

### Effects of heavy and long-term drinking (over 14 units a week)

Long-term use can result in permanent brain damage, serious mental health problems and alcohol dependence or alcoholism.

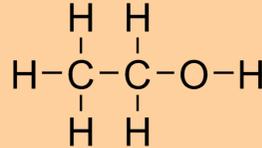
It is the second biggest risk factor for cancers of the mouth, throat, liver and breast after smoking.

It causes high blood pressure (hypertension) and increased blood lipids (fats), which increases the risk of having a heart attack or stroke, and chronic kidney disease.

Fat deposition develops in the liver and with continued use the liver may become inflamed, causing alcoholic hepatitis, which can result in liver failure.

Impotence, lowered libido/sex drive and infertility can be seen in men and infertility affects women.

Alcohol dehydrates your body and skin, and widens blood vessels, causing your skin to look red or blotchy.



### Health benefits of alcohol (< 2 units daily) [as part of a healthy lifestyle]

**Heart Health:** Moderate amounts raise levels of high-density lipoprotein, HDL, or 'good' cholesterol and higher HDL levels are associated with greater protection against heart disease.

**Brain Function:** Small amounts might reduce chances of developing dementia, as it stresses cells, toughening them up to cope with major stresses down the road that could cause dementia.

**Diabetes:** Alcohol increases levels of a hormone that improves insulin sensitivity, making it easier for your body to process glucose and use it as energy - reducing the amount of sugar in the bloodstream and ultimately the risk for developing diabetes.

**Increased Life Expectancy:** Little amounts, during meals appears to be the right way, (a feature of the Mediterranean diet), where wine is the ideal partner with a meal: the rest of the day must be absolutely alcohol-free.

### The bottom line

So... it's not all bad! Moderate alcohol consumption actually confers some health benefits. But unfortunately not many of us drink in moderation. The many mentioned ill effects are enough to warrant cutting back. The psychological effects of alcohol can be lessened if you drink water between each drink, and lower calorie drinks are better choices to prevent weight gain. If you really want to lose weight, then stop drinking immediately – eating healthily, until you have reached your target weight, and remember that it will go on twice as quick if you carry on drinking like you did.



## ALCOHOL

Each month our nutritionist **Gary Baverstock** provides some basic science and unbiased information, to help demystify certain popular foods in our diet.

# ALCOHOL

- The term alcohol originally referred to the primary alcohol ethanol (ethyl alcohol), the predominant alcohol in alcoholic beverages.
- Fermented grain, fruit juice and honey have been used to make alcohol for thousands of years.
- Fermented beverages existed in early Egyptian civilization; 7000 B.C in China; and between 3000 and 2000 B.C. in India, using Sura, distilled from rice.
- In Greece – one of the first alcoholic beverages to gain popularity was mead (made from honey and water) – where literature was full of warnings against excessive drinking.
- In the sixteenth century, alcohol (called “spirits”) was used largely for medicinal purposes.
- At the beginning of the 18th century, British parliament passed a law for the use of grain for distilling spirits, gin consumption reached 18 million gallons and alcoholism became widespread.
- The 19th century brought a change in attitudes and the temperance movement began promoting the moderate use of alcohol - which ultimately became a push for total prohibition.
- In 1920 the US passed a law prohibiting the manufacture, sale, import and export of intoxicating liquors - illegal alcohol trade boomed and by 1933, prohibition was cancelled.

## Units and calories in selected alcoholic beverages

Beverages	Measure	Calories	Units	Beverages	Measure	Calories	Units
Beer/ Lager (4%)	1 pint (568ml)	182	2.3	Alco pops (4%)	Bottle (275ml)	170	1.1
Beer/ Lager (5%)	1 pint (568ml)	224	2.8	Champagne (12%)	Flute (125ml)	89	1.5
Beer/ Lager (5%)	1 bottle (330ml)	142	1.6	Wine (13%)	Small (125ml)	114	1.6
Cider (4.5%)	1 pint (568ml)	216	2.6	Spirits (40%)	Single (25ml)	61	1.0
Port/ Sherry (18%)	50ml	65	0.9	Spirit (40%) + Cola	Large (50ml)	173	2.0

Source: DrinkAware.co.uk

## Metabolism of alcohol

Approximately 20% of alcohol is absorbed through the stomach and most of the remaining 80% is absorbed through the small intestine into the blood via small blood vessels.

Enzymes (alcohol dehydrogenase) help to break apart the ethanol molecule into other compounds (or metabolites), which can be processed more easily – some of which (acetaldehyde, a known toxic carcinogen) can have harmful effects on the body.

However, acetaldehyde is generally short-lived; it is quickly broken down to a less toxic compound called acetate by aldehyde dehydrogenase that is then broken down to carbon dioxide and water, mainly in tissues other than the liver.

The liver only metabolizes a certain amount at a time leaving the excess circulating in the body, meaning the intensity of the effect on the body is directly related to the amount consumed.

## Alcohol intoxication and toxicity

Intoxication is the result of alcohol entering the bloodstream faster than the liver metabolises it.

Some effects of alcohol intoxication (such as euphoria and lowered social inhibitions) are central to its desirability as one of the world's most widespread recreational drugs.

Medically any level of alcohol intoxication is described as a form of poisoning due to ethanol's damaging effects on the body in large doses is largely caused by acetaldehyde and acetic acid.

Ethanol is thought to cause harm partly as a result of direct damage to DNA caused by its metabolites.

## How alcohol affects the body

Within minutes of drinking alcohol, it travels from the stomach to the brain, where it quickly produces its effects, slowing the action of nerve cells.

Once in the bloodstream, alcohol diffuses into almost every biological tissue in the body, because cell membranes are highly permeable.

Alcohol interferes with the brain's communication pathways, affecting the way the brain looks and works - mood and behaviour - making it harder to think clearly and move with coordination.

When the amount of alcohol in the blood exceeds a certain level, respiration (breathing) slows down markedly.

## Alcohol and weight gain

Your body cannot store alcohol, so it metabolises it straightaway, slowing and stopping the metabolism of fats and sugars, meaning you will store the fat you have just eaten.

As alcohol enters into digestion it is split into two compounds: fat and acetate - fat is taken via the blood and stored - the acetate is sent for detoxification.

Alcohol also temporarily inhibits “lipid (fat) oxidation”, so it's harder for your body to burn fat that's already there.

Alcohol increases appetite by suppressing leptin, the hormone that normally tells your brain to stop eating, and negatively effects many other chemicals involved in appetite suppression.

Alcohol is very high in calories (7cals/g) [fat (9cals/g)] - a 750ml bottle of 13% wine contains 684 cals, while four pints of 4% lager contains 728 cals.

## The way alcohol affects health

The liver has to process alcohol above all else, which damages liver cells and affects its function.

Abusing alcohol affects the integrity of the gut and causes non-beneficial bacteria to flourish that can eventually migrate into the liver and cause damage.

Heavy drinking can be very hard on the heart, as it can cause cardiomyopathy (weakness of the muscle) and myocarditis (inflammation of the heart muscle), and also arrhythmia (irregular heartbeat).

Alcohol causes the pancreas to produce toxic substances that can eventually lead to pancreatitis (inflammation), preventing the release of digestive enzymes that help with digestion.

Drinking every day, or almost every day means you might catch frequent colds, as alcohol can weaken the immune system and make the body more susceptible to infections.