



ALCOHOL AND YOU: FACTS AND EFFECTS

Health New Zealand
Te Whatu Ora



million

people in New Zealand
drink alcohol



Contents

What is alcohol?	2
Effects of alcohol	4
Low-risk alcohol drinking advice for adults	10
Young people	12
Standard drinks: Know how much alcohol you're really drinking	13
How many standard drinks in different drinks?	14
Adverse effects	15
Acute harm	15
Pregnancy	16
Mental health and addiction	17
Withdrawal	18
Family Violence	18
Cancer	19
Motor vehicle crashes	19
Work Productivity and Safety	19
Costs	20



This booklet has some facts about alcohol and information about the effects alcohol has on New Zealanders and Aotearoa New Zealand as a whole.

What is alcohol?

Alcohol (ethanol or ethyl alcohol) is the ingredient found in beer, wine and spirits that causes drunkenness. In all three, the alcohol is produced by the same chemical process. The sugar and water found in ripe fruits, grains or vegetables is combined with yeast and fermented to produce alcohol and carbon dioxide.

The yeast builds up a concentration of alcohol and when it reaches about 15 percent, the alcohol kills off the yeast so that it cannot ferment anymore. This means that drinks with more than 15 percent alcohol content have had extra alcohol added, usually obtained by distillation. Beer and cider usually have about four to five percent alcohol. Wine has around 12–14 percent alcohol, and fortified wine such as sherry and port about 18 percent. Spirits such as whisky, gin and brandy have about 40 percent alcohol. Ready-to-drink (spirit-based drinks) are usually five percent but can be up to eight percent.

Alcohol is a poor source of carbohydrates compared to some foods, but it has a lot of energy (kilojoules (kJ)/calories) packed into it. It is the alcohol itself that is high in energy. One gram of alcohol has 27kJ compared to one gram of sugar with 17kJ. One standard drink (eg 100ml of wine, 30ml of spirits or 330ml of beer) contains 290kJ/69 calories. If spirits are combined with non-diet mixers, such as lemonade or cola, the energy value increases.

Alcoholic beverages do not contain significant amounts of protein and vitamins, which are vital ingredients of the human diet, and so alcohol cannot be regarded as a substitute for food.



Effects of alcohol

The kind of alcohol we drink is called ethanol or ethyl alcohol. It is one of the family of alcohols. Most alcohols are highly poisonous to humans, but ethyl alcohol can be tolerated in the human body in small amounts.

When people start drinking they initially feel relaxation and pleasure. As the blood alcohol level rises, it slows the body's reactions down. This is why it's classified as a sedative-hypnotic drug. People can get into trouble when they drink a lot of alcohol very quickly – this may result in alcohol poisoning.

People can and do die of alcohol poisoning, but only if their blood alcohol concentration is over 400mg per 100 millilitres of blood, which is more than five times the legal limit for driving. An average man would reach this concentration if he drank a 750ml bottle of whisky in less than one hour.

When alcohol is swallowed it passes more or less unchanged into the bloodstream through the walls of the stomach and small intestine. Only minutes after drinking, the circulation system begins distributing the alcohol to every part of the body. From the stomach and the intestine, the alcohol travels to the liver where it is ultimately broken down by enzymes into other products such as water and carbon dioxide.

These products are mainly eliminated from the body in the urine. The liver does this job at a slow, constant rate. It takes the average person one hour to process one standard drink. So when people drink alcohol faster than the liver breaks it down, alcohol concentration increases in the blood.

As the alcohol travels around the body via the bloodstream, it starts to slow down the operation of various sorts of cells. This causes the familiar symptoms of different stages of intoxication and drunkenness – relaxation, laughter, slurred speech, inability to walk straight, and impaired judgement and coordination.

Different people can have different symptoms of drunkenness, even after drinking the same amount of alcohol. A person's reaction to alcohol is influenced by:

- the ability of their liver to break down alcohol
- if they have eaten food or not
- how much alcohol they have had to drink
- how quickly they drink the alcohol
- their body type
- their age, sex and ethnicity.



Did you know ...

Black coffee, cold showers or fresh air do not sober you up. There is no way to increase the rate at which the body gets rid of alcohol.

Alcohol and the body: Immediate effects*

Mouth and throat

- slurred and confused speech

Blood and circulation

- alcohol levels in the blood rise
- alcohol moves rapidly to all parts of the body, including to an unborn baby

Liver

- breaks down alcohol at an average rate of one standard drink per hour

Kidneys and fluid balance

- more urine is made
- loss of minerals and salts
- dehydration

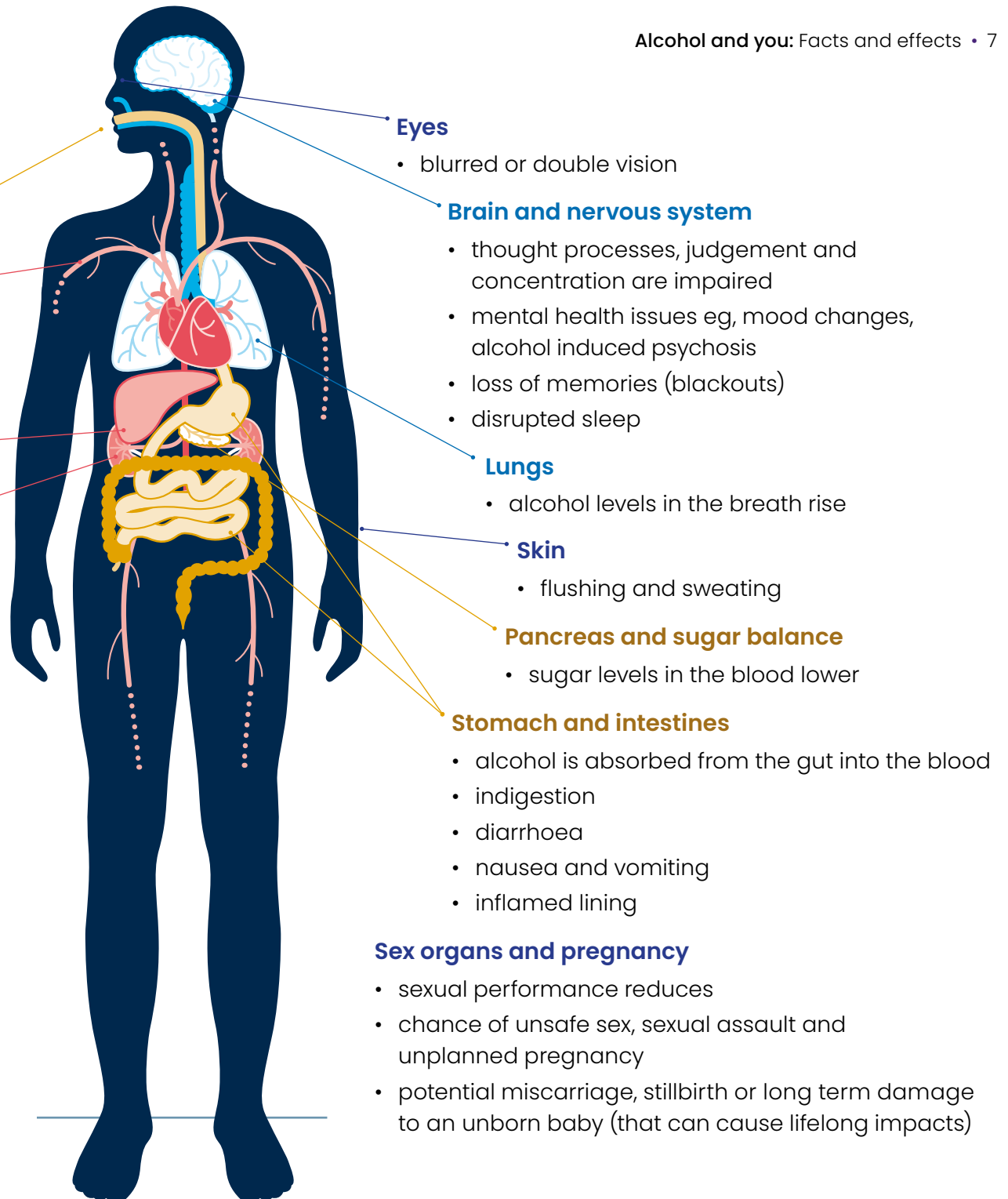
Bones and muscles

- clumsiness and difficulty walking
- broken bones, sprains, cuts, bruises and internal injuries (from falls, assaults and traffic crashes)

Whole of body

- coma and death from alcohol poisoning
- death from injuries
- existing health conditions made worse
- interactions with other drugs/medicines

* The likelihood of experiencing these effects varies depending on the amount, the strength and how quickly alcohol is consumed, and on individual factors, such as body type, age and sex.



Alcohol and the body: Long-term effects*

Whole of body

- existing health conditions made worse, such as mental illness and diabetes
- death from injury or disease
- risk of fetal alcohol spectrum disorder (FASD) to baby that can have lifelong impacts

Liver

- swelling and pain
- alcoholic liver disease, such as cirrhosis
- alcohol-associated hepatitis

Stomach and food pipe

- inflamed lining and bleeding

Blood and immune system

- changes in red and white blood cells
- anaemia
- less ability to fight off infections

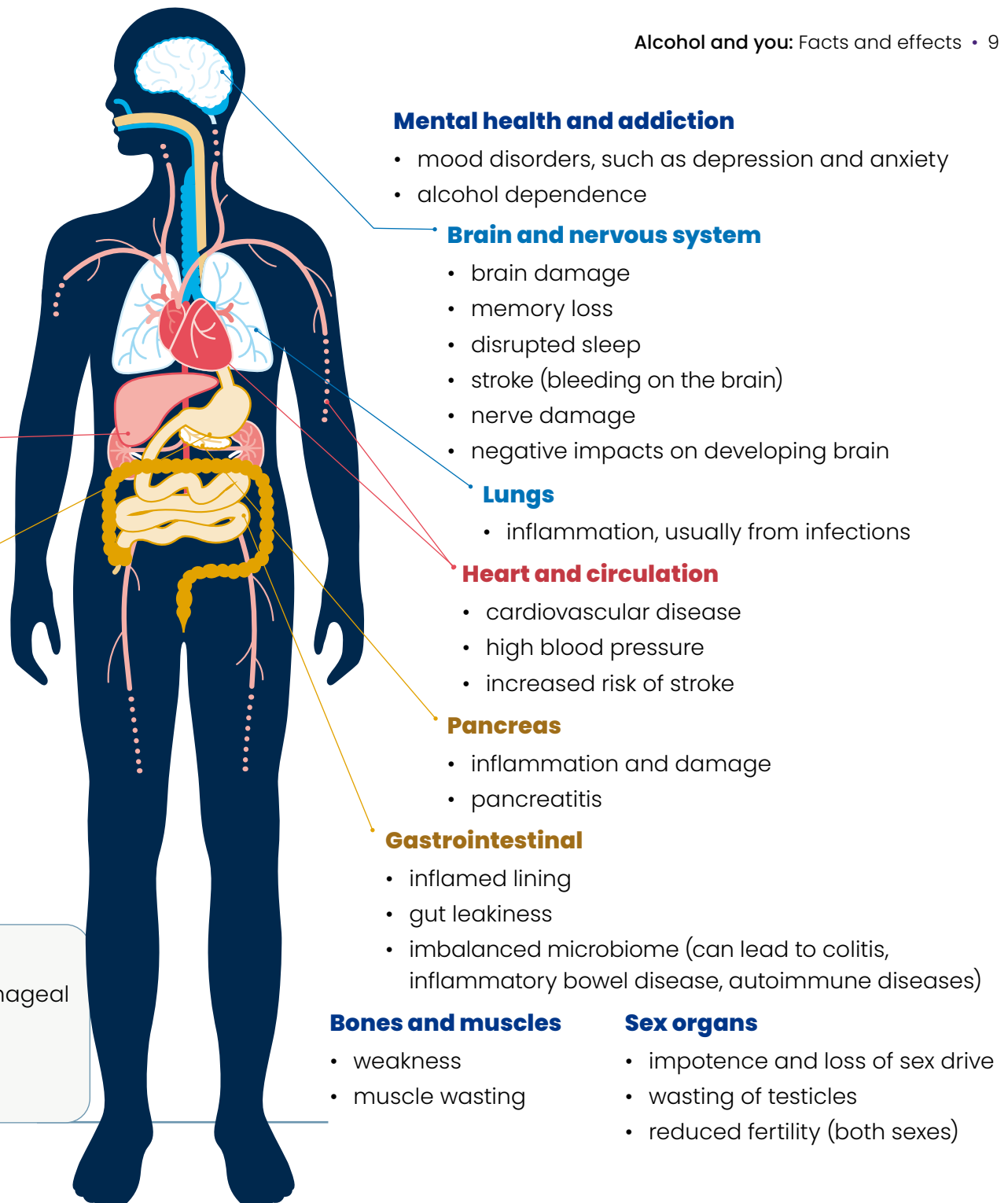
Skin and fat

- yellowing of skin and spider veins
- potential weight gain

Cancers

- | | | | |
|---|--------------|--------------|--------------|
| • throat | • intestines | • liver | • esophageal |
| • mouth | • larynx | • colorectal | |
| • breast (higher risk for women even with smaller amounts of alcohol) | | | |

* Risk of developing these health effects varies depending on the amount and frequency of alcohol consumed and individual factors.



Low-risk alcohol drinking advice for adults

This advice suggests daily and weekly limits to keep your risk of developing long-term and short-term health issues and injuries low.

Low-risk does not mean no-risk. Even when you drink within the lower-risk limits, a range of factors can affect the level of risk, including the rate of drinking, body type and genetic makeup, sex, age, and existing health problems and associated medication use.

Reduce your **long-term health risks** by drinking **no more than**:

- **2** standard drinks *a day for women* and no more than 10 standard drinks a week
- **3** standard drinks *a day for men* and no more than 15 standard drinks a week.

AND at least two *alcohol-free* days every week.

Reduce your **risk of injury on a single occasion of drinking** by drinking **no more than**:

- **4** standard drinks *for women on any single occasion*
- **5** standard drinks *for men on any single occasion.*

This advice uses ‘standard drinks’, a tool we use to communicate how much alcohol is in a beverage. A standard drink contains 12mls (10 grams) of pure alcohol. See page 13 to learn more about what a standard drink is.

	
Reduce your long-term health risks	
NO MORE THAN 2 STANDARD DRINKS DAILY	NO MORE THAN 3 STANDARD DRINKS DAILY
and no more than 10 a week	and no more than 15 a week
and at least 2 alcohol free days per week	
Reduce your risk of injury	
NO MORE THAN 4 STANDARD DRINKS	NO MORE THAN 5 STANDARD DRINKS
on any single occasion	
	When pregnant
NO ALCOHOL 0 STANDARD DRINKS	<i>There is no safe level of alcohol use at any stage of pregnancy.</i>

When not to drink

There is never any ‘safe’ amount of alcohol to drink as alcohol consumption has risk to yourself and/or your whānau in any amount. It’s especially important not to drink if you:

- are **pregnant, planning to get pregnant**, or are breastfeeding
- are on **medication** that interacts with alcohol
- have a **condition** that could be **made worse by drinking alcohol**
- feel unwell, **depressed**, tired or cold, as alcohol could make things worse
- are about to **operate machinery or a vehicle** or do anything that is risky or **requires skill**.

If you are not sure or are concerned, check with your doctor.

Young people

Research and advice suggests that delaying drinking is always the best choice for young people. For people under 18, the best is to not drink at all. Delaying or avoiding drinking can go a long way to preventing a range of risks for young people. This is important because:




- alcohol has impacts on brain development for people under 20
- young people have a lower tolerance for alcohol than adults. They are at higher risk of hurting themselves when intoxicated
- someone who starts drinking at a younger age are at higher risk for drinking harmfully later in life.

Standard drinks: Know how much alcohol you're really drinking



The amount of alcohol

It's not the amount of liquid you're drinking that's important – it's the amount of alcohol. If you drink 30mls of straight spirits or a 100ml glass of wine or a 330ml can of beer – you are drinking approximately 10 grams of pure alcohol, depending on the alcohol percentage (see below). Each of these is a standard drink.

	1		1		1
330ml can of beer		100ml glass of wine		30ml of straight spirits	
@ 4% ALC		@ 12.5% ALC		@ 45% ALC	

Because drinks have different amounts of alcohol in them, the number of standard drinks in each bottle, can or cask will be different.

How many standard drinks are there in what I'm drinking?

You'll find the standard drinks content on the label of each bottle, can or cask. If the label shows that your bottle of beer contains 1.5 standard drinks, then you're drinking 15 grams of pure alcohol. If the bottle of spirits contains 32 standard drinks and you pour it into 16 glasses, each glass will contain two standard drinks, even if you add a mixer to it.

Example: Working out the number of Standard Drinks

Amount of drink in litres (Vol) × Percent of alcohol by volume (%) × Density of ethanol at room temperature (0.789) = Standard Drinks

500ml (0.5 litre) of beer which is 5 percent alcohol by volume (5.0% alc/vol) would be $0.5 \times 5 \times 0.789 = 1.97$ (approx 2 standard drinks)



How many standard drinks in different drinks?

 1 330ml can of beer @ 4% ALC	 1.5 440ml can of beer @ 4.2% ALC	 1.3 330ml bottle of beer @ 5% ALC
 0.7 330ml bottle of lite beer @ 2.5% ALC	 2.4 750ml bottle of beer @ 4% ALC	 2.1 600ml pint of beer @ 4.5% ALC
 1 100ml glass of wine @ 12.5% ALC	 7.7 750ml bottle of wine @ 13% ALC	 7.1 750ml bottle of sparkling wine @ 12% ALC
 8.3 750ml bottle of wine @ 14% ALC	 30 3 litre cask of wine @ 12.5% ALC	 1 30ml of straight spirits @ 45% ALC
 1.5 50ml bottle of spirits @ 37% ALC	 1.3 330ml bottle of cider @ 5% ALC	 1.3 330ml can of RTD* spirits @ 5% ALC
 1.6 330ml bottle of RTD* spirits @ 6% ALC	 11 375ml bottle of spirits @ 37.5% ALC	 15 500ml bottle of spirits @ 37.5% ALC
 22 700ml bottle of spirits @ 40% ALC	 37 1000ml bottle of spirits @ 47% ALC	 40 1125ml bottle of spirits @ 45% ALC

* RTD (READY TO DRINK); ALC refers to alcohol content by volume

Adverse effects

There are two main problems with alcohol consumption – those caused by drunkenness that occur soon after drinking, and those that occur as a result of heavy drinking over a long period of time.

Both these types of problems can affect not only the individual but also other people and organisations, such as families, hospitals and police.

Awareness of alcohol-related harms, as well as increasing focus on hauora (health and well-being) can help to reduce consumption – and therefore risk.

Acute harm

Alcohol is a contributor to premature death and years of life lost due to accidents and injuries.

In Aotearoa New Zealand, estimates indicate between 800 and 1,000 people die each year due to alcohol-related causes.

Half of all deaths attributable to alcohol are through injuries caused by accidents such as drowning, falls, sports injuries, work related injuries, violence (domestic and social) and self inflicted injuries. Most alcohol-related deaths before middle age are due to injuries.

Pregnancy

Pregnant people who drink are at increased risk of giving birth to children with fetal alcohol spectrum disorder (FASD). FASD is a diagnostic term for a neurodevelopmental disorder caused by exposure to alcohol before birth. People who have FASD can experience complex physical, behavioural, learning and intellectual problems that persist throughout their lives.

There is no safe amount of alcohol to drink during pregnancy. It's important not to drink any alcohol when pregnant.

Alcohol can harm a baby's development at any stage of the pregnancy. This can be even before someone knows that they are pregnant. If someone is trying to get pregnant, or there's a chance they could be pregnant, they should not drink alcohol.

Alcohol enters breast milk and passes to the baby. This can affect a baby's growth and development. While breastfeeding, it's best to be alcohol free.



Mental health and addiction

Drinking to cope with life is something a lot of people do, but it can have impacts on their mental wellbeing. The way someone treats their whānau and friends may also be different when they have had alcohol.

There are links between drinking and mental health conditions such as depression and anxiety. While these links are not always direct, regular drinking does make a person more likely to develop mood disorders or memory loss over time.

Alcohol can have side effects on different mental conditions or medications. Drinking is known to make some symptoms worse or create dangerous reactions when mixed with some medications, such as antidepressants.

For many health providers, the concern is for anyone who feels like they need alcohol to get through life. An addiction is a medical condition referring to someone whose life is significantly affected by a substance like alcohol, and they cannot function without it. Addictions can cause physical or emotional harm.

For example, someone experiencing anxiety may feel more relaxed after a drink, but the effects are not permanent. If this keeps happening, they may always rely on alcohol to feel better. This may lead to more serious issues, such as addiction.

Anyone can develop an addiction, regardless of age, ethnicity, upbringing, or financial status. It is not a moral issue or a reflection on someone's character.

Withdrawal

If someone who is a heavy drinker is trying to quit or cut down, they may experience some signs of withdrawal. This happens because their body is making up for alcohol leaving their body and is adjusting.

Common symptoms of withdrawal include:

- feeling anxious
- nausea or feeling sick
- having a higher pulse rate
- raised blood pressure
- hand tremors or shakes.

Some symptoms can be more severe and unpredictable, such as:

- seizures
- constant vomiting
- constant racing heartbeats
- drowsiness that does not go away
- collapsing.

Severe symptoms are dangerous to the person experiencing them and are considered medical emergencies. These can lead to fluid loss and worsen a person's chronic or mental conditions, which we often cannot see from the outside or just by looking at someone.

Family Violence

Family violence is complex and can be affected by many situations in someone's family. Alcohol can make it worse and increase the risk of severe violence. Of the most severe partner assaults in Aotearoa New Zealand, 1 in 4 involved alcohol.

Cancer

Alcohol is a Class 1 carcinogen and a known cause of cancer, with strong evidence that it increases the likelihood of at least seven types of cancer including cancer of the throat, mouth, voice box, food pipe, breast, bowel, and liver. Alcohol can also contribute to weight gain and weight-related cancers because of its high energy content. Alcohol's breakdown products can cause changes in the cells of the body and changes in some hormones that lead to cancer.

Motor vehicle crashes

In 2022, alcohol was a contributing factor in 163 fatal traffic crashes, 144 serious injury crashes and 776 minor injury crashes. These crashes resulted in 178 deaths, 245 serious injuries and 1,081 minor injuries. The risk of being involved in a fatal crash is significantly higher for young people who have been drinking alcohol.

Work Productivity and Safety

Just over 20% of all full-time salary or wage earners in Aotearoa New Zealand have a hazardous drinking pattern. Nearly one in ten adults, and a higher proportion of men and younger people, admit to working while feeling under the influence of alcohol at least once in the previous year. Work and employment productivity is negatively affected by alcohol consumption. This can include a lack of concentration, poor decision making, poor quality of work, and missing work time. Alcohol use can also contribute to workplace accidents. A 2019 study from the University of Otago estimated the cost to Aotearoa New Zealand at \$1.65 billion per year.

Costs

There have been a number of studies that estimate the cost of alcohol harm in Aotearoa New Zealand. The most recent study, published in 2024, estimated the total annual cost of alcohol harm to be \$9.1 billion.

The World Health Organization (WHO) states the most cost-effective interventions to reduce alcohol-related harm:

S

Strengthen restrictions on alcohol availability

A

Advance and enforce drink driving counter measures

F

Facilitate access to screening, brief interventions and treatment

E

Enforce bans or comprehensive restrictions on alcohol advertising, sponsorship, and promotion

R

Raise prices on alcohol through excise taxes and pricing policies

For free confidential information, insight and support for you and your whānau or family contact the Alcohol Drug Helplines

Phone **0800 787 797** or free text **8681**

Māori line **0800 787 798**

Pacific line **0800 787 799**

Or visit **alcoholdrughelp.org.nz**

For up-to-date statistics and information visit **alcohol.org.nz**

Health Promotion, Health New Zealand | Te Whatu Ora

Email: hp-enquiries@tewhatuora.govt.nz

To order resources visit **resources.alcohol.org.nz**