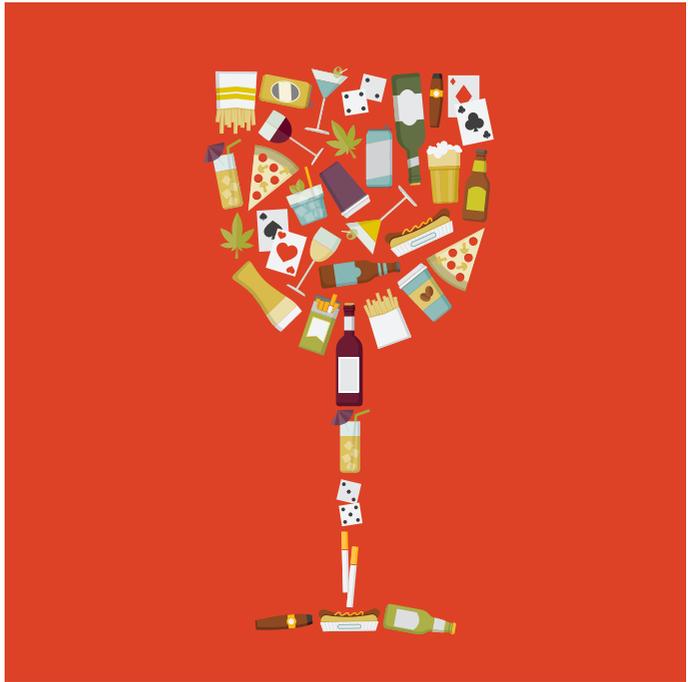


Adapted from Éduc'alcool's *Alcohol and Health* series, 2014. Used under license.

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Introduction

The majority of Albertans who choose to drink alcohol do so responsibly and in moderation. For example, they enjoy a moderate amount of alcohol in combination with food, either during a meal or with snacks at cocktail hour. However, people occasionally drink while consuming other substances or engaging in activities that, in combination with alcohol, can have harmful effects on their health. Such is the case with caffeine, energy drinks, tobacco, gambling, and illicit drugs. Unfortunately, in combination with certain substances or activities, the specific properties of alcohol can produce unexpected and sometimes dangerous results. Except in the case of food, there is always a risk involved when combining alcohol with other substances. Understanding the risks can help people modify their behaviour.

Some of the substances and activities described in this resource present a minimal or negligible health risk when combined with moderate drinking. This resource also reviews the more harmful effects of certain combinations of alcohol and other drugs and activities.



Alcohol and Food

The only substance that has a beneficial effect when combined with alcohol is food. People who drink alcohol after eating a meal high in fat, protein and carbohydrates absorb the alcohol more slowly than those who drink on an empty stomach.

If the stomach is empty, alcohol moves quickly from the stomach to the small intestine, where absorption into the bloodstream is faster. If there is food in the stomach, the pyloric valve (the valve between the stomach and intestine) closes to allow for partial digestion. Any alcohol drunk at this point is absorbed in the stomach, which means it happens more slowly. Slowed absorption reduces both peak alcohol levels and the feeling of intoxication.



Alcohol in Mixed Cocktails

It is better to mix alcoholic cocktails with 100% natural pure fruit or vegetable juice, rather than carbonated or flavoured beverages with minimal nutritional value.

If you do use a carbonated or flavoured mixer, it is better not to use diet versions since sugar helps metabolize alcohol. According to an Australian study, the alcohol in a cocktail made with artificially sweetened beverages passes more quickly from the stomach to the blood and blood alcohol levels are higher.



Alcohol and Caffeine

Studies have demonstrated the antagonistic effects of caffeine and alcohol. Caffeine will slightly lessen the effects of inebriation. However, the amount of caffeine consumed has absolutely no effect on blood alcohol concentration. Thus, people who drink coffee and alcohol, either together or sequentially should remember that they may underestimate their blood alcohol levels.

Caffeinated alcoholic beverages (CABs) have long been available in the form of coffee-based cocktails. More recently, energy drinks have been used as mixers, thus adding more caffeine and sweetness easily, conveniently and cheaply. CABs have increased in popularity, sometimes in the form of energy drinks mixed with alcohol by consumers, and sometimes premixed by manufacturers and purchased by consumers or licensed establishments.

Consumer Characteristics

Young people are the biggest consumers of energy drinks. An unpublished survey at one western Canadian university found that 25% of young adults had consumed CABs in the previous 30 days. This rate is almost double that of the general population of young adults. This finding suggests that CAB use may be higher among young people in post-secondary settings.



Increased Risk-Taking and False Perceptions

The Canadian Centre on Substance Abuse reports that young adults who drink CABs are more likely than those who drink non-caffeinated alcohol to

- drink more because caffeine keeps them awake longer and because they do not realize they are intoxicated
- drive while under the influence of alcohol or be the passenger in a vehicle with a driver who is under the influence of alcohol
- suffer injuries requiring medical attention
- be involved in a sexual assault (as victim or assailant)

People who combine alcohol and energy drinks may not feel the effects of intoxication. Because these drinkers do not feel the effects of alcohol intoxication as strongly, the normal self-regulating mechanisms associated with drinking are no longer functioning.

Dehydration

The risk of dehydration increases when caffeine and alcohol are consumed together. Both substances are diuretics, which mean that they keep water from being reabsorbed by the kidneys and cause more water to be eliminated. This creates a chain reaction. The more alcohol you drink, the thirstier you feel. The real danger lies in continuing to drink alcohol instead of water, which increases thirst and dehydration. If you are at a party or dance, the building may be warmer, which further increases dehydration.

“Morning after” symptoms—headache, general discomfort, major fatigue—are all related to dehydration. During the party, energy drinks mask the symptoms of intoxication and temporarily quenches thirst, but the next day, those who mixed alcohol and caffeine typically feel worse than those who did not.



Alcohol and Gambling

It is well known that people often drink while gambling. It is also known that excessive forms of both commonly co-exist. Among those who drink excessively, there are a higher proportion of people who are probable pathological gamblers than there is in the general population. Conversely, potential pathological gamblers and those who are at low or moderate risk for developing a gambling problem are more likely than other gamblers to drink problematically and possibly have an alcohol dependency.

Similarities Between Alcohol Use and Gambling

Both exist on a continuum.

Alcohol use problems, like problem gambling, exist on a continuum for severity. At the severe end is dependency; however, at less severe stages, the person is drinking or gambling too much and having problems as a result.

Both are complex conditions.

There is often a combination of physical, social and psychological components involved in problem drinking or other drug use and problem gambling. Simply stopping the problem behaviour is not a cure. Resolving the associated problems is usually essential to recovery.

Both involve increased tolerance.

The more a person drinks, the more they must consume to get the desired effect. Similarly, as a gambling problem progresses, the gambler must bet larger amounts of money.

Both involve mental pre-occupation.

People with alcohol problems spend a lot of time thinking about drinking (e.g., when they can get their next drink). Similarly, problem gamblers think a lot about gambling (e.g., their last win or loss, or when they can gamble again).

Both involve loss of control.

People with alcohol problems often cannot stop drinking when they want to, despite their best intentions. Similarly, a person with a gambling problem will have trouble sticking to a pre-determined limit on how much they plan to spend on gambling.

Both can result in withdrawal symptoms.

People with alcohol problems may experience withdrawal symptoms (e.g., anxiety, nausea or confusion). Withdrawal symptoms from gambling are generally less severe, but problem gamblers can become restless and irritable when they are unable to gamble. Problem gamblers, like those with alcohol problems may rely on their problem to avoid or relieve withdrawal symptoms.

Both create problems in the person's life.

Problem gamblers, like those with alcohol problems, often neglect their social or work responsibilities. This can lead to family conflict, job problems and legal difficulties.

Both are recognized as illnesses.

The medical and psychiatric community recognized alcoholism as a disease in the 1950s and pathological gambling in the 1980s. Although debate continues over whether these are truly illnesses or diseases, there is agreement that both are conditions requiring treatment.

Alcohol and gambling frequently go hand in hand, if only because both are generally available in the same place. For people who have no gambling problems and who drink in moderation, gambling while having a drink is basically a form of recreation. However, for people who tend to drink excessively or who are at risk for problem gambling the combination of the two should be avoided.



Alcohol and Tobacco

Studies show that people who drink also tend to smoke and vice versa. In addition, alcohol dependence and nicotine dependence often co-occur, suggesting that the two disorders are not independent. People who are dependent on alcohol are more than three times as likely than the general population, to be dependent on nicotine, the active and addictive ingredient in tobacco (45.4% versus 12.8%). Among people with a nicotine dependence, the rate of alcohol dependence is four times greater than it is in the general population (13.5% versus 3.8%).

There is also an association between episodic drinking and occasional smoking. Many social or weekend smokers experience a sudden and acute craving for a cigarette when drinking excessively. Similarly, people who quit smoking often find themselves starting up again during a night of drinking. This is caused by the pharmacological interaction between alcohol and tobacco and various psychosocial factors (i.e., environmental triggers and social associations), that are characterized by an intense physical need for nicotine.

Alcohol and Other Drugs

Risks of interactions that can be extremely dangerous and, in rare cases, deadly, exist when alcohol and other drugs are combined. While medications (over-the-counter or prescription drugs) come with warnings of possible contraindications, illicit drugs do not. One of the greatest dangers in combining alcohol with illicit drugs is that the effects are not always possible to predict.



Medications

Some medications, particularly over-the-counter products like painkillers, may hinder the elimination of alcohol, increase or mask its effects, or cause unpredictable reactions. Conversely, alcohol can make medications less effective or interfere with their elimination. Anyone taking medication should be properly informed about contraindications before drinking alcohol at the same time. It is important to remember that, like alcohol, medications are eliminated by the liver and, as a general rule, it is better not to drink while taking medication. If in doubt, it is advised that people speak with their doctor or pharmacist about possible interactions.



Alcohol and Cannabis

Cannabis use in Alberta is not uncommon. According to the Canadian Tobacco, Alcohol and Drugs Survey of 2013 (CTADS 2013), 9% of Albertans aged 15 and older had used cannabis in the year prior to the survey and 38% of Albertans had used cannabis in their lifetime.

It is not known how many people use cannabis when drinking alcohol, but a warning is in order for those who do. When taken together, a sedative effect is produced. Judgment, reaction time and co-ordination can be affected making driving or operating any type of mechanical equipment particularly risky. Using both substances can make the individual drink beyond their tolerance and therefore be more likely to experience alcohol poisoning. Cannabis often has an antiemetic effect (decreases feelings of nausea) for many people, meaning that it makes it more difficult for the body to vomit. By inhibiting the body's instinct to vomit cannabis can increase the danger of alcohol poisoning.



Alcohol and Other Illicit Drugs

In Alberta, 1.3%¹ of the population aged 15 and older reported having used illicit drugs other than cannabis in the previous year (CTADS 2013). This includes use of heroin, ecstasy, hallucinogens, and illicit stimulants such as cocaine, crack cocaine, and methamphetamine.

¹Moderate sampling variability, interpret with caution.

In their report *Alcohol and Health in Canada: A Summary of Evidence and Guidelines for Low-Risk Drinking*, Dr. Peter Butt and colleagues warn that the effects of mixing alcohol and illicit drugs “can be extremely serious.”

The stimulant effects of cocaine mean that alcohol reaches the brain more quickly, thus causing a higher blood alcohol concentration than drinking the same amount of alcohol alone. As with caffeine, cocaine keeps people awake and allows them to drink more. All of the risks associated with alcohol are thus increased, including dependence. Other stimulants, such as the amphetamines, are likely to produce similar effects in combination with alcohol.

Depressants like sedatives or opioids (e.g., heroin, oxycodone) can be deadly when combined with alcohol, which is also a depressant drug. Risk of overdose is multiplied, as the nervous system is slowed by the combined action of the drugs. Mixing alcohol with sedatives or opioid drugs such as heroin can severely depress the nervous system. Consequences, say Butt et al., range from “confusion to unconsciousness to death.”

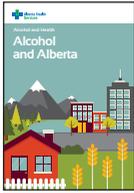
The Centre for Addiction and Mental Health cautions against ingesting alcohol with party drugs like ecstasy (MDMA), gamma hydroxybutyrate (GHB) and ketamine. This mix is common to some groups of youth at dance parties and nightclubs. At the very least, mixing alcohol and these drugs impair your ability to make decisions and can mean you are more likely to be injured or to injure others. At worst, the depressant GHB in particular can cause coma and death when combined with alcohol.

Conclusion

Combining alcohol with other substances is common. When it comes to drinking alcohol with coffee, energy drinks or gambling, caution is called for. Such combinations are not necessarily harmful, but problems may arise if they are taken in excess. In the case of tobacco and other drugs, alcohol is clearly contraindicated. No one should ever drink alcohol while taking other sedatives. Whenever medication is prescribed, people should check with their pharmacist to find out whether alcohol is permitted or contraindicated.

Alberta Health Services offers a wide range of services for individuals looking for help for someone they care about, or for themselves. For more information, and to find an addictions services office near you, call the Addiction Helpline at 1-866-332-2322. It’s free, confidential and available 24 hours a day.

Alberta Health Services' (AHS) Alcohol and Health series



Alcohol and Alberta



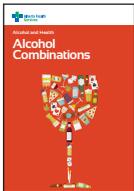
Alcohol and Sleep



Alcohol and Adolescents



Low-Risk Drinking



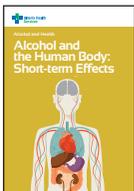
Alcohol Combinations



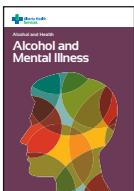
Talk to Your Children About Alcohol



Alcohol Hangover



Alcohol and the Human Body: Short-Term Effects



Alcohol and Mental Illness



Alcohol and Seniors

More information means informed decisions

Well-informed people will be more conscious of the harmful effects of excessive drinking, and will be aware that if they choose to drink alcohol, drinking in moderation is a healthier choice.

For copies:

AHS staff and allied health professionals can download digital copies from under the "Resources" tab at: www.albertahealthservices.ca/amhresources. Allied health professionals should contact their local Addiction and Mental Health office to access hard copies.

Thank you

AHS would like to thank our allied health professionals at Éduc'alcool for their contribution to this series.

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