

26 Harmful use of alcohol and NCDs

Burden, epidemiology and priority interventions

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Harmful use of alcohol causes significant mortality and morbidity globally, including through NCDs. In addition, there is a significant socioeconomic burden from the harmful use of alcohol. A number of interventions, including WHO best buys, aim at reducing alcohol consumption at both the whole population and individual levels.

Disease burden

Alcohol use accounted for 4.31% of all deaths globally in 2019 (up from 3.5% in 1990), with upward proportionate trends in low- and middle-income countries, from lower levels, but a downward trend in high-income countries (HICs), from higher levels (Table 26.1). While the proportion of all deaths due to alcohol is lowest in LICs, the age-standardized mortality rates per 100,000 attributable to alcohol use were highest. This indicates that in spite of a relative lower proportion of deaths compared to other risk factors, the absolute levels are still very high. The reduction in age-standardized mortality rates for alcohol follows the general trend of decreased overall mortality rates in all World Bank income groups between 1990 and 2019.

Alcohol use accounted for approximately 3.7% of all disability-adjusted life years lost (DALYS) globally in 2019 and ranked first among men in the 15–49 age group (IHME). The disease burden attributable to alcohol is consistently higher in men than women, consistent with a higher prevalence in men than in women.

Among all deaths related to alcohol use in 2019 (IHME), 31% were attributable to digestive diseases, 20% to cancer, 18% to cardiovascular disease (CVD), 12% to respiratory infections and tuberculosis, 7% to substance use disorders, 6% to self-harm and interpersonal violence, 3% to unintentional injuries and 3% to transport injuries.

Trends in alcohol use

In recent years, the global consumption of alcohol (in terms of ‘pure alcohol’ or ethanol) per capita (among those aged ≥15 years) per year has increased, e.g.

Table 26.1 Mortality attributable to alcohol use (IHME)

	Global		HICs		Upper MICs		Lower MICs		LICs	
	1990	2019	1990	2019	1990	2019	1990	2019	1990	2019
Proportion of all deaths (%)	3.5	4.3	5.7	5.1	4.6	5.2	2.0	3.4	2.1	3.0
Age-standardized mortality rates (per 100,000)	39	30	40	27	42	31	29	28	62	42

from 5.9 l ethanol in 1990 to 6.5 l in 2017, and is forecast to reach 7.6 l in 2030.¹ The average consumption of alcohol per capita substantially increased in low- and middle-income countries (from lower levels) but decreased in HICs (from higher levels, e.g. currently >10 l per capita and per year among men in many countries). Of note, a large proportion of the total alcohol consumption in the population arises from large alcohol consumption among fairly small proportions of the population (e.g. 50–75% of the total alcohol sold is consumed by the small proportion of heaviest drinkers in the OECD countries),^{2,3} with substantial proportions of abstainers, particularly among women, and with different consumption patterns across countries and cultural norms. WHO regularly provides consumption reports.⁴

Substantial consumption of alcohol arises from unrecorded alcohol products that are not accounted for by official government systems and/or market studies. This includes informally produced products (fermented, distilled, small-scale alcohol production), illicit alcohol smuggled across borders or produced illegally to avoid taxes and tariffs, or ethanol-based products that are not officially intended for human consumption (mouthwash, medical tinctures, windshield washer fluid, hand sanitizer, pharmaceutical alcohol, antifreeze, cleaning fluids, among others). *Ethanol* in all alcoholic beverages, whether commercial or not, is the ingredient responsible for most of the harm from alcohol products. However, unrecorded alcohol may also contain contaminants such as methanol and heavy metals that are harmful. For example, methanol can result in blindness and death, even in relatively small doses.

Social and economic impact

In addition to its direct impact on many health conditions (as mentioned above),⁵ alcohol use also has a large negative socioeconomic impact on individuals, families and communities, including domestic and sexual violence, homicide, victimization, risky behaviour and criminal activity.⁶ The economic costs related to alcohol use have been estimated to amount, for example, to \$ 249 billion in the USA in 2010, or about \$ 2.05 per drink, with three-quarters of it due to heavy episodic drinking.⁷

Standard unit of an alcoholic drink

Different alcoholic beverages have different concentrations of ‘pure alcohol’ (i.e. ethanol), typically ranging from 3–8% alcohol by volume (ABV) for beers, 11–14% ABV for wines and 40–55% ABV for spirits. The alcohol content of a standard drink is defined differently across countries, e.g. 8 g (10 ml) of pure alcohol in the UK and 14 grams (18 ml) in the US, but 10 g (13 ml) in many other countries). A 10 g standard alcohol unit corresponds, approximately, to a 100 ml glass of wine (at 12% ABV), a 333 ml bottle/can of beer (at 5% ABV) or a 44 ml shot of spirit (at 40% ABV).

Heavy episodic drinking

WHO defines heavy episodic drinking as the consumption of ≥ 60 grams of pure alcohol on ≥ 1 occasion in the past 30 days. This equates to approximately one-sixth of a bottle of spirits of 40% ABV, just under two-thirds of a 750 ml bottle of wine of 13% ABV, or 2.5 l of a beer of 5% ABV. Worldwide almost one billion drinkers are heavy episodic drinkers.⁴

Alcohol, cardiovascular disease and threshold

Globally, alcohol use is an important cause of CVD (e.g. ischaemic heart disease, stroke, hypertension). Heavy episodic drinking also increases the risk of heart arrhythmia, including sudden death. There is much debate in the scientific literature about the effects of low levels of alcohol consumption associated with lower mortality from ischaemic heart disease (IHD) in many observational studies.^{8,9} The possibility of a confounding effect is reinforced by the observation that no cardiovascular protection has been found in bias-free Mendelian randomization studies (an approach that helps understand the relationship between exposures and outcomes, particularly where randomized controlled trials are not feasible).^{10,11} It must be noted that the association between alcohol use and many alcohol-related outcomes (e.g. liver disease, several cancers, injuries) is linearly associated with alcohol use, which emphasizes that there is no safe threshold for alcohol consumption.¹²

Effective interventions to reduce alcohol consumption and the related NCD burden

Several cost-effective interventions to reduce alcohol consumption in the population are recommended in the WHO Global NCD Action Plan, the WHO Global strategy to reduce harmful use of alcohol, the WHO SAFER initiative and the new WHO Global Alcohol Action Plan. They are all related to the regulation and control of the availability of alcohol (physical, social and economic). Analyses in OECD countries show that health gains

can be particularly large for tax increases and brief interventions in primary care targeting high-risk drinkers.²

Risky vs harmful use. Hazardous use (or risky use) refers to alcohol consumption viewed from a risk factor perspective (independent of any current harm but with the potential to cause harm to self and others) while harmful use and dependence refer to health conditions with diagnostic codes under the umbrella of ‘alcohol use disorders’ in various diagnostic classification systems (Diagnostic and Statistical Manual of Mental Disorders – DSM, International Classification of Diseases – ICD). At the individual level, the risks related to alcohol use disorders are broadly classified as low, moderate or high risk, through a combination of levels of consumption, reported harms and the role of drinking in the person’s life.¹³ Harmful alcohol use is defined more broadly by WHO (both in the Global strategy to reduce the harmful use of alcohol and the Global NCD Action Plan) as “drinking that causes detrimental health and social consequences for the drinker, the people around the drinker and society at large, as well as patterns of drinking that are associated with increased risk of adverse health outcomes”. Interventions at the population level aim first at reducing overall alcohol consumption, while interventions at the individual level also aim at identifying and managing risk reduction and alcohol use disorders.

Recommended WHO interventions (* denotes a WHO best buy intervention):

- Increase excise taxes on alcoholic beverages.* This requires an effective system for tax administration and should be combined with efforts to prevent tax avoidance and tax evasion.
- Enact and enforce bans or comprehensive restrictions on alcohol marketing.* This requires the capacity for implementing and enforcing regulations and legislation.
- Enact and enforce restrictions on the physical availability of retailed alcohol (via reduced hours of sale).* As part of this, formal controls on sale need to be complemented by actions addressing illicit or informally produced alcohol.
- Enact and enforce drink-driving laws and test blood alcohol concentration limits via random sobriety checkpoints.
- Provide brief psychosocial intervention for persons with hazardous and harmful alcohol use (requires trained providers at all levels of health care).
- Carry out regular reviews of prices in relation to the level of inflation.
- Establish minimum unit prices for alcohol where applicable.
- Enact and enforce an appropriate minimum age for the purchase or consumption of alcoholic beverages and reduce the density of retail outlets.
- Restrict or ban promotions of alcoholic beverages in connection with sponsorships and activities targeting young people.

- Provide prevention, treatment and care for alcohol use disorders and comorbid conditions in health and social services.
- Provide consumer information about, and label, alcoholic beverages to indicate, the harm related to alcohol.

The **SAFER package**, launched by WHO in 2018, promotes the following:

Strengthening restrictions on alcohol availability

Enact and enforce restrictions on the commercial or public availability of alcohol through laws, policies, and programmes to reduce the harmful use of alcohol, particularly to prevent easy access to alcohol by young people and other vulnerable and high-risk groups.

Advancing and enforce drink-driving countermeasures

Enact and enforce strong drink-driving laws and low blood alcohol concentration (BAC) limits via sobriety checkpoints and random breath testing.

Facilitating access to screening, brief interventions and treatment

Health professionals have an important role in helping people to reduce or stop their drinking to reduce health risks and health services should provide effective interventions for those in need of help and their families.

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

Bans or comprehensive restrictions on alcohol advertising, sponsorship and promotion are impactful and cost-effective measures, including through reducing exposure to them on social media, particularly to help protect children, adolescents and abstainers from the pressure to start consuming alcohol.

Raising prices on alcohol through excise taxes and pricing policies

Alcohol taxation and pricing policies are among the most effective and cost-effective alcohol control measures. An increase in excise taxes on alcoholic beverages is a proven measure to reduce the harmful use of alcohol, and it provides governments revenue to offset the economic costs of the harmful use of alcohol.

Special considerations related to reducing alcohol intake in the population

The fact that low and infrequent alcohol consumption does not necessarily result in significantly increased harm for adults adds to the challenge of encouraging legislators and policymakers to tackle the harmful use of alcohol.

However, arguments to develop and enforce public health policy can be strengthened by emphasizing the importance of protecting minors, protecting people from harms caused by drinkers, the negative economic impact of alcohol consumption on governments¹⁴ and other regulatory measures to better control the alcohol market, given that alcohol is not an ordinary commodity (e.g. the addictive nature of alcohol for many users and the large health and social consequences of harmful alcohol use).

Stringent fiscal and regulatory measures to tackle the harmful use of alcohol are fiercely opposed by the alcohol industry. It is therefore important that the alcohol industry is not involved in the development of public health policy and that strong coalitions of stakeholders are built to combat interference from the alcohol industry. Governments can also develop transparent consultative processes of policy development and approval that enable the separation of commercial from public health interests. Working across sectors would help balance such interests as well.

Chapters in this book on law, fiscal measures, private sector, private–public partnerships, whole–of–government action and scaling up behaviour change describe these issues in more detail.

Monitoring

Alcohol use in the population can be assessed in different ways, including population surveys (e.g. STEPS and similar surveys in adults and GSHS and similar surveys in adolescents; see Chapter 5 on surveillance tools) which enable to estimate, based on questions, the prevalence of abstainers, drinkers, former drinkers, the pattern of alcohol use (e.g. frequency of heavy episodic occasions) and alcohol use disorders. Electronic or telephone-based surveys can also be useful. Estimates can be presented according to various socioeconomic variables. As surveys rely on self-reported data, estimates may not be reliable (quantity is particularly underestimated), including in countries where alcohol consumption is not tolerated socially or prohibited by law. Annual alcohol per capita consumption (APC) is considered the most accurate and precise indicator of alcohol exposure in the population but cannot be easily calculated from population surveys. APC includes both recorded and unrecorded consumption adjusted for tourist consumption, using several sources, including sales data provided by governments and economic operators.

Relevant global targets and indicators for alcohol control

By 2030, at least 20% relative reduction (in comparison with 2010) in the harmful use of alcohol.	<ul style="list-style-type: none"> • Total alcohol per capita consumption is defined as the estimated total (recorded plus unrecorded) alcohol per capita (aged 15 years and older) consumption within a calendar year in litres of pure alcohol, adjusted for tourist consumption. • Age-standardized prevalence of heavy episodic drinking. • Age-standardized alcohol-attributable deaths. • Age-standardized alcohol-attributable DALYs.
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A number of additional targets are formulated in relation to the implementation of high-impact policy options and interventions.¹⁵

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Notes

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