July 2024

SUBSTANCE USE PREVENTION

BEST PRACTICES & PROGRAMS FOR ADOLESCENTS

WGDS

WELLINGTON GUELPH DRUG STRATEGY

TABLE OF CONTENTS

INTRODUCTION

Adolescence is a key stage in life where long-term behaviours become established, all of which occur against a backdrop of rapid psychosocial, physical, and biological changes (1). These ongoing changes are influenced by community, social, and cultural contexts, which have implications for the development of youth (1-2). It is also at this stage of life that individuals begin to experiment with and use substances and are at greater risk of developing substance use challenges (3).

This literature review provides an overview of available evidence that explores the factors that lead to substance use among youth, best practices and recommendations for developing prevention efforts, and existing prevention programs and services for youth, with a focus on grade 7-9.

METHODS

A traditional literature review was undertaken to synthesize existing information on the substance use trends among youth in Ontario, protective and risk factors that influence substance use, and prevention efforts, interventions, and programs. The search strategy for the literature review involved looking through five academic databases to retrieve relevant journal articles.

Google Scholar was also conducted to identify any supporting grey literature and any articles that may have been missed during the academic database search. The scope of the review was limited to papers published since 2010, along with studies that investigated substance use and prevention between the ages of 12 and 14 or Grades 7 to 9. No restrictions were imposed on the type of substance that was being investigated (i.e. alcohol, opioids, cannabis, etc.).

BACKGROUND

The 2022 Well-Being and Health Youth survey (see Table 1), which captures local data about students' health, well-being, and development in the Wellington-Dufferin-Guelph region (WDG), shows that across different substances, substance use among youth in Grades 7 and 8 has generally been declining over the years (4) and is on par with provincial rates with the exception of alcohol and pain relievers.

The 2023 Ontario Student Drug Use and Health Survey (OSDUHS) indicate that the percentage of Ontarian students who started to smoke cigarettes, use cannabis, or drink alcohol before Grade 9 has either remained relatively steady or increased quite significantly over the past decade or so (5).

Given that adolecence represents a time of significant change—academically, physically, and socially—as students transition from middle school to high school, prevention efforts at this phase of life are crucial. Findings from the OSDUHS surveys (see Table 2) similarly suggest that the optimal period for prevention programs is between the ages of 12 and 15 because it is the most likely time for the initiation of substance use, coupled with continued prevention and harm

Table 1. Percentage of Grade 7 and Grade 8 students who used substances in the past year		
Wellington-Guelph		
Substance	**2022**	**2019**
Alcohol	19.0%	21.6%
Pain Relievers	11.9%	13.4%
Cough Medicine	11.1%	14.9%
Cannabis	2.4%	2.8%
Electronic Cigarettes	4.5%	7.4%
Ontario		
Substance	**2023**	**2019**
Alcohol	10.8%	11.6%
Pain Relievers	22.4%	10.7%
Cough Medicine	13.5%	6.9%
Cannabis	3.4%	3.0%
Electronic Cigarettes	4.2%	3.6%

*Data taken from the 2022 WDGPH WHY Survey and 2023 OSDUH Drug Use Report

Table 2. Proportion of secondary school students in Ontario who used the drug in the past year reporting first use before Grade 9	
Substance	**Percentage**
Alcohol	47%
Pain Relievers	22%
Cough Medicine	18%
Cannabis	43%
Electronic Cigarettes	29%

*Data taken from the 2023 OSDUH Drug Use Report

reduction efforts for middle and late adolescents (5). Additional evidence recommends that preventative efforts should begin during early adolescence (ages 12 to 14), which coincides with the onset of substance use behaviours and has the potential of curbing rates of problematic substance use and related harms into young adulthood (6-7). Implementing prevention interventions specifically in school settings is also beneficial because it offers the most "...systematic and efficient way of reaching [adolescents]" (8).

CONTRIBUTORS TO SUBSTANCE USE CHALLENGES

Substance use initiation at younger ages—paired with frequent usage and polysubstance use—may increase the chances of problematic substance use and harms later in life (1). For example, early substance use is associated with various negative behavioural and health outcomes, such as aggressive behaviours and higher rates of psychiatric disorders (3, 9).

However, it is essential to note that substance use exists along a spectrum and that not all substance use done at early ages will lead to substance use challenges—a good proportion of adolescents may occasionally or experimentally partake in substances for socializing, unwinding, having fun, and other reasons (2).

The potentially adverse health impacts of early exposure to substances necessitates the identification of broader external factors that contribute to or mitigate problematic substance use, which, in turn, informs prevention efforts (1). Research shows that substance use during early adolescence is the result of the dynamic interplay between various mediating factors at the individual, interpersonal, community, and societal levels (1, 3).

For example, exposure to adverse childhood experiences, like maltreatment, abuse, and living with someone who had substance use challenges, is linked to an earlier age of drinking onset and increased risks of using substances problematically (10). Table 3 summarizes some risk and protective factors for developing prevention programming and interventions.

PREVENTION BEST PRACTICES & INTERVENTIONS

There has been growing attention paid to the role of schools in addressing substance use and its related harms among adolescents (22). A stronger understanding of relevant substance use topics and target areas has been established through enhanced evidence about promising practices, interventions, and programming (22). The following section will provide:

- a brief list of best practices to consider when implementing prevention programming in school settings
- a table summarizing prevention interventions found in the literature that have shown to be effective in reducing overall substance use (Table 4)

- an informal list of additional resources found online that may prove to be informative in carrying out prevention efforts (Table 5)

BEST PRACTICES

1. Substance use prevention education and programming should be one component of a broader and more comprehensive approach (22). It is also essential to ensure equitable school policies, positive social and physical environments, and supportive partnerships and services are in place in school settings (22). In other words, substance use prevention approaches should have multiple components.

2. Upstream and holistic measures should also be included, which do not solely focus on substance use but also consider other factors and efforts that can improve the health and well-being of adolescents and decrease disparities (22). For example, drinking prevention programs may not work as intended if they do not help students recognize and cope with stressors like abuse or household dysfunction (23).

3. Prevention efforts should also be community-driven and reflect the communities' unique strengths, needs, desires, beliefs, preferences, and environments, which necessarily entails engagement with various stakeholders, such as adolescents, teachers, family members, school health nurses, other school staff, and community members (22). Moreover, supporting Indigenous communities to inform prevention efforts can increase cultural relevancy and encourage ownership (2).

4. Substance use programming should not only be focused on the age of substance use initiation but also be developmentally appropriate (24). Different developmental stages offer unique opportunities and possibilities for prevention (24).

5. Traditionally, many approaches to substance use among adolescents have focused on abstinence and zero-tolerance policies, which can have negative implications for individuals who use substances (22). Schools should use evidence and data available to inform their work and ensure some form of evaluation process is in place to assess ongoing impacts on students (22).

6. Since youth who have substance use challenges may have also experienced trauma, integrating a trauma-informed lens in substance use prevention work can ensure that individuals feel safe engaging with the intervention or program, are not re-traumatized, and can exercise agency (2).

7. Education efforts should focus on interactive approaches that encourage open communication and discussion rather than purely didactic ones (25). For example, including creative resources, like films, has been effective in promoting reflection and bridging gaps in discussions in classroom settings (25-26).

REFERENCES

1. Ali, F., Russell, C., Nafeh, F., Chaufan, C., Imtiaz, S., Rehm, J., Spafford, A., & Elton-Marshall, T. (2022). Youth substance use service provider's perspectives on use and service access in ontario: time to reframe the discourse. *Substance Abuse Treatment, Prevention and Policy*, 17(1), 9–9. https://doi.org/10.1186/s13011-022-00435-9

2. Canada's Chief Public Health Officer. (2018). *The Chief Public Health Officer's Report on the State of Public Health in Canada 2018: Preventing Problematic Substance Use in Youth*. Government of Canada. Retrieved from https://www.canada.ca/content/da m/phac-aspc/documents/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/2018-preventing-problematic-substance-use-youth/2018-preventing-problematic-substance-use-youth.pdf

3. Liu, X. Q., Guo, Y. X., & Wang, X. (2023). Delivering substance use prevention interventions for adolescents in educational settings: A scoping review. *World Journal of Psychiatry*, 13(7), 409.

4. 2022 Well-Being and Health Youth Survey Dashboard. Wellington-Dufferin-Guelph Public Health. Retrieved from https://wdgpublichealth.ca/your-kids/well-being-and-health-youth-why-survey/2022-well-being-and-health-youth-survey-dashboard

5. Boak, A., & Hamilton, H. A. (2024). *Drug use among Ontario students, 1977–2023: Findings from the Ontario Student Drug Use and Health Survey (OSDUHS)*. Centre for Addiction and Mental Health.

6. Griffin, K. W., & Botvin, G. J. (2010). Evidence-based interventions for preventing substance use disorders in adolescents. *Child and Adolescent Psychiatric Clinics of North America*, 19(3), 505–526. https://doi.org/10.1016/j.chc.2010.03.005

7. Spoth, R., Trudeau, L., Redmond, C., & Shin, C. (2016). Replicating and extending a model of effects of universal preventive intervention during early adolescence on young adult substance misuse. *Journal of Consulting and Clinical Psychology*, 84(10), 913–921. https://doi.org/10.1037/ccp0000131

8. Faggiano, F., Minozzi, S., Versino, E., & Buscemi, D. (2014). Universal school-based prevention for illicit drug use. *Cochrane Database of Systematic Reviews*, 2017(8), CD003020-. https://doi.org/10.1002/14651858.CD003020.pub3

9. Green, R., Wolf, B. J., Chen, A., Kirkland, A. E., Ferguson, P. L., Browning, B. D., & Squeglia, L. M. (2024). Predictors of Substance Use Initiation by Early Adolescence. *American Journal of Psychiatry*, 181(5), 423–433. https://doi.org/10.1176/appi.ajp.20230882.

10. Rothman, E. F., Edwards, E. M., Heeren, T., & Hingson, R. W. (2008). Adverse Childhood Experiences Predict Earlier Age of Drinking Onset: Results From a Representative US Sample of Current or Former Drinkers. *Pediatrics*, 122(2), e298–e304. https://doi.org/10.1542/peds.2007-3412

11. Hodder, R. K., Freund, M., Bowman, J., Wolfenden, L., Campbell, E., Dray, J., Lecathelinais, C., Oldmeadow, C., Attia, J., & Wiggers, J. (2018). Differential intervention effectiveness of a universal school-based resilience intervention in reducing adolescent substance use within student subgroups: exploratory assessment within a cluster-randomised controlled trial. *BMJ Open*, 8(8), e021047. https://doi.org/10.1136/bmjopen-2017-021047

12. Whitesell, M., Bachand, A., Peel, J., & Brown, M. (2013). Familial, Social, and Individual Factors Contributing to Risk for Adolescent Substance Use. *Journal of Addiction*, 2013, 1–9. https://doi.org/10.1155/2013/579310

13. Gray, K. M., & Squeglia, L. M. (2018). Research Review: What have we learned about adolescent substance use? *Journal of Child Psychology and Psychiatry*, 59(6), 618–627. https://doi.org/10.1111/jcpp.12783

14. Stone, A. L., Becker, L. G., Huber, A. M., & Catalano, R. F. (2012). Review of risk and protective factors of substance use and problem use in emerging adulthood. *Addictive Behaviors*, 37(7), 747–775. https://doi.org/10.1016/j.addbeh.2012.02.014

15. Aderibigbe, O. O., Stewart, S. L., Hirdes, J. P., & Perlman, C. (2022). Substance Use among Youth in Community and Residential Mental Health Care Facilities in Ontario, Canada. *International Journal of Environmental Research and Public Health*, 19(3), 1731. https://doi.org/10.3390/ijerph19031731

16. Syed, S., Sampasa-Kanyinga, H., Hamilton, H. A., Kingsbury, M., & Colman, I. (2021). Low school belongingness and non-prescription opioid use among students in Ontario, Canada. *Canadian Journal of Public Health*, 112(3), 449–455. https://doi.org/10.17269/s41997-020-00460-w

17. Larsen, K., To, T., Irving, H. M., Boak, A., Hamilton, H. A., Mann, R. E., Schwartz, R., & Faulkner, G. E. J. (2017). Smoking and binge-drinking among adolescents, Ontario, Canada: Does the school neighbourhood matter? *Health & Place*, 47, 108–114. https://doi.org/10.1016/j.healthplace.2017.08.003

18. Matheson, K., Seymour, A., Landry, J., Ventura, K., Arsenault, E., & Anisman, H. (2022). Canada's Colonial

Genocide of Indigenous Peoples: A Review of the Psychosocial and Neurobiological Processes Linking Trauma and Intergenerational Outcomes. *International Journal of Environmental Research and Public Health*, 19(11), 6455. https://doi.org/10.3390/ijerph19116455
19. Crooks, C. V., Chiodo, D., Dunlop, C., Lapointe, A., & Kerry, A. (2018). The Fourth R: Implementing Evidence-Based Healthy Relationships and Mental Health Promotion Programming in Diverse Contexts. In *Handbook of School-Based Mental Health Promotion* (pp. 299–321). Springer International Publishing. https://doi.org/10.1007/978-3-319-89842-1_17
20. Varatharajan, T., Patte, K. A., de Groh, M., Jiang, Y., & Leatherdale, S. T. (2024). Exploring differences in substance use behaviours among gender minority and non-gender minority youth: a cross-sectional analysis of the COMPASS study. *Health promotion and chronic disease prevention in Canada: research, policy and practice*, 44(4), 179–190. https://doi.org/10.24095/hpcdp.44.4.04
21. Tompsett, C. J., Domoff, S. E., & Toro, P. A. (2013). Peer substance use and homelessness predicting substance abuse from adolescence through early adulthood. *American Journal of Community Psychology*, 51(3-4), 520–529. https://doi.org/10.1007/s10464-013-9569-3
22. Public Health Agency (2018). *Blueprint for Action: Preventing Substance-Related Harms Among Youth Through a Comprehensive School Health Approach*. Retrieved from https://www.canada.ca/content/dam/phac-aspc/documents/services/publications/healthy-living/blueprint-for-action-preventing-substance-related-harms-youth-comprehensive-school-health/final-blueprint-en.pdf
23. Substance Abuse and Mental Health Services Administration. (2019). *The Role of Adverse Childhood Experiences in Substance Use*. Retrieved from https://mnprc.org/wp-content/uploads/2019/01/aces-behavioral-health-problems.pdf
24. Onrust, S. A., Otten, R., Lammers, J., & Smit, F. (2016). School-based programmes to reduce and prevent substance use in different age groups: What works for whom? Systematic review and meta-regression analysis. Clinical Psychology Review, 44, 45–59. https://doi.org/10.1016/j.cpr.2015.11.002
25. Canadian Students for Sensible Drug Policy. (2021). Sensible Cannabis Education: A Toolkit for Educating Youth. Retrieved from https://substanceuse.ca/sites/default/files/2021-05/English-Version-1.1-April-2021.pdf
26. Moffat, B. M., Haines-Saah, R. J., & Johnson, J. L. (2017). From didactic to dialogue: Assessing the use of an innovative classroom resource to support decision-making about cannabis use. *Drugs: Education, Prevention & Policy*, 24(1), 85–95. https://doi.org/10.1080/09687637.2016.1206846
27. Newton, N. C., Teesson, M., Vogl, L. E., & Andrews, G. (2010). Internet-based prevention for alcohol and cannabis use: final results of the Climate Schools course. *Addiction*, 105(4), 749–759. https://doi.org/10.1111/j.1360-0443 .2009.02853.x
28. Tremblay, M., Baydala, L., Khan, M., Currie, C., Morley, K., Burkholder, C., Davidson, R., & Stillar, A. (2020). Primary Substance Use Prevention Programs for Children and Youth: A Systematic Review. *Pediatrics*, 146(3), 1-. https://doi.org/10.1542/peds. 2019-2747
29. Luna-Adame, M., Carrasco-Giménez, T. J., & Rueda-García, M.delM. (2013). Evaluation of the effectiveness of a smoking prevention program based on the 'Life Skills Training' approach. *Health education research*, *28*(4), 673–682. https://doi.org/10.1093/her/cyt061
30. Bast, L. S., Andersen, A., Ersbøll, A. K., & Due, P. (2019). Implementation fidelity and adolescent smoking: The X:IT study—A school randomized smoking prevention trial. *Evaluation and Program Planning*, *72*, 24–32. https://doi.org/10.1016/j.evalprogplan.2018.09.004
31. Bast, L. S., Due, P., Bendtsen, P., Ringgard, L., Wohllebe, L., Damsgaard, M. T., Grønbæk, M., Ersbøll, A. K., & Andersen, A. (2016). High impact of implementation on school-based smoking prevention: the X:IT study-a cluster-randomized smoking prevention trial. *Implementation Science*, *11*(1), 125–125. https://doi.org/10.1186/s13012-016-0490-7
32. Newton, N. C., Debenham, J., Slade, T., Smout, A., Grummitt, L., Sunderland, M., Barrett, E. L., Champion, K. E., Chapman, C., Kelly, E., Lawler, S., Castellanos-Ryan, N., Teesson, M., Conrod, P. J., & Stapinski, L. (2022). Effect of Selective Personality-Targeted Alcohol Use Prevention on 7-Year Alcohol-Related Outcomes Among High-risk Adolescents: A Secondary Analysis of a Cluster Randomized Clinical Trial. *JAMA Network Open*, 5(11), e2242544. https://doi.org/10.1001/jamanetworkopen.2022.42544
33. Hollis, A., Downey, E., Standing, S., Leahy, J., Ebbert, K., & Ganesh, A. (2022). A vaping risks education program for school students: Evaluation of the solve mystery toolkit. *Preventive medicine reports*, *28*, 101852. https://doi.org/10.1016/j.pmedr.2022.101852
34. Nyman, J., Salanterä, S., Pasanen, M., & Parisod, H. (2024). Effectiveness of a Digital Health Game

Intervention on Early Adolescent Smoking Refusal Self-Efficacy. *Health Education & Behaviour: The Official Publication of the Society for Public Health Education*, *51*(4), 562–572. https://doi.org/10.1177/10901981241237788

35. Sanchez, Z. M., Sanudo, A., Andreoni, S., Schneider, D., Pereira, A. P. D., & Faggiano, F. (2016). Efficacy evaluation of the school program Unplugged for drug use prevention among Brazilian adolescents. *BMC Public Health*, *16*(1), 1206–1206. https://doi.org/10.1186/s12889-016-3877-0

Table 3. Risk and Protective Factors that Influence Problematic Substance Use Among Adolescents

Individual	**Resilience**	Resilience is the capacity or process of successfully adapting to challenging circumstances or adversity (11). It is seen as a protective factor that comes from the combined strength of individual abilities (like problem-solving and confidence), supportive relationships (with caregivers, parents, mentors, and teachers), and the broader environment (like community and culture) that helps young people handle tough situations (2). Research indicates that resilience among groups that have historically faced marginalization can result in good health and life outcomes despite the presence of risks (11).
	Mental Health	Youth with poor mental health (i.e., experiencing depression, ADHD, or posttraumatic stress disorder) may use substances as a way to cope or manage and, therefore, are at greater risk of developing substance use challenges (2, 12). Substance use challenges that co-occur with mental health issues may result in a feedback loop of negative life quality outcomes if both are not treated at the same time (2, 12). On the other hand, contributors to positive mental health, such as safe, supportive, and stable home and neighbourhood environments, are protective factors against substance use problems (2).
	Genetics	Findings from research indicate that specific genes may interact with each other and other behavioural and social risk factors and increase susceptibility to substance use challenges among youth (13-14). Youth with a family history of problematic alcohol use were found to be three to five times more likely to develop an alcohol use disorder than their counterparts (13).
	Peers	Substance use among peers in the school environment may lead individuals to also try substances out of curiosity or to “fit in” due to peer pressure (3, 12). Perception of popularity is also shown to be associated with increased risk for adolescent substance use (12). Research shows that being subjected to bullying is positively associated with substance use, with individuals who were bullied being more likely to engage in substance use compared to their uninvolved counterparts (12). Playing the role of the bully is also associated with increased alcohol use (12). On the other hand, having positive peer role models may be protective and prevent substance use challenges (15).

Interpersonal	**Family**	There are multiple considerations at the family level that can determine early substance use among adolescents. Substance use by parents or other relatives can lead to exposure among youth and have negative impacts on other health and well-being outcomes (3). Parenting style, family relationships, familial socioeconomic status, marital status of parents, respect for parents, level of parent education, childhood maltreatment, and overall family function can also predict substance use challenges among youth (3, 12). For example, nurturing home environments characterized by parental support and open communication can help stop problematic substance use (15).
	Abuse & Maltreatment	There is evidence that suggests that physical or sexual abuse is linked to adolescent use of marijuana, nicotine, alcohol, and even substances like cocaine and heroin (12). Being subjected to abuse increases the risk of substance use among adolescents from two to four times (12). Childhood maltreatment is also a risk factor for earlier onset of substance use because substance use may be used as a way to cope (12).
Community	**Access to Appropriate Services**	Studies show that youth who use substances problematically may face multiple barriers when accessing primary mental health and substance use care (1). In Ontario, services and programming targeting adolescents and youth exist, but the overall system is "fragmented, untimely, under-resourced and not user-friendly" (1). Programming and services that are modelled after existing adult services may not include a harm-reduction approach, be age-appropriate, and be tailored to the strengths, desires, and needs of youth (1).
	Connectedness to School	A lack of belonging to one's school is associated with substance use (16). Students who have poor relationships with peers and teachers, disengaged and disconnected from school, and face a challenging academic environment are at higher risk of using substances (16). Specifically, students may use substances as a way to alleviate distress connected to pressures to do well in school (16).
	Availability and Accessibility of Substances	Research indicates that substance use increases among adolescents when there is high availability and accessibility of substances (17). Adolescents can gain access to substances through family, peers, the health care system (i.e., prescriptions), and the community (i.e., costs and density of retail locations) (17). One study even found that a greater number of outlets in school neighbourhoods is associated with higher odds of smoking (17).

	Family	There are multiple considerations at the family level that can determine early substance use among adolescents. Substance use by parents or other relatives can lead to substance exposure among youth and have negative impacts on other health and well-being outcomes (3). Parenting style, family relationships, marital status of parents, respect for parents, level of parent education, childhood maltreatment, and overall family function can also predict substance use challenges among youth (3, 12). For example, nurturing home environments characterized by parental support and open communication can help stop problematic substance use (15).
	Abuse & Maltreatment	Evidence suggests that physical or sexual abuse is linked to adolescent use of marijuana, nicotine, alcohol, and other substances (12). Being subjected to abuse increases the risk of substance use among adolescents from two to four times (12). Childhood maltreatment is also a risk factor for earlier onset of substance use because substance use may be used as a way to cope (12).
Societal	**Intergenerational Trauma**	Intergenerational trauma stemming from historical and ongoing genocide has collectively impacted Indigenous youth (18). Systemic neglect—resulting in food insecurity, lack of potable water, poverty, and inadequate housing—places Indigenous youth at heightened risk for substance use challenges and other health issues (2, 18-19).
	Stigma & Discrimination	Stigma and discrimination related to BIPOC identity, mental health, 2SLGBTQ+ identity, and more increase the likelihood of using substances (2). For example, gender-minority youth have heightened risks for substance use challenges compared to cisgender peers because they use substances as a way to cope with stressors associated with their unique identities (20). Stigma is a cross-cutting issue that results in barriers to access spanning all levels of influence (2). Internalized stigma may prevent individuals from seeking the support they need, while stigma at the societal level can cause disparities in access to housing, employment, healthcare and more (2).
	Availability and Accessibility of Substances	Lower income was observed to be a predictor of substance use among early adolescents, specifically in urban communities (9). Living in low-income neighbourhoods may also be linked to exposure to substance use and poisoning (2). The relationship between income and substance use, however, may not be direct as there are other mediating factors, like food insecurity (2). Adolescents who are facing homelessness were also documented to be at higher risk of developing substance use challenges, with rates of use among youth who are homeless exceeding that of their housed peers (21).

*Adapted from Chief Public Health Officer of Canada, 2018

INTERVENTIONS

Table 4 provides an overview of some prevention interventions that are offered for students in the early adolescent age range. Table 5 is a list of additional and free resources that may help with planning and carrying out prevention programming in school settings (please click on names for links).

Table 4. Some Prevention Interventions Found in Literature

Program	Location	Description	Outcomes	Substance(s)
Climate Schools	Australia	This evidence-based course, facilitated using the Internet, consists of 12 lessons delivered over six months (27).	At the 12-month mark, Grade 8 students (n=764) demonstrated improvements in alcohol and cannabis knowledge, a decrease in average weekly alcohol consumption and a reduction in frequency of drinking to excess compared to the control arm (27-28).	• Alcohol • Cannabis
Life Skills Training	US & Spain	Students in the intervention conditions were offered the LST program, provided as part of the school curriculum (7).	Grade 7 students (n=1060) reportedly experienced lower drunkenness frequency, alcohol-related problems, illicit substance use frequency, cannabis use, lifetime illicit drug use, lifetime prescription drug misuse, and nicotine use at the 14.5-year mark. (28). Another study found no effect on Grade 8-9 students after one year (28-29).	• Alcohol • Cannabis • Pain Relievers • Nicotine
X:IT	Denmark	The three main components are 1) smoke-free school grounds, 2) curricular activities on smoking-related issues, and 3) parental involvement, comprising smoke-free contracts and dialogues.	This intervention targeted Grade 7 students (n= 3764). Research shows that better implementation of the program was associated with lower smoking prevalence (30-31).	• Smoking

PreVenture	Australia	A 2-session, personality-targeted intervention designed to upskill adolescents to better cope with their emotions and behaviours (32).	The intervention was targeted at Grade 8 students (n = 438); the study demonstrated that a brief selective personality-targeted alcohol use prevention intervention delivered in the middle school years can have sustained effects into early adulthood (32).	• Alcohol
SOLVE Mystery Toolkit	Canada	The toolkit is a novel, free, interactive educational program on vaping risks and offers an innovative design to engage students as active participants (33).	In post-program surveys, Grade 7 - 9 students (n = 800) reported a subjective increase in knowledge about the health consequences of vaping (33).	• Vaping
FUME	Finland	Fume is a mobile game that includes seven mini-games (34). Players learn about the consequences of smoking and snus use on their health, physical condition, personal finances, and the environment (34). They can also practice refusing to smoke and use snus (34).	This study involved students from the ages of 10 – 13 (n = 781) (34). Compared with the control group, the intervention group showed improvements in smoking refusal self-efficacy among 12-year-olds between baseline and follow-up, and postintervention (34).	• Snus • Smoking
Unplugged	Europe & Brazil	Unplugged is a program for adolescents between 11 and 14 years old that aims to delay onset and hinder progression of substance consumption (35).	The intervention was targeted at students from the ages of 12 - 14 (28, 35). A few studies reported lowered intoxication and cannabis use at the 18-month mark, with one study noting changes only in students with lower SES (28, 35). Another study found no effects at the 3-month mark (28).	• Alcohol • Cannabis

Table 5. Informal List of Additional Resources		
Name	**Age Range**	**Description**
iMinds	Grades 6 - 9	Provides curriculum-appropriate learning materials and resources to teach substance use literacy.
The Fourth R	Grades 7 - 9	The Fourth R is a comprehensive, school-based program designed to involve students, teachers, parents, and the community in reducing violence and risk behaviours.
Sensible Cannabis Education: A Toolkit for Educating Youth	N/A	The toolkit is divided into two sections. The first section highlights ten guiding principles for conducting cannabis education with young people. The second section discusses the concepts and values important to the delivery and implementation of cannabis education for youth.

*Adapted from https://everactive.org/wp-content/uploads/2021/08/Cindy-Andrew-Drug-Ed-Suggested-Resources.pd

For questions or suggestions, please contact:
Jean Hopkins, WGDS Manager
jhopkins@guelphchc.ca

WGDS
WELLINGTON GUELPH DRUG STRATEGY