



Drug Free Australia series –
Media suppression of alarming cannabis harms


Episode 4 – Cannabidiol (CBD), cancers & birth defects

Cannabidiol (CBD)

- The wonder drug touted to cure most everything

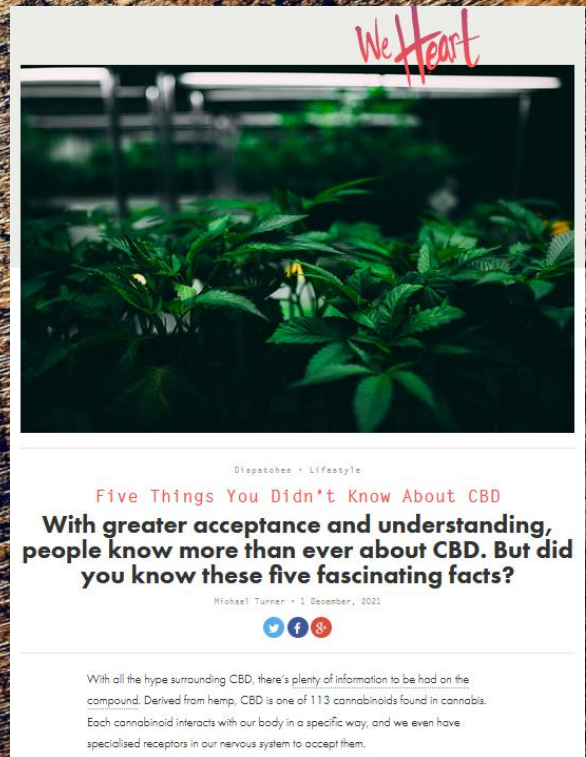
“Whatever you might know about CBD, there’s a good chance you don’t know these five facts. Keep reading to learn what they are, they might just surprise you.

“1. **It’s One Of The Fastest-Growing Industries In History:** You can buy pharmaceutical grade CBD oil in stores and at several online providers all over the country. This massive spread of CBD products is due to the incredible demand for CBD and CBD-based products; **causing the industry to become one of the fastest-growing in history.”**

 <https://www.we-heart.com> › 2020 › 04 › 13 › five-things-you-didnt-know-about-cbd

Five Things You Didn't Know About CBD, **The Wonder Drug** We Heart

There's a **CBD-Based Drug** Available for Seizures: Believe it or not, the FDA itself has recognised and performed research on the effectiveness of **CBD** in treating certain conditions, and recently approved a **drug** called Epidiolex, which is formulated from **CBD**.



<https://www.we-heart.com/2020/04/13/five-things-you-didnt-know-about-cbd/>



US population

- Results for cancer types

- cigarettes 14
- alcohol use disorder 9

- Cannabis constituents (cannabinoids)

- THC 9
- Cannabidiol (CBD) 12
- Cannabichromene 6
- Cannabinol 9
- Cannabigerol 7

- Cannabis causal in 27 cancers in all in the US data

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Geotemporospatial and causal inferential epidemiological overview and survey of USA cannabis, cannabidiol and cannabinoid genotoxicity expressed in cancer incidence 2003–2017: part 1 – continuous bivariate analysis

[Albert Stuart Reece](#) & [Gary Kenneth Hulse](#)

[Archives of Public Health](#) 80, Article number: 99 (2022) | [Cite this article](#)

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[Research](#) to this article was published on 30 March 2022

[Research](#) to this article was published on 30 March 2022

Abstract

Background

The genotoxic and cancerogenic impacts of population-wide cannabinoid exposure remains an open but highly salient question. The present report examines these issues from a continuous bivariate perspective with subsequent reports continuing categorical and detailed analyses.

Methods

Age-standardized state census incidence of 28 cancer types (including "All (non-skin) Cancer") was sourced using SEER*Stat software from Centres for Disease Control and National Cancer Institute across US states 2001–2017. It was joined with drug exposure data from the nationally representative National Survey of Drug Use and Health conducted annually by the Substance Abuse and Mental Health Services Administration 2003–2017, response rate 74.1%. Cannabinoid data was from Federal seizure data. Income and ethnicity data sourced from the US Census Bureau. Data was processed in R.

<https://archpublichealth.biomedcentral.com/articles/10.1186/s13690-022-00811-8>



US population

• Results for birth defects

- tobacco 11
- alcohol 5

• Cannabis constituents (cannabinoids)

- THC 40
- Cannabidiol (CBD) 8

• Cannabis causal in 45 of 62 birth defects in all in the US data



Reece and Hulse *BMC Pediatrics* (2021) 21:47
https://doi.org/10.1186/s12887-021-02996-3

BMC Pediatrics

RESEARCH Open Access

Geotemporospatial and causal inference epidemiological analysis of US survey and overview of cannabis, cannabidiol and cannabinoid genotoxicity in relation to congenital anomalies 2001–2015

Albert Stuart Reece^{1,2*} and Gary Kenneth Hulse^{1,2}

Abstract
Background: Cannabinoids including cannabidiol have recognized genotoxic activities but their significance has not been studied broadly epidemiologically across the teratological spectrum. We examined these issues including contextual space-time relationships and formal causal inferential analysis in USA.
Methods: State congenital anomaly (CA) rate (CAR) data was taken from the annual reports of the National Birth Defects Prevention Network 2001–2005 to 2011–2015. Substance abuse rates were from the National Survey of Drug Use and Health a nationally representative longitudinal survey of the non institutionalized US population with 74.1% response rate. Drugs examined were cigarettes, monthly and binge alcohol, monthly cannabis and analgesic, and cocaine abuse. Early termination of pregnancy for abortion (ETOPFA) rates were taken from the published literature. Cannabinoid concentrations were from Drug Enforcement Agency. Ethnicity and income data were from the US Census Bureau. Inverse probability weighted (IPW) regressors and geotemporospatial regressors conducted for selected CAs.
Results: Data on 18,328,529 births from an aggregated population of 2,377,483,589 for mid-year analyses 2005–2013 comprising 12,611 CAs for 62 CAs was assembled and ETOPFA corrected (ETOPFACAR) where appropriate. E-Values for ETOPFACARs by substance trends were elevated for THC (40 CAs), cannabis (5 CAs), tobacco (11 CAs), cannabidiol (8 CAs), monthly alcohol (5 CAs) and binge alcohol (2 CAs) with minimum E-Values descending from 16.55, 1.55x10⁷, 555.10, 7.53x10⁷, 9.30 and 32.98. Cardiovascular, gastrointestinal, chromosomal, limb reductions, urinary, face and body wall CAs particularly affected. Highest v. lowest substance use quartile CAR prevalence ratios 2.84 (95%CI 2.44, 3.31), 4.85 (4.08, 5.77) and 1.92 (1.63, 2.27) and attributable fraction in exposed 0.28 (0.27, 0.28), 0.57 (0.51, 0.62) and 0.47 (0.38, 0.55) for tobacco, cannabis and cannabidiol. Small intestinal stenosis or atresia and obstructive genitourinary defect were studied in detail in lagged IPW pseudo randomized causal regressors and spatiotemporal models confirmed the causal role of cannabinoids. Spatiotemporal predictive modelling demonstrated

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A leading cause

- From world authority on cannabis-caused disease
- Cannabidiol is a known chromosomal clastogen, epigenotoxin and mitochondrial toxin and was linked to the 29% surge in Colorado birth defects, led by **cardiovascular defects**, just as in Canada; and the pattern of rise of **Downs syndrome, anotia and absent arms** in Alaska and Oregon; and parts of France after it was added to the food supply; or the emergence of new cannabis-related defects like **atrial septal defect** in Colorado, Alaska, Oregon, Kentucky and Hawaii. (unpublished by Reece and Hulse – June 2019 – to NEJM “Response to Cohen and Sharfstein: Opportunity of Cannabidiol - Reforming Cannabinoid Education” [on request from DFA website])



Autism

“Data demonstrate clear evidence of association between alcohol, tobacco, $\Delta 9$ -THC and **cannabidiol** with Autism Spectrum Disorder incidence.”

“Our demonstration that **autism rates relate closely and robustly to population exposures to cannabidiol** is interesting and provocative”



Clinical Pediatrics: Open Access
Research Article

Epidemiological Associations of Various Substances and Multiple Cannabinoids with Autism in USA

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ABSTRACT

Introduction: Autism Spectrum Disorder (ASD) is increasing in across USA. Pediatricians and physicians in both Colorado and Australia continue to see high caseloads however this prevalence uptick remains largely unexplained. Since drug use is an obvious potential source of developmental brain damage the present study was undertaken to study drug-ASD associations at state level.

Methods: Existing datasets from the US Department of Education Individuals with Disabilities Act, the Substance Abuse and Mental Health Services Administration National Survey of Drug Use and Health, and the Drug Enforcement Agency cannabinoid concentration in seizures were reanalyzed.

Results: ASD rates are high and rising fastest in Colorado, Maine, Massachusetts, Oregon, Rhode Island and New Jersey but falling in Oklahoma and Iowa. When the nine highest cannabis use states are grouped together ASD is rising significantly faster than elsewhere (time-strata interaction in quadratic mixed effects model $p < 0.0001$). On univariate regression ASD rate was significantly positively associated with alcohol and cannabis exposure and with the cannabinoids $\Delta 9$ -tetrahydrocannabinol, cannabidiol, cannabichromene, cannabigerol and tetrahydrocannabinol. These effects remained after multivariate adjustment for $\Delta 9$ -tetrahydrocannabinol and cannabidiol (from $p < 0.00001$). Cannabidiol correlated with ASD rate when a three year lag was introduced (OR=0.7485, $p < 0.0001$).

Conclusions: These data show that increased cannabinoid exposure explains on bivariate and multivariate regression much of the recent rise in ASD across USA, and in the context of other reports, also at some local cluster levels. Together with numerous mechanistic reports these data argue for causality and indicate a large case-control study. ASD-like neurobehavioural/ toxicological syndromes likely represent the commonest form of cannabis-related teratology following perinatal exposure.

Keywords: Cannabis; Opioids; Cannabidiol; Cannabinol; Tetrahydrocannabinol; Autism spectrum disorder

Abbreviations: ASD: Autism Spectrum Disorder; CB1R: Cannabinoid type 1 receptor; DEA: Drug Enforcement Agency; IDEA: US Department of Education Individuals with Disabilities Act; NSEDCU: National Survey of Drug Use and Health; Robo: Roundabout, a guidance molecule receptor for axonal growth cones and arterial endothelial tips; EAMHSA: Substance Abuse and Mental Health Services Administration; Silt: Silt 1-3, arterial and axonal guidance molecule and ligand for Robo; *. An additive operator for regression calculations; †. Tilde, a middle sign separating the two sides of a regression calculation; ^. Asterisk, an operator used in regression calculations to include additive and interactive relationships.

INTRODUCTION

1.66% of 8 year old boys across USA and up to 4.5% of 8 year old boys in New Jersey [1]. Surveys show substantial rates of rise in ASD incidence of 20% over two years in New Jersey and 50% in Colorado. Indeed a recent bill was placed before the Colorado

Autistic spectrum disorder (ASD) is one of the commonest development abnormalities of children affecting a mean of

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Clin Pediatr, Vol. 58, No. 5, pp. 412-5

file:///C:/Users/gxian/Downloads/epidemiological-associations-of-various-substances-and-multiple-cannabinoids-with-autism-in-usa.pdf

Metabolises to THC

- Cannabidiol, when metabolised, transforms to THC

- FDA-listed Adverse Reactions for CBD include **THC-like symptoms** such as suicidal ideation, depression and anxiety. This is the 'tell'.

- Even admitted by Hemp Connoisseur magazine

“Could anomalies in results have resulted from the way gastric juices break down CBD within the human body? In a 2016 study published in Cannabis and Cannabinoid Research, by John Merrick and associates, it was noted that, “In recent epilepsy research, pediatric subjects receiving orally administered CBD showed a relatively high incidence of adverse events (≤44%), with somnolence (≤21%) and fatigue (≤17%) among the most common.”⁴ This led the researchers to more closely investigate the accepted premise that CBD is non-psychoactive. They came to the conclusion that, “Gastric fluid without enzymes converts CBD into the psychoactive components Δ9-THC and Δ8-THC, which suggests that the oral route of administration may increase the potential for psychomimetic adverse effects from CBD.”



The screenshot shows a webpage from 'THE HEMP CONNOISSEUR' magazine. The article title is 'Does CBD Convert to THC When Ingested? The findings from one study conclude it is possible.' The author is Dr. Nicole Davies, and the article is dated August 5, 2016. The text discusses a 2016 study by John Merrick and associates, which found that gastric fluid without enzymes converts CBD into psychoactive components like Δ9-THC and Δ8-THC. The article also mentions that the study was published in 'Cannabis and Cannabinoid Research'.

<https://dailymed.nlm.nih.gov/dailymed/fda/fdaDrugXsl.cfm?setid=8bf27097-4870-43fb-94f0-f3d0871d1eec&type=display>
<https://hcmagazine.com/does-cbd-convert-to-thc-when-ingested-the-findings-from-one-study-conclude-it-is-possible/>



Hemp contains THC

- THC is the psychoactive cannabinoid that intoxicates a user and is more so linked to psychosis
 - Hemp CBD preparations still contain some THC which accumulate to dangerous levels:

“Using what I call “Farm Bill Math”, the definition for hemp in the 2018 Farm Bill allows for 3 milligrams (mg) of THC per gram (same as 1,000 milligrams) by product weight. At face value, this may not seem like a big deal, until one realizes the weight of many food products that we and our children consume. For example, a bag of Tostitos Corn Chips specifies that one serving size is 7 chips, which has a listed weight of 28 grams. Thus, each chip would weigh about 4 grams (28 grams divided by 7 chips). Assuming that these chips could be made from hemp seed flour, one chip could legally contain up to 12 mg of THC (4 grams X 3 mg/gram). Also consider the 28 grams serving size, or 7 chips, noted on the Tostitos bag. This serving size could contain up to 84 mg of THC (28 grams X 3 mg THC/gram)! Corn chips also contain very little moisture in the form of water (low dry weight); it is only about 1% to 2.5%, so likely hemp-based chips would be very similar.

It is important to keep in mind that in Colorado, a product that contains THC is limited to 10 mg per serving for public health and safety reasons. Therefore, in Colorado, only one hemp-based corn chip (containing 0.3% THC by dry weight) would be roughly equivalent to the legal serving size of THC.”



Regulatory bodies

- This evidence given to the Australian TGA in 2020

- they made CBD commercially available nevertheless

**DRUG
FREE
AUSTRALIA**

NOT ENOUGH KNOWN

Any changes to legislation concerning Cannabidiol (CBD) availability cannot currently be an informed [decision](#)

1. All medical preparations regulated by the Australian TGA have been subject to rigorous science and testing, to which CBD has not generally been subject
2. CBD is a known chromosomal ~~clastogen~~, epigenotoxin and mitochondrial toxin, causing DNA damage and chromosomal aberrations. This demands caution.
3. CBD is already known to cause physical disease and safety risks, while being implicated in autism and birth defects
4. False advertising regarding imaginary benefits from CBD is already proliferating a substance within Australia about which little is known
5. In the US there are many issues with the manufacture of CBD which provide sound warnings against a less regulated environment
6. There are many questions that have not yet been answered regarding CBD
7. We simply do not know enough about CBD to be rescheduling the substance

Central Issues
&
Compiled Evidence

<https://www.tga.gov.au/sites/default/files/public-submissions-scheduling-matters-referred-acms-31-and-joint-acms-accs-25-meetings-held-june-2020-dfa-01.pdf>



Media

When in June 2023 the Australian Legalise Cannabis party put up legislation in three States to legalise cannabis for recreational use, Australian media would have beaten down the doors of organisations such as Drug Free Australia for comment. There were zero requests for comment.

Drug Free Australia's media release that same day, which outlined the science on the newly verified harms of cannabis and sent via MediaNet to 550+ mainstream media outlets was never published by even one mainstream media outlet.



The screenshot shows a news article from news.com.au. The headline is "Aussies could possess, grow and share recreational cannabis under proposed laws". The sub-headline reads: "Tuesday marks a 'historic' day for cannabis law reform as new legislation is taken to parliament in three different states across the country." The authors are listed as Elena Couper and Jessica Wang. Below the text is a video player showing two news anchors, a man and a woman, sitting at a desk in a studio. The video player has a "Click to unmute" button. Below the video player is a FOX 5 logo with the time 5:14 and temperature 71°. The article text below the video player discusses draft laws being introduced to Victoria, NSW, and Western Australia, and mentions the "Regulation of Personal Adult Use of Cannabis Bill 2023".



Next episode

- More detail in future episodes:

- Cannabis and cancer
- Cannabis and birth defects
- Cannabidiol (CBD), cancer and birth defects
- Cannabis and pain
- Cannabis and driving
- Hemp and psychoactive metabolites
- Cannabis and psychosis
- Cannabis and violence/homicide
- Cannabis and suicide
- Cannabis – its other harms

