



# Canada's Lower-Risk Cannabis Use Guidelines

## Cannabis use and health

Cannabis use is relatively common in the Canadian population, especially among adolescents and young adults. About one in seven (14.8 per cent) Canadians aged 15+ reported using cannabis in the past year. Although cannabis is sometimes perceived as a relatively safe drug, it has multiple, well-documented risks to both immediate and long-term health. The main risks include cognitive, psychomotor and memory impairments; hallucinations and impaired perception; impaired driving resulting in injuries or fatalities; mental health problems, including psychosis; cannabis use disorder; respiratory problems; and reproductive problems. However, most of these adverse health outcomes are concentrated among those who consume cannabis in high-risk ways. Fatal and non-fatal injuries from motor-vehicle collisions, as well as cannabis use disorder and other mental health problems, are the most common cannabis-related harms negatively impacting public health.

## Why Lower-Risk Cannabis Use Guidelines (LRCUG)?

The goals of cannabis legalization and regulation in Canada include the protection of public health and safety. Towards that end, proactive education, prevention and guidance on cannabis use and health are important public health strategies to reduce harms and problems related to cannabis use. While cannabis use comes with the health risks described above, the likelihood or severity of adverse outcomes can be modified through informed choices.

In this context, the main objective of Canada's Lower-Risk Cannabis Use Guidelines (LRCUG) is to provide science-based recommendations to enable people to reduce their health risks associated with cannabis use, similar to the intent of health-oriented guidelines for low-risk drinking, nutrition or sexual behaviour.

## How were the Lower-Risk Cannabis Use Guidelines developed? (LRCUG)

The LRCUG are based on a comprehensive review of scientific studies and data conducted by an international team of addiction and health experts. The scientific version of the Lower-Risk Cannabis Use Guidelines (LRCUG) was published in the American Journal of Public Health in 2017 (see "Reference" on back). All of the data and sources informing the LRCUG can be found in this peer-reviewed publication.

## Who are the LRCUG for?

The LRCUG are a tool for:

- anyone who has made the choice to use or is considering using, as well as their family, friends and peers.
- any professional, organization or government body aiming to improve the health of Canadians who use cannabis through evidence-based information and education.

Individuals who develop problems related to their cannabis use should be encouraged to seek support from a health professional.

**Non-medical cannabis use and distribution for adults is legal in Canada as of October 17, 2018. The Cannabis Act creates a strict legal framework to control the production, distribution, sale, labeling and possession of cannabis across Canada. In 2019, some additional regulations will be added in relation to the legal production and sale of edible cannabis, cannabis extracts and cannabis topicals.**



# The **LRCUG** recommendations

The LRCUG's 10 recommendations are targeted at people who use cannabis or are considering using cannabis. This evidence summary provides the context for the recommendations, including an overview of research to date. Note that these recommendations are mainly for non-medical cannabis use.



Canada has among the highest cannabis use rates in the world.



**Fatal and non-fatal injuries from motor-vehicle collisions, as well as cannabis use disorder and other mental health problems, are the most common cannabis-related harms negatively impacting public health.**



**Between 10 and 30 per cent of cannabis users are estimated to develop a cannabis use disorder (including dependence).**

## Abstinence

As with any risky behaviour, the safest way to reduce these risks is to avoid the behaviour altogether. The same is true for cannabis use. Those who decide to use cannabis incur a variety of risks related to acute and/or long-term adverse health and social outcomes. The likelihood and severity of these risks will vary, based on characteristics of individual users, their patterns of use, and product qualities. In addition, the risks may not be the same from person to person, or from one episode of use to another.

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**The most effective way to avoid the risks of cannabis use is to abstain from use.**

## Age of initial use

Studies show that initiating cannabis at a young age – primarily before age 16 – increases the risks for a variety of adverse health outcomes. For example, people who start using young are more likely to develop related mental health and education problems, or to experience injuries or other substance use problems. These effects are particularly pronounced in cannabis users who engage in intensive/frequent use. This may occur, in part, because frequent cannabis use affects the development of the brain, which is not completed until the mid-20s. The younger the age a person initiates cannabis use, the greater the likelihood of more severe health problems.

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**Delaying cannabis use, at least until after adolescence, will reduce the likelihood or severity of adverse health outcomes.**

## Choice of cannabis products

Cannabis consumers should be aware of the nature and composition of the cannabis products that they use. These products vary greatly in cannabis' main psychoactive ingredient, tetrahydrocannabinol (THC). Higher THC potency is strongly related to increased acute and long-term problems, such as mental health problems, cannabis use disorder or injuries. In particular, cannabis extract or concentrate products contain extremely high THC levels. Yet evidence suggests that other cannabinoid components, including cannabidiol (CBD), attenuate some of THC's effects. Using cannabis products with high CBD:THC ratios typically carries less severe health risks.

Synthetic cannabinoids (e.g., K2, Spice) are a relatively new, illegal class of products. Recent reviews on synthetics indicate that they generally have more severe psychoactive impacts and health risks, including cases of death.

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**Use products with low THC content and high CBD: THC ratios.**

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**Synthetic cannabis products, such as K2 and Spice, should be avoided.**

## Cannabis use methods and practices

Many alternative methods for consuming cannabis now exist. Evidence suggests that smoking burnt cannabis, especially combined with tobacco, can result in respiratory problems, possibly including lung cancer. In fact, smoking is likely the most hazardous method of cannabis use. Alternative inhalation methods include vaporizers and e-cigarette devices. While these alternatives reduce key risks to health,

they are not entirely risk-free. However, rigorous studies on health outcomes are largely lacking. Ingested or “edible” cannabis products bypass inhalation-related risks, but delay the onset of psychoactive effects and may lead to the use of higher doses. If accompanied by adequate cannabis product labeling, packaging and warnings, edibles may offer the safest method of cannabis use.

When smoking cannabis, practices such as “deep-inhalation,” breath-holding or forceful exhalation (the Valsalva maneuver), are done to increase the absorption of psychoactive ingredients. However, they also disproportionately increase the intake of toxic material into the respiratory system.

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**Avoid smoking burnt cannabis and choose safer inhalation methods including vaporizers, e-cigarette devices and edibles.**

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**If cannabis is smoked, avoid harmful practices such as inhaling deeply or breath-holding.**

## Frequency and intensity of use

Frequent or intensive cannabis use – defined as daily or near-daily use – are among the strongest and most consistent predictors of severe and/or long-term cannabis-related health problems, based on the scientific evidence. Such patterns of use increase the likelihood of developing multiple health problems, including changes in brain development or functioning (especially at a younger age), mental health problems, cannabis use disorder, impaired driving, suicidality and poorer educational outcomes.

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**Avoid frequent or intensive use, and limit consumption to occasional use, such as only one day a week or on weekends, or less.**

## Cannabis use and driving

Cannabis impairs cognition, attention, reaction and psychomotor control—all of which are critical skills for driving or operating machinery. Numerous studies have shown that the risk of being involved in a collision and experiencing driving-related injuries, both non-fatal and fatal, is two to three times higher among cannabis-impaired drivers compared with

non-impaired drivers. There is no evidence for safe levels of cannabis use for driving. After consuming cannabis, individuals should not drive during the period of acute psychoactive effects. These acute impairments set in shortly after use and persist for at least 6 hours, but can vary depending on individual characteristics and constitution, as well as on the potency and type of cannabis used. The risk of a collision is even higher when cannabis and alcohol are used together, since combining these drugs amplify the effects of impairment.

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**Do not drive or operate other machinery for at least 6 hours after using cannabis. Combining alcohol and cannabis increases impairment and should be avoided.**

## Special-risk populations

Some populations have higher or distinct risks for cannabis-related health problems. A substantial proportion of cannabis-related psychosis, and possibly other mental health problems (especially cannabis use disorders), occurs among those with a personal or family history of psychosis or substance use disorders. Furthermore, cannabis use during pregnancy increases the risk of adverse neonatal health outcomes, including low birthweight and growth reduction. This recommendation is based, in part, on precautionary principles.

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**People with a personal or family history of psychosis or substance use disorders, as well as pregnant women, should not use cannabis at all.**

## Combining risks or risk behaviours

While data are limited, it is likely that the combination of some of the risk behaviours described in the recommendations will magnify the risk of adverse outcomes from cannabis use. For example, early-onset of cannabis use, combined with frequent use of high-potency cannabis, is likely to disproportionately increase the risks of experiencing both acute and chronic problems.

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**Avoid combining any of the risk factors related to cannabis use. Multiple high-risk behaviours will amplify the likelihood or severity of adverse outcomes.**

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## Reference

Fischer, B., Russell, C., Sabioni, P., van den Brink, W., Le Foll, B., Hall, W., Rehm, J. & Room, R. (2017). Lower-Risk Cannabis Use Guidelines (LRCUG): A Comprehensive Update of Evidence and Recommendations. *American Journal of Public Health*, 107(8). DOI: 10.2105/AJPH.2017.303818.

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## Endorsements

The LRCUG have been endorsed by the following organizations:



Council of Chief Medical Officers of Health (CCMOH)

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