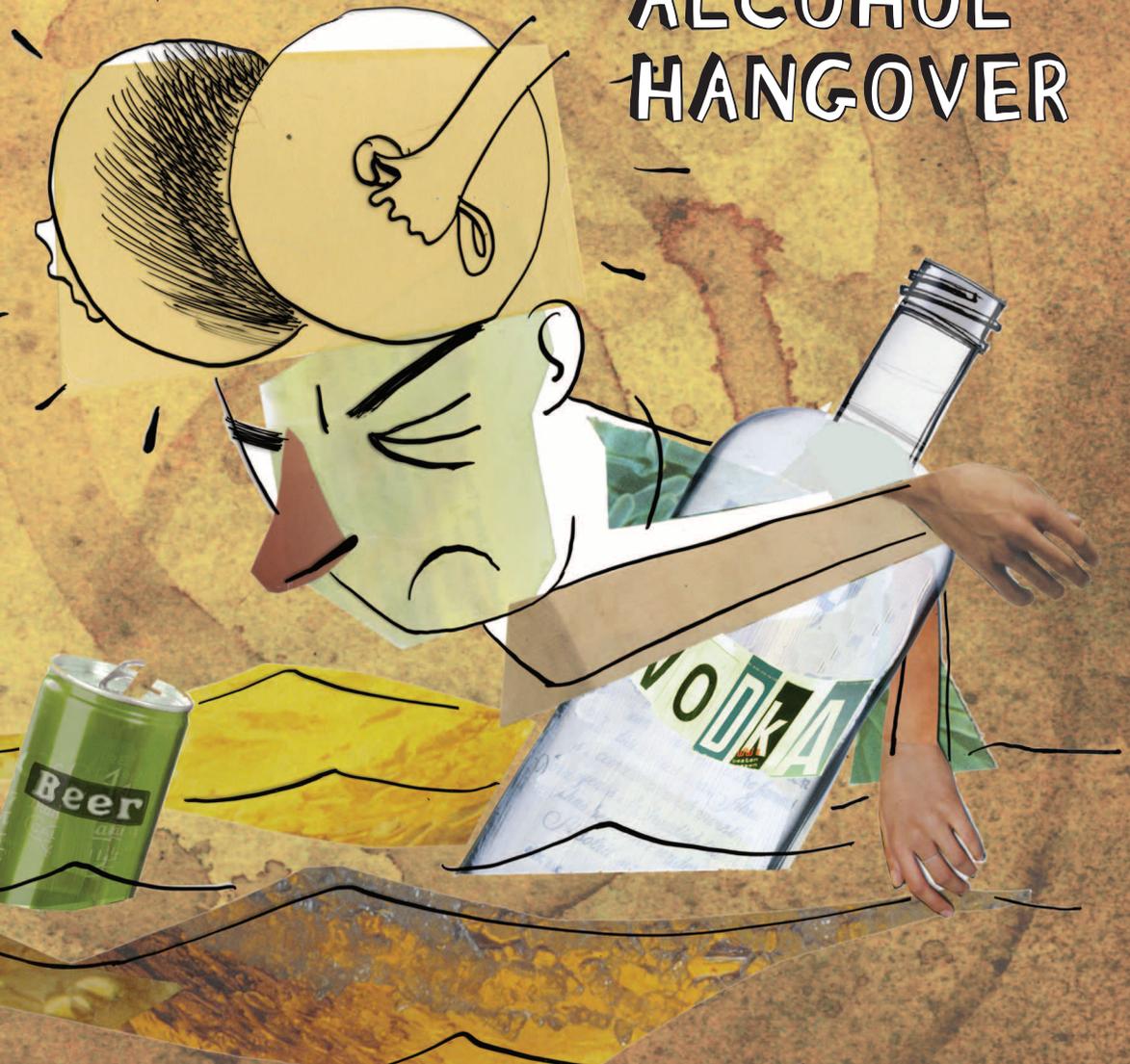


# ALCOHOL HANGOVER



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# THE MORNING AFTER...

No matter where, no matter when, you can pretty much count on the fact that some people who drink are going to wake up one morning badly hung over. Why? Well, duh. Because they drank too much the night before.

## **That's scary!**

There was a pilot who showed up for work the morning after an evening of heavy drinking. But although he had slept the whole night, he was still in no condition to fly.

Even after “sleeping it off,” even after all the alcohol you’ve drunk has been metabolized by your body, even if your blood alcohol content is back to zero, you might still not be in full possession of your faculties. Could excessive drinking have extended effects?

## **Warning! Danger!**

At swimming pools and lakes across the province, lifeguards and monitors are not likely to be fully alert after partying hard the night before. Even if they feel like they have slept well they should never work the morning after drinking a lot and supervisors should either send them home or assign them to duties where they are not responsible for others.

With this report, Éduc’alcool is hoping to demystify the phenomenon of the hangover and show that the best – and really the only – way to prevent one is never to drink excessively.

Getting drunk even just once is once too often. So remember: whatever the circumstances, moderation is always in good taste.

# HOW COMMON IS HANGOVER?

It's a fact that some Quebecers over the age of 12 drink too much. Here are the figures: 22% of men and 14% of women have had 5 or more drinks on a single occasion at least once in the last year.

Among young people 18-24, the percentage of abusive drinkers rises to 40%. Those are disturbing statistics, and the numbers have been climbing for several years. In 2020, 18% of Quebecers 12 and older said they had drunk to excess, whereas only 11% said so twenty years ago.

It's a sorry state of affairs.

Estimates show that 10% of Quebec drinkers suffer from hangover fairly regularly, since 75% of heavy drinkers report having a hangover. As for the other 25%, nobody is quite sure why they don't suffer the morning after, but the reason could be genetic.

## 1. Alcohol hangover

The discomfort of a hangover begins just as blood alcohol content (BAC) starts to drop and is worst when BAC is down to zero. The unpleasantness rarely lasts more than 24 hours.

Hangover symptoms vary according to BAC, which basically depends on time, weight and sex. The distribution of alcohol in the blood is determined by the ratio of fat to lean tissue in the body, and BAC calculations are always approximate, since people of the same weight may be of different ages and have different body fat percentages.



## © Turn off the light and lower your voice...

How uncomfortable is a hangover? The list of biological, physiological and emotional symptoms is long. Some can be quite severe and seriously affect functioning.

<b>Hangover symptoms</b>	
<b>General symptoms</b>	<ul style="list-style-type: none"><li>- Fatigue</li><li>- Depression</li><li>- Distress</li><li>- Tremendous thirst</li></ul>
<b>Pain (nociceptive symptoms)</b>	<ul style="list-style-type: none"><li>- Muscle pain</li><li>- Muscle cramps</li><li>- Headache</li></ul>
<b>Gastrointestinal disorders (the most unpleasant and inconveniencing)</b>	<ul style="list-style-type: none"><li>- Loss of appetite</li><li>- Stomach ache</li><li>- Nausea</li><li>- Vomiting</li><li>- Diarrhea</li></ul>
<b>Increased activity of the sympathetic nervous system</b>	<ul style="list-style-type: none"><li>- Increase in systolic blood pressure</li><li>- Rapid heartbeat (tachycardia)</li><li>- Palpitations</li><li>- Tremors</li><li>- Sweating</li><li>- Pulmonary edema</li><li>- Anxiety</li></ul>

## More hangover symptoms

<b>Sensory-perceptual symptoms</b>	<ul style="list-style-type: none"><li>- Hypersensitivity to sound</li><li>- Hypersensitivity to light</li><li>- Dizziness</li></ul>
<b>Sleep disturbance</b>	<ul style="list-style-type: none"><li>- General and unexpected reduction in sleep time</li><li>- Increase in slow-wave sleep</li></ul>
<b>Cognitive effects</b>	<ul style="list-style-type: none"><li>- Impaired attention</li><li>- Impaired concentration</li><li>- Impaired short-term memory</li></ul>
<b>Psycho-pathological effects</b>	<ul style="list-style-type: none"><li>- Significant visual-spatial difficulties</li><li>- Impaired psychomotor skills</li><li>- Notable feeling of anxiety</li><li>- Notable feeling of depression</li><li>- Notable feeling of irritability</li></ul>



## 2. The causes of hangover

Hangover is not yet very well documented as a research topic, but a team of international scientists is analyzing the role that genetics may play in explaining the phenomenon and determining which factors may affect the severity of symptoms.

### 🌀 Indirect causes: dehydration, low blood sugar and sleep disturbance

#### • I'm so thirsty...

The tremendous thirst, aching muscles and throbbing head associated with hangover are all related to the dehydration that occurs when the body is overloaded with alcohol. Basically, the kidneys can't reabsorb enough water from the urine and the body ends up eliminating more water than it takes in.



- **My head hurts...**

A dehydrated body will look for water wherever it can and rob other organs, including the brain, if necessary. When the brain loses water, it shrinks slightly, as do the meninges (the protective covering around the brain). It's the shrinking that causes the headaches.

- **All my muscles ache...**

Dehydration also creates a serious shortage of electrolytes in the body, which is what explains the cramps and muscle pains associated with hangover.

- **I feel sooooo sick!**

In the hours after heavy drinking, you can feel weak, tired, dizzy, anxious, and depressed. You may also have trouble concentrating and seeing clearly.

That's because your liver is not functioning properly. The liver is an amazing organ that processes most of the alcohol you drink. It also produces glucose, the main source of energy for metabolism and the substance most likely to affect the brain. But if the liver is too busy processing alcohol it can't make any glucose, and a lack of glucose – known as hypoglycemia – can cause the brain to malfunction in various ways.

Everyone who drinks too much will suffer from temporary hypoglycemia, but some people are particularly susceptible because their liver glycogen stores are low.



## Who is most susceptible to hypoglycemia?

- The very young
  - who are thin
  - or who have not eaten in more than 24 hours.
- Regular drinkers who eat little or nothing.

The chicken or the egg? To compensate for a lack of sugar, the body produces other sources of energy, such as fatty acids. But an increased concentration of fatty acids in the blood causes pH to drop, which causes a set of symptoms associated with hangover.

### • And I'm so tired...

Another reason people feel so terrible the day after drinking a lot is that they have not slept very well. Alcohol may help you fall asleep, but it disturbs the normal sleep cycle.

Excessive drinking can cause insomnia and frequent waking, and it can exacerbate other sleep problems. That's why you're likely to feel so tired "the morning after" and not in full possession of your cognitive faculties.

**REMEMBER:  
NOBODY SLEEPS WELL  
AFTER GETTING WASTED!**



## © Direct cause of hangover: production of a toxic substance

Let's go back to the amazing liver. As we mentioned, it metabolizes most of the alcohol a person drinks. But in the process, it produces an enzyme that turns alcohol into acetaldehyde, which is a highly toxic substance. In high concentrations, acetaldehyde has an impact on the whole body.

### The effects of acetaldehyde

- Flushed face
- Sweating
- Nausea
- Vomiting
- Tachycardia

Simply put, the discomfort of a hangover is the direct result of the metabolism of alcohol by the liver. The production of acetaldehyde is one of the only factors that explains both the presence and severity of hangover symptoms.

## ↓ Risk factors

This will not surprise you: the primary risk factor for hangover is excessive drinking. There is indeed a direct relationship between the amount you drink and the occurrence and severity of hangover symptoms.

### ③ Other products and impurities in alcohol

In addition to alcohol, some alcoholic beverages also contain methanol, histamine and polyphenols, which definitely affect the severity of hangover symptoms.

Alcoholic beverages that contain a significant amount of impurities, such as preservatives, are likely to cause hangover symptoms even when you drink only moderate amounts. Zinc and other metals are sometimes added to alcoholic beverages to sweeten them or add flavour. This can explain why it sometimes seems like you feel worse the day after drinking sweet cocktails. It is much better to drink good-quality alcohol than something artificially sweetened.

### ③ Psychological vulnerability

About a quarter of drinkers never suffer from hangover, even when they drink excessively.

Why? It would appear that there is an important connection between a person's psychosocial state and the severity of hangover symptoms reported. If people feel guilty about drinking, if they are angry, depressed or neurotic, or if they are going through difficult life events, they are more likely to experience more severe hangover symptoms.

## ☉ Smoking

There is a strong association between episodic drinking and occasional tobacco use. Many social or weekend smokers develop a sudden and strong urge to smoke cigarettes when they drink excessively. But smoking while drinking can make hangover symptoms worse. That's because nicotine delays gastric emptying, which means more alcohol is metabolized and less is absorbed by the small intestine. As a result, smokers seeking the intoxicating effects of alcohol have to drink more.



## ☉ Headache

Headache is a symptom reported by almost 90% of people suffering from hangover.

### **Beware of Tylenol**

It may not always be wise to take acetaminophen (Tylenol) for headache pain. Acetaminophen is fine for occasional drinkers who drink too much on a particular occasion, but it is strictly contraindicated for people with an alcohol dependency (alcoholics) who already have liver problems.

Why? The interaction between alcohol and acetaminophen significantly increases the risk of liver toxicity and may cause liver lesions, even when the medication is taken the next day.





### **Warning! Danger!**

Many young people also have seasonal jobs that involve physical activity or supervising the safety of others: think camp counsellors, sports instructors and lifeguards, for example. For these people, a hangover is not just unpleasant, it is serious and dangerous. It may also be criminal.

### **Aspirin and Advil not advised**

Depending on individual sensitivity, combining alcohol with acetylsalicylic acid (ASA, Aspirin) or ibuprofen (Advil, Motrin) may also be a bad idea.

Why? Alcohol can cause irritation or even inflammation of the mucous lining of the stomach. In people who are prone to gastro-intestinal problems, these medications can exacerbate the irritating effects of alcohol.

### **Teens and young adults, beware!**

All drinkers should be attentive, but young people must be particularly careful since they tend to get drunk more than older drinkers and they report hangover symptoms more frequently.

### **© Healthy living is the best remedy**

The only truly safe way to treat the pain and discomfort of a hangover is to practice healthy living. After that, only time will help. This is what experts recommend:

- exercise to increase oxygen supply
- rehydrate by drinking plenty of water
- eat lightly.

**The BEST solution?**  
**MODERATION IS ALWAYS IN GOOD TASTE.**



**Éduc'Alcool**

Moderation is always in good taste.

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