

HEALTH WARNING LABELS ON ALCOHOL BEVERAGES



IARD Policy Reviews cover the evidence on the impact of policy measures on drinking patterns and outcomes. They offer an overview of the key literature and provide the reader with an extensive bibliography that refers to original research on each topic. IARD Policy Reviews attempt to present the balance of the available evidence. They do not necessarily reflect the views of IARD or its sponsoring companies.

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Background

Information about alcohol beverages is shared with consumers in a number of different ways, including on containers and packaging.

This review discusses the use of health warning labels, which appear on beverage containers and provide information or recommendations about alcohol consumption. They appear as text or pictograms and focus on four main themes:

- ▶ General health risks associated with alcohol consumption
- ▶ Health risks of drinking during pregnancy
- ▶ Risks of drinking and driving or operating machinery
- ▶ Health risks for young people or legal purchase age for alcohol beverages

Labels may include additional information, such as the alcohol by volume (ABV) content, reference to national drinking guidelines, or standard units.

Health warning labels provide consumers with information close to the point of potential consumption, and may help to remind them about the risks to their health from excessive or inappropriate drinking. They are intended to help consumers make informed choices about their drinking, including whether to drink.

This review concentrates on the evidence of the effectiveness of health warning labels in reducing harmful drinking.

Health warnings are only one possible element of the information that product labels can provide to consumers. However, in line with the majority of the published literature that examines each element on its own, this review does not cover findings on other elements such as ingredients lists or nutrition content. This review also does not cover health warning messages included in commercial communications for alcohol beverages nor health warnings posted at point of sale.



Summary of the evidence

IMPACT ON HARMFUL DRINKING

The evidence indicates that health warning labels do not have an impact on average alcohol consumption [1, 2]. Research on their impact on harmful drinking is limited, with mixed findings regarding drinking during pregnancy, young people's drinking, and drink driving. There has been no research to date regarding their specific effect on heavy drinking.

Research indicates that health warning labels have not demonstrated impact on the drinking behavior of pregnant women as a stand-alone prevention measure [3].

- ▶ One U.S. study found that lighter-drinking pregnant women (defined in the study as drinking less than 14 g/day before pregnancy) reported that they drank less in the first weeks of pregnancy after health warning labels were implemented, but there was no change in behavior among other groups of pregnant women [4].

The evidence on the ability of health warning labels to affect young people's drinking behavior, or to prevent drink driving, is limited to a handful of observational studies and lab experiments.

- ▶ A lab experiment conducted among 45 women aged between 18 and 25 years found that health warning messages can slow the speed of drinking [5].
- ▶ Studies among high-school students conducted five years after the introduction of health warnings in the U.S. found that reductions in self-reported alcohol consumption and drink driving could not be attributed to the warnings [1, 6].
- ▶ Other research indicates that exposure to health warning labels is associated with more self-reported drink driving, but also with more self-reported prevention strategies like limiting one's drinking before driving and avoiding driving after drinking [7].

Since the evidence on the effectiveness of health warnings on alcohol beverage labels is limited [2, 8-13], parallels are often drawn with research on the effects of other products' labels. However, a recent **meta-analysis** on this broader topic found that warnings on tobacco and alcohol beverage labels had smaller effects on behavior than those on other products such as sweetener, digital games, household cleaning products, and power tools [14].

IMPACT ON AWARENESS, RISK PERCEPTIONS, AND SOCIAL NORMS

Much of the literature on health warning labels examines consumers' attention, comprehension, recall, and intention to adjust their drinking according to the message. These measures are not the same as change in behavior, as not all intentions translate into action [15]. However, they may contribute to shifting social norms on harmful drinking, especially as part of a more comprehensive strategy to reduce harmful drinking [3, 8, 16].

The evidence on health warning labels on alcohol beverages suggests that they may increase some consumers' awareness of health advice [3].

- ▶ Data gathered in North America showed a steady increase in awareness of health warning labels following their introduction, which then stabilized over the next five years [1, 6, 17, 18].
- ▶ A majority of respondents to an internet-based survey in Japan reported awareness of health warnings; the most commonly reported medium was product labels [19].
- ▶ In a survey of Italian university students, 28% reported that they never read alcohol beverage labels [20].
- ▶ Research indicates that warning label awareness is higher among heavier drinkers than among other groups, possibly due to greater exposure to labels [3, 17, 21-24].
- ▶ A survey of women who were pregnant or had given birth, conducted five years after pregnancy-related health warning labels were introduced in France, found that 77% of drinkers were aware of the warning and 99% of them interpreted it as suggesting abstinence during pregnancy [25].
- ▶ A review of evidence from studies conducted in the U.S., New Zealand, and Israel that focused on adolescents showed that this group's awareness rose following the introduction of warning labels, but their beliefs about negative drinking outcomes did not change [26].
- ▶ Researchers found that awareness of health warning labels in the U.S. varied according to some demographic factors and drinking patterns:
 - ▶ Pregnant women who drank more than 14 g/day of alcohol prior to their pregnancy and pregnant women aged over 29 years were more likely to be aware of health warnings [18].
 - ▶ Among a U.S. Hispanic population, awareness of the health warning message about drinking during pregnancy was higher among women than men. It was also higher among older than younger respondents, those who had completed more formal education, and respondents who were less assimilated to the majority U.S. culture than others [27].
 - ▶ Among the general population, awareness was higher among younger age groups in one study [17], but it did not vary according to how health conscious individuals are [23].

There is some evidence that both message content and characteristics of the audience affect how well consumers remember the warnings (warning recall).

- ▶ In a small study in Australia, 16% of consumers recalled health warning labels [21].
- ▶ The recall of health warning label messages varied by topic five years after their introduction in the U.S. Approximately 80% of respondents recalled messages about birth defects, while 59% and 47% recalled messages about operating machinery and drink driving, respectively [7].
- ▶ The degree of recall of health warning labels is also associated with some drinking patterns and sociodemographic factors:
 - ▶ Among lifetime-drinkers in the general U.S. population, recall was found to be higher for those reporting drinking more than four drinks (56 g of alcohol) in the preceding two weeks, younger age groups, those with a high-school education or less, and white respondents, compared to others [17].
 - ▶ Pregnant women and women of childbearing age show varying levels of health warning recall, with younger women being more likely to recall the messages correctly [3].
 - ▶ A study among 99 Hispanic women in the U.S. found that lower English language skills were associated with lower recall of health warning labels [28].

The available evidence shows that health warning labels have little impact on improving knowledge about potential risks associated with drinking [6, 26, 29].

- ▶ Knowledge of some risks associated with drinking was above 95% prior to the introduction of health warnings on beverage labels in the U.S. [6, 30].
- ▶ Among the U.S. general population, a study found no impact on the accuracy of recalled messages over the five years following health warning label implementation [7].
- ▶ A limited qualitative study among Australian college students found that they did not perceive health warning labels to be effective in changing their beliefs about risks [31].
- ▶ Researchers found that warning labels' impact on risk perceptions was greater among those U.S. and Australian college students who reported drinking more on average, and lower among those who reported binge drinking more frequently [32].
- ▶ In a study among 2,168 Australians, heavier and binge drinkers were more likely to find warnings personally relevant, but not to rate them as more convincing or believable, than other drinkers [33].
- ▶ Among pregnant women overall, the impact of health warning labels on perceptions of risk has not been found to be significant [3, 34].

Research suggests that health warning labels in the U.S. have increased the likelihood that adult consumers will intervene to deter others from drinking and driving [35]. There is also evidence that the presence of health warning labels may encourage discussion about the effects of drinking by pregnant women [3, 7, 36].

REGULATION OF ALCOHOL BEVERAGE HEALTH WARNING LABELS

Public support for the use of health warning labels is generally high [37-46], despite lack of robust evidence about their effectiveness in reducing harmful drinking.

Providing information about health outcomes on labels is recommended in WHO's "Global strategy to reduce the harmful use of alcohol" as an instance of "complementary use of interventions within a broader strategy that prevents or reduces the negative consequences of drinking and alcohol intoxication" [47].

Some governments mandate the inclusion of health warning labels on the packaging of alcohol beverages. Please see the IARD Policy Table: [Health Warning Labeling Requirements](#) for a comprehensive overview of mandatory and voluntary warning label policies around the world.

- ▶ Approximately one-fifth of the world's governments currently require health warnings to feature on alcohol beverage labels [48].
- ▶ As of April 2019, the most commonly required health warnings on alcohol beverage labels are about general health risks associated with drinking or excessive use of alcohol, while only a few governments require the use of pictograms (see Table 2) [48].
- ▶ Labeling requirements may be subject to dispute under regional or global trade agreements because they can have implications for trade [49].

Producers may voluntarily include health warning labels on labels where they are not required by government, or in order to offer additional guidance.

- ▶ For example, under the 2011 United Kingdom Public Health Responsibility Deal, signatories pledged to ensure that over 80% of on-shelf product labels include national drinking guidelines and a warning about drinking during pregnancy. An assessment in 2014 found that 86% of signatories' products and 54% of non-signatories' products complied [50].
- ▶ A 2013 assessment in European Union countries found the share of alcohol beverages that featured health warning labels ranged between 5% and 35% in countries without government-mandated requirements [51].

Some producers voluntarily include health warnings on product packaging across all of the markets in which they are active.

- ▶ IARD's members, including the leading alcohol beverage producers, added this goal in their "[Beer, Wine, and Spirits Producers' Commitments 2013-2017](#)" [52].
- ▶ In 2017, symbol or word warnings, or both, against harmful drinking were included on 85% of product labels among IARD's four signatories that reported by volume and on 59% of product labels among seven signatories that reported by brand [53].

UNINTENDED CONSEQUENCES OF HEALTH WARNING LABELS

There is evidence that consumers may interpret health warning labels in ways that do not encourage responsible drinking choices.

- ▶ Some researchers have suggested that increasing the public's exposure to warning labels may desensitize people to their content [14], or even lead to counterproductive changes in behavior among some consumers [2, 15, 54].
 - ▷ In particular, heavy drinkers have been found to react more negatively to warnings on alcohol beverage labels [2]. An experimental study of 128 drinkers who reported exceeding the U.K. weekly drinking guidelines found that more severely-phrased health warning messages were associated with greater negative reaction to the warning and greater reported motivation to reduce drinking, but not with an increased perception of alcohol-related risk [55].
 - ▷ A recent review of health warning label effectiveness across many products found insufficient research on the extent to which consumers prioritize the future results of changing their behavior as a result of the warning, compared to their reasons for engaging in that behavior in the present [14]; further research is needed in this area.
 - ▷ Researchers examining the efficacy of "threatening" messages, which rely on provoking fear of the potential consequences of drinking, have suggested that these should be avoided in mass communication interventions. Instead, they suggest that these are reserved for interventions that can also support consumers' perception of their own ability to change their drinking habits [15, 56].
- ▶ In addition, some researchers have expressed concern that warning messages about drinking during pregnancy may cause undue stress to pregnant women [3] or to others feeling entitled to criticize pregnant women's personal choices [57, 58].

IMPROVING ALCOHOL BEVERAGE HEALTH WARNING LABELS

Some research suggests that the design and placement of health warning labels may affect their effectiveness [8].

- ▶ A 2013 assessment in European Union countries found that the 80% of health warning labels on alcohol beverages were easy to understand [51].
- ▶ Some researchers have criticized the small font size, lack of color contrast, and the placement of voluntary warning labels [50, 59].
 - ▷ Focus group studies indicate that Australian consumers perceived health warnings, which had been voluntarily applied by producers, as small and unlikely to affect drinking behavior [60, 61].
- ▶ A 2013 assessment of the use of pregnancy pictogram warnings in France stated that poor placement and lack of color contrast would reduce their effectiveness [62].

TABLE 1: HEALTH WARNINGS ON ALCOHOL BEVERAGE LABELS, BY TOPIC

Type of requirement	General health risk or specific health outcomes	Drinking during pregnancy	Drink driving	Young people
Government	Argentina Bolivia, Brazil* China Chinese Taipei Colombia Dominican Republic Ecuador* El Salvador Guatemala Honduras India, Israel* Malaysia Mauritius, Mexico, Nicaragua Peru Russia* Republic of Korea Togo Turkey Turkmenistan United States Uzbekistan Zimbabwe Pending for Ireland	China France Indonesia Lithuania Russia* Republic of Korea Turkey Turkmenistan United States Pending for Ireland, Australia and New Zealand	India Turkey Turkmenistan United States Zimbabwe	Argentina Bolivia China Colombia El Salvador Germany* Indonesia Mozambique Russia* Turkey Turkmenistan Zimbabwe
Required by government as one choice among several messages, or on rotating basis	Kenya South Africa	Chinese Taipei Mexico* South Africa	Kenya Mexico* Moldova South Africa	Chinese Taipei Kenya Mexico* Moldova Republic of Korea
Required by producer codes of practice	Japan, United Kingdom	Australia Japan		
Additional IARD resources	IARD Health and Policy Reviews series	IARD Policy Table: National drinking guidelines for pregnancy and breastfeeding	IARD Policy Table: Blood alcohol concentration limits	IARD Policy Table: Minimum legal age limits

* Indicates that the requirement varies by beverage alcohol strength

For a comprehensive overview of mandatory and voluntary warning label policies around the world, please see the IARD Policy Table:

[Health Warning Labeling Requirements](#)

Theory and evidence about communicating other types of health information via labels, as well as findings from experimental studies, inform recommendations for the design of health warning labels. Researchers have studied the potential impact of various strategies to enhance the labels' effectiveness.

- ▶ Researchers have recommended using pictograms and color to help bring attention to messages [63] and raise awareness and recall of them [45, 64].
 - ▶ On-label graphic warnings about liver disease were associated with higher perception of risk and intention to quit drinking than text-only warnings or labels without warnings, in an experimental study among 60 adults aged between 18 and 35 years who reported exceeding U.K. weekly drinking guidelines [65].
 - ▶ In the experiment that found the rate of drinking to be slower when health warning labels were present, this effect did not differ between text-only and text and graphic health warnings [5].
 - ▶ Another experimental study among 22 students in the U.K., which used eye-tracking technology, found that text warnings drew less attention than text warnings paired with graphic images, but also that longer viewing of the warnings was related to increased positive expectancies about drinking [66].
- ▶ Experimental studies have found that text warnings draw more attention when they are printed on labels horizontally, as opposed to vertically [67, 68].
- ▶ Researchers propose that the messages on warning labels should regularly be rotated [8].

The topic and exact content of health warning labels on alcohol beverages are not exclusively informed by evidence. The content may be informed by the policy objectives that the requirement aims to support. Meanwhile, the size and static nature of product labels limit their usefulness for providing health guidance.

- ▶ An online experiment among 1,884 U.K. drinkers that compared two hypothetical health warning labels on different topics found that those about cancer were associated with both higher avoidance (avoiding looking at and thinking about the warning) and higher reported motivation to reduce drinking than labels about mental health [69].
- ▶ A recent experiment simulated an intervention that used labels as one of several methods of delivering a health warning message. The study found that, after exposure to consistent messages on labels, billboards, and posters in clinical settings, perceptions of risks associated with drinking increased not only for the health outcome specifically mentioned in the warning but also for other outcomes [70].

The evidence is mixed about what message framing and content may be more effective for increasing knowledge about risks and changing behavior [2, 15, 20, 33, 69, 71-73]. This content could include potential benefits of reducing consumption, an appeal to consumers' fear of given health outcomes, facts and figures about the outcomes, or some combination of these elements. Further research is needed in this area.

Meta-analysis of the evidence across topics other than drinking patterns indicates that threatening messages lead to the intended change in behavior only when subjects feel capable to make that change, while the same messages can lead those who do not feel confident in their ability to change their own behavior to engage in more harmful behavior [15].

TABLE 2: USE OF PICTOGRAMS ON ALCOHOL BEVERAGE LABELS, BY TOPIC

Country	General health risk or specific health outcomes	Drinking during pregnancy	Drink driving	Young people
Australia				
France				
India	 * only if processing aids of animal origin were used in wine			
Lithuania				
Mexico				
Moldova				"an 18+ symbol"
Turkey				
United Kingdom		A)  B)  C) 		

(a) Department of Health guidance, [Communicating the U.K. Chief Medical Officers' low risk drinking guidelines 2017](#)
 (b) British Retail Consortium, [Initiative on labeling \(March 2017\)](#)
 (c) The Portman Group's guidance, [Communicating alcohol and health-related information \(September 2017\)](#)



Limitations and methodological issues

Recent **systematic reviews** have found that there is insufficient evidence to assess the impact of health warning labels and their utility as policy measures to prevent harmful drinking [2, 14].

It is difficult to separate the impact of health warning labels from other measures that may be implemented at the same time.

- ▶ For example, the introduction of health warning labels in the U.S. coincided with various other measures targeted at reducing drink driving, possibly confounding the effects of the specific on-label message [6, 11].

Many studies attempt to address health warning label effectiveness by analyzing participants' self-reported awareness of labels or motivation and intention to change drinking habits. However, broader research indicates that not all of those who declare intentions to change a particular behavior actually do so [15].

There is little cross-cultural research on the impact of health warning labels [26]. Most of the available data are derived from studies conducted in high-income and English-speaking countries, and little research has been done on the impact of health warning labels on drinking behavior or knowledge of related risks in other contexts.



Glossary

- ▶ **Graphic warning:** a photograph, illustration or other image that shows potential harmful outcomes.
- ▶ **Lifetime-drinker:** a person who has previously consumed at least one drink, even if they are now a former drinker.
- ▶ **Message framing:** the approach used to make messages more persuasive and appealing to their audience, for example, by using emotion, logic, or morals.
- ▶ **Pictogram:** a simple, standard illustration to communicate a message (see Table 2 for examples).

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