

BULLETIN 5

What routes of administration (ROAs) do women and men use?

August 2022

In this bulletin we analyze data from Canadian respondents to Waves 2, 3 and 4 of the International Cannabis Policy Study (ICPS) collected between 2019 and 2021.

This bulletin is part of a larger research and knowledge translation project about sex, gender and cannabis use led by the Centre of Excellence for Women's Health and funded by Health Canada. Information about the overall project is available on the [Sex, Gender and Cannabis Hub](#). This bulletin is the fifth in a series. The bulletins report on sex and gender-based analyses of surveys and other data to sharpen our understanding of whether and how sex and gender affect cannabis use.

ROAs FOR WOMEN AND MEN

Routes of administration (ROAs) refer to the various methods of inhaling, ingesting, or otherwise using cannabis. Smoking, vaporizing, heating, ingesting oils or edibles, or using topical versions of cannabis such as creams are examples of different ROAs. Sex and gender related factors play different roles in patterns of use and health effects, and cannabis ROAs have been associated with various health effects that have differential impacts on women's and men's experiences [1]. For example, more men and boys prefer vaping cannabis [2-4], smoking joints or using concentrates than women and girls [3, 5]. Some evidence suggests women [3] and girls [6] tend to prefer edible cannabis, in part because these products are more discreet [7]. Studies on pharmacokinetics of smoked cannabis have shown sex differences in the metabolism of tetrahydrocannabinol (THC). A study conducted with both males and females showed higher concentrations of THC and THC metabolite levels among females compared to males after administration of smoked [8, 9] or vaporized cannabis [9], and greater subjective ratings of cannabis intoxication among females [8].



WHAT IS INCLUDED IN THIS BULLETIN?

In this bulletin we report on our analysis of sex and gender differences in selected variables on cannabis use among Canadian respondents ($n = 47,988$) from Waves 2, 3 and 4 (2019–2021) of the International Cannabis Policy Study (ICPS), funded by the Canadian Institutes of Health Research. The sample size of past 12-month users is $n = 16,015$. For a full description of the survey and methods for the ICPS see: <http://cannabisproject.ca/methods>. For a description of our approach to analyzing sex and gender in Waves 1 to 4 of the ICPS data, see the [Methodology on the Sex, Gender, and Cannabis Hub](#).

In this bulletin we focus on ROAs used in past 12 months in Waves 2, 3 and 4 of the ICPS, of the following forms of cannabis:

- » Dried herb (smoked or vaped, including pre-rolled joints)
- » Cannabis oils or liquids taken orally (e.g., drops or capsules)
- » Cannabis oils or liquids for vaping
- » Edibles/foods
- » Drinks (e.g., marijuana cola, tea, or coffee)
- » Concentrates (e.g., wax, shatter, budder)
- » Hash or kief
- » Tinctures
- » Topical ointments (e.g., skin lotions or bath products)
- » Other

Weighted chi-square analyses were used to conduct a sex and gender-based analysis for cannabis outcomes to compare results between men and women. Analyses were conducted using SAS Version 9.4 and SPSS Version 27. A threshold of $p \leq 0.05$ was used to denote statistical significance.



ROAs AMONG PAST 12 MONTHS CANNABIS USERS

There were statistically significant differences in the proportion of women and men who used dried herb (smoked or vaped, including pre-rolled joints), cannabis oils or liquids taken orally (e.g., drops or capsules), edibles/foods, drinks (e.g., marijuana cola, tea, or coffee), concentrates (e.g., wax, shatter, budder), hash or kief and topical ointments (e.g., skin lotions or bath products).



A significantly higher proportion of women compared to men reported using the following ROAs:

Edibles/foods

- » 53.0% of women vs. 48.4% of men

Cannabis oils or liquids taken orally (e.g., drops or capsules)

- » 35.7% of women vs. 31.6% of men

Topical ointments (e.g., skin lotions or bath products)

- » 19.0% of women vs. 12.7% of men
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A significantly higher proportion of men compared to women reported using the following ROAs:

Dried herb (smoked or vaped, including pre-rolled joints)

- » 75.6% of men vs. 70.8% of women

Concentrates (e.g., wax, shatter, budder)

- » 19.7% of men vs. 15.5%

Hash or kief

- » 26.6% of men vs. 19.2% of women

Drinks (e.g., marijuana cola, tea, or coffee)

- » 16.8% of men vs. 13.3% of women
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There were no significant differences in the proportion of women and men using the following ROAs:

Cannabis oils or liquids for vaping

- » 26.7% of men vs. 25.8% of women

Tinctures

- » 13.1% of men vs. 12.7% of women

CONCLUSION

Data from the ICPS show the most common cannabis ROA for both women and men is dried herb (smoked or vaped, including pre-rolled joints), followed by edibles. While a higher proportion of men use dried herb, a higher proportion of women use edibles. As sex and gender-related factors influence both health effects and patterns of use, there is an urgent need to understand and use these data to inform tailored health promotion, public education and harm reduction.

KEY MESSAGES

1. There are statistically significant differences in the proportion of women and men who used dried herb, cannabis oils or liquids taken orally, edibles/foods, drinks, concentrates, hash or kief and topical ointments.
 2. Although similar proportion of men and women reported using cannabis oils or liquids for vaping and tinctures, a significantly higher proportion of women than men reported using edibles/foods, cannabis oils or liquids taken orally, and topical ointments.
 3. A significantly greater proportion of men compared to women report using cannabis as a dried herb, concentrate, hash or kief or drinks.
 4. No significant differences were observed in the proportion of women and men who reported using tinctures, cannabis oils, or liquids for vaping.
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