

Public Health Concerns Regarding Buffering Distance less than 1,000 Feet Between Marijuana Dispensary and School, Child-Care Facility, and Pediatric Clinic in Warrensburg, MO:

1. **Safety Risk to Children:** Permitting a marijuana dispensary next to Building Blocks Pediatric Clinic, Learning Garden Child Development Center, and Sterling Elementary School is a health concern.
 - a. Secondhand smoke, vapor inhalation, advertisement, and high-risk behavior groups are negative influences and deter academic progress. Children will involuntarily pass the dispensary on their way to school and home. ***This poses a risk for drug abuse.***
 - b. According to the American Academy of Child and Adolescent Psychiatry, “Teenage marijuana use is at its highest level in 30 years, and today's teens are more likely to use marijuana than tobacco”....”Today's marijuana plants are grown differently than in the past and can **contain two to three times more tetrahydrocannabinol (THC), the ingredient that makes people high. The ingredient of the marijuana plant thought to have most medical benefits, cannabidiol (CBD), has not increased and remains at about 1%.**
 - i. Different forms: smoking buds, flowers, joint, liquid/wax marijuana vapor), baked food, drinks, and skin oils.²
 - ii. Persistent use starting in adolescence linked to **IQ score reduction** of 6-8 points by mid-adulthood.⁵
 - c. **According to Cochrane Library, an evidence-based medical meta-analysis database, social influence plays a bigger part in drug use than school prevention programs.** “School programs based on a combination of social competence and social influence approaches showed, on average, small but consistent protective effects in preventing drug use, even if some outcomes did not show statistical significance. Some programs based on the social competence approach also showed protective effects for some outcomes. Since the effects of school-based programs are small, they should form part of more comprehensive strategies for drug use prevention in order to achieve a population-level impact.”¹
 - d. The National Institute of Health reports, “Rats exposed to THC before birth, soon after birth, or during adolescence show **notable problems with specific learning and memory tasks** later in life”. **Cognitive impairments** in adult rats exposed to THC during adolescence are associated with **structural and functional changes** in the hippocampus. Studies in rats also show that adolescent exposure to THC is associated with an **altered reward system**, increasing the likelihood that an animal will **self-administer other drugs** (e.g., heroin) when given an opportunity”.⁵
2. **Limited research on long-term effects:**
 - a. **Marijuana use disorder:** The National Institute on Drug Abuse reports, “Marijuana use can lead to the development of problem use, known as a marijuana use disorder, which takes the form of **addiction in severe cases**. Recent data suggest that **30 percent** of those who use marijuana may have some degree of marijuana use disorder. People who begin using marijuana before the age of 18 are four to seven times more likely to develop a marijuana use disorder than adults”.⁴
 - i. 2015: 4.0 million people in the United States diagnosed with marijuana use disorder. 138,000 voluntarily sought treatment for their marijuana use.⁴
 - ii. 9% of Marijuana users become dependent, and 17% if started using as a teenager.⁴

- b. **Adverse effects:** dependence, withdrawal, fertility problems, increased STD rates from unsafe sex, premature birth, newborn withdrawal, transmission through breastmilk, depression, anxiety, sleep difficulty, blood pressure and heart rate fluctuations, impaired driving, impaired judgement, and lowered immune system.^{3,4}
 - i. Withdraw symptoms “peak within the first week after quitting and last up to 2 weeks”.⁴
 - ii. “If marijuana is smoked, carbon monoxide from the smoke pushes oxygen out of the mother’s blood. So the unborn baby gets less oxygen”.³
 - 1. “Exposure during development can cause long-term or possibly permanent adverse changes in the brain”.⁵

Marijuana Dependence	Marijuana Addiction
“The brain adapts to large amounts of the drug by reducing production of and sensitivity to its own endocannabinoid neurotransmitters”. ⁴	“The person cannot stop using the drug even though it interferes with many aspects of his or her life”. ⁴

- c. **Longterm Disability**
 - i. “Among nearly 4,000 young adults in the Coronary Artery Risk Development in Young Adults study tracked over a 25-year period until mid-adulthood, cumulative lifetime exposure to marijuana was associated with lower scores on a test of verbal memory.”⁵
 - ii. “Chronic THC exposure may hasten age-related loss of hippocampal neurons.” Area of the brain responsible for memory formation.⁵
- d. **Gateway Drug** – “Some research suggests that marijuana use is likely to precede use of other licit and illicit substances and the development of addiction to other substances.⁶
 - i. Alcohol and nicotine abuse.⁶
 - ii. Cross-sensitization to additional THC and other drugs such as morphine.⁶

“Marijuana potency, as detected in confiscated samples, has **steadily increased** over the past few decades. In the early 1990s, the average THC content in confiscated marijuana samples was roughly 3.8 percent. In 2014, it was 12.2 percent. **The average marijuana extract contains more than 50 percent THC**, with some samples exceeding 80 percent. These trends raise concerns that the consequences of marijuana use could be worse than in the past, particularly among those who are new to marijuana use or in young people, whose brains are still developing. **Researchers do not yet know** the full extent of the **consequences** when the body and brain (**especially the developing brain**) are exposed to high concentrations of THC or whether the recent increases in emergency department visits by people testing positive for marijuana are related to rising potency. The extent to which people adjust for increased potency by using less or by smoking it differently is also unknown. Recent studies suggest that experienced people may adjust the amount they smoke and how much they inhale based on the believed strength of the marijuana they are using, but they are not able to fully compensate for variations in potency”.⁴

- 3. **Ongoing Research** – “Over the next decade, the National Institutes of Health is funding the Adolescent Brain Cognitive Development (ABCD) study—a major longitudinal study that will track a large sample of young Americans from late childhood (before first use of drugs) to early adulthood. The study will

use neuroimaging and other advanced tools to **clarify precisely how and to what extent marijuana and other substances, alone and in combination, affect adolescent brain development.**

Conclusion: Permitting a marijuana dispensary within 1,000 feet of a school or childcare facility compromises child health and welfare, and increases community high-risk behavior.

References

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