

Enhanced Alcohol Container Labels: A Systematic Review

Key Messages

- Alcohol container labels in Canada do not have information that would help Canadians make more informed and healthier decisions about alcohol.
- In Canada, the labels of alcoholic drink containers are not required to display information such as calories and ingredients, health messages, the amount of alcohol in each container or low-risk drinking guidelines.
- Evidence suggests that nutrition labels on alcoholic drinks have strong public support and that they can improve consumers' ability to recall the number of calories in a drink.
- Available evidence suggests that there is overall public support for alcoholic drink labels with health messages, standard drink information and low-risk drinking guidelines.
- Alcoholic drink labels with health messages, standard drink information and low-risk drinking guidelines improve consumer knowledge of alcohol-related risks, and in some studies decrease the intention to buy or drink alcohol, and the total amount of alcohol consumed.

The Canadian Centre on Substance Use and Addiction recently commissioned a systematic review to analyze the published research on alcohol labels with nutrition information, health messages, standard drink information and low-risk drinking guidelines. The systematic review looked at published, peer-reviewed studies:

1. Investigating the outcomes of nutrition information on alcohol container labels (primary objective); and
2. Investigating alcohol container labels with health messages, standard drink information and drink limit guidelines (secondary objective).

This report-at-a-glance summarizes the key findings of the [full systematic review](#).

Why Does This Matter?

Alcohol is a psychoactive substance. Alcoholic drinks are widely consumed and contribute to substantial health and social problems (GBD 2016 Alcohol Collaborators, 2018; Manthey et al., 2019; World Health Organization, 2018). In 2017, harm from alcohol use cost \$16.6 billion in Canada and 18,000 deaths were attributable to alcohol (Canadian Substance Use Costs and Harms Scientific Working Group, 2020). Despite the substantial costs, few people understand the health harms associated with alcohol. Alcohol is a source of excess calories and alcohol use can cause several chronic diseases (Weerasinghe et al., 2020).



Alcohol is a concentrated source of excess calories. It accounts for more than 10 percent of the daily calories of adults who consume alcohol in Canada, the United Kingdom and the United States (Butler et al., 2016; Kirkpatrick et al., 2019; Shelton & Knott, 2014; Sherk et al., 2019). Experts recommend limiting alcohol consumption to balance the number of calories consumed (Health Canada, 2019a; Ministry of Health, 2020; National Health and Medical Research Council, 2013).

In general, people who consume alcohol:

- Do not know the calorie content of alcoholic beverages;
- Pay less attention to liquid calories compared to calories from food;
- Drink alcohol in addition to other sources of calories; and
- May consume more overall calories than they realize.

This lack of knowledge and awareness may contribute to unhealthy weight gain (Almiron-Roig et al., 2013; Cummings et al., 2020; Grunert et al., 2018; Kwok et al., 2019; Yeomans, 2010).

Alcohol Container Labels

Nutrition Labels

The Government of Canada does not require nutrition information, such as ingredients and calories, to be printed on alcohol container labels (Jané-Llopis et al., 2020; Health Canada, 2019b; Canadian Food Inspection Agency, 2020; World Health Organization, 2018). Nutrition fact labels and ingredient lists are required on nearly all other packaged food and non-alcoholic beverage containers.

Canadian regulations require nutrition information to be displayed on alcohol container labels under specific conditions. When alcoholic drinks are mixed with other ingredients, such as juice, milk or cream, or when they contain artificial sweeteners, ingredients need to be listed. When packaging or advertising refers to the nutrition or calorie content of an alcoholic beverage (e.g., “0 sugar,” “80 calories”), a nutrition facts label must be displayed (Canadian Food Inspection Agency, 2020).

Health Messages, Standard Drink and Low-Risk Drink Limit Labels

Canadian regulations do not require alcohol container labels to list health messages, standard drink information or low-risk drink limits, such as Canada’s Low-Risk Alcohol Drinking Guidelines. Alcohol is also not subject to the rigorous health labelling requirements applied to other regulated psychoactive substances, such as tobacco and cannabis (Canadian Food Inspection Agency, 2020; Department of Justice, 2021; Health Canada, 2019b; Jané-Llopis et al., 2020; Martin-Moreno et al., 2013; World Health Organization, 2018).

Canadian provincial and territorial authorities can impose additional alcohol container label requirements or restrictions on what can be displayed (Butt et al., 2011; Canadian Food Inspection Agency, 2020). The 10 provinces and Nunavut do not require labelling beyond the national requirements (Canadian Free Trade Agreement, 2020). Yukon and the Northwest Territories require post-manufacturer warning labels about the risks of drinking during pregnancy and cautions against drinking when driving or operating machinery (Canadian Free Trade Agreement, 2020).



There are no regulations preventing alcohol producers from voluntarily displaying nutrition information or other health information on alcohol container labels. Stakeholders in the alcohol industry have made voluntary commitments to provide alcohol nutrition information on labels (Beer Institute, 2020; Euromonitor International, 2021; Petticrew et al., 2017). However, these voluntary commitments are more likely to align with alcohol industry marketing aims than public health aims. More specifically, these voluntary labels will not consistently or fully communicate information to consumers about calories, nutrition or the negative health consequences of alcohol products (O'Brien et al., 2021; Petticrew et al., 2018a; Petticrew et al., 2018b; Stockwell et al., 2020).

What Did We Do?

For the first objective of the report, we systematically reviewed published empirical studies investigating the outcomes from placing nutrition information on alcohol container labels. For the second objective, we systematically reviewed published empirical studies investigating alcohol container labels with health messages, standard drink information and low-risk drinking guidelines. All reviews took place between December 2019 and December 2020.

Key outcomes examined for each type of container label information included:

- Attention to or noticing of labels by consumers;
- Comprehension, perceived effectiveness, and acceptance and support of nutrition label information by consumers;
- Consumer intentions to purchase or consume alcohol; and
- Consumption behaviour.

See the [systematic review](#) for details on the search strategy, article screening process and references.

What Did We Find?

Alcohol Container Labels with Nutrition Information

For nutrition labels, more specifically alcohol container labels with calorie information and ingredient lists, the results of 15 articles (14 studies) examined suggest that they:

- Support individuals' awareness of and ability to estimate calorie content in alcoholic drinks and alcohol consumed in the past week;
- Have strong public support (mandatory alcohol container nutrition labels providing calorie information and ingredients); and
- Were not associated with intentions to purchase or consume lower-calorie alcohol.

The articles reviewed have insufficient evidence to suggest any conclusions on the effect of calorie information labels on alcohol consumption.



Table 1: Summary of Results, Alcohol Container Labels with Nutrition Information

Outcome	Summary of Results	Number of Studies
Label attention and noticing	Little attention paid to information	Two
Comprehension	Improved calorie estimation accuracy	Two
Perceived effectiveness	Mixed results	Five
Acceptance	Support for alcohol container nutrition labels	Seven
Intentions to purchase and consume alcohol	No impact on intentions, or increase intentions	Six
Alcohol consumption	Insufficient evidence	One (insufficient)

Alcohol Container Labels with Health Messages, Standard Drink Information and Drink Limit Guidelines

Labels with Health Messages

Alcohol container labels with health messages provide information on the health consequences of alcohol (e.g., alcohol can cause cancer). Health message labels that are large, use bright colours, are mandatory, and (in some studies) are applied to plain alcohol containers were more noticeable, more visually attended to, and better recalled by participants.

Evidence from 45 articles (39 studies) shows that alcohol containers with health messages:

- Can increase research participants’ knowledge and awareness of alcohol-related health risks, including cancer; and
- Have mixed effects on participants’ intentions to consume alcohol or on actual consumption, where some studies showed no effect and others showed decreased intentions and consumption.

Of note, evidence suggests that improving consumer knowledge that alcohol can cause cancer is associated with increased support for effective alcohol pricing policies that reduce per capita alcohol consumption and related harms (Weerasinghe et al., 2020).

Labels with Standard Drink Information

Fifteen studies (18 articles) investigated labels with standard drink information. Studies investigating these labels indicate that they support consumers’ ability to accurately estimate the number of standard drinks in a container. Understanding and being able to track standard drinks is an essential part of being able to understand and apply low-risk drink limits such as Canada’s Low-Risk Alcohol Drinking Guidelines.

Standard Drink

A standard drink is a standardized measure of how much alcohol is in an alcoholic drink. In Canada, a standard drink contains approximately 17 ml (13.45 grams) of alcohol. This corresponds to 341 ml of 5% alcohol by volume (ABV) beer, 142 ml of 12% ABV wine and 42 ml of 40% ABV spirits. An alcohol container can contain more or less than one standard drink. This information can be displayed on the container label.



Labels with Low-Risk Drinking Limits

Drinking guidelines provide information about the risks associated with consuming alcohol. Eight studies (12 articles) investigated the effects of labels with drink limit guidelines and showed that:

- Large and brightly coloured drink limit guideline labels were noticeable and improve message recall compared to smaller less colourful labels;
- They improved closely reading, thinking about and talking with others about low-risk drink limits;
- They improved knowledge of drink limit guidelines in Canada and the United Kingdom; and
- They had mixed effects on intentions to drink or on actual alcohol consumption across studies.

Further Research Considerations

Alcohol container labels have been largely studied in artificial settings. Real-world studies are needed to understand how alcohol consumers react to alcohol container labels in settings where alcohol is purchased instead of lab settings. Implementation of alcohol container nutrition labels should be accompanied by high-quality, real-world evaluations to improve future labelling standards and policies. The container label types presented above can be combined as complementary and can reinforce important information for people who drink alcohol.

What Does This Mean?

There is an opportunity to use alcohol container labels and public education in Canada to support more informed and lower-risk alcohol use. The available scientific evidence suggests that well-designed alcohol container labels can inform people who use alcohol and support behaviour change.

A small number of studies examining alcohol container nutrition labels have been published in the peer-reviewed literature. Results indicate that nutrition labels:

- Have public support;
- Improve consumers' ability to estimate the calorie content of alcoholic drinks they consume; and
- Increase transparency by ensuring consumers have access to complete information.

The effect of alcohol labels with nutrition information on intentions to purchase or consume alcohol are inconsistent, and there is insufficient evidence to determine the impact on alcohol consumption.

For alcohol container labels with health messages, standard drink information and low-risk drink limits, results from a small number of studies indicate that they:

- Improve consumer knowledge of the label information;
- Are supported by the public; and
- Have mixed effects on intentions to purchase or consume alcohol and on alcohol consumption.



Enhanced alcohol container labels are one way to provide critical information to support Canadians who drink alcohol to make informed and healthier decisions about their alcohol consumption. Please see the [full systematic review](#) for additional details.



References

- Almiron-Roig, E., Palla, L., Guest, K., Ricchiuti, C., Vint, N., Jebb, S. A., & Drewnowski, A. (2013). Factors that determine energy compensation: A systematic review of preload studies. *Nutrition Reviews*, 71(7), 458–473. <https://doi.org/10.1111/nure.12048>
- Beer Institute. (2020). Introducing the brewers' voluntary disclosure initiative. <https://www.beerinstitute.org/beer-policy/regulatory/voluntary-disclosure/>
- Butler, L., Poti, J. M., & Popkin, B. M. (2016). Trends in energy intake from alcoholic beverages among US adults by sociodemographic characteristics, 1989–2012. *Journal of the Academy of Nutrition and Dietetics*, 116(7), P1087–1100.e6. <https://doi.org/10.1016/j.jand.2016.03.008>
- Butt, P., Beirness, D., Gliksman, L., Paradis, C., & Stockwell, T. (2011). *Alcohol and health in Canada: A summary of evidence and guidelines for low-risk drinking*. Ottawa, Ont.: Canadian Centre on Substance Use and Addiction. <https://www.ccsa.ca/alcohol-and-health-canada-summary-evidence-and-guidelines-low-risk-drinking>
- Canadian Food Inspection Agency. (2020). *Labelling requirements for alcoholic beverages*. <https://www.inspection.gc.ca/food-label-requirements/labelling/industry/alcohol/eng/1392909001375/1392909133296>
- Canadian Free Trade Agreement. (2020). Alcohol laws in Canada. <https://alcohollaws.ca/governments/>
- Canadian Substance Use Costs and Harms Scientific Working Group. (2020). *Canadian substance use costs and harms 2015-2017*. Ottawa, Ont.: Canadian Centre on Substance Use and Addiction. <https://csuch.ca/publications/CSUCH-Canadian-Substance-Use-Costs-Harms-Report-2020-en.pdf>
- Cummings, J. R., Gearhardt, A. N., Ray, L. A., Choi, A. K., & Tomiyama, A. J. (2020). Experimental and observational studies on alcohol use and dietary intake: A systematic review. *Obesity Reviews*, 21(2), Article e12950. <https://doi.org/10.1111/obr.12950>
- Department of Justice. (2021). *Tobacco products labelling regulations (cigarettes and little cigars)*. <https://laws-lois.justice.gc.ca/eng/regulations/SOR-2011-177/index.html>
- Euromonitor International. (2021). *Voice of the industry: Alcoholic drinks*. <https://www.euromonitor.com/voice-of-the-industry-alcoholic-drinks/report>
- GBD 2016 Alcohol Collaborators. (2018). Alcohol use and burden for 195 countries and territories, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet*, 392(10152), 1015–1035. [https://doi.org/10.1016/S0140-6736\(18\)31310-2](https://doi.org/10.1016/S0140-6736(18)31310-2)
- Grunert, K. G., Hieke, S., & Juhl, H. J. (2018). Consumer wants and use of ingredient and nutrition information for alcoholic drinks: A cross-cultural study in six EU countries. *Food Quality and Preference*, 63, 107–118. <https://doi.org/10.1016/J.FOODQUAL.2017.08.005>



- Health Canada. (2019a). *Canada's dietary guidelines*. <https://food-guide.canada.ca/sites/default/files/artifact-pdf/CDG-EN-2018.pdf>
- Health Canada. (2019b). *Packaging and labelling guide for cannabis products: Requirements under the Cannabis Act and the Cannabis Regulations*. <https://www.canada.ca/en/health-canada/services/cannabis-regulations-licensed-producers/packaging-labelling-guide-cannabis-products/guide.html>
- Jané-Llopis, E., Kokole, D., Neufeld, M., Hasan, O. S. M., & Rehm, J. (2020). *What is the current alcohol labelling practice in the WHO European region and what are barriers and facilitators to development and implementation of alcohol labelling policy?* Copenhagen: WHO Regional Office for Europe. <https://www.euro.who.int/en/health-topics/disease-prevention/alcohol-use/publications/2020/what-is-the-current-alcohol-labelling-practice-in-the-who-european-region-and-what-are-barriers-and-facilitators-to-development-and-implementation-of-alcohol-labelling-policy-2020>
- Kirkpatrick, S. I., Raffoul, A., Lee, K. M., & Jones, A. C. (2019). Top dietary sources of energy, sodium, sugars, and saturated fats among Canadians: Insights from the 2015 Canadian Community Health Survey. *Applied Physiology, Nutrition, and Metabolism*, 44(6), 650–658. <https://doi.org/10.1139/apnm-2018-0532>
- Kwok, A., Dordevic, A. L., Paton, G., Page, M. J., & Truby, H. (2019). Effect of alcohol consumption on food energy intake: A systematic review and meta-analysis. *British Journal of Nutrition*, 121(5), 481–495. <https://doi.org/10.1017/S0007114518003677>
- Manthey, J., Shield, K. D., Rylett, M., Hasan, O., Probst, C., & Rehm, J. (2019). Global alcohol exposure between 1990 and 2017 and forecasts until 2030: a modelling study. *Lancet*, 393(10190), 2493–2502. [https://doi.org/10.1016/S0140-6736\(18\)32744-2](https://doi.org/10.1016/S0140-6736(18)32744-2)
- Martin-Moreno, J. M., Harris, M. E., Breda, J., Moller, L., Alfonso-Sanchez, J. L., & Gorgojo, L. (2013). Enhanced labelling on alcoholic drinks: Reviewing the evidence to guide alcohol policy. *European Journal of Public Health*, 23(6), 1082–1087. <https://doi.org/10.1093/eurpub/ckt046>
- Ministry of Health. (2020). *Eating and activity guidelines for New Zealand adults: Updated 2020*. <https://www.health.govt.nz/system/files/documents/publications/eating-activity-guidelines-new-zealand-adults-updated-2020-jul21.pdf>
- National Health and Medical Research Council. (2013). *Australian dietary guidelines*. <http://www.nhmrc.gov.au/guidelines-publications/n55>
- O'Brien, P., Stockwell, T., Vallance, K., & Room, R. (2021). WHO should not support alcohol industry co-regulation of public health labelling. *Addiction*, 116(7), 1619–1621. <https://doi.org/10.1111/add.15462>
- Petticrew, M., Douglas, N., Knai, C., Maani Hessari, N., Durand, M. A., Eastmure, E., & Mays, N. (2017). Provision of information to consumers about the calorie content of alcoholic drinks: Did the Responsibility Deal pledge by alcohol retailers and producers increase the availability of calorie information? *Public Health*, 149, 159–166. <https://doi.org/10.1016/j.puhe.2017.04.020>



- Petticrew, M., Maani Hessari, N., Knai, C., & Weiderpass, E. (2018a). How alcohol industry organisations mislead the public about alcohol and cancer. *Drug and Alcohol Review*, 37(3), 293–303. <https://doi.org/10.1111/dar.12596>
- Petticrew, M., Maani Hessari, N., Knai, C., & Weiderpass, E. (2018b). The strategies of alcohol industry SAPROs: Inaccurate information, misleading language and the use of confounders to downplay and misrepresent the risk of cancer. *Drug and Alcohol Review*, 37(3), 313–315. <https://doi.org/10.1111/dar.12677>
- Shelton, N. J., & Knott, C. S. (2014). Association between alcohol calorie intake and overweight and obesity in English adults. *American Journal of Public Health*, 104(4), 629–631. <https://doi.org/10.2105/AJPH.2013.301643>
- Sherk, A., Naimi, T. S., Stockwell, T., & Hobin, E. (2019). Calorie intake from alcohol in Canada: Why new labelling requirements are necessary. *Canadian Journal of Dietetic Practice and Research*, 80(3), 111–115. <https://doi.org/10.3148/cjdpr-2018-046>
- Stockwell, T., Solomon, R., O'Brien, P., Vallance, K., & Hobin, E. (2020). Cancer warning labels on alcohol containers: A consumer's right to know, a government's responsibility to inform, and an industry's power to thwart. *Journal of Studies on Alcohol and Drugs*, 81(2), 284–292. <https://doi.org/10.15288/jsad.2020.81.284>
- Weerasinghe, A., Schoueri-Mychasiw, N., Vallance, K., Stockwell, T., Hammond, D., McGavock, J., ... Hobin, E. (2020). Improving knowledge that alcohol can cause cancer is associated with consumer support for alcohol policies: Findings from a real-world alcohol labelling study. *International Journal of Environmental Research and Public Health*, 17(2), Article 398. <https://doi.org/10.3390/ijerph17020398>
- World Health Organization. (2018). *Global status report on alcohol and health 2018*. <https://apps.who.int/iris/bitstream/handle/10665/274603/9789241565639-eng.pdf>
- Yeomans, M. R. (2010). Alcohol, appetite and energy balance: Is alcohol intake a risk factor for obesity? *Physiology & Behavior*, 100(1), 82–89. <https://doi.org/10.1016/j.physbeh.2010.01.012>

