Canadian Centre
on Substance Abuse
Centre canadien de lutte
contre les toxicomanies

Partnership. Knowledge. Change.
Collaboration. Connaissance. Changement.

Cannabis

Introduction

Cannabis, more commonly called marijuana, is a tobacco-like greenish or brownish material consisting of the dried flowers, fruiting tops and leaves of the cannabis plant, *Cannabis sativa*. Hashish or cannabis resin is the dried brown or black resinous secretion of the flowering tops of the cannabis plant and can be further processed to produce hash oil, wax or shatter. There is preliminary evidence of higher risks of resins due to the higher concentrations of THC.[1] Cannabis is usually smoked as a cigarette ("joint") or smoked as resins in a pipe or bong, also known as "dabbing."[1] Vaporizers are also used to reduce the toxins inhaled from the cannabis smoke. Some users slice open and hollow out cigars and replace the tobacco with marijuana (called "blunts"). In some cases, joints and blunts may be laced with other substances, such as cocaine. Cannabis can also be baked into foods and orally ingested. Commonly used street names for cannabis include "weed," "pot," "herb," "ganja," "grass," "Mary Jane" and "reefer."

Illegal drugs, including cannabis, accounted for approximately $8.2 billion (about 20%) of the nearly $40 billion cost of substance abuse in Canada in 2002.[2]

Key Points

- Cannabis is not a benign drug: there are risks and harms associated with its use.
- There has been a slight decrease in cannabis use among the Canadian general population since 2008.
- Although cannabis use among Canadian youth aged 15-24 has been declining since 2008, their use is more than 3 times higher than that of adults.
- The rate of daily cannabis use among the Canadian general population remains steady and underscores the potential for cannabis-related harms.

Effects of Cannabis Use

Short-term: Cannabis produces euphoria and relaxation, changes in perception, time distortion and deficits in attention span. It also negatively impacts the ability to divide attention and results in deficits in memory, body tremors and impaired motor functioning. Cannabis also impairs coordination and balance. Other physical effects of recent cannabis use include increased heart rate and appetite, increased blood pressure, dilated pupils, red eyes, dry mouth and throat, and bronchodilation (expansion of breathing passages).[3,4]

Long-term: Chronic cannabis use is associated with deficits in memory, attention, psychomotor speed and executive functioning, particularly among those who started using cannabis during early adolescence.[5] Chronic use of this drug can also increase the risk of psychosis, depression and anxiety, breathing problems and respiratory conditions, and possibly lung cancer.[5,6] Use of cannabis

during pregnancy — particularly heavy use — can affect children's cognitive functioning, behaviour, future substance use behaviour and mental health.[7]

Legal Status of Cannabis in Canada

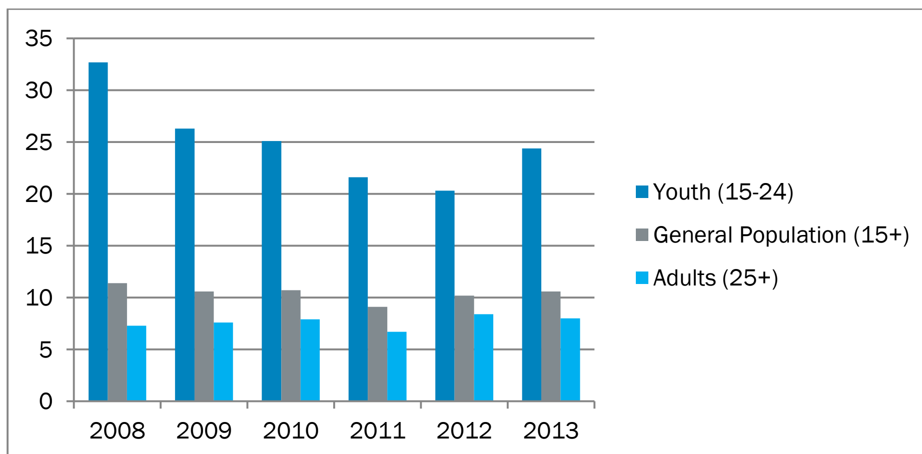
Cannabis is a Schedule II drug under the *Canadian Controlled Drugs and Substances Act*, meaning that growing, possessing, distributing and selling cannabis are illegal. The possession of cannabis can result in less than five years' imprisonment; its production can result in seven years' imprisonment; and trafficking it can result in life imprisonment. A cannabis-related conviction results in a criminal record, which can affect education acceptance, employment and travel. As part of its 2015 election platform, the Liberal Party of Canada pledged to legalize, regulate and restrict access to cannabis. When, after the election of October 2015, it became the Government of Canada, it confirmed its intention to legalize cannabis, and has committed to establishing a federal-provincial-territorial task force to oversee this process.

Driving while impaired by a drug, including cannabis, is an offence under the *Criminal Code of Canada*. Drivers who are impaired by drugs are subject to the same penalties as those impaired by alcohol.

In 2013, the regulations governing Canadians' access to cannabis for medical purposes were updated by the Government of Canada. Individuals must receive a prescription from a medical practitioner to be able to use cannabis for medical reasons. Under the current *Marihuana for Medical Purposes Regulations* (MMPRs), all cannabis for medical use must be obtained from a licensed producer authorized by Health Canada. However, a Supreme Court of Canada decision issued in February 2016 allows those authorized to grow their own supply under the previous *Medical Marijuana Access Regulations* to continue doing so. Health Canada will be amending the MMPRs in light of this decision, with amended regulations anticipated in August 2016. According to recent statistics from Health Canada, 47,627 Canadians are authorized to possess dried marijuana for medical purposes.[8] The evidence on the efficacy and effectiveness of cannabis for medical purposes has been the focus of recent reviews.[9,10]

Past-Year Use in Canada

Figure 1. Prevalence of self-reported cannabis use among Canadians by age category



Source: CADUMS 2008–2012, CTADS 2013

Note: Due to methodological differences between CADUMS and CTADS, comparisons of prevalence estimates between CADUMS (2008–2012) and CTADS data should be made with caution.

- **General population (age 15+)**: The Canadian Tobacco, Alcohol and Drugs Survey (CTADS) reported that the prevalence of past-year use of cannabis among the general population was 10.6%[11] in 2013, which is down from the 11.4% reported in the 2008 Canadian Alcohol and Drug Use Monitoring Survey (CADUMS 2008).[12]
- **Adults (age 25+)**: Among Canadian adults, 8.0% reported past-year use of cannabis in 2013, which is similar to the rate reported in 2012 (8.4%).[11,12] The past-year rate of cannabis use among adults had significantly increased from 6.7% in 2011 to 8.4% in 2012.[13]
- **Youth (age 15-24)**: The rate of past-year cannabis use in 2013 was more than three times higher among Canadian youth aged 15–24 compared to adults (24.4% vs. 8.0%), with an average age of initiation of 16.1 years. Among youth aged 15–19, the rate of past-year cannabis use in 2013 was 22.4%; the corresponding rate was 26.2% among young adults aged 20–24. On average, youth initiated use of cannabis at 15.1 years, young adults at 16.6 years and adults at 18.3 years.[11]
- **Students (Grades 7-12)**: In 2012–2013, 19.3% of students from across Canada reported past-year use of cannabis, with 8.8% of those in grades 7 to 9 and 29.7% of those in grades 10 to 12 reporting use. The average age of initiation is 14, with males on average initiating at age 13.7 and females at age 14.2.[13] Provincial surveys of student drug use reveal that cannabis use increases with grade level. For instance, in 2012–2013, 3.2% of Canadian youth in Grade 7 reported using cannabis compared to 23% of those in Grade 10 and 35.6% of those in Grade 12 students reported use.[13]
- **Post-secondary students**: Data from the spring 2013 National College Health Assessment Survey, which is drawn from a convenience sample of 32 post-secondary institutions and therefore not representative of all post-secondary students in Canada, indicates that 60.1% of post-secondary students had never used cannabis, 23.8% had used cannabis, but not in the past 30 days, and the remainder (16%) had used cannabis sometime in the past 30 days.[14]
- **Gender**: Data from the 2013 CTADS indicate that the prevalence of past-year cannabis use among males is nearly double that among females (13.9% vs. 7.4%).[11]
- **Daily use:** About 28% of Canadians aged 15 and older who used cannabis in the past three months in 2013 reported that they used this drug daily or almost daily, unchanged from the approximate 27% in 2012.10 With regards to age, 23.4% of youth age 15–19, 30.4% of young adults (age 20–24) and 27.9% of those 25 and older reported daily or almost daily use. The prevalence of daily or almost daily cannabis use did not significantly differ between youth and adults in 2013.[11]
- **Provincial differences**: The provincial prevalence of past-year cannabis use ranged from 8.1% in Saskatchewan to 13.3% in British Columbia in 2013. When comparing each province's past-year cannabis prevalence with the average prevalence for the remaining nine provinces, British Columbia experienced a significantly higher than average prevalence and Saskatchewan had a significantly lower than average prevalence.[11]

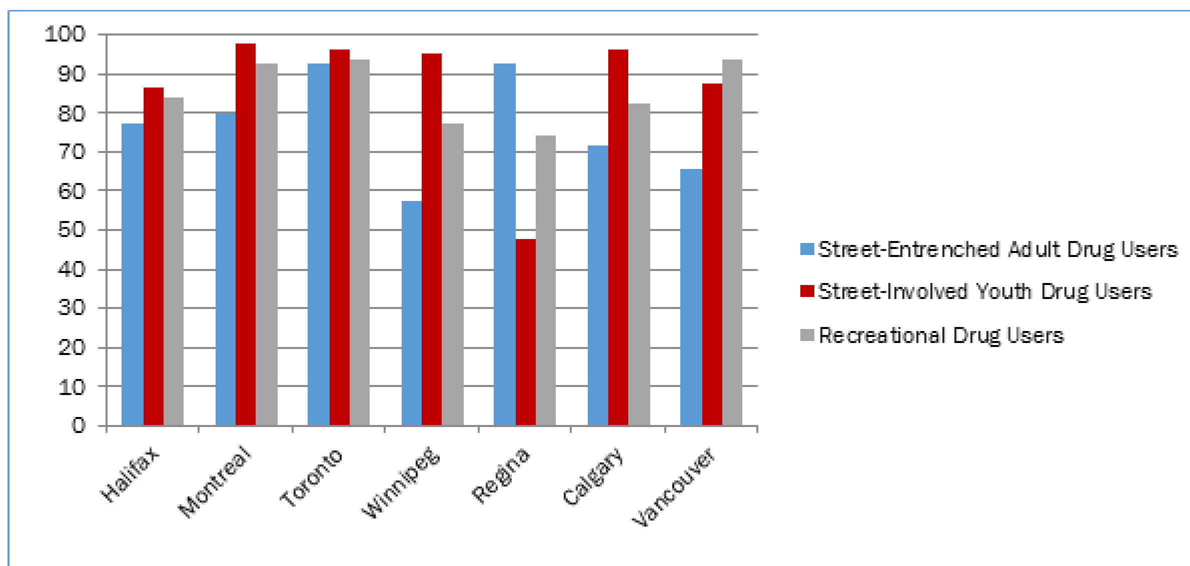
Past-Year Use among High-Risk Populations

Data from Health Canada's Monitoring of Alcohol and Drug Use among High-Risk Populations Study (HRPS) considered three groups: recreational drug users, [*] street-entrenched drug users[†] and street-

[*] Recreational drug users include individuals that were recruited at an event-specific site (e.g., rave, warehouse party) or permanent night club sites. To be included in the study, they had to have used at least one drug (excluding alcohol and tobacco) at least once in each of the last six months prior to each of the interviews.

involved youth users. ‡ The study found that cannabis was ranked first, after alcohol, for all three groups as the most used substance by the greatest proportion of users across all cities surveyed in 2012 and 2013. In some cases, cannabis was also the most used substance after alcohol in the participant's lifetime. Figure 2 shows the prevalence of past-year cannabis use among these populations across the Canadian cities surveyed in 2013.[15]

Figure 2. Prevalence of past-year cannabis use among high-risk populations in 2013



Source: Monitoring of Alcohol and Drug Use among High-Risk Populations Study (HRPS), 2012–2013

Ranking among Top Five Substances

Cannabis is the most commonly used illicit substance in Canada according to data from the 2013 CTADS. Overall, cannabis is the second most used substance by Canadians in the past-year after alcohol (see Table 1).

Table 1. Top five substances used in the past year by Canadians

	#1	#2	#3	#4	#5
General Population (15+)	Alcohol (75.9%)	Cannabis (10.6%)	Cocaine/Crack (0.9%)*	Hallucinogens & Salvia (0.6%)*	Ecstasy (0.4%)*
Youth (15-24)	Alcohol (72.6%)	Cannabis (24.4%)	Hallucinogens & Salvia (2.7%)	Cocaine/Crack (2.4%)	Ecstasy (1.4%)*
Adults (25+)	Alcohol (76.5%)	Cannabis (8.0%)	N/A (suppressed)	N/A (suppressed)	N/A (suppressed)

Source: CTADS, 2013

Note: Figures identified with an asterisk should be interpreted with caution because of the small sample size.

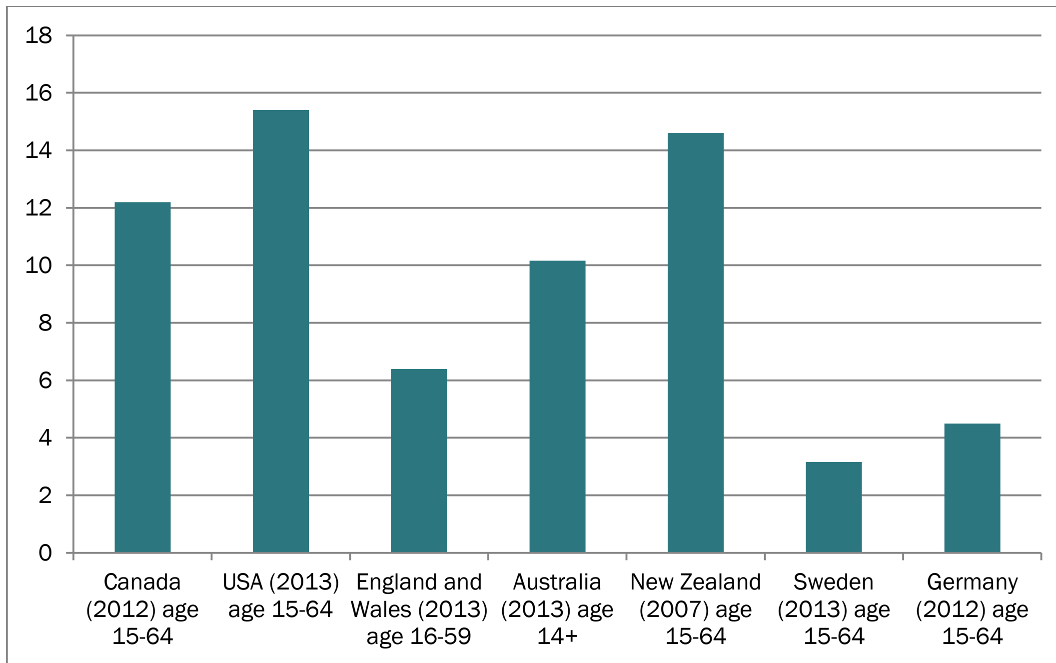
† Street-entrenched adults include individuals 19 years of age or older with no permanent shelter. To be included in the study, they had to have used at least one drug (excluding alcohol and tobacco) at least once in each of the last six months prior to each of the interviews.

‡ Street-involved youth include individuals 15–24 years of age who might be experiencing total homelessness; have temporary, but not permanent, shelter; use services oriented to street youth; or were identified by local stakeholders as "street-involved." To be included in the study, they had to have used at least one drug (excluding alcohol and tobacco) at least once in each of the last six months prior to each of the interviews.

Past-Year Use of Cannabis Internationally

Canadians are among the highest past-year users of cannabis. Figure 3 presents data on the prevalence of self-reported past-year cannabis use for several countries as reported in the United Nations Office on Drugs and Crime (UNODC) *World Drug Report 2015* (see Figure 3).[16] As this data is reported by individual member states based on different survey years and age ranges, the prevalence rates are not directly comparable. These estimates are based on annual report questionnaire data and other official sources.

Figure 3. Prevalence of self-reported past-year cannabis use among the general population by country



Source: UNODC World Drug Report (2015)

Since 2012, five U.S. states and Uruguay have passed legislation to legalize cannabis for personal use. Definitive conclusions regarding the impact of these policy changes on cannabis use and the cannabis market are not yet possible due to the recency of policy changes and variations in the scope and quality of data collected.[§]

Associated Harms

Morbidity

Hospital administrative data provide an important measure of the impact of substance use on the healthcare system. Data collected by the Canadian Institute for Health Information (CIHI) indicate that the rate of hospital separations (defined as the departure of an inpatient from hospital, owing either to discharge[**] or death) where cannabis was recorded as the primary diagnosis doubled between 1996 and 2005, from 14 to 31 per 100,000.[17]

[§] Additional information on policy approaches to cannabis is available through CCSA's policy briefs and considerations publications, available at www.ccsa.ca/Eng/topics/Marijuana/Pages/default.aspx.

[**] Reasons for discharge include being discharged home, transfer to other hospitals, units or settings, absent without leave, leave of absence, discharged against medical advice, etc.

Between 2006 and 2011, cannabis increased as a reason for the use of hospital resources: hospital stays due to cannabis-related disorders (e.g., cardiovascular issues) increased by 44% during this time and the number of days spent in the hospital due to cannabis-related disorders increased as well by 39%. This increase was mainly due to the increase in cannabis-related disorders among youth aged 15–24. Overall, the costs associated with hospitalization due to cannabis increased 52%, from approximately 9 million to 14 million during this time.[18]

Data from the 2012 Canadian Community Health Survey — Mental Health reported that 1.3% of Canadians aged 15 and older met the criteria for cannabis abuse or dependence during 2012. Males were found to have higher rates of abuse of or dependence on cannabis than did females (1.9% vs. 0.7%).[19]

According to the 2012 CADUMS, 2.6% of Canadians reported driving within two hours of using cannabis during the past year, which represents a modest decrease since 2008 (2.9%).[12] Rates of driving after using cannabis do not significantly differ between Canadian youth and adults; 5% of youth aged 15–24 reported engaging in such behaviour in 2012 compared to 7.6% among 25–34 year olds.[12]

The results from a night-time roadside survey conducted in British Columbia during 2012 revealed that 7.4% of drivers tested positive for at least one psychoactive substance (i.e., cannabis, opiates, cocaine, amphetamines, methamphetamine or benzodiazepines) other than alcohol.[20] This reflects a downward trend from the 10.4% of drivers who tested positive for at least one psychoactive substance in 2008. Cannabis accounted for nearly half of the drugs detected in 2012. Data from a recent roadside survey in Ontario revealed that marijuana was the most common illegal drug present among young drivers.[21]

Mortality

It has been estimated that use of cannabis can increase the risk of serious or fatal injury in a motor vehicle crash by 2 to 3 times.[22,23] A national study of fatally injured drivers in Canada reported that in 2012, between 42% and 45.7% of fatally injured drivers aged 16 to 45 who were tested for the presence of drugs were found to have tested positive for drugs in their system. Among the 363 drivers who were tested, 45.5% tested positive for cannabis. During a baseline period of 2006 to 2010, 35.6% of fatally injured drivers who were tested for drugs tested positive. Between 2011 and 2012, incidents of fatally injured drivers testing positive for drugs increased to 40.5%, a 13.4% increase from the baseline sample.[24][††]

Treatment

According to the 2015 National Treatment Indicators report,[‡‡] cannabis was the most commonly used illicit drug among Canadians accessing publicly funded substance abuse treatment in 2012–2013.[25] The rate of individuals accessing treatment who reported cannabis use in the past 12 months varied from 10.2% to 47.5%, depending on jurisdiction. However, this data does not indicate whether cannabis was the reason for seeking treatment.[26]

Data on the presenting problem substance at the time of treatment admission is available in some provinces. For example, in Ontario in 2012–2013, cannabis was identified as the presenting

[††] This study did not include data from British Columbia.

[‡‡] The *National Treatment Indicators Report* provides 2012–2013 fiscal-year data on public, specialized substance use treatment from eight provinces (Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Manitoba, Saskatchewan and Alberta) one territory (Yukon), one provincial association (Association des centres de réadaptation en dépendance de Québec) and one federal department (Correctional Service of Canada).

problem substance by 33% of individuals and in Nova Scotia, 10.5% of treatment clients identified cannabis as the primary substance for which treatment was being sought.

Enforcement

In 2014, police reported more than 104,000 drug offences, of which two-thirds (66%) were related to cannabis, mainly possession of cannabis.[27] There were a total of 57,314 arrests for possession of cannabis and 10,696 arrests related to production, trafficking and distribution of cannabis during 2014.[27] The 2014 arrests for cannabis possession decreased by 4% from the previous year as did the arrests for trafficking, production and distribution of cannabis by 25%.

Canada seized approximately 43.2 tons of cannabis herb (defined as the flower buds of the cannabis plant) in 2013, which is higher than the 33.5 tons reported in 2012.[16] In addition, a total of 803,363 cannabis plants were seized in 2013, which represents a decrease from the 1.1 million plants seized in 2013.[16]

Police reported 74,781 charges of alcohol- and drug-impaired driving in 2014, representing a decrease of 5% from the previous year.[27] Drug impairment accounted for 3% of all impaired driving charges, with approximately 2,500 incidents in 2014, an increase in the number of incidents compared to 2013.[§§]

Additional Resources

- Substance Abuse in Canada: The Effects of Cannabis Use during Adolescence
- Cannabis Regulation: Lessons Learned in Colorado and Washington State
- Clearing the Smoke on Cannabis Series Highlights
- What Canadian Youth Think About Cannabis
- Impaired Driving in Canada (Topic Summary)
- Cannabis, Driving and Implications for Youth (Topic Summary)
- Marijuana for Non-Therapeutic Purposes (Policy Brief)
- Marijuana for Medical Purposes (Policy Brief)

ISBN 978-1- 77178-331-6

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The Canadian Centre on Substance Abuse changes lives by bringing people and knowledge together to reduce the harm of alcohol and other drugs on society. We partner with public, private and non-governmental organizations to improve the health and safety of Canadians.

CCSA activities and products are made possible through a financial contribution from Health Canada. The views of CCSA do not necessarily represent the views of the Government of Canada.

[§§] In Canada, driving while impaired by drugs or alcohol is the same offence. This means it is difficult to calculate the exact number of offences that were alcohol related, drug related or both.

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