Overview

Who is this toolkit for?

This toolkit is for all Canadians: consumers, practitioners, policy makers and researchers. It contains information and evidence on sex, gender, equity and cannabis. It is aimed at encouraging harm reduction in the use of cannabis, especially for recreational users. We draw attention to sex, gender and equity related factors that affect access to, use and the effects of cannabis. The kit illustrates the application of a sex and gender-based analysis (SGBA+) to the issues of cannabis use, and the impacts on policy and practice responses. We bring together the limited, but available knowledge on sex, gender and routes of administration (ROAs) of cannabis.

Why do routes of administration matter so much? Some ROA are more popular than others, often based on gender and cultural preferences. Some ROAs are more harmful than others, even though we do not yet have exhaustive research to be definitive about all relative harms. We have even less research on sex and gender related factors affecting ROA, and on issues of cannabis use, ROAs and reproductive health. This kit draws attention to these gaps in knowledge.

Harm reduction is a critical issue in public health in Canada, now that cannabis has become legalized and vaping products regulated. There is often confusion about the relative effects of inhaling vs ingesting cannabis, and about smoking vs vaping. There has been a comcomitant rise in vaping nicotine, especially among youth, and some devices allow for mixing THC and nicotine, making it even more difficult to create harm reduction advice.

Vaping nicotine is intended as a harm reducing cessation method for current adult tobacco smokers. But in fact, many young nonsmokers have taken up vaping nicotine, and some adult smokers have become dual users of both

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cigarettes and vaping nicotine. Further, some young people have ultimately taken up smoking cigarettes, after starting on vaping. When case reports emerged in 2019 about lung injury and disease due to vaping nicotine and/or THC, especially harming young men, some members of the public and practitioners wanted to review thinking on harm reduction advice concerning all of these ROAs.

There remain many gaps in the evidence around sex, gender and equity and ROA and exposures, but this package presents what we know so far. Clearly, many questions about gender, equity and harm reduction remain.

Sex, Gender, and Cannabis: Online Resources

There are a number of online resources that complement this toolkit.

1. Centre of Excellence for Women's Health
http://bccewh.bc.ca/featured-projects/sex-gender-and-cannabis/

This website includesbackground materials that form the foundation of this toolkit, including:

- Report: *Sex, Gender and Cannabis*. A review of current research and data on cannabis use that highlights sex and gender related factors and issues.
- PowerPoint presentation: *Sex, Gender and Vaping*. A summary of a scoping review on how sex and gender influence cannabis and nicotine vaping.
- Conference Poster: *Developing Equitable Approaches to Prevention, Harm Reduction, the Route of Administration (ROA): Aligning Cannabis, Tobacco Use, and Vaping.* A summary of a scoping review of how how sex and gender related factors impact patterns of use, exposure and health effects of different ROAs and the implications for future policy directions.

2. Canada's Lower Risk Cannabis Use Guidelines, Centre for Addiction and Mental Health
https://www.camh.ca/-/media/files/pdfs---reports-and-books---research/canadas-lower-risk-guidelines-cannabis-pdf.pdf

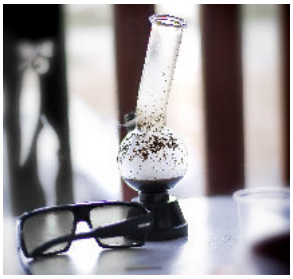
3. Evidence Report: Vaping Linked with Severe Lunch Illnesses, Canadian Centre on Substance Use and Addiction
https://www.ccsa.ca/vaping-linked-severe-lung-illnesses

4. Outbreak of Lung Injury Associated with the Use of E-Cigarette, or Vaping, Products, Center for Disease Control and Prevention (USA)
https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html

5. E-cigarettes and heated tobacco products: evidence review, Public Health England
https://www.gov.uk/government/publications/e-cigarettes-and-heated-tobacco-products-evidence-review

6. The great vape debate: are e-cigarettes saving smokers or creating new addicts? The Guardian
https://www.theguardian.com/society/2020/feb/18/the-great-vape-debate-are-e-cigarettes-saving-smokers-or-creating-new-addicts

About This Toolkit



This SGBA+ Cannabis Routes of Administration Toolkit contains:

- Overview of the Toolkit
- Key Terms
- Key Messages
- Fact Sheet: Sex, Gender, and ROAs: Patterns of Use
- 10 Frequently Asked Questions (FAQs)
- Summary: Sex, Gender and Cannabis
- Summary: Sex, Gender and Cannabis - Routes of Administration
- Summary: Sex, Gender and Cannabis - Nicotine Vaping in Youth
- Sex, Gender, and Equity Analyses
- Commentary: Hemsing, N., & Greaves, L. (2018). New Challenges: Developing Gendered and Equitable Responses to Involuntary Exposures to Electronic Nicotine Delivery Systems (ENDS) and Cannabis Vaping. *International Journal of Environmental Research and Public Health*, 15(10), 2097. doi: 10.3390/ijerph15102097. [Open Access]
- Research Article: Greaves, L. & Hemsing, N. (2020). Sex and Gender Interactions on the Use and Impact of Recreational Cannabis. *International Journal of Environmental Research and Public Health*, 17(2), 509. doi: 10.3390/ijerph17020509. [Open Access]
- Evidence Review: Brabete, A., Greaves, L., Hemsing, N., & Stinson, J. (2020). Sex- and Gender-Based Analysis in Cannabis Treatment Outcomes. *International Journal of Environmental Research and Public Health*, 17(3), 872. doi: 10.3390/ijerph17030872. [Open Access]
- Evidence Review: Hemsing, N., & Greaves, L. (2020). Gender Norms, Roles and Relations and Cannabis-Use Patterns: A Scoping Review. *International Journal of Environmental Research and Public Health*, 17(3), 947. doi: 10.3390/ijerph17030947. [Open Access]

Key Terms

Cannabis Routes of Administration
Policy | Treatment | Harm Reduction

Cannabis Routes of Administration (ROAs)

Common ROAs include smoking, vaping, eating & drinking, topical use, and use of oils and concentrates.

Sex

Our reactions to cannabis are determined by genetic and physiological factors specific to female and male bodies.

Gender

Our roles, relations, and identities affect our use of and reactions to cannabis — in men, women, boys, girls, and gender diverse people.

Equity

Ensuring health and gender equity requires examinatino of differential access to and impact of cannabis on all groups.

SGBA+

Sex and gender based analysis is a process that integrates sex and gender related evidence into health advice, policies, programs and practice.

Harm Reduction

Using knowledge on cannabis ROAs to identify the least harmful approaches for using cannabis.

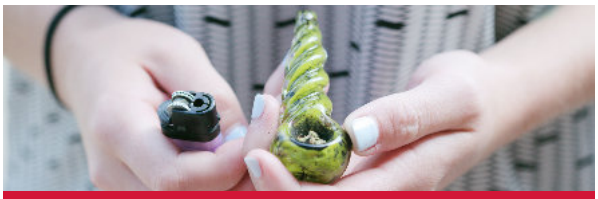
Key Messages

Consumers

- Female bodies are more sensitive to cannabis (and other substance use) than male bodies
- Inhaling cannabis is the most harmful ROA
- We do not yet know if vaping is safe
- Ingesting cannabis takes longer to take effect

Policy Makers

- Sex and gender based analyses of all regulations, policies and health promotion messages is essential
- Requiring the integration of sex and gender in all commissioned research, contracts and public opinion research will enhance understanding of the impact of vaping, cannabis and related issues



Practitioners

- Cannabis Use Disorder (CUD) affects 10% of users and is more frequent in men
- Women and girls typically use less cannabis less frequently, compared to men and boys
- Women telescope from use to dependence faster than men

Researchers

- Much more research is needed on sex and gender related factors affecting cannabis use
- Animal research suggests that females are more sensitive to cannabis than males
- Equity issues needing investigation include access to cannabis and factors associated with ROAs
- Sex and gender factors affecting medical use need more research

Sex, Gender, and ROAs: Patterns of Use

SGBA+

Cannabis Routes of Administration

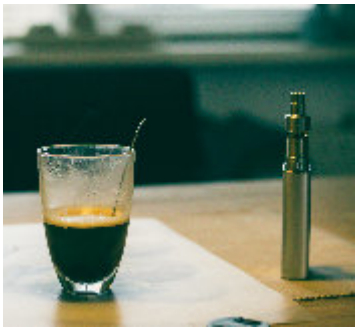
Policy | Treatment | Harm Reduction

More men and boys report vaping cannabis, smoking joints or using cannabis concentrates.

Blunt use and the mixing of cannabis and tobacco is greater among men and boys.

Among medical cannabis users, men report slightly greater rates of vaping compared to women.

Women and girls tend to prefer edible cannabis in part because these products are more discreet.



Among women who are pregnant, smoking cannabis is often preferred in part because of the difficulty ingesting when using to manage nausea.

Vaping devices are designed to target specific user groups, including girls and women; marketing rebrands cannabis users as "stylish and fashionable."

The data on this information sheet are from a scoping review synthesizing academic and grey literature published between 2007 and 2019 on sex, gender and cannabis smoking or cannabis vaping. Download the full report from www.bccewh.bc.ca.

Frequently Asked Questions

1. Is cannabis safe?

No substances are completely safe. Cannabis should not be used every day, or in large quantities. It is best not to inhale (smoke) cannabis.

2. Is smoking more damaging than vaping?

Yes, it is. Most practitioners and researchers think so, but policy and practice about vaping differ in different countries. Reports of lung injuries related to vaping, especially in young men, has led to advice not to vape in some jurisdictions.

3. Is cannabis addictive?

If cannabis is used too much, too often and in large quantities, dependence can result, and Cannabis Use Disorder could be diagnosed. This requires treatment to reverse.

4. Is there treatment for cannabis use disorder?

Yes, but it is not clear yet if it is equally effective for women and men, given differential patterns of use, and the effects of cannabis on female and male bodies.

5. How can non users be protected?

It is best to not smoke or vape around others, especially children. Confine smoking and vaping cannabis to private spaces and keep all cannabis products away from children.

6. Is secondhand cannabis smoke and vapour harmful?

Likely, based on emerging research. Cannabis smoke contains many of the same constituents as tobacco smoke, which causes increased rates of cancer and heart disease in nonsmokers, particularly women and children.

7. Does cannabis affect reproductive health?

Yes, it has effects on fertility, sperm production and some pregnancy outcomes. It is best not to use cannabis during pregnancy and breastfeeding.

8. What are the lower risk use guidelines for?

Low risk use guidelines provide information on how to use cannabis and reduce some of the associated harms. They do not yet include sex specific advice, unlike Canada's low risk alcohol use guidelines.

9. Are cannabis harms sex specific?

Yes, they appear to be, based on animal studies. Lower doses of cannabis create intoxication faster and females transition to dependence more quickly than males.

10. Does gender affect cannabis use?

Yes, several aspects of gender affect use. Gender relations, norms and roles affect access to cannabis, preferred ROAs and patterns of use, and gender identity affects prevalence.

Sex, Gender & Cannabis

Introduction

The cannabis policy landscape is rapidly changing. In Canada, cannabis was legalized on October 17, 2018, and medical cannabis has been available since 2001. In the USA, thirty-three states have legalized medical cannabis use, and eleven states have legalized recreational cannabis use. In 2019, reports of vaping related lung injuries and deaths emerged, mostly among young people, with many of these cases linked to vaping cannabis products [1].

Sex and gender based analyses of cannabis use patterns indicate the importance of sex and gender related factors to routes of administration, treatment for Cannabis Use Disorder (CUD) and assessing impairment [2-4].

Definitions

Sex-related factors affect how your body reacts to substances, including how substances are metabolized, what effects they may have on your brain, and the development of tolerance and dependence. Female and male bodies have different genetic and physiological characteristics that affect these processes.

Gender-related factors affect your risks for use, exposure to marketing or exploitation, access to care and services, and the societal response to problematic use. Men, women, and gender diverse individuals experience these elements differently. In part, this is based on social roles and expectations that are dependent upon cultural context.

Key Sex-Related Factors

- In animal research, female rats metabolized THC more rapidly [5] although this may be reversed when CBD is also present [6].
- In a study measuring cognitive effects of cannabis use among young adults, males had a more pronounced negative effect with regard to psychomotor speed/sequencing ability [7].
- Females transition from initiation to regular use faster than males (similar to other substances), also referred to as “telescoping” [8,9].
- There is some evidence of higher sensitivity to the subjective effects of cannabis in females compared to males, particularly at low doses [10-12].

Key Gender-Related Factors

- Men and boys are more likely to report current [13-15] and past cannabis use [16, 17], use cannabis more frequently [17, 18] and in greater quantities [17, 19] compared to women and girls. However, patterns may be changing; there is evidence from the USA that the gender gap in cannabis use is narrowing among adolescents [19].
- Boys and men report experimenting with more routes of administration (ROAs) and higher rates of use of inhalation ROAs including smoking and vaping [20-22].
- There is evidence from qualitative studies that girls and young women may use cannabis as a way of resisting dominant feminine ideals. For example, women may engage in patterns of use such as: using cannabis habitually, rolling joints, buying cannabis, and being able to ‘handle the high’ [23, 24].

- Simultaneous use of alcohol and cannabis appears to be higher in young men compared to young women [25, 26] and is associated with substantial risks such as: greater impairment; heavier alcohol use; driving while impaired; and greater likelihood of comorbid substance use and mental health issues.
- Driving after cannabis use is more frequent among men [27-29]. Evidence on being a passenger with someone who has used cannabis is mixed, with one study reporting greater rates of riding with someone who has used cannabis among men [27], and another reporting no gender differences [29].
- In a study conducted with lesbian, gay, bisexual and transgender (LGBT) individuals, the highest rates of cannabis use were reported by transgender men (12.5%) and sexual minority females (12.1%) [30]. Gender minority stress has been associated with cannabis use [31].

For information about cannabis and its effects while pregnant, breastfeeding, and parenting, visit: bccewh.bc.ca

While research on sex, gender and cannabis is expanding, large gaps in the evidence remain. Most current evidence describes prevalence and patterns of use, with relatively few studies examining the influence of sex and gender on the health effects of cannabis use.

Further research on sex, gender and the patterns and effects of cannabis use is needed to better understand the benefits and risks for all genders and inform more precise policy and practice responses.

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Sex, Gender and Cannabis
Routes of Administration

What are various Routes of Administration?

- Smoking, vaping, eating/drinking, topical use (creams, lotions, salves), and use of oils and concentrates (e.g. shatter, wax) are among the Cannabis may be smoked with tobacco. Blunts involves rolling cannabis in a tobacco leaf wrapper, and "spliffs" are joints containing both cannabis and tobacco.

Who is using which ROA?

Routes of administration are not evenly used across all subpopulations for either recreational or medical use. There is only limited information on gendered and age-related patterns of use:

- *Young adults* - Greater use of e-cigarette devices to vaporize cannabis have been found among high school aged boys [1], or no difference between girls and boys [2].
- *Adults* - Men report greater use of: joints, blunts, vaporizers and concentrates [3], and water pipes and bongs [4].
- *Pregnant women* - Limited data on cannabis use by pregnant women indicate that smoking is preferred [5].
- *Medical Use*- both women and men report smoking cannabis as it is convenient, easier to monitor dosage and affordable [6].
- *Problematic use* – For men, use of an increasing number of cannabis ROAs was associated with more problematic cannabis use, and using water pipes/ bongs was linked with heavy use [7].

What we need to know

1. What sex-based factors affect the health effects and intoxication impact of various ROAs?
2. What gender-based factors affect choice, marketing and trends in ROAs?
3. What are the long-term effects of vaping cannabis on males and females?

ROA & effects on health

We have very limited information on the sex specific biological effects of cannabis ROA from animal and human studies.

- *Cannabis use disorder* – Concurrent use of cannabis and tobacco (not mixing as in blunts or spliffs) has been found to increase the risk of dependence *among women* [8].
- *Reproductive health* - Concurrent use of cannabis and tobacco results in changes to the menstrual cycle [9].
- *Maternal use* – Concurrent use of cannabis and tobacco during pregnancy has been found to increase the risk of preeclampsia and adverse perinatal health outcomes, and is associated with poor emotional regulation, decreased immunity and greater risk for substance use disorder in offspring [10-13].

ROA effects in medical use

Limited studies have examined optimal ROA for treating specific health conditions in samples of men or women. Some of the observed effects include:

- moderate sleep enhancing effects of oral THC in a sample of men who used cannabis daily [14];
- relief from adverse drug reactions following the HPV vaccine in young women who used sublingual CBD drops [15]; and
- relief of some chronic prostatitis symptoms in a sample of men, the majority of who smoked or vaped cannabis [16].

What we need to know

- Much more information on the effects of cannabis ROAs on a wider range of sex specific conditions and diseases

ROA & social consequences

- *Impaired Driving* – Research on gender and ROAs related to impairment in driving has not yet been documented.
- *Poisonings* –No sex/gender-based analysis of outcomes has been done related to poisoning among children who have ingested edibles.
- *Injuries* - Research on gender and injuries associated with cannabis ROAs is limited to two studies on manufacturing of butane hash oil use, where burns in men were more common in hospital admissions [17,18].
- *Second hand smoke* - There is a lack of evidence on the effects of involuntary exposure to cannabis smoke on human health. One study found metabolites of cannabis smoke were detected in some children hospitalized with bronchiolitis, and one metabolite was more commonly detected in children with concurrent tobacco smoke exposure [19].

What we need to do

- Funding of more basic and social science research that investigates sex, as well as gender related issues in ROAs
- Focus groups and public opinion research to develop gendered prevention messages for specific subpopulations
- Incorporate ROA harm reduction messages into all treatment programs

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Sex, Gender and Cannabis
Nicotine Vaping in Youth

Sex, gender and cannabis and nicotine vaping in youth

In the context of ongoing investigations and debates regarding the benefits and harms of vaping, researchers at the Centre of Excellence for Women's Health have examined the existing sex and gender related factors affecting patterns of use, exposure and health effects of cannabis vaping and electronic nicotine delivery systems (ENDS). However, long term effects of vaping and ENDS are still unknown, and much more research on sex, gender and nicotine and cannabis vaping is necessary to understand and mitigate specific risks for men, women, boys, girls and gender diverse individuals.

Cannabis vaping and harm reduction

Vaping cannabis has been promoted as a safer alternative to smoking cannabis.

- The Lower Risk Cannabis Use Guidelines for Canada, and Lower Risk Cannabis Use for Youth Guidelines, suggest *avoiding combustible cannabis* and instead, choosing vaping and edibles, based on a 2017 review that identified harmful byproducts in smoked cannabis and adverse respiratory health outcomes associated with smoking [1].
- However, the form of cannabis used, as well as the route of administration (ROA) matters. Vapourizing cannabis flower (dried herb) is recommended, but vapourizing cannabis concentrates has greater harms, including enhanced impairment and potential for injuries [1].

More recently, evidence has emerged of harms associated with vaping cannabis, particularly for youth, such as:

- Contamination of cannabis concentrate vaping products, particularly with vitamin E acetate.
- Reports of e-cigarette or vaping associated lung injury (EVALI). EVALI has primarily affected young males (66%) in the USA [4].
- Case reports described patients presenting with lipoid pneumonia, acute respiratory distress syndrome and pulmonary hemorrhage [5].

The type of vaping device matters

Cannabis vaping devices, their byproducts and health effects may vary depending on the carrier compounds, flavourings, product materials and heating capacity [2, 3].

- Some devices use cartridges that contain cannabinoid extracts combined with propylene glycol, vegetable glycerin and flavours [6].
- There are portable, disposable vape pens as well as rechargeable devices that use dried flower or THC or CBD extracts [6]. Some devices use conduction heat, and others convection heat.
- Stationary vapourizers have tubing or bags/balloons attached to deliver the vapour.
- Dabbing is a method of aerosolizing cannabis concentrates by placing them on a hot surface.

- Vapourizing dried herb is associated with the lowest harm, while vapourizing cannabis concentrates and dabbing increases the risk of negative health effects and injuries [1].
- The long term health effects of cannabis vaping on human health are unknown [1].

What are electronic nicotine delivery systems (ENDS)?

- ENDS contain nicotine dissolved in a liquid solution, often including vegetable glycerin, propylene glycol and flavourings, that is heated to create an aerosol (vapour) that the user inhales.
- There are disposable and rechargeable devices, some that resemble cigarettes or pens, and larger tank systems or MODS (Mechanical Modified Nicotine Delivery Systems) [6, 7].
- The latest device is the pod mod, such as Juul, that contains nicotine salt e-liquid in disposable pods.
- Other non-combusted tobacco products are available, including heat-not burn products that heat dried tobacco to create an aerosol that is inhaled.

What is the harm reduction potential of ENDS?

ENDS are being investigated for their harm reduction potential or as tools in tobacco smoking cessation as they produce fewer toxicants and known carcinogens compared to cigarettes [8-10]. But, there is increasing evidence of harms for youth including:

- Frequency and misuse among youth [2, 9]; and dual use of ENDS and cigarette smoking [11-13] leading to a greater risk of misuse and addiction [2].
- Among youth and young adults, the risk of addiction associated with ENDS use is a key public health issue [14]. Among ENDS users, young adults who only use ENDS reported the lowest intention to quit using nicotine products [15].
- The byproducts and health effects of ENDS may vary depending on the carrier compounds, flavourings, product materials and heating capacity [2].
- There is no long term research on nicotine vaping [16], but emerging evidence suggests vaping related pulmonary illness [14] and adverse effects of ENDS on lung cellular function, organ physiology, cardiovascular and respiratory health and immune function [16-18].

What do we know about sex, gender and cannabis vaping?

Sex related effects of cannabis vaping:

- There is a lack of evidence from human studies on the sex related effects of cannabis vaping.
- Female rats are more sensitive to the hypothermic effects (reduced body temperature) of vaporized THC at lower doses [19] compared to male rats.
- Rats of both sexes become tolerant to the hypothermic and antinociceptive (reduced reaction to potentially painful stimuli) effects after repeated daily THC vapor inhalation [20].
- Plasma THC levels reached after a 30 minute session of vapour inhalation session did not differ between male and female rats [20].

Gender, equity and prevalence and patterns of cannabis vaping:

- More boys and young men report vaping cannabis [12, 21] and using cannabis concentrates [22, 23] compared to girls and young women.
- Based on a large US national sample, cannabis vapers were more likely to be:young, male, White and to have initiated cannabis use at an earlier age [12].
- Studies of high school students in the US report greater use of e-cigarette devices to vaporize cannabis among boys [24], or no difference between girls and boys [25].
- In a sample of college students, men and individuals from higher socioeconomic status (SES) families were more likely to report vaping cannabis, while women and individuals from low SES families reported lower rates of vaping [26].
- Vaping devices are designed to target specific user groups, including girls and young women; marketing rebrands cannabis users as “stylish and fashionable” [27].

What do we know about sex, gender and electronic nicotine delivery systems (ENDS)?

Sex related effects of ENDS:

- In mice, e-cigarettes promoted mitochondrial depolarization in primary brain vascular endothelial cells (which may affect cerebrovascular tone) but no sex differences were observed [28].
- Following aerosol nicotine exposure there were no sex differences in brain nicotine concentrations in mice [29].
- In a human study, females who were taking oral contraceptives demonstrated more negative changes in vitamin E levels and flow-mediated dilation (widening of artery with increased blood flow in the artery) compared to males after e-cigarette use [30].

Gender, equity and prevalence and patterns of ENDS:

- Across multiple studies, boys have reported greater prevalence of use of ENDS and poly-tobacco product use [31-43].
- In a Canadian study, past 30 day use of e-cigarettes was associated with initiation of smoking a whole tobacco cigarettes, with slightly higher rates in males (9.5%) than females (7.4%) at follow up [44].
- In a sample of US youth who had tried e-cigarettes, males were more likely to report liking the flavours and taste and perceiving them as less harmful for self and others compared to cigarettes, and liking the ability to use in locations where smoking is prohibited [45].
- Girls who reported cannabis use [3] and perceived stress [46] were more likely to report e-cigarette use.
- A study on the ENDS devices used by high school youth found that those who used vape or hookah pens and multiple devices were more likely to be female [47].
- Among a sample of young adults ages 18–34, females preferred non tobacco and non-menthol flavours of e-cigarettes [48].
- Prevalence of ENDS use is higher for sexual minorities [49-51] and gender minorities [52, 53] compared to non-sexual or gender minorities.

What next?

More research is urgently needed on the sex-specific health effects of both cannabis and nicotine vaping. Policy and public health approaches to cannabis vaping and ENDS use need to consider how sex-based factors affect health and how decisions, regulations and messaging impact different gender groups.

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Sex, Gender and Equity Analyses

Key Messages

- CCSA is committed to integrating sex-, gender- and diversity-based analysis (SGBA+) in all its work, as substance use is affected by sex, gender and equity issues.
- Sex-related factors (biology) affect how people respond to substances, and how fast they become intoxicated or dependent.
- Gender relations, norms and roles affect how people access and use substances, and gender identity and sexual orientation can affect patterns of use.
- Sex and gender intersect with a range of other factors such as income, age and ability to affect the effectiveness of prevention, treatment or policy.
- Many funders now require sex and gender to be considered in research, programs and policy, which highlights the need to produce more evidence on factors related to sex and gender.
- It is important to consider sex, gender and equity so that responses to substance use can be effectively tailored with a view to increasing overall health and wellness.

CCSA is committed to integrating sex-, gender- and diversity-based analysis (SGBA+) in all its work, as substance use is affected by factors related to sex and gender. Considering sex- and gender-related factors, and how they interact with equity issues will contribute to more useful evidence, guidance on tailoring actions and policy for different groups of Canadians.

This document describes the importance of SGBA+ to the substance use and addiction field and offers guidance about how to integrate it into research, knowledge mobilization and policy-related activities. It provides some examples of SGBA+ in action and offers additional sources of information and training for researchers, knowledge brokers, policy makers, funders and program planners. A glossary defining the key terms associated with SGBA+ appears at the end of this resource.

Reproduction of graphic produced by Status of Women Canada. Copy of version available at www.women.gc.ca

What Is SGBA+?

Sex-, gender- and diversity-based analysis is an ongoing process that:

- Analyzes research, lived and living experience, and perspectives of individuals and groups who differ by sex, gender, sexual orientation, gender identity, culture, age, race, ethnicity, ability and socioeconomic status;

- **Applies** this understanding in a systematic way to developing and tailoring policy and programs; and
- **Achieves** equity rather than equal treatment, as treating everyone the same will not produce equitable results.

SGBA+ is a way of working and is an ongoing and iterative process for you and your team. It requires critical thinking skills and a commitment to change. It is useful at every stage of a project or initiative: in conceptualizing, implementing, evaluating and replicating your project. It raises questions, fosters speculation, develops critical thinking and helps to identify areas for more research. Lessons learned can be incorporated into subsequent initiatives.

Some Results of SGBA+

- **It's not sexism, it's science!** *Canada's Low-risk Alcohol Drinking Guidelines* recommend that females should consume less alcohol on any single occasion, per day and per week. This is because of female metabolism, the amount and ratio of adipose tissue and water in female bodies, and lower levels of enzymes that break down alcohol. (See, for example, Cederbaum, 2012.)
- **Help seeking is gendered!** Overdose deaths due to opioid use are more common for men. This could be explained by gender, as masculine norms may drive men to take more risks, use drugs alone and not seek support for substance use problems. (See, for example, Kaplovitch et al., 2015.)
- **Intersections matter!** Groups such as bisexual girls, Indigenous men, transgender people and people who have experienced trauma have much higher rates of substance use than the general population. (See, for example, Scheim, Bauer, & Shokoohi, 2017.) These examples demonstrate that the factors accounting for substance use, as well as the influences and consequences of substance use, are **made visible** by undertaking sex, gender and diversity analyses.

Often the substance use field has been **gender blind**, which has meant that inequalities and different health risks are hidden, and programs, policies or treatments tailored to specific sub-populations are not designed or implemented and therefore not responding to need.

The Government of Canada now **requires** that those undertaking research, projects and education on substance use consider how sex, gender and diversity affect the issues, and to apply SGBA+ to their work.

How To Do SBGA+

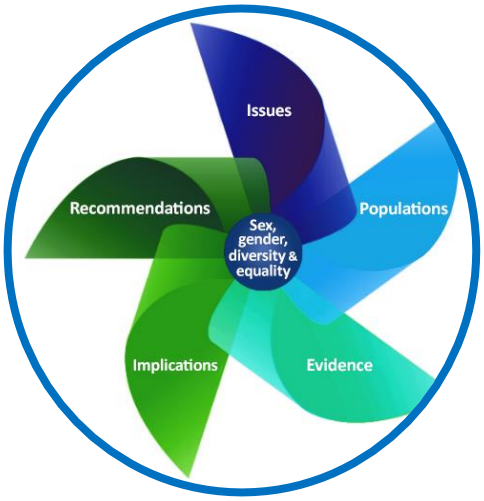
The process of doing SGBA+ is iterative, meaning that each stage builds on the last in an ongoing fashion. It involves defining the issue, describing the populations, assembling the evidence, analyzing the implications and structuring recommendations. To help you perform SGBA+, the following sections include questions you might ask at each stage, recognizing that these stages all build on each other.

1. Defining the Issue

- What evidence exists about the sex- and gender-related factors that affect the substance use issue you want to examine or for which you want to develop messages, policy or programming?
- Is there practical wisdom or information from those involved or affected, including those with lived or living experience, that could inform your project?

2. Describing the Populations

Often we use gender blind categories like "youth" when, in fact, we would get more useful direction if we had information about, in this instance, young men or women. For example, gender-specific language helps us to understand and describe cannabis use by young men and young women of different ages, sexual orientations, gender identities, rural or urban locations. Using more precise language to describe groups will help us understand how factors associated with sex and gender influence substance use and help us identify other key factors that affect health and well-being.



Adapted from Clow, Pederson, Haworth-Brockman, & Bernier, 2009.

We need to ask:

- Which populations are important to learn about and describe? It is justifiable to focus on one sub-population, such as transgender men, Indigenous women in rural areas, or young men, as long as you describe the population and justify the need.
- What sex, gender and health issues are experienced by the populations with which you are concerned? What might be important in tailoring a response for these populations to the substance use issues they experience?
- What comparisons might you be interested in making? For example, women who need substance use treatment and have children might need different programs than those who do not have children; or bisexual girls might need different prevention messages than heterosexual girls.

3. Assembling the Evidence

To perform SGBA+, we need evidence:

- How will data disaggregated by sex, gender, sexual orientation, age, ethnic and socioeconomic status, and other relevant factors be collected and analyzed during your initiative? You might need to expand search protocols with specific language to capture evidence on cross-cutting populations.
- There are some sex and gender influences that are best captured through qualitative data to help understand why they exist, as well as what they are.

4. Analyzing the Implications

The actual analysis can be the difficult part of SGBA+. You might find data that says boys and men use cannabis more often than girls and women, but it is important to analyze and describe the implications of such differences:

- Is it just the level or frequency of use of a substance that matters, or also the impact and health effects of the use?
- Does it matter which sub-groups of boys and girls are implicated in the analysis, what mental health impacts result, or how quickly they advance to dependency?
- Does the social or legal impact or the settings that affect how people get involved in drug use in the first place matter?

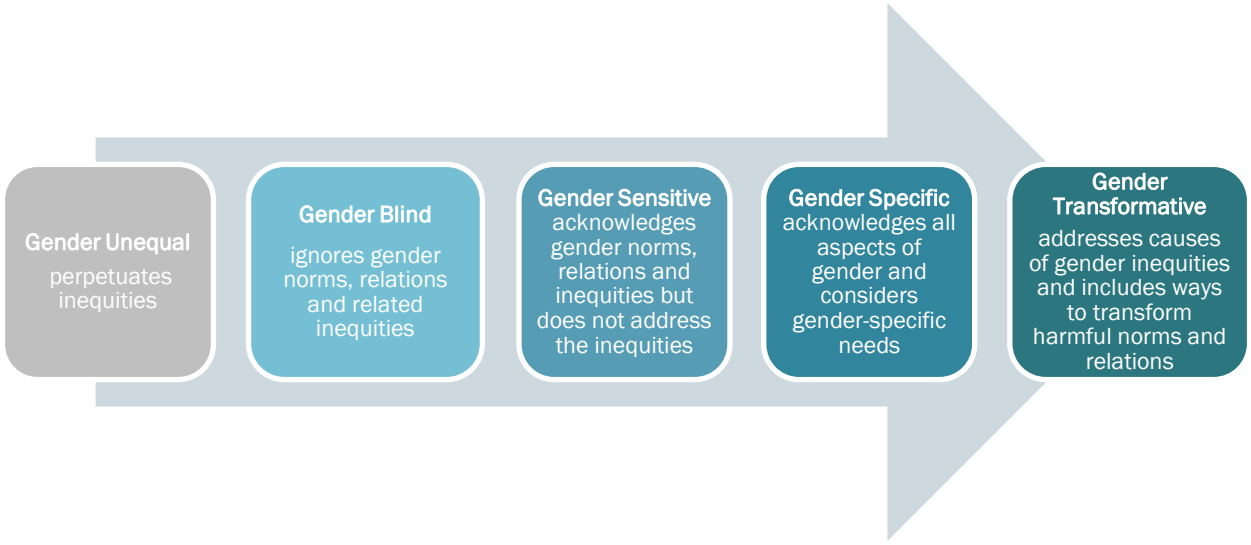
These questions and others illustrate why it is important to look at what is already known about sex and gender factors, influences and consequences, and build on them to frame your findings.

Your efforts in defining the issues, identifying and engaging populations, and assembling evidence could serve you well here. Analyzing all of these inputs can take you in unexpected directions and demands thoughtfulness, critical thinking and speculation about impacts and responses. For example, you might find that while girls use less cannabis, girls may need less to become dependent, may have different experiences of being high or may see cannabis as a way of resisting gendered roles. If any of these conditions are valid, they would require you to develop different recommendations for action.

5. Structuring the Recommendations

Making recommendations for changes in your future research, treatment program, policy, prevention campaign or health promotion initiatives based on the results of SGBA+ is important. The ultimate goal is to move your project from not considering gender (gender blind), to gender accommodating (recognizing that gender matters) to **gender transformative** (addressing gender inequities in the course of your work). These are all positive moves and take the field in the right direction. Framing your recommendations on this continuum requires conscious choice. See the figure on the following page to assess where you are now and where you might want to go in your work.

To achieve health **and** gender equity, we need to go to the furthest point and commit to doing gender transformative work. This means that we would not, for example, hinge a smoking cessation campaign aimed at young women on the premise that smoking might make them unattractive to boys. Doing so would not only reinforce negative gender stereotypes and heterosexist assumptions but would also ignore the much better goal of improving girls' health.



Adapted from Greaves, Pederson, & Poole, 2014.

It is important to consider differences in experience **among** women and **among** men, or **among** Indigenous women or urban men, and create tailored, meaningful responses to these varied situations. Indeed, it is worth thinking about how your work in the substance use field not only responds to sex and gender but could also contribute to improving gender and health equity by suggesting messages or programs that reduce gender stereotyping and inequality. These aspirational goals, in addition to responding to substance use, will help us address root causes and achieve more equity and wellness in our lives.

A Final Check

- Have you designed your initiative with sex and gender in mind?
- Have you searched for the evidence on sex and gender related factors?
- Have you sought out data on lived or living experience from relevant gender and diversity groups?
- Have you analyzed your results by applying sex-related factors, such as metabolism, body size, genetics and so on?
- Have you analyzed your results by applying gender-related factors, such as gender roles, norms, relations and identity?
- Have you considered the impact of relevant factors such as age, sexual orientation, culture, geography, income or Indigenous status?
- Have you reported on the SGBA+ results in your publication, program or policy?
- Have you made recommendations with both gender and health equity in mind?
- Have you committed to ongoing critical thinking in building your SGBA+ skills?

Considering sex- and gender-related factors, and how they interact with equity issues will contribute to more useful evidence, guidance on tailoring actions and policy for different groups of Canadians, and ultimately better overall health and wellness.

Glossary

The definitions that follow were adapted from the websites of the Canadian Institutes of Health Research, Institute for Gender and Health, HealthLinkBC, Sexual Orientation, and the Centre of Excellence for Women's Health gender and trauma training module.

Sex refers to a set of biological attributes in humans and animals. It is primarily associated with physical and physiological features including chromosomes, gene expression, hormone levels and function, and reproductive and sexual anatomy. Sex is usually categorized as female or male, but there is some variation in the biological attributes that comprise sex and how they are expressed.

Gender refers to the socially constructed roles, behaviours, expressions and identities of girls, women, boys, men and gender-diverse people. It includes our roles and relations with others, the norms we follow and how people perceive themselves and each other, as well as the distribution of power and resources in society. Gender is often conceptualized as a binary (girl/woman and boy/man) yet there is diversity in how individuals and groups understand, experience and express it.

Sex- and Gender-Based Analysis (SGBA+) is an approach that systematically examines sex-based (biological) and gender-based (socio-cultural) differences between men, women, boys, girls and gender-diverse people. The purpose of SGBA+ is to promote more rigour in our work by considering sex and gender and numerous intersecting factors such as age, ability, culture and income, thereby expanding our understanding of health determinants for all people.

Equity refers to just and fair solutions that distribute resources or tailor programs or policies according to different needs and aim to create more level playing fields, as opposed to aiming for equal distribution of resources, regardless of need.

Sexual orientation describes patterns of emotional, romantic or sexual attraction. Sexual orientation can include attraction to the same gender (homosexuality), a gender different from your own (heterosexuality), both men and women (bisexuality), all genders (pansexual) or none (asexuality).

Gender identity is one's internal sense of yourself as a woman, a man, both, in between or neither (woman, man, transgender, non-binary or gender nonconforming).

Gender transformative approaches strive to examine, question and change rigid gender norms and imbalances of power as a means of reaching health as well as gender equity objectives.

Additional Resources and Online Training Opportunities

- Canadian Institutes of Health Research, online training modules on sex and gender in health research: http://www.cihr-irsc.gc.ca/e/49347.html
- Status of Women Canada, online course on GBA+: https://cfc-swc.gc.ca/gba-acs/course-cours-en.html
- Centre of Excellence for Women's Health, online course on gender transformative health promotion: http://bccewh.bc.ca/wp-content/uploads/2018/06/GIrls-HP-Webinar_June-18-2018.pdf
- Centre of Excellence for Women's Health, *New Terrain: Tools to Integrate Trauma and Gender Informed Responses into Substance Use Practice and Policy*: http://bccewh.bc.ca/wp-content/uploads/2018/05/New-Terrain-Webinar-Slides_May-22-2018.pdf

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