



Protecting Adolescent Brains in the Era of Commercialized Cannabis

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In the popular narrative, Cannabidiol (CBD) is portrayed as a natural, non-intoxicating cure-all for modern anxieties. It is infused into gummy candies, vapes, skincare serums, and seltzers, pitched as a calming remedy with none of the stigma of marijuana. However, this "wellness" narrative masks a significant public health risk.

This so-called green rush has made CBD a ubiquitous presence. From high-end beauty counters displaying infused serums to local gas stations selling "calming" gummies at the register, the substance is everywhere. Influencers and lifestyle brands amplify this message, explicitly marketing these products as essential tools for managing the very struggles that define modern adolescence: academic pressure, social anxiety, and sleep deprivation. This creates a powerful 'halo of health' around a substance that, in reality, lacks the safety data to support such broad claims.

A Regulatory Wild West Targeting Youth

Following the 2018 Farm Bill, which legalized hemp but failed to establish a safety framework, the market has operated like a gold rush where consumer safety is an afterthought. While the U.S. Food and Drug Administration has approved one CBD medication (Epidiolex) for severe epilepsy with **strict warnings** regarding liver damage and suicidal ideation, consumer CBD products flood the market with no such warnings, no mandatory testing, and no oversight.

Into this regulatory void walks an entire generation of young people. An **estimated 999,000 U.S. adolescents reported vaping CBD in 2023**, a figure that is rising significantly. These adolescents are the subjects of a massive, uncontrolled experiment, consuming products that are often mislabeled, untested for contaminants, and marketed specifically to appeal to them through candy-like formats.

How CBD Disrupts the Developing Brain

The comforting story that CBD offers harmless botanical relief is dangerously out of step with neuroscience. The adolescent brain is not a finished product; it is a "city under construction." During these years, the brain is furiously wiring and rewiring itself, building new neural circuits while pruning others, to refine the social behavior and emotional control required for adulthood.

Research conducted at **the Sall Lab** at the University of California San Francisco sought to understand what happens when CBD is introduced into this critical construction zone. Using rodent models to simulate human adolescent exposure, we found that CBD exposure leaves enduring scars:

Social Impairment: As CBD-exposed subjects matured, they became markedly less interested in peers and less responsive to social cues compared to unexposed groups.

Structural Changes: Under the microscope, brain cells in exposed subjects showed fewer branches and less complex connections. This suggests an impaired capacity to form the intricate circuits necessary for sophisticated cognition and interaction.

These findings align with the [American Academy of Pediatrics'](#) stance: "natural" does not mean safe. CBD appears to disrupt the very neural wiring of social interaction, potentially hindering the brain's ability to build resilience and regulate emotions in the long run.

Policy Recommendations

To protect the next generation, regulators and policymakers must move beyond the current hands-off approach. We recommend three immediate actions:

Mandate Rigorous Testing and Labeling. The FDA must regulate CBD products with the same rigor applied to other consumables.

- **Require Testing:** Every product must be tested for actual CBD content and contaminants such as pesticides, heavy metals, and synthetic cannabinoids.
- **Clear Warnings:** Labels must clearly state that the product is not safe for individuals under 21 and carries risks for brain development.

Ban Youth-Targeted Marketing and Products. The days of CBD gummies that look and taste like children's candy must end.

- **Apply Tobacco/Alcohol Standards:** Prohibit cartoons, candy imagery, and marketing on platforms popular with minors.
- **Eliminate "Kid-Friendly" Formats:** Ban the sale of CBD in forms indistinguishable from candy such as gummy bears and lollipops.

Enforce Strict Age Verification. Current online age gates that use simple checkboxes are ineffective.

- **Mandatory ID Checks:** Enforce strict age verification for both in-person and online sales, with significant penalties for non-compliance.
- **Close Loopholes:** Ensure that hemp-derived intoxicants fall under the same age restrictions as cannabis.

Fund Science-Based Public Education. Counteract the industry's "wellness" marketing with facts.

- **Empower Families:** Launch public health campaigns in partnership with schools and pediatricians to explain the difference between FDA-approved medicine and unregulated over-the-counter snacks.
- **Clarify Risks:** Explicitly communicate that adolescent CBD use is linked to long-term changes in brain structure.

In summary, the gap between the commercial promise of CBD and the neurological reality constitutes a public health emergency. We are allowing a psychoactive substance to be marketed as a wellness aid to developing
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brains, resulting in measurable social and structural impairment. By implementing rigorous testing, banning youth-targeted marketing, and enforcing strict age verification, we can close this regulatory chapter and protect the cognitive future of the next generation.