

# What is alcohol?

Alcohol is the most widely used mood-changing recreational drug in Australia, with 90% of the population having drunk it at some time during their life.

The active drug in all alcoholic drinks is ethanol. This drug is produced as a result of the fermentation of grains (beer or whisky), fruits (wine or cider) and vegetables, such as potatoes (vodka) which changes sugars into ethyl alcohol. Pure alcohol has no taste and is a colourless liquid. Alcoholic drinks vary in appearance and taste due to the other ingredients they contain and the method by which they are manufactured.

**Alcohol is often mistakenly believed to be a stimulant.** This is because drinking a small amount of alcohol may initially reduce tension or inhibitions, making one feel more relaxed or excited. For this reason, people often drink alcohol at social occasions.

In fact, **alcohol is a depressant drug** that acts to slow down the central nervous system and inhibits many of the brain's functions, affecting almost all the body's cells and systems. Increasing alcohol levels in the body slows down a person's reflexes and rapidly makes judgement, co-ordination and balance more difficult.

**Alcohol only takes a few minutes to reach the brain.** It is absorbed directly into the blood stream through the walls of the stomach and small intestine, and is then quickly distributed to all parts of the body, including the brain. Food in the stomach slows down the rate at which alcohol is absorbed, but does not prevent intoxication or drunkenness, as all the alcohol a person drinks reaches the blood stream.

Sobering up takes time. The liver is the main organ of the body responsible for removing alcohol from the blood stream. The liver processes alcohol at a fixed rate, taking about an hour to break down the alcohol in a standard drink. Drinking coffee or other caffeine-containing drinks, vomiting or having a cold shower will not influence the rate at which alcohol is removed from the body.

# What is a Standard Drink?

In Australia, the use of standard drink sizes have been designed to help people monitor their alcohol consumption and exercise control over the amount they drink. All alcoholic drinks are labelled with the number of standard drinks they contain.

Different types of alcoholic drinks contain different amounts of pure alcohol. A standard drink is defined as one that contains 10 grams of pure alcohol.

The following are all equal to approximately one standard drink:

- One 425ml glass (a schooner) of light beer (2.7% alcohol)
- One 285ml glass (a middy) of regular beer (4.9% alcohol)
- One 100ml glass of wine (12% alcohol)
- One 30ml nip of spirits (40% alcohol)
- One 60ml glass of port or sherry (20% alcohol).

It is important to remember that the 'standard' size of drinks served in some hotels, or at home, may be bigger than the standard drinks you are used to. Large wine glasses can hold two standard drinks or even more! In addition, cocktails can contain as many as five or six standard drinks, depending on the recipe.

# What are the short-term effects of alcohol?

No one can say exactly how alcohol will affect an individual or how quickly. The body's reaction to alcohol is affected by a person's age, weight, sex, body chemistry, fitness, use of medicines and other drugs, and whether they have food in their stomach. For some people, a high blood alcohol level (ie. the percentage of alcohol circulating in the blood stream) will be reached after drinking only a couple of standard drinks.

It is important to keep this in mind when considering the following table, which outlines the short-term effects that may be experienced when increasing levels of alcohol are drunk. See page 13 for specific recommendations about drinking and driving.

## • 2–4 standard drinks

Feel more relaxed, reduced concentration, talking a lot and slower reflexes Up to 0.05% blood alcohol concentration

### 5–8 standard drinks

Fewer inhibitions, more confidence, reduced coordination, judgement and cognition impaired, slurred speech

0.05 - 0.08% blood alcohol concentration

## 9–15 standard drinks

Confusion, blurred vision, poor muscle control, balance affected, intense moods: for example angry, sad, happy 0.08 - 0.15% blood alcohol concentration

## 16–30 standard drinks

Nausea, vomiting, needs help to walk, wants to sleep 0.15% - 0.3% blood alcohol concentration

## 30 plus standard drinks

Dead drunk, heavy breathing, stupor, no bladder control. Possibly coma or death 0.3 - 1.0% blood alcohol concentration

# What are the harms associated with alcohol?

Drinking alcohol at celebrations, barbecues and other social occasions is part of the Australian lifestyle. Peer pressure, stress and advertising all encourage alcohol consumption. People use alcohol to change how they feel. For some, drinking patterns are influenced by a strong family history of heavy alcohol use. Whatever the reason for drinking to excess, it is clear that once heavy drinking becomes a habit, it may become difficult to stop.

Alcohol abuse is a major factor in death, disease, accidents and crime in Australia. The problems associated with drinking alcohol generally fall into two areas:

- Short-term harm due to intoxication (binge drinking)
- Long-term harm due to alcohol dependence or heavy alcohol use over a lifetime

# What is binge drinking?

Binge drinking occurs when a person drinks heavily over a short period of time resulting in immediate and severe intoxication. Binge drinking is sometimes defined as 'drinking to get drunk'.

The health risks associated with binge drinking include the potential to develop toxic damage to the small bowel which causes diarrhoea, depression of the central nervous system, hangovers, headaches, and stomach problems resulting in nausea, shakiness and vomiting. Regular excessive drinking can result in damage to many body organs, especially the liver.

Importantly, because intoxication stops one from thinking clearly and acting sensibly, binge drinking can also lead a person to put themselves and others at risk of harm from other things: for instance, injury due to falls, risky behaviour or assault. It is for this reason that alcohol is closely associated with road accidents, fights and violence, sexual assault and unprotected sex.

# What is alcohol poisoning?

Serious binge drinking can lead a person to suffer alcohol poisoning. This occurs when the blood alcohol level rises to a dangerous point. At very high blood alcohol levels, a person may suffer a seizure, lose consciousness and slip into a coma. There have been cases when the intoxicated person dies.

## Death from alcohol poisoning usually occurs in one of three ways:

- the blood alcohol level reaches such a high level that the depressant effects of the drug slow down the parts of the brain and nervous system that control breathing and the heart. Usually the drinker dies because they have stopped breathing and their heart has stopped, usually while unconscious.
- while unconscious, the drinker has been sick and choked on their own vomit. There are also rare reports of an unconscious drinker choking on their own tongue.
- alcohol reacting with another drug that the person has taken. This can be either a prescription drug, over the counter medicine or an illicit substance. These deaths are even more unpredictable as they can happen at a relatively low blood alcohol level.

It is also important to be aware that an intoxicated person can also die of exposure in comparatively warm temperatures. Alcohol affects the body's thermostat, as well as the drinker's perception as to what is hot or cold, therefore someone who has been drinking can feel quite warm when in fact their body temperature is dropping sharply.

# How do you know if a person is just drunk or suffering from alcohol poisoning?

If you see any one of the following, you should seek medical help immediately – this is not something you can deal with alone, **this is an emergency!** 

- The person is unconscious and can't be awakened by pinching, prodding or shouting.
- The skin is cold, clammy, pale and bluish or purplish in colour, indicating that the person is not getting enough oxygen.
- The person is vomiting without waking up.
- The person is breathing very slowly if there are more than 10 seconds between each breath.

## What is alcohol dependence?

Alcohol dependence occurs when a person has significant problems with their alcohol use. There are strict medical definitions of dependence. In general, alcohol dependence means that a person places a high priority on drinking alcohol, often damaging other social relationships with family and work. The person also finds that they can tolerate a lot more alcohol the longer they use it (called tolerance). They often have social and physical problems with alcohol use and some will make repeated attempts to cut back. Most people will also suffer withdrawal symptoms when they stop using alcohol.

## What are the long-term effects of heavy drinking?

While drinking a small amount of alcohol is generally not harmful for most people, regular drinking of a lot of alcohol can be a major cause of physical ill health as well as contributing to emotional and social problems over the long-term.

People who drink heavily may become dependent on alcohol.

The long-term effects of excessive alcohol use may include the following physical, psychological and social effects.

# Physical

**Tolerance** - Ability to drink progressively larger amounts without apparent intoxication

Alcohol seeking behaviour - Craving, continuing to drink despite adverse affects, devoting a lot of time to drinking

Withdrawal - Anxiety, agitation, confusion, shakes and fits which occur when alcohol consumption is suddenly stopped

Accidents - Accidents at work or at home and road accidents leading to possible head injury and broken bones

Liver disease - Liver inflammation and fat deposition, Liver failure • Cirrhosis (scarring) • Cancer

Stomach and bowel diseases - Heartburn and indigestion due to an inflamed stomach • Diarrhoea • Ulcers • Cancer of the bowel Inflammation of the pancreas leading to abdominal pain or inability to absorb food

Nervous system - Damage to nerves, leading to numbness in the legs and difficulty walking • loss of sensation in hands

Brain - Cell damage, resulting in loss of memory • Difficulty learning Confusion • Hallucinations • Dementia) • Poor coordination and balance

### Heart and blood vessel diseases

- High blood pressure (hypertension) Palpitations • Enlarged heart • Heart failure

# Sexual and reproductive disorders Damage to the testicles leading to impotence Damage to the unborn baby

Muscle - Weakness • Loss of muscle tissue

#### Bone and joint disorders

- Gout (painful swelling of the joints, most commonly the big toe) • Osteoporosis

## **Psychological**

There are many psychological conditions that are associated with heavy alcohol use e.g. Depression • inability to cope and suicide Difficulty sleeping • Anxiety • PTSD and panic attacks • Confusion and Alcoholic 'blackouts'

Whether these conditions come before or after the alcohol abuse is often not clear. However it is clear that heavy alcohol use makes these psychological conditions worse and more difficult to treat,

## Social

Domestic problems - Loss of friends • difficulties in marriage or other significant relationships leading to separation and divorce • neglect of children

Financial problems - Loss of regular income from employment, • hardship from money • spent on alcohol • gambling debts

> Legal problems - Drink-driving offences/loss of licence, • property crime • assault • homicide

# How does alcohol affect women?

### Alcohol affects women differently to men.

The blood alcohol level in a woman's body will almost always be higher than that in a man's body after drinking exactly the same amount of alcohol. This is because women tend to have a smaller physical build than men and a lower volume of blood, so alcohol is concentrated into a smaller volume of blood. Women also tend to have more fatty tissue than men, and alcohol is not taken up by fatty tissue. As a result, the alcohol will be more concentrated in a woman's body, producing a higher blood alcohol level.

The liver is the main organ of the body responsible for removing alcohol from the blood stream. On average, women have smaller livers than men, and the ability to break down alcohol is limited by the size of the liver.

It is for these reasons that women often get drunk more quickly than men, and they recover from drinking more slowly than men.

In addition, women may develop liver damage and other health problems at lower levels of alcohol consumption than men.

The more people drink, the greater risks they will take which can lead to injury. Even though men are not as easily affected by alcohol, they are more likely than women to engage in such risky behaviour. Therefore, current safe drinking guidelines recommend the same low levels of alcohol use for both men and women.

# What are the early signs of health problems due to alcohol?

Some of the early indicators of dangerous drinking patterns may include:

• regular consumption of risky amounts of alcohol.

Short-term risky drinking for adult men and women would involve drinking more than 4 standard drinks on any one day. **Drinking more than 4 standard drinks on one occasion more than doubles the risk of injury in the following six hours.** 

Over the long-term, risky drinking would involve drinking more than 14 standard drinks per week, even if they are spread out over the week. **Every drink above this level increases the risk of lifetime disease or injury.** 

- involvement in leisure activities associated with heavy drinking
- eating less or missing meals while drinking

There may be symptoms such as morning nausea, diarrhoea, blackouts and difficulty sleeping. Frequent accidents or repeated lateness or absence from work may also be early warning signs.

# Is there a safe drinking level?

A moderate amount of alcohol does not harm most people, however there is no guaranteed safe level of drinking.

Remembering that alcohol will affect everyone differently, the following table presents guidelines that may be followed to reduce the short-term and long-term risks of health problems associated with drinking alcohol.

## Adult Men and Women (over 18 years of age)

Drink an average of no more than 2 standard drinks a day, and no more than 4 standard drinks on any one occasional heavier drinking day.

Have one or two alcohol-free days each week.

## People aged 15-17

It is recommended that older adolescents delay starting to drink alcohol for as long as possible. No level of drinking is considered safe for people under 18 as they are more likely to engage in risky and antisocial behaviour. If they are to drink then it should be in a safe environment and under the supervision of a responsible adult.

## People under 15 years of age

It is important that this age group does not drink any alcohol as they are much more likely than older drinkers to behave in a way that is antisocial or that may cause serious injury.

# Is it safe to drink during pregnancy or while trying to become pregnant?

It is not known whether there is any safe level of alcohol consumption during pregnancy. However, it is known that the level of risk to a developing baby increases with higher alcohol usage.

Alcohol drunk during pregnancy crosses the placenta to the baby and can cause problems such as bleeding, miscarriage, still birth and premature birth. It can also result in damage to the unborn child with symptoms such as low attention span, distractibility and slow reaction times.

**Foetal Alcohol Syndrome** may occur in the children of heavy and dependent drinkers, resulting in birth defects such as an abnormally small head, defective development of facial tissues, outer ear abnormalities, abnormally small eyes, and heart and genital defects. After birth, these babies can suffer withdrawal symptoms, including tremors, irritability, fits and bloated abdomen. People with Foetal Alcohol Syndrome have lifelong problems including learning difficulties, disrupted education, higher risk of mental illness and drug and alcohol problems, and problems with the law.

# Heavy drinking during pregnancy also leads to higher rates of miscarriage, stillbirth and premature death of babies,

It is difficult to identify the exact levels of drinking which may cause harm to the child, and for this reason, the Australian National Health and Medical Research Council suggests that there is no safe level at which alcohol can be drunk during pregnancy, and that **the safest approach for pregnant women is not to drink any alcohol at all. This applies to women who are planning a pregnancy as well.** However, it is clear that if the level of drinking before or during pregnancy is low then the risks to the foetus are also low. There are aspects of both the mother and the foetus that determine how damaging drinking can be for the foetus, but to date these have not been uncovered by scientific research.

# Is it safe for breastfeeding mothers to drink?

While there is little research evidence available about the effect of alcohol in breast milk on a newborn baby, it is known that alcohol in the blood stream passes into the breast milk. Alcohol can reduce the milk supply, and cause irritability, poor feeding and sleep disturbance, and poorer psychomotor development in the baby. Breast feeding mothers who drink are more likely to stop breast feeding earlier and this may be due to expectation of risks to the baby. It is safest to not drink at all whilst breast feeding. As breast feeding has many advantages for a young baby, it would be valuable for the mother to discuss the issue of breast feeding and continued alcohol drinking with a medical professional. Continued breast feeding, and expressing milk before drinking, may be suitable options to consider. As it takes some time for alcohol to leave the system a lactating mother who chooses to drink should drink only at safe levels (no more than 2 standard drinks a day). **No alcohol should be taken by a breast feeding mother until the baby is 1 month old.** 

## How does alcohol affect driving ability?

It is safest not to drink alcohol at all if you are going to drive. Alcohol is involved in about a third of all serious motor vehicle accidents.

A person who drives after they have had only one drink is still 5 times more likely to have a motor vehicle accident than a driver who has not drunk any alcohol.

#### Alcohol affects all drivers as it prevents the brain from functioning effectively.

Under the influence of alcohol, it takes longer to receive messages from the eye, processing information becomes more difficult, and instructions to the muscles are delayed. The result is that alcohol may slow down a person's reaction time by 10% to 30%, it will impair their vision, reduce their ability to judge speed and distance, and reduce their ability to perform two or more tasks at the same time.

Alcohol reduces a person's ability to see distant objects, to see what is happening at the roadside, and may reduce night vision by 25%. Alcohol may also cause blurred and double vision.

Alcohol may give a person a sense of overconfidence with the result that they may be prepared to take greater risks than they otherwise would, such as speeding. Impaired judgement may also make a person think they are fit to drive, when in reality they are not.

Finally, as alcohol is a depressant drug, it may make a driver sleepy, and affect their sense of balance.

# What is blood alcohol concentration?

Drink driving legislation is based on blood alcohol concentration (BAC). This is a measure of the amount of alcohol in the blood. A BAC of .05 means that in every 100ml of blood there is 0.05 grams of alcohol.

In Australia it is illegal to drive with a BAC over and including 0.05. By law, probationary drivers (P-platers) and motorcyclists in their first year of riding must maintain a zero BAC while on the road. Drivers of heavy trucks, buses, trains and trams must also maintain a zero BAC level while on the road in most of Australia.

The best way for a driver to ensure that they have a BAC below 0.05, is not to drink alcohol. However, if a driver chooses to drink then they are advised to limit their drinking to:

- **Women** No more than one standard drink in the first hour and no more than one per hour thereafter
- **Men** No more than two standard drinks in the first hour and no more than one standard drink per hour thereafter

These are estimates designed to minimise the risk of exceeding the legal limit to drive. However, it is important to be aware that these are guidelines, not rules. It is safest not to drink alcohol at all if you plan to drive.

In addition, as everyone is different some people would need to drink less to maintain a BAC level below the legal limit.

As sobering up takes time, it is quite possible for a person who has drunk a lot at night to still be well over the legal limit to drive the next morning.

# **Celebrating safely**

When enjoying a drink while relaxing with friends or celebrating a special event, people sometimes drink more than they intended. Alcohol used in moderation can be part of a healthy lifestyle, but it is important to stay as safe as possible by taking precautions and being aware of all the risks involved with celebrating.

If you are going to drink alcohol when out with friends, here are some practical tips to help you slow down your drinking:

• **Plan in advance.** Think about where you are going, who you will be with and how much you are going to drink. What do you need to do the next day?

• Start with a water, juice or soft drink. You will drink much faster if you are thirsty, so have a non-alcoholic drink to quench your thirst before you start drinking alcohol.

• **Drink slowly.** Sip your drink, don't down it in gulps! Put your glass down in between sips.

• **Eat before or while you are drinking.** Food in the stomach slows down the rate at which alcohol can be absorbed into the blood stream. Eating slows down your drinking pace and fills you up"

• Pace yourself. Space alcoholic drinks with non-alcoholic drinks

• Select low-alcoholic drinks That is, low alcoholic beers or spirits in large glasses of juice or soft drink

• **Avoid rounds or 'shouts'.** Drinking in a 'shout' encourages you to drink at someone else's pace. If you do get stuck in this situation, buy a non-alcoholic drink for yourself when it's your turn

• **Drink one drink at a time.** Don't let people top up your drink if you haven't finished it – it is a lot harder to keep track of how much you have drunk. Count your drinks.

• **Keep yourself busy.** If you're occupied you tend to drink less – have a dance, play pool – don't just sit and drink.

• **Be the designated driver.** If you've made the decision not to drink and are worried that their might be pressure from your friends to have a few, let them know that you're the designated driver. They'll respect that decision and it will save them money in cab fares!

• Don't take any substances you're not sure of and don't leave your drinks unattended. There are increased reports of 'drink spiking' across Australia so always watch your drink and don't accept drinks from strangers.

• Look out for your friends. Always watch out for your friends- if you got into trouble you would expect them to watch over you. Don't be afraid to let them know that they have had too much. They may not be too impressed when you let them know, but they will most probably thank you the next day.

• Make sure you rehydrate before you go to bed. One of the best ways to prevent a hangover is to make sure you drink water before you go to sleep. Drinking water throughout the evening is also a good option

# **Frequently asked questions**

## • Does alcohol really damage brain cells?

Damage to brain cells can be one of the long-term effects of drinking too much alcohol. However, because the damage occurs slowly, you may not become aware of the symptoms for many years. Symptoms may include loss of memory, difficulty with learning, confusion, hallucinations, poor co-ordination and poor balance. These symptoms are often associated with dementia.

## • Does alcohol affect teenagers differently to adults?

While the effects of intoxication due to drinking too much alcohol remain the same for people of any age, binge drinking and alcohol dependence are particularly problematic for teenagers who tend to be inexperienced, and therefore have fewer skills to regulate their drinking. Teenagers tend to be physically smaller than adults, and are therefore more susceptible to the effects of alcohol. They are also much more likely than adults to engage in risk-taking behaviours, such as driving under the influence of alcohol.

## • Why do women tend to get drunk quicker than men?

Women tend to have smaller bodies than men, and therefore a lower volume of blood flowing through their bodies. Women also generally have more fatty tissue in their bodies than men, and alcohol is not absorbed by fatty tissue. So if a man and a woman drink the same amount of alcohol it will become more concentrated in the woman's body, as she has less blood in which to dilute it, and less tissue in which to absorb it. She will therefore have a higher blood alcohol level, and feel drunk quicker.

## • If I don't drink during the week, can I drink more on the weekend?

The recommended low-risk drinking level for adult men and women in the long-term is an average of no more than 2 standard drinks per day. If you don't drink your average daily allowance of alcohol this does not mean that it is then safe for you to make up for it on weekend, by drinking all of your allowance at once! Clearly severe intoxication would result, with the potential for alcohol poisoning or other harms. Also important to remember is the recommendation that adults should not drink more than 4 standard drinks in one session. It may also be beneficial to make a rule of having 2 alcohol-free days per week.

## • Is the effect of alcohol stronger if I mix my drinks?

The amount of alcohol that is absorbed into your blood stream will determine how drunk you feel. All the alcohol you consume will be absorbed.

If you drink two standard drinks of spirits that have been mixed into a cocktail, the total alcohol concentration per glass would be that of one standard amount of a spirit on its own, so you will become drunk faster. It becomes difficult to determine how many standard drinks are contained in a mixed drink, if the quantities of each spirit are unknown. This can happen more easily at private functions, such as at someone's home. When water is mixed with the alcohol to dilute it, the alcohol that is absorbed into the blood stream would be less concentrated per glass. However drinking large amounts of alcohol and water together does not decrease one's blood alcohol concentration! Carbonated drinks, like coca cola and champagne, increase alcohol absorption.

## • How much can I drink if I am taking other medicines? What medicines should not be mixed with alcohol?

Alcohol should be avoided altogether by anyone who is taking other drugs, including over-the-counter or prescribed medicines, as the combination of these substances can be especially dangerous and unpredictable. One drug can make the negative effects of the other even worse. Alcohol can also stop medicines from working properly.

Mixing alcohol with other drugs that slow down the body, like sleeping pills or marijuana, can be fatal as this can cause the central nervous system to switch off brain and heart activity. Alcohol mixed with methadone or heroin can cause coma and death.

# • If you are an athlete, or just enjoy your sport, is it true that binge drinking reduces your fitness? Is it dangerous to drink the night before a game/run/swim/cycle?

The negative effects of alcohol on sporting performance are well known and include lack of balance and steadiness, reduction in reaction time, impaired hand-eye co-ordination, loss of motor skills, and a decrease in decision-making effectiveness.

Binge drinking after exercise is likely to interfere with speedy rehydration, delay repair from soft-tissue injuries sustained during exercise, disturb regular sleep patterns and interfere with the general recovery process.

Research suggests that exercise performance is impaired during the 'hangover period' following a binge drinking session. In addition, regular drinking can affect an athlete's ability to maintain an ideal body weight and body fat level. Alcohol is high in kilojoules and promotes fat storage when consumed in combination with high-fat foods and fluids.

# • On average, how much can a person drink before their blood alcohol level reaches 0.05?

All drugs are unpredictable. You never know quite what effect they will have on your body, no matter how many times you may have taken them before. So clearly it is best not to drink if you are planning to drive. However the following drinking levels are recommended for staying under the legal limit to drive, although these amounts will vary between individuals:

- Women No more than one standard drink in the first hour and no more than one per hour thereafter
- **Men** No more than two standard drinks in the first hour and no more than one standard drink per hour thereafter

# • Why is it that some people can drink more than others before they appear to be drunk?

People react in different ways to alcohol depending on whether they are male or female, and on their particular weight and body chemistry. However, in addition to this, people who drink heavily usually develop a tolerance to alcohol, so they need to drink more in order to experience the same effect. As a result, some people can drink large amounts of alcohol without appearing to be intoxicated. However, the amount of alcohol consumed can still damage their health as well as impair their performance of motor tasks and their ability to respond quickly in dangerous situations.

## • If I want to decrease my alcohol consumption, what are my options?

There are a number of treatment options available in Australia. While stopping drinking altogether may be a suitable treatment aim for some people, many programs recognise that for others this may not be possible or realistic. Most programs adopt strategies that have an overall aim of reducing the harms and risks related to a person's alcohol use. Some treatment options include counselling, withdrawal (detoxification) and medication. Residential and 'out-patient' programs are available.

If you would like help with a drinking problem, either approach a treatment centre directly, discuss your drinking with your doctor, or contact the telephone drug information and referral service in your State. A list of numbers can be found at the back of this booklet.

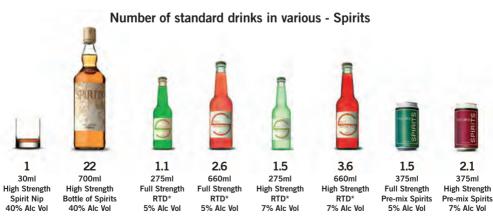
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## Number of standard drinks in various beverages







\* Ready-to-Drink

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