During their discussion of his relapse, the counsellor points out a pattern of excessive alcohol use in social situations. She refers him to the clinic's psychologist for assessment of his social anxiety and for cognitive behavioural therapy. After completing 10 sessions of cognitive behavioural therapy for excessive alcohol use and social anxiety, John looks better and claims to feel better. His drinking is down to two to three cans two to three times per week; he monitors and paces his drinking; he knows how to plan for and manage risky social situations and has learned other ways of coping with his social anxiety. Apart from several telephone calls for follow up to discuss his progress, John needs no further treatment. His blood pressure has returned to normal, and he now no longer misses work on Mondays.

Figure 1. Standard drink guide.

Reproduced from *Reduce your Risk: New National Guidelines for Alcohol Consumption*, used by permission of the Australian Government.[5]

of the patient to explore this issue further. A formal diagnosis of dependence can be made if three or more of the following have been present together at some time during the previous year:

- loss of control of drinking
- a strong desire to drink
- drinking to the exclusion of other activities
- tolerance (drinking more without becoming intoxicated)
- withdrawal
- persistent drinking despite self-evident harms.

Harmful alcohol use refers to continued drinking despite harm without sufficient criteria for alcohol dependence.

Ask if the patient is willing to change his or her drinking habits. Ambivalence about change is a key characteristic of heavy drinkers. GPs should respond sensitively but not let it hamper their current or future therapeutic efforts.

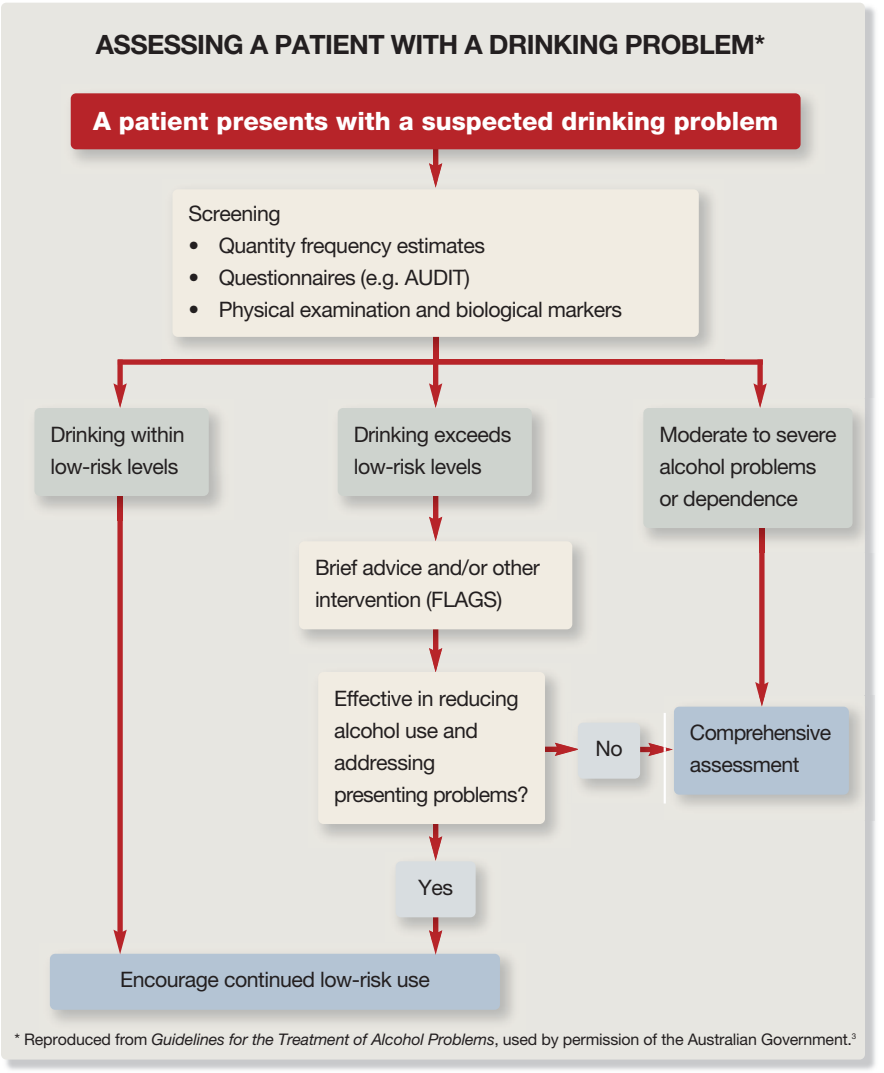
Psychiatric and physical comorbidities

Psychiatric comorbidities – most commonly depression and anxiety – are more prevalent among alcohol-dependent people than the general population. The risk of suicide is increased so patients should be screened for thoughts of hopelessness or self-harm. A targeted risk assessment of the possibility of harm to others, particularly children, and screening for domestic violence should be performed. Clinicians should consult relevant mental health and social services to help manage patients with these disorders.

In addition to physical and mental health, the patient's drinking may have led to family problems or detrimentally affected work performance, social relationships or financial stability. Alcohol-related offences such as drink-driving are also relevant. A specific crisis in one of these areas may have been the impetus for seeking help, and this should be explored.

PHYSICAL EXAMINATION

Early signs of alcohol excess include hypertension and abdominal obesity. The common indicators of excessive alcohol use (such as bloodshot eyes, dilated facial capillaries, hand tremor, cognitive impairment) should be noted;



* Reproduced from *Guidelines for the Treatment of Alcohol Problems*, used by permission of the Australian Government.[3]

however, their absence does not rule out the existence of risky alcohol consumption. Most people drinking above recommended levels will appear normal.

A physical examination should assess signs of intoxication or withdrawal, vital signs (temperature, blood pressure, pulse), signs of liver disease and a screen for organic brain damage.

INVESTIGATIONS

Biological markers of excessive alcohol use include direct measures (such as blood or breath alcohol levels) and a range of indirect indices such as liver enzymes activity, and characteristics of blood erythrocytes (such as mean corpuscular volume).

Measures of alcohol concentration (in breath and blood) are important when screening for alcohol use in occupational and other settings. They are useful indicators in emergency departments and in outpatient clinics to confirm recent alcohol use and to assess suspected intoxication.

Serum gamma-glutamyl transpeptidase (GGT), a liver enzyme, is the most useful of the currently available tests but is elevated in only 30% of primary care patients with alcohol dependence. It is less likely to be raised in women and young people. Elevated GGT levels are not specific for alcohol use and may occur in obesity, obstructive liver disease and with some medications (such as anticonvulsants).

Other biological markers (e.g. acetaldehyde-protein adducts or fatty acid ethyl esters) are under investigation but are not yet available for routine clinical use.

Indirect biological markers should only be used as an adjunct to other screening measures because they have lower sensitivity and specificity in detecting at-risk people than structured questionnaire approaches (such as AUDIT-C). Discussion about the implications of abnormal liver function tests has been shown to reduce subsequent alcohol consumption.

Collateral information

Patients may be reluctant to acknowledge their excessive alcohol use and its consequences because of the associated stigma. Collateral interviews of friends and family can play a central role in the diagnosis of problem drinking and are particularly needed where a discrepancy appears likely. The patient's spouse or other close family members are often aware of drinking and may be more aware of alcohol-related problems than the patient. Work colleagues may provide evidence of impairment or intoxication while at work. Reports from other clinicians or hospital records may also be revealing.

Privacy legislation limits the distribution of personal information without consent. Even if legally, ethically and clinically appropriate, the patient may object to such enquiries. In such cases, the therapeutic relationship may be disrupted.

MANAGEMENT OF PROBLEM DRINKING

Patients who are drinking at risky levels should be offered a brief intervention. Patients with less severe and reversible alcohol-related harms may be able to safely continue consumption at reduced levels.

The most appropriate drinking goal

for patients with severe alcohol dependence and/or those presenting with associated problems (such as organ damage, cognitive impairment and co-existing mental health problems) is abstinence. These patients require more intensive treatment.

Brief intervention

Brief interventions are delivered in a time-limited way, ranging from one to four sessions of between five and 30 minutes. Brief interventions are both effective and cost-effective if alcohol dependence is not present. The acronym FLAGS (Feedback, Listen, Advice, Goals, Strategies; Table 2) summarises the components of an effective brief intervention.[3]

Repeated brief interventions may provide greater effect, and follow up (by consultation, letter, telephone, SMS or email) can serve as reinforcement.

Alcohol dependence

For a dependent drinker, a brief intervention is not usually enough, but it can be important in initiating the conversation about alcohol. In these patients, the goal will usually be abstinence, because loss of control over drinking is a central feature of dependence. Management for dependent drinkers includes predicting and managing alcohol withdrawal, preventing nutritional deficiency and considering strategies such as medications to help prevent relapse, counselling and group-based approaches and residential rehabilitation. Comorbid conditions need to be managed and risks to the patient and others considered. Support for family and significant others may be required and follow up is vital.

Risk assessment

Alcohol use is a major risk factor for intentional and unintentional harm to self and others. Screen for risks for suicide and violence towards others including domestic violence. Alcohol-use disorders impair social functioning. Check if the patient is the primary carer of any children under the age of 16 years and notify the relevant authorities if there is any welfare concern.

If there appears to be an ongoing risk of drink-driving, advise the patient to surrender his licence or notify the authorities. If the patient works in a safety sensitive occupation or as a professional, advise him or her not to return to work until the alcohol use is controlled and he or she is fit to work. If the patient is a medical practitioner, you may be required to notify the Australian Health Practitioner Regulation Agency. Registered practitioners who fail to report notifiable conduct may face disciplinary action by their national board.

TABLE 2. THE FLAGS MODEL FOR BRIEF INTERVENTION FOR ALCOHOL ABUSE*

Feedback	Provide individualised feedback about the risks associated with continued drinking.
Listen	Listen to the patient's response to identify chief concerns and any false beliefs held by the patient.
Advice	Give specific advice about the recommended change to current drinking patterns, supported by self-help materials, which provide objective information.
Goals	Discuss safe drinking limits and assist the patient to set specific goals for consumption. Instill optimism in the patient that his or her goals can be achieved. Motivation-enhancing techniques are used to encourage patient planning to stop drinking.
Strategies	Ask the patient to suggest some strategies for achieving these goals: • drink only with food • have a glass of water between drinks • switch to smaller glass sizes • switch to low-alcohol beer • avoid going to the pub after work • avoid or limit time spent with friends who drink heavily. This approach emphasises the individual's choice for the approach best suited to their own situation.

* Reproduced from *Guidelines for the Treatment of Alcohol Problems*, used by permission of the Australian Government.[3]

WITHDRAWAL

Almost half of dependent drinkers experience withdrawal symptoms usually commencing six to 24 hours after the last drink. In some severely dependent drinkers, withdrawal can occur while the blood alcohol level is decreasing. Management of patients with these symptoms facilitates further engagement and ensures the patient's safety. Longer-term management is needed to address the very high relapse rate.

The signs and symptoms of alcohol withdrawal may be grouped into three major classes – autonomic hyperactivity, gastrointestinal changes and perceptual changes. Severe withdrawal refers to the presence of complications (Table 3).[3]

Predictors of increased severity of alcohol withdrawal are previous severe alcohol withdrawal episodes, withdrawal symptoms (such as tremor, nausea or anxiety) upon waking that are normally relieved by early morning

TABLE 3. SIGNS AND SYMPTOMS OF ALCOHOL WITHDRAWAL*

	Autonomic hyperactivity	Gastrointestinal features	Cognitive and perceptual changes
Uncomplicated withdrawal features	Sweating Tachycardia Hypertension Tremor Fever (generally less than 38°C)	Anorexia Nausea Vomiting Dyspepsia Diarrhoea	Poor concentration Anxiety Psychomotor agitation Disturbed sleep, vivid dreams
Severe withdrawal complications	As above plus dehydration and electrolyte disturbances	As above	Seizures Hallucinations or perceptual disturbances (visual, tactile, auditory) Delirium

* Reproduced from *Guidelines for the Treatment of Alcohol Problems*, used by permission of the Australian Government.[3]

drinking, high levels of daily consumption, unplanned abstinence, concomitant heavy or regular use of other substances and concomitant medical or psychiatric conditions.

Ambulatory or outpatient withdrawal management is appropriate for those with mild to moderate predicted withdrawal severity, a safe alcohol-free 'home' environment and social supports, no history of severe withdrawal complications, and no severe concomitant medical, psychiatric or other substance-use disorders. Inpatient withdrawal in hospital or at a community residential unit is recommended for other patients and for those that have repeatedly failed ambulatory withdrawal.

Reassurance and encouragement are important, as is the opportunity for the patient to rest in a quiet and safe environment when anxiety and craving for alcohol are prominent.

Thiamine and other supplements

All dependent drinkers are prone to thiamine deficiency because of poor diet, damage to the intestinal mucosa and impaired thiamine utilisation. Thiamine supplements are recommended for all people undergoing alcohol withdrawal even those without clinical features of Wernicke's encephalopathy or memory impairment.

Chronic drinkers with poor dietary intake and a poor nutritional state should be administered parenteral thiamine doses of 300 mg/day for three to five days, with subsequent oral thiamine doses of 300 mg/day for several weeks. The intramuscular route should not be used for patients with coagulopathy. Thiamine should be given before any carbohydrate load such as intravenous dextrose. Thiamine supplementation should be continued indefinitely in an alcohol-dependent patient who continues to drink alcohol.

In addition to thiamine, deficiencies of other B-complex vitamins, vitamin C, zinc and magnesium are not uncommon and an oral multivitamin preparation can be given to nutritionally depleted patients for several days.

Medications for managing alcohol withdrawal

Diazepam is recommended as first-line treatment because of its rapid onset of action, long half-life and evidence for effectiveness. Shorter-acting benzodiazepines (such as lorazepam, oxazepam or midazolam) may be indicated when the clinician is concerned about accumulation and over-sedation from diazepam, such as in the elderly or those patients with severe liver disease, recent head injury or respiratory failure. Benzodiazepines should not be continued beyond the first week for managing alcohol withdrawal due to the risk of dependence.

If diazepam is required, the dose will vary – for example, from 5 to 10 mg at night for three days for insomnia in the setting of mild withdrawal, to 10 to 20 mg four times per day for moderate withdrawal. The initial dose of diazepam is decided on the basis of past history of withdrawal and ongoing dosing on current withdrawal symptoms and signs. Withdrawal rating scales are used to monitor treatment progress, being careful to exclude other conditions, such as pneumonia, that may raise the score (by causing tachycardia, fever and anxiety). Diazepam dose should be monitored carefully and appropriate doses prescribed daily. Diazepam should be gradually but steadily reduced to nothing within a week to avoid dependence to benzodiazepines.

A range of symptomatic medications may be used for addressing specific symptoms such as paracetamol for headache, antiemetics and antidiarrhoeal agents.

RELAPSE PREVENTION

Only a minority of patients will accept relapse-prevention interventions but they should be offered to all. There is no clear evidence to favour one approach over others, and a combined approach is ideal. The choice is based on availability and patient preference.

Psychosocial interventions

Psychosocial interventions such as individual therapy using motivational interviewing and cognitive behavioural therapy are effective. Mutual help-groups such as Alcoholics Anonymous and cognitive behaviour therapy-based groups such as SMART Recovery may help improve outcomes. Directline and the Alcohol & Drug Information Service (ADIS) provide 24-hour information and support for patients (see the box on this page).

Pharmacotherapies for alcohol dependence

Three medications – naltrexone, acamprosate and disulfiram – are licensed in Australia for the treatment of patients with alcohol dependence.

Naltrexone is an orally active opioid receptor antagonist that has been shown to reduce the rewarding effects of alcohol, reduce craving and decrease the amount and frequency of drinking. It has been shown to be modestly more effective than placebo in reducing the rate and severity of relapses. The recommended dose is 50 mg (one tablet per day) with meals. It may be preferable to start with 25 mg/day (half a tablet) for several days, and increase to 50 mg after any adverse effects have subsided.

A long-acting (monthly) depot intramuscular injection of naltrexone is licensed in the USA. This agent looks promising and avoids the problem of poor adherence; however, it is not available for use in Australia. Very long-acting naltrexone implants are used in some centres but are currently not licensed for general use in Australia.

RESOURCES FOR GPS AND PATIENTS

- Australian Government Department of Health and Ageing. Guidelines for the treatment of alcohol problems: www.alcohol.gov.au (select publications)
- The drink-less program: www.sswahs.nsw.gov.au/sswahs/Drinkless
- Directline and Alcohol & Drug Information Service (ADIS) provide 24-hour information and support for patients:
  - **NSW** 02 9361 8000 (Sydney); 1800 422 599 (NSW country)
  - **Vic** 1800 888 236
  - **ACT** 02 6205 4545
  - **SA** 1300 131 340
  - **NT** 08 8948 0087 (Darwin); 08 8951 7580 (central Australia); 1800 131 350 (territory wide)
  - **WA** 08 9442 5000; 1800 198 024 (WA country).
- Alcoholics Anonymous: www.aa.org.au
- Al-Anon (for friends and relatives): www.al-anon.org/australia
- SMART Recovery: www.smartrecoveryaustralia.com.au
- Controlled drinking: www.acar.net.au/cdcp01.html

For information about local treatment services and referral options, contact the local Alcohol and Drug Information Service (ADIS), the Drug and Alcohol Specialist Advisory Service (DASAS) or the Australian National Council on Drugs at www.ancd.org.au or the following regional services:

- **NSW** www.health.nsw.gov.au/mhdao/contact_service.asp; 1800 023 687 or 02 9361 8006 (for professionals)
- **Vic** www.health.vic.gov.au/aod/directline.htm; 1800 888 236
- **Qld** www.health.qld.gov.au/atod; 1800 177 833 or 07 3837 5989
- **SA** www.dassa.sa.gov.au; 1300 131 340 or 08 8363 8618
- **WA** www.dao.health.wa.gov.au; 1800 198 024 or 08 9442 5000
- **NT** 1800 131 350 or 1800 629 683; Alice Springs 08 8951 7580; Darwin 08 8922 8399; Amity House 1800 684 372 or 08 8944 6565
- **Tas** 03 9416 1818 or 1800 811 994
- **ACT** 02 6207 9977 or 02 6205 4545

Acamprosate reduces craving by modulating brain gamma-aminobutyric acid (GABA) and glutamate that are dysregulated by chronic alcohol consumption. Meta-analyses of randomised controlled trials indicate that acamprosate is effective in maintaining abstinence from alcohol following withdrawal in dependent drinkers. The recommended dose for adults is 1998 mg/day with meals (two tablets three times per day). Adults under 60 kg should take 1332 mg/day (four tablets per day).

Disulfiram inhibits acetaldehyde dehydrogenase, leading to an accumulation of acetaldehyde if alcohol is consumed. The resulting unpleasant symptoms – flushing, dizziness, nausea and vomiting, irregular heartbeat, breathlessness and headache – deter drinking. Contraindications include cirrhosis and cardiovascular disease. Disulfiram treatment is best suited to people with social supports, such as family, who will help supervise dosing. Supervision has a marked effect on adherence and greatly improves the effectiveness of this intervention. The recommended dose is 100 to 400 mg (one-half to two tablets per day). Some patients can continue to drink on 400 mg without significant

adverse effects, and the dose should be increased. The maintenance dose should generally not exceed 600 mg/day. In many patients, two or three doses per week may be sufficient, and this approach may be more practical and easier to schedule with supervision.

Several new agents are emerging. These include anticonvulsants, such as gabapentin and topiramate; antipsychotic medications, such as olanzapine and aripiprazole; and baclofen, a skeletal muscle relaxant. Although these medications appear promising as agents in reducing alcohol relapse, the need for further controlled trials and the cost of the newer agents means they cannot be recommended for use as first-line treatments for patients with alcohol dependence and their use is off label.

THE PERSISTING DRINKER

If a patient continues drinking despite the above measures, a clinical 'harm-reduction' model is appropriate. Strategies include: maintaining a therapeutic relationship to support nutrition, managing medical, psychiatric, social and legal comorbidities; maintaining social supports; and facilitating reduction in alcohol intake when possible. The risk assessment strategy described above should be revisited.

SPECIALIST SUPPORT

Local public sector drug and alcohol services may provide advice and/or accept referrals. There are a number of private sector and nongovernmental alcohol treatment services. There are also a few specialists in addiction medicine in community practice. Telephone support for healthcare professionals is available, including information on accessing these treatment options (see the box on page 51).

SUPPORT FOR FAMILIES

Family members, friends or carers of heavy drinkers experience a range of emotions in living with and trying to support drinkers. Many benefit from support and the opportunity to discuss how they are coping. Self-help groups (such as Al-Anon) and professional services for families and carers are available.

CONCLUSION

GPs can identify and offer brief intervention for risky alcohol consumption in the knowledge that is it effective. More severe drinking problems can be managed using a multidisciplinary comprehensive treatment approach involving other health professionals as indicated and when accepted by the patient. Pharmacotherapy can be prescribed by GPs and increases the chance of therapeutic success. Patients may be offered a choice between the available treatments because there is no compelling evidence to support one approach over the others. MT

REFERENCES

1. Department of Health and Ageing. National alcohol strategy 2006-2009: towards safer drinking culture. Canberra; Commonwealth of Australia: 2006. Available online at: www.alcohol.gov.au/internet/alcohol/publishing.nsf/content/B83AD1F91AA632ADCA25718E0081F1C3/$File/nas-06-09.pdf (accessed June 2012).
2. Australian Institute of Health and Welfare. 2010 National drug strategy household survey report. Drug statistics series no. 25. Cat. no. PHE 145. Canberra; AIHW: 2011.
3. Department of Health and Ageing. Guidelines for the treatment of alcohol problems. Canberra; Commonwealth of Australia: 2009. Available online at: www.health.gov.au/internet/ministers/publishing.nsf/Content/76AE6384CE9A3830CA2576BF003073F8/$File/DEZEM_Alcohol%20Guide_FA.pdf (accessed June 2012).
4. National Health and Medical Research Council. Australian guidelines to reduce health risks from drinking alcohol. Canberra; Commonwealth of Australia: 2009. Available online at: www.nhmrc.gov.au/_files_nhmrc/publications/attachments/ds10-alcohol.pdf (accessed June 2012).
5. Department of Health and Ageing. Reduce your risk: new national guidelines for alcohol consumption. Canberra; Commonwealth of Australia. Available online at: www.alcohol.gov.au/internet/alcohol/publishing.nsf/Content/36E6FEE732C8DF1BCA25767200769CD8/$File/adult.pdf (accessed June 2012).

COMPETING INTERESTS: Dr Schwarz: None. Dr Haber is a member of the international and Australian Lundbeck advisory boards for nalmefene (which is not mentioned in this article because it is not registered in Australia).