



Ontario

Cancer Care Ontario

Action Cancer Ontario



# Cancer Risk Factors in Ontario

Alcohol – exceeding cancer prevention recommendations for consumption

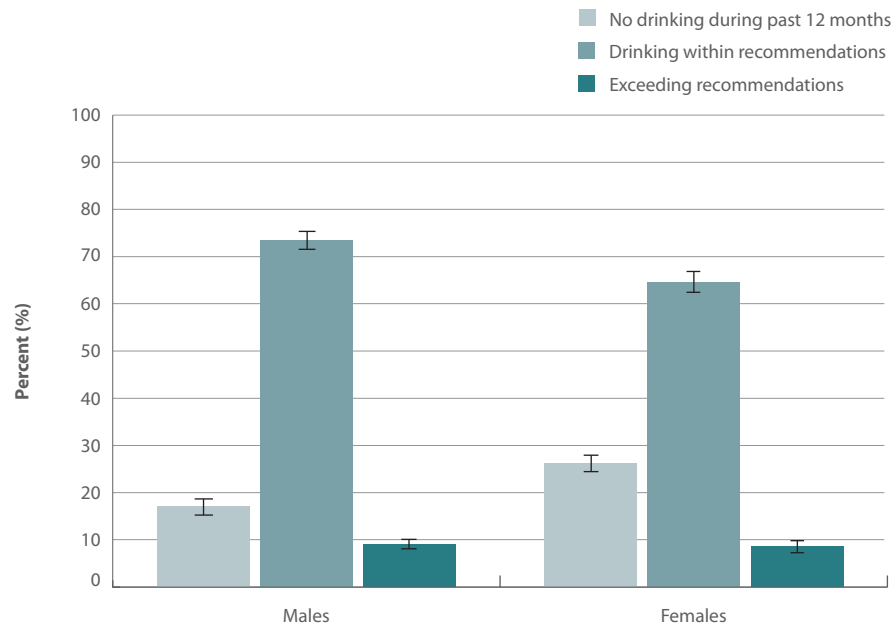


### 3. EXCEEDING CANCER PREVENTION RECOMMENDATIONS FOR ALCOHOL CONSUMPTION

#### 3.1 OVERVIEW: DRINKING WITHIN OR EXCEEDING RECOMMENDATIONS

FIGURE 2.

Alcohol consumption in relation to cancer prevention recommendations during past 12 months, Ontario adults (aged 19+), 2012



**Notes:** Estimates are age-standardized to the 2006 Canadian population.  
I represent 95% confidence intervals.

The alcohol consumption cancer prevention recommendations are no more than two drinks a day for men and one drink a day for women.

**Source:** Canadian Community Health Survey, 2012 (Statistics Canada)

- In 2012, 8.8% of Ontario adults aged 19 years and older reported drinking more alcohol, on average, than recommended for cancer prevention by the World Cancer Research Fund/American Institute for Cancer Research (i.e., no more than two drinks a day for men and one drink a day for women).<sup>1</sup> This represents nearly 1 million Ontario adults drinking in excess of the cancer prevention recommendations.
- A similar proportion of adult males (9.1%) and females (8.6%) reported drinking alcohol in excess of the recommendations (Figure 2).
- A significantly larger proportion of adult females (26.2%) than males (17.0%) reported drinking no alcohol during the past 12 months.
- The proportion consuming a level within the cancer prevention recommendations was significantly higher in males (73.4%) than females (64.6%).
- Because the proportion of adults drinking in excess of the cancer prevention recommendations is based on alcohol consumption reported for one week (see Appendix B),



its validity depends on how representative that week is of someone's typical consumption. It may be underestimated if people who normally drink in excess of the recommendations self-reported no alcohol consumption during the week before the survey interview. This may be balanced, however, by the inclusion of people who normally do not drink more than the recommendations but reported consuming more during that week.

### 3.2 TRENDS IN EXCEEDING RECOMMENDATIONS

**FIGURE 3.** Percentage of Ontario adults (aged 19+) exceeding cancer prevention recommendations for alcohol consumption, 2003–2012



**Notes:** Estimates are age-standardized to the 2006 Canadian population.  
**Source:** Canadian Community Health Survey, 2003, 2005, 2007–2012 (Statistics Canada)

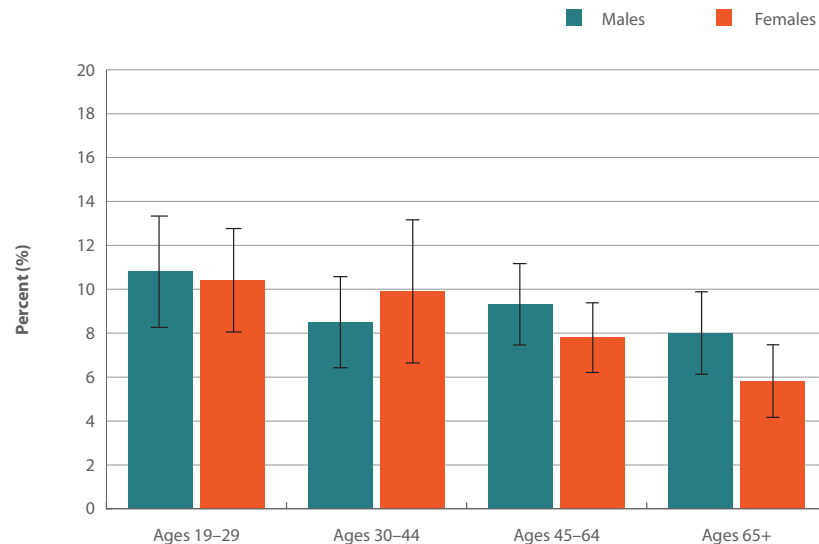


- Although the prevalence of drinking in excess of the World Cancer Research Fund/American Institute for Cancer Research cancer prevention recommendations (no more than two drinks a day for men and one drink a day for women)<sup>1</sup> was historically higher in adult males (aged 19+) than females in Ontario, the gap between the sexes has closed in recent years. Before 2007, the proportion of adults who reported drinking more alcohol than recommended was significantly higher among males than females; from 2007 to 2012, the difference was not statistically significant (Figure 3). The proportion of males who exceeded the cancer prevention recommendation remained stable between 2003 and 2012.
- The proportion of females who exceeded the cancer prevention recommendation appeared to increase between 2003 and 2012. While this is not statistically significant, it is important given that there is no established “safe” lower limit of consumption to prevent an increased risk of cancer.<sup>1</sup>

### 3.3 DIFFERENCES AMONG AGE GROUPS IN EXCEEDING RECOMMENDATIONS

**FIGURE 4.**

Percentage of Ontario adults (aged 19+) exceeding cancer prevention recommendations for alcohol consumption, by age group, 2012



**Notes:** I represent 95% confidence intervals.

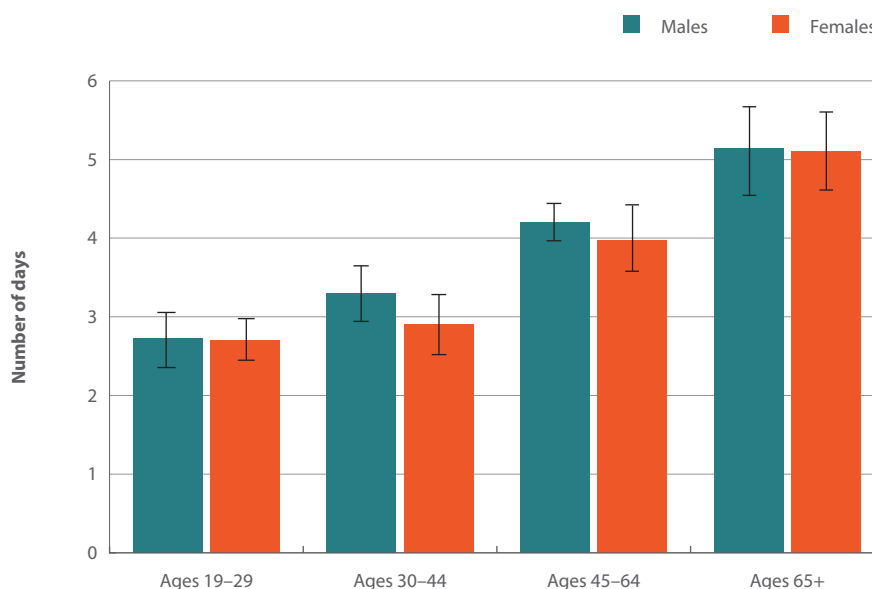
**Source:** Canadian Community Health Survey, 2012 (Statistics Canada)

- In 2012, the prevalence of exceeding the daily cancer prevention recommendations for alcohol consumption, averaged across one week, was highest among males in the 19–29 age group (10.8%) (Figure 4). Among females, prevalence was highest in the 19–29 (10.4%) and 30–44 (9.9%) age groups. Prevalence was lower at ages 65 and older (males 8.0%, females 5.8%) compared with adults aged 19–29, although this difference was statistically significant for females only.



- The prevalence of drinking in excess of the cancer prevention recommendations, particularly in the 19–29 age group, may actually be higher than reported here. College and university students living away from home, and especially in on-campus residences, may be under-represented in the Canadian Community Health Survey (CCHS); a US study showed alcohol consumption in this subgroup to be higher than among students living at home.<sup>35</sup>

**FIGURE 5.** Average number of days per week exceeding cancer prevention recommendations for alcohol consumption among Ontario adults (aged 19+) who exceed the recommendations on average, by age group, 2012



**Notes:** I represent 95% confidence intervals.  
**Source:** Canadian Community Health Survey, 2012 (Statistics Canada)

- Among Ontario adults who reported drinking more alcohol than recommended for cancer prevention in 2012, based on their average consumption during the past week, the average number of days per week in which they exceeded the recommendations was significantly higher in those aged 65 and older than those in younger age groups (average of 5.1 days for both males and females) (Figure 5).
- Ontarians aged 45–64 also drank more than recommended on significantly more days per week (average of 4.2 days for males and 4.0 days for females) than Ontarians aged 19–29 (average of 2.7 days for both males and females).
- While Figure 4 shows that younger adults had the highest prevalence of drinking in excess of the daily cancer prevention recommendations when consumption was averaged across



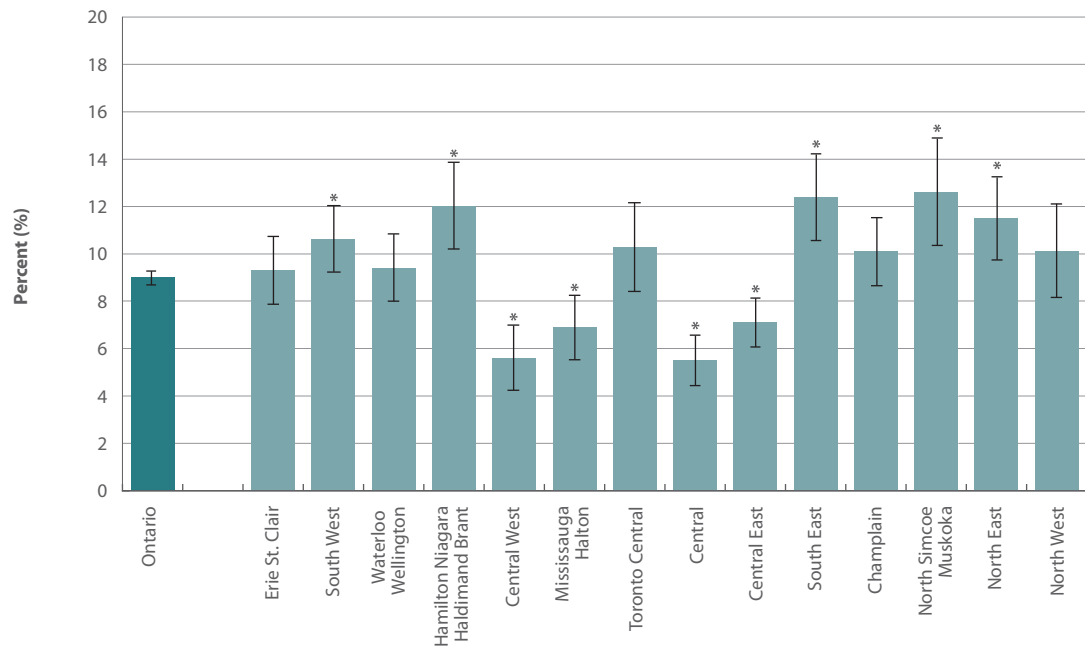
one week, Figure 5 shows that, among those exceeding the recommendations on average, older adults did so on the greatest number of days per week. This suggests that younger drinkers consume more alcohol per occasion than older drinkers, and older consumers drink more often than younger consumers. These figures do not indicate the amount of alcohol consumed on each drinking occasion. Binge drinking, often defined as consuming five or more drinks on a single occasion, is most prevalent among Ontarians aged 18–29.<sup>36</sup>

### 3.4 REGIONAL VARIATIONS IN EXCEEDING RECOMMENDATIONS

Compared to the other Canadian provinces and territories, Ontario had one of the highest proportions of adults who reported drinking more alcohol than recommended for cancer prevention. In 2005, the most recent year for which data covering all Canadian provinces and territories are available, the proportion of adults who reported exceeding the cancer prevention recommendations ranged from 7% in Prince Edward Island to 13% in the Yukon, with a national average of 9%.<sup>24</sup> Ontario was tied with Québec and British Columbia, with 9.5% of adults (aged 18+) reporting exceeding the cancer prevention recommendations. While the prevalence in the Northwest Territories (11.7%) and Yukon (12.5%) was higher than in Ontario, the difference was not statistically significant for the comparison between either territory and Ontario.



**FIGURE 6.**  
Percentage of Ontario adults (aged 19+) exceeding cancer prevention recommendations for alcohol consumption, by Local Health Integration Network, 2010–2012 combined



**Notes:** Estimates are age-standardized to the 2006 Canadian population.  
 I represent 95% confidence intervals.  
 Data from CCHS cycles 2010 through 2012 combined to increase sample size for analyses by Local Health Integration Network.  
 \*Estimate is significantly higher or lower than the Ontario estimate.

**Source:** Canadian Community Health Survey, 2010–2012 (Statistics Canada)

- Within Ontario there is significant regional variation in the prevalence of drinking in excess of the cancer prevention recommendations, with the lowest rates occurring in the Greater Toronto Area (except for the Toronto Central Local Health Integration Network) and the highest occurring in parts of central, eastern, southwestern and northern Ontario.
- The prevalence of drinking in excess of the cancer prevention recommendations among Ontario’s 14 Local Health Integration Networks (LHINs) ranged from a low of 5.5% in the Central LHIN to a high of 12.6% in the North Simcoe Muskoka LHIN (Figure 6; see Appendix D for map showing LHIN boundaries).
- Compared to the 2010–2012 combined provincial estimate of 9.0%, the age-adjusted prevalence of drinking in excess of the cancer prevention recommendations was significantly higher in the South West, Hamilton Niagara Haldimand Brant, South East, North Simcoe Muskoka and



North East LHINs, and significantly lower in the Central West, Mississauga Halton, Central and Central East LHINs.

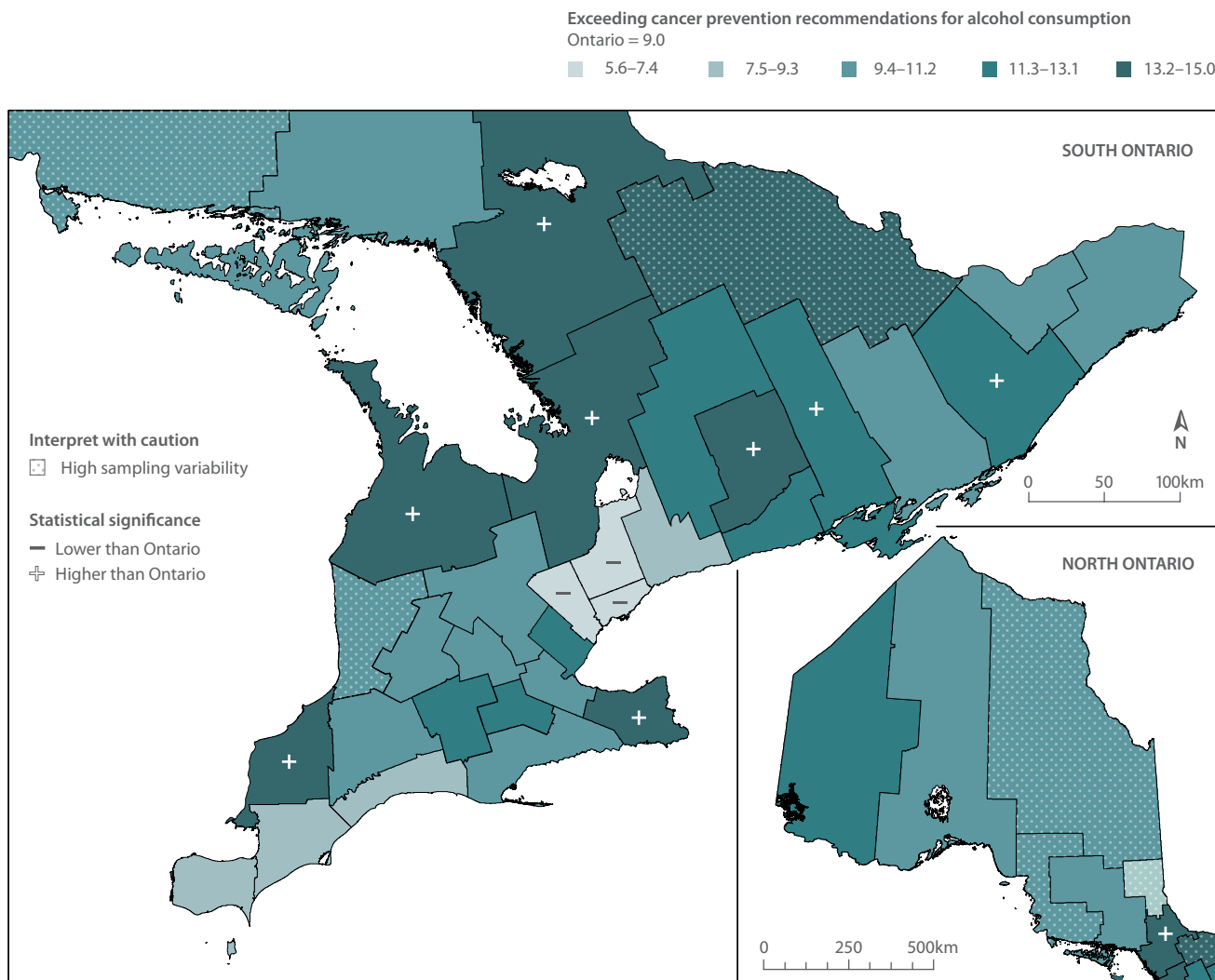
- The proportion of drinking in excess of the cancer prevention recommendations among Ontario's 36 public health units (PHUs) ranged from a low of 5.7% in the Peel PHU to a high of 15.0% in the Niagara Region PHU (Figure 7; see Appendix D for map showing PHU boundaries).
- Compared to the provincial estimate of 9.0%, the age-adjusted prevalence of drinking in excess of the cancer prevention recommendations was significantly higher in the Niagara Region, North Bay Parry Sound, Grey Bruce, Simcoe Muskoka, Peterborough, Lambton, Hastings and Prince Edward Counties, and Leeds Grenville and Lanark District PHUs, and significantly lower in the Peel, York Region and Toronto PHUs.
- Greater regional variation was apparent at the PHU level than at the LHIN level, with marked variation between some PHUs in the same LHIN. In Erie St. Clair, for example, the prevalence of drinking more than recommended ranged from 8.3% in the Chatham-Kent PHU to 13.3% in the Lambton PHU; these differences are averaged out at the LHIN level resulting in an estimate that is similar to the all-Ontario estimate.
- Variations among LHINs and PHUs may potentially be explained, in part, by the population composition of the different regions. There is a lower prevalence of drinking in excess of the cancer prevention recommendations in immigrant populations than in Canadian-born adults, for example (Figure 8), so immigrant distribution may play a role. The factors underlying the income, immigrant and geographic patterns of alcohol consumption in Ontario are complicated and inter-related.





**FIGURE 7.**

Percentage of Ontario adults (aged 19+) exceeding cancer prevention recommendations for alcohol consumption, by public health unit, 2010–2012 combined



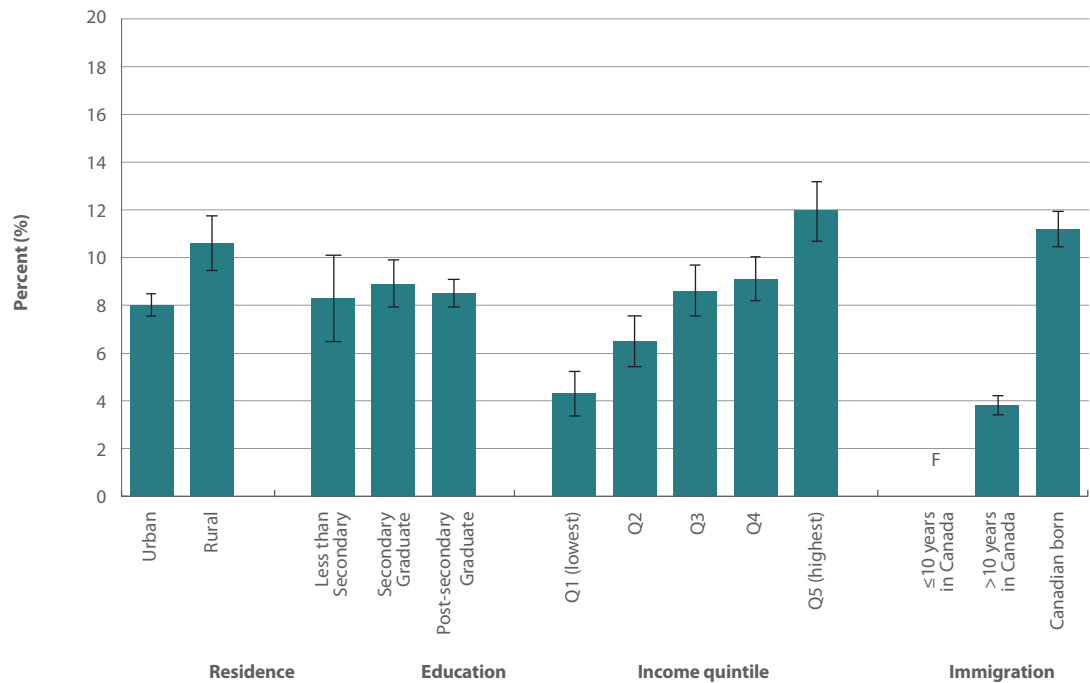
Notes: <sup>1</sup>Estimates are age-standardized to the 2006 Canadian population.  
 Data from CCHS cycles 2010 through 2012 combined to increase sample size for analyses by public health unit.  
 Sources: Canadian Community Health Survey, 2010–2012; 2006 Census Boundaries (Statistics Canada)



### 3.5 SOCIO-DEMOGRAPHIC DISPARITIES IN EXCEEDING RECOMMENDATIONS

**FIGURE 8.**

Percentage of Ontario adults (aged 30+) exceeding cancer prevention recommendations for alcohol consumption, by selected socio-demographic factors, 2010–2012 combined



**Notes:** Estimates are age-standardized to the 2006 Canadian population.

┆ represent 95% confidence intervals.

— Estimates have been suppressed due to very high sampling variability.

Data from CCHS cycles 2010 through 2012 combined to increase sample size for analyses by socio-demographic factors.

**Source:** Canadian Community Health Survey, 2010–2012 (Statistics Canada)

- The proportion of Ontario adults drinking in excess of the cancer prevention recommendations differed significantly across levels of four socio-demographic factors (Figure 8). Socio-demographic characteristics were analyzed for adults aged 30 and over to restrict the sample to those who have likely completed their education and reached their adult socio-demographic status.
- For 2010–2012 combined, the prevalence of drinking in excess of the cancer prevention recommendations was significantly higher among adults (aged 30+) living in rural (10.6%) than in urban areas (8.0%), among the highest income quintile (12.0%) than in all lower income quintiles (e.g., the lowest at 4.3%) and among Canadian-born adults (11.2%) compared with immigrants who have been in Canada for more than 10 years (3.8%). The proportion



of adults who exceeded the alcohol recommendations for cancer prevention did not differ significantly among levels of education.

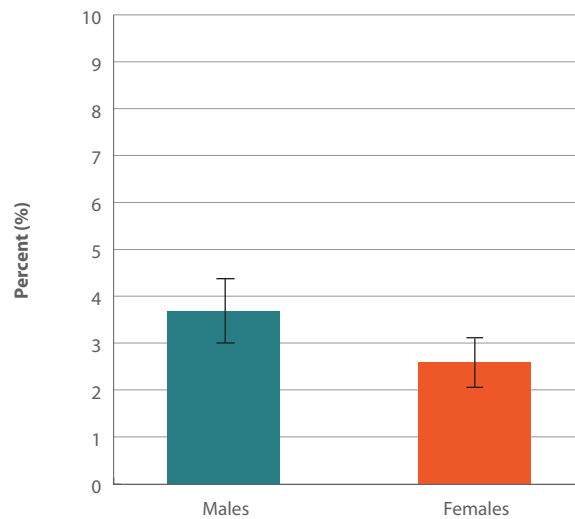
- Increase in prevalence of drinking more than recommended with increasing income is consistent with studies in Europe and the US.<sup>37,38</sup> Individuals in the higher income quintiles can afford, for example, to purchase larger volumes of alcohol than those with lower incomes. Other differences, such as choice of leisure activities, may also be contributing factors.
- The predominant countries of origin among immigrants to Canada have changed over the past several decades. Before 1961, 93% of immigrants to Ontario were from Europe;<sup>39</sup> between 2006 and 2011, 71% of immigrants were arriving from Asia (including the Middle East) and Africa.<sup>40</sup> The lower prevalence of drinking in excess of the cancer prevention recommendations among immigrants than among Canadian-born adults may be explained by the increased proportion of immigrants from Asia and Africa, where adult per capita alcohol consumption is much lower.<sup>41</sup> The lower prevalence of exceeding the recommendations among immigrants compared with Canadian-born adults is consistent with what is seen for some other cancer risk factors, including tobacco.
- Income and immigrant disparities in the prevalence of drinking in excess of the cancer prevention recommendations may be related because immigrants may be disproportionately represented in the lower income groups.<sup>42</sup>



### 3.6 DRINKING AND CURRENT SMOKING

**FIGURE 9.**

Percentage of Ontario adults (aged 19+) exceeding cancer prevention recommendations for alcohol consumption who are current smokers, 2012



**Notes:** Estimates are age-standardized to the 2006 Canadian population.

┆ represent 95% confidence intervals.

Current smokers are defined as adults who reported that they presently smoke cigarettes "daily" or "occasionally".

**Source:** Canadian Community Health Survey, 2012 (Statistics Canada)

- In 2012, 3.7% of Ontario males and 2.6% of Ontario females aged 19 and older reported drinking in excess of the cancer prevention recommendations and being current (daily or occasional) smokers (Figure 9). Smoking enhances the carcinogenic effect of alcohol and vice versa so that smokers who also drink alcohol are at an especially increased risk for cancers of the oral cavity, pharynx, larynx and esophagus (squamous cell carcinoma).<sup>2,3</sup>
- Ontarians who drank in excess of the cancer prevention recommendations were more likely to be current smokers (39.5% males, 29.6% females) than those who drank within the recommended amount for cancer prevention (22.7% males, 16.6% females). The association between alcohol consumption and tobacco use has been demonstrated in studies from various countries.<sup>37,38,43</sup>