

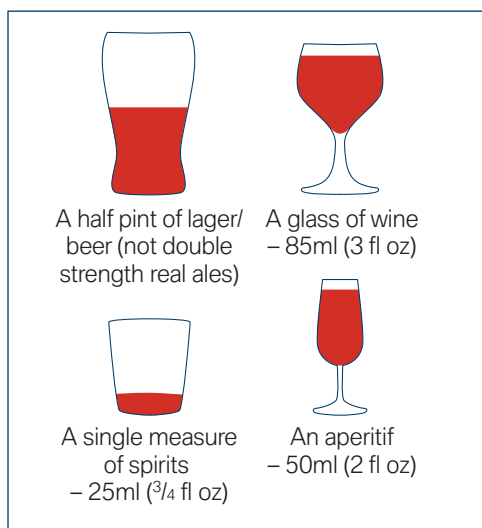


Fitness and Nutrition – Theme 9: Staying alert

Factsheet 9c

Effects of alcohol

- Alcohol (ethanol) is a compound made of carbon, hydrogen and oxygen. It is produced when sugars are fermented by yeasts, producing alcohol and gas (carbon dioxide).
- Fruit and cereals are normally used to produce alcoholic drinks. Grapes and apples are used to make wines and ciders, barley and rye form the basis for beers and spirits (e.g. whisky or vodka). Other substances provide the flavour, e.g. hops for beer, juniper berries for gin.
- Alcohol intake is measured in units of alcohol. Each unit contains approximately 8 grams or 10ml of alcohol. The alcohol content of drinks varies widely.
- A standard unit is typically half a pint of beer, a small glass of wine or a single measure of spirits. However, in reality categories of drinks provide different amounts of alcohol, depending on their strength (see below). So, a small glass of wine or half a pint of beer may provide more than one unit if it is a stronger version.
- The Department of Health recommends that men should not consume more than 3-4 units of alcohol a day and women not more than 2-3 units. Regularly drinking more than this can adversely affect health. There is particular concern about binge drinking amongst young people.





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- Since 1989, labels of alcoholic drinks have been required to show the strength. This is expressed as the percentage of alcohol by volume (abv). A 10% abv equates to 7.9g of alcohol per 100ml. Beers and cider may range in abv from 4-6%; wines from 9-13%; fortified wines from 18-25% and liqueurs 20-40%.

Alcohol in the body

- Alcohol is a source of energy contributing 29kJ (7kcal) per gram. Some alcoholic drinks contain traces of vitamins and minerals but not significant amounts. Many alcoholic drinks also contain sugars.
- When drunk, most of the alcohol is quickly absorbed from the stomach and distributed through the body by the blood stream. (If alcohol is consumed with food, it is absorbed up to 3 times more slowly.)
- Once absorbed, most alcohol is metabolised in the liver to provide energy. A small quantity is excreted in the breath, sweat and urine. The rate at which this happens depends on the person's age, gender, body weight and liver size. On average, it takes 1 hour to metabolise 1 unit of alcohol.
- The most immediate effects of alcohol are on the nervous system:
 - it slows reactions
 - impairs judgement and ability to make decisions
 - decreases ability to carry out skilled actions
 - affects balance and co-ordination.

Alcohol and driving

- It is very dangerous to drive after consuming alcohol (even small amounts).
- In the UK, the legal drink-drive limit is 80mg of alcohol/100ml of blood. When breathalysed, it is equal to 35mg/100ml of breath. However, driving performance is impaired even below the legal limit.
- After a heavy drinking session, a driver can still be above the legal limit the morning after.
- Even when alcohol has left the body, its bi-products are still being processed leading to reduced concentration and judgement (hangover effect).

The right formula

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Alcohol and sport

- Alcohol is classified as a drug due to its effects on the body. It is forbidden 'in competition' in many sports, including all Automobile Sports. Detection is by analysis of breath and/or blood. The threshold set by the Fédération Internationale de l'Automobile (FIA) is 0.1 gram per litre of breath (equivalent to 10mg/100ml).
- The diuretic effect of alcohol leads to extra loss of fluids and to dehydration. Heat regulation is also affected leading to 'flushed' skin and heat loss from the body.
- Alcohol interferes with the healing process and must be avoided altogether if you have any soft tissue injuries.
- Alcohol's energy cannot be absorbed straight into the muscles – it has to be broken down by the liver – so it is not a suitable energy source for exercise. Also, having a high energy content, alcohol can contribute to weight gain.
- Alcohol reduces endurance as it relaxes the heart muscles and slows down the respiration rate – the result is less oxygen being delivered to the muscles.