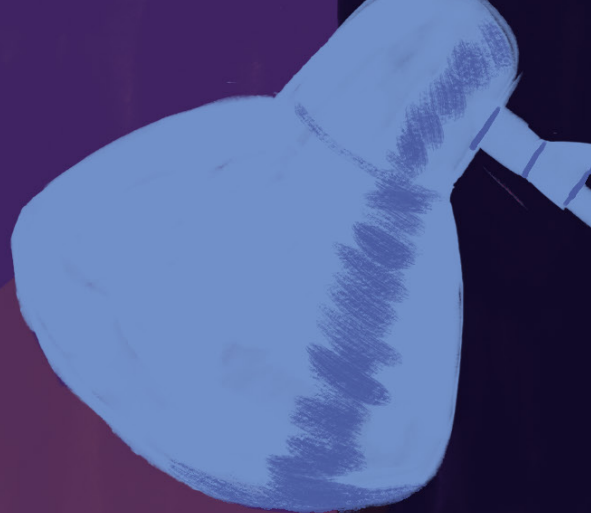
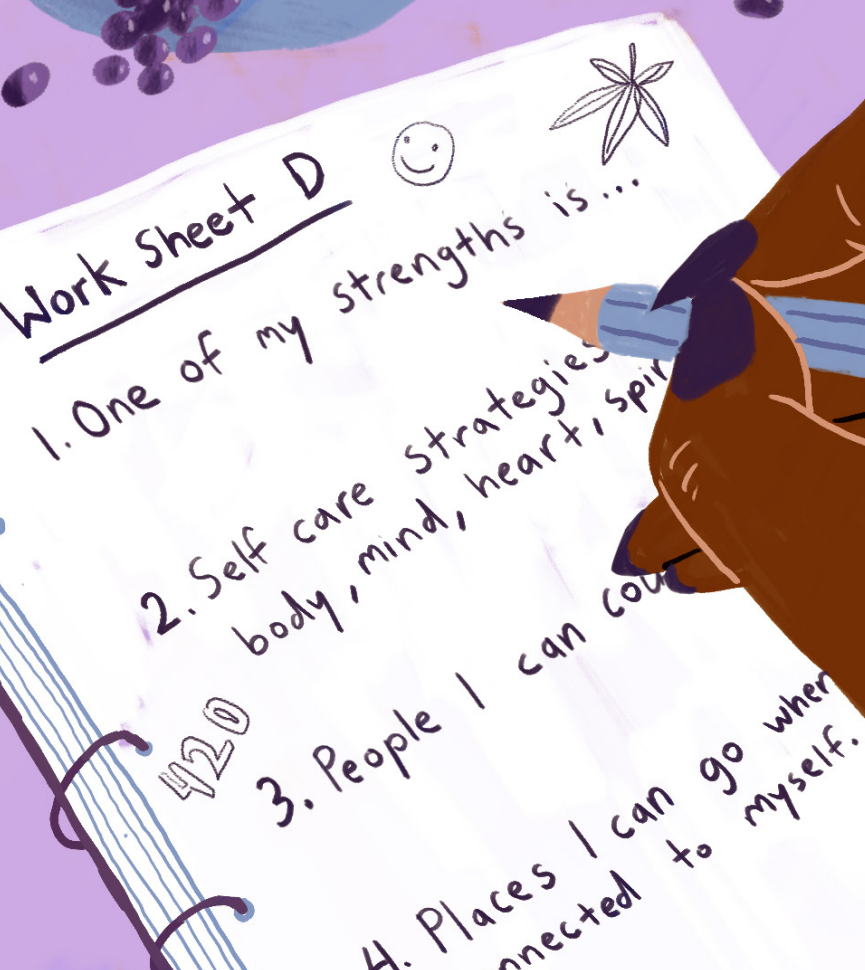
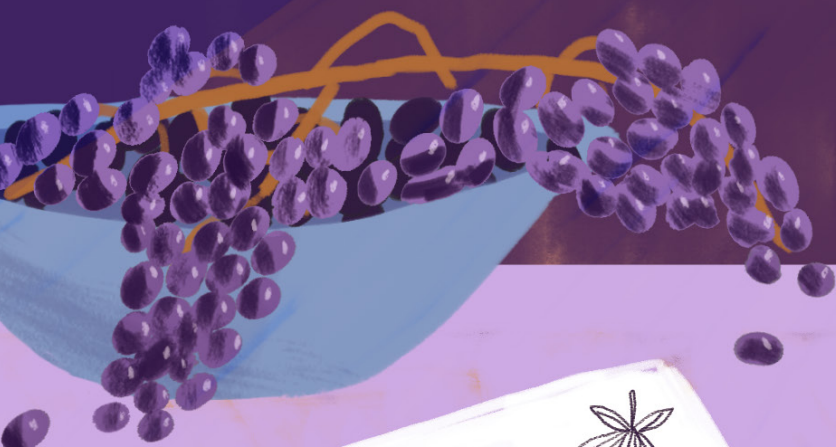


Cannabis in Context

the Sensible Cannabis
Education Toolkit Series



GET
SENSIBLE

Nothing about us, without us.

This series is dedicated to young people who use
drugs and the people who support them.

CSSDP's

Cannabis in Context



CANADIAN
STUDENTS
FOR SENSIBLE
DRUG POLICY

Canadian Students for Sensible Drug Policy (CSSDP) is a grassroots network of **youth and students** who are concerned about the negative impact our *drug policies* have on **individuals and communities**. We consider drug use a **health and human rights issue** rather than a *criminal-legal issue*. We advocate for **evidence-based responses** to *reduce and prevent the harms* associated with drug use and drug criminalization.



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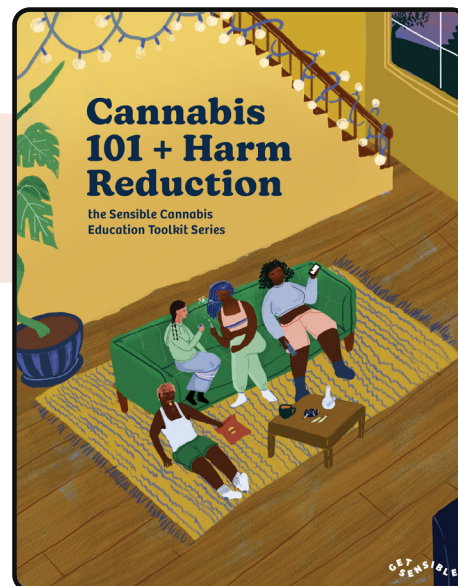
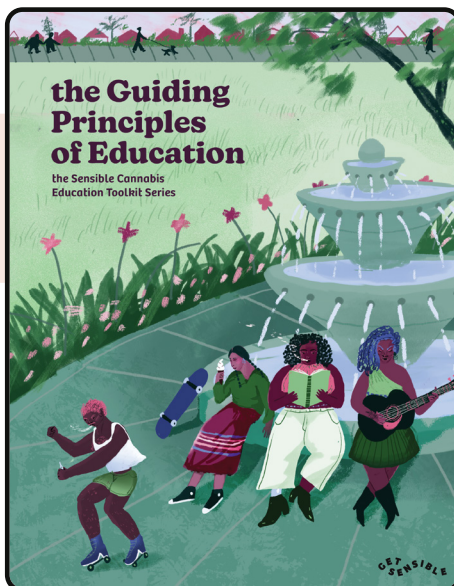
FOREWORD

This resource is broken into **three separate booklets**. The content draws directly from CSSDP’s **Sensible Cannabis Education Toolkit**, originally published in 2018 to help educators, parents and adults have *evidence-informed conversations* with youth. Recognizing that cannabis legalization is *a process* and not *an event*, it’s important to note that this booklet was **published in 2021** and the Cannabis Act and other related legislation is *subject to change*. We encourage you to **stay up to date** with revisions and updates to both *the Cannabis Act* **and your local cannabis legislation**.

Booklets 2 and 3 outline **core concepts** youth and adults can draw on to *familiarize themselves* with cannabis and cannabis use, and can additionally be used as **a resource** to assist in the *information delivery component* of a comprehensive cannabis education program.

Teaching youth the “**facts**” about cannabis *should not be* the only focus of cannabis education, but given the vast amount of resources – including *conflicting research, internet sources, and myths* – an overview of where the evidence sits is **essential to empowering youth** to make *informed decisions* and can also *guide conversations* with youth and adults. Topics addressed in Booklet 3 include: “**Cannabis - A Historical and Legislative Background,**” “**Reasons for Cannabis Use and Non-Use Among Youth,**” and “**Assessing Potential Health Harms.**”

We also encourage you to check out our two other booklets in this series:



According to the Canadian Cannabis Survey, **before** legalization, 19.8% of youth age 15-17 used cannabis, while the corresponding **post-legalization** estimate from the third quarter release of the CCS (2019) was 10.4%.



While it is too soon to make concrete observations about the *impact of legalization* on youth use, it is notable that reported consumption has *fallen* across the **first year of legalization**. However, youth estimates that capture a wider range of *young people age 15-25* continue to suggest a consumption rate **2 or 3 times higher** than adults age 25 and older. Given that cannabis was the **most popular** illegal drug consumed by young people in Canada, as well as Canada's decision to *legalize and regulate non-medical cannabis*, the continued development of cannabis education for youth is of *critical importance*.

In September 2016, CSSDP held a **youth round table** on cannabis legalization and regulation titled, **“Youth Speak: Cannabis Policy in the 21st Century.”**

Attended by diverse young people in *Toronto, Ontario*, CSSDP gathered input for a *youth-focused* submission to the **Task Force on Marijuana Legalization and Regulation**. A consensus emerged among attendees that there is a lack of *evidence-based* cannabis education in their schools, families, communities, and online. Youth highlighted the need for education that prioritizes the development of youth's **“cannabis literacy”** by including evidence-based assessments of *risk and harm reduction principles*. Cannabis literacy refers to the **knowledge + skills** required to make **informed choices** around cannabis use. Youth described the need for drug conversations and education to *start sooner*, with age-appropriate content, and highlighted the importance of creating content *with the input of young people*, including those who use cannabis. Building upon the round table, the Toolkit was created as a first step towards *sensible* youth cannabis education.

Introduction

Aligning with CSSDP's mandate to **support drug education efforts**, and building upon youth consultations on cannabis legalization conducted in Canada, the Toolkit responds to calls for the development of **realistic and evidence-based** cannabis education for youth. Created for educators, as well as parents, this resource aims to support adults in having **informed and non-judgmental conversations** with young people about cannabis.

Throughout the Toolkit and booklets, the term “youth” and “young people” is used to refer to those between the ages of 14-25, unless otherwise stated. Generally, the central purposes of drug education are to provide **accurate information** and **awareness of resources**, **develop decision making skills** and **health literacy**, **reduce risks** of consumption, and support *increasing* an individual’s **risk competency**. However, the Toolkit goes *beyond these mandates*.

While there is **no silver bullet approach** for **talking about cannabis with youth**, the Toolkit provides **guiding principles** and a **curriculum for youth cannabis education**.

The Toolkit was developed in consultation with CSSDP’s Board of Directors, national chapters, and an external Youth Content Review Team to ensure alignment with the concerns of *young people*. Authors drew extensively from the available scientific literature, as well as relevant resources from the drug policy community including *Students for Sensible Drug Policy’s “Just Say Know”* curriculum, the *Canadian Centre on Substance Use and Addiction’s “Clearing the Smoke”* series, the *Canadian Research Initiative in Substance Misuse CRISM’s “Lower Risk Cannabis Use Guidelines,”* *HereToHelp BC*, and more.

Further, CSSDP has hosted workshops *across Canada* to talk with **diverse groups of youth** and **people who work with youth** about the Toolkit – its messaging, its principles, and its scope. We have also presented this work to a **diverse range of key stakeholders**, including the *federal government*, the *Senate of Canada*, and as part of a side event with other youth groups at the *UN’s Commission on Narcotic Drugs*.



In this latest edition of the Toolkit, we've updated the **scientific literature** and **best practices** since the Toolkit's original publication in 2018.

We have integrated the feedback we received from our **workshops with youth** and individuals who work with young people and are excited to continue to build out this work, with the goal of promoting **sensible, evidence-informed** dialogue.

Over two years after legalization, education efforts must **continue to be updated** to not only meet the needs of a **diverse youth population** under a **new framework**, but also keep up with a **quickly changing** regulatory and research landscape.

CSSDP is a *proud recipient* of the federal government's **Substance Use and Addiction Program** grant in 2020, which will provide two-years of funding to advance **sensible cannabis education** for *young people*. These funds will allow us to facilitate a **national dialogue** with young people age 17-25 about cannabis both *in person and online*, with the inclusion of peer leaders to ensure **youth perspectives + approaches** are *centred and uplifted*. We are also working to *increase* the reach and distribution of these booklets and the toolkit. The full toolkit, which is *available online* at **getsensible.org** can be downloaded in **English, French, Mandarin, Punjabi** and **Spanish**. The booklet series is also available in print and copies can be requested online at <https://getsensible.org/get-toolkit/>.

We know there is *no single agreed upon* model to cannabis education and that **context matters**. Even if a particular approach is considered *exemplary* in one context, it should always **be adapted** to *local situations*, rather than simply replicated. As such, the Toolkit remains a **starting point** for the *development* of educational approaches, which will **allow for flexibility**, and **provide insight** into how youth cannabis education can be *operationalized in practice*, as well as further *refined and improved*.



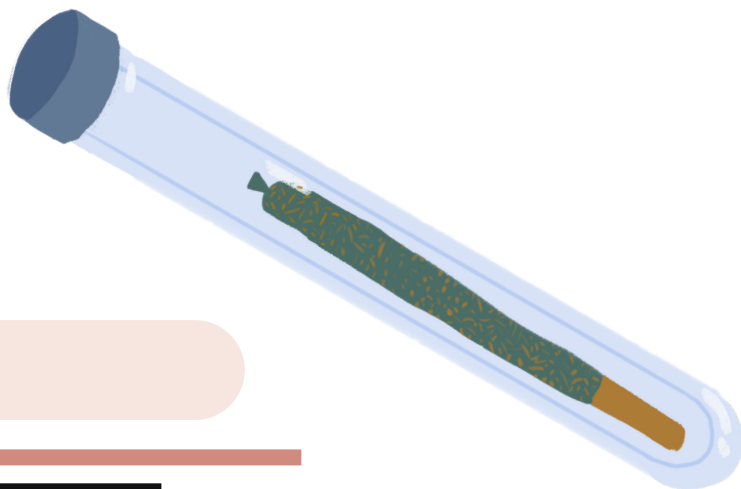
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Cannabis Education

Booklet 3 - Cannabis in Context

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BOOKLET 3

Cannabis in Context

SECTION 1

Cannabis: A Historical and Legislative Background

Learning Outcomes

By the end of this section, you will:

1. Learn briefly about the history of **drug prohibition in Canada**, and how it *disproportionately targets vulnerable segments* of the population, *including youth*.
2. Understand *key elements* of the **Cannabis Act**, particularly as it *relates to youth*
3. Understand the **medical cannabis access program** in Canada, including the difference between *Licensed Producers* and *cannabis dispensaries*

A Brief History of Cannabis + Other Drug Prohibition in Canada

While legislation that **prohibited alcohol consumption + sales** to Indigenous peoples has existed *since 1777* in various jurisdictions across Canada, the first *federal legislation* with alcohol provisions appeared in the **1867 Indian Act** in an effort to *colonize* Indigenous peoples. The act stated Indigenous peoples could *only* consume alcohol *after* they were successfully **colonized and assimilated** as a Canadian citizens. The *first* specific drug law in Canada, the **Opium Act of 1908** and subsequent changes in 1911 (which created *harsher penalties* for offenders), is acknowledged as a response to the *labour shortage* on the west coast and the Chinese populations that came to Canada to work on the North American railway. Since **opium** use was popular among the Chinese populations, the *enforcement* of the Opium Act represented, “a close link between the escalation of **anti-drug policies** and the **public’s fear** of Chinese immigrants.”

Cannabis was added to the list of prohibited drugs in the **Opium and Drug Act** in 1923. Unlike other *narcotic drugs*, which were **federally regulated** at the time, “marijuana was added to the **Schedule [of Prohibited Substances]** before it came to be defined as a *social problem* in Canada.” At this time, cannabis use was *not* widespread, and the **first arrest** for a cannabis-related crime was *not* made until *many years later*. Since then, the prohibition of cannabis has led to a **profitable criminal market** as well as links to **violence, unsafe street drugs, and a declining respect for government + the police.**

Racialized minorities have a *much higher chance* of being **arrested and prosecuted** for cannabis related possession despite **little to no difference** in usage rates.

Drug policy in Canada has traditionally focused on **policing** and **prisons** rather than *social wellbeing* and *treatment*. In fact, by 2008, *over 70%* of funding for Canada's national drug strategy was being funneled into **law enforcement** rather than increased *substance use treatment, education, + prevention*. Prior to legalization, Canada spent roughly *\$1 billion dollars* per year to **enforce cannabis prohibition**. It is acknowledged that the legalization of cannabis is a **matter of social justice**, where the *prohibition of cannabis* led to **high levels of inequity in policing** as racialized minorities have a *much higher chance* of being **arrested and prosecuted** for cannabis-related possession, despite *little to no difference* in usage rates. Black communities in Canada are often the **target of policing drug policies more broadly**, leading to **racialized mass incarceration**. For example, from 2010 to 2011 *Black inmates* accounted for *9%* of the federal inmate population, yet only **comprise 2.5% of the overall population**. Further, youth and young adults have been **disproportionate targets** of cannabis related arrests, *over 80%* related to possession alone, which is *further exaggerated* for **at-risk + racialized minority youth**. Cannabis prohibition has traditionally **affected the most disenfranchised** segments, such as those from *lower socioeconomic backgrounds, youth, and racialized populations*.

The Cannabis Act

On April 13, 2017, the Liberal government tabled legislation to “create a *strict legal framework* for **controlling the production, distribution, sale, + possession of cannabis** in Canada.” Also known as **Bill C-45, An Act respecting cannabis and to amend the Controlled Drugs and Substances Act, the Criminal Code and other Acts**, the **Cannabis Act** was created after consultation with the public and a report by the government-appointed *Task Force on Cannabis Legalization and Regulation* released in November 2016. The government also tabled **Bill C-46, An Act to amend the Criminal Code (offences relating to conveyances) to make consequential amendments to other Acts**, which focuses on **drug-impaired driving** and the **expansion of police powers** for detection and enforcement.

The Cannabis Act has three main priorities:

- i. *preventing youth* from **accessing cannabis**;
- ii. *protecting public health and public safety*; and
- iii. *eliminating the illegal cannabis market* through serious *criminal penalties* for those operating outside the *legal framework*.

On October 17th, 2018 **the Cannabis Act** came into effect allowing the **legal sale + purchasing** of *certain* recreational cannabis products. On October 17th, 2019 an amendment to **Schedule 4 of the Cannabis Act** (classes of cannabis that an *authorized person* may sell) was made to *expand* the range of available products for sale to include **edibles, extracts, and topicals**.

Additional regulatory amendments were made to focus on reducing:

- i. the **appeal** of such products to *youth*
- ii. the risk of **accidental consumption**, particularly of *edible cannabis by youth*; and
- iii. the risk of **overconsumption** associated with *edible cannabis* and cannabis products with a *higher concentration of THC*



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Cannabis in Context

Product Type	THC Limits
Edible Cannabis	10 mg of THC per package
Cannabis Extract (ingesting)	10 mg THC per unit / 1,000 mg THC per package <small>*1 unit = 1 dose (i.e. a capsule)</small>
Cannabis Extract (inhaling)	1,000 mg of THC per package
Cannabis Topical	1,000 mg of THC per package

Product Type	Possession Limits
Dried Cannabis	30 grams
Fresh Cannabis	150 grams <small>*1 gram dried cannabis = 5 grams fresh cannabis</small>
Edible Product	450 grams <small>*1 gram dried cannabis = 15 grams of edible product</small>
Liquid Product	2,100 grams <small>*1 gram dried cannabis = 70 grams of liquid product</small>
Concentrates (solid or liquid)	7.5 grams <small>*1 gram dried cannabis = 0.25 grams of concentrates</small>
Cannabis Plant Seed	30 seeds <small>*1 gram dried cannabis = 1 cannabis plant seed</small>
Cannabis Plant	4 plants per residence

*Youth possession limit is 5 grams (legal purchasing age varies provincially)

Though legal, there *are still regulations*, in part to address some of the *public health concerns* mentioned, for the **amount of cannabis an individual may legally possess** and **limits on THC content per product** (see the tables on *page 11*). The tables on the previous page represent the information around **possession and product limits** listed on the *Government of Canada website*, but it is important to note that the listed limits, particularly for products other than dried cannabis, *can be confusing and convoluted* to apply in practice.

In addition to amendments *within* the Cannabis Act, amendments were also made to the **Criminal Records Act**. On June 19th, 2019 **Bill C-93, An Act to provide no-cost, expedited record suspensions (pardons) for simple possession of cannabis offences**, was passed. These amendments were an important *first step* for racialized communities **disproportionately affected** by the **criminalization of cannabis** possession. Notably, however, the number of records suspended to-date *remains low*. Additionally, many experts across policy, criminal, and legal spheres agree pardons *do not do enough* to address the harms caused the **prohibition of cannabis**.

Key Considerations for Youth

- Under the Cannabis Act, the **federal minimum age of access is 18 years old**, although provinces and territories may choose to *increase* the age of access. Much like alcohol access in Canada, there are *differences in age of access* for cannabis across provinces and territories, **ranging from 18** (in Alberta) **to 21** (in Quebec) **years old**.
- In terms of **sale + promotion**, the Cannabis Act *prohibits* products that are **appealing to youth**, including promotion in places that could be *seen by young people*.
- If an adult (18+) is found **giving or selling cannabis to youth** or **using a young person** to commit a cannabis related crime, it may result in a maximum penalty of *14 years in prison*. This could impact youth who are the **minimum age of access** and share cannabis with other youth *under the minimum age*.
- The Cannabis Act *does not* apply criminal charges for individuals between the ages of 12 to 17 for **possessing or sharing up to 5 grams** of cannabis, but *all other* youth violations are still subject to the **Youth Criminal Justice Act**. Non-criminal consequences for up to 5 grams can *vary across provinces + territories* but can include **finest** and **community service**. This reflects the fact that young people have *historically* and *disproportionately* been the **targets of drug-related arrests**, particularly for cannabis possession.
- **Bill C-46**, the *coupled impaired driving legislation*, allows for “new and stronger laws to *punish more severely* those who **drive while under the influence** of drugs, including cannabis.” This includes the establishment of “**per se**” offenses for THC, which refers to a *specific concentration* of a substance that assumes a criminal charge when a set *cut-off is exceeded*. While per se limits for alcohol consumption and driving have been **scientifically supported**, per se limits in the case of cannabis are *highly controversial*, as scientific evidence has not established a universal **measure of impairment**.

“It’s really important to learn the **history of cannabis use, legalization, + policy**. It’s all very **intersectional** and affects how it is sold + used today. It would be cool if **every school** offered a **Cannabis 101 class**.”

- Roundtable Participant

The number of **records suspended** to-date **remains low**. Additionally, many experts **across policy, criminal, and legal spheres** agree **pardons do not do enough** to address the **harms caused** by the **prohibition of cannabis**.

Access to Cannabis for Medical Purposes

In 2001 Canada implemented a *federal medical cannabis access program* that regulates the production and distribution of cannabis to *qualified patients*. The program, formerly known as “**Access to Cannabis for Medical Purposes Regulations**” (ACMPR) and now covered under the Cannabis Act, grants Licensed Producers and Sellers the ability to **legally produce and distribute controlled** amounts of cannabis and cannabis products *directly to patients* by mail. The *only* legal way to purchase medical cannabis is to get an **authorization** (similar to a prescription) from a *physician* or a *nurse practitioner*, and submit it directly to a **Licensed Seller**. People who use for *medical purposes* can also **produce limited personal quantities** through a special authorization from their healthcare provider for *personal cultivation*.

In *addition* to this legal channel, some medical cannabis consumers choose to access cannabis through the **legal non-medical cannabis channels** (e.g. a ‘recreational’ store), or from **online medical cannabis dispensaries**. Medical cannabis dispensaries are *illegal retail and online stores* that have been traditionally tolerated by enforcement in some jurisdictions prior to legalization, and that distribute cannabis and a range of cannabis products to individuals outside the regulated model. *Immediately after* legalization many illegal dispensaries *continued to operate*, however, more recently law enforcement has conducted **nation-wide shutdowns** of many dispensaries.

The Cannabis Act has **three main priorities**:

- i. preventing** youth from **accessing cannabis**;
- ii. protecting** **public health** and **public safety**; and
- iii. eliminating** the **illegal cannabis market** through serious **criminal penalties** for those operating **outside the legal framework**.

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Sensible Cannabis Education for Youth



SECTION 2

Reasons for Cannabis Use + Non-Use Among Youth

Learning Outcomes

By the end of this section, you will:

1. Understand a **variety of individual motives for use**
2. Understand a **variety of social factors** which may contribute to use, including *“peer pressure”*
3. Understand **what factors account for non-use in youth**
4. Understand **where youth access cannabis**

Why Do Youth Use Cannabis?

The reasons why young people **use or do not use** cannabis are *complex and multifaceted*. This section will examine a variety of factors thought to *influence* use and non-use among youth, with **“use”** referring to *initiation and continued use*, and **“non-use”** referring to *abstention or discontinued use*. It should be kept in mind that some **experimentation** in adolescents is *considered “normal,” even healthy*, among peer groups, and that the majority of users *do not* experience negative effects, or develop long term problematic *consumption patterns*. For example, research generally shows cannabis use *increases* from early **adolescence to mid-20s**, then *steadily decreases*. However, *earlier* adolescent initiation of use can be *predictive* of future problematic and harmful use. Young people might have **more than one reason** for choosing to use or not use cannabis, and framing youth cannabis use as *“deviant” or “bad”* behaviour is **not useful**, particularly given that use has become *increasingly common* among youth and young adults.

Further, past work has identified *risk + protective factors* associated with a range of potential outcomes, including **problematic substance use**. **Risk factors** can include influences and situations which can *increase* an individual's *risk for substance misuse*, while **protective factors** may lead to *reduced risk*. These can include local community factors, school and peer factors, individual characteristics, family factors, and societal and political issues. The underscoring idea is that we should consider **not just the individual**, but also *family, the wider community, and society*, and how they *interact with one another*.

While studied to a *lesser degree*, there are some common reasons young people decide to abstain from use. Motives for cannabis use can **change and evolve**. In practice, youth may not *rigidly fit* into one category for the reasons why they may or may not use cannabis. Further, boundaries between *perceived medical use* and **recreational use** are not always clear.

“My family doesn’t understand that **I don’t like my anxiety medication** - it turns me into a zombie person. I’m really talkative normally, so **I prefer using weed** cause it **doesn’t make me feel so terrible.**”

- Roundtable Participant

It may also be important to consider **traditional and cultural uses** of cannabis as reasons for use. For example, cannabis has been “intimately associated with *magical, medical, religious, and social customs* in India for thousands of years,” particularly “**bhang**,” a *cultural drink* made from cannabis leaves, milk, sugar, and spices. Another example can be found in Jamaican culture, where some cultural groups view cannabis, or “**ganja**,” as an herb that has *both* religious *and* medicinal value.

Individual Motives for Cannabis Use

When thinking about why people use a particular substance, we often rely on the “**motivational model**,” which views an *individual’s choice* to use a particular substance as *influenced by* the perception of that substance being able to **fulfill particular needs**. This model suggests that *different motives* for use will accordingly have **unique behaviour + use patterns**. The motivational model has been used *extensively* in the research literature to understand the **underlying factors** influencing cannabis use among youth.

Some of the most common factors explored include *pleasure, experimentation, conformity, coping, and medical use*. The support for each is presented below, noting these are **not** presented in any particular order.

PLEASURE

One of the *most common* reasons given for cannabis use is simply for the purposes of **general**

enjoyment, being social, getting “high,” and to relax. *Enjoyment and relaxation* have been cited as a primary factor for repeated or continued cannabis use. This also includes enjoyment derived from a reported “**expansion of awareness**” and **heightened senses**, including the enjoyment of music, engagement in creativity, and taste. Studies that draw on self-reported data show that individuals who use cannabis for **social + recreational purposes** tend to smoke *less frequently* and in the *presence of others* compared to individuals who use cannabis for **relief or coping purposes**. Qualitative interviews with youth reveal that smoking in the *presence of others*, as a social activity, may promote **group euphoria + happiness**, which *may* motivate continued use. Further, many young people who use cannabis occasionally and socially *do not* often experience problematic use.

EXPERIMENTATION

Experimentation and **curiosity** have been cited as significant factors influencing *first time* cannabis use among youth. Young people who cite “**experimentation**” as a *primary motivator* may discontinue use after trying cannabis, tend to use *less frequently*, and are *less prone* to developing substance use problems **compared to individuals who use for coping** and (nonexperimental) **recreational purposes**. Experimenting with cannabis *and* other illegal substances among youth can be considered **exploration** during this developmental stage and is associated with *mostly positive* peer interaction.

SOCIAL/SOCIALIZING

Conformity as a motive refers to cannabis use for the purposes of *connecting or “fitting in”* with peers, but the relationship is unclear. This is typically connected to...

Youth also report using cannabis for **medical reasons**, both as **self-medication** and, less commonly, with **physician authorization**. This includes, but is **not limited to**, relief from **depression, anxiety, sleeping issues, physical pain,** and to **help with concentration**.

...**peer networks**, with evidence supporting an association between *cannabis use* and *cannabis using peer networks*. However, this may mean that youth are **motivated** to use in the presence of *other cannabis using peers*, **or** that the presence of cannabis using peers is **reflective** of an *individual interest* in cannabis. A study investigating how youth negotiated differences in *individual beliefs* and *peer norms* showed that **individual beliefs** were strongly predictive of **cannabis initiation**. In other words, youth who *did not* have an individual desire or interest to use often would *not use or try cannabis regardless of peer norms*. The effects of peer networks on cannabis use will be **further explored** in the following sections.

COPING

Coping refers to *cognitive processes* and *behavioural strategies* that individuals adopt to **deal with stress**. Among young people, **stress and tension reduction** are some of the *most common reasons* given for cannabis use. The use of cannabis for relief is influenced by the perceived **relaxation effects**. While the presence of stress alone is not considered a *significant risk factor* for cannabis use, **differences in coping strategies** have been shown to influence use or non-use.

Coping strategies can either be *adaptive* or *maladaptive*. **Adaptive** coping strategies include *cognitive* and *appraisal coping* (such as reframing and putting issues into perspective), *behavioural coping* (relaxation), and *seeking parental support*. **Maladaptive** coping strategies include the *use of anger* (i.e., emotional outbursts, hitting, screaming, throwing objects), *feelings of helplessness*, and *avoidance*. The use of maladaptive coping strategies has been found to be *strongly related* to **cannabis initiation + continued use** over time. Youth who report coping as a **primary reason** for use tend to have *worse mental health*, and experience *more distress* and *stressful life events* than their peers who primarily use cannabis for **recreational or social reasons**. These sources of stress have also been *primarily linked* to **poor familial + peer support**. The use of cannabis for coping is also related to **problematic use over time**.

MEDICAL USE

Youth also report using cannabis for **medical reasons**, both as *self-medication* and, less commonly, with *physician authorization*. This includes, but is not limited to, *relief from depression, anxiety, sleeping issues, physical pain,* and to **help with concentration**. While mental health issues, such as depression and anxiety, are often assumed to be *strong predictors of use*, the causal link is *inconclusive* (see **Section 1.3** for more information on cannabis use and mental health). There is evidence for *both* the idea that cannabis is used to **alleviate symptoms** or



be more sociable (i.e., self-medication hypothesis) and that *isolation* from peer networks due to mental illness symptoms **limits possible peer influences + access to cannabis** (i.e., buffer hypothesis).

In a six-year longitudinal study investigating the *association between social anxiety disorder (SAD) symptoms, peer involvement, and cannabis use* among adolescents, it was found that **SAD symptoms** were associated with **higher probabilities of non-use** of cannabis and **a lower frequency** of cannabis use. In line with the *buffer hypothesis*, initiation and frequency of use were influenced by **social isolation**, which limits the potential for *peer involvement* and *access to cannabis*. However, the association remains *inconclusive* and contextual factors such as **differences in peer group structures + norms**, and the **changing nature of mental illness symptoms**, must be considered.

Importantly, research has found an *association* between **youth who report self-medicating** with cannabis and their **perceptions of the inadequacies of the medical system** and **ineffective medical interventions**. In this case, many youth reported feeling *invalidated* by the medical system, *dissatisfied* by solutions and medications offered, and *within this context*, cannabis was framed by young people as the “**better**” + **natural alternative to pharmaceuticals**.

Social Factors Influencing Cannabis Use

The research shows a *distinct overlap* between **individual motives** and **social factors**, where the latter is interested in *how* social interactions and relationships **affect or impact individual choices**. For instance, the use of cannabis as a *coping mechanism* is often facilitated within the context of **youth encountering traumatic life events + illnesses**, as well as with a **lack of support** from family and peers. Therefore, individual risk factors can *change over adolescent development* according to parental socializing, peer bonding, and normative beliefs. *Social level factors* include the **family + parental network, peer networks, and social norms**.

FAMILY + PARENTAL NETWORK

Family and parental networks have been shown to *significantly influence* lifetime cannabis use among youth in *several ways*. Whether family and parental networks *pose a risk* or can be considered a *protective factor* for cannabis use is affected by **family structure**, referring to whether the family is “intact” or “disrupted” (i.e., divorce, separation, single parent), and **family quality**, referring to *management practices* (i.e., supervision, communication, parenting style, parental substance use). **Disrupted family structure** characterized by low bonding can be a *significant source of stress* for adolescents, and when coupled with **poor family management practices** (i.e., low supervision and control), youth are both *more likely*, and have *more opportunities*, to use cannabis. In Canada, adolescents with disrupted family status are approximately **65% more likely** to use cannabis than youth from intact families. The consistent differences in *social patterns* between users and non-users, with lifetime cannabis users spending *less time with family* and *more time with drug using friends*...

“A lot of people **judge me for smoking weed** but most of my family members *low-key abuse alcohol* and that’s **considered normal**. They drink like 4 drinks a day + are like **‘it’s just what we do.’**”

- Roundtable Participant

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Cannabis in Context

...reflects the importance of **management practices** and **family bonding**. It's important to keep in mind this research has *generally focused* on **heteronormative, dual parent, middle class families**. Educators should also consider that *not all families* have access to **time, resources, knowledge, and skills** for *positive* interactions about cannabis with youth.

Family and parental networks can *also* influence cannabis use among youth through the mechanism of **modeling behaviour**, which posits the family as the *primary unit* responsible for the **socialization of children**. Youth from dysfunctional families often lead *more stressful* lives, and when combined with a *lack of support* from family members, are prone to **adopting maladaptive coping strategies** when faced with stress.

Furthermore, studies show that youths' **expectation** of the *stress-relieving properties* of cannabis is influenced through **observing significant adults** in their lives using cannabis to *deal with stress*. In summary, family and parental networks can influence cannabis use through the modeling of **maladaptive coping strategies + parental use of cannabis**, but *more work* is needed to explore the *different contexts* of use + how *different communication and education strategies* may influence this relationship (e.g., parent's medical use).

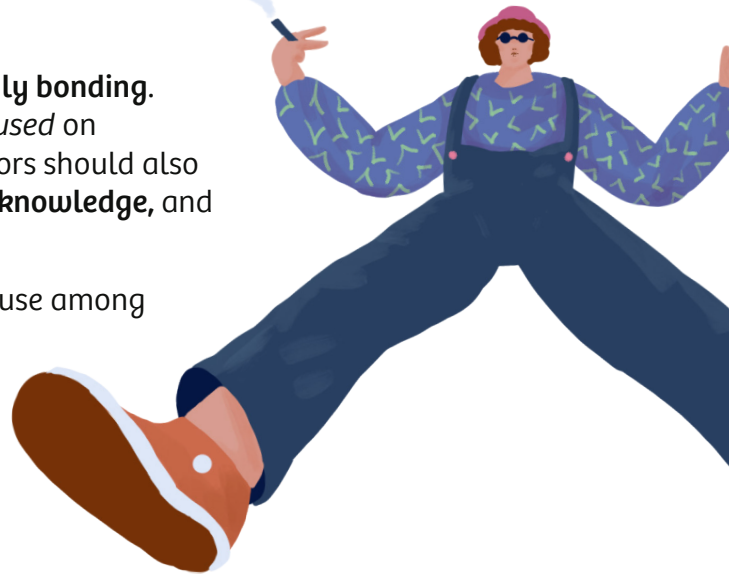
PEER NETWORK

In comparing users to non-users, some *marked differences* in **social patterns** are apparent, with people who use cannabis generally reporting *less time with family* and *more time with friends* who use cannabis.

Peer pressure or peer preference?

While peer networks are a *determinant of use*, the causal **link between peer networks + cannabis use** is *unclear*. "**Peer pressure**" conceptualizes youth as being "*pressured*" into engaging in cannabis use. Peer pressure has been critiqued for being **overly simplistic** in explaining the association between *peer networks and drug use*. While evidence shows an *association* between **having peers who use drugs** and **individual drug use**, it is likely evidence of **peer selection** (or *preference*), rather than peer pressure.

Peer preference or selection considers peer networks as a *collection of individuals* who **gravitate towards friends with similar interests** to their own. In this view, instead of an individual being "*lured*" into using cannabis, individuals with an interest in using cannabis **seek friends who affirm and support this choice**. Therefore, peer networks may create a more *conducive space* for youth to do what they *already want to do*. Instead of *situating blame* on the youth who uses cannabis, peer preference recognizes the *agency* of individuals to **choose their own peers** and **to abstain or use drugs**. This perspective is *supported* by other studies, which revealed that *regardless of peer norms*, **individual beliefs** regarding cannabis can be *strongly predictive* of cannabis use initiation. However, there is evidence that supports **both peer pressure and peer preference**, where some research has suggested that *peer networks may promote initiation*, + continued use is perpetuated through *seeking out cannabis-using friends*. Finally, some studies have noted an *association* between the **perceptions of peer use + subsequent use** (i.e., if one *thinks* all their peers engage in cannabis use, they are *more likely* to use cannabis). Importantly, youth often **overestimate peer use...**



... so a discussion of *prevalence among young people* can help to **ground this discussion**.

SOCIAL NORMS

While studied to a *lesser extent* in favour of individual level risk factors, **changing social norms** surrounding cannabis use *and* its historical status as an illegal drug can **shift** and **influence patterns of use**.

“Normalization”

There are studies that look at how the **normalization of cannabis use** among youth may *contribute* to use or non-use. This typically relies on the understanding of people who use cannabis as “*nondeviant*,” and positions **recreational users**, conceptualized as *occasional users*, against **habitual** or **problematic users**.

Several indicators signal the normalization of recreational and occasional cannabis use, including **(1) increasing access and availability, (2) increasing prevalence of use, (3) increasing tolerant attitudes towards people who use cannabis, (4) cultural accommodation, and (5) policies of legalization and regulation of cannabis markets**. An *important nuance* in studies that look at cannabis use and normalization relies on the idea of “**differentiated**” **normalization** – meaning that *some* drugs and drug use may be *more* normalized for *some* groups of people. Cannabis use has *varying degrees of acceptability* and **cultural identification + experiences** around cannabis use therefore *remain important* to a broader discussion of reasons for use and non-use. For example, *occasional use* and **employing discretion** around *when and where* is **considered appropriate use** is important to how young people think about cannabis, whereas *heavy or chronic use* of cannabis is **seen as problematic**. Social acceptance of cannabis use is *increasing* more generally in North America. In self-report surveys, Canadians report **increasing tolerance** of *recreational* cannabis use as a “lifestyle” choice.

How do we *promote norms* around *appropriate cannabis use*?

Norms are **established**, but often informal, **rules or guidelines** around **appropriate behaviour or conduct**. Some norms around responsible use *could include*:

- **Cannabis use and driving** – while youth acknowledge that *cannabis is less impairing than alcohol*, it is important to be clear that this **does not mean it is safe to drive after using cannabis** or to drive with **others who have recently used cannabis**.
- **Being mindful of appropriate times and places for use** – similar to alcohol, cannabis use **should not impede responsibilities** like *school* or *work*, as well as *hobbies and activities*.
- **Encouraging respecting the rights of others** (*particularly non-users*) – be **cautious and courteous** in terms of *when and where* cannabis is consumed, and **respect other people’s choices** to consume or not.
- **Always storing cannabis responsibly** – taking precautions to *store cannabis safely*, as well as **keeping it away from children**, is important.

Reasons for Non-Use

While studied to a *lesser extent*, young people's reasons for **abstaining or discontinuing cannabis use**, particularly within a context wherein cannabis use is *increasingly being normalized*, are **important to consider**. Prominent reasons for non-use include **concerns regarding psychological or physical harms, lack of interest, and avoidance of social consequences**.

PSYCHOLOGICAL OR PHYSICAL HARMS

In examining how youth's **subjective perceived effects** of cannabis *impact* cannabis use, past work reveals that compared to users, non-users *expected more negative consequences*, including **cognitive + behavioural impairment**. In a nationally representative study of cannabis use among American youths, **concerns about psychological and physical harm** were a *primary factor* listed for abstaining. While potential for psychological or physical harm is a *historically consistent* reason for abstaining and research continues to highlight the *complicated relationship* between these outcomes, its relative importance has *declined over time*. More recent youth perception studies have found youth generally **think of cannabis as "safer"** with *minimal harms*, particularly when compared to alcohol, tobacco, or other drugs.

"The comparison of weed and alcohol can happen a lot. But that can be inaccurate and toxic - you're comparing two completely different substances. Driving drunk and driving high can't be compared and it's detrimental to do that... it's holding a lot of people back."

- Roundtable Participant

LACK OF INTEREST

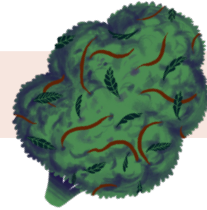
Another *significant reason* for abstaining among youth is simply a **lack of interest**. Among individuals who **discontinued use**, many cited that they *did not* have an interest in or *did not enjoy* the **sensation of being "high."** Abstaining was also related to young people perceiving cannabis use as **unaligned with their self-image**.

There is also support for considering the importance of *youth agency* in their decision-making process. In comparing significant factors for **abstaining from illegal substances** more broadly, one study found that *several factors* for abstaining were *uniquely* associated with cannabis **compared to MDMA/ecstasy, cocaine, and hallucinogens**. Compared to the *other illegal substances*, non-users acknowledged that cannabis was *relatively easy* to obtain and that the *majority* of their peers used it, reflecting that **drug availability + peer networks** may *not* be an important **cannabis use determinant**, at least among adolescents who lack interest in cannabis.

AVOIDANCE OF SOCIAL CONSEQUENCES

While studies show that *cannabis use and frequency of use peaks at 18*, after this age *many* young people who discontinue use cite **legal and employment consequences** as a *deterrent* to continued use. Among non-users, **disapproval from family + parental networks**, particularly *stigma*, was cited as a *primary* reason for abstention. Other studies have confirmed that young people may **fear being caught** by parents or police because they do not want to be *labeled as a "drug user."*

Among **non-users**, **disapproval from family** and **parental networks**, particularly **stigma**, was cited as a **primary reason for abstention**.



How Do Youth Access Cannabis?

Canadian youth *generally report* cannabis as an **easily accessible substance**. Often, cannabis is **shared among groups or at social events**, and finding someone to purchase from is *relatively easy*. Youth often report **sharing cannabis** (both getting cannabis *from others* and *giving it away*) and when they do obtain it for free, it most often comes *from friends or family*. Other points of access include **purchasing from a friend** or from an **acquaintance**. While there is *little formal data* on young people **accessing cannabis online** through illegal websites, this *may* also be an avenue young people may use to access cannabis.

“Most of the time I purchase weed **through people I know**, because it’s way **more affordable**. But cannabis is my **daily medicine** + I can’t always **rely on local dealers** to *have stock* or be *able to meet up when I need*.”

- Get Sensible Team Member

“**Government weed does feel safe** because it’s **regulated**, but the prices are **more than I ever paid** for weed *before legalization*. As a student, I **can’t realistically afford to buy expensive government weed**.”

- Get Sensible Team Member

“My friends + I tend to be **wary of large corporations**, and **prefer supporting people in our local community**.”

- Get Sensible Team Member

“Sometimes **buying from street dealers**, getting to **re-use my jar** to buy **locally grown weed** from someone in my **community**, feels like the **more ethical way** to access cannabis.”

- Get Sensible Team Member

SECTION 3

Assessing Potential Health Harms

Learning Outcomes

By the end of this section, you will:

1. Differentiate between **correlation and causation** in research
2. Understand *common indicators of problematic use*
3. Understand the *impacts of cannabis use on cognition and the developing brain*
4. Understand the *complex relationship between mental health and cannabis use, and the importance of various risk factors*
5. Understand the *long-term physical health implications of cannabis use*
6. Understand *evidence behind the common "gateway" theory*

Correlation versus Causation

It is *important to note* the difference between **correlation** and **causation**, particularly when considering the evidence around *youth cannabis use and health outcomes*. Although you have likely heard the phrase, "**correlation does not equal causation**," interpreting correlational evidence *as causal* remains one of the *most common errors* in current cannabis education programs.

Causation refers to a *proven "cause and effect,"* where we know that **an exposure causes an outcome**, meaning there is a *scientifically verified* direction of the relationship. This is typically established through *rigorous, randomized controlled experiments*. **Correlation** refers to an *observed relationship between two variables*, which **may or may not be causal**. Correlational evidence generally signals that *more research* is needed to *establish* the direction of the relationship between the two factors of interest, and to *rule out the possibility* that a *third factor* is driving the relationship.

What Do We Know About the Risks and Harms of Cannabis Use?

This section will review the evidence on **common understandings** of *cannabis use and youth health*. While the evidence generally **relies on correlated outcomes**, a *cautious* approach to cannabis use and its effects on young people is still warranted as **research continues to develop** and we *begin to* understand these effects *more clearly*.

CANNABIS USE DISORDERS (CUD)

For most people who use cannabis, cannabis use *does not* progress to **problematic use**. As is the case for *most* psychoactive substances, for *some users*, cannabis use *may* progress into a **substance use disorder**. This is marked by a **problematic pattern of use** leading to **clinically significant impairment or distress**, often *negatively interfering* with the user's health and social obligations. **Cannabis use disorder (CUD)** refers to a **clinical classification of cannabis abuse and/or dependence**, and can range from *mild to severe* depending on the number of criteria met. These criteria fall under the *broader domains* of **impaired control, social impairment, risky behaviour, and physiological adaptation**. It should be noted that research has also illustrated *limitations* of the **Diagnostic and Statistical Manual of Mental Disorders (DSM)** criteria for CUD when *applied to youth*, particularly because of the *ambiguous criteria* for **defining and classifying tolerance, withdrawal, and craving**, which are *important components* when considering a diagnosis.

Diagnosing a CUD

A person who *uses cannabis* and who meets *at least two* of the following criteria in a *12-month period* would be **diagnosed with a CUD**, according to the DSM (*fifth edition; DSM-V*):

1. Cannabis is used in **larger amounts** or over a **longer period of time** than **initially intended**;
2. Cannabis use *persists despite desires and/or efforts to cut down or control* cannabis use;
3. A *substantial* amount of time is spent in **efforts to procure cannabis, use cannabis, or recover from the effects** of cannabis use;
4. **Cravings** (*strong desires or urges*) to use cannabis;
5. **Major** work, school, home obligations **fail to be met as a result of recurrent** cannabis use;
6. *Continued* cannabis use **despite persistent / recurrent social or interpersonal problems caused or exacerbated by** the effects of cannabis;
7. Social, occupational, recreational activities are **reduced or dropped** altogether *as a result of* cannabis use;
8. Cannabis is used *recurrently* in **physically hazardous situations**;
9. Cannabis is used despite knowledge of a **persistent or recurrent physical or psychological problem** likely to be *caused by* cannabis use;
10. **Increased tolerance** for cannabis, marked by either **a)** a need for increased cannabis to *achieve intoxication or desired effect*, or **b)** markedly **diminished effect** with *continued use of the same amount* of cannabis;
11. **Withdrawal upon cessation** of cannabis use, marked by either **a)** the *characteristic withdrawal syndrome* for cannabis (according to separate criteria in *DSM-5*), or **b)** cannabis is taken to **relieve or avoid symptoms of withdrawal**.

Few cohort studies have been conducted that can inform this discussion. As such, the **majority of evidence presented** is **ambiguous** and should be **interpreted with caution**.

Risk of Developing a CUD

While overall cannabis use is *on the rise*, evidence on the **rate + risk factors of developing a CUD remains varied**. This is *complicated by* the **change in CUD diagnosis criteria** between the DSM-IV to DSM-V in which *abuse and dependence* criteria was **combined** and *craving and withdrawal* criteria were **added**. Data from the **US National Survey on Drug Use and Health (NSDUH)** estimates that **11% of youth** (aged 12-17) and **6% of emerging adults** (aged 18-25) **meet diagnostic criteria** for CUD *within a year of initiating cannabis*. Since the early 2000s an *increase in mild CUD* has been observed in adults, while rates of moderate and severe CUD *remain stable*. It is important to note *several factors* may be influencing rates of increased use and transition to CUD including **legalization, increased cannabis potency, and changing public opinion**.

*“I think it’s important to be mindful of how much weed we’re smoking, but there’s **obsession in medicine with diagnosing people**, especially youth, with **addictions/substance use disorders**. You can *absolutely* develop a tolerance to weed + *it can be harmful* if you smoke a lot when you’re young, but I wish doctors + psychologists **spent more time understanding why we smoke weed**, rather than **patronizing us** by telling us to *quit* or labeling us with a *highly stigmatized diagnosis*.”*

- Get Sensible Team Member

Earlier onset of cannabis use has consistently been shown to *increase* the likelihood of developing a CUD. For example, data from the *US National Survey on Drug Use and Health* demonstrates that individuals who initiate cannabis use *between the ages of 12 to 18* are **4 to 7 times as likely to develop a CUD** compared to *first time users* aged 22 to 26. Similar findings from the **National Epidemiologic Survey on Alcohol and Related Conditions-III** showed that individuals who *initiated cannabis use at age 15 or below* had a **two-fold increase in likelihood of transitioning to a CUD**, compared to those who *initiated use over the age of 20*. Though younger age of initiation is a *significant risk*, data from the US shows that **rates of cannabis use and CUD have decreased in adolescents** in recent years. Aside from age of initiation, the risk of developing a CUD can *vary according to social, environmental, behavioural, psychological, and genetic factors*.

Treatment of CUD

There are currently **no pharmacotherapy options** that have been *approved* by a *national regulatory authority* (e.g., Health Canada) for CUD. However, several *psychotherapy models* exist ranging from **motivational enhancement therapy (MET)**, **cognitive behavioural therapy (CBT)**, **contingency management**, **supportive-expressive...**

psychotherapy, family + systems interventions, and **12-step programs**. A review found **MET + CBT** to be the *most successful* models for reducing cannabis use + dependence symptoms *in the short-term*, but the majority of patients **did not** achieve *complete* abstinence. **Harm reduction** and **moderation strategies** are increasingly being discussed, given *low rates* of long-term abstinence with conventional treatment, but have *not* been formally evaluated.

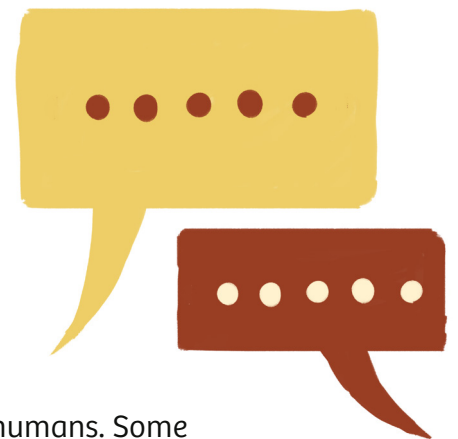
COGNITION AND THE DEVELOPING BRAIN

Adolescence is an *important period* for **developing brain structures + neurotransmitter systems**. The use of a *wide variety of substances*, including alcohol, during adolescence has been implicated in **negative cognitive outcomes** such as *deficits in memory, attention, or executive function*. The relationship between cannabis use and healthy cognitive development is *unclear*. Results of investigations into **differences in brain structure and function** between cannabis users and non-users are *extremely varied*. **Deficits** are *most commonly* found in **early, heavy cannabis users**, but there remains *little consensus* regarding long-term effects. The *ambiguous findings* on brain structure and functional changes following adolescent cannabis use make it *difficult* to draw definitive conclusions. Although **not all adolescents experience harm** from regular cannabis use, being at an *elevated risk* of these potential outcomes may be reason enough to **delay age of first initiation, use cannabis less frequently, and consume less potent cannabis** (i.e., lower percentage of THC).

Research suggests that a relationship exists between **early, heavy adolescent cannabis use + impairments in acute cognition function + mental health**. **Learning impairments, memory impairments, and co-morbid psychiatric disorders** are *consistently associated* with heavy cannabis use, though seem to *resolve* after a **period of abstinence**. There has yet to be *definite conclusions* about **causality, direction, or magnitude** of these associations. This is mostly due to the *shortage of current research* in these areas and is a result of the inherent **difficulty in establishing directionality** of the relationship between *adolescent behaviors* and *adult health + social outcomes* that would **affirm** a causal association. Studying the effects of *persistent* cannabis use on the brain is difficult due to the **infeasibility of studying this association** experimentally. Few **cohort studies** (i.e., studies that *observe a group of people over a period of time*, often several years) have been conducted that can *inform this discussion*. As such, the majority of evidence presented is *ambiguous* and should be **interpreted with caution**.

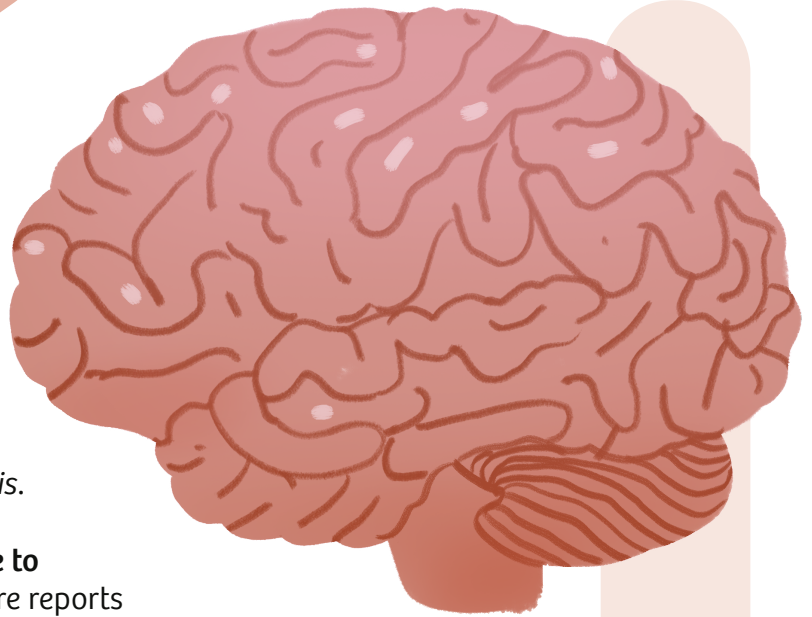
Adolescent Endocannabinoid System + Brain Development

While development of overall brain size occurs in *earlier years*, specific **structural + functional changes** that *increase cognitive capacity and efficiency* take place during adolescence. Many important and necessary brain alterations occur during this **critical period of brain development**. The **endocannabinoid system** plays *a crucial role* in many brain areas, including the **prefrontal cortex** and **limbic system**, which are crucial for many cognitive processes including *decision making and emotional regulation*. While animal studies have shown **cannabinoid-exposure-induced alterations to brain development**, the evidence is much *less developed + consistent* in humans. Some studies suggest that *prolonged, heavy cannabis use* during adolescence may result in **disruptions of normal brain maturation and maturing neurotransmitter systems** that take place during this time. This is because during adolescence, the brain becomes *more sensitive* to **cannabinoid receptor interactions** and thus may be *more susceptible*...



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...than the adult brain to the effects of cannabis use. These potential alterations *may* persist for *several weeks*, but research also suggests that any effects **may normalize** after *three months of abstinence*.

Brain Morphology

A handful of studies have examined the **brain volume and density** of *adolescents who use cannabis*. Unfortunately, these studies are *limited* by their **retrospective design, small sample sizes, and failure to consider confounding variables**. Regardless, there are reports of *brain abnormalities* associated with cannabis use, such as **decreased brain volume + grey matter density**. However, combined evidence from several larger-scale investigations *do not* support these findings and **show limited to no structural brain differences** between adolescent cannabis *users* and *non-users*. In adults who use cannabis, there is also *little evidence* to support changes in **brain density + volume** overall. One *exception* to this is in the **hippocampus**, where there is *some evidence* to suggest **decreased volume**.

Since *few studies* have examined the **developmental trajectories** of the brain in adolescents who use cannabis, the **impacts of cannabis on the adolescent brain** are *not yet* well characterized. A recent *longitudinal* study of heavy adolescent cannabis users noted **no changes** following an average of *five years* of *near daily* cannabis smoking. However, there does appear to be *some evidence* from longitudinal studies suggesting **altered white matter development** in adolescent and young adult cannabis users. Further research is needed to determine **when** and **for whom** cannabis may be associated with *changes to brain morphology*.

Cognition and Cognitive Testing

While reviewing the research *pertaining to cognition*, it is important that we **do not conflate cognitive testing with intelligence**. The *evaluation and classification* of “intelligence” is very complex, particularly for *neurodivergent individuals*, and thus **cognitive testing**, such as IQ tests, should **never be used as a proxy**. A recent investigation comparing the results from *69 different studies* concluded that while there *may* be some **reduction in the cognitive function** of adolescents and young adults who use cannabis, effects were *small* and *potentially lacking clinical relevance*. In other words, differences, if proved true, may be *small enough* that they **cause no true detriment** to the individual. Further, if *abstinent for longer than 72 hours* all cognitive deficits associated with cannabis use *were diminished*. Several studies have examined IQ specifically among adolescents who use cannabis, and **findings are inconsistent**. In one study, cannabis use had a **negative effect** on **global IQ, processing speed, and immediate + delayed memory** in adolescents that *smoked five or more joints per week*, but **no long-term effects** remained following a period of abstinence. Further, **no difference in IQ** were observed between *non-using controls* and individuals *consuming less than five joints per week*. A recent review considering data from *both cohort and twin studies* reported *similar declines* in IQ in cannabis users compared to non-users, but authors noted **other factors likely impacted results**.

There have been studies which reported an *association* between **persistent cannabis use over 20 years** and **cognitive decline following a year of abstinence**, but these have also *been scrutinized* for not *considering* other important factors that *may have affected* the relationship.

To date, it *remains unclear* if findings attributing cannabis use to deficits in cognitive scores are **due to cannabis use directly**, or **other factors** such as *genetics, mental health, and environmental factors*. Several studies suggest that adolescent cannabis use *is not associated with reduced IQ or educational attainment* once *adjusting for confounding factors* (e.g., sociodemographic factors, other substance use). Rather, evidence suggests that IQ declines *may be attributable to family considerations* that affect youth *rather than* the direct result of cannabis use. A recent investigation using a *twin study* found that the twin with **higher cannabis use rarely had lower cognitive scores** than their cannabis non-using counterpart. The twin study design allowed researchers to **control for genetic and environmental factors** to *better assess* a causal association between cannabis use and cognitive function. This more *strongly suggests* that decreases in intelligence and cognition *are not* directly attributable to cannabis use.

Two factors that appear to be *potential mediators* of cognitive effects due to cannabis are **frequency and magnitude of cannabis use**. Research has shown *increased frequency and magnitude* of cannabis use was **associated with worse performance** on neuropsychological tests. Further, there was an *association* between **age of initiation and cognitive deficits**; adolescents that initiated cannabis use *before the age of 15* had **lower scores** on cognitive tests than those who initiated use *after the age of 15*.

Educational Attainment

Research has *broadly suggested* that cannabis use in adolescence is **linked with lower educational attainment**, and it has been suggested that rates of educational attainment were *highest* for those who had **not used cannabis by age 18**, and *lowest* for those who **first used cannabis before age 15**. However, more recent cohort studies found that after **adjusting for childhood behavioural problems, childhood depressive symptoms, other substance use** (including use of cigarettes and alcohol), and **maternal use of cannabis during pregnancy**, cannabis use by age 15 *did not* predict poorer educational performance.

MENTAL HEALTH

Debate exists in the research literature as to whether **cannabis creates harm related to mental health, exacerbates existing issues, or whether the supposed negative consequences of cannabis use can be partially or wholly accounted for by other variables**. Cannabis use *may* exacerbate issues in adolescents **predisposed to psychosis or schizophrenia**. An *association* exists between cannabis use and an *increased risk* of developing a **depression or anxiety disorder**. Similarly, an *association* has been found between cannabis use and *increased risk* for **suicide** in adolescents. However, the *relationship* between **genetics and the environment** has not been *parsed apart*.

The extent to which cannabis **plays a causal role in the development of mental health issues** has yet to be established. **Reverse causation** must be considered when reviewing the evidence; it may be that **adolescents initiate cannabis use to alleviate early symptoms**.

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Cannabis in Context

The *extent* to which cannabis **plays a causal role** in the *development of mental health issues* has **yet to be established**. The longitudinal studies of cannabis and IQ have highlighted how **confounding variables** (e.g., *sociodemographic factors, polysubstance use*) **may obscure the actual relationship**. **Reverse causation** must be considered when reviewing the evidence; it *may* be that adolescents initiate cannabis use **to alleviate early symptoms**.

“Using weed as harm reduction helps me get through the days I’m struggling with depression + PTSD. Even if it’s harming my lungs a bit, that’s worth it if it’s keeping me more mentally stable and able to be around day to day.”

- Roundtable Participant

pre-disposed to schizophrenia and an **increased likelihood of cannabis use**, suggesting a *strong genetic component*. Nevertheless, an *association* between cannabis use and schizophrenia *does exist*. A recent review concluded that the early initiation of cannabis use was *associated with an increased risk of early onset psychotic disorder*, especially for those with a **pre-existing vulnerability** and those who **use cannabis daily**. A *robust systematic review* concluded that **heavy and/or daily adolescent cannabis use** was *associated with increased symptoms of psychosis* more so than was occasional or non-use of cannabis. Similarly, evidence suggests that **regular, early cannabis use in males** may increase the risk of enduring **subclinical psychotic symptoms, paranoia, and visual hallucinations**.

Depression / Anxiety

Mental health concerns and **substance use** often *first arise* in adolescence. The **manifestation of anxiety + depression** *may not* be perpetuated by concurrent cannabis use but rather, might **arise during a similar developmental period**. Nevertheless, epidemiological research in this area suggests that there is an *association* between **cannabis use in adolescence** and the **development of anxiety and depressive mood disorders** as an adult. **Evidence remains varied**, though some studies report *no association*, while other studies have found *low to moderate rates* of cannabis-related harms that were *unaffected by age*. The most frequently self-reported cannabis-related harm among participants is **anxiety or depression**. A recent *large-scale meta-analysis* including 23 individuals, found cannabis use in adolescence was *associated with an increased risk of major depression* as a young adult, even *without premorbid conditions*. **No association was found for anxiety**. However, there appears to be a **dose-response** (e.g., small amounts may have *little to no* significant effect, whereas larger amounts during use can be *more harmful*) relationship between **cannabis use and anxiety**, demonstrating that *age of initiation* and *severity of use* are important determinants of risk.



Self-harm / Suicide

There is evidence for an *association* between **exposure to cannabis** and an

increased risk of suicide in adolescence. Several prominent reviews and meta-analyses spanning *over 30,000 individuals and five countries*, found an **increased risk for suicidal ideation** as an adults among those who used cannabis in adolescence. While authors noted **several methodological shortcomings** with the studies that they analyzed, they suggested that the association between *adolescent cannabis use* and *suicidality* **should not be ignored**.

In a cross-sectional study that examined *twin pairs*, where twins differed by if they **did or did not use cannabis** in adolescence, twins who were *dependent* on cannabis experienced **increased odds** (2.5 to 2.9 times higher) **of suicidal ideation** or **suicide attempt** than their cannabis non-using twin. As *environmental upbringing* and *genetic factors* were controlled for through the twin design, the authors *could not* rule out cannabis as a possible risk factor for suicidal thoughts and behaviour. The research to date points towards an *association* between **adolescent cannabis use** and an **increased risk of suicide** later in life. However, the *direction* of this association requires *rigorous testing* through longitudinal research.

Comorbid Substance Use

Early and heavy adolescent onset of cannabis use has been *associated* with **enduring mental health problems** and **advancement to other substance use**. Even for *late onset* and *occasional* cannabis use, the **risk of progressing to other substance use** and **misuse** *remains higher* compared to those who have never used cannabis. While cannabis users appear to be at a *higher risk* for **other illicit drug use**, large-scale longitudinal data found that after **controlling for other factors** (e.g., *other drug use, economic deprivation, serious family tension*) there was **no independent association** between cannabis use and subsequent substance use disorders.

Additionally, *preventing* transitions from **cannabis to higher-risk drug use** is important during adolescence, as youth who initiate substance use are *more vulnerable* than older adults to **developing substance use disorders**. Cannabis use tends to *correlate* with other **high-risk substance use patterns**, and is often *one of the first* initiated substances (after alcohol and tobacco) along trajectories towards *higher-risk* use, fueling questions about the potential role of cannabis in *determining future patterns* of higher-risk substance use.

PHYSICAL HEALTH

Cannabis use may have **short- and long-term physical health implications** for some individuals. This section will summarize evidence on the *potential physical health impacts* of cannabis use with a special focus, wherever possible, on youth. It is important to note that there have been **no reported deaths** from teenagers or adults overdosing on cannabis, suggesting the **harm profile of cannabis is less risky** than that of many other common drugs, *including alcohol*.

Respiratory Symptoms

Similar to *tobacco smoke*, **cannabis smoke contains harmful chemicals** that can cause *irritation and damage* to the airway, resulting in a range of **respiratory symptoms** including *coughing, wheezing, shortness of breath, sputum production, chest tightness, and exacerbation of asthma symptoms*. Even after *controlling* for the effects of cigarette smoking, the estimated **risk of chronic cough, chronic phlegm, and wheezing** for people who use cannabis is *2 to 3 times* that of non-users. There is some evidence that symptoms may **improve or resolve after cessation** of cannabis smoking.

Lung Injury and Disease

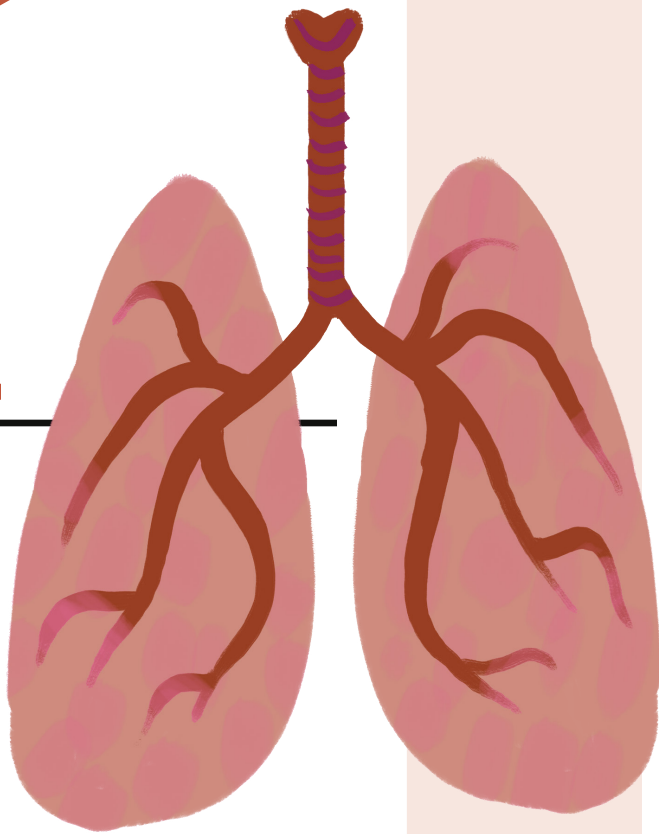
Relative to non-smokers, cannabis smoking is *associated* with an **increased risk of chronic bronchitis**. To date, a *consistent association* has not been found between moderate cannabis use and/or low cumulative use and risk of **chronic obstructive pulmonary disease (COPD)** development. There is *preliminary evidence* that heavy cannabis use may be *associated* with **airway obstruction**, and one study found that cannabis use among tobacco users **increased the risk of COPD more than twice as much** as tobacco-only users.

Recently, there has been a **large increase in e-cigarette use**, also called **vaping**, *particularly in youth*. Use of these products, obtained from *illicit sources*, has been linked to **severe respiratory disease** known as **E-cigarette or Vaping Product Use-Associated Lung Injury (EVALI)**. While vaping often appeals to younger users, *excessive use* and/or use of *illicit products* can lead to hospitalization and in severe cases, death. It is important to note **lung damage** has *not* been attributed to *cannabis itself* but rather from the **chemicals and contaminants in the solvent** (juice), such as *Vitamin E acetate*. The long term impacts of EVALI *remain unknown*.

Lung Cancer

Cannabis smoke contains many of the **same carcinogenic exposures** as tobacco smoke, but the evidence of a *causal relationship* between **cannabis and lung cancer remains inconclusive**. One study pooled six case control studies from *North America, Europe, and New Zealand* and **did not find evidence** of a **dose-dependent association** between *frequency or duration* of cannabis and *incidence of lung cancer*. However, a study examining the *relationship* between cannabis use and lung cancer in a cohort of Swedish men observed that the **likelihood of lung cancer increased** for men who reported using cannabis *more than 50 times*.

After using cannabis, drivers tended to exhibit slower speeds, maintain longer following distances, and demonstrate slower reaction times compared to individuals who took placebo cannabis (0 mg/mL THC).



Another study found an **increase in lung cancer risk** based on a *pooled case-control study* of men in *Tunisia, Morocco, and Algeria*. A **wide spread limitation** of these studies is the possibility of **incomplete adjustment for the effects of tobacco**, given that smoking tobacco is *common* among people who use cannabis and an *indisputable risk factor* for lung cancer.

Acute Cardiovascular Problems

Cannabis *may cause acute cardiovascular effects* such as *increased heart rate* and *changes to blood pressure*. There are *several cases* of acute cardiovascular complications following cannabis use, including *several reports* among **younger males** (20 to 40 years old).

Coronary Heart Disease

Recent findings from the **Coronary Artery Development in Young Adults (CARDIA)** study demonstrated **no dose-dependent relationship** between *cannabis use* and incidence of *coronary heart disease*.

Stroke

Cross-sectional population-based surveys and *assessments of hospitalized patients* have **linked cannabis use to an increased likelihood of ischemic stroke** (i.e., deprivation caused by *lack of oxygen and other nutrients* to the brain). Recent findings showed young cannabis users had **1.82 times the odds of experiencing a stroke** compared to non-users, and this increased to **2.45 times in frequent users**. However, these findings are *contested* by a number of other studies. **Evidence remains inconclusive**, with *limited high quality evidence* supporting the association between **cannabis use and risk of stroke**.

Myocardial Infarction and Cardiovascular Mortality

Several studies identify **cannabis use as a potential trigger for myocardial infarction**, including among adolescents and young adults. However, an *extensive review* found **no evidence to support or refute an association** between chronic cannabis use and future acute myocardial infarction. Although a recent mortality follow-up study **linked cannabis use with an increase in death from hypertension**, the *CARDIA study* did *not* find cumulative cannabis use to be *associated with cardiovascular mortality* among middle-aged Americans.

INJURY

Experimental studies show that consumption of cannabis (*specifically THC*) **induces dosedependent psychomotor + neurocognitive impairments** that **affect information processing** (e.g., *attention and short-term memory*), **reaction time, perceptual-motor coordination, and motor performance**. These impairments may *reduce the ability to...*

...perform everyday tasks *safely*, leading to an **elevated risk of accident or injury.**

Motor Vehicle Crashes

Controlled experimental studies using a *driving simulator* have shown that **cannabis impairment is associated with altered driving patterns.** After using cannabis, drivers tended to **exhibit slower speeds, maintain longer following distances, and demonstrate slower reaction times** compared to individuals who took *placebo cannabis* (0 mg/mL THC). The most recent and comprehensive review to date estimated that, after *controlling for the effect of alcohol*, cannabis use is associated with an **18% increase in risk** of a **motor vehicle crash**. The study authors concluded that this increased risk is *similar in magnitude* to driving with a **blood alcohol concentration (BAC) of 0.04-0.05%**. Several recent studies support a **moderate increase in crash risk** after cannabis use. The *level of impairment and risk of unsafe driving* is estimated to **increase if cannabis and alcohol are used together** or in **close temporal proximity**, even at low doses. The individual risk for young people who use cannabis *may also vary* according to other factors such as the **driver's gender, experience level, + tendency to drive recklessly.**

Occupational Injuries

Although several studies among adult workers *have not found* an **elevated likelihood of occupational injury** associated with cannabis use, one study found that **working high school students** in Texas who **used cannabis at least once** in the last month were *more likely* to report an **occupational injury** than those who *did not* report past-month cannabis use, although, the study *did not* discern **between time of cannabis use and occupational injury**. More recent *systematic reviews* support the position that **cannabis users are not at a higher risk for occupational injury.**

Other Accidents and Injuries

A few studies have assessed the *association* between **cannabis use and injuries more generally**, and findings *vary considerably*. For example, *one study* found that cannabis use was associated with an **increased frequency of injuries**, while *another* **did not find an increased risk of injury** associated with cannabis use among patients *presenting to the emergency department* (ED) in British Columbia. In contrast, a *Swiss study* of patients presenting to the ED found that **cannabis use was associated with a 67% decrease in the risk of injury overall**, and the risk of injury *decreased with increasing doses* of cannabis. *Common cannabis-related ED visits* were shown to be **acute intoxication, gastro-intestinal effects, psychiatric effects, and acute physical injury**. However, cannabis-related injuries *remain rare*.

Burns are an *emerging* cannabis-related health concern: one study noted that the *proportion of people who use cannabis* within the burn patient population is **outgrowing the representation of people** who use cannabis in the *general population*, and another study recorded an **increase in burns from butane hash oil** (a *potent cannabis concentrate*, colloquially known as "**dabs**") in Colorado after medical cannabis legalization.

All-Cause Mortality

While a *modest association* between **heavy cannabis use and all-cause mortality** has been identified in one study, this finding was *not replicated* in two other studies. An extensive review concluded a **lack of evidence to confirm or refute** an *association* between cannabis use and all-cause mortality.

The “Gateway” Theory

Initially *proposed in the 1970’s by epidemiologists* who were studying youth substance use, **the gateway theory** suggests that **substance use follows a pattern of increasing severity**, starting with *tobacco or alcohol*, progressing to *cannabis*, and then to other illegal drugs including *cocaine, methamphetamine, and heroin*.

While **people who use cannabis** (particularly those who start early or are heavy/regular users) have a **higher risk of trying other illegal drugs** compared to non-users, it is important to note that the *majority of people* who use cannabis **do not transition to other illegal drugs**. Furthermore, whether or not cannabis is an initiator is a *highly debated topic* that has **not** been fully substantiated. *Several* plausible causal and noncausal explanations have been proposed to **explain** (or partially explain) **the association between cannabis and transitions to higher-risk drug use**, as described below.

Pharmacological Pathways: Cannabis acts on the **same reward centre-stimulating neural pathways** as nicotine, opioids, and cocaine in the brain. Under a *causal framework*, the gateway hypothesis proposes that *cannabis* (and other drugs such as tobacco + alcohol) **leads to higher-risk substance use by inducing pharmacological changes** in the brain that **encourage people to seek the euphoric effects of other drugs** (by *reducing* the reaction to dopamine).

Common Underlying Factors: Rather than cannabis “*priming the brain*” for other illegal drug use, another potential explanation is that **other genetic, environmental, and behavioural factors increase the likelihood of people using substances** more generally, with opportunities to use cannabis often *coming before* opportunities to use other illegal drugs. Many studies demonstrate that these factors *explain part* of the association, *but not all* of it.

Contextual Influences: Being **exposed to other illegal drugs** through *different social environments* that **accompany the use of cannabis** has been proposed as another way to explain the *relationship between cannabis use and future higher-risk drug use*. Since cannabis is an **illegal drug in most settings**, youth who use cannabis **may come into contact with the illegal drug market**, which may *facilitate opportunities* to engage in **other illegal substance use**.

BOOKLET 3 CONCLUSION

This booklet series, which also includes **Booklets 1 + 2**, has provided a summary of vast amounts of information around *cannabis* and *youth*. The legalization and regulation of non-medical cannabis markets presents a *significant opportunity* to change the way we **approach cannabis education with young people** in Canada. These changes are an *opportunity* to **move away from abstinence-only** cannabis education and to **develop new approaches** that *resonate with young people*. Key to these approaches will be the creation of programs that serve youth who *do not* use cannabis, as well as those *who do*. In any drug education program, young people's **right to education and health services**, as well as **privacy**, should be respected. Educators and parents also need support.

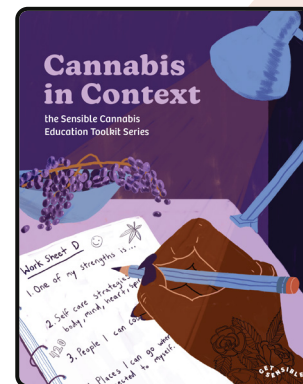
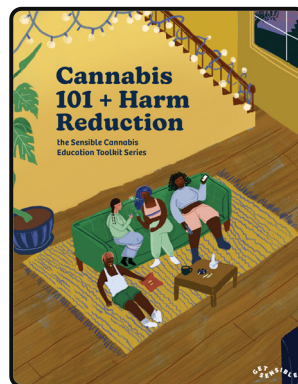
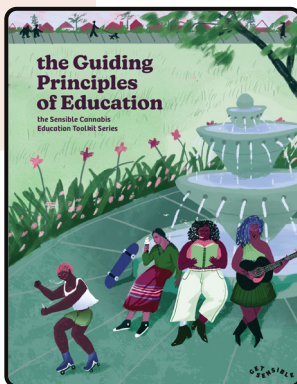
The **Sensible Cannabis Education Toolkit**, and subsequent tearaway booklets, began from the *ground up*, acknowledging that there is **no secret recipe** for cannabis education.





Here are some final key points that summarize and tie together our approach to youth cannabis education:

- **‘Youth’ encompasses a large, diverse group of people:** Age, gender, socio-economic status, race or ethnicity, community norms, sexual orientation, and attitudes towards cannabis use mean different components of personal and social identity may lead to reduced or exacerbated vulnerabilities, understandings, and use patterns – education should reflect these differences.
- **Abstinence-only or fear-based approaches do not work + leave many youth in the dark:** We need to stop relying on and start rebranding programs that are rooted in this approach, and create education that serves both non-users and users.
- **Engage youth and do not leave youth out of the process:** Give young people the opportunity to talk about their experiences with cannabis. Engage with youth respectfully and acknowledge their capacity to make decisions for themselves. Provide opportunities for youth to be involved in creating, assisting, or leading cannabis education where appropriate.



If you are looking for the *other* booklets in this series, please **check out our website** where you can access digital copies/request print copies to be sent to your mailing address - <https://getsensible.org/get-Toolkit/>

Thank you for supporting **CSSDP** + the **Get Sensible** project.

Spread the word and remember...
stay sensible gang!

MORE INFO

Scientific References

All the information we've discussed in this booklet comes from our **original Sensible Cannabis Education Toolkit** (available for *digital download* at <https://getsensible.org/get-Toolkit/>). *Extensive scientific research* was put into the Toolkit's creation. All **academic sources** can be found by scanning the QR code below.



Download the
complete Toolkit
and Academic
Citations here!

Additional Resources

There is **no one size fits all** approach to cannabis education, so here is a list of **additional resources** that might better *suit different contexts*:

Reports

- **"The Health Effects of Cannabis + Cannabinoids: Current State of Evidence"**, National Academies of Science, Engineering and Medicine
nap.edu/read/24625/chapter/1
- **"Using Evidence to Talk about Cannabis"**, International Centre for Science in Drug Policy
icsdp.org/cannabis_claims_reports
- **"Canadian Youth Perceptions on Cannabis"**, Canadian Centre on Substance Use and Abuse
ccsa.ca/Resource%20Library/CCSA-Canadian-Youth-Perceptions-on-Cannabis-Report-2017-en.pdf

Legislative

- Introduction to the Cannabis Act, Government of Canada**
canada.ca/en/services/health/campaigns/introduction-cannabis-act-questions-answers.html
- Backgrounder: The Cannabis Act, Government of Canada**
canada.ca/en/health-canada/news/2018/06/backgrounder-the-cannabis-act-the-facts.html
- Cannabis in the Provinces and Territories**
canada.ca/en/health-canada/services/drugs-medication/cannabis/laws-regulations/provinces-territories.html

Youth Harm Reduction

- Karmik (Vancouver, BC)**
www.karmik.ca/
- TRIP! Project (Toronto, ON)**
www.tripproject.ca/trip/
- GRIP (Montreal, QC)**
www.grip-prevention.ca/

Indigenous Youth-led Resources:

We Matter Toolkit for Teachers

www.wemattercampaign.org/toolkits/teachers

We Matter Toolkit for Support Workers

www.wemattercampaign.org/toolkits/support-workers

We Matter Toolkit for Youth

www.wemattercampaign.org/toolkits/youth

Practical Guides + Resources

- Cannabis and Youth: A Certificate for Youth Workers (free)

youthrex.com/cannabis-and-youth-certificate/

- Cannabis Use and Youth: A Parent's Guide, HereToHelp BC

heretohelp.bc.ca/workbook/cannabis-use-and-youth-a-parents-guide

- Cycles (a film-based teaching resource), UBC School of Nursing

uic.ca/research/centres/cisur/publications/helping-schools/cycles/index.php

- Lower Risk Cannabis Use Guidelines, CRISM

crism.ca/wp-content/uploads/2018/03/LRCUG-2017.pdf

- Factsheet for Parents and Caregivers, SACY

usb.bc.ca/Student_Support/Safe_Caring/SACY_Substance_Use_Health_Promotion/Cannabis-Corner/Documents/sbfile/181002/parents.pdf



THANK YOU!

We'd like to give a *big shout out* to the **Get Sensible's creative team**, which includes:

MILO STØRDAHL

Graphic Designer

SEB JAGOE

Web Developer

BRIAN JIANG

Illustrator



We're *incredibly proud* of what we've accomplished with this campaign, and none of it would have been possible without the contributions of *each and every young person* who **shared their time, perspectives, and expertise** with us throughout the course of this project, including our **Peer Leader team**, our **workshop participants**, and **CSSDP members across the country**.

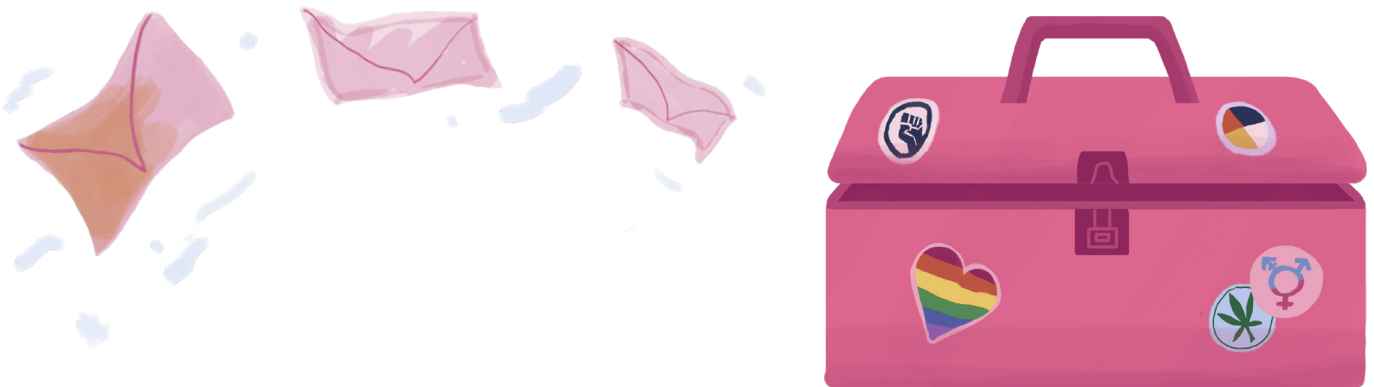
Finally, thank you to **Health Canada's Substance Use and Addictions Program** funding. The views expressed herein *do not* necessarily represent the views of Health Canada.



Notes



Notes





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