



ALCOHOL AND HEALTH

THE EFFECTS OF ABUSIVE DRINKING



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INTRODUCTION

Quebecers are very concerned about the relationship between alcohol and health. When asked what interests them most about drinking, the consensus is clear and consistent: the link between drinking and health is always first on the list.

Éduc'alcool is well aware that knowledge alone does not determine human behaviour. However, it does help people make decisions. The more informed people are about the effects of drinking, the more intelligently they can appreciate and enjoy drinking moderately, and the more successfully they can avoid abusive drinking and its terrible effects.

We know that the vast majority of Quebecers will never have to deal with the harmful effects described in this booklet. Generally speaking, most of us have a healthy attitude towards alcohol and reasonable drinking is the rule, while abuse is the exception.

Nonetheless, we believe that the public and health care professionals need to pay specific attention to the problems resulting from alcohol dependency and excessive drinking. That's why we have published *The Effects of Abusive Drinking*. Note that our focus is not the causes of alcoholism, but the harmful impact of abusive drinking.

Like all the publications in the *Alcohol and Health* series, this one was prepared with the utmost care. As always, the scientific data was translated to comprehensive information to make it accessible to as many people as possible.

It is our sincerest hope that this publication will serve to further inform Quebecers about drinking and convince them that moderation is always in good taste.



Too much is too much: dependency and excess

The harmful effects of abusive drinking on the human body occur under two different circumstances. Where there is alcohol **dependency**, the effects are chronic and result from regular, heavy drinking. Where there is **excess**, the effects are acute and result from individual occasions of immoderate drinking; the risk is proportionate to the amount of alcohol in the blood.

People who have an alcohol dependency are certainly endangering their health. Among other things, they risk developing cirrhosis of the liver, a very serious disease. What is less well known is that even occasional excessive drinking can damage almost every organ in the body.

Whether or not you frequently drink to excess, if you've ever been drunk you probably have experienced the unpleasant "morning after" effects of a pounding headache, upset stomach and vomiting.

Most people, and young people in particular, are not aware that just one occasion of severe alcohol intoxication can cause very serious problems, including gastrointestinal bleeding, abnormal heart rhythm (arrhythmia), stroke (cerebrovascular accident or CVA) and respiratory depression that can lead to death. Furthermore, alcohol causes a host of social problems—accidents, fights, unprotected sexual relations, etc.—that have their own medical consequences, which are often misunderstood or underestimated.

It takes the right information to make the right decision

Alcohol may produce pleasurable effects, but it also causes problems. When we choose to drink, we must remain aware and attentive. Physically speaking, is drinking good for us or bad for us?

Given that drinking in Quebec has been on the rise since 1992, and that the population is aging and thus becoming more vulnerable to the effects of alcohol, we must do what we can to keep from becoming literally "sick of drinking."

Some pathological conditions are not caused only by excessive drinking. As a result, when someone does not have the classic or stereotypical profile of an alcoholic, alcohol may not immediately spring to mind as a cause of the symptoms displayed.

When it comes to alcohol, we are not all born equal. Some of us are more sensitive to its effects than others. Some people are more vulnerable because of biological or genetic reasons. In such people, a number of conditions may be brought on by a relatively small amount of alcohol.

And some complications result not from drinking, but from alcohol withdrawal.

Dependency is caused by the effect of alcohol on areas of the brain known as the "pleasure centres." When these pleasure centres are stimulated by alcohol, they give the drinker a sense of well-being. When drinkers become dependent on that feeling, it's difficult for them to stop drinking. In fact, when alcoholics quit drinking, they are often physically very unwell: 4% of them suffer convulsions and 6% suffer from an acute form of delirium called delirium tremens (also known as the DTs). Medication may be necessary to relieve these symptoms and strong psychological support is always advised.

You don't have to be an alcoholic to suffer the effects of alcohol. It happens that some people who are particularly vulnerable to alcohol drink more than their bodies can tolerate, while others simply drink too much.

When you drink chronically or excessively, alcohol can have significant harmful effects on the body and affected organs react strongly.

REMEMBER!

◆ Alcohol is an **irritant** for the entire digestive tract, including the mouth, throat, esophagus, stomach and intestines. Alcohol also affects the valves that control the passage of food from the mouth to the intestines.

◆ Alcohol is a **food** and the liver is responsible for digesting it. The liver is a little factory capable of breaking down about 7-8 grams of pure alcohol an hour.¹ That equals a reduction in blood alcohol of about 15-17 mg/100 ml per hour. That's about:

one 340-ml/12-oz bottle of beer (5% alcohol)

one 140-ml/5-oz glass of wine (12% alcohol)

one 45-ml/1.5-oz shot of spirits (40% alcohol)

¹ Cederbaum, A. I. (2012). Alcohol metabolism. Clinics in liver disease, 16(4), 667-68585.

When the liver is overloaded or damaged, it reacts by storing fat, which affects the normal functioning that is so critical to human life.

◆ Alcohol affects the **heart** and blood vessels, even though it has a certain protective effect in the arteries and promotes the production of "good" cholesterol. Alcoholics may have diseased hearts, but their arteries will be fat free.

◆ Alcohol affects the **brain** and the nervous system, in particular the nerves in the legs. Alcohol is a neurotoxin that affects, among other things, memory, balance and the ability to anticipate things.



THE EFFECTS OF ABUSIVE DRINKING

Alcoholics risk damaging just about every major system in the human body, either through alcohol dependency or excessive drinking. Alcohol can have a harmful impact on everything: the internal organs (liver, pancreas, esophagus, stomach and intestines), the circulatory system (heart, arteries and the cerebrovascular system), the nervous system, mental health, even a fetus. Alcohol intoxication also leads to social problems that can have serious medical consequences.

Effects on the internal organs

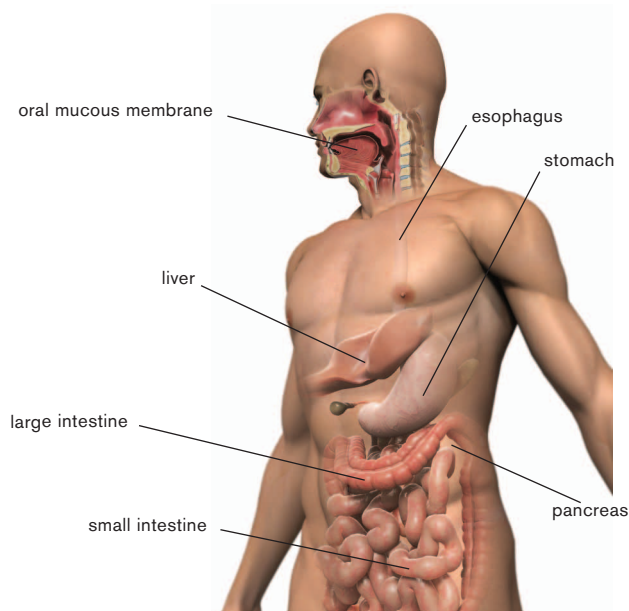
Liver

Liver diseases are the most common problems related to alcohol abuse. Because the liver bears the greatest responsibility for metabolizing alcohol, it inevitably suffers the impact of intoxication.²

When a person drinks more than the liver can process, lesions begin to form. Alcohol-related liver disease progresses from a relatively benign condition of fat cell accumulation known as “fatty liver” (hepatic steatosis) to more serious inflammation (alcoholic hepatitis) and finally cirrhosis. Both hepatic steatosis and alcoholic hepatitis are reversible conditions that in some cases may improve without long-term consequences if the person stops drinking completely. However, if drinking continues, the once-reversible conditions will develop into severe hepatitis or cirrhosis in 25% of cases. Both of the latter are very serious diseases with a 5-year survival rate of 20% to 60%.

Alcohol's toxic effect on the liver can first be seen with what is considered moderately excessive drinking. The risk of cirrhosis becomes significant when average alcohol intake reaches 30-60 grams a day, which is 2.2-4.5 drinks a day. A person would have to drink that amount for at least 10 years before the disease would appear, although heavier drinkers might see symptoms sooner.³ Drinking must also be continuous, rather than cumulative.⁴ In fact, the risk is higher when people drink for 10 years in a row, as opposed to 10 years spread over a period of 30 years. However, the research does not reveal whether there's a difference between dividing the drinking over the seven days of the week and consuming it in concentrated fashion in just a few days, such as over a weekend.

Of course, liver disease can be caused by many other things—viruses, bile duct problems, medications, genetic disorders or metabolic conditions—but epidemiological data indicate that alcohol abuse is the primary cause of death due to liver complications.



Pancreas

In 80% to 90% of all cases, alcohol is the cause of both acute and chronic forms of pancreatitis. Acute pancreatitis can be treated and healthy function restored, but chronic pancreatitis causes *permanent scarring* that results in long-term impairment of pancreatic function and the possibility of multiple complications.

Acute pancreatitis is often an indicator of a chronic condition to come. Regular heavy drinking continues to take its toll on the pancreas, sometimes causing a permanent inflammation that can seriously impair the exocrine (glandular) function of the pancreas.⁵

Acute pancreatitis generally results from autodigestion, a process whereby pancreatic enzymes destroy the tissue of the organ itself, leading to inflammation. The main symptoms of acute pancreatitis are abdominal pain and vomiting, which may persist even after the person quits drinking.

Chronic pancreatitis may present as an acute episode of the same symptoms (abdominal pain, nausea and vomiting). In some serious cases, there may also be serious metabolic disorders and acute circulatory complications that can be fatal.

Some people may develop pancreatic disease from drinking moderately (less than two drinks a day), while others may have up to 25 drinks a day before the symptoms appear. Still others will never develop pancreatitis, no matter how much they drink.

In high-risk people, chronic pancreatitis will develop with prolonged alcohol use, i.e. more than 10-15 years for women and 15-20 years for men. Each individual's vulnerability to alcohol is a determining factor in pancreatic disease.

² See *Alcohol and Health II, Alcohol and the Human Body* (Éduc'alcool).

³ Bellentani, S., & Tiribelli, C. (2001). The spectrum of liver disease in the general population: lesson from the Dionysos study. *Journal of Hepatology*, 35(4), 531-537.

⁴ Sørensen, T. A., Bentsen, K., Eghøj, K., Orholm, M., Højbye, G., & Offersen, P. (1984). Prospective evaluation of alcohol abuse and alcoholic liver injury in men as predictors of development of cirrhosis. *The Lancet*, 324(8397), 241-244.

⁵ Exocrine glands release their secretions directly into the body via ducts; endocrine glands release their secretions into the bloodstream.



Esophagus

People who abuse alcohol are at risk for developing a condition called gastroesophageal reflux disease, or GERD (commonly known as gastric reflux). Normally, food passes from the esophagus to the stomach and into the intestine. Gastric reflux causes a backflow of acidic fluid from the stomach into the esophagus, resulting in an uncomfortable burning sensation.

Gastric reflux can lead to reflux esophagitis, a more advanced condition involving inflammation of the esophageal mucosa and more severe acid backflow.

Esophagitis may be acute (severe, sudden and short-lived) or chronic (develops and worsens over a long period of time). The burning sensation may be provoked by food, alcohol or hot liquids.

In alcoholics, chronic esophagitis can lead to ulcers in the esophagus. Regular, heavy drinkers may also develop a tear in the mucous lining at the point where the esophagus joins the stomach.⁶ The tearing is caused by repeated, prolonged retching that, in 5% of cases, leads to digestive hemorrhaging, in which the person vomits blood (hematemesis) in quantities that can be considerable and fatal.

Chronic alcoholism is the primary contributing factor in cancer of the esophagus, and the risk is increased significantly by smoking.

Stomach

Alcohol intoxication can cause an inflammation in the stomach mucosa—the lining that protects the stomach walls. This condition is called acute gastritis. Heavy drinking can cause heartburn, nausea, vomiting (sometimes with blood) and pain in the upper abdominal area (epigastric pain). The symptoms generally disappear two or three days after the person stops drinking.

Regular abusive drinking can result in chronic gastritis, which is often asymptomatic and very difficult to cure, as it develops slowly over many years. It is generally accompanied by anemia and malnutrition; sometimes, it is seen in conjunction with gastric reflux (see above). Alcoholics may also develop digestive hemorrhaging, due primarily to ruptures in the esophageal veins, or the deterioration or ulceration of the gastric mucosa.

Intestines

Alcohol impairs the body's ability to absorb various nutrients, including amino acids, vitamins A and C, minerals and glucose. It also damages the cells lining the intestinal tract and affects the production of secretions essential for transporting nutrients to the blood. One of the effects is diarrhea, observed in 10% to 50% of alcoholics. The effects of alcohol on the intestines are generally moderate and, with the help of nutritional and vitamin support, can disappear 2 to 6 weeks after the person quits drinking.

⁶ Mallory-Weiss Syndrome.

Effects on the circulatory system

Arteries

The more you drink, the higher your blood pressure.⁷ The relationship between alcohol and blood pressure is even more obvious in drinkers over the age of 40. Systolic pressure increases on average by 2.7 mmHg in those who have 4 to 6 drinks a day, and by 4.6 mmHg in those who have at least 7 drinks a day. Alcohol-related hypertension (high blood pressure) tends to disappear when the person quits drinking, but returns if drinking resumes.

Hypertension can cause a variety of health problems, including angina and heart rhythm disturbances.

Alcohol also contributes to lowering fibrinogen, a protein that functions as a blood coagulant. But coagulation is critical: it allows us to survive injury by stopping bleeding quickly. Should a blood vessel rupture, particularly as a result of elevated blood pressure, alcohol can become harmful, or even fatal, because of its anticoagulant effect.

Heart

Regular, heavy drinking over at least 10 years can weaken the heart muscle and prevent it from pumping blood efficiently, a condition called alcoholic cardiomyopathy. In some drinkers, the disease may be asymptomatic and be discovered only accidentally. In others, it causes chest pain, palpitations, night coughing, abnormal fatigue, difficulty breathing and sometimes even cardiac arrest from arrhythmia.

Alcoholics suffering from cardiomyopathy often experience heart rhythm problems (tachycardia, palpitations) when they drink an excessive amount. In most cases, normal heart rhythm returns spontaneously within 24 hours.

In cases of extreme intoxication, even non-alcoholics with healthy hearts can have heart rhythm disturbances.



STROKES

Abusive drinking is a risk factor in cerebrovascular accidents (CVA), also known as strokes. Chronic heavy drinking increases the risk of death from a cerebral hemorrhage, while episodes of intoxication can obstruct the flow of blood to the brain, which can also cause a stroke.

⁷ We refer here to systemic arterial blood pressure, i.e., the pressure in the large arteries delivering blood to body parts other than the lungs, expressed as a ratio of systolic to diastolic pressure. Systolic pressure is the peak pressure in the arteries when the heart contracts; diastolic pressure is the lowest pressure at the resting phase of the cardiac cycle.



Effects on the nervous system

All excessive drinking has neurological consequences. In low doses, alcohol has a mild stimulant effect that is exciting and even disinhibiting. In higher doses, it acts as a sedative and can cause reduced attentiveness, loss of balance, speech impairment and mental confusion. These are problems generally associated with *common drunkenness*.

All too frequently, however, these problems evolve into the more serious symptoms of *pathological drunkenness*, including agitation and aggressiveness. These are the problems most responsible for the harmful social effects of alcohol (see below, *Effects on the social environment*).

Chronic, abusive drinking can cause a variety of disturbances in the central and peripheral nervous systems.

- ◆ Some problems may result from the malnutrition that often plagues alcoholics.⁸
- ◆ Some neurological complications may be linked to liver malfunction.⁹
- ◆ Alcohol can be a primary cause of specific neurological problems.¹⁰
- ◆ Some neurological problems, such as acute alcoholic delirium (delirium tremens), occur when an alcoholic stops drinking.

The neurological complications associated with abusive drinking are usually described individually, but it is often better to consider them all as part of a complex whole.

Wernicke-Korsakoff Syndrome

One of the most serious problems resulting from continued excessive drinking is Wernicke-Korsakoff syndrome, which is caused by a significant thiamine (vitamin B1) deficiency.

Wernicke's encephalopathy is a severe syndrome characterized by confusion, lack of coordination (ataxia), paralysis of the eye muscles and sometimes even stupor and coma. These clinical conditions may develop suddenly or over several days.

Individuals diagnosed with Korsakoff's psychosis usually have symptoms of anterograde and retrograde amnesia (severe memory loss), as well as temporal disorientation, false recognition and confabulation (invented memories). Korsakoff's psychosis generally follows Wernicke's encephalopathy, which is why both are often considered as a single syndrome. Such cases are quite spectacular, and fortunately very rare.

Polyneuritis

Alcoholic polyneuritis is the most common neurological complication caused by chronic alcoholism. Multiple nerves become inflamed, involving a breakdown of the myelin (the sheath around the nerve) and the impairment of the peripheral nervous system. The condition usually starts insidiously, with symptoms including unusual numbness or prickly sensations (dysesthesia), cold feet, cramps, particularly in the calves, and reduced walking endurance. It is caused by the toxic effect of alcohol and its metabolites, and is exacerbated by thiamine deficiency. In more severe cases, it may spread to the upper limbs. Polyneuritis is slowly reversible after the person stops drinking.

Optic neuritis

Optic neuritis is a lesion in the optic nerve that can be caused by chronic alcohol intoxication. The condition is characterized by a progressive and bilateral reduction in visual acuity. Field of vision is reduced and patients have difficulty distinguishing colours. The condition is reversible if the person stops drinking—and smoking—and takes the proper vitamins.

⁸ Wernicke's encephalopathy, Korsakoff's syndrome, pellagrous encephalopathy, polyneuritis, optic neuritis.

⁹ Hepatic encephalopathy, portacaval encephalomyelopathy.

¹⁰ Optic neuropathy, cerebellar atrophy, dementia, central pontine myelinolysis, Marchiafava-Bignami disease, alcoholic myopathy, alcoholic epilepsy.

Hepatic encephalopathy

Hepatic encephalopathy is observed among people whose liver function is severely impaired by cirrhosis. It can be caused by toxic substances that the diseased liver is no longer able to metabolize. The most common form of hepatic encephalopathy is characterized in the first stage by involuntary wrist movements; in the secondary stage, by mental confusion; and in the third stage, by a deep coma.

Cerebellar atrophy

About half of all alcoholics suffer from cerebellar atrophy, characterized by varying degrees of ataxia (loss of coordination) affecting primarily the torso and lower limbs. People have trouble synchronizing their movements, which manifests essentially as difficulty walking.

Alcoholic dementia

Heavy drinking over a long period of time can cause brain lesions that produce the symptoms of dementia. Problems include memory loss, learning difficulties, impaired psychomotor skills, poor sense of time and space, and generally reduced cognitive function (such as the ability to reason).

The intellectual and emotional processes of alcoholics are often impaired. Alcoholics who lack a moral and social conscience and behave irresponsibly without concern for consequences put not only themselves at risk, but others, too.

Alcoholic epilepsy

Four to seven percent of alcoholics suffer from epileptic seizures. In fact, alcoholism is the primary cause of late-onset epilepsy in adults. Among alcoholics, seizures may be related directly to acute intoxication, as well as to withdrawal from alcohol.

Acute alcoholic delirium

When alcoholics stop drinking suddenly (usually unintentionally), they experience the symptoms of acute alcoholic delirium (delirium tremens) within 6 to 8 hours of their last drink. They feel jumpy, shaky, nervous, anxious and nauseated. If alcohol withdrawal continues, the symptoms become more severe: agitation and confusion, hallucinations, rapid trembling, insomnia, cardiac arrhythmia and fever. Delirium tremens can be fatal: if untreated, 30% of alcoholics will die from it.





Effects on mental health

Abusive drinking can cause a variety of psychiatric disorders. Studies show that alcoholics have more mental problems than non-alcoholics. The term psychiatric comorbidity is used when an individual displays maladaptive drinking behaviour, along with mental or psychiatric problems that are caused neither by acute intoxication nor withdrawal.

This combination of psychiatric conditions and abusive drinking must be taken all the more seriously, since the mental disturbances can easily be mistaken as the effects of alcohol. Both problems must be dealt with at the same time as part of an integrated treatment plan, or else each can have a negative impact on the treatment of the other.

Three major types of psychiatric problems affect alcoholics to a much greater degree than non-alcoholics:

- ◆ **Personality disorders.** People who have drinking problems suffer from the full range of personality disorders. For example, antisocial personality disorder is ten times more common among alcoholics than among the general population. There is also a strong connection between alcoholism and all kinds of eating disorders, particularly among women.
- ◆ **Mood disorders and anxiety.** This category includes bipolar disorder and depression, the latter being extremely common among alcoholics. Depression must be taken very seriously: suicide—one of its consequences—is eight to ten times more common among alcoholics than among the general population. Alcoholics do not suffer excessively from anxiety-related conditions, such as panic disorder and social phobia, but both are nonetheless overrepresented among alcoholics than among the rest of society.
- ◆ **Schizophrenia** and other serious illnesses. While there is no link between schizophrenia and intoxication or withdrawal, this very serious disease is observed more among alcoholics than non-alcoholics. Most psychotic problems observed among alcoholics are related to alcohol intoxication, as described above in *Effects on the nervous system*.

Effects on the social environment

Abusive drinking leads to social problems with serious social and medical consequences that are frequently underestimated.

Too much alcohol causes disturbances in the brain, the central nervous system and the hormonal system, which, in turn, affects cognitive and physiological processes. When people are drunk, everything suffers: response time, muscle control, dexterity, hand-eye coordination, short and medium-term memory, and problem-solving capacity.

In other words, the mortality rate is higher among alcoholics not only because of the particular diseases and conditions caused by alcohol, but also because alcohol increases the normal risk of suicide, homicide and injury resulting from car accidents and violence, for example.

Clearly, intoxication is often to blame for accidental injuries requiring medical care. However, the link between intoxication and the severity of such injuries is not always mentioned. For example, while all road accident victims may suffer serious injuries, intoxicated victims are more likely to be gravely or fatally injured than those who are sober.

The exact reasons for this are not fully understood, but one explanation could be that alcohol inhibits the production of molecular fragments known as free radicals, thus altering the chemical composition of the blood and possibly causing cerebral edema or hemorrhage.

Studies also show that alcohol intoxication is a factor in 64% of fires and burns, 48% of hypothermia and frostbite cases, and 40% of falls.

Road accidents¹¹

The Société de l'assurance automobile du Québec reports that, in 2016, 33.3% of drivers who died on Quebec roads had been drinking. If we consider only those drivers who had a blood alcohol content above the legal limit of .08, the percentage drops to 25.5%, representing 88 deaths. While that number is still too high, the percentage of alcohol-related road deaths has been dropping over the 25 years since 1987, when it was 50.3%.

The social impact of non-fatal accidents is even more significant. The bulk of the social and economic costs of alcohol intoxication can be traced to driving while impaired.

As for accidents with non-fatal injuries, impaired drivers are more at risk compared to those who have no alcohol in their systems, of having an accident on their own (such as hitting a lamp post or driving off the road), as opposed to an accident involving someone else (such as another vehicle, a pedestrian or a cyclist).

The more serious the consequences of an accident, the more likely alcohol is involved. From 2012 to 2016, there were 1,800 mild injuries, 260 serious injuries, and 110 deaths a year caused by drinking. That corresponds to 5%, 15% and 30% of the victims in each category.¹² In all cases, men and young adults are most at risk for an alcohol-related accident.

Violence

While it is wrong to believe that alcohol directly causes violence, the fact remains that, in our society, alcohol intoxication has a direct impact on violent behaviour and the resulting injuries. Because one of the neurological effects of drinking is a loss of inhibition, alcohol is a determining factor in the kind of violence often associated with the removal of inhibition, such as sexual and physical assault.

Studies show that the likelihood of aggressive behaviour increases with the amount of alcohol consumed. Alcohol intoxication is thus associated with homicide, violent crime, physical and sexual assault, and rape.

One Canadian study on addiction, carried out among the adult population, revealed that in the 12 months preceding the survey, 11% of respondents had been shoved and 3% assaulted by someone who had been drinking. There is a close link between intoxication and criminal behaviour, and a significant part of that relationship is one of cause and effect.

Victims are often also intoxicated when violence occurs, which makes them more vulnerable to physical assault.

¹¹ Société de l'assurance automobile du Québec (2017). *Profil détaillé des faits et des statistiques touchant l'alcool et les drogues au volant*. Consulted January 10, 2019 at <https://saaq.gouv.qc.ca/fileadmin/documents/publications/espace-recherche/stats-alcool-drogues-profil-detaille.pdf>

¹² Sûreté du Québec (2018). *Tous unis contre l'alcool et la drogue au volant*. Consulted January 10, 2019 at https://www.sq.gouv.qc.ca/nouvelles/onc_capacite_de_conduite_affaiblie/

Conjugal violence

Abusive drinking by one partner in a couple often leads to an escalation of conflict that can result in physical violence. The risk of conjugal violence increases with frequency of intoxication. In Canada, 41% of female victims and 25% of male victims said that their partner was under the influence of alcohol when the violence occurred. According to Statistics Canada, 26% of men and 55% of women who have killed their partners were drunk at the time the murder was committed.

A definite link has been established between drinking and the severity of conjugal violence. When the violent partner is under the influence of alcohol at the time of the attack, the victim is in greater danger of being physically hurt and requiring medical attention.

In addition to the physical injury that can result from conjugal violence, studies show that the partners of alcoholics are more likely to suffer from anxiety, insomnia, tension and depression.



Sexuality

Alcohol intoxication, particularly among young people, is linked to unprotected sex, which increases the risk of sexually transmitted infections (STIs) and unwanted pregnancy.



Alcohol and the fetus

Pregnant women who drink to the point of intoxication risk giving birth to children with fetal alcohol syndrome (FAS). FAS encompasses a host of problems that can include growth retardation, intellectual deficits, heart malformation, an abnormally small head and other facial and skeletal abnormalities.

For more information, see the Éduc'alcool booklet called *Pregnancy and Drinking: Your Questions Answered*.



BETTER SAFE THAN SORRY

Most drinkers never suffer any of the conditions described in this booklet. Nevertheless, it is important to remember that many symptoms may develop at some point without ever reaching a dangerous level.

Never forget that some people are born with a vulnerability to alcohol that, without leading to psychological or physical dependence, can still affect the function of their organs and systems.

When the pleasure of drinking is outweighed by its harmful effects, it's better to reduce your alcohol

intake or stop drinking altogether, to see if the situation improves.

When you go for your annual checkup, be smart and tell your doctor how much you drink—even if no questions are asked—so that the doctor can make the most informed assessment of your examination and test results.

This publication emphasizes the importance of adapting our alcohol consumption to our own vulnerabilities, since moderation is always in good taste.



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IN THE SAME COLLECTION



THE EFFECTS OF MODERATE AND REGULAR ALCOHOL CONSUMPTION

A review of the research on how moderate, regular alcohol consumption affects human health.



ALCOHOL AND THE HUMAN BODY

An explanation of what happens to alcohol as it passes through the body and the effects it produces.



ALCOHOL AND SENIORS

A description of the effects of alcohol on people 65 and older. Includes valuable advice for seniors, their families, friends and caregivers.



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Explains the beneficial, harmful and downright dangerous effects of combining alcohol with various other substances or activities.



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Straightforward answers to frequently asked questions about drinking during pregnancy and breast-feeding, for pregnant women and those who might become pregnant.



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Examines the harmful effects of early alcohol use and explains the basic reasons why young people should not have unrestricted access to alcohol.



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Explains the connections and interactions between mental health disorders and problem drinking and provides useful information and advice.



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Abusive drinking has long-lasting effects even when blood alcohol content is back to zero.



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Alcohol is a fickle friend of sleep. That's one of the most important conclusions of this report on the impact of drinking on sleep. There are many more.



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A report on women and drinking that explains why women are more vulnerable than men—both physiologically and socially—to the effects of alcohol.



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The depressant effect of alcohol and cannabis are amplified when the two are taken together, this publication explains them and warns users about the synergy that heightens the effects of both substances.



ALCOHOL AND HEART HEALTH

A report on the effects of moderate drinking on cardiovascular health. Benefits are explained and myths are debunked.



ALCOHOL, ALZHEIMER'S DISEASE AND OTHER NEUROCOGNITIVE DISORDERS

A publication covering the impact of drinking habits on the development of Alzheimer's disease and other neurocognitive disorders.



ALCOHOL AND DIABETES

A review and detailed examination of the data regarding the connection between moderate drinking, heavy drinking and diabetes.



ALCOHOL AND GENETICS

This report demystifies the impact of our genetic inheritance on the risk of developing a drinking problem, from both the physical and psychological perspective.



Moderation is always in good taste.

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