

Medical Marijuana: A Critical Look at Medicine, Politics, Public Health, and Profits

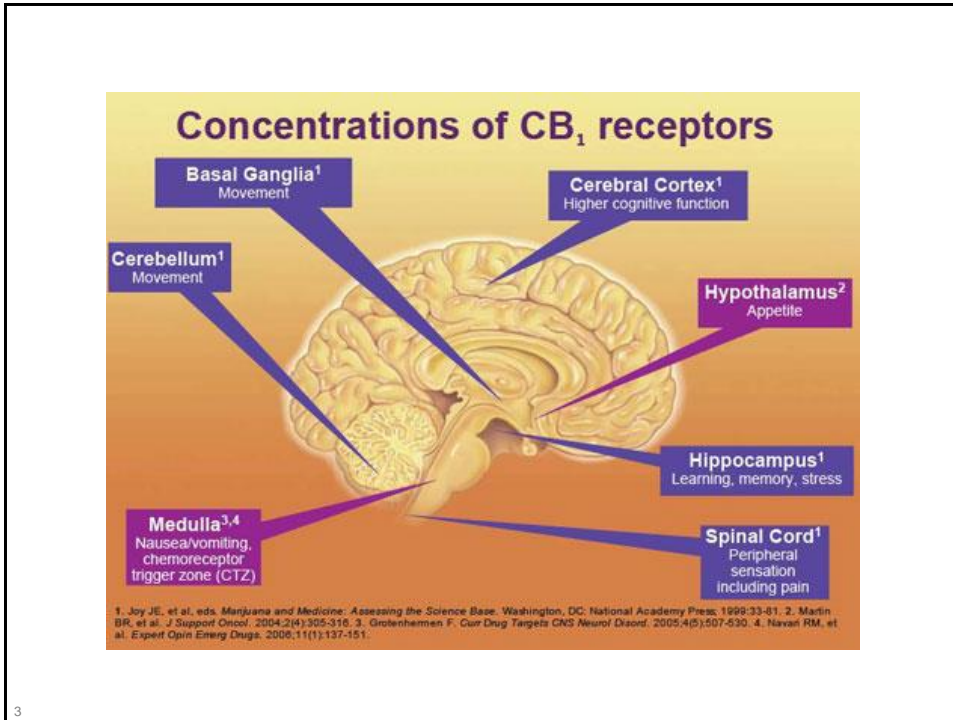
Aaron Weiner, PhD

Aaron.Weiner@eehealth.org



What is marijuana?

- Plant with 500 chemical compounds, and 100 cannabinoids
- THC & CBD
- THC binds to CB1 receptors



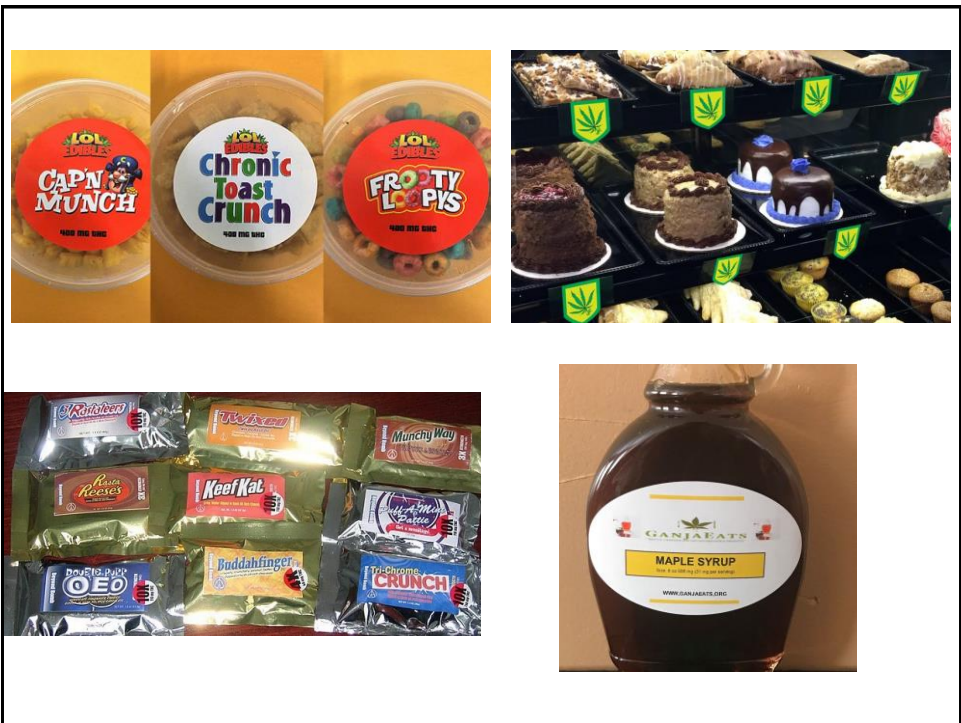
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- THC binds to CB1 receptors
- Most-used substance behind alcohol & tobacco
- Number of routes of administration

4 (CDC, 2017)

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Healthy Driven



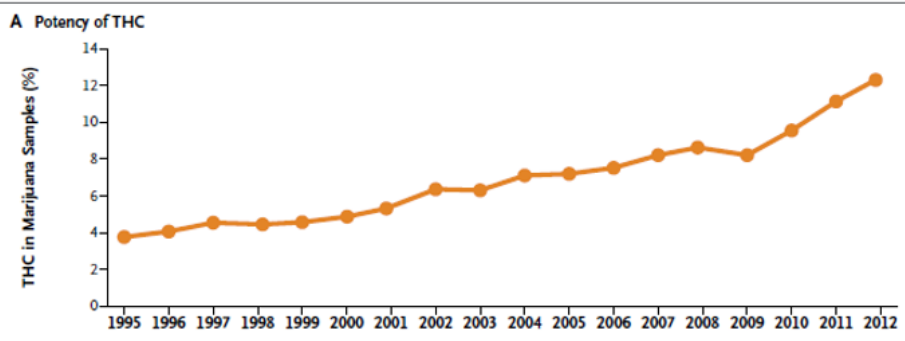
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(CDC, 2017)

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(Volkow et al., 2014)

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- THC binds to CB1 receptors
- Most-used substance behind alcohol & tobacco
- Number of routes of administration
- High variability of concentration
- Addictive substance

(CDC, 2017)

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Reviews and Overviews

Review of the Validity and Significance of Cannabis Withdrawal Syndrome

Alan J. Budney, Ph.D.
John R. Hughes, M.D.
Brent A. Moore, Ph.D.
Ryan Vandrey, M.A.

The authors review the literature examining the validity and significance of cannabis withdrawal syndrome. Findings from animal laboratory research are briefly reviewed, and human laboratory and clinical studies are surveyed in more detail. Converging evidence from basic laboratory and clinical studies indicates that a withdrawal syndrome reliably follows discontinuation of chronic heavy use of cannabis or tetrahydrocannabinol. Common symptoms are primarily emotional and behavioral, although appetite change, weight loss, and physical discomfort are also frequently reported. The onset and time course of these symptoms appear similar to those of other substance withdrawal syndromes. The magnitude and severity of these symptoms appear substantial, and these findings suggest that the syndrome has clinical importance. Diagnostic criteria for cannabis withdrawal syndrome are proposed.

(*Am J Psychiatry* 2004; 161:1967-1977)

The NEW ENGLAND JOURNAL of MEDICINE

REVIEW ARTICLE

Dan L. Longo, M.D., Editor

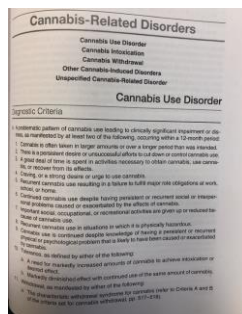
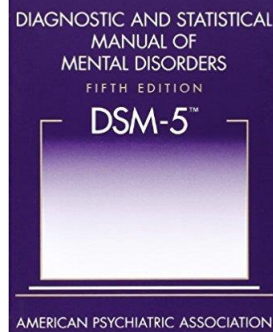
Adverse Health Effects of Marijuana Use

Nora D. Volkow, M.D., Ruben D. Baler, Ph.D., Wilson M. Compton, M.D., and Susan R.B. Weiss, Ph.D.

Effects of long-term or heavy use

Addiction (in about 9% of users overall, 17% of those who begin use in adolescence, and 25 to 50% of those who are daily users)*

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What is marijuana?

- Plant with 500 chemical compounds, and 100 cannabinoids
- THC & CBD
- THC binds to CB1 receptors
- Most-used substance behind alcohol & tobacco
- Number of routes of administration
- High variability of concentration
- Addictive substance
 - Approximately 30% of active users have a SUD
 - 1:10 adults, 1:6 adolescents
- Well-studied detrimental impact on behavioral health and functioning

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(CDC, 2017)

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Is this medicine?

- In Illinois since 2013, Ohio 2019
- Not approved by the FDA, nor prescribed/dispensed like medicine
 - **Medicine:** Marinol, Sativex, and Epidiolex

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Is this medicine?

- In Illinois since 2013, Ohio 2019
- Not approved by the FDA, nor prescribed/dispensed like medicine
 - **Medicine:** Marinol, Sativex, and Epidiolex
 - **Not medicine:** Buying whatever you like from a dispensary, using it however you want
 - Also consider: physicians are not pushing for this

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Therapeutic Uses for Marijuana

- What does quality research show it is good for?
 - Appetite stimulation
 - Nausea suppression
 - Some types of pain
 - MS spasticity (cannabinoids only)
 - Short-term sleep outcomes (cannabinoids only)
 - Good reference: [National Academy of Sciences](#)
- In Illinois, it is approved (by the legislature) for **51** conditions...starting at age 18 (Ohio 21)

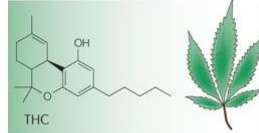
Qualifying Conditions

- AIDS
- Amyotrophic Lateral Sclerosis (ALS)
- Alzheimer's disease
- Cancer
- Chronic Traumatic Encephalopathy
- Crohn's Disease
- Epilepsy or another seizure disorder
- Fibromyalgia
- Glaucoma
- Hepatitis C
- Inflammatory Bowel Disease,
- Multiple Sclerosis
- Pain that is either chronic and severe or intractable
- Parkinson's Disease
- Positive status for HIV
- Post-Traumatic Stress Disorder
- Sickle Cell Anemia
- Spinal Cord Disease or injury
- Tourette's Syndrome
- Traumatic Brain Injury
- Ulcerative Colitis

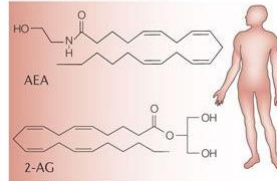
Endogenous Cannabinoids vs. Exogenous Manipulation

- Theory
 - Endocannabinoid system impacts many different diseases
 - Manipulate the same receptors, get the desired effect
- Reality
 - Hit & Miss

Plant-derived cannabinoid



Endogenous cannabinoids



(Nature, 2012)

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REVIEW

Open Access

Narrative review of the safety and efficacy of marijuana for the treatment of commonly state-approved medical and psychiatric disorders

Katherine A Belendiuk¹, Lisa L Baldini² and Marcel O Bonn-Miller^{3,4,5*}

Abstract

The present investigation aimed to provide an objective narrative review of the existing literature pertaining to the benefits and harms of marijuana use for the treatment of the most common medical and psychological conditions for which it has been allowed at the state level. Common medical conditions for which marijuana is allowed (i.e., those conditions shared by at least 80 percent of medical marijuana states) were identified as: Alzheimer's disease, amyotrophic lateral sclerosis, cachexia/wasting syndrome, cancer, Crohn's disease, epilepsy and seizures, glaucoma, hepatitis C virus, human immunodeficiency virus/acquired immunodeficiency syndrome, multiple sclerosis and muscle spasticity, severe and chronic pain, and severe nausea. Post-traumatic stress disorder was also included in the review, as it is the sole psychological disorder for which medical marijuana has been allowed. Studies for this narrative review were included based on a literature search in PsycINFO, MEDLINE, and Google Scholar. Findings indicate that, for the majority of these conditions, there is insufficient evidence to support the recommendation of medical marijuana at this time. A significant amount of rigorous research is needed to definitively ascertain the potential implications of marijuana for these conditions. It is important for such work to not only examine the effects of smoked marijuana preparations, but also to compare its safety, tolerability, and efficacy in relation to existing pharmacological treatments.

Keywords: Cannabis, Medical marijuana, Marijuana, Medicine, Treatment, Alzheimer's disease, ALS, Cachexia, Cancer, Crohn's disease, Epilepsy, Seizures, Glaucoma, Hepatitis C virus, HCV, HIV, AIDS, Multiple sclerosis, MS, Pain, Nausea, Vomiting, Post-traumatic stress disorder, PTSD

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Medical Marijuana

There is no or insufficient evidence to support or refute the conclusion that cannabis or cannabinoids are an effective treatment for:

- Cancers, including glioma (cannabinoids) (4-2)
- Cancer-associated anorexia cachexia syndrome and anorexia nervosa (cannabinoids) (4-4b)
- Symptoms of irritable bowel syndrome (dronabinol) (4-5)
- Epilepsy (cannabinoids) (4-6)
- Spasticity in patients with paralysis due to spinal cord injury (cannabinoids) (4-7b)
- Symptoms associated with amyotrophic lateral sclerosis (cannabinoids) (4-9)
- Chorea and certain neuropsychiatric symptoms associated with Huntington's disease (oral cannabinoids) (4-10)
- Motor system symptoms associated with Parkinson's disease or the levodopa-induced dyskinesia (cannabinoids) (4-11)
- Dystonia (nabilone and dronabinol) (4-12)
- Achieving abstinence in the use of addictive substances (cannabinoids) (4-16)
- Mental health outcomes in individuals with schizophrenia or schizophreniform psychosis (cannabidiol) (4-21)

■ What about glaucoma?



Summary: Although marijuana can lower the intraocular pressure (IOP), its side effects and short duration of action, coupled with a lack of evidence that it use alters the course of glaucoma, preclude recommending this drug in any form for the treatment of glaucoma at the present time.

■ PTSD...

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Is this medicine?

- Should lawmakers really be deciding what society calls “medicine?”
 - Public health implications? Perceived risk?
- Why are we doing an end-around the FDA?
 - And what are the consequences?

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Healthcare before science: Why do clinical trials matter?

THE THALIDOMIDE TRAGEDY: LESSONS FOR DRUG SAFETY AND REGULATION

By: Bara Fintel, Athena T. Samaras, Edson Carlas
Jul 28, 2009



Many children in the 1960's, like the kindergartner pictured above, were born with phocomelia as a side effect of the drug thalidomide, resulting in the shortening or absence of limbs. (Photo by Leonard McCombe//Time Life Pictures/Getty Images)

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Opioid Substitute?

Effect of cannabis use in people with chronic non-cancer pain prescribed opioids: findings from a 4-year prospective cohort study

Lancet Public Health 2018;
3: e341-50

Gabrielle Campbell, Wayne D Hall, Amy Prescott, Nicholas Lintzeris, Raimondo Bruno, Briony Laranca, Suzanne Nielsen, Milton Cohen, Gary Chan, Richard P Mattick, Fiona Blyth, Marian Shanahan, Timothy Dobbins, Michael Farrell, Louisa Degenhardt

Interpretation Cannabis use was common in people with chronic non-cancer pain who had been prescribed opioids, but we found no evidence that cannabis use improved patient outcomes. People who used cannabis had greater pain and lower self-efficacy in managing pain, and there was no evidence that cannabis use reduced pain severity or interference or exerted an opioid-sparing effect. As cannabis use for medicinal purposes increases globally, it is important that large well designed clinical trials, which include people with complex comorbidities, are conducted to determine the efficacy of cannabis for chronic non-cancer pain.

Medical Marijuana Users are More Likely to Use Prescription Drugs Medically and Nonmedically

Theodore L. Caputi, BS and Keith Humphreys, PhD

J Addict Med • Volume 12, Number 4, July/August 2018

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Association between medical cannabis laws and opioid overdose mortality has reversed over time

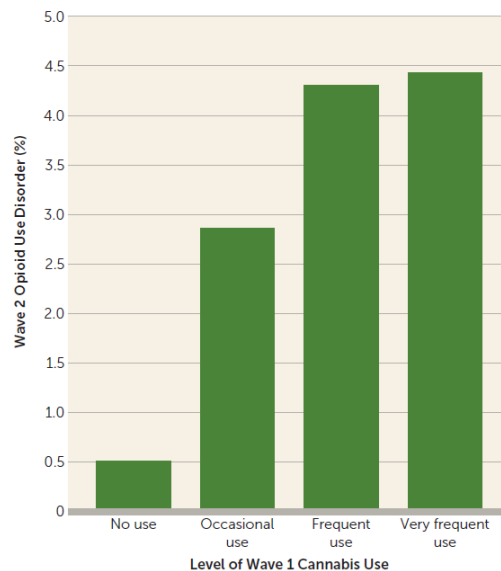


Chelsea L. Shover, Corey S. Davis, Sanford C. Gordon, and Keith Humphreys

PNAS June 25, 2019 116 (26) 12624-12626; first published June 10, 2019 <https://doi.org/10.1073/pnas.1903434116>

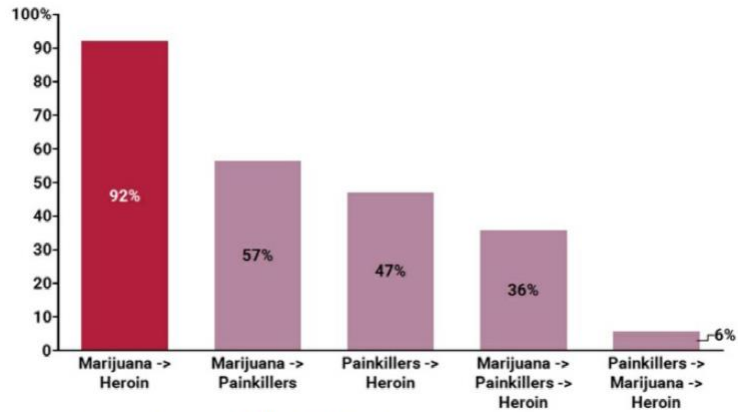
et al.'s analysis through 2017. Not only did findings from the original analysis not hold over the longer period, but the association between state medical cannabis laws and opioid overdose mortality reversed direction from -21% to +23% and remained positive after accounting for recreational cannabis laws. We also uncovered no evidence that either broader (recreational) or more restrictive (low-tetrahydrocannabinol) cannabis laws were associated with changes in opioid overdose mortality. We find it unlikely that medical

FIGURE 1. Level of Wave 1 Cannabis Use and Incident Wave 2 Prescription Opioid Use Disorder in the NESARC^a



^a NESARC=National Epidemiological Survey on Alcohol and Related Conditions; wave 1 was conducted in 2001 and 2002, and wave 2 in 2004 and 2005.

Percentage of heroin/prescription painkiller users who first used another addictive drug in previous years



Source: National Survey on Drug Use and Health (NSDUH, 2013 & 2014)

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Association between medical cannabis laws and opioid overdose mortality has reversed over time



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A little “dab” will do ya’ in: a case report of neuro-and cardiotoxicity following use of cannabis concentrates

Shannon S. Rickner^a, Dazhe Cao^a, Kurt Kleinschmidt^a and Steven Fleming^b

^aDivision of Medical Toxicology, Department of Emergency Medicine, Parkland Memorial Health and Hospital System and University of Texas Southwestern Medical Center, Dallas, TX, USA; ^bGulfstream Diagnostics, Dallas, TX, USA



Contents lists available at ScienceDirect

Schizophrenia Research

journal homepage: www.elsevier.com/locate/schres



Cannabis-induced psychosis associated with high potency “wax dabs”



Joseph M. Pierre^{a,b,*}, Michael Gandai^a, Maya Son^c

^a Department of Psychiatry and Biobehavioral Sciences, David Geffen School of Medicine at UCLA, Los Angeles, California

^b Department of Veterans Affairs, VA Greater Los Angeles Healthcare System, Los Angeles, CA

^c College of Medicine, University of Vermont, Burlington, VT

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Smoking strong marijuana daily increases risk of psychosis, study finds



MARCH 20, 2019 / 11:44 AM / CBS/AP



Psychotic Disorders as Function of THC dose, Frequency of Use 11 Sites, 6 Nations in Europe, Brazil: 3 of the cities

The contribution of cannabis use to variation in the incidence of psychotic disorder across Europe (EU-GEI): A multicentre case control study
Di Forti et al
www.thelancet.com/psychiatry
Published online March 19, 2019

- If high-potency cannabis were no longer available:
- 12-2% of cases of first-episode psychosis could be prevented across 11 cities
 - 30-3% prevented London
 - 50-3% prevented Amsterdam



ER visits linked to marijuana rose at Colorado hospital after legalization, study finds

People who consume marijuana edibles may be ingesting unsafe levels because they don't feel the immediate high, researcher says.

March 25, 2019, 4:30 PM CDT
By Shamard Charles, M.D.



He loved weed. Then the vomiting began. Months later, he died

Shari Rudavsky, Indianapolis Star | Published 2:48 p.m. ET Sept. 20, 2019 | Updated 4:00 p.m. ET Sept. 20, 2019

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What messages are customers receiving?

Marijuana shops recommend products to pregnant women, against doctors' warnings

By Michael Nedelman, CNN
Updated 6:05 AM ET, Thu May 10, 2018

Obstetrics: Original Research

Recommendations From Cannabis Dispensaries About First-Trimester Cannabis Use



Betsy Dickson, MD, Chanel Mansfield, MPH, Maryam Gaiahi, MD, MS, Amanda A. Allhouse, MS, Laura M. Borgell, PharmD, Jeanette Shveder, PhD, Robert M. Silver, MD, and Torri D. Metz, MD, MS

Is cannabis safe to take during pregnancy?

- "Different people opinions, kind of like alcohol; I used to be a bartender and it is legal to serve someone who is pregnant because it is up to them so you know. I am not here to tell you you should or should not use, does that make sense. I do know a lot of people that do use cannabis during their pregnancy though and for what they have found, there has not been side effects that they can see."
- "I know a lot of doctors are recommending marijuana nowadays."
- "We have a girl that comes in and she is probably 6 months pregnant and she smokes bud but she does not smoke it as much as she did but she still does...she said her doctor said it was ok...she said the doctor said that but I am not a doctor...I know aspirin is ok for babies and that is pretty much what you are getting is an aspirin that is probably better."

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Marijuana - Health and Safety Impact

- Negative health impact

Table 1. Adverse Effects of Short-Term Use and Long-Term or Heavy Use of Marijuana.

Effects of short-term use

Impaired short-term memory, making it difficult to learn and to retain information

Impaired motor coordination, interfering with driving skills and increasing the risk of injuries

Altered judgment, increasing the risk of sexual behaviors that facilitate the transmission of sexually transmitted diseases

In high doses, paranoia and psychosis

Effects of long-term or heavy use

Addiction (in about 9% of users overall, 17% of those who begin use in adolescence, and 25 to 50% of those who are daily users)*

Altered brain development*

Poor educational outcome, with increased likelihood of dropping out of school*

Cognitive impairment, with lower IQ among those who were frequent users during adolescence*

Diminished life satisfaction and achievement (determined on the basis of subjective and objective measures as compared with such ratings in the general population)*

Symptoms of chronic bronchitis

Increased risk of chronic psychosis disorders (including schizophrenia) in persons with a predisposition to such disorders

* The effect is strongly associated with initial marijuana use early in adolescence.

Review

The Role of Cannabinoids in Neuroanatomic Alterations in Cannabis Users

Valentina Lorenzetti, Nada Solow, and Murat Yücel

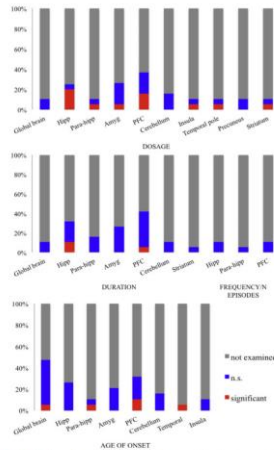


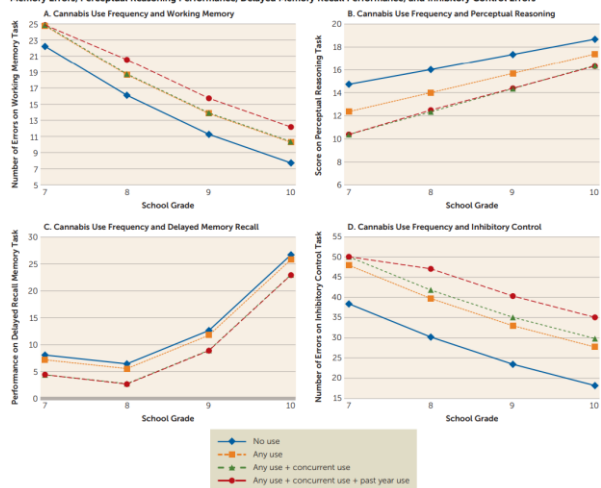
Figure 4. Percentage of studies reporting associations between regional neuroanatomy and cannabis use measures. Significant associations (red), nonsignificant associations (n.s.; blue), and associations unexamined (gray). Amyg, amygdala; Hipp, hippocampus; Para-hipp, parahippocampal gyrus; PFC, prefrontal cortex.

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A Population-Based Analysis of the Relationship Between Substance Use and Adolescent Cognitive Development

Jean-François G. Rezon, B.A., Muhammad H. Atzaf, Ph.D., Joirene Bourque, M.Sc., Sherry H. Stewart, Ph.D., Jean R. Seguin, Ph.D., Maive O'Leary-Barnett, Ph.D., Patricia J. Conrod, Ph.D.

FIGURE 2. Between-Subject and Within-Subject (Concurrent and Lagged) Relationships Between Cannabis Use Frequency and Working Memory Errors, Perceptual Reasoning Performance, Delayed Memory Recall Performance, and Inhibitory Control Errors*



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Drivers of Brain Aging

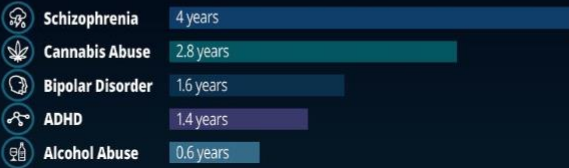
In the largest known brain imaging study, scientists from Amen Clinics, Google, John's Hopkins, UCLA, and UC San Francisco evaluated **62,454 brain SPECT scans** of individuals from nine months old to 105 years of age to investigate factors that accelerate brain aging.



128
brain
regions

studied to predict
the chronological
age of a patient

Accelerated Aging Prediction



Aging SPECT scans



"We can now link clinical diagnoses and addictions to premature aging of the brain. Better treatment of these disorders can slow or even halt brain aging."

The cannabis abuse result was especially important, as our culture is starting to view marijuana as a harmless substance. These findings invite us to rethink its effects on the brain.

- Daniel G. Amen, MD, founder of Amen Clinics

Caption: Drivers of Brain Aging. Credit: Daniel G. Amen

Vaping appears to be making hundreds of people sick. No one knows exactly why.

The mysterious spike in respiratory illnesses is a reminder that e-cigarettes may be more dangerous than they seem.

By Julia Belluz | @juliaoftoronto | julia.belluz@voxmedia.com | Sep 3, 2019, 2:20pm EDT



City of Milwaukee urges residents to stop vaping 'immediately'; 89% of Wisconsin sick cite THC



First death linked to vaping reported in Illinois



© 24 August 2019

The New York Times

The Washington Post

Bronx Teenager's Death Is the Youngest Vaping Fatality in U.S.

Health

Vaping lung injuries top 1,000 cases as deaths rise to 18

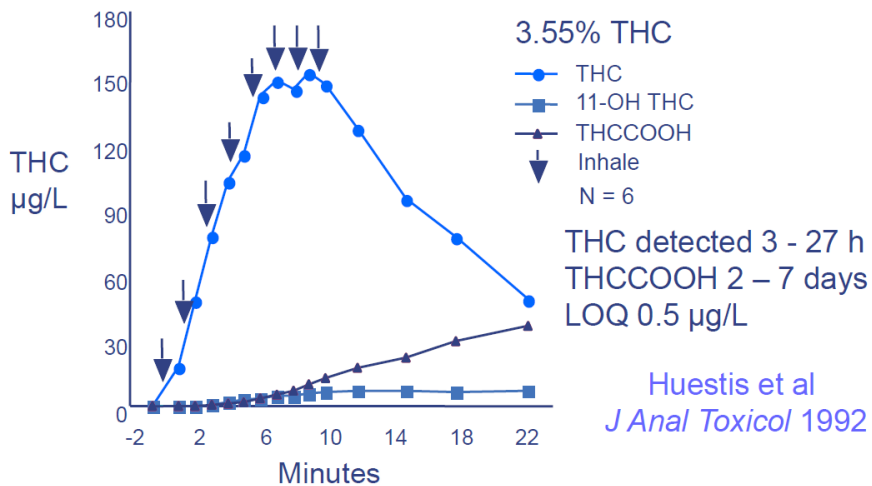
The 17-year-old who died last week is the youngest of 23 people to die nationwide of a vaping-related lung illness.

Health officials are amplifying their recommendation that people refrain from using e-cigarettes or vaping, particularly products containing THC

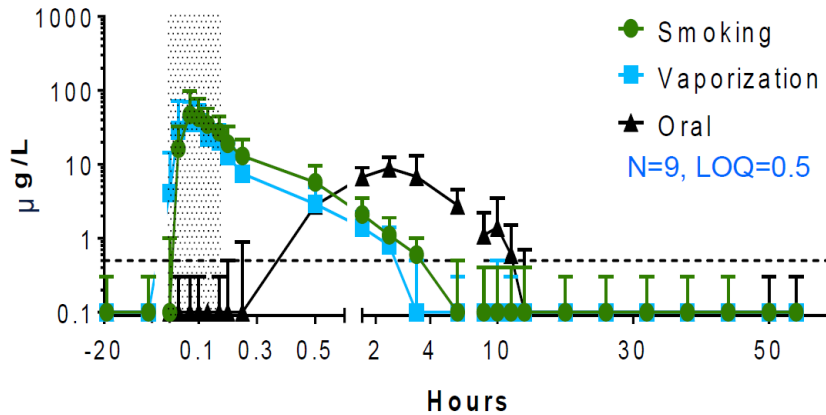
Marijuana - Health and Safety Impact

- Negative health impact
- Impaired motor function
 - Traffic safety concerns
 - Detection concerns

THC, 11-OH-THC & THCCOOH Plasma Concentrations After Smoking Cannabis



Mean Blood THC Concentrations in Occasional Smokers After 50.6 mg THC by 3 Administration Routes

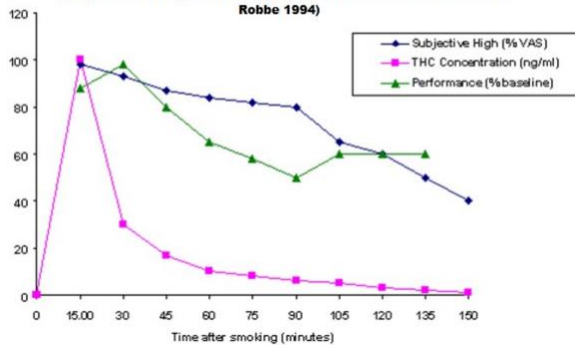


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Traffic Safety Concerns

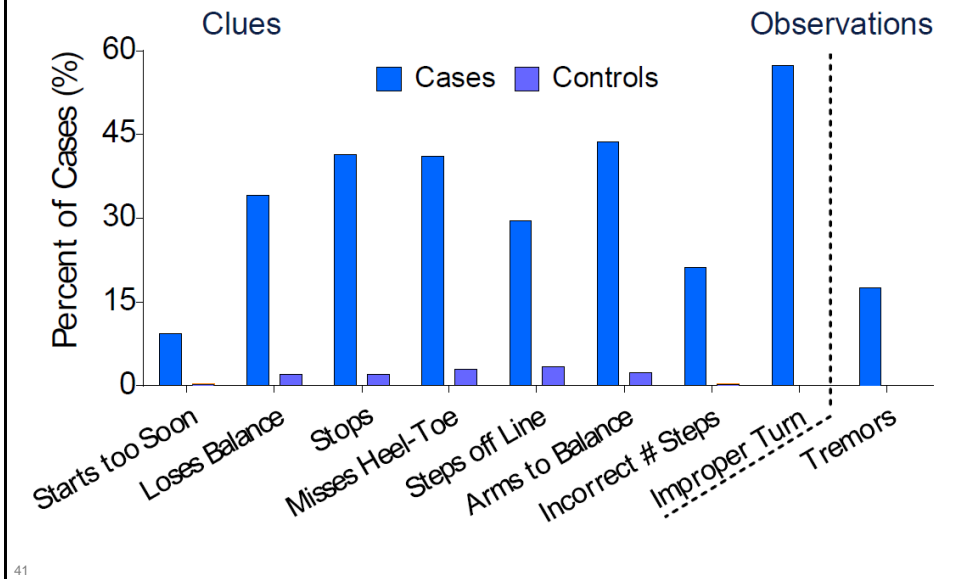
Figure 4

Time Course of Standardized THC Concentration in Plasma, Performance Deficit and Subjective High after Smoking Marijuana (Adapted from Berghaus et al. 1998, Sticht and Käferstein 1998 and Robbe 1994)

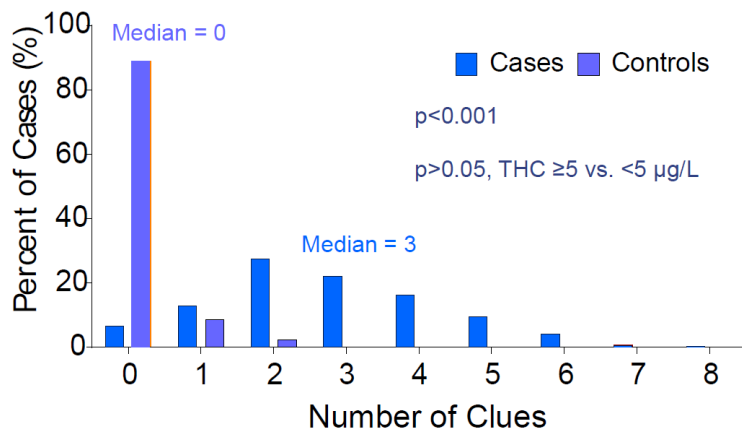


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Walk And Turn Clues & Observations



Number of WAT Clues ≥2 considered "Impaired"



Medical Cannabis Patients Driving While High

Driving under the influence of cannabis among medical cannabis patients with chronic pain

Erin E. Bonar^{a,b,*}, James A. Cranford^a, Brooke J. Arterberry^{a,c}, Maureen A. Walton^{a,b}, Kipling M. Bohnert^{a,d}, Mark A. Ilgen^{a,d}

In the past 6 months...

- 56.4% endorsed driving within 2h of use
- 50.5% endorsed driving while “a little high”
- 21.5% endorsed driving while “very high”
- US base rate 16+ for driving high in the past year: 4.3%

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To Recap: Delivery System

- How is medicine approved for the public?
 - Replicated science, multi-phase FDA trials
- How is medicine prescribed?
 - Dose, frequency, type, concentration
- How is medicine produced?
 - Uniform, standardized
- Do we smoke any medicine you're aware of?
 - Or use bong, butane torches, vape pens, etc.
- What demographic do the products appear to be marketed at?

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Marketing



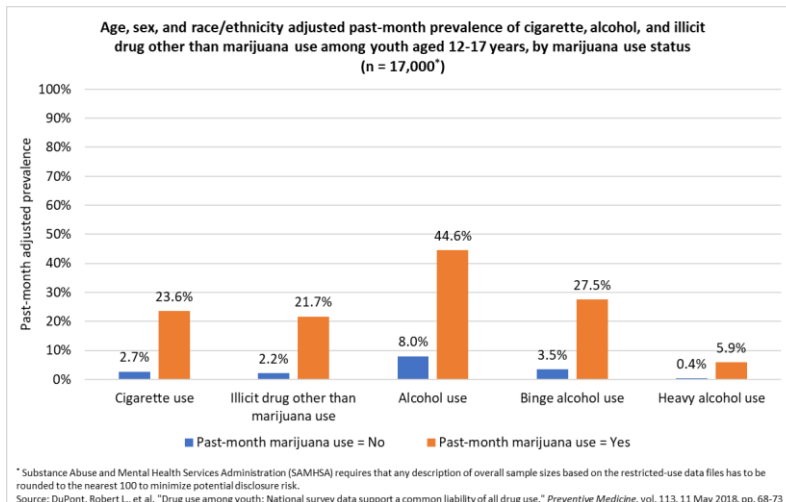
Have you ever looked at what product is actually being sold?

- [Local Example](#) / [Another Local Example](#)

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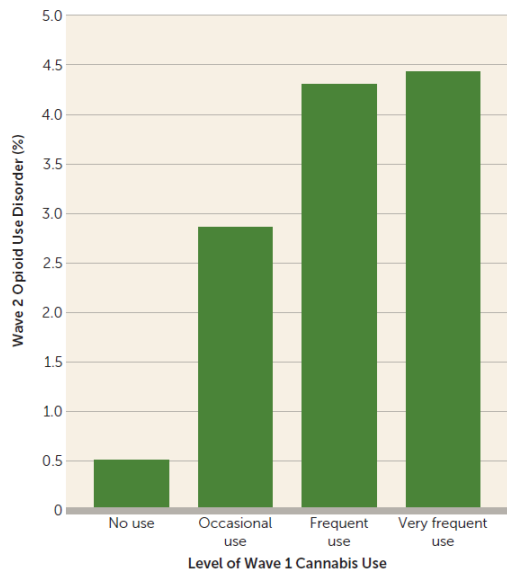
Gateway Drug?



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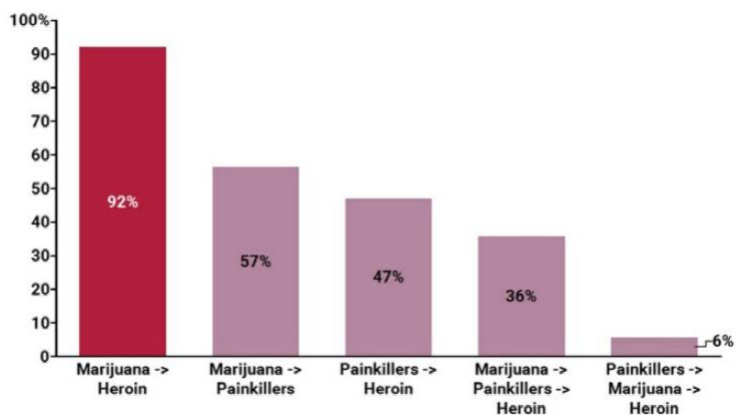
FIGURE 1. Level of Wave 1 Cannabis Use and Incident Wave 2 Prescription Opioid Use Disorder in the NESARC^a



^a NESARC=National Epidemiological Survey on Alcohol and Related Conditions; wave 1 was conducted in 2001 and 2002, and wave 2 in 2004 and 2005.

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Percentage of heroin/prescription painkiller users who first used another addictive drug in previous years



Source: National Survey on Drug Use and Health (NSDUH, 2013 & 2014)

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Gateway Drug?

Drug and Alcohol Dependence 194 (2019) 51–58



ELSEVIER

Contents lists available at ScienceDirect

Drug and Alcohol Dependence

journal homepage: www.elsevier.com/locate/drugalcdep

Full length article

Historical trends in the grade of onset and sequence of cigarette, alcohol, and marijuana use among adolescents from 1976–2016: Implications for “Gateway” patterns in adolescence

Katherine M. Keyes^{a,b,*}, Caroline Rutherford^d, Richard Miech^c

^a Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, NY, USA

^b Center for Research on Society and Health, Universidad Mayor, Santiago, Chile

^c Institute for Social Research, University of Michigan, Ann Arbor, MI, USA

Conclusion: Marijuana is increasingly the first substance in the sequence of adolescent drug use. Reducing adolescent smoking has been a remarkable achievement of the past 20 years; those who continue to smoke are at higher risk for progression to marijuana use.

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So what's this all about then?

- To review...
 - Lack of quality evidence to support most medical claims
 - Dispensing system that is unspecific and promotes self-medication
 - Selling concentrates that have up to 70% THC (93% in Illinois)
 - Low age for entry, products that can appeal to kids and young adults

- Do these ads look familiar?

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Every doctor in private practice was asked:
—family physicians, surgeons, specialists...
doctors in every branch of medicine—
"What cigarette do you smoke?"

According to a recent Nationwide survey:
**More Doctors
Smoke Camels**
than any other cigarette!

Not a guess, not just a trend...but an actual fact based on the statements of doctors themselves in a nationally known independent research organization.

Yes, your doctor was asked... along with thousands of thousands of other doctors from Maine to California. And they've named their choice—the brand that most doctors named as their smoke to Camels? Those nationally known independent research organizations found this to be a fact.

Nothing unusual about it. Doctors smoke for pleasure just like the rest of us. They appreciate, just as you, a mild taste that's cool and easy on the throat. They're men of full, rich flavor of expertly blended natural tobaccos. As they named Camels... more of them named Camels than any other brand. Now when you buy cigarettes, try Camels.

The "8-2000" TEST WILL TELL YOU

The "8-2000" test is the only test of the tobacco industry ever devised. It was devised by the only organization that has ever tested and rated every cigarette brand sold in the U.S. — and has it all been done through the kind of the cooperation of more than 80,000 doctors, the better Camels will tell you "I smoke Camels".

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20,679* Physicians
say "LUCKIES are
less irritating"

"It's toasted"
Your Throat Protection
against irritation against cough

The figures quoted have been checked and certified to by LEBRAND, ROSE, BROS. AND MONTGOMERY, Accountants

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THE SHOCK OF FACING *what your figure may become*



When Tempted
Reach for a LUCKY
instead
"It's toasted"

Your Throat Protection - against irritation - against cough


THE SPIRIT OF YOUTH *carry on - avoid that future shadow*



When Tempted
Reach for a LUCKY
instead
"It's toasted"

Your Throat Protection - against irritation - against cough

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NOW... Scientific Evidence on Effects of Smoking!


A MEDICAL SPECIALIST is making regular bi-monthly examinations of a group of people from various walks of life. 45 percent of this group have smoked Chesterfield for an average of over ten years.

After ten months, the medical specialist reports that he observed . . .

no adverse effects on the nose, throat and sinuses of the group from smoking Chesterfield.

**MUCH MILDER
CHESTERFIELD
IS BEST FOR YOU**

First and Only Premium Quality Cigarette in Both Regular and King-Size



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Marijuana: Bottom Line

- Actual science-based therapeutic applications for cannabinoids are present, but limited
 - The distinction between marijuana and cannabinoids is critical
- The delivery system is not consistent with current models for healthcare, promoting speculative treatment, poor product choices, self-medication, and potential resale to youth
- There are numerous health & safety concerns related to marijuana use, particularly for youth and young adults
 - Addiction, brain development, achievement, psychosis, drug sequencing, vaping & road safety
- Our perspective has shifted on drugs before...

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BEHAVIORAL HEALTH

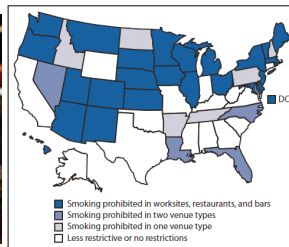
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For sale by all Druggists.
(Registered March 1885.)

The Allenburys Throat Pastilles
No. 26.
Menthol, Eucalyptus and Cocaine
Menthol, 1 gram. Eucalyptus Oil, 2 1/2 gr. Cocaine.
A Pastille may be taken every four or six hours,
if required.
Manufactured by
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HEROIN-HYDROCHLORIDE
Is pre-eminently adapted for the management of cough, catarrh, cough spasms, cough drops, cough lozenges, and cough medicines of any kind. Dose: 1 to 2 mg. per day, 4 to 6 mg. per course, less in larger quantities. The effectiveness being very small (1 cent to 1/2 gr.).
The Cheapest Specific for the Relief of Coughs
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Marijuana: Bottom Line

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...let's go in with eyes open this time.

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Thank You!

