Ecstasy or Molly (MDMA)

Key Points

- Ecstasy and molly are street names for pills or tablets that are assumed to contain the active ingredient 3,4-methylenedioxy-N-methamphetamine (MDMA).
- Although most people consuming ecstasy or molly expect the main psychoactive ingredient to be MDMA, pills, capsules and powder sold as ecstasy or molly frequently contain other ingredients (such as synthetic cathinones or other adulterants) in addition to MDMA and sometimes contain no MDMA at all.
- The prevalence of Canadians aged 15 and older reporting past-year ecstasy use is less than 1%.
- 1 in 25 Canadian youth in grades 10–12 have reported using ecstasy in the past 12 months.

Introduction

Ecstasy and molly are street names for pills, capsules or powder assumed to contain MDMA (3,4-methylenedioxy-N-methamphetamine), a synthetically derived chemical that is used recreationally as a party drug. Pills are typically coloured and stamped with a logo. These drugs are made in illegal laboratories, often with a number of different chemicals, so they might not contain MDMA or contain MDMA in amounts that vary significantly from batch to batch. Other active ingredients found in tablets sold as ecstasy or molly in Canada in 2016–2017 include synthetic cathinones or "bath salts" such as ethylone, methylenedioxyamphetamine (MDA) and its precursor methylenedioxyphenylpropionamide (MMDPPA). Other adulterants reported were caffeine, procaine, methylsulfonylmethane (MSA)and methamphetamine.[1]

In 2011–2012, paramethoxymethamphetamine (PMMA) was present in pills sold as ecstasy in Canada. This adulteration resulted in the deaths of 27 individuals in Alberta and British Columbia over an 11-month period.[2]

Effects of Ecstasy Use

The effects of ecstasy are directly linked to the active ingredients in the pill. Most people taking ecstasy are seeking MDMA; however, other active ingredients have been found to be included in the drug and therefore the effects might vary. Synthetic cathinones, which are often referred to as "bath salts," are a common adulterant in ecstasy pills.[3]

Effects of MDMA

- **Short-term:** MDMA has mood-enhancing properties and the short-term effects of its use include feelings of euphoria;[5] emotional empathy;[5,6] and increased energy;[4,7] as well as muscle aches, nausea and vomiting;[8,] teeth grinding;[4,7,8] hyperactivity;[4] accelerated heart rate;[4,7,8] increased temperature and sweating;[4,7,8] depression;[4] and sleeplessness.[8]
- **Long-term:** The long-term effects of MDMA use include sleeping problems;[4,7,8,9,10] high blood pressure; liver problems;[11] panic attacks;[9] jaundice;[11] memory deficits;[7,9,12,13] and attention deficits.[9]

Effects of synthetic cathinones

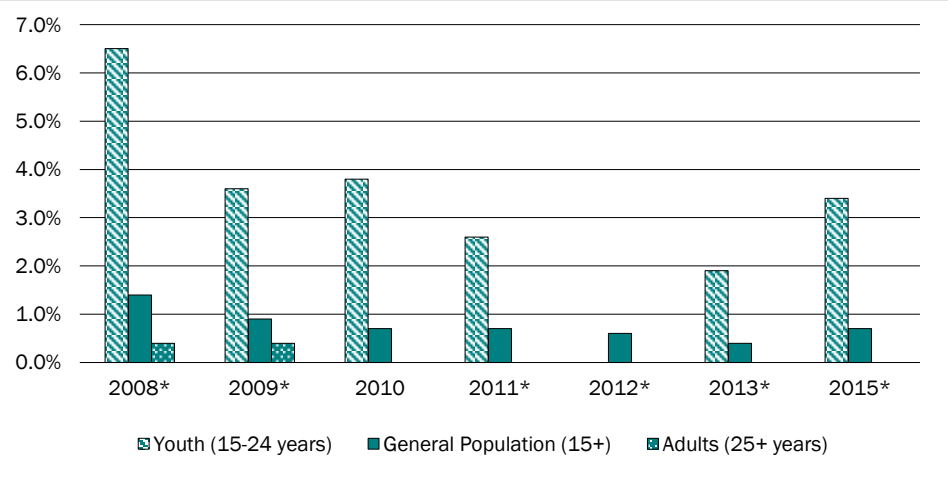
- **Short-term:** The short-term effects of synthetic cathinones include euphoria;[14,15] increased energy;[15] increased heart rate and blood pressure;[16,17,18] sweating;[18] muscle tremors;[15,18] chest pains;[15,16,17] hallucinations;[15,16,17,18] paranoia;[15,16,17,18] agitation;[15,17,18] and aggressive behaviour.[15,18]
- **Long-term:** The long-term effects of synthetic cathinone use are not well known.[19,20,21]

Legal Status in Canada

MDMA is a Schedule I drug under the *Canadian Controlled Drugs and Substances Act* (CDSA). Possession of MDMA can result in seven years imprisonment, while trafficking and production of the drug can result in life imprisonment. There are a great number of synthetic cathinones, some are controlled while others are not.

Past-Year Self-Reported Use of Ecstasy in Canada

Figure 1. Prevalence of self-reported past-year use of ecstasy by age category



Sources: CADUMS 2008, 2009, 2010, 2011, 2012; CTADS 2013, 2015
Notes: Due to methodological differences between CADUMS and CTADS, comparisons of prevalence estimates between CADUMS (2008–2012) and CTADS data should be made with caution. Figures identified with an asterisk should be interpreted with caution due to high sampling variability. In 2015, the high sampling variability refers to the youth but not the general population estimate. Figures for youth are not available for 2012 due to data suppression. Figures for adults are not available for 2010, 2011, 2012, 2013 and 2015 due to data suppression.

General population (age 15+): The prevalence of past-year ecstasy use among the general population is quite low and has decreased by half since 2008.[22,23,24,25,26,27] The most recent estimate, taken from the 2015 Canadian Tobacco, Alcohol and Drugs Survey (CTADS), indicates that 0.7% of Canadians aged 15 and older reported using ecstasy in the past year.[28]

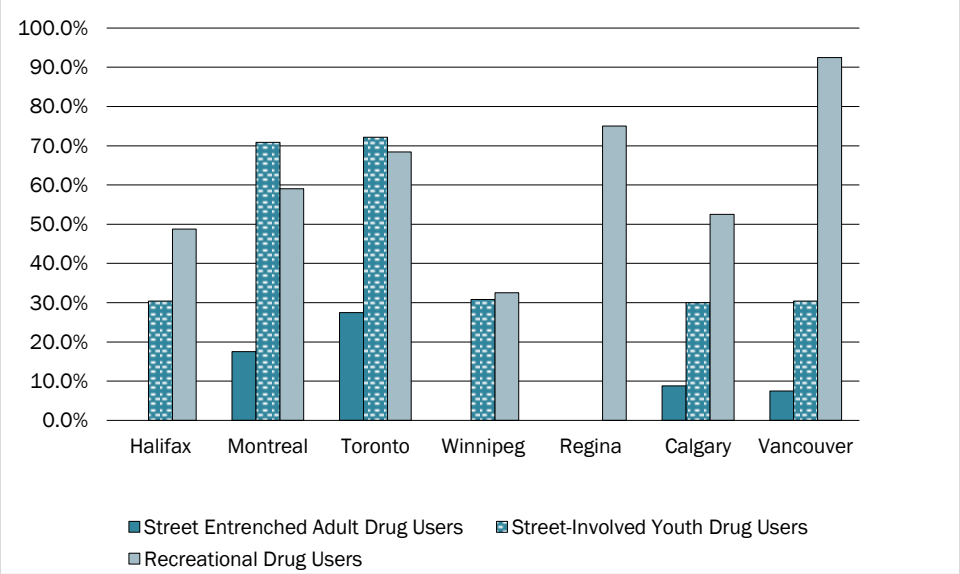
Students (grades 7–12): Findings from the 2014–2015 Canadian Student Tobacco, Alcohol and Drugs Survey indicate that 2.4% of Canadian students in grades 7–12 reported using ecstasy in the past 12 months. Students in grades 10–12 had a higher prevalence of past-year ecstasy use than students in grades 7–9 (4.0% vs. 0.7%*). The prevalence of past-year ecstasy use among students was similar between males and females (2.4% and 2.3%, respectively).[29]

Youth (age 15–24): Youth have the highest prevalence of past-year ecstasy use among all Canadians sampled in the general population. According to the 2015 CTADS, the past-year prevalence of ecstasy use among youth was 3.4%* a significant increase from the 1.9%* prevalence rate reported in 2013.[27,28]

Adults (age 25+): Due to an insufficient number of respondents, it is not possible to report the past-year prevalence of ecstasy use among Canadian adults using 2015 CTADS data.[28]

Past-Year Self-Reported Ecstasy Use among High-Risk Populations

Figure 2. Prevalence of self-reported past-year ecstasy use among high-risk populations by city (2013)



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

Street Entrenched Adults:† In 2012, the prevalence of past-year ecstasy use among street entrenched adults ranged from 7.7% in Calgary, Alberta, to 33.8% in Toronto, Ontario.[30] In 2013, the past-year

* Percentages identified with an asterisk should be interpreted with caution due to high sampling variability.

† 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.

prevalence of ecstasy use among street entrenched adults ranged from 7.5% in Vancouver, British Columbia, to 27.5% in Toronto, Ontario (see Figure 2).[30] Compared to street-involved youth and recreational drug users, street entrenched adults had the lowest self-reported prevalence of past-year ecstasy use in all cities where data was provided for both 2012 and 2013.[30,31,32]

Street Involved Youth:‡ In 2012, the prevalence of past-year ecstasy use among street involved youth ranged from 27.5% in Halifax, Nova Scotia to 50.6% in Montreal, Quebec.[31] In 2013, the past-year prevalence of ecstasy use among street-involved youth ranged from 30.0% in Calgary, Alberta, to 72.2% in Toronto, Ontario (see Figure 2).[31]

Recreational Drug Users:§ In 2012, the prevalence of past-year ecstasy use among recreational drug users ranged from 30.8% in Winnipeg, Manitoba, to 78.8% in Montreal, Quebec.[32] In 2013, the prevalence of past-year ecstasy use among recreational drug users ranged from 32.5% in Winnipeg, Manitoba, to 92.5% in Vancouver, British Columbia (see Figure 2).[32] With the exception of Winnipeg in 2012, and Toronto and Montreal in 2013, recreational drug users had the highest self-reported prevalence of past-year ecstasy use among all three high-risk populations.[30,31,32]

Ranking among Top Five Substances

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

	#1	#2	#3	#4	#5
General Population (15+)	Alcohol (76.9%)	Cannabis (12.3%)	Cocaine/Crack, Hallucinogens and Salvia (1.2%)	**Ecstasy (0.7%)**	Pharmaceuticals to get high** (0.5%)*
Youth (15-24)	Alcohol (71.8%)	Cannabis (25.5%)	Cocaine/Crack (3.5%)*	**Ecstasy (3.4%)***	Hallucinogens and Salvia (2.7%)*
Adults (25+)	Alcohol (77.8%)	Cannabis (9.9%)	Hallucinogens and Salvia (0.9)*	Cocaine/Crack (0.8%)*	Pharmaceuticals to get high (0.3%)*

Source: CTADS 2015
Note: Percentages identified with an asterisk should be interpreted with caution due to high sampling variability. The order for cocaine/crack, hallucinogens and salvia in the general population is alphabetical, as prevalence rates are equal.

Past-Year Self-Reported Use of Ecstasy Internationally

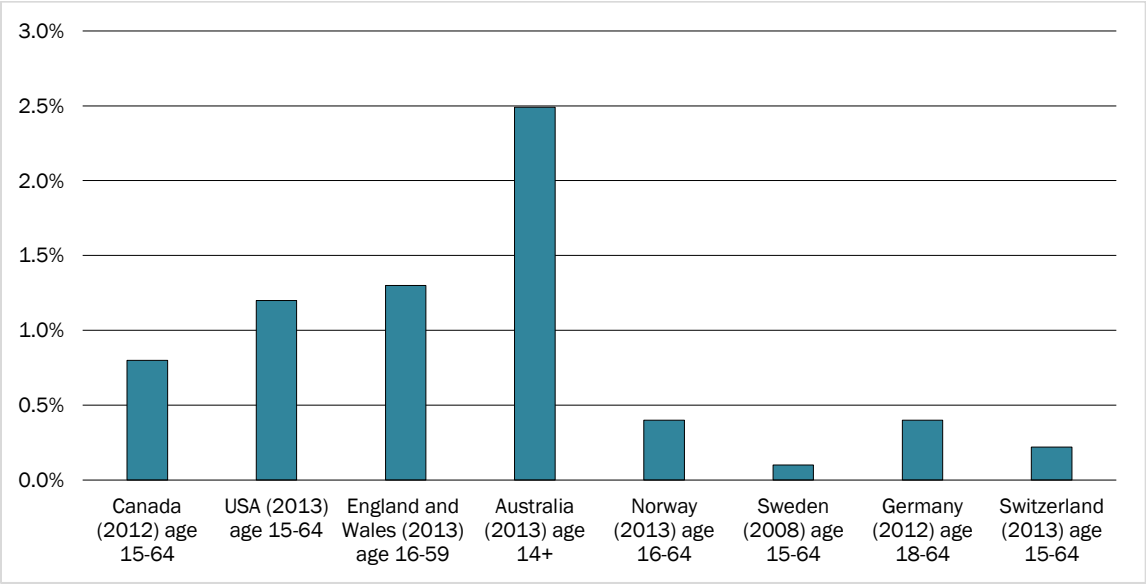
According to data obtained from the United Nations Office of Drugs and Crime (UNODC), past-year prevalence of ecstasy use in Canada was higher than the global average of 0.4%, but rates were still lower than those in the United States, England and Wales, and Australia (Figure 3).[33]

‡ 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.

§ 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.

** This category includes any pharmaceutical such as pain relievers, sedatives and stimulants.

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



Source: UNODC World Drug Report 2017

Enforcement

In 2015, 14.86 kilograms (25,574 tablets) of ecstasy-type substances were seized in Canada.[33] In 2015, police also reported:

- 418 incidents of ecstasy possession (183 charges);
- 141 incidents of ecstasy trafficking (93 charges); and
- Four incidents of ecstasy production (three charges).

Overall, in 2015, the rate of ecstasy-related possession incidents reported by police increased by 12.3%. Rates of trafficking incidents remained relatively stable with a 1.31% increase from 2014, while rates of incidents of ecstasy production decreased by 43.3%.[34]

Federal Initiatives to Address the Problem

Bill C-10, known as the *Safe Streets and Communities Act*, received royal assent in March 2012. This bill introduced mandatory minimum sentences for trafficking in ecstasy when aggravating factors such as violence (one year) or proximity to a school (two years) are present.[35] Judges are not required to impose these mandatory minimums if offenders complete a drug treatment court or other court-approved addiction treatment program.

Additional Resources

- Cross-Canada Report on Student Alcohol and Drug Use
- Canadian Student Tobacco, Alcohol and Drugs Survey

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