



Prescription Stimulants

Key points

- The use of prescription stimulants among the Canadian general population is about 1% and has remained relatively stable since 2008.
- In Canada, the rate of prescription stimulant use is highest among youth.
- There is little Canadian data available on the harms associated with prescription stimulant use and misuse.

Introduction

Stimulants are a broad category of substances that act to increase the level of activity of the central nervous system. The category includes commonly used substances such as caffeine and nicotine, over-the-counter decongestants (e.g., pseudoephedrine), illegal drugs (e.g., cocaine, methamphetamine), and prescription medications. Although the category of stimulants includes many substances, this drug summary focuses on prescription stimulants.

The most common use of prescription stimulants is to treat individuals diagnosed with attention deficit hyperactivity disorder (ADHD). Other medical uses for prescription stimulants include the treatment of narcolepsy and other sleep disorders. Table 1 lists examples of the generic, trade and street names for some common prescription stimulants.

Table 1. Common generic, trade and street names for stimulants

Generic name	Trade name	Street names
Methylphenidate	Ritalin®, Concerta®, Biphentin®	Vitamin R, skippy, rids, uppers
Dextroamphetamine	Dexedrine®	bennies, black beauties, hearts
Amphetamine and dextroamphetamine	Adderall®	Beans, dexies, amps
Lisdexamfetamine dimesylate	Vyvanse®	Vanies

Prescription stimulants are normally taken in pill form for medical uses, but some people tamper with the pills to obtain euphoric effects from them. Such tampering can cause complications, such as blockage of small blood vessels due to insoluble fillers in the tablets, infections at the injection site, and rapid onset of effects that can cause blood pressure and heart rate to spike.



Effects of Prescription Stimulant Use

Short-term: These medications, which are in the same class of drugs as cocaine and methamphetamine, increase alertness, energy and attention in low doses. These effects of stimulant drugs are produced as the drug increases levels of dopamine, a neurotransmitter in the brain associated with pleasure, movement and attention.

At low doses, prescription stimulants narrow blood vessels in the body, which causes a decrease in blood flow and oxygen to the heart, at the same time causing an increase in blood pressure and heart rate. Stimulants also increase body temperature and breathing rate, as well as decrease the ability to sleep and the desire to eat. Other short-term effects can include sweating, dilated pupils, restlessness, aggressive behaviour, dizziness, tremors, increased ability to concentrate, paranoia and hallucinations.

Long-term: Repeated use of stimulants can lead to feelings of hostility and paranoia. At high doses, they can lead to serious cardiovascular complications, including heart attack, stroke and lethal seizures. Long-term use can lead to the development of tolerance, which serves to reduce the effects of the drug and prompts users to increase the dose to reinstate the desired effects. The potential for dependence and addiction increases with repeated use of higher doses.

As is the case with illicit and other legal prescription drugs, the abuse of prescription stimulants can alter a person's judgment and decision-making ability, which can increase the likelihood of engaging in risky behaviours, such as drug-impaired driving and unsafe sex.

If prescription stimulants are used chronically, withdrawal symptoms—including fatigue, depression and disturbed sleep patterns—can emerge when the drugs are discontinued.

Legal Status of Prescription Stimulants in Canada

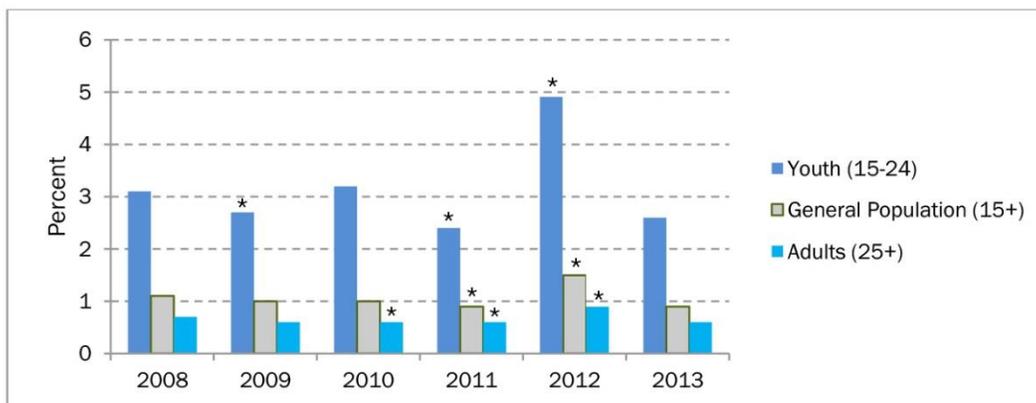
Prescription stimulants are classified as Schedule III drugs under the *Controlled Drugs and Substances Act* (CDSA). Their use is legal only when they are prescribed by licensed practitioners and are used by the person for whom they are prescribed. Illegal possession of stimulants and “double doctoring” (i.e., obtaining a prescription from more than one practitioner without telling the prescribing practitioner about other prescriptions received in the past 30 days) can result in three years imprisonment. Trafficking, importing, exporting or producing stimulants can result in 10 years imprisonment.¹

Past-Year Use of Prescription Stimulants in Canada

- **General population (age 15+):** The prevalence of the use of prescription stimulants among the general population was 0.9% in 2013 (representing over 256,000 people), and has remained relatively stable since 2008.^{2,3} Because of methodological differences between the Canadian Alcohol and Drug Use Monitoring Survey (CADUMS)³ and the Canadian Tobacco, Alcohol and Drugs Survey (CTADS),² comparisons of prevalence estimates between CADUMS (2008–2012) and CTADS (2013) data should be made with caution.
- **Youth (age 15-24):** Youth have the highest rate of prescription stimulant use among all Canadians (2.6% for 2013).² Among youth aged 15–19, the rate of past-year prescription stimulant use in 2013 was 3.5%; the corresponding rate was 1.9% among young adults aged 20–24.²
- **Adults (age 25+):** The rate of prescription stimulant use among Canadian adults was 0.6% in 2013.²



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



Source: CTADS 2013,² CADUMS 2008–2012³

Notes: Figures identified with an asterisk (*) should be interpreted with caution because of the small sample size. Because of methodological differences between CADUMS and CTADS, comparisons of prevalence estimates between CADUMS (2008–2012) and CTADS (2013) data should be made with caution. Several of the prevalence estimates included in this summary are qualified because of high sampling variability and should be interpreted with caution.

Past-Year Use among High-Risk Populations

Health Canada’s Monitoring of Alcohol and Drug Use among High-Risk Populations Study (HRPS)⁴ investigated drug use in seven Canadian cities in three different high-risk groups: recreational drug users, street-entrenched adult drug users and street-involved youth drug users.* Past-year methylphenidate (Ritalin®) use was included in the survey and is presented below. The HRPS survey also indicates past-year use of methamphetamine (crystal meth) and amphetamines (speed), which includes illegally manufactured amphetamines. These data are not presented in this summary since the focus in this document is prescription stimulants.

Among the targeted sample of recreational drug users in 2013, the reported prevalence of methylphenidate use in the previous 12 months ranged from 0% in Halifax to 19.0% in Calgary (Figure 2).⁴ Among the sample of street-involved youth drug users, methylphenidate use in the 12 months prior to the survey varied from 0% in Montreal, Toronto and Winnipeg to 23.1% in Halifax (Figure 2).⁴ In the sample of street-entrenched adult drug users, use of methylphenidate during the 12 months prior to the survey was lowest in Montreal and Vancouver (data suppressed due to low numbers) and most common in Regina (22.5%) (Figure 2).⁴

* **Recreational drug users** include individuals of legal drinking age in their provinces who were recruited at an event-specific site (e.g., rave, warehouse party) or a permanent night club site. 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. Proof of age was not asked at the time of recruitment and some respondents younger than the legal drinking age participated in the study.

Street-entrenched adult drug users 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.

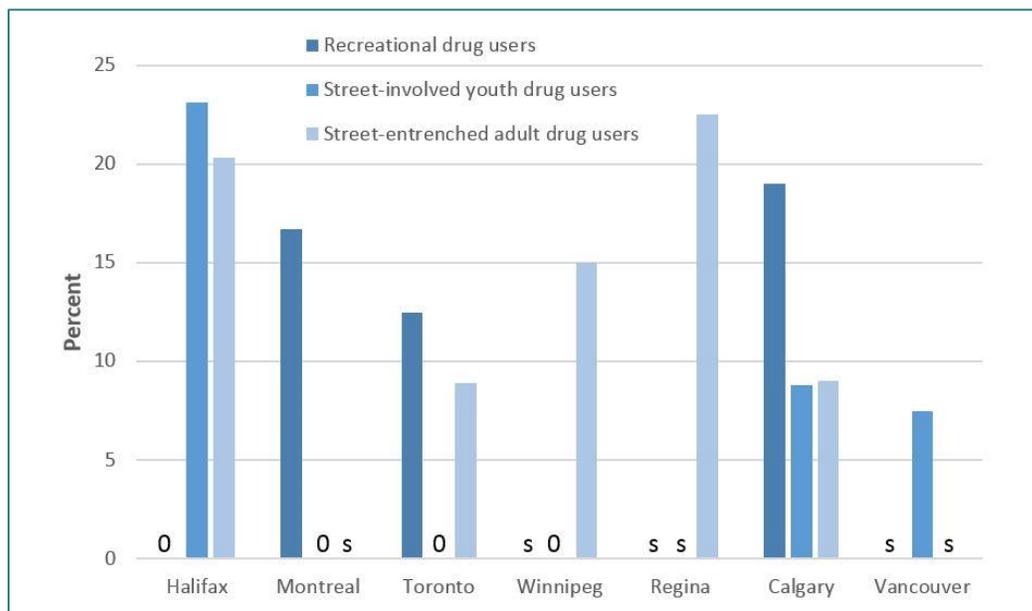
Street-involved youth drug users include individuals 15–24 years of age who might be experiencing total homelessness; have temporary, but not permanent, shelter; use services oriented to street youth; or were identified by local stakeholders as “street-involved.” To be included in the study, they had 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.

Note that there is overlap in the age range of the two street populations because most youth services are provided to clients up to the age of 24 years. Respondents aged 19–24 were considered to be adults or youth depending on the site where they were recruited.



In this latter group, the past-year use of Ts and Rs† was notable in Winnipeg and Regina at 25% and 32.5%, respectively. For other cities and in the other high-risk populations studied, there was either no past-year use of Ts and Rs or the data was suppressed due to low numbers.

Figure 2. Prevalence of self-reported past year use of methylphenidate by city (2013)



Abbreviations: S = data was suppressed when the number of respondents was between 1 and 5; 0 = no drug use

Source: Monitoring of Alcohol and Drug Use among High-Risk Populations Study (HRPS), 2012–2013⁴

Misuse of Prescription Stimulants

While prescription stimulants are prescribed for therapeutic purposes, they have the potential to be misused because of their psychoactive properties. The risk for psychological and physical dependence (addiction) is increased through accessibility, multiple opportunities for diversion along the supply chain, and perceptions of relative safety compared to other illicit drugs, among other factors. Stimulants are often misused for both cognitive enhancement and recreational purposes (i.e., to get high). For the former purpose, they increase wakefulness, alertness, focus and attention. When stimulants are used without medical supervision, used for the wrong purpose or administered inappropriately, there is an increased risk for adverse effects and harms.

- In 2012–2013, 1.2% of Canadian students in grades 7–9 and 2.5% of Canadian students in grades 10–12 reported the past-year use of prescription stimulants to get high and not for medical use.⁵
- 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 3.7% of post-secondary students had used

† Ts and Rs refers to a combination of Talwin® (pentazocine, an opioid) and Ritalin® (methylphenidate), which are mixed and injected together.



stimulants that were not prescribed to them in the past 12 months.⁶ Other studies conducted on post-secondary campuses have indicated rates as high as 5.9%.⁷

- A 2012 survey of Nova Scotia students in grades 7, 9, 10 and 12 reported that 7.0% of students reported non-medical stimulant use in the previous 12 months.⁸
- Among students in grades 7, 9, Level I and Level III[‡] in Newfoundland and Labrador in 2012, 6.5% reported non-medical use of stimulants.⁹
- In 2013, 1.4% of Ontario students in grades 7–12 reported using an ADHD drug for non-medical purposes. Use among females significantly increased between 2013 and 2015, from 0.9% to 2.0%, whereas use among males remained stable.¹⁰
- In 2013, among Americans aged 12 and older, the past-year prevalence of the non-medical use of prescription stimulants was 0.5%.¹¹

Prescription Stimulant-related Harms

In Alberta, the most common reason for emergency department visits related to prescription drugs between 2003 and 2006 was disorders caused by stimulants other than cocaine (16.6 visits per 100,000).¹²

Among 12,856 young people (25 years of age and younger) who were prescribed stimulants in Ontario, stimulant initiation was related to a greater risk of hospitalization for psychosis or mania in the 60-days following initiation.¹³

To date, there is limited data available in Canada on the harms associated with stimulant use. Collecting more information on the potential harms of stimulants could allow for a greater understanding of the issue, from which prevention programming could be developed. As well, greater research on stimulant use in Canada can provide a baseline against which the effectiveness of prevention strategies can be evaluated.

Additional Resources

- [First Do No Harm: Responding to Canada's Prescription Drug Crisis](#)
- [Stimulants, Driving and Implications for Youth \(Topic Summary\)](#)
- [Prevention of Prescription Stimulant Misuse among Youth \(Topic Summary\)](#)

[‡] In Newfoundland and Labrador, Levels I, II and III refer to the last three years of study of a thirteen-year, kindergarten-to-senior-high education system (i.e., grades 10, 11 and 12 in some other provinces).



- ¹ *Controlled Drugs and Substances Act*, S.C. 1996, c. 19, laws-lois.justice.gc.ca/eng/acts/C-38.8/index.html.
- ² Statistics Canada. (2015). *Canadian Tobacco, Alcohol and Drugs Survey: Summary of results for 2013*. Ottawa, Ont.: Author. Retrieved from healthycanadians.gc.ca/science-research-sciences-recherches/data-donnees/ctads-ectad/summary-sommaire-2013-eng.php.
- ³ Health Canada. (2012). *Canadian Alcohol and Drug Use Monitoring Survey (CADUMS)*. Ottawa, Ont.: Author. Retrieved from www.hc-sc.gc.ca/hc-ps/drugs-drogues/cadums-escCAD-eng.php.
- ⁴ Health Canada. (2014). *Monitoring of Alcohol and Drug Use among High-Risk Populations Study (HRPS): Street-entrenched adult drug users, street-involved youth drug users and recreational drug users — Prevalence results 2012–2013*. Ottawa, Ont.: Author.
- ⁵ Health Canada. (2014). *Youth Smoking Survey 2012–2013 — Supplementary Tables*. Retrieved from www.hc-sc.gc.ca/hc-ps/tobac-tabac/research-recherche/stat/_survey-sondage_2012-2013/table-eng.php.
- ⁶ American College Health Association. (2013). *National college health assessment II: Canadian reference group data report*. Hanover, MD: Author.
- ⁷ Chinneck, A., Thompson, K., Teehan, M., Stewart, S., & the Caring Campus Team. (2015). *Personality and prescription drug misuse among emerging adults*. Poster presented at the Association for Behavioral and Cognitive Therapies convention, Chicago, Illinois.
- ⁸ Asbridge, M., & Langille, D. (2013). *2012 Nova Scotia Student Drug Use Survey. Technical report*. Halifax: Nova Scotia Department of Health and Wellness and Dalhousie University.
- ⁹ Newfoundland and Labrador Department of Health and Community Services (2013). *2012 Student Drug Use Survey: Highlights report*. St. Johns: Author.
- ¹⁰ Boak, A., Hamilton, H.A., Adlaf, E.M., & Mann, R.E. (2015). *Drug use among Ontario students. 1977-2015: Detailed OSDUHS findings* (CAMH Research Document Series No. 41). Toronto, Ont.: Centre for Addiction and Mental Health.
- ¹¹ Substance Abuse and Mental Health Services Administration. (2014). *Results from the 2013 National Survey on Drug Use and Health: Summary of national findings* (NSDUH Series H-44, HHS Publication No. (SMA) 12-4713). Rockville, MD: Author.
- ¹² Wild, C., Wolfe, J., Newton-Taylor, M., & Kang, H. (2008). *Prescription drug misuse in Edmonton and Alberta: A rapid assessment*. Edmonton, Alta.: University of Alberta.
- ¹³ Cressman, A. M., Macdonald, E. M., Huang, A., Gomes, T., Paterson, M. J., Kurdyak, P. A., ... & Canadian Drug Safety and Effectiveness Research Network. (2015). Prescription stimulant use and hospitalization for psychosis or mania: a population-based study. *Journal of Clinical Psychopharmacology*, 35(6), 667–671.

