

**Health Benefits and Risks of Moderate Alcohol Consumption  
Policy Background Paper**

**Prepared for the AADAC Commission Board**

**Sandra Goatcher  
Policy and Planning**

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## **EXECUTIVE SUMMARY**

The purpose of this paper is to provide background information to support the Commission Board in their review of AADAC's Policy on Alcohol. It summarizes the health benefits and risks of moderate alcohol consumption, and presents the implications of the evidence for alcohol policy and program development.

Moderate alcohol consumption can be broadly defined as the level of drinking that has a low risk of alcohol-related problems, for both the drinker and others. The Canadian Guidelines on Low-risk Drinking recommend a maximum of two standard drinks on any day, with a weekly maximum of 14 drinks for males and nine for females. The guidelines also list special populations, such as pregnant women and people taking medications, who should abstain or limit their alcohol use to less than the maximum amount indicated.

Research shows that the moderate use of alcohol is related with reduced risk of several diseases. The most compelling evidence supports the relationship between moderate drinking and reduced risk of coronary heart disease. Moderate alcohol consumption has also been associated with decreased risk of peripheral arterial disease, ischemic stroke, and Type 2 diabetes mellitus.

Moderate alcohol consumption is not risk free. Moderate drinking has been associated with injuries, breast cancer, colorectal cancer, liver disease, and a decrease in nutritional quality of diet. For some individuals, moderate drinking can lead to problem drinking.

Research on the potential health benefits of moderate alcohol consumption has implications for effective policy and program development. In particular, (1) prevention messages that incorporate low-risk drinking guidelines will be more credible because information on the risks of alcohol consumption are balanced by acknowledgement of its health benefits; and (2) information that conveys what constitutes a standard drink and a standard serving can help consumers avoid alcohol intoxication and drink at levels that reduce health risks or enhance health benefits.

# **Health Benefits and Risks of Moderate Alcohol Consumption**

## **Policy Background Paper**

The purpose of this paper is to provide background information to support the Commission Board in their review of AADAC's Policy on Alcohol. Recent evidence has indicated that moderate alcohol consumption has significant health benefits, especially in reducing the risk of coronary heart disease. However, information about these health benefits is not usually balanced with the health risks of moderate drinking. This paper will provide information on the definition of moderate alcohol consumption, the health benefits and risks of moderate drinking, and implications of the research evidence for alcohol policy and programs.

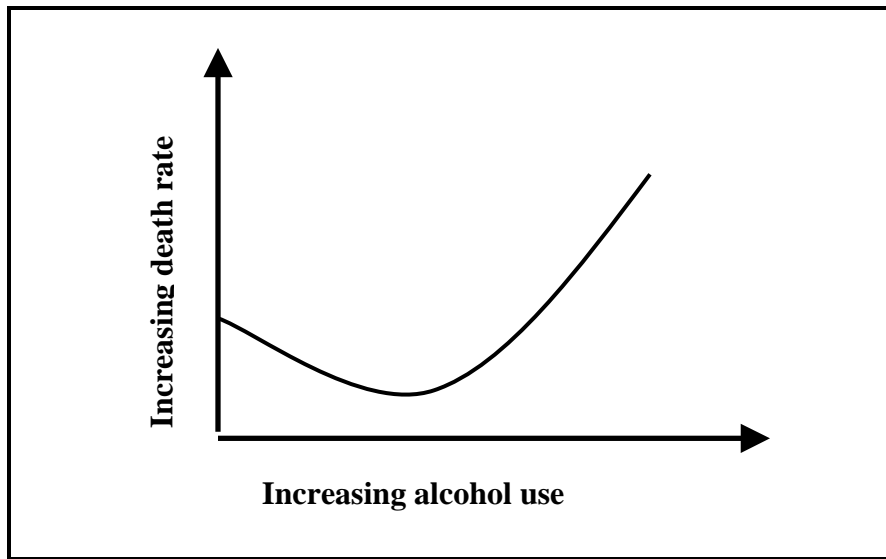
### **INTRODUCTION**

Alcohol misuse is associated with a large range of personal, social, and health problems. Personal and societal costs include reduced vocational and educational performance, family and social disruption, and contact with the criminal justice system. Individuals are also negatively affected by other's drinking. In addition, alcohol misuse has negative economic impacts such as lost productivity, law enforcement costs, and direct health care costs.<sup>1 2</sup>

Alcohol use and abuse can contribute to a variety of medical problems, such as cardiovascular diseases, cancer, liver cirrhosis, and fetal abnormalities. Alcohol is also a major causal and contributing factor in injuries and premature deaths due to motor vehicle accidents, falls, suicides, fires, drownings, and violence.<sup>1 2</sup>

More recently, a growing number of studies have reported a positive relationship between moderate alcohol consumption and mortality.<sup>3 4 5 6 7</sup> Results support a J-shaped alcohol-mortality risk curve (see Figure 1), with "heavier drinkers at high-risk, lighter drinkers at lowest risk, and abstainers at intermediate risk"(p. 15).<sup>8</sup> It is important to note that this J-shape curve has been found mainly in research with middle-aged to elderly men from developed countries, where coronary heart disease (CHD) is the leading cause of death. As a result, the shape of the alcohol-mortality risk curve is heavily influenced by the lower CHD risk of moderate drinkers.<sup>7 8</sup>

It has been suggested that the J-shape curve may not accurately represent the relationship between abstaining from alcohol and mortality. Rather, the increased risk of death found among abstainers may be due to the unique characteristics of this group.<sup>8</sup> Some researchers explain that the non-drinking group may be more likely to include individuals prone to cardiac disease, for example alcoholics and persons that do not drink due to other medical problems.<sup>7</sup>



**Figure 1.** The J-shaped alcohol-mortality risk curve.  
Source: Adapted from Klatsky 1999

Research has demonstrated a positive relationship between moderate alcohol consumption and mortality, but it is important to remember that drinking alcohol is only one influential factor. The benefits of moderate alcohol consumption do not compensate for the increased risks associated with smoking, poor diet, obesity, and socioeconomic status.<sup>7 8 9</sup>

### **MODERATE ALCOHOL CONSUMPTION**

Moderate drinking can be broadly defined “as the level of drinking that poses a low risk of alcohol-related problems both for the drinker and for others.”(p. 265) In 1997, the Addictions Research Foundation and Canadian Centre for Substance Abuse released low-risk drinking guidelines, based on clinical experience and current research. The core elements include:

- Drink no more than two standard drinks (SD) on any day.<sup>a</sup>
- Limit weekly intake to 14 or fewer SD for men and nine or fewer SD for women.
- Drink slowly to avoid intoxication waiting at least one hour between drinks; consume alcohol with food and non-alcoholic beverages.<sup>10 11 12</sup>

Even with guidelines, there can be confusion regarding the definition of a standard drink and the definition of moderate drinking. What constitutes a drink can depend upon such factors as the type of alcohol beverage, the alcohol content of the beverage, whether the alcohol is being served in an establishment that is regulated to a specific serving size or in a private home, and the country.<sup>13</sup>

<sup>a</sup> The Canadian Guidelines on Low-risk Drinking define a standard drink as one 341ml (12oz.) “regular” strength bottle of beer (5% alcohol), one 142 ml (5oz.) glass of table wine (12% alcohol), one 43 ml (1.5 oz.) serving of spirits (40% alcohol), or one 85ml (3 oz.) serving of fortified wine such as sherry or port (18% alcohol).<sup>10</sup>

As with guidelines available in other countries, the Canadian guidelines list special populations that should abstain or limit use to less than the maximum amount indicated. This would include people with certain health problems, people taking medications, pregnant women, people who need to be alert, people who are operating vehicles, people who were formerly alcohol dependent, and youth.<sup>10 14 15</sup> The guidelines recommend that heavy drinkers should reduce consumption and, they indicate that abstainers do not need to start drinking to improve their health.<sup>7 10</sup>

The number of drinks consumed over a specified time is the usual method of reporting how much people drink. The pattern of drinking, or how one drinks, also has an important impact on health.

“Patterns of drinking may refer to . . . temporal variations in drinking, the number and characteristics of heavy drinking occasions, the settings where drinking takes place, the activities associated with drinking, the personal characteristics of the drinker, and their drinking confederates, the types of beverage consumed, and the clusters of drinking norms and [behaviours]. . . .” (p. 64).<sup>1</sup>

For example, some individuals drink on a daily basis (e.g., two drinks daily), while others drink more sporadically such as only on the weekends (e.g., 14 drinks on a Friday night). Although the total amount of alcohol consumed may be the same, the health impacts differ.<sup>1</sup> Excessive drinking on a particular occasion, often referred to as “binge-drinking,” can lead to health and safety issues such as motor vehicle or other accidents, risky behaviour (e.g., unprotected sex), and violence. Excessive drinking on a daily basis predisposes the drinker to long-term health problems such as cardiovascular disease and cirrhosis of the liver, as well as developing the potential for alcohol dependence.<sup>10 15</sup>

## **HEALTH BENEFITS OF MODERATE ALCOHOL USE**

The moderate use of alcohol has been related with reduced risk for several diseases. The most important of these relationships, in terms of the extent of supporting scientific evidence and its impact on mortality, is between alcohol intake and coronary heart disease (CHD).

### **CORONARY HEART DISEASE**

Epidemiological studies indicated that moderate alcohol consumption is associated with lower risk of CHD (disorders of decreased blood supply to the heart).<sup>4 8 9 15 16 17</sup> Moderate alcohol consumption increases serum high-density lipoprotein (HDL) or good cholesterol. HDL removes cholesterol from the arterial wall and thus prevents blockages due to the build up of cholesterol. Alcohol may also protect against CHD through its beneficial effects on decreasing the formation of blood clots, decreasing low-density lipoprotein, and increasing coronary blood flow.<sup>5 7 11 12</sup>

All types of alcohol are associated with reduced risk of CHD. Some researchers have suggested that certain types of alcohol (i.e., wine) may be more protective than others, but most evidence does not support this view. Much of the benefit appears to come from the alcohol itself rather than from other components of the alcoholic beverages.<sup>7 11 18</sup>



The benefits of alcohol for lower CHD risk are offset at higher drinking levels. That is, most of the benefit achieved at very low levels of alcohol consumption (e.g., one standard drink or less per day). Binge drinking is not protective.<sup>4 8 11 16</sup> Protection has been observed only in middle-aged and older adults,<sup>2 4</sup> and the effects are modified with gender.<sup>4</sup> Overall, the public health benefit of moderate alcohol consumption may be limited to individuals with high risk of CHD.<sup>11</sup>

### **PERIPHERAL ARTERIAL DISEASE**

Peripheral arterial disease is “a condition in which blood flow to extremities is impaired by narrowing of the blood vessels.”(p.9)<sup>2</sup> Moderate alcohol consumption has been associated with decreased risk of peripheral arterial disease.<sup>2 5 7 11 15</sup> Since peripheral arterial disease and CHD share many pathophysiological features, the protective effects are similar.<sup>7 15</sup>

### **STROKE**

The relationship between alcohol consumption and stroke is complex. Due to its prolonging effect on blood clotting, alcohol increases the risk of haemorrhagic stroke (caused by bleeding), but decreases the risk of ischemic stroke (caused by clots or blockages in blood vessels).<sup>3 5 7 11</sup> Therefore, moderate alcohol intake may reduce risk in populations where the main type of stroke is ischemic (i.e., middle-aged and elderly Western groups), but increase risk in populations where haemorrhagic stroke predominates (i.e., young adults and non-Western groups).

Results of studies that have examined the relationship between alcohol and stroke are inconsistent. More research is required to distinguish risk relationships by stroke type and the underlying effect of alcohol on stroke.<sup>2 7</sup>

### **DIABETES**

There is growing evidence that alcohol may have a protective effect against developing Type 2 diabetes mellitus (non-insulin dependent).<sup>3 7 11</sup> It is hypothesized alcohol may cause the body cells to be more insulin sensitive, therefore the body can better regulate blood glucose levels.<sup>7</sup>

### **GALLSTONES**

There is good evidence that moderate alcohol consumption is associated with a decreased risk of gallstones.<sup>3 5 7 11</sup> The formation of gallstones is prevented due to the effect alcohol has on HDL or good cholesterol.

### **PSYCHOSOCIAL**

The most commonly reported psychosocial benefits of moderate drinking, both popular and scientific accounts, are relaxation, stress reduction, mood elevation, and increased sociability.<sup>2 7</sup><sup>11 19 20</sup> Moderate drinking has been reported to positively influence the sociability of individuals and groups, social cohesion, creativity, and leisure experiences.<sup>20</sup> These psychosocial benefits are correlated with how much one drinks, as well as drinking pattern, and may vary between cultures.<sup>2 7</sup>

## **COGNITIVE**

There is some recent evidence that moderate alcohol consumption may have a positive effect on cognitive functioning and reduces the risk of dementia and Alzheimer's disease. However, more research is needed in this area to better understand this relationship.<sup>20 21 22</sup>

## **OTHER HEALTH BENEFITS**

Although more evidence is needed to substantiate results, moderate drinking has been associated with a variety of other physical health benefits. Alcohol may reduce the risk of rheumatoid arthritis, kidney stones, infections, and the common cold. Increased bone mineral density has also been associated with moderate alcohol consumption.<sup>7 11 21</sup>

## **HEALTH RISKS OF MODERATE ALCOHOL USE**

Moderate alcohol consumption is not risk free. Risk varies depending upon the individual, the amount of alcohol consumed and length of time over which it is consumed. However, for moderate amounts of alcohol, these risks are relatively small, and can be minimized by avoiding alcohol in certain situations.<sup>3 7 15</sup>

## **INJURY**

Risk of injury starts at relatively low levels of alcohol consumption. Drinking can impair judgment, perception, attention, motor coordination, and balance. The level of drinking at which these effects occur will vary among individuals, and some degree of impairment may occur even after one or two drinks.<sup>7 15</sup>

Drinking alcohol has been associated with injuries in many situations: vehicle and cycling accidents, falls, fires, sport and recreational injuries, and violence (sexual and physical). Alcohol consumption can result in an individual taking increased risks, such as drinking and driving.<sup>7 15</sup>

## **CANCER**

Substantial research evidence suggests that the risk of breast cancer is increased for women consuming more than three drinks per day, when compared to abstainers. Most studies indicate that the relationship is linear, with the risk rising steadily as the level of alcohol consumption rises.<sup>1 2 3</sup> There is evidence that drinking as few as one to two drinks per day can increase the risk of breast cancer, but not to the same degree as three daily drinks. In addition, research findings indicate the breast cancer risk associated with alcohol consumption is in both pre and post-menopausal women.<sup>2</sup>

A weak relationship has been found between alcohol and the risk of colorectal (colon and/or rectal) cancer. Some studies indicate risk at intake levels within the moderate drinking guidelines. More research is needed to better understand the relationship between alcohol and colorectal cancer.<sup>1 2 3</sup>

## **LIVER DISEASE**

It is uncertain what level of alcohol intake increases the risk of liver disease. As with some cancers, there is a possibility of risk at the upper end of the moderate drinking guidelines. This risk appears to be greater for daily drinkers than for those who drink less frequently but consume large amounts.<sup>1 2</sup>

## **SHIFT TO HEAVIER DRINKING**

For some individuals, moderate alcohol consumption can lead to problem drinking. It is impossible to predict which individuals will become problem drinkers. However, people with past alcohol problems and those with a family history of alcohol abuse are at greater risk<sup>1 3</sup>

## **NUTRITION**

Depending on the individual, moderate alcohol consumption may contribute to an overall decrease in nutritional quality of the diet. The caloric content of alcoholic beverages is considerable, while providing few essential nutrients. Individuals who consume alcohol regularly may obtain a significant proportion of their total daily calorie intake from alcohol.

## **POPULATION SUB-GROUPS AND MODERATE ALCOHOL USE**

Differences across sub-groups, as well as individual differences are perhaps the largest challenge when establishing guidelines for moderate alcohol use. With respect to health benefits and risks, some of these individual differences have been identified.

## **WOMEN**

The Canadian low-risk drinking guidelines are lower for women (one drink per day) than for men (two drinks per day) because women achieve higher blood alcohol levels than men at an equivalent amount of alcohol.<sup>5 23</sup> This difference is mainly due to gender differences in the distribution and metabolism of alcohol in the body.<sup>5 23 24</sup>

When alcohol (a water-soluble substance) is absorbed, it is dispersed throughout the body's water content. On average, women have less body water due to their higher ratio of body fat and lower average body weight. Therefore, any given amount of alcohol is distributed over a smaller body mass and fluid volume in women.<sup>15 23 24 25 26</sup> The result is that women reach higher peak blood alcohol concentrations than men at equivalent amounts of alcohol, even when the amounts are adjusted for body weight.<sup>23</sup>

Women and men also differ in the way they metabolize alcohol. The liver is the main site of alcohol metabolism. However, about 20% of alcohol metabolism occurs elsewhere in the body and alcohol dehydrogenase (ADH) is one of the key gastric enzymes involved in the breakdown of ethanol. On average, women have smaller livers than men and have smaller quantities of gastric ADH, resulting in decreased rates of alcohol metabolism and higher blood alcohol levels.<sup>5 15 23 25</sup> The higher blood alcohol levels leads to a greater likelihood of intoxication at a given amount of alcohol.

### **a) Pregnancy and Birth**

Much attention in recent years has been given to the association between heavy alcohol consumption during pregnancy and harm to the unborn child, especially fetal alcohol syndrome (FAS). FAS is a condition characterized by physical abnormalities, growth deficiency, neurological dysfunction with developmental delays.<sup>5 15</sup> However, moderate drinking during pregnancy is also linked with developmental problems in childhood that resemble but are less severe than FAS.<sup>27</sup>

Alcohol consumption by nursing mothers may also have an impact on the infant's neurologic development. Very small amounts of alcohol are passed into breast milk and the infant has only a limited ability to metabolize alcohol. In addition, the infant's brain continues to develop after birth. Although research in this area is limited, the possibility exists for consequences similar to those that result from alcohol consumption during pregnancy.

A recent study reported that women in their first trimester of pregnancy who consume within moderate drinking guidelines increase their risk of miscarriage.<sup>28</sup> There is some evidence that a small reduction in birth weight is associated with moderate maternal drinking,<sup>5</sup> as is the potential risk for infertility in women, although the evidence is varied.

Since there is no known threshold below which consumption is safe, most guidelines for moderate drinking recommend that women do not consume alcohol (1) while trying to conceive, (2) during pregnancy, especially in the first trimester, or (3) when breastfeeding.<sup>5 10 29</sup>

### **b) Breast Cancer**

Epidemiologic studies provide evidence that risk of breast cancer is greater for women who consume moderate to high levels of alcohol. The risk increases with increased consumption beginning with as little as one or two drinks per day.<sup>5 7 15 30 31</sup> It should be noted that the relationship is modest and is not restricted to one type of alcohol.<sup>7 31</sup> It is recommended that women at increased risk for breast cancer or those who want to reduce their risk of this cancer abstain or reduce alcohol consumption.<sup>5 15</sup>

More research is recommended to explore the breast cancer and alcohol consumption relationship, as well as the interaction between alcohol consumption and body size, hormone replacement therapy, and family history of breast cancer.

### **OLDER ADULTS (60 years and older)**

Generally, alcohol consumption decreases with age and the proportion of abstainers increases.<sup>32 33</sup> <sup>34</sup> This decline in consumption results from changes in personal circumstances (e.g., finances), health, and attitudes. However, compared to previous generations, older adults today drink more. This could be the result of higher levels of disposable income. Or, it could be that for this cohort of older adults alcohol has been more socially available and more socially acceptable.<sup>6 33 34 35</sup>

Low-risk drinking guidelines recommend that moderate drinking levels for older adults of both genders be no more than one standard drink per day. This is similar to the guidelines for women of all ages and for the same reasons. With age, lean body mass decreases and body fat increases, resulting in a decrease in the volume of total body water. Therefore, the same amount of alcohol consumed by a younger person of the same size and gender will produce higher blood alcohol

levels in older adults. In addition, gastric alcohol dehydrogenase (ADH) levels decrease with age, which further contributes to an increased blood alcohol level.<sup>36 37 38 39</sup>

For older men and women, light to moderate alcohol consumption is associated with lowered risk of coronary heart disease, stroke, and dementia.<sup>22</sup> In addition, low levels of consumption appear to improve socialization and mood, stimulate appetite, promote regular bowel functions, and for some older adults, have a pain relief effect.<sup>6 22 36</sup>

### **a) Medications**

Interactions between moderate amounts of alcohol and prescription or over-the-counter medications (OTC) can result in potentially serious medical consequences.<sup>39 40 41</sup> Older adults are at a higher risk of adverse interactions due to their significant use of prescription and OTC medications, and because of age-related physiological changes.<sup>36 39</sup>

Interactions between some prescription drugs and moderate amounts of alcohol can cause significant elevation of blood alcohol (e.g., Zantac™, aspirin), increased bleeding time and gastrointestinal inflammation and bleeding (e.g., aspirin, Motrin™), and impairment of motor skills (e.g., tricyclic anti-depressants, sedatives).<sup>36 39 40</sup>

Moderate consumption of alcohol can negatively interact with OTC medications, including some herbal medications. As stated earlier, moderate drinking and aspirin can increase bleeding time, gastrointestinal inflammation, and bleeding. Because antihistamines can cause dizziness, sedation, and lower blood pressure in older adults, the added effect of alcohol can be very serious.<sup>36</sup>

There has been limited research on the interaction between alcohol and herbal medications. However, like prescription and OTC medications, some herbal products (e.g., chamomile, echinacea, valerian, St. John's wort, kava-kava) used as sleep aids may produce enhanced sedative effects when combined with alcohol. In addition, some herbal products can cause liver toxicity, and alcohol may augment these adverse effects.<sup>40 42</sup>

A related issue is the relationship between noncompliance with medications and moderate alcohol consumption. For example, some older adults on a limited income may decide to purchase alcohol rather than an expensive prescribed drug for pain relief. Also, moderate drinking may increase forgetfulness, resulting in the older adult taking their medications inappropriately or not taking them at all.<sup>36</sup>

### **b) Falls**

Due to age-related physiological changes, moderate alcohol consumption may contribute to accidents and falls among older adults. As individuals age, there is a decreased tolerance to alcohol, impacting the functioning of the central nervous system. This may result in loss of balance and falling. As discussed under medications, the combination of some prescribed drugs and low levels of alcohol can enhance side effects of the drug, such as dizziness, which in turn can lead to falls. More research is needed to explain the effects of moderate alcohol consumption on falls among older adults.<sup>43 44</sup>

### **c) Driving**

Even at low levels of alcohol consumption, the risk of a traffic accident is increased. Alcohol impairs judgment, affects psychomotor skills, and makes the extent of any injury resulting from

the accident worse. At any given blood alcohol level, older adults are at a higher risk of being in a traffic accident and receiving injuries. Coupled with the interaction of alcohol and medications, the risk increases again, even at very low levels of alcohol consumption.<sup>45</sup>

#### **d) Other**

Sleep disturbance is common among older adults. Some older adults report that they have less difficulty in getting to sleep after having a drink of alcohol. However, the effects of alcohol on sleep, even at moderate consumption levels, are for the most part detrimental. Alcohol can disrupt breathing and worsen insomnia.<sup>36 46</sup>

For some older individuals, moderate alcohol consumption can lead to problem drinking. Those who experience alcohol-related problems after age 40 or 50 are called late onset drinker. They are more likely to have started drinking or increased drinking in response to a recent loss, such as death of a spouse, life changes (e.g., retirement), or change in health.<sup>6 36</sup>

#### **Young Adults (18 to 24years)**

Patterns of consumption, such as binge drinking, are of particular relevance to young adults since young adults, as compared to other age groups, tend to participate in this pattern of drinking. The Canadian Campus Survey<sup>47</sup> reported that 62.7% of students surveyed reported drinking five or more drinks on a single occasion and 34.8% drank eight or more drinks on a single occasion.

Binge drinking has been defined as excessive consumption of alcohol on one particular occasion that places the drinker at increased risk of experiencing alcohol-related problems and also puts others at increased risk of experiencing secondhand effects. Binge drinking has been measured as the consumption of five or more drinks on at least one occasion in the last two weeks for men, and four or more for women. Therefore, binge drinking can be interpreted as falling within moderate alcohol consumption guidelines of maximum weekly number of drinks (14 for males, nine for females) if the daily recommended drinking levels are excluded or ignored.

Young adults who are students and binge drinkers are at a higher risk for negative consequences and behaviours that include unplanned sexual relations and unsafe sex, drinking and driving, violence, accidents, as well as hangovers, memory loss, and missing classes.<sup>47 48 49</sup> There is evidence that students who binge drink are more likely than non-binge drinking students to report lifetime and current use of cigarettes, marijuana, cocaine, and other illegal substances.<sup>50</sup> Non-binge drinking college students can also experience the consequences of those who binge drink, such as being assaulted, sleep or study interruptions, and property damage.

An increase risk of ischemic stroke in men and women aged 16 to 40 years has been associated with recent heavy alcohol consumption, particularly drinking to intoxication.<sup>51</sup> In Britain, there has also been a rise in deaths from liver cirrhosis among younger adults. It is suggested that these results indicate that patterns of heavy drinking (e.g., binge drinking) at early ages are beginning to have serious public health implications.<sup>52</sup>

#### **YOUTH (< 18 years)**

Although it is illegal for youth to drink, the reality is that many persons under the legal drinking age do consume alcohol. Youth have greater vulnerability to alcohol due their physical size and

because they lack experience of drinking and its effects.<sup>15</sup> There is evidence that young people are starting to drink at younger ages. In North America, the average age of first alcohol use is reported at 13.1 years.<sup>53</sup> Longitudinal studies have found that the earlier youth start drinking, the more likely they are to experience alcohol-related injuries and alcohol dependency later in life.<sup>21</sup>  
<sup>53 54</sup>

Like young adults, binge drinking by youth is associated with a variety of problem behaviours, including drinking and driving, assault, fighting, truancy, theft, risky sexual activities, and an increase risk of ischemic stroke.<sup>51 54 55</sup> Research suggests that moderate amounts of alcohol can delay female puberty.<sup>56</sup>

## **ETHNICITY**

Physiological differences can result in low tolerance to alcohol for some ethnic groups. For example, a nonfunctional form of aldehyde dehydrogenase interrupts the metabolism of alcohol for some Asians. Reactions to even a small amount of alcohol can be severe, resulting in facial flushing, dizziness, nausea, and heart palpitations. This condition affects at least a quarter of Chinese, Japanese, Koreans, and other Asians. Similar variations in aldehyde dehydrogenase have been found in other ethnic groups such as Ashkenzic Jews, Native American tribes, and indigenous populations of South America.<sup>15</sup>

## **CULTURE**

People immigrating to Canada from cultures where the consumption of alcohol is generally considered unacceptable (e.g., Muslim), may feel pressure to drink. Children of these groups may be expected by peers to move towards Canadian drinking norms as with other behaviours, possibly causing conflict within families. In contrast, some cultures introduce alcohol to children at early ages, enabling them to learn about drinking and alcohol gradually and within a supported family environment. In Canada, however, this more liberal approach to alcohol consumption by youth contradicts low-risk drinking guidelines.<sup>15</sup>

## **SUMMARY**

The health effects of moderate alcohol consumption vary among individuals and between populations. It is impossible to make blanket recommendations for all members of a population. Guidelines for low-risk drinking provide upper limits for consumption, and if these guidelines were followed across most of the adult lifespan, adverse health consequences from alcohol use may decrease.<sup>7 10</sup>

Some individuals should not drink at all. For example, people taking medications, women who are pregnant or who may become pregnant, people with personal history of abusing alcohol, or those with specific health problems or family histories that are or have the potential to be incompatible with alcohol use. For others, the health risks and benefits vary with age, gender, and ethnicity. Low-risk drinking guidelines recommend that people not consume alcohol and drive a motor vehicle or engage in other activities that involve attention and skill or physical risk.<sup>7</sup> And no one needs to start drinking to improve health. This can be achieved through other behaviours such as dieting and exercise.

Many people have religious, cultural, or personal reasons to abstain from alcohol while others have a variety of reasons for deciding to drink moderately. Either choice can be compatible with a healthy lifestyle.

## **POLICY IMPLICATIONS**

The potential health benefits and risks of moderate alcohol consumption present challenges to effective policy and program development. The need to present a balanced view of the risks and benefits of moderate alcohol consumption are most salient in the delivery of prevention and information services.

The beneficial effects of moderate drinking complicate alcohol prevention messages. Instead of advocating for a reduction in alcohol consumption for everyone regardless of their drinking level, the prevention messages must take into account the drinking level and drinking patterns of target groups. The low-risk drinking guidelines used in Canada and other countries provide recommended limits for alcohol consumption. Incorporating these guidelines provides credibility to prevention messages because not only are risks addressed but the potential health benefits of low to moderate drinking are also acknowledged. However, the message must be clear in relating the fact that health benefits are largely confined to individuals with a high risk of CHD. They do not accrue to all, and even moderate alcohol consumption can increase the risk for acute and long-term consequences in certain situations and certain population sub-groups.

Conveying information on what constitutes a standard drink and a standard serving is also important. Without this information, consumers are typically unable to accurately determine the amount of alcohol they have consumed. Providing such information allows drinkers to avoid intoxication and can assist individuals to drink at levels that provide health benefits.<sup>14</sup> One suggestion is to use alcohol product labels to communicate the alcohol content in terms of standard drinks, and also provide low-risk drinking guidelines.<sup>57</sup>

Providing information on alcohol consumption should not exclude a presentation on the addictive properties of alcohol and the risks for alcohol dependence.<sup>58</sup> Abstainers should be informed that there is no need to start drinking to improve their health, and that there are many other lifestyle changes that will improve health. Factors like diet and exercise carry fewer risks than those associated with alcohol use.<sup>11</sup>

Among treatment clients, comprehensive assessment is required to determine the presence and severity of problems. Individualized treatment plans should be developed that includes moderate drinking goals if appropriate. While abstinence is recommended for individuals with alcohol dependence, the low-risk drinking guidelines can be used as an objective and evidenced-based approach to counsel clients who do not choose an abstinence goal.<sup>5 10</sup>

The potential health benefits of moderate alcohol consumption impact policy as it shifts the focus from the avoidance of drinking to reduce alcohol dependence, to the avoidance of heavy or harmful drinking. As a result, behaviours like binge drinking among young adults, drinking during pregnancy, drinking while taking medications, and drinking and driving need to be adequately considered when addressing moderate consumption in the broad context of alcohol control and health policy.<sup>11 14</sup>



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