



What's With Weed: Responding to Problematic Marijuana Use – An Annotated Bibliography¹ Parent Action on Drugs 2009

Levels of Use:

1. Adlaf et al, 2007, Ontario Student Drug Use and Health Survey, Centre for Addiction and Mental Health, Toronto, Ontario.
“26% of all Ontario students in Grades 7-12 report using marijuana at least once in last 12 months. By Grade 12, this increases to 44.7%. About 1/5 of all users use weekly and another 10% use daily. Among cannabis users, about 10% indicate dependence. Perceptions of risk increase with grade for most drug use but decrease with grade for cannabis.”
2. Adlaf, Edward M., Demers, Andrée, and Gliksman, Louis (Eds.)
Canadian Campus Survey 2004. Toronto, Centre for Addiction and Mental Health. 2005. Available online: http://www.camh.net/research/population_life_course.html
“35% of post-secondary students report use in the previous year, 17% report use in the last month and 6.3% report daily use.”
3. DATIS (Drug and Alcohol Treatment Information System)_Substance Abuse Statistical Tables, 2008, available online at <http://www.datis.ca/download/SA%20Statistical%20Tables%20I.pdf>
“8-19% of new admissions for treatment in 2008 were from the age group 16-24 and about 30% of that group identify cannabis as their presenting problem substance”.

Cannabis Risks and Reality in Research:

Cognitive Functioning, Mental Health and Addiction:

4. Porath-Waller, Amy, Clearing the Smoke on Cannabis: Chronic Use and Cognitive Functioning and Mental Health, Canadian Centre on Substance Abuse (2009)
“Studies...have failed to yield evidence of severe abnormalities. There are reports of mild impairments, however, in memory, attention, psychomotor speed and executive functioning, particularly among those who started using cannabis during early compared to late adolescence.”
5. Zammit, S., Lingford-Hughes, A., Barnes, T., Jones, P., Burke, M., Lewis, G (2007), Cannabis use and risk of psychotic or affective mental health outcomes: a systematic review, *The Lancet* (2007) 370:319-328
“The evidence is consistent with the view that cannabis increases risk of psychotic outcomes independently of confounding and transient intoxication effects, although evidence for affective outcomes is less strong. The uncertainty about whether cannabis causes psychosis is unlikely to be resolved by further longitudinal studies such as those reviewed here. However we conclude that there is now sufficient evidence to warn young people that using cannabis could increase their risk of developing a psychotic illness later in life.”

6. Coffey, C, Carlin, J, Lynskey, M., Li, N. Patton, G, (2003) Adolescent Precursors of Cannabis Dependence: Findings from the Victorian Adolescent Health Cohort Study, *British Journal of Psychiatry* (2003) 182 (330 – 336)
“Regular cannabis use increased the risk for dependence only in the absence of persistent problematic alcohol use.”
7. Hall, W, (2006), The Mental Health Risks of Adolescent Cannabis Use, *PLoS Med* 3 (2):e39
“The major explanations of this association (cannabis use and schizophrenia) have been that: (1) cannabis use precipitates schizophrenia in persons who are vulnerable to the disorder (2) cannabis is used to self-medicate symptoms of schizophrenia, or (3) the association arises from uncontrolled confounding by variables that predict an increased risk of both cannabis use and schizophrenia “
8. Fergusson, D., Poulton, R, Smith, P, and Boden, J, (2006), Cannabis and Psychosis, *BMJ*, 2006; 332; 172-175
“Neuroscientific studies show that cannabis may lead to psychosis through effects on the processing of dopamine in the brain.
Taken together, this evidence suggests a causal relation in which frequent use of cannabis leads to a greater risk of psychotic symptoms.
The implications for policy and the legal status of cannabis are unclear as most people who use cannabis do not develop psychotic symptoms.”
9. Henquet, C., Krabbendam L., Spauwen, J., Kaplan, C., Lieb, R., Wittchen, H., van Os, J (2005), Prospective cohort study of cannabis use, predisposition for psychosis and psychotic symptoms in young people, *BMJ* 2005; 330;11
“What is already known on this topic? – It is generally accepted that cannabis use is strongly associated with psychosis but we do not know whether the association is causal or whether those with a predisposition for psychosis are particularly at risk. What this study adds? – Cannabis use in young people moderately increased the risk of developing psychotic symptoms. The risk was much higher in those with a pre-disposition for psychosis. Predisposition at baseline did not predict cannabis use at follow up thus refuting the self-medication theory”.
10. Looby A, Earleywine, M, (2007), Negative consequences associated with dependence in daily cannabis users, *Substance Abuse Treatment, Prevention, and Policy*, 2007, 2:3 Available also as well at <http://www.substanceabusepolicy.com/content/2/1/3>
“The notion that cannabis use in moderation may not be problematic, especially if alcohol consumption is also limited, might be particularly salient to those users who recognise problems associated with cannabis use but who are not motivated to completely abstain”

Injuries:

11. Mann, R., Adlaf E., Zhao, J., Stiduto G., Ialomiteanu, A., Smart, R., Asbridge, M, (2007) in press, Cannabis Use and Collision Risk: Cannabis Use and Self-reported Collisions in a representative Sample of Adult Drivers, *Journal of Safety Research*, received from author.
“While the overall prevalence of driving after cannabis use in the general population is relatively low, among cannabis users and some sub-groups of the population such as high school students and university student, the prevalence is relatively high. Our data reveals an association of cannabis use and driving under the influence of cannabis with increased likelihood of collision.”
12. Asbridge, M., Poulin, C, Donato, A (2005), Motor vehicle collision risk and driving under the influence of cannabis: Evidence from adolescents in Atlantic Canada, *Accident Analysis and Prevention* 37 (2005) 1025-1034

“The current study found that among the general adolescent population in Atlantic Canada, driving under the influence of cannabis has become a prevalent activity surpassing driving under the influence of alcohol, and it has played an important role in motor vehicle collision risk, independent of drinking and driving, driver experience and other risk factors.”

13. Adlaf, E, Mann, R., Paglia, A, (2003), Drinking, cannabis use and driving among Ontario students, *CMAJ*, Mar. 4, 2003;168 (B), 565-566
31 % of students identified driving with someone who had been drinking, and 15% reported driving after consuming 2 or more drinks. Nearly 20% reported driving after consuming cannabis.
14. MacDonald S., Anglin-Bodrug K., Mann, R., Erickson, P., Hathaway, A., Chipman, M., Rylett, M, (2003) Injury risk associated with cannabis and cocaine use, *Drug and Alcohol Dependence* 72 (2003) 99-115
“Studies of non-clinical samples have shown that both cannabis and cocaine use are related to intentional injuries and injuries in general. Results indicate higher risk for all types of injuries among cannabis and cocaine clients in treatment. Strengths and limitations of the different types of studies are discussed. More rigorous studies are needed which should focus on ruling out alternative explanations for relationships between drug use and injuries.”

Chronic disease:

15. British Lung Foundation, 2002, “A Smoking Gun? The Impact of Cannabis Smoking on respiratory Health, found at
http://www.lunguk.org/Resources/British%20Lung%20Foundation/Migrated%20Resources/Documents/A/A_Smoking_Gun.pdf
“Studies comparing the clinical effects of habitual cannabis smokers versus non-smokers demonstrate a significantly higher prevalence of chronic and acute respiratory symptoms such as chronic cough and sputum production, wheeze and acute bronchitis episodes.3-4 Cannabis cigarettes a day are associated with the same evidence of acute and chronic bronchitis and the same degree of damage to the bronchial mucosa as 20 or more tobacco cigarettes. In general, the studies indicate that there is an increased negative health impact on those who smoke cannabis compared to those who do not smoke at all. When cannabis is smoked together with tobacco then the effects are additive. However, what is not clear is whether it is the addition of the cannabis or the tobacco which is more harmful or whether this is the result of the combined effects of equally harmful substances.”
16. Tan, W.C. et al, Marijuana and chronic obstructive lung disease: a population-based study. *Canadian Medical Association Journal*. April 14, 2009: 180(8).
For this study among an older population (mean age was 56 years) the finding was that “participants who had smoked at least 50 marijuana cigarettes but had no history of tobacco smoking were not at significantly greater risk for either outcome [Chronic Obstructive Lung Disease or respiratory symptoms]....Smokers who reported using both marijuana and tobacco were almost 2.5 times more likely than non-smokers to have respiratory symptoms and nearly 3 times more likely than non-smokers to have COPD”

Cannabis Risks and Reality from Users:

17. Hathaway, Andrew, (2004), Cannabis careers reconsidered: transitions and trajectories of committed long-term users, *Contemporary Drug Problems* 31/Fall 2004.
“The findings from this study suggest that the association between levels (of use) and problems is not necessarily straightforward. Problematic use of cannabis is highly subjective and inexorably dependent on context and circumstances.”
18. Hathaway, Andrew, (2004), Cannabis users’ informal rules for managing stigma and risk. *Deviant Behaviour*, 25: 559-577, 2004
“Experienced users develop strategies to manage their risks that are most salient to the situated context of their lifestyles. Perceived risks clearly vary, and yet there are generic features that permeate most users’ perceptions of control. Advice for novice users is generally consistent across all categories, suggesting the informal rules are recognized in practice. Moderation and discretion are the dominating themes around amounts and frequency, and where and when to use.”
19. Hathaway, Andrew, (2003), Cannabis Effects and Dependency Concerns in Long-Term Frequent Users” A Missing Piece of the Public Health Puzzle, *Addiction Research and Theory*, December 2003, Vol. 11 No. 6, pp 441-458
“Whereas concerns about use levels nonetheless overshadowed other dependency indicators, including concern for personal health, however, no association was found between amounts nor frequency of use and the number of DSM-IV items reported by respondents. Users acknowledged and accepted the potential for dependence, adapting use levels accordingly when seen as problematic.”
20. Moffat, B., & Johnson, J. (2006). Marijuana use by youth: When is it a problem?’ *Visions*, 3, no. 2, pp. 13-14.
“As noted, teens use marijuana to manage the difficulties in their lives. Often, youth smoke marijuana because they feel there are no other options. However, frequent use can affect teenagers’ school performance and their relationships with family members. Earlier and greater involvement with marijuana has also been associated with increased risk of poor mental health. Frequent use is a concern for some youth; they acknowledge the difficulties they have cutting back or quitting. Frequent use may well be a sign of other distress in their lives.”
21. Moffat, B., Mulvogue, T., Haines, R., & Johnson, J. (2007). TRACE Project: ‘L’ School students talk about marijuana, Nursing and Health Behavior Research: Unpublished report. Available through nahbr@nursing.ubc.ca
In this ethnographic study, students from a secondary school spoke about the culture of cannabis use including reasons for using, and patterns of using that could be seen as dependent “Youth refer to this pattern as “wake and bake,” and they apply the terms “stoner,” “chronic” and “lifer” to themselves and others who use marijuana often.” Students identified that they enjoyed the opportunity of just talking about marijuana, not being told not to do it.
22. Moffat, B., Mulvogue, T., Haines, R., & Johnson, J. (2007). TRACE Project: ‘T’ School students talk about marijuana, Nursing and Health Behaviour Research: Unpublished report. Available through nahbr@nursing.ubc.ca
Similar process as above but with middle school students. Again, students identified the value in talking about cannabis and not being shut down.
23. Tutt, A et al, 2008, “What’s With Weed”: A program to reduce problematic marijuana use in secondary schools Niagara Region Pilot Project
 - I found this was very important for everyone and I think everyone learned something new and important about marijuana.

- I learned a lot from the workshop about weed.
 - Well, before this workshop, I knew most of the risks they just explained it better.
 - I already decided that I would never use marijuana. This did not change that
24. Cunningham, J and Selby, P, 2007, “Implications of Normative Fallacy in Young Adult Smokers, Aged 19-24”, *American Journal of Public Health*, 2007;97
 “Approximately three quarters of young adult (aged 19-24 years) smokers overestimated by 20% or more the proportion of their peers who smoked. The effect of this normative fallacy was significantly greater in young adult smokers than in smokers aged 25 years or older”
25. Glover, Chris, (2005)(2006), “Youth to Youth – The Risks and Realities of Marijuana Use”, Evaluation Reports for “What’s With Weed” Project, Years 1 and Year 2 for Parent Action on Drugs. Health Promotion Consulting Group, Toronto, Ontario. Available from the Executive Director, Diane Buhler, Toronto (416) 395-4970
 “Grade 9 students said – “I became more aware of risks I had never thought about.” “It won’t change if I use it or not, but I know it’s risky now.” “What changed my mind was knowing that it could hurt my relationships with people who I care about.”

Social Marketing, Drug Awareness and Education

26. Legarde, Francois, 1998, “Best Practices and Prospects for Social Marketing in Public Health” Canadian Public Health Association Conference, accessed at Health Canada website
http://www.hc-sc.gc.ca/ahc-asc/activit/marketsoc/tutorial-guide/appendix-annexe_a-eng.php
 “Social marketing is the application of commercial marketing technologies to the analysis, planning, execution, and evaluation of programs designed to influence the voluntary behaviour of target audiences in order to improve their personal welfare and that of their society.” (Andreasen, 1995)
27. Tupper, K. W., “Teaching teachers to just say “know”: Reflections on drug education”, *Teaching and Teacher Education* (2007)
 “This article looks at the history and queries the purposes of contemporary drug education. It compares current approaches to drug education with those of other “vice” issues addressed in the history of public schools, such as sex education and temperance education. It critically challenges the question of knowledge definition and production related to psychoactive substances. Finally, some of the theoretical groundings on which to base teacher education for drug education are considered.”
28. Tupper, K.W. “Drugs, discourses and education: a critical discourse analysis of a high school drug education text”, *Discourse: Studies in the Cultural Politics of Education*, Vol. 29, No. 2, June 2008, 223_238
 “Paying careful attention to features such as genre, syntax, interdiscursivity, and lexicalization, (the author) questions core assumptions made by both a drug education text and the broader medical, public health, legal and drug policy discourses from which it draws.”
29. Canadian Centre on Substance Abuse (2007). *Substance Abuse in Canada: Youth in Focus*. Ottawa, ON: Canadian Center on Substance Abuse, extracted from website, www.ccsa.ca
 “Rather than focusing solely on drug-related knowledge, prevention programs need to use techniques that directly address participants’ attitudes in order to help them acquire skills they can use to resist drug abuse. The most effective prevention programs usually rely on the active participation of peers to provide a positive influence. They teach participants to reframe their perceptions and to adopt refusal strategies, while remaining interactive and focused on rational and behavioural learning.”
30. Join Together Online, 2007, *Prevention Education in America’s Schools: Findings and Recommendations from a Survey of Educators*, published by Join Together, Boston University School of Public Health,

extracted from website for Join Together Online,

<http://www.jointogether.org/resources/2007/prevention-education-in.html>

“Schools should not be relied upon or act as the principal provider of general prevention education. They can and should play a role as part of a comprehensive community prevention strategy including parents and other social institutions.”

“School systems should carefully re-evaluate money and time spent on outside programs and speakers and unfocused printed materials because they are likely to have no lasting impact on what students know about alcohol and drugs or on their drinking or drug-taking behaviour.”

31. Cheon, J.W. (2008). Best practices in community-based prevention for youth substance reduction: Towards strengths-based positive development policy, *Journal of Community Psychology*, 36, 761-779.
“In this article, the author offers a best practice analysis of systematic review about 12 selected community-based preventions, and proposes policy changes towards incorporating a strengths perspective. A substantive, methodological, and value-based critical analysis of the strongly effective preventions was conducted. A strengths-based positive youth development perspective is specified as one feasible needed improvement and subsequent policy changes in the school district as well as in the local, state, and federal levels are proposed along with the suggestion of a mandated community youth participation strategy.”
32. Werch, C. E. & Owen, D. M. (2002). Iatrogenic effects of alcohol and drug prevention programs. *Journal of Studies on Alcohol*, 63, 581-590.
“Evidence of negative program effects was found in 17 evaluation studies for which 43 negative outcomes were documented. The most common type of negative outcome resulting from prevention programs was behavioral effects consisting primarily of increases in consumption, especially alcohol use. Drug prevention programs resulted in greater increases in alcohol use, cigarette use, marijuana use and multiple drug use than did alcohol prevention programs.”

Intervention, Counselling

33. Currie, Janet, 2001, “Best Practices for Treatment and Rehabilitation for Youth with Substance Use Problems”, Health Canada, accessed at http://www.hc-sc.gc.ca/hl-vs/alt_formats/hecs-sesc/pdf/pubs/adp-apd/youth-jeunes/youth-jeunes-eng.pdf
“A realistic view of relapse, a focus on harm reduction, a client-centred, flexible approach to treatment and involvement of the family are essential approaches to retain youth in treatment. A broad psychosocial approach with a focus on skill building, culturally appropriate activities (where applicable) and a recreational component are seen as optimal components of youth treatment.”
34. Breslin et al, “First Contact: A Brief Treatment for Young Substance Users” in Youth, Drugs and Mental Health: A Resource for Professionals, 2004, Centre for Addiction and Mental Health.
“Designed to strengthen young clients' motivation and commitment to change, this outpatient program combines elements of cognitive-behavioural and motivational interviewing approaches. The program can be a first step for youth with substance use problems, fostering motivation for change before addressing more specialized or long-term needs.”
35. Marlatt et al, 1998, “Screening and Brief Intervention for High-Risk College Student Drinkers: Results From a 2-Year Follow-Up Assessment, *Journal of Consulting and Clinical Psychology*, August 1998 Vol. 66, No. 4, 604-615
36. Walters, S, Baer, K., Talking with College Students about Alcohol: Motivational Strategies for Reducing Abuse, The Guilford Press, New York.2006

37. Martin, G et al, 2004, "The Adolescent Cannabis Check-up: A Brief Intervention for Young Cannabis Users. Findings and Treatment Manual", Technical report Number 200, National Drug and Alcohol Research Centre, University of New South Wales, Sydney, 2004,
"Through the explicit inclusion of non-treatment seekers in the trial the project broadened the potential catchment for participants in an intervention, which may be particularly relevant for this age group who are rarely active treatment seekers. The trial's focus on early and brief intervention for young cannabis users (irrespective of treatment seeking) is consistent with the goal of providing access to effective, low cost, low intensity intervention at a population level to any young people who may benefit from it". Available at [http://ndarc.med.unsw.edu.au/NDARCWeb.nsf/resources/TR_3/\\$file/TR.200.pdf](http://ndarc.med.unsw.edu.au/NDARCWeb.nsf/resources/TR_3/$file/TR.200.pdf)
38. Cunningham, J, (2006), "Internet-based Interventions for Alcohol, Tobacco and Other Substances of Abuse", in Peter Miller and David Kavanagh (Eds.). Translation of Addictions Science into Practice: Update and Future Directions, Elsevier Publishers.
39. Cunningham, J and Trevor van Mierlo, (2009), "The Check Your Cannabis screener: A new online personalized feedback tool", *The Open Medical Informatics Journal*, 2009, 3, 27-31.
40. MacMaster, S.A., Holleran, L., & Chaffin, K. (2005). Empirical and theoretical support for non-abstinence-based prevention services for substance using adolescents. *Journal of Evidence-Based Social Work*, 2 (1-2), 91-111.
"This article proposes Harm Reduction as a complimentary or alternative perspective for work with adolescents for whom abstinence may not be immediately possible and/or may not be a realistic outcome for services. This article outlines the abstinence-oriented and Harm Reduction perspectives, as well as the Stages of Change model; utilizing empirical support, it then discusses how these perspectives can work together in social work practice in the adolescent substance abuse prevention arena."
41. Poulin, Christiane, (2006), Harm reduction policies and programs for youth, Harm Reduction for Special Populations in Canada, CCSA, 2006, extracted from website, <http://www.ccsa.ca/CCSA/EN/Publications/>
"Evidence is especially needed as to the age/grade at which school-based drug education can appropriately graduate from a message of "don't use" to one of, "if you use, remember this."
42. Poulin, Christiane, Nicholson, Jocelyn, (2005), Should we teach harm minimization to teenagers in school? The production and translation of controversial new knowledge in addictions. In *CIHR Institute of Population and Public Health, Canadian Population Health Initiative, Moving population and public health knowledge into action (2006)* extracted from website http://www.cihr-irsc.gc.ca/e/documents/ipph_ktcasebook_e.pdf
43. Earlywine M., Barnwell, S, (2007), Decreased respiratory symptoms in cannabis users who vaporize, *Harm Reduction Journal* 2007, 4:11
"Data from a large Internet sample revealed that the use of a vaporizer predicted fewer respiratory symptoms even when age, sex, cigarette smoking, and amount of cannabis used were taken into account. Age, sex, cigarettes, and amount of cannabis also had significant effects. The number of cigarettes smoked and amount of cannabis used interacted to create worse respiratory problems. A significant interaction revealed that the impact of a vaporizer was larger as the amount of cannabis used increased. These data suggest that the safety of cannabis can increase with the use of a vaporizer."

Student Drug Use Policy

44. Tracy Evans-Whipp et al, (2004), "A review of school drug policies and their impact on youth substance use", *Health Promotion International*, Vol. 19, No. 2, 227-234, June 2004.
"The first part of this paper reviews the known status of school policies on tobacco, alcohol and other illicit drugs in a number of Western countries and the existing evidence for the effectiveness of school

drug policy in preventing drug use. The review shows that most schools in developed countries have substance use policies but that there is substantial variation in comprehensiveness, and the orientation of their enforcement (e.g. punitive versus remedial). The second part of the paper introduces the International Youth Development Study, a new longitudinal research project aimed at comparing school policies and the developmental course of youth drug use in the United States, where drug policies are abstinence-based, with Australia, which has adopted a harm minimization approach to drug policy.”

45. Johnson et al, Johnson, J., Moffat, B., Bottorff, J., Shoveller, J., Fischer, B., & Haines, R.(2008), “Beyond the barriers: Marking the place for marijuana use at a Canadian high school”. *Journal of Youth Studies*
“We trace the interplay between high school staff and students with regards to marijuana use in the proximity of a local high school and the shifting geographies of use in this setting. Groups of students would leave the school and smoke marijuana in school time. Students were aware that they needed to keep their use discrete. Teachers and staff unintentionally conveyed the message that marijuana use was acceptable provided it did not take place on school property. Students and staff thus enacted and reinforced the barriers to open communication about marijuana use.”
46. Nova Scotia Department of Health Integrated Primary/Population Health Branch Addiction Services, (2002), *When Drugs Come to School, A Resource Manual for Student Substance Use and School-Based Policy Development*.
“Best Practices indicates that it is NOT a good idea to implement a zero-tolerance policy (i.e. immediate suspension) regarding student substance use. Instead a series of responses should be outlined using alternatives to suspension, guided by an overall concern for the health, safety, and well-being of the student, staff, family or guardian, and school community.”
47. AIMS 2007, Alternative Intervention for Marijuana Suspension (AIMS) 2006/07, University of British Columbia, Okanagan District. Email correspondence from AIMS Program Coordinator Aarin Frigon, November, 2007.
“Overall, the AIMS Program has shown to be a success and has met many of the goals it set. In relation to marijuana use, it has: 1. Reduced participants use of marijuana before going to school; 2. Reduced participants use of marijuana during breaks at school; 3. Reduced the general frequency of marijuana use among participants in the program.”
48. Hathaway, Andrew, Erickson, Patricia, (2003) Drug reform Principles and Policy Debates: Harm Reduction Prospects for Cannabis in Canada, *Journal of Drug Issues*, 0022-0426/03/02 467-496
“Despite its official manifestation as the goal of Canada’s Drug Strategy, the marginality of harm reduction in practice is noteworthy. (In the Canadian Senate Committee’s statement of guiding principles in 2002) Scientific evidence is but one of those listed alongside more fundamental, overarching reflections on ethics and values and the primary role of the State in promoting or restricting individual autonomy.”
49. Swift, Wendy, Copeland, Jan, Lenton, Simon, (2000), Harm Reduction Digest 8: Cannabis and harm reduction, *Drug and Alcohol Review* (2000) 19, 101-112.
“The paucity of information on correlates and consequences of cannabis use among adolescents, particularly its relationship to co-morbid psychopathology, have allowed an ill-informed and polemic community debate about cannabis to flourish. As a result, young people are increasingly skeptical about public messages on the harms associated with cannabis use. School-based programs should at least be based on educational principles rather than drug ideology.”