

How much alcohol is too much alcohol, if you plan to drive?

Here is what science tells us about drinking and driving.

Teo Yik Ying

Singapore recently announced that the drink-driving threshold will be tightened in 2026. The legal breath-alcohol limit will be lowered from the current 35 micrograms per 100ml of breath – equivalent to 0.08 per cent blood alcohol concentration (BAC) – to 15 micrograms, or roughly 0.03 per cent BAC.

The move follows a troubling 2025 in which road traffic fatalities were the highest in the past decade and included 12 deaths attributed directly to drink driving.

Globally, the context is sobering. The World Health Organization (WHO) estimates that road traffic injuries claim almost 1.2 million lives each year. Speeding and driving under the influence of alcohol or other psychoactive substances remain two of the most significant risk factors.

Importantly, the WHO notes that crash risk begins at low BAC levels and increases significantly once a driver's BAC exceeds 0.04 per cent – half of Singapore's current legal threshold. Set against this context, Singapore's recalibration of limits is in fact not radical and instead reflects the science of risk.

Yet, reactions on social media have included protestations that the change is overly drastic. Some argue the new threshold effectively criminalises "just one drink".

To understand this claim, we need to understand what a "standard drink" means.

In most health guidelines, a standard drink contains about 10 to 14 grams of pure alcohol, roughly the amount in a regular 330ml can of beer, a small glass of wine, or a single shot of spirits. Depending on body weight, metabolism, food intake and other factors, even one such drink may be enough for some individuals to exceed the new limit.

But the truth is that even a single drink can impair driving.

HOW ALCOHOL AFFECTS HEALTH

Any discussion about drink driving must begin with a basic physiological truth: alcohol is a psychoactive substance that acts directly on the brain and multiple organ systems. Its effects are measurable and dose-dependent, beginning at low levels of exposure.

Once consumed, alcohol is rapidly absorbed through the stomach and small intestine into



Officers at a roadblock checking motorists for drink driving. Lowering the drinking threshold for drivers has nothing to do with restricting personal freedom or preserving convenience, says the writer. When evidence suggests this can increase risk for others, it is simply about protecting lives. ST FILE PHOTO

the bloodstream. Because it readily crosses the blood-brain barrier, it exerts depressant effects on the central nervous system.

Even at relatively low blood alcohol concentrations, alcohol impairs the brain's frontal lobe functions, which are the very areas responsible for judgment, impulse control and risk assessment.

One of the earliest effects of drinking is therefore not obvious clumsiness, but diminished awareness of one's own impairment. In other words, a driver may feel relaxed and confident while experiencing a reduced ability to perceive hazards accurately.

Alcohol slows reaction time by interfering with neurotransmitter systems that regulate attention and motor coordination. This compromises the multitasking demands of driving, including monitoring mirrors, adjusting speed, observing pedestrians, and anticipating traffic signals.

Studies show that crash risk begins to rise at BAC levels as low as 0.02 to 0.03 per cent, with more pronounced deterioration beyond 0.04 per cent. At these levels, drivers exhibit delayed braking responses, impaired tracking of moving objects, and reduced peripheral vision.

Alcohol also distorts risk perception. By dampening the brain's inhibitory pathways while stimulating dopamine release, it

Even at relatively low blood alcohol concentrations, alcohol impairs the brain's frontal lobe functions, which are the very areas responsible for judgment, impulse control, and risk assessment. One of the earliest effects of drinking is therefore not obvious clumsiness, but diminished awareness of one's own impairment.

creates a sense of reward and lowered restraint. The result can be overconfidence, increased risk-taking, and even aggression behind the wheel.

Many of us would have heard the phrases "who says I'm drunk?" or "I'm fine to drive", despite clear signs to the contrary. It is exactly this disconnect between perceived competence and actual performance that is among the most dangerous aspects of alcohol impairment.

Physiological variability adds another layer of complexity. The same amount of alcohol can produce different BAC levels depending on body weight, sex, liver metabolism, concurrent medications, fatigue and whether

one has eaten and is hydrated. These variables mean that self-monitoring may not be reliable, even for the same person imbibing the usual amount of alcohol.

There is also the broader question on the long-term health impact of alcohol consumption.

Alcohol is classified by the International Agency for Research on Cancer as a Group 1 carcinogen. This is the highest risk category, reserved for agents with sufficient evidence of causing cancer in humans, and is the category that includes tobacco smoke, asbestos and ionising radiation.

Alcohol consumption has been linked to at least seven types of cancer, including cancers of the breast, liver, oesophagus, mouth and colorectum. Risk increases with the amount consumed, and does not begin at a high threshold.

While the alcohol industry has understandably resisted sweeping characterisations of alcohol as inherently harmful, advocating instead for moderation and personal responsibility, scientific evidence has consistently demonstrated that alcohol intake carries increased health risks. This is why the WHO maintains its firm stance: there is no safe level of alcohol consumption.

ROMANTICISING ALCOHOL

At the same time, alcohol's

enduring social role cannot be ignored. Ironically, this may mask the harm it can cause.

Across cultures and centuries, alcohol has accompanied celebration and consolation. It features in religious rituals, harvest festivals, weddings, wakes and state banquets. Sharing a drink can foster camaraderie, and toasting often symbolises collective joy.

In many societies, alcohol is interwoven with identity, whether through beer in Europe, sake in Japan or rice wine in other parts of East Asia.

In fact, popular culture frequently romanticises high tolerance. In Jin Yong's wuxia novel *Demi-Gods And Semi-Devils*, the protagonists Qiao Feng and Duan Yu become sworn brothers after an epic drinking bout. Qiao Feng is famed for his legendary capacity to hold his liquor, while Duan Yu relies on extraordinary inner powers to expel alcohol from his system.

Such stories often capture a recurring theme of a hero who drinks deeply yet remains formidable. In real life, we echo this sentiment by celebrating colleagues or friends who can "hold their drink", equating tolerance with resilience or fortitude.

But high tolerance is not a superpower. Instead, it is often a marker of repeated exposure. While the body may adapt to high and regular consumption of

alcohol, this doesn't mean it is not being harmed. Alcohol's social value does not negate its biological effects.

The issue, then, is not whether alcohol should be eliminated from public life, but rather how consumption can be contextualised responsibly within modern society.

RIGHTS AND RESTRICTIONS

This is where the debate over drink-driving limits often blurs two distinct rights: the right to drink, versus the right to drive after drinking.

We need to be clear that the recent law change does not challenge the right to drink. Adults remain free to consume alcohol within existing regulations. What the change addresses is the matter of operating a motor vehicle after alcohol has been consumed.

Driving is not merely a private act, but is an activity conducted in shared public space. A moving vehicle can inflict severe harm not only on the driver, but also on passengers, pedestrians and other road users.

Where an individual's behaviour poses a risk to others, government has a duty to regulate.

Singapore's current limit of 0.08 per cent BAC was always on the higher end compared with many countries.

China and Japan set their limits at 0.02 per cent and 0.03 per cent respectively, while Australia, France, Germany, and New Zealand enforce 0.05 per cent limits. France and Thailand impose stricter standards for new drivers, and New Zealand even applies a zero-tolerance 0 per cent limit to drivers under 20.

Lowering the drinking threshold for drivers has nothing to do with restricting personal freedom or preserving convenience. When evidence suggests this can increase risk for others, it is simply about protecting lives.

This is why I view the tightening of the drink-driving limit as a measured recalibration rather than a moral crusade. Scientific evidence clearly identifies the point at which crash risk rises significantly, and lowering the legal threshold brings Singapore closer to that inflection point while aligning with international best practice for safer roads.

It also reflects a growing recognition that responsible alcohol use and responsible driving cannot be conflated. Honest conversations about alcohol's place in society must acknowledge both: its role as a social lubricant and also the harm it can cause to health.

It is your prerogative to drink, but if you need to commute after that, then my advice is straightforward: plan ahead and leave the car behind. Also, don't forget to go for regular health screenings to monitor and mitigate any health consequences.

Responsible enjoyment begins with recognising that some choices affect not only ourselves, but also everyone who shares the road.

• Teo Yik Ying is vice-president for global health and dean of the Saw Swee Hock School of Public Health at the National University of Singapore.