

Canada's Low-Risk Alcohol Drinking Guidelines

Communicating Alcohol-Related Health Risks

This resource was developed to assist healthcare providers in discussing with their clients the risks of several serious illnesses associated with various levels of alcohol consumption.

Tables 1, 2 and 3 below—taken from the technical, scientific report¹ that provided the basis for *Canada's Low-Risk Alcohol Drinking Guidelines*²—show changes in the risk for a selected number of serious alcohol-related illnesses based on how many drinks a person consumes on average per day. These estimates were based on an analysis of a comprehensive database of scientific studies commissioned as an internal document by the Centre for Addiction and Mental Health.³

Table 1 summarizes the risks for 12 serious illnesses, including seven types of cancer, which apply equally for both men and women under 70 years of age. Of note from this table:

- Drinking just one drink per day increases, by up to 42%, a person's risk of getting any one of the nine listed conditions identified in yellow. For these nine conditions, a person's risk rises as the number of drinks consumed per day increases.
- Tuberculosis was the only condition for which there was no significant change in risk until a particular 'threshold' drinking level (namely, at three or more drinks per day).
- A person is 14–19% less likely to get ischemic heart disease when drinking up to 3–4 drinks per day, with zero risk at 5–6 drinks per day and increased risk with greater consumption.

Table 1. Percentage changes in risks for males and females of premature death from 12 alcohol-related illnesses according to typical daily alcohol intake

Type of Illness or Disease	Proportion of All Deaths, 2002–2005	Percentage Increase/Decrease in Risk				
		1 Drink	2 Drinks	3–4 Drinks	5–6 Drinks	+ 6 Drinks
Tuberculosis	1 in 2,500	0	0	+194	+194	+194
Oral cavity & pharynx cancer	1 in 200	+42	+96	+197	+368	+697
Oral esophagus cancer	1 in 150	+20	+43	+87	+164	+367
Colon cancer	1 in 40	+3	+5	+9	+15	+26
Rectum cancer	1 in 200	+5	+10	+18	+30	+53
Liver cancer	1 in 200	+10	+21	+38	+60	+99
Larynx cancer	1 in 500	+21	+47	+95	+181	+399
Ischemic heart disease	1 in 13	-19	-19	-14	0	+31
Epilepsy	1 in 1,000	+19	+41	+81	+152	+353
Dysrhythmias	1 in 250	+8	+17	+32	+54	+102
Pancreatitis	1 in 750	+3	+12	+41	+133	+851
Low birth weight	1 in 1,000	0	+29	+84	+207	+685

Tables 2 and 3 present separate risk estimates for males and females for conditions where these are significantly different. Of note from the estimates in these tables:

- At the lower levels of alcohol consumption, women experience greater benefits for some conditions such as stroke and diabetes (in green). However, with increasing alcohol intake, women's risk for these conditions increases more rapidly than that of men.
- At even one drink per day on average, a woman's risk of getting liver cirrhosis increases by 139% compared with 26% for males.
- The risk levels from drinking for all the listed illnesses are also significant for persons 70 years of age or older, with similar patterns of protection and increased risk.

Table 2. Percentage changes in risks for men of premature death from five alcohol-related illnesses according to typical daily alcohol intake

Type of Illness or Disease	Proportion of All Deaths, 2002–2005	Percentage Increase/Decrease in Risk				
		1 Drink	2 Drinks	3–4 Drinks	5–6 Drinks	+ 6 Drinks
Hemorrhagic stroke (morbidity)	-	+11	+23	+44	+78	+156
Hemorrhagic stroke (mortality)	1 in 30	+10	+21	+39	+68	+133
Ischemic stroke (morbidity)	-	-13	0	0	+25	+63
Ischemic stroke (mortality)	1 in 80	-13	0	+8	+29	+70
Diabetes mellitus	1 in 30	-12	0	0	0	+72
Hypertension	1 in 150	+13	+28	+54	+97	+203
Liver cirrhosis (morbidity)*	-	0*	0*	+33	+109	+242
Liver cirrhosis (mortality)	1 in 90	+26	+59	+124	+254	+691

* **Note:** Rehm and colleagues (2010)⁴ estimate reduced risk of liver cirrhosis morbidity at these levels of consumption (at one or two drinks per day). Given that there is no known biological reason for such a result, the relative risk has been artificially put at zero.

Table 3. Percentage changes in risks for women of premature death from five alcohol-related illnesses according to typical daily alcohol intake

Type of Illness or Disease	Proportion of All Deaths, 2002–2005*	Percentage Increase/Decrease in Risk				
		1 Drink	2 Drinks	3–4 Drinks	5–6 Drinks	+ 6 Drinks
Breast cancer	1 in 45	+13	+27	+52	+93	+193
Hemorrhagic stroke (morbidity)	-	-29	0	0	+78	+249
Hemorrhagic stroke (mortality)	1 in 20	+22	+49	+101	+199	+502
Ischemic stroke (morbidity)	-	-18	-13	0	+31	+121
Ischemic stroke (mortality)	1 in 65	-34	-25	0	+86	+497
Diabetes mellitus	1 in 30	-36	-40	0	+739	+1560
Hypertension	1 in 85	0	+48	+161	+417	+1414
Liver cirrhosis (morbidity)*	-	+21	+70	+125	+182	+260
Liver cirrhosis (mortality)	1 in 160	+139	+242	+408	+666	+1251

* **Note:** Each cause of death in the above tables is reported in the second column as a proportion of total deaths for four years from 2002–2005, using Statistics Canada data.

Other conditions caused by alcohol include:

- alcohol dependence syndrome (alcoholism)
- alcoholic psychosis
- nervous system degeneration due to alcohol
- alcoholic polyneuropathy, myopathy and cardiomyopathy
- alcoholic gastritis
- alcoholic liver diseases and hepatitis
- alcohol-induced pancreatitis
- fetal alcohol spectrum disorder
- alcohol toxicity and poisoning

Reference:

1. 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, ON: Canadian Centre on Substance Abuse. Available at: www.ccsa.ca/2011%20CCSA%20Documents/2011-Summary-of-Evidence-and-Guidelines-for-Low-Risk%20Drinking-en.pdf.
2. National Alcohol Strategy Advisory Committee. (2011). *Canada's low-risk alcohol drinking guidelines*. Ottawa, ON: Canadian Centre on Substance Abuse.
3. Rehm, J., Kehoe, T., Taylor, B., & Patra, J. (2009). *Evidence base for the development of Canadian drinking guidelines: Report prepared for the Low Risk Drinking Guidelines Expert Working Group by the Centre for Addiction and Mental Health, Ontario*. Ottawa, ON: Canadian Centre on Substance Abuse.
4. Rehm, J., Taylor, B., Mohapatra, S., Irving, H., Baliunas, D., Patra, J., & Roerecke, M. (2010). Alcohol as a risk factor for liver cirrhosis: A systematic review and meta-analysis. *Drug and Alcohol Review*, 29, 437–445.