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**Kim Hunter, Director**

**MEMORANDUM #2**

DATE: July 23, 2020  
TO: Members of the Trinity County Planning Commission  
FROM: Kim Hunter, Director of Planning and Building *KH*  
SUBJECT: Agenda Item 1 – Retail Storefront Ordinance (DEV-20-02) Comments Received

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The attached comments have been received regarding the proposed Cannabis Retail Storefront Ordinance.

1. Scott Morris comment letter and attachment (received July 6, 2020 via email)
2. Mr. Mrs. D. Dickerson comment letter (received July 17, 2020)

To: Trinity County Planning Commission

Re: Retail Cannabis Dispensaries in Trinity County

From: Scott Morris, Citizen

I am writing you today to express my opposition to retail cannabis shops in Trinity County. As the previous Substance Abuse Prevention Specialist for over thirteen year in Trinity County, I know well how susceptible our youth are to Cannabis abuse. The science is clear on the adverse effects of THC on the adolescent brain which does not complete development until the age of twenty-five. Despite the fact that Cannabis shops are only allowed to sell to those over twenty-one years of age, access to cannabis will become even easier for children in a county already awash in black market and homegrown cannabis. With retail cannabis shops, we will see a huge increase in edibles with poorly controlled dosage standards and products that are specifically designed and marketed to children and young adults.

Cannabis products targeting children include cannabis infused and colored Gummy Bears, lollypops, chocolate truffles and other candy products. Cannabis related emergency room visits across the country are up specifically due to overdoes from cannabis edibles. Both adult and underage patients experience rapid heartbeats, confusion and psychotic breaks. Edible cannabis is burdening already overtaxed mental health systems, emergency room health care providers and local law enforcement agencies. Emergency room visits due to edible cannabis are well document, particularly in states where cannabis has been legalized and continue to increase. Childhood exposure to and abuse of cannabis sets up the adolescent brain for a life time of substance abuse risk. Cannabis oil vaping products are just as popular as tobacco vaping products and are sold in flavors specifically designed to appeal to children and are merchandised and promoted by most retail cannabis outlets.

The cannabis industry is following the same play book as the alcohol and tobacco industry when it comes to advertisement and products which specifically appeal to underage youth and young adults. In Trinity County we have the opportunity to create safer, healthier communities. This work starts with this Planning Commission stopping the commercial cannabis industry's exploitation of our youngest citizens by refusing to allow retail cannabis in Trinity County. Thank you for your dedication to creating healthier communities through better planning.

Sincerely,

Scott A. Morris

P.O. Box 2245

Weaverille, California 96093

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 [Testimony](#)

## Marijuana and America's Health: Questions and Issues for Policy Makers

October 23, 2019

Presented by VADM Jerome M. Adams, M.D., M.P.H., U.S. Surgeon General and Nora D. Volkow, M.D., Director, National Institute on Drug Abuse  
Presented to Caucus on International Narcotics Control



[Go to the Senate Caucus on International Narcotics Control site](#)

Chairman Cornyn, Co-Chairwoman Feinstein and members of the Caucus on International Narcotics Control, we appreciate the opportunity to share the content of the recent Surgeon General's Advisory on Marijuana Use and the Developing Brain with you, and to join national experts to discuss this complex issue that demands our attention and action. Recent increases in

access to marijuana and in its potency, along with misperceptions of its safety, endanger our most precious resource, our nation's youth.

## Background

Marijuana, or cannabis, is the most commonly used illicit drug in the United States. In 2018, 43.5 million people reported using marijuana in the past year.<sup>1</sup> Marijuana acts by binding to cannabinoid receptors in the brain to produce a variety of effects, including euphoria, intoxication, and memory and motor impairments. These cannabinoid receptors are part of an extensive endocannabinoid system that regulates a wide range of functions, including brain development.

The endocannabinoid system appears relatively early during fetal development. As the fetal brain grows, this system influences how brain cells develop and connect with one another, and it plays a major role in the formation of brain circuits including those important for decision making, mood, and responding to stress.<sup>2</sup> Not surprisingly, animal studies have shown that in utero exposure to marijuana can interfere with the proper development and regulation of brain circuitry. Moreover, the endocannabinoid system is a critical regulator of the neuronal hardwiring that translates experience throughout the teen years and young adulthood into mature brain architecture. This helps explain why the developing brain is particularly vulnerable to chronic exposure to delta-9-tetrahydrocannabinol (THC), the component of marijuana responsible for euphoria, intoxication, and addiction.

Marijuana and its related products are widely available in multiple forms, with varying concentrations of constituent chemicals, the most salient of which are known collectively as "cannabinoids". In addition to varying levels of THC, marijuana also contains cannabidiol (CBD). While pure CBD is not intoxicating and does not lead to addiction, its long-term effects are largely unknown. In addition to THC and CBD, the marijuana plant also contains hundreds of other cannabinoid and non-cannabinoid components, many of which have not been studied extensively.

Marijuana has changed over time; the marijuana available today is much more potent than what was available in the past. The THC concentration in commonly cultivated marijuana plants increased three-fold between 1995 and 2014 (4 percent and 12 percent, respectively),<sup>4</sup> and marijuana available in dispensaries in some states has average concentrations of THC between 17.7 percent and 23.2 percent.<sup>5</sup> Concentrated products, commonly known as dabs or waxes, are

widely available to recreational users today and may contain between 23.7 percent and 75.9 percent THC.<sup>6</sup>

The risks of physical dependence, addiction, and other negative consequences increase with frequent use, exposure to high concentrations of THC<sup>7</sup> and with younger age of initiation. Higher doses of THC are more likely to produce anxiety, agitation, paranoia, and psychosis.<sup>8</sup> Use of edible marijuana can increase the risk of unintentional overdose due to its lengthy absorption time and delayed effect, often prompting the user to take a second dose. Edibles, which may have the appearance of desserts or snacks, are also increasingly a cause of accidental ingestion by children<sup>9</sup> and adolescents.<sup>10</sup> In addition, chronic users of marijuana with a high THC content are at risk for developing a condition known as cannabinoid hyperemesis syndrome, which is marked by severe cycles of nausea and vomiting.<sup>11</sup> The increase in the THC content of marijuana, combined with the growing availability of loosely regulated cannabis products, has led to a worrisome upward trend in the rate of calls to poison control centers and emergency department visits over the past decade.

## Surgeon General's Advisory on Marijuana Use and the Developing Brain

On August 29, 2019, the Surgeon General's Advisory on Marijuana Use and the Developing Brain was issued to emphasize the importance of protecting our Nation from the health risks of marijuana use in adolescence and during pregnancy. This advisory is intended to raise awareness of the known and potential harms that the increasing availability of highly-potent marijuana in multiple, concentrated forms poses to the developing brain of youth and young adults who consume it. These harms can be long-lasting and costly to individuals and to our society, impacting mental health and educational achievement and raising the risks of addiction and other psychiatric disorders. In addition to the health risks posed by marijuana use, the sale or possession of marijuana remains illegal under federal law, notwithstanding some state laws to the contrary.

## Marijuana Use during Pregnancy

Pregnant women use marijuana more than any other illicit drug. In a national survey, marijuana use in the past month among pregnant women doubled (3.4 percent to 7 percent) between 2002 and 2017<sup>12</sup>, although this trend may be starting to reverse based on the most recent data reported in the National Survey on Drug Use and Health. In a study conducted in a large health system in California, marijuana use rose by 69 percent (4.2 percent to 7.1 percent) between 2009

and 2016 among pregnant women, with the highest rates of use occurring among pregnant women under the age of 25. These researchers found that 22 percent of pregnant girls under the age of 18 and 19 percent of pregnant women ages 18-24 used marijuana in 2016.<sup>13</sup> Alarming, many retail dispensaries recommended marijuana to pregnant women for morning sickness.<sup>14</sup>

Since the THC in marijuana crosses the placenta, it may disrupt the important role the endocannabinoid system plays in fetal brain development and in maintaining a healthy pregnancy.<sup>2</sup> Moreover, the placenta itself has cannabinoid receptors, which might contribute to restricted fetal growth with cannabis use during pregnancy<sup>34</sup>. Indeed, studies have shown that marijuana use in pregnancy is associated with adverse outcomes, including lower birth weight and 16 and preterm delivery.<sup>35</sup> For example, The Colorado Pregnancy Risk Assessment Monitoring System reported that maternal marijuana use was associated with a 50 percent increased risk of low birth weight regardless of maternal age, race, ethnicity, education, and tobacco use.<sup>16</sup>

The American College of Obstetricians and Gynecologists holds that "[w]omen who are pregnant or contemplating pregnancy should be encouraged to discontinue marijuana use. Women reporting marijuana use should be counseled about concerns regarding potential adverse health consequences of continued use during pregnancy."<sup>17</sup> In a 2018 clinical guidance statement, the American Academy of Pediatrics recommended that health professionals, "...advise all adolescents and young women that if they become pregnant, marijuana should not be used during pregnancy"<sup>18</sup>.

While cannabis use *during* pregnancy is associated with increased risk of adverse birth outcomes, later effects on the child due to exposure to THC through breastmilk are still unclear. This is in part due to challenges disentangling the long-term effects associated with marijuana exposure *in utero* versus during nursing. Although additional research is needed in this area, there is ample reason for caution, as THC has been detected in breastmilk for up to six days after the last recorded use. Additionally, marijuana smoke contains many of the same harmful components as tobacco smoke;<sup>22</sup> no one should smoke marijuana or tobacco around a baby.

## Marijuana Use during Adolescence

Each day in 2018, 3700 adolescents aged 12 to 17 became new users of marijuana.<sup>1</sup> Although marijuana use declined among 8<sup>th</sup> graders and remains unchanged among 10<sup>th</sup> and 12<sup>th</sup> graders compared to five years ago, high school students' perception of the harm from regular marijuana use has been steadily declining over the last decade.<sup>24</sup> In 2018, only about a third (34.9 percent) of adolescents aged 12 to 17 perceived great risk from weekly marijuana use.<sup>1</sup> During this same

period, a number of states legalized adult and/or so-called medicinal use of marijuana, though it remains illegal under federal law. Importantly, medical marijuana laws may allow for use at a younger age than adult recreational laws. The legalization movement may be impacting youth perception of harm from marijuana.

The human brain continues to develop from before birth into the mid-20s and is vulnerable to the effects of addictive substances.<sup>25, 26</sup> Frequent marijuana use during adolescence is associated with structural and functional changes in areas of the brain involved in attention, memory, decision-making, and motivation, and in deficits in attention and memory.<sup>27</sup> Marijuana can also impair learning in adolescents. Chronic use is linked to declines in IQ and school performance, which may jeopardize professional and social achievements, and life satisfaction.<sup>29</sup> Regular use of marijuana in adolescence is linked to increased rates of school absence and drop-out, as well as suicide attempts.<sup>29</sup>

Marijuana use is also linked to both overall risk for and early onset of psychotic disorders, such as schizophrenia. The risk for psychotic disorders increases with frequency of use, potency of the marijuana product, and younger age of initiation.<sup>30</sup> Adolescent marijuana use is also associated with other substance use.<sup>31,32</sup> In 2017, teens 12-17 reporting frequent use of marijuana showed a 130 percent greater likelihood of misusing opioids.<sup>23</sup> 2018 data from 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders show that a third reported lifetime cannabis use and almost a quarter reported lifetime use of concentrated products. Adolescents using concentrates show higher rates of other substance use and risk factors for substance use-related problems.<sup>33</sup> Marijuana's increasingly widespread availability in multiple and highly potent forms, coupled with a false and dangerous perception of safety among youth, merits a nationwide call to action.

## Research Supported by the National Institutes of Health's (NIH) National Institute on Drug Abuse (NIDA)

NIH supports a broad range of research aimed at understanding the public health effects of marijuana use at all stages of life. NIDA's portfolio includes research on the pharmacology of THC and other cannabinoids in the marijuana plant; the molecular mechanisms underlying the effect of marijuana use on the brain, including its development; epidemiologic studies to elucidate the prevalence and patterns of marijuana use; research to understand the brain changes associated with cannabis addiction and other adverse effects such as amotivation, an unwillingness to participate in normal social situations; research on the potentially beneficial effects of marijuana and its constituent compounds; applied research aimed at preventing and treating cannabis

misuse and addiction; as well as research aimed at understanding how marijuana policies affect public health.

There is still much we do not know about the impact of marijuana exposure during the vulnerable periods of adolescence and pregnancy; therefore, these remain key areas of focus for NIDA. Two current studies with great potential to advance knowledge in these areas are the Adolescent Brain Cognitive Development (ABCD) study and the HEALTHy Brain and Child Development (HBCD) study. ABCD, the largest long-term study of brain development and child health in the United States, is expected to yield an unprecedented amount of information about normal brain development and how it is affected by substance use—including use of marijuana—and other childhood experiences. The ABCD study has recruited over 11,000 children ages 9-10 and is following them into early adulthood. By integrating structural and functional brain imaging with genetic and biological markers, along with psychological, behavioral, and other health assessments, ABCD will increase our understanding of the many factors that can enhance or disrupt a young person's life trajectory. Complementing ABCD is the HBCD Study, which is currently in its planning phase. HBCD would establish a large cohort of pregnant women and assess maternal and child outcomes over the course of at least 10 years. In parallel to the ABCD study, findings from this cohort will help researchers understand both normal childhood brain development as well as the long-term impact of prenatal and postnatal drug and environmental exposures.

## Key Messages and Critical Actions

No amount of marijuana use during pregnancy or during youth when the brain is under development is known to be safe. Until and unless more is known about the long-term impact, the safest choice for pregnant women and youth is not to use marijuana. Although women generally tend to limit drug use during pregnancy, education efforts on marijuana's adverse effects during pregnancy should be expanded and improved. Pregnant women and youth--and those who love them--need the facts and resources to support healthy decisions. It is critical to educate women and youth, as well as family members, school officials, state and local leaders, and health professionals, about the risks of marijuana.

Science-based messaging campaigns and targeted prevention programming are urgently needed to ensure that risks are clearly communicated and amplified by local, state, and national organizations. Clinicians can help by asking about marijuana use, and by informing pregnant women, new mothers, young people, and those vulnerable to psychotic disorders of the risks associated with marijuana use. Clinicians can also prescribe safe, effective, and FDA-approved treatments for nausea, depression, and pain during pregnancy.



What we know now about the impact of marijuana exposure during adolescence, as well as during prenatal development is enough to warrant concern and action. Still, further research is needed to understand the full effects of marijuana exposure on biological, cognitive, and social development, especially the mid- and long-term consequences of prenatal and youth exposures. The wide and ever-increasing array of cannabis products used both recreationally and for therapeutic purposes also raise significant public health concerns, particularly when used by young people and pregnant women. Additional research aimed at evaluating the health effects of these products is critical.

Thank you for the opportunity to share this summary of the current trends in marijuana use among youth and pregnant women; the state of the evidence regarding the harms to developing brains; and the steps we can take together to understand more about and to mitigate those harms in order to protect our youth, the future of our nation. I am happy to answer any questions you may have.


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## Related Articles

 Testimony

### Hearing on Cannabis Policies for the New Decade



 Testimony

### Federal Efforts to Combat the Opioid Crisis: A Status Update on CARA and Other Initiatives

## Cannabis and Canada's children and youth

### Principal author(s)

Christina N Grant, Richard E Bélanger; Canadian Paediatric Society, Adolescent Health Committee

Paediatr Child Health 2017;22(2):98-102

### Abstract

Cannabis is the most common illicit drug used worldwide and it is used frequently by Canadian teenagers. Cannabis use during adolescence can cause functional and structural changes to the developing brain, leading to damage. Marijuana use in this age group is strongly linked to: cannabis dependence and other substance use disorders; the initiation and maintenance of tobacco smoking; an increased presence of mental illness, including depression, anxiety and psychosis; impaired neurological development and cognitive decline; and diminished school performance and lifetime achievement. Rates of acute medical care and hospitalization for younger children who have ingested cannabis unintentionally are increasing. Ongoing debate concerning cannabis regulation in Canada makes paying close attention to the evidence for its health effects and ensuring that appropriate safeguards are in place, vital public health priorities.

*Keywords: Adolescents, CUD, CWS, Neurodevelopment, THC, Youth*

Cannabis refers to various psychoactive preparations of the plant *Cannabis sativa*, including marijuana (the dried and crushed leaves and flower buds), hashish (the resin of flower buds) and cannabis extracts (i.e., oils or wax). Common terms for marijuana include 'pot', 'grass' and 'weed'. Cannabis can be inhaled (as smoke or vapour) or ingested, depending on its form. When smoked, joints (cannabis cigarettes), blunts (cannabis cigars) and pipes (from personal devices to large, shared bongos) are commonly employed. A growing trend in e-cigarette use by youth has led to the more recent practice of 'vaping' cannabis [1]. 'Edibles' or marijuana-infused food products in various formats, including cookies and candies, may attract teens who wish to avoid smoking [2].

Although some study participants claim that recreational cannabis use has positive effects [3], most of the scientific literature has focused on its deleterious outcomes. In light of the current public debate on the decriminalization and legalization of cannabis in Canada, paediatricians and other health care providers need to be aware of the physical and mental health issues that are specific to cannabis use by youth as well as the risks to younger children of unintentional exposure. Cannabis use for medical purposes has been addressed in a recent position statement from the Canadian Paediatric Society [4].

### INCIDENCE AND PREVALENCE

Cannabis is the world's most widely used illicit drug. In 2010, Canadian youth ranked first for cannabis use among 43 countries and regions across Europe and North America, with one-third of youth (regardless of gender) having tried cannabis at least once by age 15 [5]. Regional variations in the frequency of cannabis use exist, with Atlantic and Western provinces in Canada reporting higher use than other regions [6]. Indigenous youth are particularly at risk; nearly two-thirds of 15- to 19-year-old Inuit participants from an earlier study in Nunavik, Quebec, self-reported past-year use [7]. In Ontario, 13.8% of 7th to 12th graders reported past-month use for 2015, while 12th graders reported the highest daily use, at 5.6% [8]. Frequency of use increases as students progress through high school, yet global use among Canadian youth has declined since the turn of the century.

A concerning inverse relationship exists such that as the perceived harm related to cannabis use decreases, the frequency of cannabis use increases [8]. The effect of legalizing cannabis on rates of use in adolescents in some parts of the USA is under preliminary study. Although early reports from Colorado and Washington do not appear to indicate a significant increasing prevalence among adolescents [9][10], Colorado has recently reported one of the highest state prevalences for cannabis use in adolescents, while other states experienced a decline in use during the same period. Colorado has also reported increasing rates of use as students progress through high school [10], while perceptions of risk declined among youth in both states [9][10].

Scientific research over the last 15 years has established that the human brain continues to develop into a person's early 20s. Concern is rising that exposure to cannabis during this important developmental period causes greater adverse effects in adolescents compared with older adults, whose brains are fully developed [11][12]. One of the main chemicals responsible for the perceptual and emotional changes associated with cannabis is delta-9-tetrahydrocannabinol (delta-9-THC), which stimulates the cannabinoid receptors. These receptors modulate the secretion of gamma-aminobutyric acid and glutamate within the central nervous system, two neurotransmitters that have significant neurodevelopmental effects on the brain [13]. The frontal cortex, responsible for higher order cognitive processes such as judgment and decision making, is undergoing rapid change and, as such, is more susceptible to THC [14]–[16]. The endocannabinoid system, which is involved in the maturation of cortical neuronal networks through the modulation of dopamine, is affected concurrently. When exogenous THC enters the system, it targets receptors in much higher quantities than endogenous cannabinoids and 'floods' receptors, with two main results: a system that is no longer working as effectively and toxic changes to the neurons involved [17].

Structural changes on MRI have also been documented in youth who use cannabis regularly. They show lower brain volumes, different folding patterns and thinning of the cortex, less neural connectivity and lower white matter integrity, all of which indicate damage by THC [18]. Finally, functional MRI studies in adolescents who use cannabis regularly have demonstrated increased neural activity, which means the brain is working harder to perform tasks. In other words, the brain must overcome or compensate for altered integrity caused by the effects of cannabis use [19]. Importantly, the THC content of marijuana available today is two to four times higher than from typical products used 40 years ago [20], a factor likely to magnify impact on the adolescent brain.

## INTOXICATION

The experience of being 'high' described by users encompasses a wide range of sensations, with euphoria, distorted perception and relaxation being the most common. Some users experience extreme anxiety and 'panic attack'-like symptoms [21]. Documented areas of impairment include short-term memory, performance of complex mental tasks, attention and judgment. Reaction times and motor skills are also compromised [22]. Many occasional users of cannabis only experience the intended effects of a high, but risks for an adverse experience still exist, especially for regular users.

Cannabis-impaired driving is now more prevalent among adolescents than alcohol-impaired driving [8]. In 2015, 9.8% of Ontario students in grades 10 to 12 with a driver's licence admitted to having driven after using cannabis at least once during the previous year [8]. One meta-analysis revealed that cannabis use more than doubled the risk of being in a motor vehicle accident [23]. Simulation studies have identified the deficits associated with driving under the influence of cannabis, with a lowered ability to stay within a lane being the driving skill most affected [24][25]. According to a recent survey, only 48% of Canadian teens 16 to 19 years of age recognized the danger of driving under the influence of cannabis, compared with 79% who recognized the risk of driving under the influence of alcohol [26]. In fact, both cannabis and alcohol impair driving significantly, and it is likely that the effects are cumulative [26]. However, while blood ethanol levels are readily measurable and can establish recent use, reliable laboratory markers of acute cannabis use are still under investigation. Persistence of metabolites in urine for as long as 77 days after cessation of cannabis use has been described [27].

Furthermore, consuming cannabis-infused edibles may inadvertently result in toxicity because absorption can take hours, compared with minutes when smoking [2]. An individual who does not yet feel an effect may over-consume, and the unintended consumption of edibles manufactured to look like sweets by younger children is particularly concerning. In Colorado, rates of unintentional ingestion in children <9 years of age increased by 34% after legalization [28]. Thirty-five per cent of these cases required hospitalization for overdose symptoms, including severe drowsiness and respiratory depression [28].

## CANNABIS USE DISORDER (CUD) AND CANNABIS WITHDRAWAL SYNDROME (CWS)

It is estimated that one in six adolescents who use cannabis during their adolescence will meet criteria for dependence [29][30]. CUD, a new DSM-5 diagnosis, integrates cannabis abuse and dependence into a single entity [31]. CUD is defined as a problematic pattern of cannabis use leading to clinically significant impairment in areas of function or distress within a 12-month period [31]. Usually, adolescents experience the following functional impairments: reduced academic performance, truancy, reduced participation and interest in extracurricular activities, withdrawal from their usual peer groups and conflict with family. The 12-month prevalence of CUD among North American adolescents is just above 3%, with males and older youth being disproportionately affected [29].

CWS appears for the first time as a psychiatric diagnosis in the DSM-5 [31]. CWS is defined by experiencing at least two of five psychological symptoms—irritability, anxiety, depressed mood, sleep disturbance, appetite changes—and at least one of six physical symptoms—abdominal pain, shaking, fever, chills, headache, diaphoresis—after cessation of heavy cannabis use. Heavy cannabis use is defined as daily or near daily use for at least a few months. Withdrawal symptoms commonly occur 24 h to 72 h after last use [32] and persist for 1 to 2 weeks. Sleep disturbance is often reported for up to 1 month. CWS may impede cannabis cessation and precipitate relapse [32].

## CANNABIS USE RELATED TO TOBACCO AND OTHER SUBSTANCES

with cannabis use [33]. The use of marijuana and cigarettes at age 18 is predictive of heavy drinking at age 35 [34]. Eighty per cent of young cannabis users also smoke tobacco [35][36], indicating a strong link between these two drugs. Cannabis use is also linked to tobacco via 'mulling': the addition of tobacco to cannabis cigarettes [37]. Mixing the two substances aids combustion and constitutes a significant exposure to nicotine [38]. Using both tobacco and cannabis concomitantly contributes significantly to symptoms of cannabis dependence because withdrawal symptoms following the simultaneous cessation from two substances are more severe than from one alone [39].

Regarding other drugs, one prospective, longitudinal study demonstrated that cannabis use during adolescence is associated with a sixfold increase in future ecstasy consumption [40]. A study from France of adults and adolescents reported past-year use of illicit drugs at 0.4% among cannabis nonusers, compared with 25% among regular cannabis users [41]. A recent trend has been the consumption of synthetic cannabinoids, known colloquially as 'K2' or 'spice', which can be one hundred times more potent than THC [42] and have greater potential for toxic effects, including acute renal failure and death [43].

## CANNABIS, DEPRESSION AND ANXIETY

Research suggests a strong association between daily cannabis use and depression in adolescents and young adults. However, a causal relationship has not been established. Epidemiological studies suggest that heavy cannabis use is associated with an increase in mood disorders, especially in individuals who may already be vulnerable to major depressive episodes [44][45]. One study demonstrated a threefold higher risk for major depressive episode [46]. Recent data suggest that cannabis use starting in adolescence and continuing into young adulthood is required for the association of cannabis with depression [47], and the data confirming a specific association between cannabis use and anxiety disorders is weaker. However, one large cohort study found an association between frequent cannabis use and the incidence of anxiety symptoms in young adulthood [48]. It also appears that social anxiety disorder and post-traumatic stress disorder are risk factors for developing problematic patterns of cannabis use [48][49].

## PSYCHOTIC DISORDERS AND SCHIZOPHRENIA

Cannabis can produce an acute/transient psychosis in adolescents, even without a history of prior mental illness. Diverse psychotic symptoms have been reported, such as depersonalization, de-realization, dream-like euphoria, disorientation, delusions, hallucinations and paranoid ideation [50]. The strongest evidence of a direct effect of cannabis on perception and cognitive function comes from research involving healthy volunteers, who developed transient symptoms resembling schizophrenia after intravenous THC was administered [51]. In some adolescents, acute/transient psychotic symptoms persisted for days, prompting consultation for medical or psychiatric evaluation. Large longitudinal studies have demonstrated that more than 50% of youth who develop such symptoms will develop a future psychotic disorder [52].

Although the absolute risk for developing psychosis is low, the risk for developing a psychotic outcome of any nature is increased by 40% in individuals who have used cannabis during their lifetime [53]. A strong association between heavy cannabis use and psychosis has been documented repeatedly in the literature. The association appears to be temporally related, demonstrates a dose-response relationship and is biologically plausible [54]. One meta-analysis provided evidence of a relationship between cannabis use and onset of psychotic illness, thus supporting the hypothesis that cannabis use plays a causal role in the development of psychosis in some individuals, especially those who have a family or personal history of psychosis [55].

Overall, individuals with a psychotic disorder show higher rates of cannabis use than those experiencing other mental disorders, with the exception of substance use disorder. More specifically, schizophrenia usually emerges toward the end of adolescence or in early adulthood, and accumulating evidence points to a causal relationship with heavy cannabis use. The prevalence of schizophrenia is about 1% in the adult population, and the risk of developing this illness is doubled in heavy cannabis users [55]. Recent data indicate that using high-potency cannabis represents an even greater risk [56].

## SCHOOL PERFORMANCE, COGNITIVE DECLINE AND LIFETIME ACHIEVEMENT

The relationship between cannabis use and academic performance is complex. While direct causation between use and level of performance is uncertain, there are undeniable associations between cannabis use in youth and lower educational attainment [57]. This relationship could be due to the fact that students who do not do well in school are more likely to use cannabis. Alternatively, cannabis use and substandard educational attainment may have common risk factors [57]. However, the observation that cognitive function, particularly working memory, is impaired both acutely and in the days following cannabis use suggests a direct link between cannabis use and reduced educational achievement [58]. Short-term impairment in cognitive performance can lead students to fall behind, thus placing them at a disadvantage for future learning. Also, individuals who begin using cannabis in early adolescence or who chronically use cannabis are at risk for long-lasting cognitive impairments [59]. Specifically, deficits in decision-making skills, concept formation and planning have been reported, and studies suggest that cannabis users are less likely to complete high school [57].

Scientific research is equivocal regarding the association between IQ and cannabis. Two recent longitudinal studies involving sets of twins indicated that the IQ scores of cannabis users declined significantly over time though not significantly more than in their non-cannabis-using twin [60]. One large cohort study had previously found that IQ scores declined significantly among heavy cannabis users who were followed prospectively from adolescence to

was sustained throughout follow-up, IQ scores dropped an average of 10 points. Also, when persistent users started heavy cannabis use during adolescence, their cognitive decline was greater than in individuals who started using after 18 years of age.

All the factors described above may contribute to higher unemployment levels, involvement in criminal activity, greater social assistance requirements as well as compound the lower levels of life satisfaction reported by heavy cannabis users [62]. While there are probably multiple explanations for the association between cannabis use and lower lifetime achievement, regular use can act as both cause and consequence. The point to bear in mind is that cognitive impairments have been linked to cannabis and some of these effects have a greater impact when cannabis is used in adolescence [63]. Among all trajectories of cannabis use, nonusers consistently have the most favourable socioeconomic and health outcomes at age 29, whereas early heavy users have the least [13].

## CONCLUSION

Youth should not use cannabis recreationally because its many potentially harmful effects are serious. These effects are present in the entire population; however, the developing brain is especially sensitive to the negative consequences of cannabis use. Canadian youth are at significant risk for developing CUD and, possibly, for doubling their risk of having a psychotic illness. Driving under the influence of cannabis increases the risk for motor vehicle accidents. Where cannabis has been legalized in the USA, children are requiring emergent medical care at greater rates due to unintentional ingestion.

The potential extension of the legal cannabis industry in Canada has raised a dilemma regarding the most appropriate age for its legal use, which should minimize harm to children and youth, the population most vulnerable to the product. On the one hand, prohibiting cannabis use until the mid-20s would protect adolescents during a period of critical brain development. On the other, adolescents and young adults are already experimenting frequently with marijuana. Aligning the legal age for cannabis use with that for other legally controlled substances, notably alcohol and tobacco, would help ensure that youth who have attained age of majority have access to a regulated product, with a known potency. Also, they would be less liable to engage in high-risk illegal activities to access cannabis.

Cannabis legislation will have a significant impact on the lives and health of children and youth, and safeguards are necessary. Based on the physical and mental health risks, and with many legal, financial and public safety issues at stake, policy makers—with support from physicians and the public at large—must continue to limit access to cannabis.

## RECOMMENDATIONS

To protect children and adolescents from the harms associated with recreational cannabis use and cannabis dependence, the Canadian Paediatric Society recommends the following:

### **Governments should:**

- Prohibit sales of all cannabis products to children and youth under the legal age for buying tobacco products and alcohol (18 or 19 years, depending on location).
- Consider limiting the concentration of THC in cannabis that 18- to 25-year-olds can purchase legally.
- Enact and rigorously enforce regulations on the cannabis industry to limit the availability and marketing of cannabis to minors. These regulations must:
  - prohibit dispensaries from being located close to elementary, middle and high schools, licensed child care centres, community centres, residential neighbourhoods and youth facilities.
  - prohibit the sale of cannabis products by means of self-service displays or dispensing devices.
  - mandate strict labelling standards for all cannabis products, including a complete and accurate list of ingredients and an exact measure of cannabis concentration.
  - mandate package warnings for all cannabis products, including known and potential harmful effects of exposure (e.g., to young children and the fetus during pregnancy), similar to messaging on cigarette packaging.
  - mandate and enforce strict marketing and promotional standards, including a ban on all cannabis industry-related advertising and on the sponsorship of events, activities or permanent facilities by the cannabis industry.
  - mandate and enforce a ban on the marketing of cannabis-related products using strategies or venues that attract children and youth, including (but not limited to) 'candy-like' edibles, 'giveaways' and promotion through social media.
  - restrict the online sales of all cannabis and related products only to individuals identified as being older than the legal drinking age in the province or territory where they reside.
- Extend and align existing anti-tobacco legislation at all government levels to include cannabis (i.e., prohibiting smoking in public venues, smoking in cars where a child is present).
- Fund public education campaigns to reinforce that cannabis is not safe for children and youth by raising awareness of the harms associated with cannabis use and dependence. These campaigns should be developed in collaboration with youth leaders and should include messages from young

youth who are found to be under the influence.

- Increase funding for the research, prevention and treatment of substance use in adolescents and young adults.
- Increase funding for mental health promotion and for treating mental illness in this age group.
- Consult with Indigenous communities on adapting legislation, preventative measures and/or interventions to meet local conditions and cultural requirements.
- Actively monitor the impacts on youth of changes to cannabis legislation.

#### Health care providers should:

- Be aware of and communicate the health risks related to cannabis use.
- Screen all children and youth for cannabis exposure and/or use and educate adolescents and families on the health risks and harms associated with cannabis.
- Provide anticipatory guidance to parents and older children on the potential health risks of cannabis use.

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**Disclaimer:** The recommendations in this position statement do not indicate an exclusive course of treatment or procedure to be followed. Variations, taking into account individual circumstances, may be appropriate. Internet addresses are current at time of publication.

Last updated: Jul 17, 2018

# Let's Be Clear Georgia

## A Collaborative to Prevent Marijuana Abuse

Let's Be Clear Georgia is a partnership of private and public agencies, employers, and individuals engaging in best practices and policies to prevent marijuana abuse in our state.

### HOW AND WHY THE MARIJUANA INDUSTRY TARGETS YOUTH



#### THE MARIJUANA INDUSTRY LEARNED FROM BIG TOBACCO

It's important to know as much as possible about "Big Tobacco" and teenage smoking patterns and attitudes in order to understand why the marijuana industry, like the tobacco industry, also targets youth.

According to Phillip Morris, "Today's teenager is tomorrow's potential regular customer, and the overwhelming majority of smokers first begin to smoke while in their teens . . . it is during the teenage years that the initial brand choice is made."<sup>1</sup>

Legalized marijuana means bringing in a second "Big Tobacco" that is psychoactive. The emerging marijuana industry will target the same populations, such as youth and minorities, that are targeted by the tobacco and alcohol industries. There are already private holding groups and financiers that have raised millions of start-up dollars to promote businesses that will sell marijuana and marijuana-related merchandise.

#### HOW THEY TARGET YOUTH

Cannabis food, drinks and candy are being marketed to children and are already responsible for a growing number of marijuana-related emergency room visits.<sup>2</sup> Numerous products such as "Ring Pots" and "Pot Tarts" are inspired by youth-friendly products such as "Ring Pops" and "Pop Tarts". Marijuana vending machines containing products such as marijuana brownies and candies are emerging throughout the country.<sup>3</sup> Manufacturers are adding marijuana to everything from cookies to chocolate bars, sodas and candies, with THC strength and serving size vary widely.

With the emergence of electronic cigarettes (e-cigarettes), teens and adults are using these devices to "vape" (inhaling vapor rather than smoke) cannabis products. According to a report released by the U.S. Centers for Disease Control and Prevention (CDC), the number of youth who tried electronic cigarettes tripled between

2011 and 2013. CDC also reports the majority of teens who use e-cigarettes has never tried regular tobacco, which is surprising considering the device is touted as a way to replace normal cigarettes.<sup>4</sup> E-cigarette ads target youth by trying to make vaping the cool new trend and selling colorful devices sold with flavored liquids such as bubble gum and cotton candy that attract young people. A number of these vaporizers look like pens so students won't be caught vaping in school.

#### **KNOW THE "BIG MARIJUANA" PLAN OF ACTION**

- 1) Remove the perception of harm — decriminalize an ounce.
- 2) Give marijuana a good name — marijuana as medicine.
- 3) Legalize 5

#### **WHAT GEORGIANS SHOULD KNOW:**

- 1) The former Corporate Strategy Manager for Microsoft has said that he wants to "mint more millionaires than Microsoft" with marijuana and that he wants to create the "Starbucks of marijuana."<sup>6</sup>
- 2) In other states such as Colorado, emergency rooms are treating one to two kids a month for accidental marijuana ingestion, mostly in the form of edibles such as brownies or candies.<sup>7</sup>
- 3) Marijuana edibles are currently not state-tested for strength and the effects can vary widely from product to product.
- 4) The 2014 Monitoring the Future survey also revealed that in states with medical marijuana laws, 40 percent of 12th graders who reported using marijuana in the past year said they had consumed marijuana in food products (edibles).<sup>8</sup>

#### **TO LEARN MORE VISIT:**

<http://clearga.org/how-and-why-the-marijuana-industry-targets-youth>

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[www.ClearGA.org](http://www.ClearGA.org)

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For information please email [support@clearga.org](mailto:support@clearga.org) or call (678) 506-1572

July 10, 2020

Trinity County Planning Commission  
C/O Kim Hunter, Director  
Trinity County Planning Department  
P.O. Box 2819/ 61 Airport Road  
Weaverville, CA 96093

Re: Proposed Cannabis Storefront Retail Sales Ordinance

Dear Planning Commisioners:

Retail cannabis sales should not be next to residential neighborhoods.

The 500 foot setback from churches and schools should be increased to 1,000 foot and should also include school bus stops.

The opt-out clause should be written so that the voters in Douglas City, Lewiston, or other areas in the county can vote to opt out of the cannabis ordinance.

A Conditional Use Permit (C.U.P.) should be required so that a traffic study, environmental impact, security issues, lighting, air pollution, restrooms, water, sewer, fire protection and neighborhood input can be evaluated in the C.U.P. process.

Crime comes with cannabis sales. Residents have to deal with the crime that cannabis brings. We have enough crime already. Please keep it out of Douglas City.

We must not forget the things that attract residents and tourists to Trinity County are the natural beauty of lakes, streams, blue skies and resultant fishing, boating, swimming etc.

Respectfully,

Mr. and Mrs. D. Dickerson  
Douglas City, CA

RECEIVED  
JUL 17 2020  
TRINITY COUNTY  
PLANNING DEPARTMENT