

## Alcohol – interventions and interactions

For centuries, alcohol has played a major role in the social and cultural life of Wales and currently 88% of adults report that they drink.<sup>1</sup> Many of these people drink alcohol in moderation, as a normal part of a healthy lifestyle; however, 45% of adults report drinking in excess of the recommended amounts, and 27% are known to binge drink.<sup>1</sup> Although consumption in small amounts may have some cardiovascular health benefits in certain people,<sup>2</sup> alcohol misuse is associated with a range of adverse consequences that may lead to significant harm to individuals, their families, and society.

An estimated 54 000 hospital admissions and 1050 deaths are attributable to alcohol each year in Wales.<sup>3</sup> Alcohol is the third-leading risk factor for death and disability in the EU, behind only high blood pressure and tobacco.<sup>4</sup> Misuse can also affect non-drinkers, e.g. the effect of parental drinking on children or the unborn child, and the contribution of excessive alcohol consumption to violent behaviour and drink driving. There is a clear need to prevent the health problems and economic consequences of excessive alcohol consumption in Wales.<sup>5</sup>

Epidemiological research shows that, at a population level, the majority of alcohol-related harm is not due to drinkers with severe alcohol dependence, but attributable to a much larger group of 'hazardous' or 'harmful' drinkers.<sup>6</sup> In 2008 the Welsh Government launched the 10-year strategy "Working Together to Reduce Harm", outlining plans to reduce the harm associated with substance misuse in Wales.<sup>7</sup> Regarding alcohol, the focus is on drinkers who may not need specialist treatment for addiction but whose drinking levels or patterns cause them longer-term damage, or cause problems for the wider community.

This bulletin outlines current recommendations for encouraging 'sensible' alcohol intake amongst hazardous and harmful drinkers, and discusses some potential alcohol-medication interactions, counselling for which may provide an opportunity to raise the issue of alcohol with patients. It supports the Public Health Wales programme of alcohol brief advice training for primary care staff.<sup>5</sup>

### Units of alcohol and patterns of consumption<sup>5,8,9</sup>

'Units' are a way of expressing the quantity of pure alcohol in a drink. A single unit is 8g or 10ml of ethanol; typically half a pint of normal strength beer, half a 175ml glass of average strength wine, or a single 25ml measure of spirits. Units can be calculated using the formula:

$$\text{Units} = \frac{\text{Alcohol by volume (\%)} \times \text{Volume (ml)}}{1000}$$

A unit calculator tool is available from NHS Choices at [www.nhs.uk/tools/pages/alcohol-unit-calculator.aspx](http://www.nhs.uk/tools/pages/alcohol-unit-calculator.aspx).

### Sensible or lower-risk drinking

A pattern of alcohol consumption that is unlikely to cause harm to self or others. Recommended limits are:

- ♦ **men: up to 3-4 units per day (21 units per week)**
- ♦ **women: up to 2-3 units per day (14 units per week)**

Two days a week should be alcohol-free. Drinking consistently within these limits is called 'lower-risk' rather than 'safe'; there is no such thing as 'risk-free' drinking.

In 1995, the government amended sensible drinking limits from weekly to daily recommended consumption, to reflect the potential risks of excessive alcohol intake in single episodes. Due to the physiological and metabolic changes of ageing, it has recently been suggested that limits should be lower for the over 65s. A limit of 1.5 units daily for men and 1 unit daily for women is proposed.<sup>10</sup>

### Hazardous or increasing-risk drinking

- ♦ **men: 4-8 units per day**
- ♦ **women: 3-6 units per day**

This pattern of drinking puts people at increased risk of health problems. Drinking at this level over a long period of time can cause significant, ongoing health problems.

### Binge drinking

Consuming large quantities of alcohol over a short period of time, for example over the course of an evening, usually leading to intoxication. Commonly referred to as drinking over 8 units a day for men and over 6 units a day for women on at least one day a week. This pattern of drinking can cause immediate risk to the drinker and those around them. 'Binge drinkers' can be included in the category of 'hazardous' drinking.

### Harmful or higher-risk drinking

- ♦ **men: more than 8 units per day**
- ♦ **women: more than 6 units per day**

This pattern of drinking will definitely harm health (either physical or mental) and means the person is showing signs of alcohol dependence. People who drink at these levels are thirteen times more likely to suffer liver cirrhosis.

## 'Brief advice' and raising the issue of alcohol

Alcohol brief advice is a type of 'brief intervention' that is described as, "a short, evidence-based, structured conversation about alcohol consumption with a client to motivate and support the individual to think about and/or plan a change in their drinking behaviour in order to reduce their consumption."<sup>5</sup>

There is evidence that brief interventions in primary care can reduce total alcohol consumption and episodes of binge drinking in hazardous drinkers, for periods lasting up to a year.<sup>11</sup> The public health impact of the widespread implementation of simple brief interventions is likely to be very large.<sup>8</sup>

The effectiveness of brief interventions for alcohol has been reported as a number needed to treat (NNT) of 7-9, i.e. for every seven to nine patients given a brief intervention, one will reduce their drinking to non-hazardous levels.<sup>11</sup> This compares favourably with physician intervention for smoking cessation (NNT=30) and nicotine replacement therapy (NNT=16).<sup>12</sup>

A brief intervention is particularly effective at the point where hazardous or harmful drinking is first identified,<sup>11</sup> which could be at the time of practice registration or during an attendance for an alcohol-related or unrelated illness or injury. There are many presentations that should probably alert the practitioner to the possible relevance of alcohol, e.g. depressive illness, insomnia, anxiety, repeated accidents, absenteeism, self-harm, hypertension, liver abnormalities, or gastrointestinal (GI) disorders. Situations may also arise where alcohol is not suspected to be an issue, but where some discussion about alcohol consumption would be prudent, e.g. when reviewing or prescribing a new medication that is known to interact with alcohol (see pages 3-4).

### How is brief advice delivered?

Brief advice is much more than a conversation in which the topic of alcohol is mentioned; but a single session can be effective and can take just 5-10 minutes to complete.<sup>5</sup> Brief advice has a structure and style that distinguishes it from a simple recommendation to drink less. The 'FRAMES' acronym summarises the desirable components of a brief intervention.

**Feedback:** about personal risk or impairment  
**R**esponsibility: change is the client's responsibility  
**A**dvice: provision of clear advice when requested  
**M**enu: of alternative options for changing drinking  
**E**mpathy: a warm, reflective, understanding approach  
**S**elf-efficacy: optimism about behaviour change

More detailed information on delivering alcohol brief advice is available from Public Health Wales at [www.wales.nhs.uk/sitesplus/888/page/43761](http://www.wales.nhs.uk/sitesplus/888/page/43761).

### Deciding who will benefit from brief advice

Evidence suggests that alcohol brief advice is a suitable approach for hazardous drinkers, but not dependent drinkers.<sup>5</sup> Practitioners must therefore make an objective assessment of an individual's level of risk from alcohol. This is referred to as 'screening' or 'identification'. Discussions should be sensitive to the person's needs, taking into account their faith and cultural beliefs. A formal screening tool may not be necessary if an individual admits to drinking above recommended limits, or when total abstinence is recommended, e.g. during pregnancy.<sup>5</sup> However, a validated tool can be useful in providing an objective assessment and motivating an individual to change.<sup>5</sup>

AUDIT (Alcohol Use Disorders Identification Test) is regarded as the gold standard for accurately identifying hazardous and harmful alcohol users.<sup>8</sup> This screening tool includes questions about drinking frequency and intensity and covers experience of alcohol-related problems and signs of possible dependence. It has been validated in a number of health and social care settings and across a range of drinking cultures.<sup>8</sup> Several abbreviated versions have been developed, e.g. FAST (Fast Alcohol Screening Test) and AUDIT-PC (AUDIT Primary Care), but these are generally less accurate than AUDIT and do not clearly differentiate between hazardous, harmful, and possibly dependent drinking. However, they may be more practical for use in busy settings.<sup>5</sup> AUDIT and its associated screening tools can be downloaded from [www.ncl.ac.uk/ihs/assets/pdfs/hmitm/screening\\_tools.pdf](http://www.ncl.ac.uk/ihs/assets/pdfs/hmitm/screening_tools.pdf). The CAGE (Cut down, Anger, Guilt, and Eye-opener) tool is also used, but it is not as sensitive as AUDIT in detecting hazardous drinking.<sup>11</sup>

Professional judgement should be used when interpreting AUDIT scores as some people are more vulnerable to the effects of alcohol than others.<sup>8</sup> By listening to the reaction of the patient on hearing the result of the screening questionnaire, the practitioner can judge whether the patient may be receptive to brief advice or whether the conversation should be ended at this stage leaving the door open for a further discussion in the future.

A practitioner may wish to consider referral to another service if the individual: shows signs of, or has screened positively for, alcohol dependence; might benefit from additional support; or has complex problems that the practitioner cannot adequately address (e.g. other substance use or complex physical or mental health problems).<sup>5</sup>

The assessment of an individual's level and pattern of alcohol consumption will, by its nature, involve a degree of subjectivity. It is possible that the perception of an 'alcohol problem' in a patient may be influenced by the health practitioner's own drinking habits. Help and support for health professionals with concerns about their own, or a colleague's, alcohol use is provided by the Primary Care Support Service and can be accessed via [www.primarycaresupport.wales.nhs.uk](http://www.primarycaresupport.wales.nhs.uk).

### Alcohol-medication interactions

Alcohol can interact with many medicines by pharmacokinetic and/or pharmacodynamic mechanisms. Older patients may be particularly susceptible to interactions with alcohol as they often take many medicines and may have chronic conditions that can be worsened by alcohol.<sup>13-15</sup>

Patients receiving medicines that potentially interact with alcohol should be advised about the possible effects, which may depend on the level and pattern of their consumption. Occasional drinking inhibits the metabolism of some medicines by competing for liver microsomal enzymes, whereas regular consumption of large amounts of alcohol will induce liver enzymes, increasing metabolism.<sup>16,17</sup> For people who are heavy drinkers or alcohol dependent, it may be necessary to adjust the dose of, or even avoid, some medicines. However, abstinence is usually unnecessary for patients receiving most medicines and the patient should be told not to stop the medicine in order to have a drink. Unnecessary abstinence may also increase the stigma associated with certain diseases.<sup>16</sup>

### Alcohol and antibiotics

Many people believe that they should not drink alcohol while taking antibiotics,<sup>16</sup> but moderate alcohol consumption probably does not interfere with antibiotic effectiveness.<sup>18</sup> Metronidazole can produce an unpleasant, disulfiram-like reaction with alcohol in some patients (the so-called 'Antabuse' effect), typically including facial flushing, throbbing headache, hypotension, palpitations, tachycardia, and nausea and vomiting. This reaction is caused by inhibition of acetaldehyde metabolism. Patients should abstain from alcohol while taking metronidazole and for 48 hours after finishing the course. No adverse interaction normally occurs between alcohol and phenoxymethylpenicillin or amoxicillin.<sup>17</sup> Chronic heavy drinkers seem to metabolise doxycycline more quickly than non-drinkers, so higher doses may be required, but tetracycline does not seem to be affected.<sup>17</sup>

### Alcohol and warfarin

Small or moderate amounts of alcohol do not appear to cause problems in patients without liver disease, and people taking warfarin can be advised to follow the national guideline limits for 'sensible' drinking.<sup>19</sup> Acute ingestion of large amounts of alcohol may inhibit the metabolism of warfarin and increase the risk of bleeding. Conversely, chronic heavy alcohol intake may induce the metabolism of warfarin and so patients may need above average doses.<sup>20</sup> Those with liver damage who binge drink may experience marked fluctuations in prothrombin times. If possible, it is advisable to avoid anticoagulation in such patients.<sup>17</sup>

### Alcohol and CNS-depressant medicines

The central nervous system (CNS) depressant effect of alcohol may add to that of medicines such as antidepressants, anxiolytics, antipsychotics, opioid analgesics, anticonvulsants, hypnotics, and sedating H<sub>1</sub>-antihistamines. In these circumstances, blood alcohol levels well within the legal driving limit may be equivalent to levels at, or above, the legal limit in terms of worsened driving and other skills.<sup>17</sup> It is difficult to predict if an interaction affecting wakefulness and performance will occur, but elderly patients may be particularly susceptible. Patients may be unaware of the extent of the deterioration of their skills; they should be warned about the possible interaction and how it could affect them (i.e. drowsiness, poor concentration, or reduced ability to perform tasks). In some chronic heavy drinkers, CNS depressant medicines may have no additional effect.<sup>16</sup>

### Alcohol and cardiovascular medicines

Moderate amounts of alcohol may cause acute vasodilation, particularly of the skin and blood vessels. Patients being prescribed nitrates, beta-blockers, alpha-blockers, calcium-channel blockers, and ACE-inhibitors should be warned that postural hypotension, with dizziness and fainting, can occur with alcohol consumption, particularly at the start of treatment.<sup>16,17</sup> Longer term, chronic, moderate to heavy drinking raises the blood pressure and reduces, to some extent, the effectiveness of antihypertensive medicines. The National Institute for Health and Clinical Excellence (NICE) hypertension guidance recommends that clinicians should ascertain alcohol consumption in hypertensive patients and encourage a reduced intake if appropriate.<sup>21</sup> Verapamil delays the elimination of alcohol and patients should be warned that intoxicant effects may persist, making them 'over the limit' for longer.<sup>16,17</sup> There does not appear to be a significant interaction with statins, but alcohol use can exacerbate hyperlipidaemia.<sup>17,18</sup>

## Alcohol and analgesics

Epidemiological evidence suggests that alcohol may further increase the risk of GI bleeding associated with ibuprofen and/or aspirin; the risk of acute upper GI bleeding appears to be greatest among heavy consumers of these medicines and alcohol.<sup>22</sup> Studies of the interaction of alcohol with other non-steroidal anti-inflammatory drugs are lacking. Enzyme induction in chronic heavy drinkers increases the conversion of paracetamol to its hepatotoxic metabolite, potentially increasing the risk of liver damage after paracetamol overdose, and some studies have claimed that this may also occur after repeated conventional doses of paracetamol. There is also controversy over the use of paracetamol in chronic heavy drinkers; some recommend that the normal daily maximum of 4g may be too high. Occasional and light to moderate drinkers do not appear to be at additional risk.<sup>17</sup> The relationship between alcohol intake and paracetamol metabolism is complex and further study is needed.<sup>17</sup> Because opioid analgesics can enhance the CNS depressant effects of alcohol, which has been fatal in some cases, patients should be advised to avoid consuming alcohol where possible, or to limit their intake.<sup>17</sup>

## Alcohol and anticonvulsants

Many people with epilepsy find that they can drink one or two units of alcohol without having more seizures than normal. However, fluid overload and fluctuating blood concentrations of alcohol from binge drinking have been associated with seizures, even in non-epileptic people.<sup>16,17</sup> People who binge drink are at risk of 'withdrawal seizures', usually for 6-72 hours after they have stopped drinking. People with epilepsy taking anticonvulsants are at a higher risk of withdrawal seizures. As some anticonvulsants are CNS depressants they can, in theory, have an additive effect with alcohol. However, in most patients established on these medicines this does not occur.<sup>16</sup> Individuals should be aware that anticonvulsants may make them more sensitive to the effects of alcohol, particularly after a change in medication, or an increase in dose.<sup>17,23</sup> Chronic heavy drinking reduces serum phenytoin levels and higher doses may be needed to maintain adequate levels.<sup>16,17</sup>

## Alcohol and tacrolimus ointment

Alcohol may cause facial flushing or skin erythema in about 6-7% of patients treated with tacrolimus 0.1% ointment. Patients should be warned of this reaction and that alcohol may need to be avoided if this occurs. A similar reaction has been reported with pimecrolimus but appears to be rare.<sup>17</sup>

## Summary

Because interactions between alcohol and medicines are complex and variable it is difficult to recommend a level of consumption that can be considered safe when taking medicines. Practitioners should be alert to the potential of even moderate alcohol use to interfere with the therapeutic effects of a medicine.<sup>17</sup> Prescribing or reviewing any medicine that has the potential to interact with alcohol may also necessitate a discussion about alcohol consumption and may provide an opportunity to offer brief advice, if appropriate.

## Primary Care Quality and Information Service

An audit toolkit for use in general practice to ensure that the delivery of services to those patients drinking alcohol at hazardous, harmful, and dependent levels is based on best evidence and practice is available at [www.wales.nhs.uk/siteplus/888/page/45129](http://www.wales.nhs.uk/siteplus/888/page/45129).

## Alcohol brief advice training

This bulletin is not intended to be a substitute for training in delivering brief advice. Further information on training is available from the Public Health Wales Health Improvement Team on [01443 824160](tel:01443824160).

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