

# Alcohol Use and Cancer in Canada

In Canada in 2010, an estimated 173,800 Canadians were diagnosed with cancer and 76,200 died from it. Alcohol use is among the top three leading risk factors for death from cancer worldwide.<sup>1</sup> Avoiding excessive alcohol consumption, as well as other key risk factors such as poor nutrition, obesity and physical inactivity, can prevent about one-third of all cancers.<sup>2</sup> This report provides health care professionals with an overview of alcohol consumption patterns in Canada and recommendations physicians can use to address risky alcohol use with their patients.

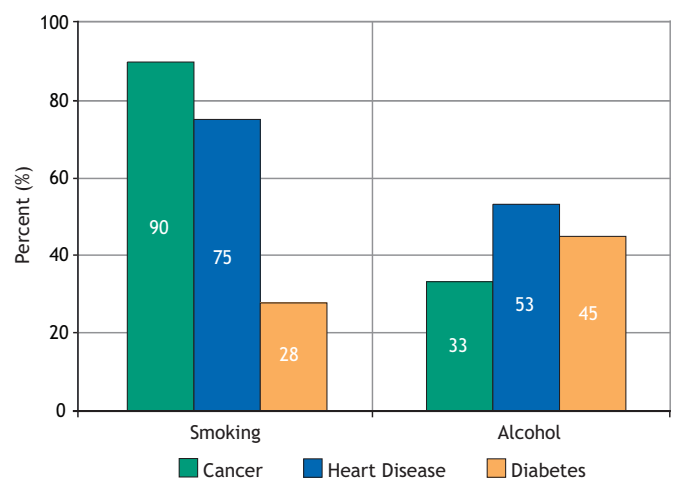
## Canadians are not aware that alcohol use can lead to cancer

Most Canadians are unaware that they can lower their cancer risk by limiting their consumption of alcohol. In a survey conducted in 2008† which asked Canadians about their awareness of risk factors for cancer, only 33% of Canadians thought drinking alcohol was linked to an increased risk of cancer (Figure 1). Canadians were somewhat more likely to see drinking alcohol as a risk factor for heart disease and diabetes, although percentages are still low (53% and 45% for heart disease and diabetes, respectively).

## There is convincing evidence that alcohol consumption causes cancer

Evidence linking alcohol consumption to cancer has become stronger since the mid-1990's, according to a recent review from the World Cancer Research Fund (WCRF), an international not-for-profit association committed to preventing cancer. The review by the WCRF found convincing evidence that alcohol increases the risk of cancer of the oesophagus, mouth, throat (pharynx and larynx), breast, as well as colorectal cancer in men. It also probably increases the risk of liver cancer in both sexes and colorectal cancer in women<sup>2</sup> (Table 1).

Figure 1: Percentage of Canadians reporting a definite link between risk factor and cancer, heart disease and diabetes, 2008.



Source: The Cancer Prevention - Attitudes, Awareness and Behaviours Survey

† The Cancer Prevention - Attitudes, Awareness and Behaviours Survey was conducted by Environics Research Group on behalf of the Canadian Partnership Against Cancer in 2008. The survey used random digit dialing methodology and results are based on questions asked to 3,307 residents of Canada aged 18 or older from August to September 2008. The margin of error is +/- 1.7 percentage points, 19 times in 20. Results are weighted using population data to ensure sample representativeness of the Canadian population.

**IN THIS ISSUE** • Canadians are generally unaware that drinking alcohol can elevate cancer risk • There is clear evidence that alcohol consumption increases the risk of a number of cancers • The percentage of Canadians exceeding low-risk drinking guidelines has increased over time • Physicians can help by delivering the message to their patients that drinking even a moderate amount of alcohol can increase cancer risk • Brief counseling interventions in primary care produce sustained reductions in alcohol consumption

Table 1: Alcoholic drinks and the risk of Cancer, WCRF<sup>2</sup>

Strength of evidence	Alcoholic drinks increase risk
<b>Convincing</b>	<ul style="list-style-type: none"> <li>• Mouth, pharynx and larynx</li> <li>• Oesophagus</li> <li>• Colorectum (men)</li> <li>• Breast (pre- and postmenopause)</li> </ul>
<b>Probable</b>	<ul style="list-style-type: none"> <li>• Liver</li> <li>• Colorectum (women)</li> </ul>
<b>Substantial effect on risk unlikely</b>	<ul style="list-style-type: none"> <li>• Kidney</li> </ul>

Figure 2: Percentage of adults exceeding low-risk drinking guidelines. Time trends by age group, Canada - 2000-01, 2003 and 2005†

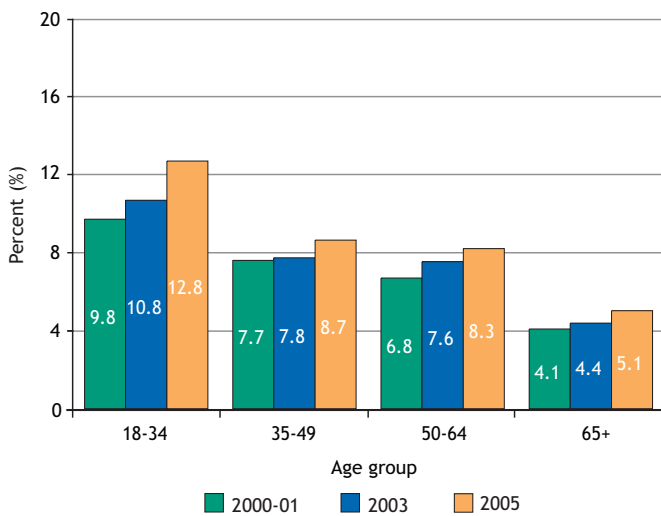
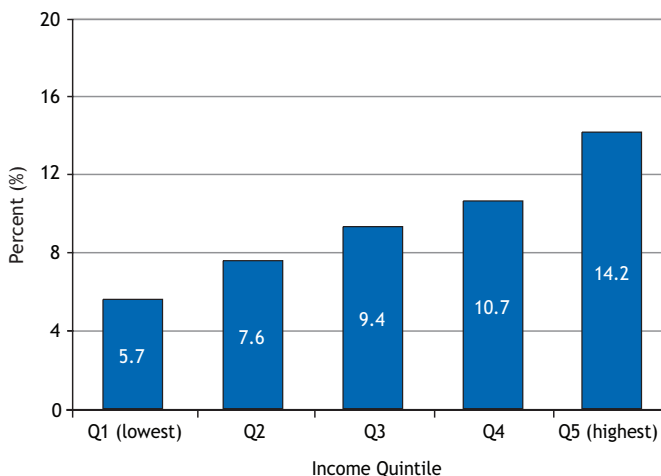


Figure 3: Percentage of adults exceeding low-risk drinking guidelines, by income quintile, Canada, 2005†



† Source: Canadian Community Health Survey

Research supports a dose-response relationship between alcohol consumption and cancer risk. That is, as alcohol intake increases, the risk of cancer also increases. For example, a review of 156 high-quality studies conducted by Corrao and colleagues<sup>3</sup> shows a clear dose-response relationship between daily alcohol consumption of 25, 50 and 100 g (approximately 2, 4 and 9 drinks, respectively) and the increased risk of cancer, particularly oral and pharyngeal, esophageal and laryngeal cancer.

### Concurrent alcohol and tobacco use

Concurrent tobacco use is common among alcohol drinkers and the combination of alcohol and tobacco use appear to have a synergistic effect on cancer risk.<sup>4-5</sup> For example, Castellsague and colleagues<sup>4</sup> found that while alcohol and tobacco alone were strongly related to the risk of esophageal cancer, a history of concurrent exposure to cigarette smoking and alcohol drinking yielded odds ratios as high as 51 for men and 35 for women in the highest consumption group compared to those who never smoked or drank.

### Is there a 'safe' level of alcohol consumption?

According to the WCRF, the current evidence does not identify a generally 'safe' level of alcohol consumption below which no increased risk of cancer is evident. In fact, the WCRF notes that, based solely on the evidence for cancer, alcohol should be avoided as even a small amount can increase cancer risk.<sup>2</sup> For example a meta-analysis conducted by Ellison and colleagues found that women averaging 12 g of alcohol per day, the equivalent of about one drink, had a 10% increased risk of breast cancer.<sup>6</sup> Recognizing the potential protective effect of modest alcohol consumption against coronary heart disease, the WCRF recommends that if alcohol is consumed, to limit consumption to no more than two drinks per day for men and no more than one drink per day for women.<sup>2</sup>

## More Canadians are exceeding low-risk drinking guidelines

The percentage of Canadians exceeding the low-risk drinking guidelines put forth by the WCRF has been steadily rising in Canada. In 2000-01, 7.6% of Canadians reported exceeding low-risk drinking guidelines and this increased to 9.2% in 2005, the most recent pan-Canadian data available for alcohol consumption. The rising trend is seen in all age groups; particularly younger Canadians aged 18 to 34 who also have the highest rates compared to all other age groups (Figure 2). The percentage of Canadians exceeding low-risk drinking guidelines increases sharply as income increases. Canadians in the highest income quintile are 2.5 times more likely to exceed low-risk drinking guidelines than Canadians in the lowest income quintile (Figure 3).

In 2005, the percentage of Canadians exceeding guidelines varied across provinces with a range of 7% in Prince Edward Island to 13% in the Yukon territory (Figure 4). Differences in the age structure across provinces may account for some of this variation.

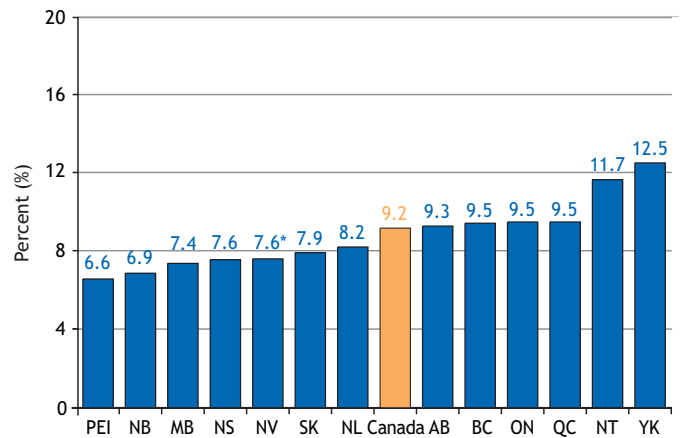
## Recommendations to address alcohol use in patients who exceed recommended levels

Both the Canadian Task Force on Preventive Health Care<sup>7</sup> and the U.S. Preventive Services Task Force<sup>8</sup> (USPSTF) encourage primary care physicians to screen patients for alcohol use that exceeds the recommended levels and offer brief interventions. The USPSTF recommendations were recently updated and can be viewed at [www.uspreventiveservicestaskforce.org/uspstf/uspdrin.htm](http://www.uspreventiveservicestaskforce.org/uspstf/uspdrin.htm) along with information on screening instruments and interventions. The USPSTF defines risky alcohol use as more than 7 drinks per week or more than 3 drinks per occasion for women and more than 14 drinks per week or more than 4 drinks per occasion for men.

Screening has been shown to be effective at identifying patients whose drinking patterns do not meet the criteria for alcohol dependence, but place them at risk for increased morbidity and mortality.<sup>8</sup> The Alcohol Use Disorders Identification Test (AUDIT)<sup>9</sup> is the most studied screening tool for detecting risky alcohol use in primary care and includes questions about consequences of drinking and drinking quantity and frequency. The 4-item CAGE<sup>10</sup> is widely used for detecting alcohol abuse or dependence but has been shown not to be an appropriate screening test for less severe forms of drinking.<sup>10</sup>

The recommendations encourage primary care physicians to offer brief behavioral counseling interventions to patients who consume alcohol levels above the

Figure 4: Percentage of adults aged 18+ exceeding low-risk drinking guidelines, by province and Canada, CCHS 2005



\*Use with caution (coefficient of variation between 16.6% and 33.3%)

Source: Canadian Community Health Survey

recommended amount. Effective interventions can be either office-based or referral and can be delivered by one or more members of the health care team, including physician and non-physician practitioners. Studies show that an initial counseling session of about 15 minutes, during which time physicians can provide patients with feedback and set goals, is effective in reducing alcohol consumption.<sup>8</sup> Multi-contact interventions, which includes an initial 15 minute counseling session plus follow-up contact, have been shown to reduce mean alcohol consumption by 3 to 9 drinks per week among risky or harmful drinkers (excluding dependent drinkers) and produce sustained (6 to 12 months or longer) reductions in alcohol consumption.<sup>8</sup>

USPSTF Guidelines recommend that physicians use the 5-As framework for screening and counseling interventions for patients who consume alcohol levels above the recommended amount:

- **Assess** alcohol consumption with a brief screening tool
- **Advise** patients to reduce alcohol consumption to moderate levels
- **Agree** on individual goals for reducing alcohol use or abstinence
- **Assist** patients with acquiring the motivation, skills, or supports needed
- **Arrange** follow-up support and repeated counseling

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## TAKE-HOME MESSAGES

There is convincing evidence that alcohol increases the risk of a number of cancers. Despite this, the majority of Canadians are unaware of the link between alcohol use and cancer. As the percentage of Canadians exceeding the low-risk drinking guidelines continues to rise, making Canadians aware of the role of alcohol in increasing cancer risk will be important. Primary care physicians can

help by delivering the message to their patients that drinking moderate amounts of alcohol can increase their risk of cancer. USPSTF recommendations encourage primary care physicians to screen patients for risky alcohol use and offer brief behavioral counseling interventions which have been shown to be effective at reducing alcohol consumption.

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