The Wise Drinkers Guide

Alcohol, Health and Sensible Drinking – Your Questions Answered

www.wsetglobal.com

By Helena Conibear
Alcohol in Moderation

www.drinkingandyou.com
www.alcoholinmoderation.com

Contents

Foreword 2
Introduction 3

Part I - Key issues regarding the responsible marketing, sale, promotion, production and consumption of alcohol

Social and professional responsibility 3
Responsible drinking 6
Drinking and driving 9

Part II - Alcohol and Health

Allergy 12
Asthma 12
Is alcohol fattening? 12
Alcohol and the heart 13
Healthy lifestyle and the mediterranean diet 14
Antioxidants 15
Alcohol and cancer 16
Alcohol and diabetes 17
Ethnic differences 18
Absorption of alcohol 19
Alcohol and the liver.....19
J shaped curve 20
Pregnancy 21
A spirited old age ?.....22
Vegetarians and vegans 22
Yeast allergy 22
References 23
Further sources of information 25

Foreword

Just as education in wines and spirits has become a 'must-have' for those who work in the industry, and a 'nice-to-have' for thousands of interested consumers, so the need for social awareness has become, in our opinion, a 'must-have'.

We live in an age when social responsibility is top of many people's agenda, and as the foremost educational body of its kind in the world, we at WSET believe we should have a stance on the issue of promoting, selling and marketing alcohol responsibly.

The Wine & Spirit Education Trust was founded in 1969, when the UK wine industry was starting to gain some serious momentum, and identified the need for high quality education and training for those working in the industry. Now, nearly forty years later, WSET has grown to the extent where we are no longer an exclusively UK-based education provider and awarding body, but have centres in 42 countries, and over 23,000 people annually who take one or more of our qualifications.

We are therefore delighted to support AIM in the production of the Wise Drinkers Guide. It contains information which everyone in the alcoholic beverage industry should read, and for our part we will ensure that all our students have the opportunity to learn more about the social, scientific and medical effects of drinking alcohol.

A module on social responsibility is now included in all of our lower level courses in the UK and we encourage other approved WSET programme providers to include this in their educational offering, as social responsibility now forms part of the syllabus at all levels of WSET qualifications.

Ian Harris

Chief Executive

The Wine and Spirit Education Trust

www.wsetglobal.com

Part I -
Key issues regarding the responsible marketing, sale, promotion, production and consumption of alcohol

Social and professional responsibility

The responsible advertising, marketing, promotion, production, packaging and sale of alcohol

To ensure that production, marketing, sales and promotional practices present the responsible enjoyment of alcohol and do not encourage misuse or excessive drinking, many regulatory laws, codes and guidelines exist. The monitoring of alcohol advertising, marketing, production and sales is addressed, particularly in relation to the protection of children and minors, by laws and voluntary codes developed by advertising self-regulatory organisations, social aspect organisations and individual companies. A socially responsible company, or representative association, helps to ensure the promotion of sensible drinking and reduce the social and health harms related to misuse by complying with guidelines.

Many voluntary codes, such as the Portman Group code (UK), The DISCUS Code (US) and EFRD code (Europe) are reinforced with independent complaints panels, whereby the public can submit complaints concerning inappropriate advertising or marketing.

Provisions on Naming, Packaging and Labeling ensure that new product development follows the same rules and high standards – increasingly, responsible drinking messages are standard on alcohol packaging, print and media internationally.

Watchdogs and regulatory frameworks, such as the EU 'Audio visual directive' lie above the self-regulatory codes.

Article 15 of the EU Audio visual directive states that advertising for alcoholic beverages shall comply with the following criteria:

- It may not be aimed specifically at minors or, in particular, depict minors consuming these beverages

- It shall not link the consumption of alcohol to enhanced physical performance or to driving
- It shall not create the impression that the consumption of alcohol contributes towards social or sexual success
- It shall not claim that alcohol has therapeutic qualities or that it is a stimulant, a sedative or a means of resolving personal conflicts
- It shall not encourage immoderate consumption of alcohol or present abstinence or moderation in a negative light
- It shall not place emphasis on high alcoholic content as being a positive quality of the beverages.

Most codes and guidelines from around the world embrace similar criteria. For a comprehensive list of codes and guidelines, visit the social and policy area of www.alcoholinmoderation.com

Social aspect organisations (SAO)

Social aspect organisations are bodies, usually funded by the industry, that exist specifically to promote responsible drinking and address areas of misuse associated with alcohol. Their role is to create and implement programmes and educational material that promote responsible drinking, and tailor interventions for sectors of the community to improve patterns of drinking and reduce misuse. This might include educating children and parents about appropriate alcohol use, server training, interventions that addressing drink driving and underage purchase. SAO's do not have a lobbying or legal enforcement role, but may administer codes of practice and are usually not for profit. Social aspect organisations include: The Drinkaware Trust (UK), The Century Council (US), MEAS (Ireland), Educ'Alcool (Canada); many are listed at the end of this guide.

Legal drinking age

In many countries, a minimum age is set at which it becomes legal to drink or purchase alcohol, this varies nationally, from 18 in the UK, 21 in the US and 16 in Italy and Portugal. This drinking age provides a legally enforceable tool in preventing access to alcohol by those under a certain age on or off premise or on-line.

Drinking age may be distinct from the minimum legal age at which a person may purchase alcohol, for example, you can drink wine, beer or cider with a meal when 16 or 17 in England in a pub, but not purchase it.

Most legal drinking age legislation does not cover drinking in the home with parental permission and supervision. For example, this is legal from age 5 in the UK, while in many US states an underage person may drink legally in a private residence, but is breaking the law if they move onto public property with alcohol in their blood. As a server or seller of alcohol, it is important you are aware of your country's legal purchase age so you do not break the law and are prepared to ask for proof of age. In many countries it is also illegal to facilitate 'buying by proxy', whereby someone of age knowingly buys or provides alcohol for someone who is underage.

Binge drinking

Binge drinking is a widely used, but ill defined term. Binge drinking differs in its medical and social usage from drinking to drunkenness, being defined as drinking five or more drinks in quick succession, or on one drinking occasion. Size of drinks vary from country to country, (8 grams (UK) or 14 grams (US)) hence comparing 'binge drinking' statistics and studies is difficult. In terms of alcohol misuse it may be useful to describe harmful patterns of drinking as 'drinking to drunkenness' or 'going out with the intention of getting drunk' as well as the number of drinks consumed, time frame and context.

'Alcohol misuse'

This describes alcohol use outside of the parameters of the law or health guidelines. It encompasses health issues such as unhealthy patterns of drinking, drinking to drunkenness, dependency and issues such the sale or marketing of alcohol to minors, the antisocial or violent behaviour that can be associated with excess drinking and drink drive.

Responsible drinking

Standard drinks or units

Official 'standard drinks' or units generally contain between 8 and 14 grams of pure ethanol, although the measure varies among countries - there is no consensus internationally on a single standard drink size. For a full list of country unit definitions and responsible drinking guidelines, visit www.alcoholinmoderation.com

Standard drinks offer a useful means of tracking personal consumption. Drinks are generally also served in well-defined measures at restaurants and bars - this allows servers or retailers to monitor how much alcohol is being dispensed and ensures that drink sizes do not vary significantly across venues. For licensing authorities, standard measures are useful for tracking sales. The sizes of servings are largely shaped by local customs and culture.

The strengths of different types of beverage alcohol vary significantly, and using standard measures allows for uniformity. Thus, in terms of the alcohol it contains, a standard drink or unit will be the similar - regardless of whether it contains beer, distilled spirits, wine, or a mix of any of these beverages.

Responsible drinking guidelines

Official drinking guidelines are issued by governments and public health entities to advise on levels of alcohol consumption considered 'safe', 'responsible', or 'low-risk'. They do not apply to those under the legal drinking age or to pregnant women. Those on medication or with a history of illness should consult their general practitioner for specific advice.

It is difficult to lay down exact guidelines as to what constitutes 'moderate consumption' – as this will depend on your age, size, gender, genetic make up and health. Your culture as well as how and when you consume alcohol are also factors as both the speed of consumption and drinking with food will affect the absorption of alcohol. This helps explain why Government guidelines and definitions of a 'drink' or unit vary.

NB: Many countries have a maximum recommended gram intake per day without defining unit size. Moderation, however, is generally medically accepted as between 12-24g of alcohol a day for women (1-2 drinks) and 24-32g for men (2-3 drinks).

Country	Source	Standard drink in grams of alcohol	National recommended daily intake in units	Total
USA	Federal Dietary Guidelines	14g = 1 unit	2 units for men 1 units for women	28g 14g
Spain	Ministry of Health	10g (spirits = 17g)	3 units for men 2 units for women	30g 20g
UK	Dept of Health	8g	3-4 units for men 2-3 units for women	32g 24g

For the many countries where there are no official Government guidelines, it is recommended that the internationally recognised World Health Organisation low risk responsible drinking guidelines are followed. Taking a drink as 10g, these are:

(2) Women should not drink more than two drinks a day on average

(3) For men, not more than three drinks a day on average

(4) Try not to exceed four drinks on any one occasion

(0) Don't drink alcohol in some situations, such as when driving, if pregnant or in certain work situations and abstain from drinking at least once a week.

Men or women who consistently drink more than these recommended levels may increase risks to their health.

What does moderate drinking mean?

Sensible or moderate drinking means drinking enjoyably, sociably and responsibly. Ideally your preferred beverage should be drunk with food, water served or alternated with alcohol and daily guidelines respected.

Responsible drinking means being aware of the implications of your drinking on others. It includes not drinking when the effects of alcohol will put someone's safety or health at risk, such as when working at heights, with machinery, when pregnant or when driving. As a parent, it means being aware of the risks to young people of drinking and setting an example of moderation.

If you drink too much?

Most people who enjoy drinking find it a sociable and relaxing thing to do. In general drinking sensibly is compatible with a healthy lifestyle. However, there are times when drinking too much - or at all - can cause problems or harm.

Do not:

- Exceed the legal BAC limit and drive
- Operate machinery, use electrical equipment or work at heights after drinking
- Drink heavily before playing sport
- Drink while on certain medications - ask your doctor if you are unsure
- Binge drink - it can lead to health and social problems
- Drink when pregnant
- Drink if there is a history of addiction or mental illness.

Short term increased risks due to getting very drunk include imprudent or unprotected sex, antisocial behaviour, not getting home safely, vomiting, passing out or even alcoholic poisoning, being a victim of crime and of course, the inevitable hangover. When you 'binge drink' (that is five or more drinks in quick succession or getting drunk) you increase your blood pressure and the risk of having a heart attack or stroke. Illnesses related to long term heavy drinking

are cancer of the mouth, throat and oesophagus, cirrhosis of the liver, dementia, haemorrhagic stroke and pancreatitis.

It is important to remember that 'the majority of people who drink alcohol drink sensibly the majority of the time'. Also, more than half the world's adult population choose not to drink alcohol for religious, cultural or health reasons.

Evidence suggests that regular moderate alcohol consumption reduces the risk of coronary heart disease and stroke by over 30%, mainly in men aged over 40 years and in postmenopausal women, when the risk factors for coronary heart disease and stroke significantly increase.

The risk increases exceptionally, however, with each drink above moderation. Therefore, while a glass or two of wine, beer or spirits per day can be considered to be in balance with a healthy lifestyle, drinking more than the guidelines will not provide more benefits, only more harm.

Drinking and driving

The best advice is to nominate a non-drinking driver if planning to go out, or to arrange a taxi/transport to take you home. BAC levels are affected by how much alcohol has been drunk, the speed of drinking and over what period of time. An individual's weight, gender, health, level of tiredness and food intake also affect the absorption and metabolism of alcohol, making an estimation of how much it is safe to drink before driving risky. Risks incurred by being over the limit include the loss of driving license, fines, prison, loss of job and an inability to acquire insurance.

Research show that a driver with elevated BAC levels will underestimate the distance and speed of other vehicles on the road, has slower reaction times and will overestimate their ability and take risks. Involvement in fatal crashes is 11 times more likely for drivers with BAC levels between 0.5 mg/ml and 0.9 mg/ml, compared with drivers who have not consumed alcohol. Special legislation or BAC regulations are set nationally, at company level or internationally for operators of commercial vehicles, airline pilots,

buses, truck, and taxi drivers, as well as for captains of ships for example. In some countries, BAC limits apply to operators of bicycles, snowmobiles, personal aircraft and boats.

What is BAC?

BAC stands for blood alcohol concentration that is the amount of alcohol in the blood stream.

A BAC of 80mg (the UK and US drink drive limit) means that an individual has 0.08g or 80mg of alcohol in their body for every 100ml (0.1L) of blood. Be careful to check drink-drive laws if driving abroad, most of Europe has a limit of 50mg (in Sweden it is 20mg).

Men

Taking a standard drink as 10g alcohol, a man's BAC will generally increase by 20mg for each standard drink. A man's BAC will generally decrease by approximately 1 standard drink an hour. The consumption of alcohol with a meal will slow the absorption of alcohol - the BAC recorded will, therefore, be higher when alcohol is consumed on an empty stomach, but on a full stomach BAC will be recorded for a longer period of time.

Women

A woman's BAC will generally increase by between 20-30mg for each standard drink and will decrease by approximately 3/4 of a standard drink an hour. These rates are higher than men as women tend to be smaller than men, and have more fatty tissue per kg body weight: drink-for-drink this increases the exposure of organs and tissue to alcohol. Males also have more body water, therefore, alcohol is more concentrated in the body fluids of women consuming the same number of drinks as a male. Finally women possess only half as much of the metabolising enzyme, alcohol dehydrogenase, in their stomachs and liver as men.

Designated Driver

This is a term used for a non-alcohol-drinking driver nominated by a group of people before going out, to ensure they get home safely. Many occasions may arise if you work in the wine and spirit trade when you will need to think ahead and plan how to get home after a tasting, event or dinner.

As a responsible host, you need to plan for guests or customers too. Ensure tastings are well planned with water and spittoons. Samplings and tastings should not encourage illegal, irresponsible or immoderate consumption, such as drunkenness or drink drive or have appeal or be directed towards to those under legal drinking age.

Part II -
Alcohol and Health

Allergy

A food allergy is where a normally harmless substance is perceived as a threat by the body's immune system. In sufferers, even light alcohol consumption can cause an allergic reaction. Allergic reactions include migraine, headaches, itchiness, rashes, bowel colic, diarrhoea, asthma, swollen facial features and watery swollen eyes. If you suffer these symptoms on drinking alcohol, consult your doctor. Many consumers think that the main cause of an adverse reaction to wine is due to sulphur dioxide (S02), which is an antioxidant and preservative. Unless an individual has a similar reaction when eating dried fruits, such as apricots (preserved with much higher levels of S02), this is unlikely.

Hangover?

An adverse reaction or allergy is not to be confused with excessive alcohol consumption. A hangover is where one develops headache, nausea, vomiting, lethargy, and a dry mouth due to excess alcohol consumption. It is due to dehydration especially of the brain cells, which temporarily shrink. The way to prevent a hangover is to drink less alcohol, to pace yourself, to eat when drinking and to drink plenty of water or soft drinks whilst consuming alcohol.

Asthma

If asthma is triggered by sulphur compounds, such as sulphur dioxide (SO2), then fermented beverages should not be consumed as SO2 is used as a preservative and is a natural by product of fermentation. If the asthma is not triggered by sulphur compounds, then alcoholic drinks are unlikely to trigger an asthma attack.

If 'sulphite-sensitive', however drinks that contain a lower concentration of sulphur dioxide are recommended. For example, wines labelled as 'made with organic grapes' contain approximately 50% less sulphur dioxide than bag in box wines.

Is alcohol fattening?

Alcohol is calorific, but dry wines, ciders and beers are fat free and almost sugar free. A standard half pint of beer has approximately 100 calories, as does a 125ml glass of dry wine, less than a serving of apple juice. Spirits with non-diet mixers, fortified and dessert wines are much more calorific per serving, however.

It is important to include drinking alcohol only as part of a balanced diet and lifestyle that includes plenty of fresh fruit and vegetables, not smoking, maintaining a low BMI and exercise of course.

Energy supplied by various drinks and snacks

	Calories
Half pint of 4% ABV Lager	95
125ml 12% AV Wine	96
Half pint 5% Lager	123
Half Pint Apple juice	133
275ml bottle 5% 'alcopop'	179
34.5g packet ready salted crisps	183
100g bar of milk chocolate	525
100g salted peanuts	601

Nutritional Information per 150 ml (5oz) Serving of Table Wine, approx. 12.5% Alcohol

Key Nutrients	Red Wine	White Wine
Calories	106 kcal	100 kcal
Protein	0 g	0g
Carbohydrates	2.5 g	1.2 g
Fat/Cholesterol	0 g	0 g
Sodium (Na)	7 mg	7 mg
Potassium (K)	164 mg	117 mg
Magnesium	19 mg	14 mg
Calcium	11.4 mg	13 mg
Iron	0 .6 mg	0.5 mg
Vitamin B6	0 .05 mg	0.02 mg
Riboflavin B2	0.05 mg	0.007 mg

Source: USDA National Nutrient Database for Standard Reference, Release 16, 2003. The 2003 USDA database for the Flavonoid Content of Selected Foods also reported significant amounts of anthrocyanidins, flavones, flavonols and flavan-3-ols. Note: Wine also contains yeasts, sulfating agents and sorbates.

Alcohol and the heart

Coronary heart disease (CHD) is the leading cause of death throughout the developed world, accounting for 25-50% of all deaths. Studies consistently show that regularly consuming moderate amounts of alcohol reduces mortality from CHD and ischemic stroke by 25-30%, mainly in men aged over 40 years and in postmenopausal women, when the risk factors for CHD and stroke significantly increase.

It is thought that alcohol itself accounts for 75% of the cardioprotective effects of alcoholic beverages. It favourably alters the balance of fats or lipids in the blood, by stimulating the liver to produce the 'good' high-density lipoprotein cholesterol (HDL). HDL removes the 'bad' low-density lipoprotein cholesterol (LDL) from arteries and veins for disposal via the bile, which is referred to as reverse cholesterol transport.

Alcohol decreases the clotting together or 'stickiness' of red blood cells, which if untreated could form a clot to block blood flow in an artery or vein to cause a heart attack or stroke. The message is little and often as the blood thinning effect of alcohol lasts for approximately 24 hours and one drink confers the benefit.

Drinking alcohol is not recommended if you have uncontrolled, high blood pressure. If someone has an existing heart condition, alcohol can generally be drunk in moderation, but only if alcohol use does not affect the medication, a doctor's advice should be sought.

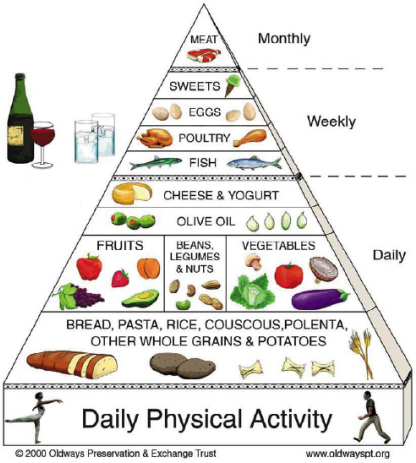
Healthy lifestyle and the mediterranean diet

Studies have shown that a healthier, 'Mediterranean' type diet, high in fruits, vegetables, fish, salad and olive oil and including alcohol in moderation, leads to greater longevity and a significant reduction in heart disease, late on set diabetes and stroke. The Lyon Heart Study found that this type of diet, combined with moderate wine consumption, might prevent a second heart attack in middle-aged men. Compared to non-drinkers, men drinking two glasses of wine a day reduced their risk of a second heart attack by 59%. Following the five heart healthy lifestyle factors of staying slim, not smoking, exercising gently daily and eating a balanced diet high in fibre, fruit and vegetables and low in saturated fats and drinking between 1/2 and two drinks a day, more than halves the risk of heart disease, type 2 diabetes and stroke.

Daily Beverage Recommendations:

6 Glasses of Water

Wine in moderation



Shown here, wine in moderation – between one to two 12g glasses a day – is part of a recommended healthy diet. (1 glass = 5oz serving of wine containing 12% alc/vol.)

Antioxidants

The cardio-protective effects of wine, beers, traditional ciders and cask aged spirits are due to alcohol (approximately 75% of the effects) and the specific phenolic or antioxidant compounds and their polyphenolic forms (approximately 25% of the effects), although the quantity needed and the 'bioavailability' of poly phenols is undetermined.

Polyphenolic compounds, (anthocyanins or pigment and tannin), give wine its characteristic colour and flavour, and red wine typically has a 200-fold greater concentration of polyphenolic compounds than white wine. Dark beers are richer in antioxidants, complex B vitamins and folic acid than lighter beers too.

Are they the magic ingredients?

Resveratrol and querticin, antioxidants found in wines - are more powerful than the 'benchmark' antioxidants vitamins C and E. Research suggests that the phenolic compounds and procyanidins in wine and present in many other alcoholic beverages, appear to:

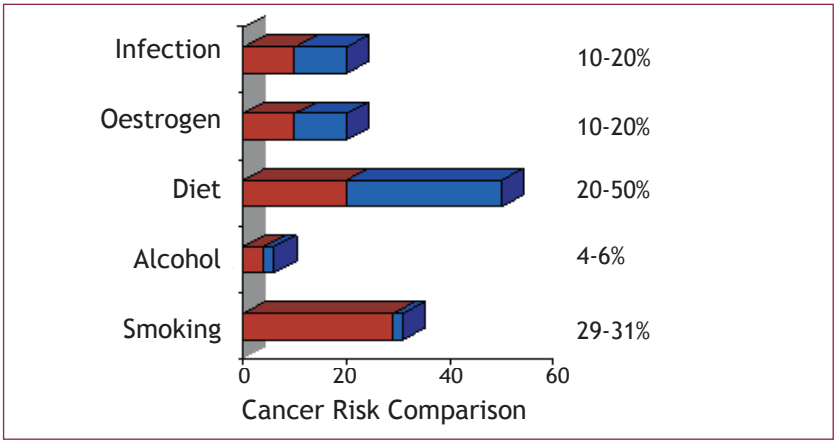
- Decrease the oxidative transformation of 'bad' cholesterol in the body called low-density lipoprotein or 'LDL'-cholesterol. This prevents oxidised LDL- cholesterol from accumulating on blood vessel walls, which if untreated could narrow an artery or vein to eventually block blood flow causing a heart attack or stroke.
- Enable blood vessel walls to relax and dilate from being continually contracted and narrowed. When the blood vessel wall is contracted, blood pressure is increased, but when relaxed blood pressure decreases and this prevents a blood vessel from rupturing to cause a stroke.
- Decrease the clotting together of red cells, which if untreated could form a clot to block flow in an artery or vein to cause a heart attack or stroke.

It should be remembered that drinking alcohol should be for pleasure and enjoyment, rather than for any health benefit it.

Alcohol and cancer

There is no doubt that the prolonged excessive consumption of alcohol, especially when combined with smoking, leads to an increased incidence of many cancers (mouth, throat, larynx, oesophagus, breast and liver).

However, for moderate drinkers, recent research is encouraging:



The American Cancer Society found there was a reduction in cancer mortality rates of 20% amongst those who drank in moderation. At consumption levels above 30g, the risk of cancer increases significantly.

It appears that the possible anti-cancer capabilities of some alcoholic drinks could be due to antioxidants, for their best-known function (see separate section).

Breast cancer

Research shows that there could be an increased risk associated with alcohol use above one drink a day. Individual risk varies according to hereditary genes. We know that there is a sharp increase in breast cancer risk at above 30g alcohol intake a day.

Alcohol and diabetes

Diabetics can consume alcohol, but preferably with a meal. The consumption of alcohol without a meal can cause blood sugar level to fall unexpectedly (hypoglycaemia), in particular, if on insulin.

If more than a light to moderate amount of alcohol is drunk, alcohol can react with many of the prescribed diabetic medications and worsen the side effects of diabetes such as increased blood pressure.

Recommendations are a maximum of two 10g standard drinks per day for men and one 10g standard drink per day for women. For further information visit www.healthline.com or www.diabetes.about.com

Which drinks?

Low sugar or 'dry' varieties of wine are recommended. These include still and sparkling styles and dry sherry, but not a sweet or medium dry/sweet sherry or sweet dessert wines. Beers and spirits (avoid sweet mixers) are fine but high sugar liqueurs and fortified wines should also be avoided.

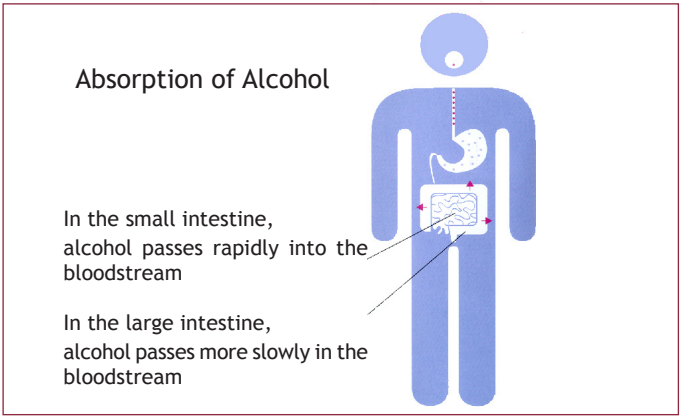
Ethnic differences

Some Asian populations have a large proportion of individuals with an 'inactive' gene for breaking down alcohol. Acetaldehyde, therefore, accumulates in the blood stream and liver. The blood concentration of acetaldehyde in individuals with the inactive gene can be 10-times higher than normal. The physical effects of having the inactive gene include the following:

- facial flushing - a rapid increase in the blood flow to the skin of the face, neck and chest;
- a rapid heart beat;
- a headache;
- nausea and vomiting;
- extreme drowsiness or tiredness; and
- low blood pressure.

These physical effects can occur after only one standard drink and are so unpleasant that individuals with the inactive gene generally consume only little if any alcohol.

Absorption of alcohol



Alcohol is absorbed into your body through the stomach and small intestines. Food slows down the rate of absorption - that's why alcohol affects you more quickly when taken on an empty stomach. An enzyme in our stomachs, known as alcohol dehydrogenase (ADH), is key in breaking down alcohol - women's stomachs contain about 60% as much alcohol dehydrogenase as do men's, which is one reason why women's daily drinking guidelines are lower. Alcohol travels through the intestines to the liver and then on to the heart, brain, muscles and other tissues. This happens very quickly - within a few minutes. Usually, though not always, this has a pleasant effect.

Alcohol and the liver

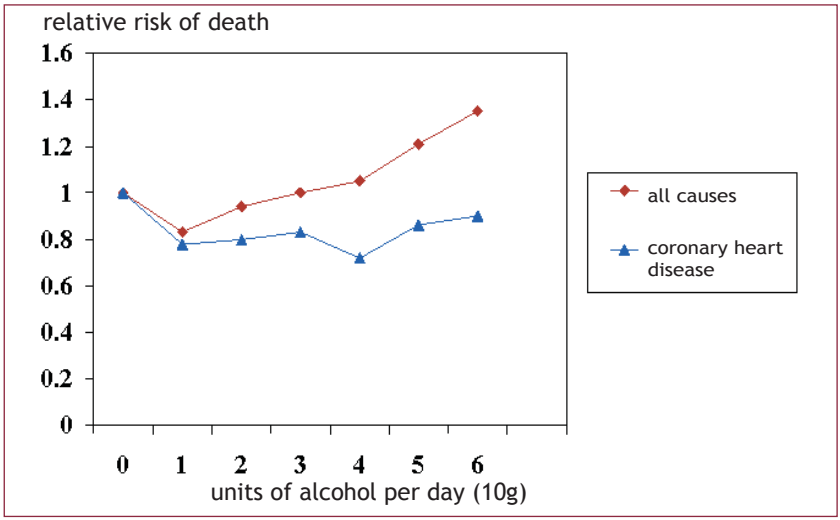
Your body can't store alcohol, so it breaks it down - your liver's job. The liver firstly changes alcohol into acetaldehyde (this is toxic), then into acetate (harmless), which is then broken down into carbon dioxide and water. About 90-95% of alcohol consumed is broken down by the liver, 5-10% is excreted through urine, breath and sweat.

Your body's ability to process alcohol depends on your age, weight and sex. Your body breaks down alcohol at a rate of roughly one drink (10g) per hour – this cannot be speeded up by consuming water or strong coffee. If the body can't cope with all the alcohol in its system, the person can pass out, or in extreme cases fall into an alcoholic coma (which can be fatal).

If many units have been consumed there is a risk of being over the drink drive limit the next morning.

Long-term drinking kills off liver cells, potentially leading to 'cirrhosis' or alcoholic liver disease. It's a 'silent' disease - symptoms may not be noticeable until the disease is advanced.

J-shaped curve



Light and moderate drinkers of any form of alcohol live longer than those who abstain or drink heavily. This widely accepted relationship is known as the J-shaped curve. The relative risk of mortality is lowest among moderate consumers (at the lowest point of the J), greater among abstainers (on the left-hand side of the

J), and much greater still among heavy drinkers (on the right-hand side of the J). In addition to longevity in general, the J-shaped relationship also exists for cardiovascular deaths, specifically for coronary heart disease and ischemic stroke.

Pregnancy

Drinking and conception

If women drink more than once or twice a week, or more than one or two units each time, it could affect the menstrual cycle and fertility levels.

Men should note that alcohol lowers the sperm count; and heavy drinking can cause temporary impotence.

Drinking when pregnant

If you drink when you're pregnant, alcohol from your blood crosses the placenta and enters the baby's blood. As no threshold of safe drinking when pregnant has been established, the best advice if pregnant or planning to conceive is not to drink.

Heavy drinking during pregnancy can affect the development of the foetus. In the first three months, heavy drinking can damage the developing organs and nervous system. After this, it can have the additional effect of stopping the baby from growing and developing properly.

Foetal alcohol syndrome

Foetal Alcohol Syndrome (FAS) is the name given to a set of serious problems in babies whose mothers drank heavily when pregnant. They include facial deformities, poor growth and mental problems.

Breastfeeding

Alcohol clears from a mother's milk at the rate of around one unit every two hours. So it is best to avoid alcohol before breastfeeding, or to plan ahead and express milk if drinking alcohol later.

A spirited old age?

The UK Government guidelines explain that middle aged or elderly non-drinkers or infrequent drinkers and especially those at risk for heart disease "may wish to consider the possibility that light drinking may be of benefit to their overall health and life expectancy." As well as the 'heart-healthy' benefits of moderate drinking to older people, research is also finding that moderate alcohol consumption may reduce the risk of dementia and Alzheimer's disease. Heavy alcohol consumption will, however, cause neural damage and memory loss.

Vegetarians and vegans

The class of vegetarian will determine whether alcohol can be drunk. Wine may have been clarified with egg albumin (egg protein), casein (milk protein), gelatine (beef) or isinglass (fish), which are all compounds derived from animals. Beer is clarified with isinglass. Essentially all of the clarifying agent is removed prior to bottling and hence does not remain in the finished product.

Yeast allergy

Generally most drinks can be drunk without an allergic reaction occurring, because although yeast is used for fermentation of beer, cider and wine, a negligible amount remains in the finished product. A certain concentration of yeast breakdown products will, however, remain in the finished beverage. If an intolerance to yeast is experienced, consumers should avoid wines that are aged 'sur lie', this means aged on the yeast cells for extra complexity or cask conditioned ales.

References

Alcohol and the heart

Red wine procyanidins and vascular health. Nature 2006; 444: 566. Corder R, Mullen W, Khan NQ, et al

Alcohol and Cardiovascular Diseases:A Historical Review and 2005 Update Arthur L. Klatsky, MD Senior Consultant in Cardiology, Kaiser Permanente Medical Care Program, Oakland, California, USA

Wine, alcohol and cardiovascular risk: an epidemiological perspective G. de Gaetano, A. Di Castelnuovo et al. Iacoviello Research Laboratories, John Paul II Centre for High Technology Research and Education in Biomedical Sciences, Catholic University, 86100 Campobasso, Italy

Alcohol consumption and risk of heart failure in the Physicians' Health Study I. Circulation. 2007;115(1):34–39. Djoussé L, Gaziano JM.

Gronbaek M, The Epidemiologic Evidence for the Cardioprotective Effects Associated with the Consumption of Alcoholic Beverages, Pathophysiology. 2004 Apr; 10(2): 83-92

Stroke

Bazzano, L.A., et al. (2007) Alcohol consumption and risk for stroke among Chinese men. Annals of Neurology, published online 20 Aug 2007; doi: 10.1002/ana.21194.

T Kurth, M Fink, Lowering cholestrol lowers women's stroke risk Neurology Feb. 20, 2007

Elkind MSV et al. Moderate Alcohol Consumption Reduces Risk of Ischemic Stroke: The Northern Manhattan Study. Stroke 2006;37:13-9.

Gorelick P et al. Prevention of first stroke - a review of guidelines and a multidisciplinary consensus statement from the National Stroke Association. Journal of the American Medical Association: 1999:281:12.

Liver

Marugame, T., et al. (2007) Patterns of Alcohol Drinking and All-Cause Mortality: Results from a Large-Scale Population-based Cohort Study in Japan. American Journal of Epidemiology, 165(9): 1039-1046; doi: 10.1093/aje/kwk112.

Day CP. Who gets alcoholic liver disease: nature or nurture? Ctr Liver Res, Fl 4 William Leech Bldg, The Med Sch, Framlington PL, Newcastle upon Tyne NE2 4HH, UK. J R Coll Physicians Lond 2000: 34: 557-62 Zhang M, Gong Y, Corbin I, et al

Light to moderate alcohol consumption is associated with lower frequency of hypertransaminasemia. Am J Gastroenterol. 2007; 102: 1912-1919.

Cancer

www.cancerinstitute.org.au/cancer_inst/publications/pdfs/pm-2008-03_alcohol-as-a-cause-of-cancer.pdf

International Journal of Cancer, August 15, 2006. Alcohol consumption, patterns of drinking and burden of disease in the European region 2002

Diabetes

Carlsson S, Hammar N, Grill V. Alcohol consumption and type 2 diabetes. Meta-analysis of epidemiological studies indicates a U-shaped relationship. Diabetologia 2005;48:1051–1054. Alcoholism: Clinical & Experimental Research. 29(5):902-908, May 2005

The author of this guide, Helena Conibear is Editorial Director of AIM – Alcohol in Moderation, an association set up in 1991 to promote the responsible consumption of alcohol.
AIM maintains nine websites in five languages on sensible drinking that can be visited via
www.drinkingandyou.com and www.alcoholinmoderation.com.
If you have any queries arising from this guide,
please email Helena.conibear@aim-digest.com.

Disclaimer

Further sources of information

Visit www.drinkingandyou.com for further consumer advice and The Gateway to Sensible Drinking and Health via: www.alcoholinmoderation.com for detailed medical studies. Country specific Social Aspect Organisations and useful links are listed below:

Argentina:	www.vivamosresponsablemente.com
Australia:	www.drinkwise.com.au
	www.alcohol.gov.au
	www.awri.com.au
Canada	www.educalcool.qc.ca
	www.trafficinjuryresearch.com
	www.drinkingandyou.com
Chile:	Proyecto Ciencia Vino Y Salud email: vinsalud@genes.bio.puc
Czech republic:	www.forum-psr.cz
Denmark:	www.goda.dk
France:	www.2340.fr
	www.soifdevivre.com
	www.vinetsante.com
Germany:	www.drinkingandyou.com
	www.deutscheweinakademie.de
Hungary:	www.hafrac.com
Ireland:	www.meas.ie
Italy:	www.alcol.net
Mexico:	www.alcoholinformante.org.mx
Netherlands:	www.stiva.nl
	www.alcoholinfo.nl
New Zealand:	www.alcohol.org.nz
Norway:	www.alkokutt.no
Poland:	www.parpa.pl
Portugal:	www.100porcentocool.pt
Spain:	www.alcoholysociedad.org
	www.fdmed.org
Taiwan:	www.tbaf.org.tw
UK:	www.units.nhs.uk
	www.drinkaware.co.uk
	www.drinkingandyou.com
	www.portmangroup.org.uk
USA:	www.healthierus.gov/dietaryguidelines
	www.whatisadrink.com
	www.acsh.org
	www.drinkingandyou.com
	www.centurycouncil.org
	NIAAA "State of the science report on the effects of moderate drinking"
	http://pubs.niaaa.nih.gov/publications/ModerateDrinking-03.htm

European and International

AIM Alcohol in Moderation:	www.alcoholinmoderation.com
ICAP International Center for Alcohol Policies:	www.icap.org
Medical Friends of Wine International:	www.medicalfriendsofwine.org
Office International de la Vigne International:	www.oiv.int
Oldways Preservation & Exchange Trust:	www.oldwayspt.org
The European Forum for responsible drinking:	www.efrd.org


DRINKING & YOU