



ALCOHOL AND HEALTH

# LOW-RISK DRINKING: 2 · 3 · 4 · 5 · 0



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# INTRODUCTION

Alcohol is a normal part of life for most of us, and fortunately, it is generally not problematic. In Quebec in particular, moderation has become both socially integrated and culturally acceptable.

According to the latest surveys, Quebecers have a pretty good idea of what constitutes moderate drinking. A 2007 Éduc'alcool-CROP poll found that, on average, people believe moderation to be 2.4 drinks per occasion. About 25% of respondents thought moderation was one drink, while another 25% said it was two drinks. Twenty percent believe that three drinks constitute moderation, but more than 15% said it all depends on the circumstances. Fewer than 5% said moderation was five drinks.

Nonetheless, Quebecers have a thirst for knowledge. In the above-mentioned survey, seven out of ten people said they wanted to know more about how much alcohol they can drink without endangering their health. Given all the studies constantly being done on the effects – both positive and negative – of alcohol, it's not surprising that so many people seek guidelines for low-risk drinking.

Like all the publications in the Alcohol and Health series, this one offers advice to those who want to make enlightened decisions about drinking.

Our purpose is to give Quebecers who choose to drink some general but very clear guidelines on the subject.

In other words, we hope to further convince them – if they still need convincing – that moderation is always in good taste.

*The Éduc'alcool Board of Directors*



**LOW-RISK DRINKING**

### 3

A number of countries have drinking guidelines. Often, these originate in government health departments or agencies responsible for alcoholic beverages and alcohol-related matters. They may also come from medical associations or other non-governmental professional and scientific organizations. Sometimes the guidelines are associated with a food guide; they may also be part of a national alcohol policy. Most frequently, they are simply presented in an ad hoc publication.

All drinking guidelines have one thing in common: they offer advice about moderate, i.e. low-risk, drinking, and set recommended limits. The idea is to maximize the benefits of alcohol while minimizing the health risks.

Among these guidelines, which are based on research studies conducted around the world, there is a considerable variation in the recommended amounts and the way they are presented, i.e. as a number of drinks, units or grams of alcohol.

Since such guidelines are based on scientific studies, theoretically they should be identical. But according to the International Center for Alcohol Policies, the data are subject to different interpretations because local culture must be taken into account, along with the current drinking standards of the population for whom the guidelines are intended. That's why low-risk drinking guidelines are not the same everywhere.



## DRINKING GUIDELINES IN QUEBEC

Quebecers can find drinking guidelines in various publications. They are available through medical associations, in Canada's Food Guide and from the Canadian Cancer Society, among others. To date, however, no government authority has published any official recommendations.

Éduc'alcool's excellent and trusted reputation in Quebec makes it the ideal organization to propose drinking guidelines. In fact, our publications on alcohol and health are widely recognized for their expertise and serious approach.

Éduc'alcool has been studying drinking habits in Quebec for almost 20 years. We have a sensitive finger on the pulse of the culture and the role alcohol plays in people's lives. All our publications on drinking are based on scientific research. More than 82% of Quebecers think the organization has high credibility and they willingly turn to us when they have questions about alcohol and drinking.

# RECOMMENDED NUMBER OF DRINKS:

## STANDARD DRINKS AND THEIR ALCOHOL CONTENT

There is the same amount of alcohol in **one regular beer** (341 ml/12 oz, 5% alcohol), **one glass of wine** (142 ml/5oz, 12% alcohol), **one glass of fortified wine** (85 ml/3oz, 20% alcohol) and **one shot of spirits** (43 ml/1.5 oz, 40% alcohol). Each of these is considered **a standard drink**.

With **cider, malt-based beverages** or **pre-mixed drinks** (e.g. coolers), which are usually **but not always** served in a 142 ml/5 oz glass, you have to check the bottle label for the alcohol content, which can be anywhere from 2.5% to 20%.





## 2 • 3 • 4 • 5 • 0

The recommended number of drinks – 2, 3, 4, 5 or 0 – varies primarily according to sex.

- 2** **WOMEN** who want to drink responsibly – and for the health benefit after menopause – should have no more than **TWO** drinks a day.
- 3** **MEN** who want to drink moderately – and for the health benefit after age 40 – should have no more than **THREE** drinks a day.
- 4** To avoid intoxication and the associated complications, **WOMEN** should have no more than **FOUR** drinks on a single occasion.
- 5** **MEN** who wish to avoid intoxication and the associated complications should have no more than **FIVE** drinks on a single occasion.
- 0** A good habit: To avoid any kind of habituation or dependency, we recommend that everyone – men and women – have **NO** alcoholic drinks at least one day a week.

And a reminder: If you are a woman of child-bearing age, Éduc'alcool recommends that you do not drink alcohol from the time you decide to become pregnant, or if you think you might be pregnant.

# INDIVIDUAL VULNERABILITY

These recommendations are intended for the general public. However, as the research shows with increasingly clarity, when it comes to alcohol, we are not all born equal.

The effects of alcohol can vary greatly from one person to the next, which means that these guidelines are not necessarily good for everyone.

Genetic heritage, weight and age are among the important factors we must all consider when figuring out what “moderate drinking” means for us.

## GENETICS

Some genes – located in specific areas of the chromosomes – play an important role in determining how much alcohol it takes for a person to feel the effects. Recent studies show that as much as 50% of the risk of alcohol dependence is determined by genetic factors.<sup>1</sup>

**Slow response to alcohol.** People who need a large quantity of alcohol in order to feel the effects are at greater risk of developing a dependence. Men and women who tend not to feel drunk should therefore pay closer attention and refrain from unlimited drinking.

**Quick response to alcohol.** Some people have to be careful for the opposite reason. These are the drinkers who feel drunk and lose control over their bodies sooner than the average person.<sup>2</sup>

It is not uncommon for such people to have a family member with a serious drinking problem.

Like those who are slow to respond to alcohol, people who are quick to respond must be more careful than the average drinker. They should drink less than the amount recommended here in order to avoid social gaffes and accidents.

## WEIGHT

Our recommendations are for men and women of average weight and height. But we know that blood alcohol level is basically the amount of alcohol you absorb divided by the amount of water present in your body. Thus, the less water you have in your body, the higher your blood alcohol level will be.

People whose weight is below average and those with a high percentage of body fat must be very careful and drink less than the low-risk recommendations for the average person.

**Low body weight.** If your weight is below average, your body will also have a lower-than-average water content, which means that, all other things being equal, you will have a higher blood alcohol level than the average person who drinks the same amount. If this sounds like you, be careful!

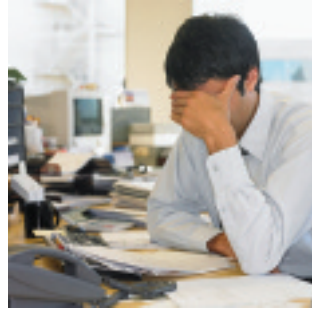
**High body fat.** The same warning applies if you have a higher-than-average body fat percentage. Given two people who weigh the same, where one is well muscled and the other is overweight with a high body fat percentage, the one with the high body fat will feel the effects of alcohol more than the one with all the muscle. That's because fatty tissue does not contain much water.



<sup>1</sup> Edenberg and Foroud, 2006; Grucza and Bierut, 2006; Schuckit, 2005.

<sup>2</sup> Duranceaux et al., 2006.





# CIRCUMSTANTIAL VULNERABILITY

## AGE

**Young adults.** The low-risk drinking guidelines are designed for adults. Teens who wish to drink should be careful and drink less than the recommended amounts.

In fact, teenagers can't handle alcohol as well as adults. They often weigh less and have less water in their bodies to dilute the alcohol.

Also, compared to adults, young people have fewer of the enzymes that help the liver eliminate alcohol.

Furthermore, the adolescent brain is more vulnerable to damage by alcohol. Recent studies in neuroscience<sup>3</sup> and child psychiatry show that the brain is not really fully developed until after the age of 20. Teens are therefore at greater risk when they drink because alcohol inhibits the development of some parts of the brain.

**Older people.** As people age, their kidneys, liver, cardiovascular system and brain undergo changes. Some of these changes make the elimination of alcohol less efficient, while others make people more sensitive to the effects of alcohol.

Older people tend to have a higher body fat percentage than younger adults and less water in their bodies. An older person will therefore have a higher blood alcohol level than a younger person who drinks the same amount.

Also, because of their increased physiological vulnerability and the fact that many of them take prescription drugs (see *Medication*), some older people should drink less than the low-risk guidelines for the general adult population.

## MEDICATION

The low-risk drinking guidelines may not be valid for someone who is taking medication. People on medication should be extra cautious and check with their doctor or pharmacist to see whether alcohol is contraindicated.

When taken in combination with certain medications, particularly those commonly prescribed for epilepsy, high blood pressure and the common cold, alcohol can cause dizziness and drowsiness.

Mixing alcohol with medication for rheumatism, arthritis, pain, infection and depression can cause serious physical and psychological problems.<sup>4</sup>

Alcohol can also increase the sedative effect of benzodiazepines and other drugs, increasing the danger of falling.<sup>5</sup>

## HUNGER, FATIGUE AND STRESS

When you are very hungry, tired or stressed, you should drink less than is recommended in the guidelines.

When you are hungry, your stomach is empty, so any alcohol you drink will be absorbed by the blood much more quickly. Consequently, you will feel the effects of the alcohol sooner and more intensely.

The same warning applies when you are very tired. Fatigue is a sign that your energy supplies are low, which means your liver will not eliminate alcohol as efficiently. The blood alcohol level of a tired person will be higher than that of a well rested person who drinks the same amount. Many symptoms of fatigue are similar to those of intoxication, and drinking will simply make them worse.

And since alcohol is a depressant, its negative effects will be felt more intensely by people who are stressed or depressed.

<sup>3</sup> Crews et al, 2007.

<sup>4</sup> Wesson, 1992.

<sup>5</sup> Herring, 1995.

# OFFICIAL STANDARDS AND HOW MUCH YOU DRINK

The drinking guidelines proposed here have been established based on the standard drink. If you want to follow the guidelines and drink reasonably, you should make sure you know what a standard drink is in every form (beer, wine, cider, spirits, fortified wines, malt-based beverages and pre-mixed drinks, e.g. coolers).

Pay close attention to how much is poured – by you or anyone serving you – and know the alcohol content of what you're drinking.

Studies show that many people, especially young people and women, underestimate the amount they drink because they do not know what constitutes a standard drink.<sup>6</sup>

There has also been a recent trend among wine-makers to increase the alcohol content of certain wines. Read all labels carefully and adjust your intake accordingly.

And remember that most people who drink spirits tend to have drinks containing more than the standard amount.<sup>7</sup>



## A REMINDER ABOUT INAPPROPRIATE DRINKING

In closing, here's a list of situations where drinking is inappropriate and unadvised:

- At work
- Before or during physical activity
- Before or while driving any motorized vehicle
- Before or while handling any mechanical or electrical machinery or equipment
- When drinking is against your doctor's orders
- When drinking bothers you and is not enjoyable

<sup>6</sup> Lemmens, 1994; Kerr et al., 2005; White et al., 2005.

<sup>7</sup> Gill, 2004; Lemmens, 1994.

## FROM THE SAME COLLECTION

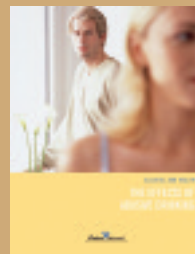
The carefully researched, easy-to-understand monographs in Éduc'alcool's "Alcohol and Health" series get straight to the point. They are essential resources for anyone in the health, education and information fields.

You can download them from our website at [www.educalcool.qc.ca](http://www.educalcool.qc.ca) or order them by calling 1-888-ALCOOL1.



### THE EFFECTS OF MODERATE AND REGULAR ALCOHOL CONSUMPTION

A brochure summarizing the research presented in the monograph.



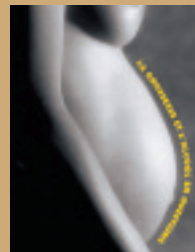
### THE EFFECTS OF ABUSIVE DRINKING

A brochure explaining the physiological and psychological effects of both chronic and occasional abusive drinking.



### ALCOHOL AND THE HUMAN BODY

A brochure explaining what happens in the body when you drink and the specific effects of alcohol.



### PREGNANCY AND DRINKING

A brochure for pregnant women and those planning to become pregnant. Answers frequently asked questions about drinking while pregnant and nursing.



### ALCOHOL AND OLDER PEOPLE

A brochure on the effects of alcohol on people 65 and older. Contains valuable information for older people, their families, and caregivers.

## ABOUT ÉDUC'ALCOOL

Éduc'alcool is an independent, not-for-profit organization whose sole mission is to improve the relationship between Quebecers and alcohol.

To that end, we develop prevention, education and information programs to help young people and adults make responsible, enlightened decisions about drinking. The Éduc'alcool slogan summarizes our commitment: Moderation is always in good taste.

*Éduc'alcool would like to thank Ms. Catherine Paradis, M. Sc., Research Associate at GRASP, Université de Montréal, for her rigorous approach and admirable effort in simplifying and untangling the data.*



*Moderation is always in good taste.*

If you have a comment about this publication or want to order more copies, contact Éduc'alcool.

**Téléphone: 1-888-ALCOOL1 (1-888-252-6651)** Courriel : [info@educalcool.qc.ca](mailto:info@educalcool.qc.ca)

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