

Alcohol & Other Vices

69. Alcohol kills brain cells

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Do you ever wake up with a raging hangover and picture the row of brain cells that you suspect have started to decay? Or wonder whether that final glass of wine was too much for those tiny cells, and pushed you over the line?

Well, it's true that alcohol can indeed harm the brain in many ways. But directly killing off brain cells isn't one of them.

The brain is made up of nerve cells (neurons) and glial cells. These cells communicate with each other, sending signals from one part of the brain to the other, telling your body what to do. Brain cells enable us to learn, imagine, experience sensation, feel emotion and control our body's movement.

Alcohol's effects can be seen on our brain even after a few drinks, causing us to feel tipsy. But these symptoms are temporary and reversible. The available evidence suggests alcohol doesn't kill brain cells directly.

There is some evidence that moderate drinking is linked to improved mental function. A 2005 Australian study of 7,500 people in three age cohorts (early 20s, early 40s and early 60s) found moderate drinkers (up to 14 drinks for men and seven drinks for women per week) had better cognitive functioning than non-drinkers, occasional drinkers and heavy drinkers.

But there is also evidence that even moderate drinking may impair brain plasticity and cell production. Researchers in the United States gave rats alcohol over a two-week period, to raise their alcohol blood concentration to about 0.08. While this level did not impair the rats' motor skills or short-term learning, it impacted the brain's ability to produce and retain new cells, reducing new brain cell production by almost 40%. Therefore, we need to protect our brains as best we can.

Even moderate drinking may impair brain plasticity. Excessive alcohol undoubtedly damages brain cells and brain function. Heavy consumption over long periods can damage the connections between brain cells, even if the cells are not killed. It can also affect the way your body functions. Long-term drinking can cause brain atrophy or shrinkage, as seen in brain diseases such as stroke and Alzheimer's disease.

There is debate about whether permanent brain damage is caused directly or indirectly.

We know, for example, that severe alcoholic liver disease has an indirect effect on the brain. When the liver is damaged, it's no longer effective at processing toxins to make them harmless. As a result, poisonous toxins reach the brain, and may cause hepatic encephalopathy (decline in brain function). This can result in changes to cognition and personality, sleep disruption and even coma and death.

Alcoholism is also associated with nutritional and absorptive deficiencies. A lack of Vitamin B1 (thiamine) causes brain disorders called Wernicke's encephalopathy (which manifests in confusion, unsteadiness, paralysis of eye movements) and Korsakoff's syndrome (where patients lose their short-term memory and coordination).

So, how much alcohol is OK?

To reduce the lifetime risk of harm from alcohol-related disease or injury, the National Health and Medical Research Council recommends healthy adults drink no more than two standard drinks on any day. Drinking less frequently (such as

weekly rather than daily) and drinking less on each occasion will reduce your lifetime risk.

Health guidelines suggest men and women drink no more than two standard drinks a day.

To avoid alcohol-related injuries, adults shouldn't drink more than four standard drinks on a single occasion. This applies to both sexes, because while women become intoxicated with less alcohol, men tend to take more risks and experience more harmful effects.

For pregnant women and young people under the age of 18, the guidelines say not drinking is the safest option.

While alcohol may not kill brain cells, if this myth encourages us to rethink that third beer or glass of wine, I won't mind if it hangs around.

70. Mixing drinks causes hangovers

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As a general practitioner, I hear a lot of colourful advice from my patients about what they believe constitutes 'safe' drinking and how to avoid a nasty hangover.

Some of the more pithy sayings — 'beer before liquor, never been sicker; liquor before beer, you're in the clear' and 'never mix the grape and the grain' — have become part of our vernacular and perpetuate the myth that you can avoid a hangover if you stay away from spirits, or don't mix drinks, unless it's in a particular order.

Curiously, the precise physiological factors that cause hangovers are not well understood. We know that a heavy night

of drinking can disturb your sleep, irritate your stomach and intestines, and leave you dehydrated and low on blood sugar. However, it's unclear how much of the hangover is due to alcohol's direct effect on the body and how much is attributable to after effects (such as alcohol withdrawal).

There is some evidence that congeners — compounds produced during alcohol production that contribute to its flavour, smell and appearance — promote hangovers. Early research in the 1970s suggested that drinks containing more congeners (such as bourbon) were associated with a higher rate of hangover than drinks that contain fewer (vodka, for instance). These findings may have given credence to the idea that avoiding spirits could save you from a hangover.

But even if congeners contribute to a hangover, the ethanol (alcohol) itself has a much stronger effect on your body. In a recent experiment that assessed the severity of hangovers, the participants who drank vodka (which has virtually no congeners) had an impressive rate of hangover that was not different to the bourbon drinkers.

The researchers concluded that the most important factors that affect whether you get a hangover (and the severity of symptoms) are the total amount of alcohol and the rate at which it is consumed. For the most part, we should assume that one standard drink of vodka, bourbon, beer and wine contribute equally to the likelihood of hangover, even if you mix your drinks.

But even if you're one of the lucky few who don't show symptoms, the current National Health and Medical Research guidelines recommend healthy adults consume no more than two standard drinks a day, or four on a single occasion of drinking. One can, bottle or schooner of full strength beer and a typical restaurant serving of wine is equivalent to 1.5 standard drinks, so it's easy to exceed these guidelines.

If you are planning to have a few drinks, there are a few things you can do to lessen the impact on your body.

Drinking on an empty stomach may worsen a hangover due to the rapid absorption of alcohol from the small intestine. Eating first may slow down the alcohol absorption. But eating after a drinking session isn't likely to do much good from a hangover perspective.

Dehydration contributes to hangover symptoms, so stay hydrated (with water, not more booze!). Slowing down the consumption of alcohol by alternating between 'hard' and 'soft' drinks can be a useful strategy to pace yourself.

Despite the copious folk remedies, home concoctions, herbal supplements, and plain quackery to 'cure' hangovers, there is no good evidence that any of these methods work. The only way to guarantee you won't get a hangover is to avoid drinking altogether. If you do enjoy a drop, a little common sense goes a long way.

71. You can cure a hangover

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Piping hot cups of coffee. A fat-laden fried breakfast. Going for a run. Or maybe just going back to bed. There are plenty of claims about how you can cure a hangover. So, what's the reality?

If you've woken up with a sore head on a Sunday morning after a big Saturday night, chances are you've tried plenty of things to get your weekend back up and going.

From the outset, it should be remembered that alcohol is a drug. It acts as a depressant, and has numerous other effects on the body.

It is a diuretic, meaning that drinking makes you dehydrated, resulting in thirst, headaches, dry mouth and tiredness the following day.

In addition, alcohol irritates the stomach and intestines, and increases the production of gastric acid, which can result in nausea, vomiting and abdominal pain if you overindulge.

Alcohol is broken down in the liver, which houses many of the body's energy stores. A heavy binge affects the liver's ability to supply this energy (called glucose) to the brain and body. This results in symptoms of irritability, low mood, tiredness and weakness.

Although drinking alcohol can help you fall asleep, it disrupts the normal sleep cycle, meaning the sleep you get is often disrupted.

It also interferes with other circadian rhythms, producing a state similar to jet lag.

Factors such as gender, age, mental health, drug use, and existing medical conditions affect the way your body responds to alcohol.

So if you've had a big night out, getting a few hours sleep before you head off to work the next day can still mean you have alcohol in your system, and you could be over the legal limit if driving.

Chances are you've heard the hangover cure myths — a long shower, going for a run, munching on a bacon and egg roll, downing cups of coffee.

Do they cure a hangover? Unfortunately, no.

Will they help you sober up? No.

Some of the myths may give the impression you are 'better', but you're still likely to be under the influence or recovering from too much alcohol.

It might sound boring and old hat, but if you are going to indulge make sure you drink plenty of water, and keep track of how much alcohol you are drinking.

It's also important to eat, switch to non-alcoholic drinks when you start feeling the effects of alcohol, and avoid trying to match how much your friends choose to drink.

The National Health and Medical Research Council (NHMRC) has produced a set of guidelines highlighting that for healthy men and women, drinking no more than two standard drinks on any day reduces your risk of harm from alcohol-related disease or injury over a lifetime.

A ‘standard drink’ refers to any drink containing 10 grams of alcohol. One can of full strength beer or one restaurant glass of wine equates to about 1.5 standard drinks.

Drinking no more than four standard drinks on a single occasion reduces the risk of alcohol-related injury arising from that occasion.

Alcohol is very much part of Australian culture. It might be a party with mates, a couple of glasses of wine over dinner or a Saturday night down at the pub.

But when it comes to sorting fact from fiction, there is only one sure way to avoid the effects of a hangover the morning after — drink plenty of water, and exercise responsibility with alcohol the night before.

72. You can’t mix antibiotics with alcohol

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Staying off alcohol when taking antibiotics has been hallowed advice from GPs, pharmacists and well-meaning relatives for decades.

It’s difficult to work out exactly where the advice originated, but Karl Kruszelnicki (Dr Karl) suggests it dates back as far back as the 1950s, when penicillin came into use as the

first really effective treatment for sexually transmitted infections (STIs) such as gonorrhoea and syphilis.

Doctors were apparently worried that disinhibited acts under the influence of the demon drink could undo their expensive treatment with the new miracle drugs. So patients were advised to abstain (from alcohol) until things cleared up.

A recent survey suggests these fears may be well founded. Participants receiving treatment for STIs at a United Kingdom clinic were more likely to engage in risky sexual activity while intoxicated.

The advice that you shouldn't drink alcohol while taking antibiotics does hold true for a small group of anti-infective drugs including metronidazole (Flagyl, Metronide or Metrogyl), tinidazole (Fasigyn or Simplotan) and sulfamethoxazole/trimethoprim (Bactrim, Co-trimoxazole). These drugs block one of the major pathways that metabolise alcohol and cause a rapid build-up of nasties called acetaldehydes, which are responsible for many of the unpleasant physical effects of hangovers. With these drugs on board, you can be red-faced, fainting and vomiting after as little as one glass of beer.

But these anti-infective drugs have fairly specialised uses — to treat infections with organisms such as giardia (from contaminated drinking water) or intestinal worms, for instance — and it would be unusual to be prescribed these drugs without a long lecture from your doctor or pharmacist about the potential adverse reaction.

For nearly all other types of antibiotics there is no clear evidence of harm from modest alcohol intake. But this doesn't mean it's a good idea to drink to excess when you're in the grip of an infection, as the sedative and nauseating effects of the alcohol are likely to increase if you are unwell.

Alcohol-induced dilation of blood vessels in the limbs interferes with your body's attempts to raise a fever to slow the spread of infection. Your kidneys will be forced by the alcohol

to lose more fluid, thus increasing the risk of dehydration. And the deep, aching muscle pain produced by viral infections may be more likely to lead to serious muscle damage when combined with binge drinking.

Alcohol can exacerbate mild or moderate infections, even if you're not on antibiotics.

Some antibiotics such as isoniazid and flucloxacillin (Flopen, Staphylex) may inflame the liver (causing mild hepatitis) in a small percentage of those treated. A boozy night out could further irritate the liver, which is already working hard to get rid of the extra alcohol. A similar mild hepatitis may occur with some infections such as glandular fever, which would have the same outcome.

So if you're unwell and thinking of having a big one at the office end-of-year party, it's better to go easy on the alcohol whether you are on antibiotics or not. You'll recover quicker and you'll reduce your risk of secondary complications.

If you're on one of the problematic drugs, it's important to take the 'no alcohol' warning seriously or you'll quickly and deeply regret even a few mouthfuls of alcohol.

For most antibiotic users, though, a glass of bubbly or a cold beer at your office Christmas party should be fine.

73. Hookahs are less harmful than cigarettes

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After decades of successful anti-tobacco campaigns, we're all familiar with the risks of smoking. But how do the health

harms of cigarettes compare with those of other smoking devices?

The hookah, also known as the shisha or waterpipe, is one such device dating back to sixteenth century Persia and India.

These days, the common form of hookah consists of a bowl where tobacco is placed and heated by a piece of charcoal, which sits on top.

The smoke produced goes down a tube and is passed through water before being inhaled through the mouthpiece of a hose or pipe. As the smoker inhales, air is drawn into the charcoal bowl, which helps the tobacco smoulder.

The water is meant to cool and filter the smoke.

The myth that smoking using a hookah is safer than smoking cigarettes is based on the false belief that the water filters dangerous chemicals out of the smoke before it's inhaled through the mouth and into the lungs.

It was thought that water rendered the smoke harmless. But despite being passed through water, the smoke from the hookah contains similarly high levels of carcinogens, heavy metals and carbon monoxide that are found in cigarette smoke.

Although some nicotine may be absorbed by the water, the hookah smoker is still inhaling sufficient quantities to cause addiction.

And any decrease in nicotine consumption that comes with smoking a hookah over a cigarette may simply result in the user smoking more and therefore being exposed to higher levels of cancer-causing chemicals.

In fact, hookah smoking is actually likely to be more dangerous than cigarette smoking because it's commonly associated with more frequent puffing, deeper inhalation and longer smoking sessions.

Each hookah session typically lasts over 40 minutes, during which the smoke is inhaled 50 to 200 times.

Over a one-hour session, this would equate to the smoker inhaling 100 to 200 times the amount of smoke inhaled from a single cigarette.

Further, hookahs are often smoked by groups in cafes and restaurants where the mouthpiece is shared. This raises the possibility of transmitting infectious diseases such as hepatitis or tuberculosis.

Not only can the social context of this type of smoking attract young smokers, who wouldn't otherwise be attracted to cigarettes, but additives mixed with the tobacco may give the smoke more appealing smells and flavours.

Unfortunately, the inhalation of second-hand smoke is also more of a problem where hookahs are used; not only does the smoke contain cancer-causing chemicals from the tobacco, but it also mixes with the smoke from the charcoal being used to burn the tobacco.

The disease outcomes from smoking hookahs are the same as with cigarette smoking, which increases your risk of developing a range of cancers including those of the mouth and head and neck, lung, bladder and stomach, along with chronic lung disease, cardiovascular disease, decreased fertility and for women who smoke during pregnancy, babies with a low birth weight.

More research is needed to investigate the prevalence of smoking hookahs, along with the health consequences and how best to manage addiction in this setting.

But it's already clear that hookahs require regulation and health warnings like any other smoking device.

By no means is this a safe form of smoking, so we can definitely lay this myth to rest.

74. Smoking helps control your weight

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One of the few positives put forward by smokers to justify their habit is that it helps keep their weight in check. And while smoking may be harmful to their health, so is obesity.

So how does this claim measure up?

The health harms of smoking are well known — it is one of the world's leading causes of illness and death. But the rising rates of obesity have overtaken smoking as the leading independent risk factor contributing to poor health.

When you combine smoking and obesity you get a major health hazard which cuts the average life expectancy by 13 years compared with non-smokers of a healthy weight.

Putting aside the undisputed serious health risks of smoking, is there any credence to the claim by smokers that their habit helps keep their weight in check?

A critical review of the medical research on smoking and weight management found that in the short term, nicotine can increase the body's ability to burn energy and has a small effect on reducing appetite.

But rather than look at conclusions made from cross-sectional studies, which only look at current smoking status and body weight at a single point in time, we need to look at what happens to a smoker's weight over time.

In these long-term studies, you find that smokers don't control their weight any better than non-smokers.

When you combine all this research together, the 'thin smoker' image may arise because thin people are more likely to take up the habit in the first place.

Once they start smoking, they gain just as much weight, and sometimes even more, as the rest of the non-smoking population.

Surprisingly, very heavy smokers gain more weight than light smokers. This may be because low levels of physical activity, poor diet and alcohol are key culprits of obesity, and these lifestyle factors are known to cluster around heavy smokers.

So for someone thinking of quitting, should they expect their weight to balloon as a consequence?

Past research on smoking cessation and weight has shown the risk of weight gain is small but real.

Long-term quitters gain, on average, between three and five kilograms in the 10 years after they quit. The risk of gaining weight is highest in the two years immediately after quitting and seems to decline thereafter.

But this is no reason to continue smoking. The health risks of cancer and metabolic disease places smoking at the bottom of the list for ways to control weight. Small changes to diet and physical activity can easily offset the slight amount of weight gained over several years after quitting.

The often-promoted ‘benefit’ of controlling weight by smoking is greatly exaggerated, and more myth than reality.

Even if this myth were true, it’s far better for your health to be an overweight non-smoker than it is to be a thin smoker.

