

Testimony of Ken Winters, PhD. regarding cannabis legalization bill, SF 73

January 26, 2023

Senator Matt Klein and members of the Senate Commerce and Consumer Protection Committee

Thank you for allowing me to submit written testimony in opposition to cannabis bill SF73.

I am Ken Winters, PhD., a long-standing research in drug abuse, with 20 years of it while a professor in psychiatry at the University of Minnesota. I also co-founded Smart Approaches to Marijuana Minnesota. We are the state affiliate of the national group, Smart Approaches to Marijuana. I am very knowledgeable about the research and science of cannabis use as it relates to health and safety.

There are now over 20,000 peer reviewed science articles that consistently point to one major conclusion: Using cannabis greatly increases the risk to the user of numerous health and safety problems. As an international panel of experts wrote in 2021 (Fischer et al., 2021, International Drug Policy), "there is no universally safe level of cannabis use; thus, the only reliable way to avoid any risk for harm from using cannabis is to abstain from its use."

Studies of states that have commercialized cannabis have consistently reached the conclusion that commercializing cannabis contributes to an increase in negative health effects on its citizenry. Of note is the damage it does to the adolescent developing brain and that use significantly increases risk to mental illness.

There are no legislative controls, conditions or guardrails that will make legalization a rational decision. Once a drug is legalized and thus normalized, its increased popularity will lead to more use by more Minnesotans. The work place and highways will be less safe. More Minnesotans will get addicted to cannabis and the incidence of serious mental disorders will increase. Regulating it will not eliminate the black market, as other states have learned. If there are concerns that our state over-criminalizes cannabis users, then decriminalize it and expunge the records of those convicted of a minor possession.

A summary list of safety and health issues is provided on pp. 2 and 3 of this letter.

I urge the committee to oppose SF 73.

Ken C. Winters, Ph.D.  
winte001@umn.edu

Falcon Heights, MN

**Based on Lessons Learned from Other States and Published Scientific Research,  
What Are the Likely Effects of Commercializing Cannabis?**

**Users of cannabis, particularly users of high potency THC, will increase their likelihood of ....**

Developing a cannabis use disorder <sup>1-8</sup>

Progression to use other drugs <sup>9</sup>

Suffering from severe and persistent mental disorder <sup>1, 2, 10-14</sup>

Damaging brain development during adolescence <sup>1, 2, 14-18</sup>

Deficits in learning, memory and IQ <sup>2, 9, 16-21</sup>

Poorer functional well-being, including derailment by youth of transition to adulthood <sup>9, 13, 19, 21-22</sup>

**State-wide, we will likely see...**

Higher prevalence rates of cannabis use by youth and adults <sup>4-8</sup>

Greater strain on mental health and related social services <sup>1, 2, 10-14</sup>

Greater proportion of motor vehicle accidents linked to cannabis intoxication <sup>23-26</sup>

Increase in emergency room visits because of acute overdose reactions <sup>26-27, 30</sup>

Less safe workplace <sup>26</sup>

**State-wide, we will likely NOT see...**

Lower opioid abuse rates <sup>26, 28-29</sup>

Enough tax revenue to cover attendant social and health costs <sup>26</sup>

Reduction in crime <sup>26</sup>

citations on page 3

1. [www.nationalacademies.org/cannabishealtheffects](https://www.nationalacademies.org/cannabishealtheffects)
2. Volkow, N. D., Swanson, J. M., Evins, A. E., DeLisi, L. E., Meier, M. H., Gonzalez, R., ... & Baler, R. (2016). Effects of cannabis use on human behavior, including cognition, motivation, and psychosis: A review. *JAMA Psychiatry*, *73*, 292-297.
3. Cerdá, M., Mauro, C., Hamilton, A., Levy, N. S., Santaella-Tenorio, J., Hasin, D., Wall, M. M., Keyes, K. M., & Martins, S. S. (2020). Association between recreational marijuana legalization in the United States and changes in marijuana use and cannabis use disorder from 2008 to 2016. *JAMA Psychiatry*, *77*, 165-171.
4. O'Grady, M. A., Iverson, M. G., Suleiman, A. O., & Rhee, T. G. (2022). Is legalization of recreational cannabis associated with levels of use and cannabis use disorder among youth in the United States? A rapid systematic review. *European Child & Adolescent Psychiatry*, 1-23.
5. Gunadi, C., Zhu, B., & Shi, Y. (2022). Recreational cannabis legalization and transitions in cannabis use: Findings from a nationally representative longitudinal cohort in the United States. *Addiction*, <https://doi.org/10.1111/add.15895>.
6. Robinson, T., Ali, M. U., Easterbrook, B., Coronado-Montoya, S., Daldegan-Bueno, D., Hall, W., ... & Fischer, B. (2022). Establishing risk-thresholds for the association between frequency of cannabis use and development of cannabis use disorder: A systematic review and meta-analysis. *Drug and Alcohol Dependence*, *238*, 1-9.
7. Zellers, S. M., Ross, J. M., Saunders, G. R., Ellingson, J. M., Anderson, J. E., Corley, R. P., ... & Vrieze, S. (2022). Impacts of recreational cannabis legalization on cannabis use: A longitudinal discordant twin study. *Addiction*, <https://doi.org/10.1111/add.16016>.
8. Copeland, W. E., Hill, S. N., & Shanahan, L. (2022). Adult psychiatric, substance, and functional outcomes of different definitions of early cannabis use. *Journal of the American Academy of Child & Adolescent Psychiatry*, *61*, 533-543.
9. Volkow, N. D., Baler, R. D., Compton, W. M., & Weiss, S. R. (2014). Adverse health effects of marijuana use. *New England Journal of Medicine*, *370*, 2219-2227.
10. Livne, O., Shmulewitz, D., Sarvet, A. L., Wall, M. M., & Hasin, D. S. (2022). Association of cannabis use - related predictor variables and self-reported psychotic disorders: US adults, 2001–2002 and 2012–2013. *American Journal of Psychiatry*, *179*, 36-45.
11. Hjorthøj, C., Posselt, C. M., & Nordentoft, M. (2021). Development over time of the population-attributable risk fraction for cannabis use disorder in schizophrenia in Denmark. *JAMA Psychiatry*, *78*, 1013-1019.
12. Petrilli, K., Ofori, S., Hines, L., Taylor, G., Adams, S., & Freeman, T. P. (2022). Association of cannabis potency with mental ill health and addiction: A systematic review. *The Lancet Psychiatry*, *9*, 736-750.
13. Copeland, W. E., Hill, S. N., & Shanahan, L. (2022). Adult psychiatric, substance, and functional outcomes of different definitions of early cannabis use. *Journal of the American Academy of Child & Adolescent Psychiatry*, *61*, 533-543.
14. Hammond, C. J., Chaney, A., Hendrickson, B., & Sharma, P. (2020). Cannabis use among US adolescents in the era of marijuana legalization: a review of changing use patterns, comorbidity, and health correlates. *International Review of Psychiatry*, *32*, 221-234.
15. Albaugh, M. D., Ottino-Gonzalez, J., Sidwell, A., Lepage, C., Juliano, A., Owens, M. M., ... & IMAGEN Consortium. (2021). Association of cannabis use during adolescence with neurodevelopment. *JAMA Psychiatry*, *78*, 1031-1040.
16. Kroon, E., Kuhns, L., Hoch, E., et al. (2020). Heavy cannabis use, dependence, and the brain: A clinical perspective. *Addiction*, *115*, 559–572.
17. Meier, M.H., Caspi, A., Danese, A., et al. (2018). Associations between adolescent cannabis use and neuropsychological decline: A longitudinal co-twin control study. *Addiction*, *113*, 257–265.
18. Gorey, C., Kuhns, L., Smaragdi, E., Kroon, E., & Cousijn, J. (2019). Age-related differences in the impact of cannabis use on the brain and cognition: a systematic review. *European Archives of Psychiatry and Clinical Neuroscience*, *269*, 37-58.
19. Hammond, C. J., Chaney, A., Hendrickson, B., & Sharma, P. (2020). Cannabis use among US adolescents in the era of marijuana legalization: a review of changing use patterns, comorbidity, and health correlates. *International review of psychiatry*, *32*(3), 221-234.
20. Stoner, M. J., Dietrich, A., Lam, S. H. F., Wall, J. J., Sulton, C., & Rose, E. (2022). Marijuana use in children: An update focusing on pediatric tetrahydrocannabinol and cannabidiol use. *Journal of the American College of Emergency Physicians Open*, *3*(4), e12770.
21. Meier, M. H., Caspi, A., Ambler, A., Harrington, H., Houts, R., Keefe, R. S., ... & Moffitt, T. E. (2012). Persistent cannabis users show neuropsychological decline from childhood to midlife. *Proceedings of the National Academy of Sciences*, *109*, E2657-E2664.
22. Shanahan, L., Steinhoff, A., Bechtiger, L., Copeland, W. E., Ribeaud, D., Eisner, M., & Quednow, B. B. (2021). Frequent teenage cannabis use: prevalence across adolescence and associations with young adult psychopathology and functional well-being in an urban cohort. *Drug and Alcohol Dependence*, *228*, <https://doi.org/10.1016/j.drugalcdep.2021.109063>
23. Farmer, C. M., Monfort, S. S., & Woods, A. N. (2022). Changes in traffic crash rates after legalization of marijuana: Results by crash severity. *Journal of Studies on Alcohol and Drugs*, *83*, 494-501.
24. Marcotte, T. D., Umlauf, A., Grelotti, D. J., Sones, E. G., Sobolesky, P. M., Smith, B. E., ... & Fitzgerald, R. L. (2022). Driving performance and cannabis users' perception of safety: A randomized clinical trial. *JAMA Psychiatry*, *79*, 201-209.
25. Arkell, T. R., Vinckenbosch, F., Kevin, R. C., Theunissen, E. L., McGregor, I. S., & Ramaekers, J. G. (2020). Effect of cannabidiol and  $\Delta^9$ -tetrahydrocannabinol on driving performance: A randomized clinical trial. *JAMA*, *324*, 2177-2186.
26. Smart Approaches to Marijuana. (2020-2021). <https://learnaboutsam.org/wp-content/uploads/2020/12/2020-Impact-Report1.pdf>
27. O'Brien, M., Rogers, P., & Smith, E. (2022). A chart review of emergency department visits following implementation of the cannabis act in Canada. *Canadian Journal of Medicine*, *4*, 13-21.
28. Olfson, M., Wall, M. M., Liu, S. M., & Blanco, C. (2018). Cannabis use and risk of prescription opioid use disorder in the United States. *American Journal of Psychiatry*, *175*(1), 47-53.
29. Bleyer, A., Barnes, B., & Finn, K. (2022). United States marijuana legalization and opioid mortality epidemic during 2010–2020 and pandemic implications. *Journal of the National Medical Association*, *114*, 412-425.
30. Tweet, M.S., et al (2023). Pediatric edible cannabis exposures and acute toxicity: 2017-2022. *Pediatrics*, <https://doi.org/10.1542/peds.2022-057761>