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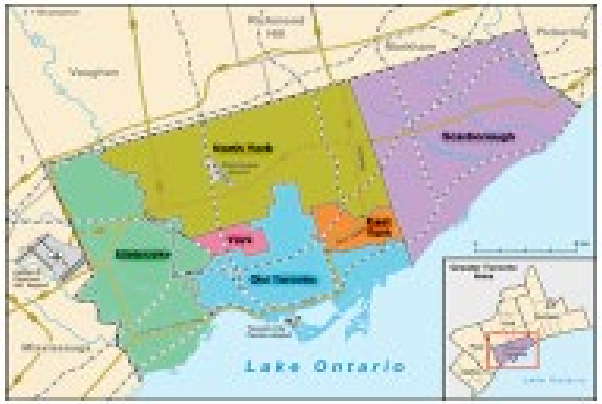
https://www.youtube.com/watch?v=dqL0MzWvFdQ

Please scroll down this file to view a copy of the slides from the session.

Land Acknowledgment

We acknowledge the land we are meeting on is the traditional territory of many nations including the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee and the Wendat peoples and is now home to many diverse First Nations, Inuit and Métis peoples. We also acknowledge that Toronto is covered by Treaty 13 of the Mississaugas of the Credit.



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Canada

The Impact of Alcohol Labelling on Behaviour, Knowledge, and Support: A Systematic Review

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PHO Rounds Series: Alcohol Risk and Policy

January 30	Inequities in alcohol use and harm
February 22	Canadian Alcohol Policy Evaluation (CAPE) 3.0 - Ontario Results
February 27	Epidemiology and outcomes of alcohol-associated liver disease in adolescents and young adults
April 23	Impacts of alcohol container labels - a systematic review
May 14	Minimum legal drinking age – an underrated alcohol control policy

Conflicts of Interest to Declare

- Erin was a scientific expert panel member for Canada's Guidance on Alcohol and Health released in January 2023 and Ontario's CMOH 2023 report, is an expert member of the WHO Technical Advisory Group for alcohol labelling, and has received CIHR project grant funding to study the effects of alcohol labels on various alcohol-related outcomes.
- Alex has no COI to declare.

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Learning Objectives

By the end of this event, participants will be able to:

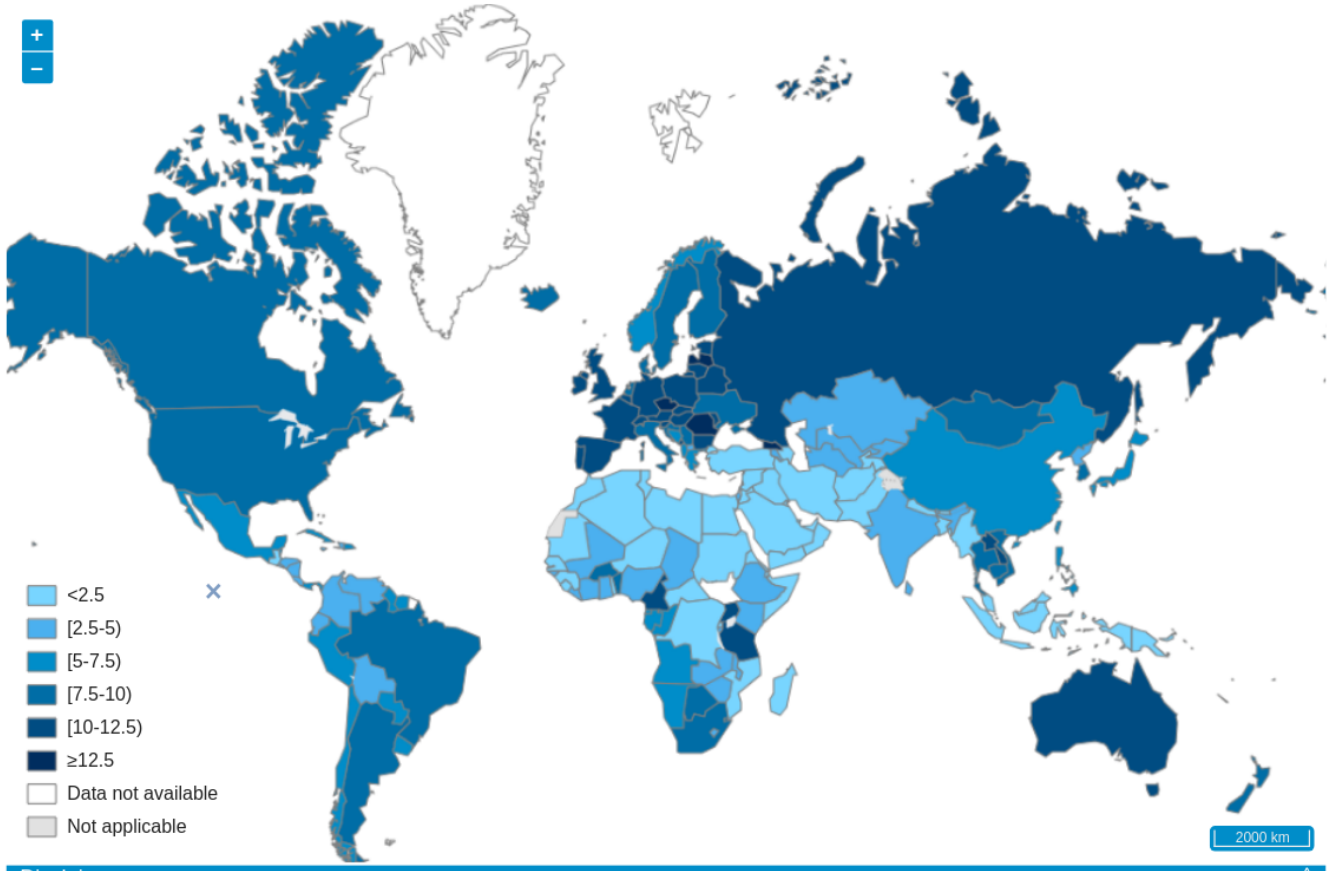
1. Understand the state of evidence investigating the impacts of alcohol container labels on alcohol use behaviour, knowledge of label message(s), and support for alcohol labelling
2. Identify limitations and gaps in the evidence requiring further research
3. Be aware of alcohol container label policies, practices, and opportunities in Canada and internationally

Introduction: Canadian Context

Do people in Canada consume more alcohol than other countries?

Adults (15+) in Canada consumed 9.9L of pure alcohol per capita in 2019 – 4L more than the world average of 5.5L

Canada ranked 40th out of 194 WHO member states

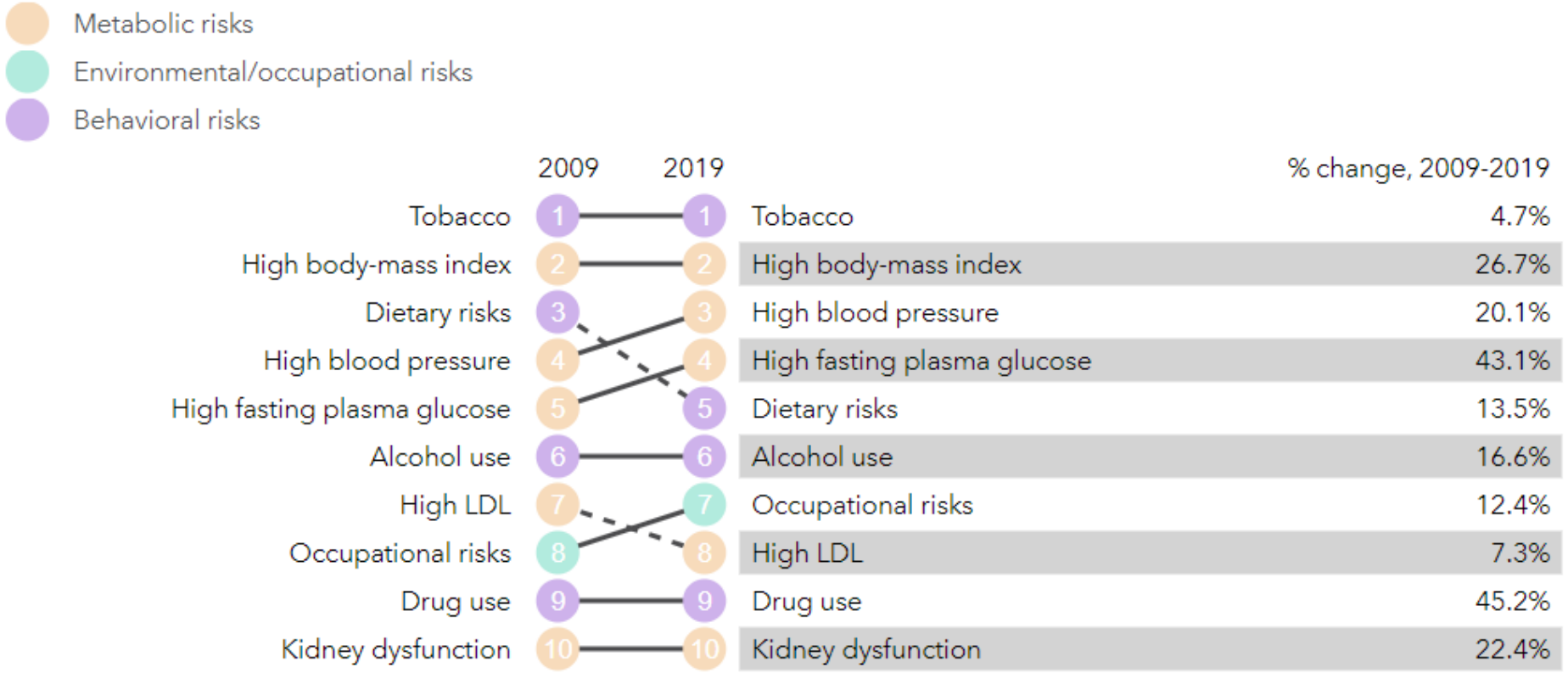


World Health Statistics: https://www.who.int/data/gho/data/indicators/indicator-details/GHO/total-(recorded-unrecorded)-alcohol-per-capita-(15-)-consumption

Introduction: Canadian Context

Global Burden of Disease: Canada

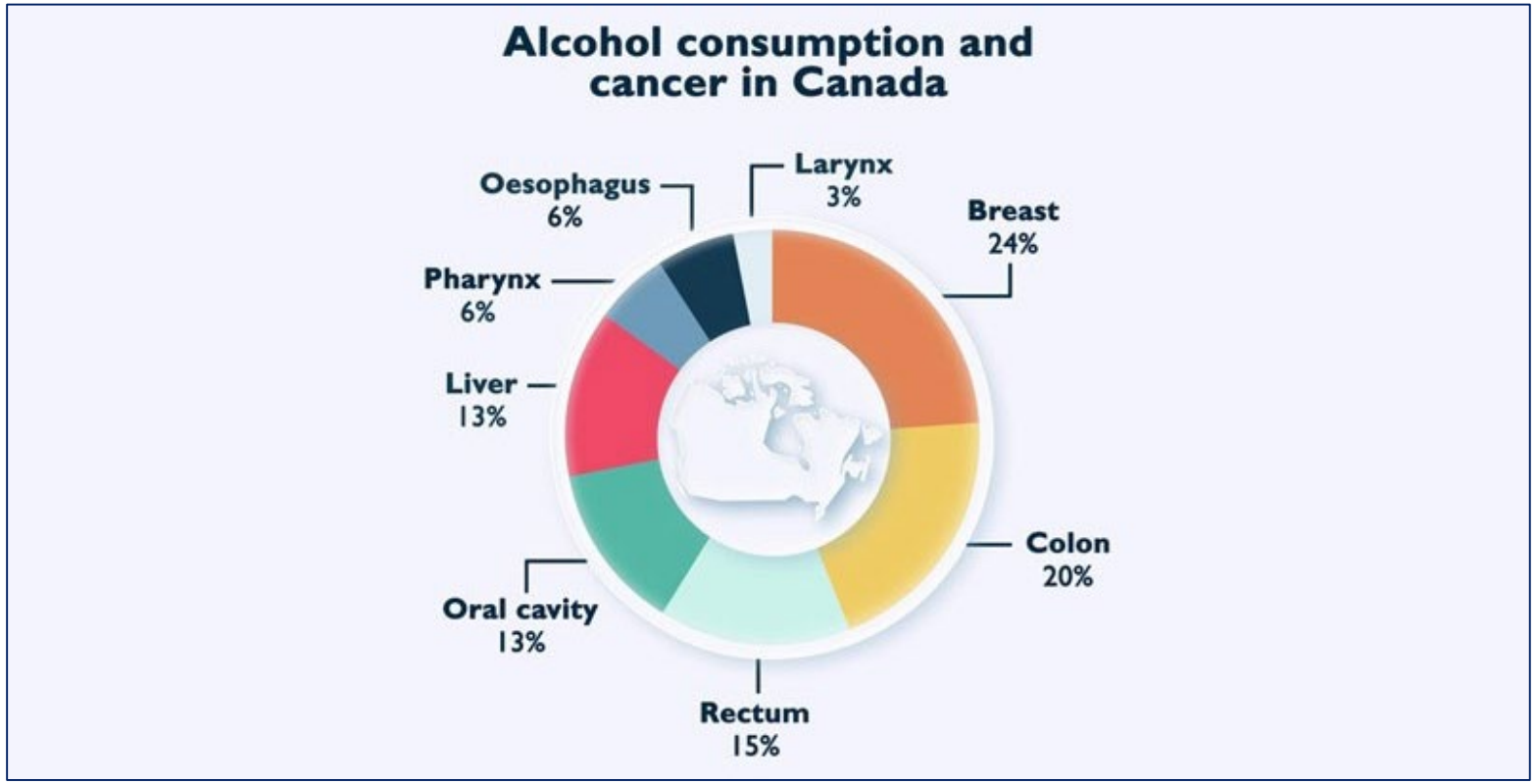
What risk factors drive the most death and disability combined?



Institute for Health Metrics and Evaluation – Canada: https://www.healthdata.org/canada

Introduction: Canadian Context

7000 new cancer cases attributable to alcohol in Canada in 2020

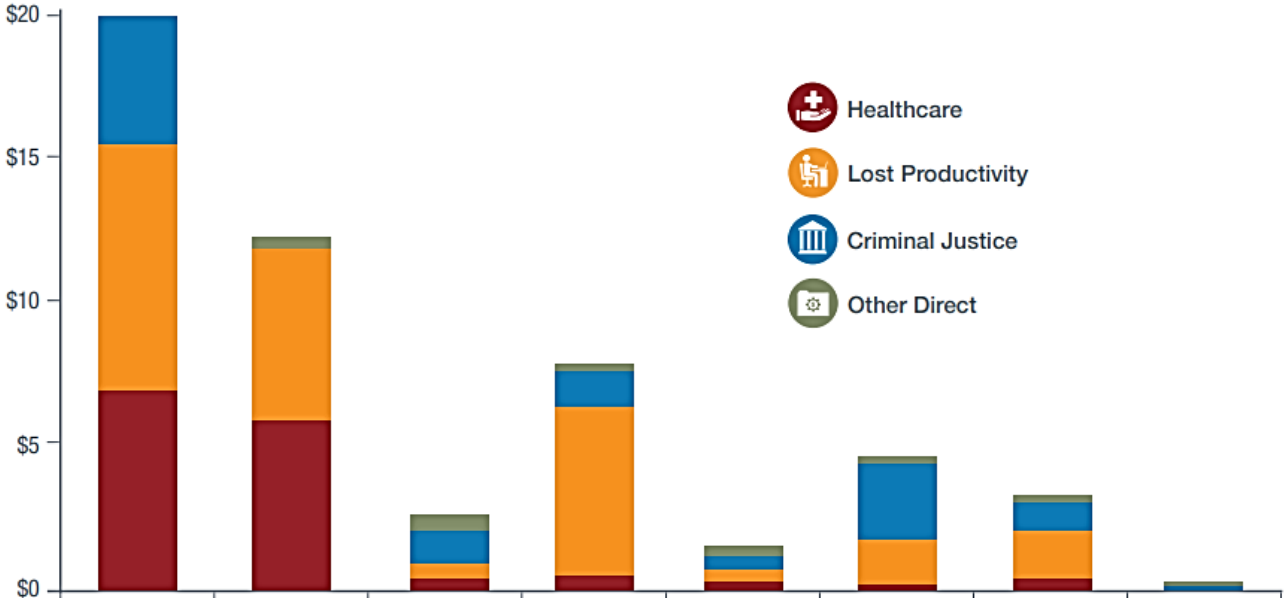


Rumgay et al. (2021). Global burden of cancer in 2020 attributable to alcohol consumption: a population-based study. Lancet Oncology 22(8):P1071-1080. Reported in supplementary materials available at: https://www.thelancet.com/cms/10.1016/S1470-2045(21)00279-5/attachment/f8f564ed-5b9b-4e60-974a-f71b4884888b/mmc1.pdf
Infographic available at: https://www.camh.ca/en/camh-news-and-stories/new-who-study-links-moderate-alcohol-use--with-higher-cancer-risk

Introduction: Canadian Context

Societal Costs of Alcohol in Canada (2020)

Figure 1. Costs (in billions) and percentage of total costs attributable to substance use in Canada by substance and cost type, 2020



Variable	Alcohol	Tobacco	Cannabis	Opioids	Other CNS depressants	Cocaine	Other CNS stimulants	Other substances
Cost (billions)	$19.7	$11.2	$2.4	$7.1	$1.4	$4.2	$3.0	$0.2
Percentage of total	40.1%	22.7%	4.9%	14.4%	2.8%	8.5%	6.2%	0.5%

Note: These estimates do not include costs associated with in-patient hospitalizations, day surgeries, emergency department visits or paramedic services in Quebec, nor costs associated with lost productivity due to premature deaths in Yukon.

Canadian Substance Use Costs and Harms Scientific Working Group. (2023). Canadian substance use costs and harms (2007–2020). (Prepared by the Canadian Institute for Substance Use Research and the Canadian Centre on Substance Use and Addiction.) Ottawa, Ont.: Canadian Centre on Substance Use and Addiction. https://csuch.ca/documents/reports/english/Canadian-Substance-Use-Costs-and-Harms-Report-2023-en.pdf

Introduction: Canadian Context

Awareness of Alcohol-Related Health Risks

Study participants who were aware that alcohol can cause:

Online survey in May 2014 with 2000 adult alcohol consumers in Ontario

Public Health Ontario. https://www.publichealthontario.ca/en/eRepository/Alcohol_Infographics_Health-Risks-and-Labels.pdf

National survey with 5000 adult alcohol consumers in March/April 2023:

- **29%** aware that **"alcohol causes at least 7 different types of cancer"**
- **50%** reported this information makes them **think about drinking less**

Unpublished data. Online survey in March/April 2023 with 5000 adults across 10 provinces who consumed ≥1 alcoholic beverage in past 30 days.

Introduction: Canadian Context

Alcohol information environment dominated by alcohol industry

Molson CANADIAN.

NHL

OFFICIAL BEER OF THE NHL®

Introduction: Alcohol Container Labels (ACL)

Why are labels an option to consider?

Labels are unique in that consumers are exposed to key health information and advice repeatedly at critical points of contact:

- Point-of-purchase
- Point-of-consumption/pour

Labels are appealing because of their low cost to regulators, unparalleled reach among consumers, and higher exposure among high volume consumers

Greenfield, T. (1997). Warning labels: Evidence of harm reduction from long-term American surveys. In M. Plant, E. Single, & T. Stockwell (Eds.), Alcohol: Minimizing the harm (pp. 105–125). London, England: Free Association Books.

Introduction: Alcohol Container Labels (ACL)

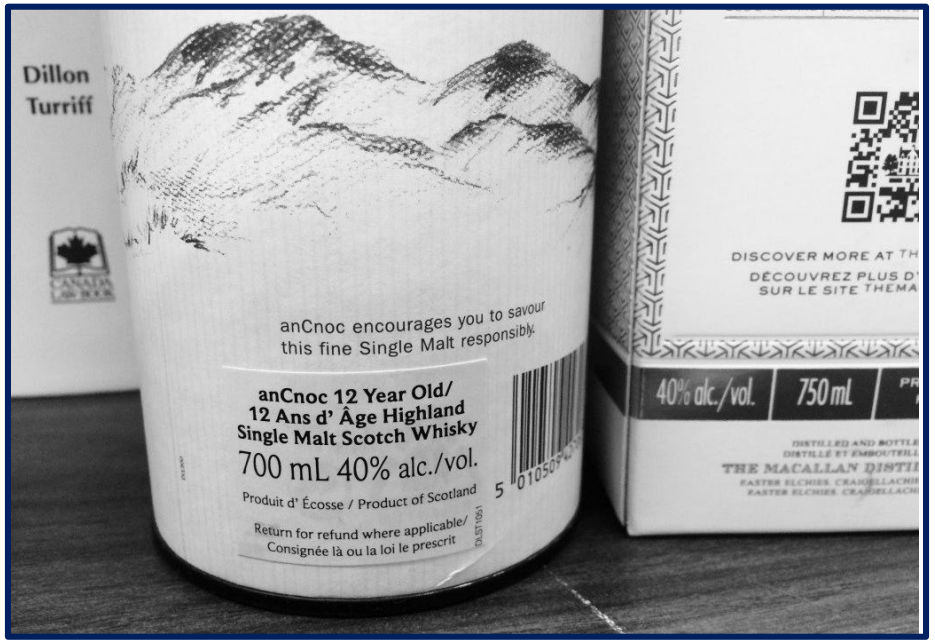
Canada is a world leader in well-designed health warning labels for tobacco and cannabis

Hammond, D. (2011) Health warning messages on tobacco products: a review. Tob Control. 20(5):327-37; Massey et al. (2024) A systematic review of cannabis health warning research. Preventive Medicine Reports. https://doi.org/10.1016/j.pmedr.2023.102573

Introduction: Alcohol Container Labels (ACL)

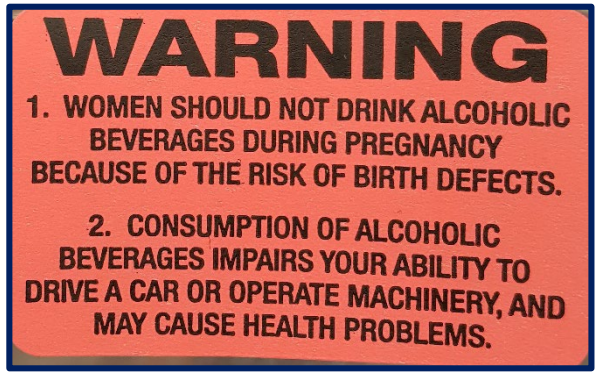
Alcohol Labelling Requirements in Canada

Alcohol containing ≥1.1% alcohol by volume must show alcohol by volume declaration on the principal display panel of the container



Warning Label in Yukon

Warning Label in Northwest Territories

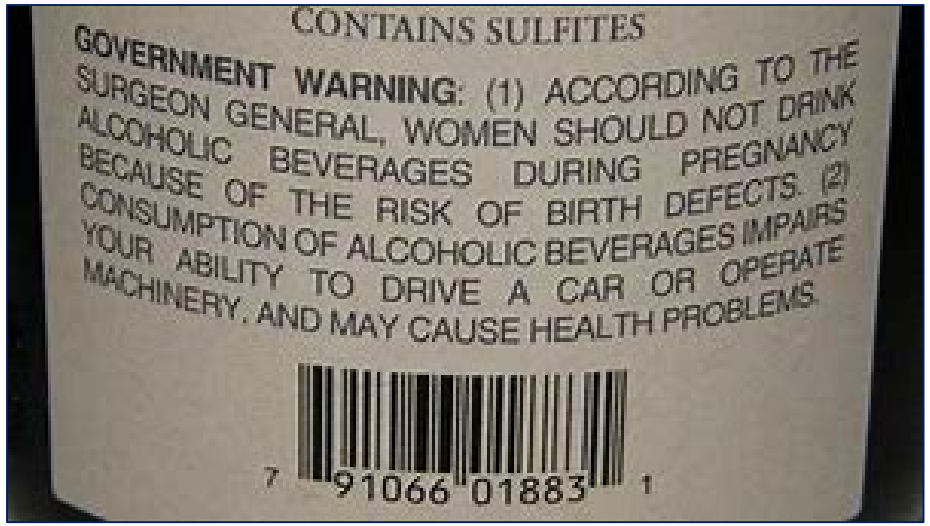


https://inspection.canada.ca/food-label-requirements/labelling/industry/labelling-requirements-for-alcoholic-beverages/eng/1392909001375/1392909133296?chap=6

Introduction: Alcohol Container Labels (ACL)

Alcohol Labelling Requirements in the USA

- Mandated federally in 1988
- Limited regulations in terms of label design
- Only mandated label to be evaluated in real-world experiments



Greenfield, T. (1997). Warning labels: Evidence of harm reduction from long-term American surveys. In M. Plant, E. Single, & T. Stockwell (Eds.), Alcohol: Minimizing the harm (pp. 105–125). London, England: Free Association Books; US Treasury Department Alcohol Tax and Trade Bureau: https://www.ttb.gov/labeling-wine/wine-labeling-health-warning-statement

Introduction: Alcohol Container Labels (ACL)

Ireland: legislation implemented mandating enhanced alcohol labels (applies from May 2026)

XX grams XX kJ/ XX kcal	DRINKING ALCOHOL CAUSES LIVER DISEASE
	THERE IS A DIRECT LINK BETWEEN ALCOHOL AND FATAL CANCERS
	Visit askaboutalcohol.ie

Ireland Public Health (Alcohol) Act - https://data.oireachtas.ie/ie/oireachtas/act/2018/24/eng/enacted/a2418.pdf

Introduction: Alcohol Container Labels (ACL)

The New York Times

Should Alcoholic Beverages Have Cancer Warning Labels?

Ireland will require them starting in 2026, and there are nascent efforts elsewhere to add more explicit labeling about the health risks of drinking.

New York Times, April 9, 2024. https://www.nytimes.com/2024/04/09/health/alcohol-cancer-warning.html; Globe & Mail, May 2018. https://www.theglobeandmail.com/canada/article-alcohol-industry-officials-lobbied-yukon-to-halt-warning-label-study/; Drinks Ireland. https://www.ibec.ie/drinksireland/news-insights-and-events/news/2023/05/16/strong-international-opposition-to-irelands-alcohol-labelling-proposals

Introduction: Previous Syntheses

Six previous evidence reviews…

Systematic (n=3), Rapid (n=2), Scoping (n=1)

…but with serious limitations

- One applied GRADE; but only two ACL studies
- Other five did <u>not</u>:
  - Define comparison/control
  - Use comprehensive search
  - Analyse subgroups

Impact of health warning labels on selection and consumption of food and alcohol products: systematic review with meta-analysis

Natasha Clarke [a], Emily Pechey [a], Daina Kosīte[a], Laura M. König [b], Eleni Mantzari [a], Anna K.M. Blackwell [c], Theresa M. Marteau [a] and Gareth J. Hollands [a]

Article

Nature and Potential Impact of Alcohol Health Warning Labels: A Scoping Review

Daša Kokole [1,*], Peter Anderson [1,2] and Eva Jané-Llopis [1,3,4]

Review

Alcohol Health Warning Labels: A Rapid Review with Action Recommendations

Norman Giesbrecht [1,2,*], Emilene Reisdorfer [3] and Isabelle Rios [4]

A systematic review on the impact of alcohol warning labels

Kayla M. Joyce, MSc[a,b], Myles Davidson, BA[c], Eden Manly[d], Sherry H. Stewart, PhD[a,e] and Mohammed Al-Hamdani, PhD[f]

The effectiveness of alcohol label information for increasing knowledge and awareness: a rapid evidence review

Charlotte E. R. Edmunds[1,7*], Natalie Gold[1,3,4], Robyn Burton[1,2], Maria Smolar[1], Matthew Walmsley[1], Clive Henn[1], Mark Egan[5], Anh Tran[1], Hugo Harper[5], Max Kroner Dale[5], Helen Brown[5], Kristina Londakova[5], Nick Sheron[1,6] and Felix Greaves[1,8]

A systematic review of the efficacy of alcohol warning labels

Insights from qualitative and quantitative research in the new millennium

Louise M. Hassan and Edward Shiu

Clarke N, Pechey E, Kosīte D, et al. Impact of health warning labels on selection and consumption of food and alcohol products: systematic review with meta-analysis. Health Psychol Rev 2020; : 1–24.
Kokole D, Anderson P, Jané-Llopis E. Nature and Potential Impact of Alcohol Health Warning Labels: A Scoping Review. Nutrients 2021; 13: 3065.
Giesbrecht N, Reisdorfer E, Rios I. Alcohol Health Warning Labels: A Rapid Review with Action Recommendations. Int J Environ Res Public Health 2022; 19: 11676.
Joyce KM, Davidson M, Manly E, Stewart SH, Al-Hamdani M. A systematic review on the impact of alcohol warning labels. J Addict Dis 2023; : 1–24.
Edmunds CER, Gold N, Burton R, et al. The effectiveness of alcohol label information for increasing knowledge and awareness: a rapid evidence review. BMC Public Health 2023; 23: 1458.
Hassan LM, Shiu E. A systematic review of the efficacy of alcohol warning labels: Insights from qualitative and quantitative research in the new millennium. J Soc Mark 2018; 8: 333–52.

Introduction: Objective and PICO

SR Objective

To establish the effect of three types of alcohol container labelling on (alcohol use-related) behaviour, knowledge of label message(s), and support for alcohol labelling.

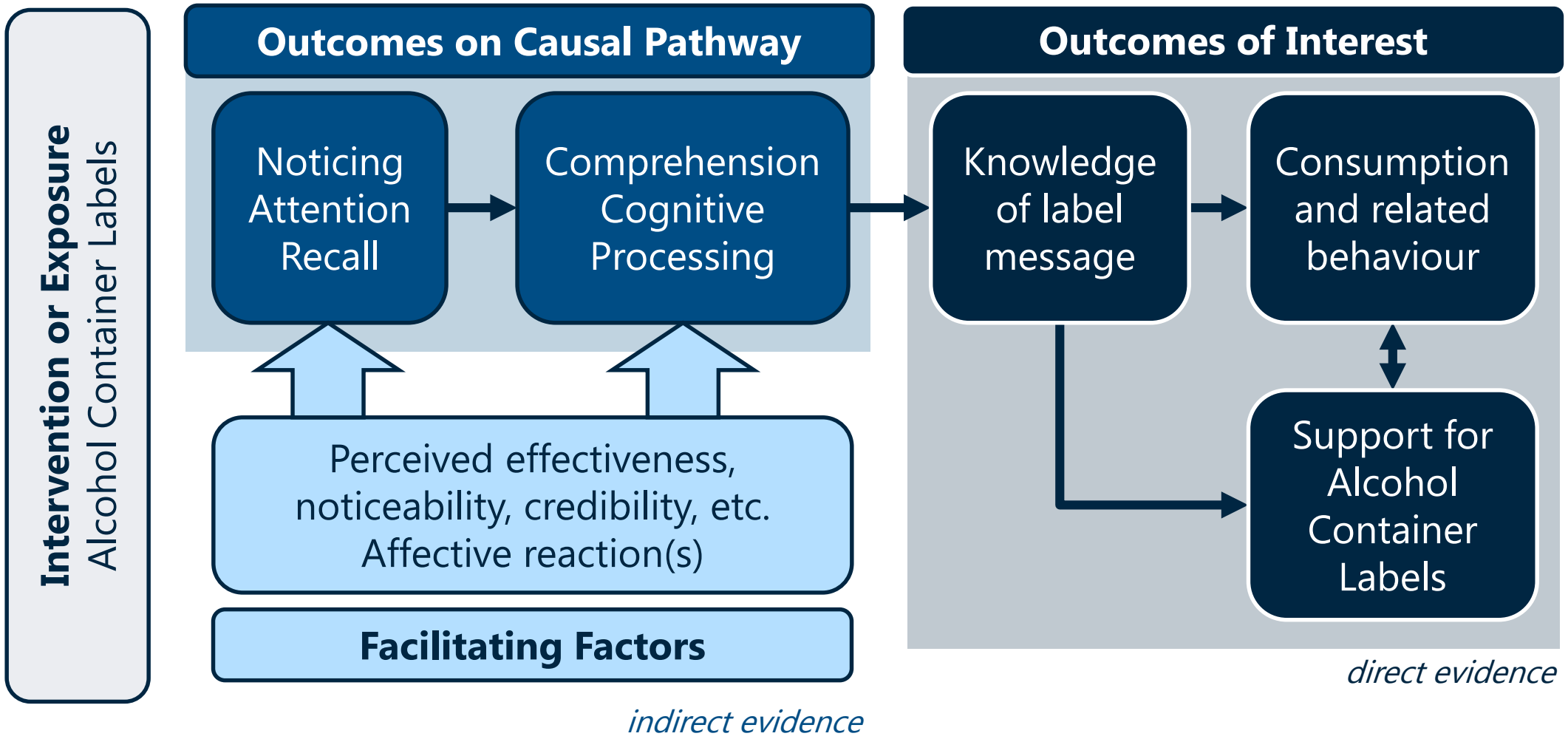
PICO

Population	Intervention/Exposure	Control	Outcomes
All (regardless of alcohol use)	Health Warning Labels (HWL) Standard Drink Labels (SDL) Drink Guideline Labels (LRDGL) Mixed Labels of the above (ML)	No labels *or* Existing labels *(not required for support)*	**Behaviour** (consumption or consumption-related) **Knowledge** (of label message) **Support** (for label in question)

Methods

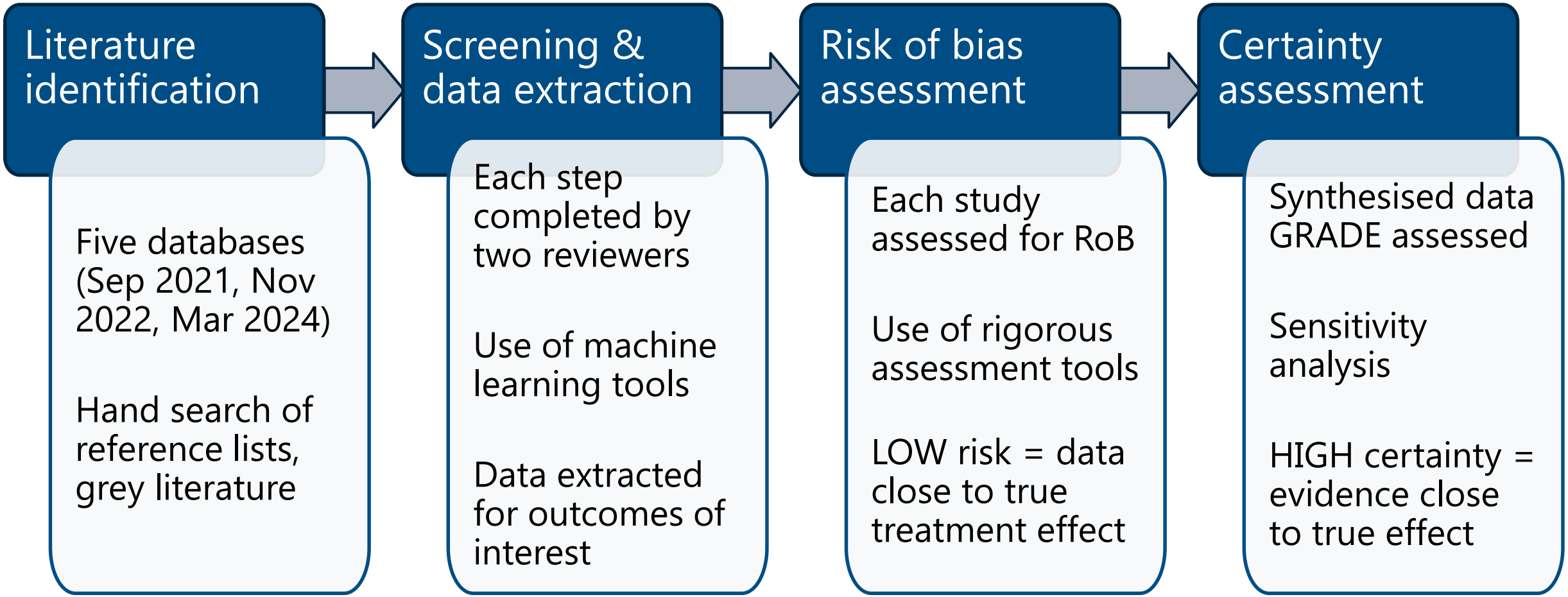
Methods

Outcome Selection



Methods

Best Practice Approach Following International Standards



GRADE: Grading of Recommendations, Assessment, Development, and Evaluations

Results

Results Overview

1. **Evidence availability**

2. **Experimental data**
   - Impact statements for controlled data by label type
   - Assessed for certainty in the evidence with GRADE

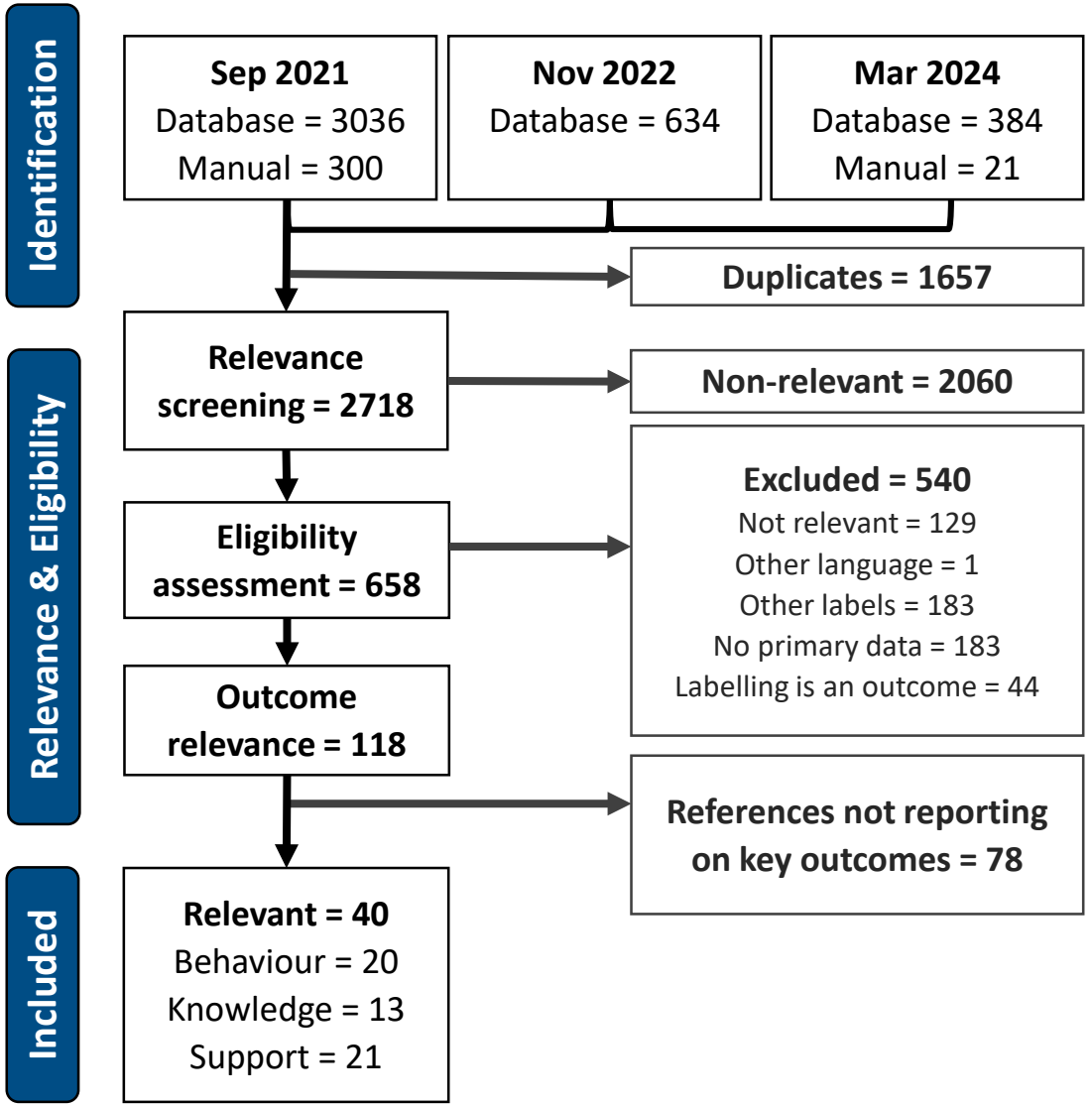
3. **Subgroup data: Alcohol Use, Health Literacy/Education**
   - Narrative summary by label type
   - Not assessed with GRADE

Results: Available Evidence

Study Selection

- Substantial heterogeneity
- Poorly-designed RCTs
- Overall limited evidence base

Language(s)	Label type	Countries
English (40)	HWL (29) SDL (10) LRDGL (3) Mixed (8)	Australia (4) Canada (13) France (3) UK (9) USA (14) Other/Multiple (3)



Results: Health Warning Label Variation

GOVERNMENT WARNING: (1) According to the Surgeon General, women should not drink alcoholic beverages during pregnancy because of the risk of birth defects. (2) Consumption of alcoholic beverages impairs your ability to drive a car or operate machinery, and may cause health problems.

WARNING

Any amount of alcohol may harm your unborn baby

CHIEF MEDICAL OFFICER OF HEALTH ADVISES
MISE EN GARDE DU MÉDECIN HYGIÉNISTE EN CHEF

Alcohol can cause cancer

including breast and colon cancers

L'alcool peut causer le cancer

y compris le cancer du sein et du côlon

INFO: WWW.YLC.YK.CA/LABELS
HELP/AIDE: 1-855-667-5777

To reduce health risks, drink no more than:

2 **standard drinks a day.** **Plan two or more non-drinking days each week.** 3

Pour réduire les risques pour la santé, ne pas boire plus de :

2 **verres standards par jour.** **Prévoir deux jours ou plus sans alcool par semaine.** 3

INFO: WWW.YLC.YK.CA/LABELS
HELP/AIDE: 1-855-667-5777

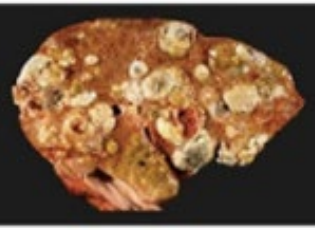
How many standard drinks? Combien de verres standards?

750 ml 12% ALC = 5

750 ml 15% ALC = 7

INFO: YLC.YK.CA/LABELS
HELP/AIDE: 1-866-456-3838

Alcohol causes liver cancer



GOVERNMENT WARNING: Carbonated Alcohol is Absorbed Faster than Noncarbonated Alcohol. Within 2 Minutes Alcohol is Absorbed by the Stomach and Carried by the Blood to the Brain. You can be Poisoned and Die If You Drink Alcohol Too Fast.

WARNING
DRINKING ALCOHOL DURING PREGNANCY CAN CAUSE BIRTH DEFECTS

AVERTISSEMENT
LA CONSOMMATION D'ALCOOL DURANT LA GROSSESSE PEUT PROVOQUER DES ANOMALIES CHEZ LE FŒTUS

Results: GRADE

Effect size	Health Warning Labels (HWL)	Certainty
Moderate to Large	**HWL** likely result in little to no difference in **general consumption**. (n=10942; 1 RCT, 1 RCS)	High ⊕⊕⊕⊕
Small	**HWL** may have little effect on **consumption frequency**, but the evidence is very uncertain. (n=36878; 3 RCS)	Moderate ⊕⊕⊕◯
	HWL may reduce **consumption quantity** or reduce it slightly. (n=12101; 1 RCT, 2 RCS)	
Little to None	**HWL** may result in a large decrease in **consumption rate**. (n=45; 1 RCT)	Low ⊕⊕◯◯
	HWL may slightly reduce **consumption during pregnancy**. (n=21117; 1 TS)	
Uncertain	**HWL** likely result in little difference in outcome in **alcohol-impaired driving**. (n=9187; 1 RCS)	Very Low ⊕◯◯◯

RCT … randomized controlled trial, RCS … repeat cross-sectional, TS … time series

Results: GRADE

Effect size	Health Warning Labels (HWL)	Certainty
Moderate to Large	**HWL** slightly increase the frequency of **limiting consumption before driving**. (n=9187; 1 RCS)	High ⊕⊕⊕⊕
Small	**HWL** result in a moderate to large reduction in **selecting the container** bearing the label. (n=6188; 2 RCT)	Moderate ⊕⊕⊕◯
Little to None	**HWL** may result in little to no difference in the number of **standard drinks purchased**. (n=608; 1 RCT)	Low ⊕⊕◯◯
	HWL may result in no to a large increase in **health risk knowledge**. (n=21642; 1 QE, 2 RCS, 3 RCT)	
Uncertain	**HWL** likely result in little difference in **support** for such labels. (n=188; 1 RCT)	Very Low ⊕◯◯◯

RCT … randomized controlled trial, RCS … repeat cross-sectional, QE … quasi-experimental

Results: GRADE

Effect size	Standard Drink Labels (SDL)	Certainty
Moderate to Large	**SDL** likely result in little difference in **selection of beverages with higher alcohol content**. (n=1884; 1 RCT)	High ⊕⊕⊕⊕
Small	**SDL** may result in little difference to a small increase in **support** for such labels. (n=4583; 1 QE, 1 RCS, 1 RCT)	Moderate ⊕⊕⊕◯
Little to None		Low ⊕⊕◯◯
Uncertain		Very Low ⊕◯◯◯

RCT … randomized controlled trial, RCS … repeat cross-sectional, QE … quasi-experimental

Results: GRADE

Effect size	Low Risk Drinking Guidance Labels (LRDGL)	Certainty
Moderate to Large	**LRDGL** likely result in little difference in **knowledge of limits** (n=2049; 1 QE)	High ⊕⊕⊕⊕
Small	**LRDGL** may increase **support** for such labels, but the evidence is very uncertain. (n=2049; 1 QE)	Moderate ⊕⊕⊕◯
Little to None		Low ⊕⊕◯◯
Uncertain		Very Low ⊕◯◯◯

QE … quasi-experimental

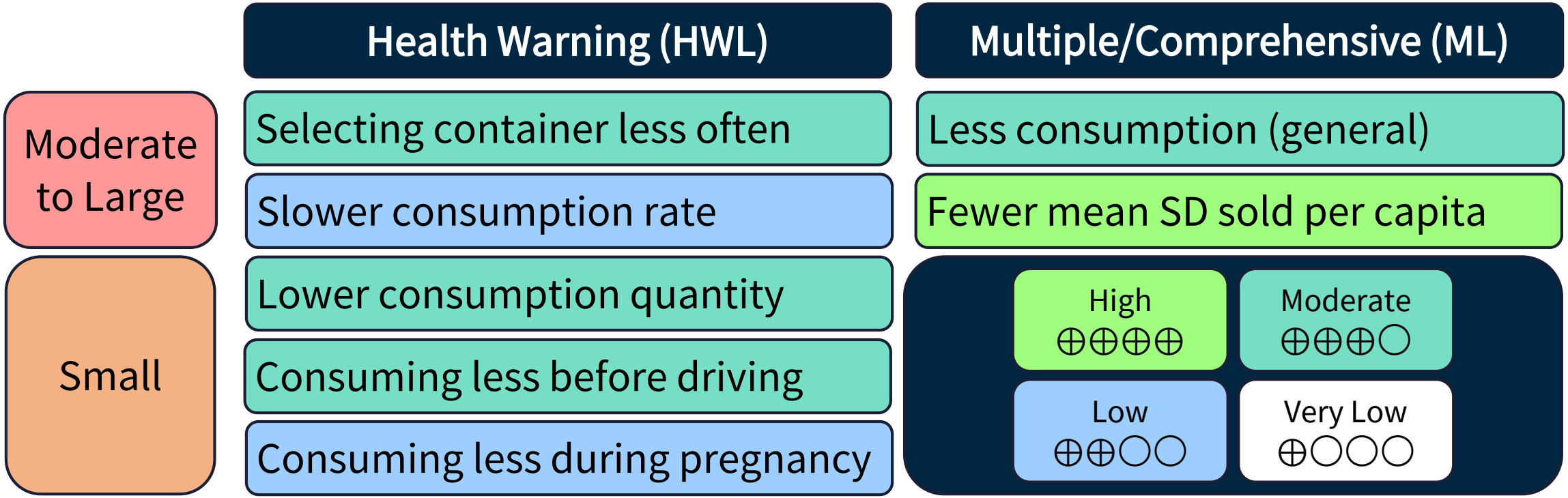
Results: GRADE

Effect size	Labels with Multiple or Comprehensive Messages (ML)	Certainty
Moderate to Large	**ML** likely result in a large reduction in **general consumption**. (n=2049; 1 QE)	High ⨁⨁⨁⨁
Small	**ML** result in a large reduction in **mean SD sold per capita** (n=n/a; 1 QE)	Moderate ⨁⨁⨁◯
Little to None		Low ⨁⨁◯◯
Uncertain		Very Low ⨁◯◯◯

QE … quasi-experimental

Results: GRADE Summary

- Most impact statements at low / very low certainty
- Six outcomes suggested effects of HWL, one of LRDGL, two of ML
- Sensitivity analysis did not affect outcomes suggesting effects



Results: Subgroup Analysis – Drinking Status

Effect size	Participants who consume (more)	RoB
Moderate to Large	The effect of **HWL** on **reducing alcohol consumption** may be **smaller** in participants consuming more (n=14043; 2 RCS)	All Studies Low
	The effect of **HWL** on **increasing knowledge of driving risks** may be **larger** in participants who consume alcohol (n=1337; 1 RCS)	
Small	The effect of **HWL** on **increasing knowledge of alcohol health risks** may be **similar** regardless of alcohol use status (n=8243; 1 CS, 1 RCS)	1+ Study Moderate
Null or Mixed	**Support for HWL** may be **similar or lower** in participants who use alcohol (n=13263; 3 CS)	1+ Study High
	Support for HWL may be **lower** in participants who binge alcohol (n=13263; 3 CS)	

CS … Cross-sectional, RCS … repeat cross-sectional, RoB … Risk of Bias

Results: Subgroup Analysis – Drinking Status

Effect size	Participants who consume (more)	RoB
Moderate to large	**Support for SDL** may be **lower** in participants who use alcohol (n=9977; 2 CS)	All Studies Low
	Support for SDL may be **lower** in participants who binge alcohol (n=650; 1 CS)	
	Support for LRDGL may be **lower** in participants who use alcohol (n=9812; 1 CS)	
Small	The effect of **ML** on **reducing alcohol consumption** may be **similar** in participants consuming more (n=290; 1 QE)	1+ Study Moderate
Null or Mixed		1+ Study High

CS … Cross-sectional, QE … quasi-experimental, RCS … repeat cross-sectional, RoB … Risk of Bias

Results: Subgroup Analysis – Health Literacy

Effect size	Participants with low health literacy	RoB
Moderate to Large	The effect of **HWL** on **reducing alcohol consumption** may be **similar or larger** in participants with low literacy (n=1400; 1 CS)	All Studies Low
	The effect of **HWL** on **increasing knowledge of pregnancy risks** may be **similar** in participants with low literacy (n=404; 1 CS)	
Small	**Support for HWL** may be **lower** in participants with low literacy (n=6609; 2 CS)	1+ Study Moderate
	Support for SDL may be **lower** in participants with low literacy (n=9812; 1 CS)	
Null or Mixed	**Support for LRDGL** may be **lower** in participants with low literacy (n=9812; 1 CS)	1+ Study High
	The effect of **ML** on **reducing alcohol consumption** may be **larger** in participants with low literacy (n=682; 1 QE)	

CS … Cross-sectional, QE … quasi-experimental, RCS … repeat cross-sectional, RoB … Risk of Bias

Results: Subgroup Analysis Summary

Participants who consume (more)…

…may be less likely to reduce consumption (HWL)

…may be less likely to support labelling (HWL, SDL, LRDGL)

Participants with low(er) health literacy…

…may be more likely to reduce consumption (ML)

…may be less likely to support labelling (HWL, SDL, LRDGL)

Discussion

Discussion

Key Messages

Evidence on alcohol labelling is limited and heterogeneous regarding impact on behaviour, knowledge, and support outcomes

Health warning labels may effect certain consumption behaviours (reducing consumption during pregnancy, slowing consumption rate and quantity consumed per occasion, reducing alcoholic drink selection, and limiting consumption prior to driving)

Labels with health warning, alcohol guidance, standard drink information likely result in substantial reductions in individual-level alcohol consumption and per capita ethanol sold

Discussion

Limitations of Systematic Review

- Heterogeneity of the evidence = synthesis may obscure key differences
- Label design differences may have substantial impact
- Lack of evidence for non-HWL, direct health outcomes
- Limited real-world evidence may limit applicability of results

GOVERNMENT WARNING: (1) According to the Surgeon General, women should not drink alcoholic beverages during pregnancy because of the risk of birth defects. (2) Consumption of alcoholic beverages impairs your ability to drive a car or operate machinery, and may cause health problems.

Discussion

Public Health Implications

- Opportunity to strengthen ACLs in Canada
- Results align with recommendations requiring ACLs with health warnings, alcohol guidance, and standard drink information (e.g., Guidance on Alcohol and Health, 2023 Ontario CMOH Report, Senator Brazeau's Bill-254)
- Public support for ACLs is generally high
- Other factors to consider
  - Importance of ACL design (format, message content)
  - Potential for subgroup differences
  - Awareness of alcohol-cancer link & support for other alcohol control policies [Weerasinghe…Hobin (2020) https://www.mdpi.com/1660-4601/17/2/398]

Canada's Guidance on Alcohol and Health (p.48)

"mandatory labelling of all alcoholic beverages with the **number of standard drinks** in a container."

"…mandatory labelling of all alcoholic beverages with **health warnings and Canada's Guidance on Alcohol and Health**"

Paradis, C., Butt, P., Shield, K., Poole, N., Wells, S., Naimi, T., Sherk, A., & the Low-Risk Alcohol Drinking Guidelines Scientific Expert Panels. (2023). Canada's Guidance on Alcohol and Health: Final Report. Ottawa, Ont.: Canadian Centre on Substance Use and Addiction - https://www.ccsa.ca/sites/default/files/2023-01/CCSA_Canadas_Guidance_on_Alcohol_and_Health_Final_Report_en.pdf; Parliament of Canada, Senate - https://www.parl.ca/legisinfo/en/bill/44-1/s-254

Ontario Chief Medical Officer of Health Report – Balancing Act. https://www.ontario.ca/files/2024-04/moh-cmoh-annual-report-2023-en-2024-04-02.pdf, page 58..

Discussion

Research Gaps

What is the optimal ACL design and message combination?

Establish if standard drink information and alcohol guidance is retained after or between exposure to labels, and how these labels influence alcohol use behaviours

How does repeated exposure to ACLs influence label impacts?

RCTs (usually gold standard) not feasible at population-level; must be adjusted in ways that reduce their relevance (e.g., single exposure to label, virtual exposure)

Can results of real-world long-term ACL interventions be replicated?

Most studies focus on short-term label-related outcomes (noticing, recall, perceived effectiveness, etc.)

Additional evidence on the relationships between ACLs and alcohol use behaviours and health outcomes could facilitate policy development efforts

Do ACLs have differential effects on population subgroups?

(e.g., by gender, age, alcohol use level, health literacy)

Questions