Testimony of Ken Winters, PhD. regarding the cannabis legalization bill, HF 100

February 17, 2023

Members of the House Health Policy and Finance Committee, thank you for allowing me to submit written testimony in opposition to cannabis bill HF 100.

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 co-founded Smart Approaches to Marijuana Minnesota, which is the state affiliate of the national group, Smart Approaches to Marijuana. I am very knowledge about the research and science of cannabis use.

There are now over 20,000 scientific articles in the published literature that consistently point to one major conclusion: Using cannabis greatly increases the risk to the user of numerous health and safety problems. Major reviews from the National Institute on Drug Abuse and the National Academy of Sciences detail numerous harms from cannabis use, including elevating risks of mental illness, poor cognitive functioning, disruptions in brain development, and impaired driving. Studies in states that have passed cannabis legislation have consistently reached the conclusion that commercializing cannabis contributes to an increase in negative health effects on its citizens. 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."

Once a drug is legalized and thus normalized, it's increased popularity will lead to a rise in the percentage of citizens who use cannabis, including underage youth. This has been consistently shown in states that have already legalized cannabis. And it's a false promise that regulating the cannabis business will lead to a healthier and safer state. Unregulated products will continue and even flourish.

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. Yet the commercialization portion of the bill in its current form, which is absent of many necessary rigorous guardrails, is not a good idea for Minnesota.

A summary of the safety and health issues is provided on pp. 2 and 3 of my letter.

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 1-8

Progression to use other drugs 9

Suffering from severe and persistent mental disorder 1, 2, 10-14

Damaging brain development during adolescence 1, 2, 14-18

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

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

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

Higher prevalence rates of cannabis use by youth and adults 4-8

Greater strain on mental health and related social services 1, 2, 10-14

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>

<u>State-wide, we will likely NOT see...</u> 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
- 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.
- 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 Δ9-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.
- Tweet, M.S., et al. (2023). Pediatric edible cannabis exposures and acute toxicity: 2017-2022. Pediatrics, https://doi.org/10.1542/peds.2022-057761