Youth Marijuana Use: Current Trends in Marijuana Use Vaping & CBD

MPI Funded by the County of San Diego, Health and Human Services Agency, Behavioral Health Services
Happy to be here!

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MPI Focuses on **Youth** Marijuana Use

**Why?**

- We are funded to work with youth ages 12-25.
- These years are crucial both developmentally and educationally.
- The brain continues to develop until 25.
Confirmation bias – in this world of mass media we undervalue evidence that contradicts our beliefs and overvalue evidence that confirms them. We filter out inconvenient truths and arguments on the opposing side.

As a result, our opinions solidify, and it becomes increasingly harder to disrupt established patterns of thinking.
Weed 101

Marijuana is a bunch of chemicals disguised as a plant!

- The pot/marijuana/cannabis plant has over 400 chemicals. A little over 100 in the cannabinoid family.

- THC is a cannabinoid chemical that is psychoactive.

- CBD is also a cannabinoid chemical that counteracts the THC high.
National Statistics
“No amount of marijuana use during pregnancy or adolescence is known to be safe.”

Until and unless more is known about the long-term impact, the safest choice for pregnant women and adolescents is not to use marijuana.
THC, CBD products and vaping devices have never been fully researched to determine health impacts.

From a national level the FDA does not test marijuana products (THC, CBD) for human consumption because they have *no medical value*.

State by State testing of marijuana is spotty at best!

Black market products are always available
Weed is getting stronger
Average THC percentage in federal seizures of imported marijuana, 1985 – 2013

Source: White House Office of Nat’l Drug Control Policy
In the 1980’s marijuana’s THC content on average was 5-10%. Mostly herb or plant form smoked in blunt or bong.

Today’s marijuana potency in herb can be upwards of 25% and oils and waxes 30 - 99%. Eating, vaping, drops/tinctures
Why is potency so high?

- Increasing potency due to:
  - Big Industries getting involved (Hiring scientists and researchers to make more potent products).
  - Cross breeding
  - Improved gardening techniques
  - Genetic modification of plants
  - Extraction methods
  - Consumption methods (edibles, vaping)
Illegal Extraction Labs

San Diego hash oil labs growing in sophistication, but who’s behind them?

The DEA has taken down at least 20 hash oil labs in San Diego County as of June 2019, including six that have made the news in May when they exploded.

There were 31 found in 2018 and 27 in 2017, according to the DEA.

In CA, 154 extraction businesses are licensed to use butane or other volatile solvents. None of those licensed extractors are in San Diego County.
Concentrates - Wax, Hash Oil, Edibles

(bud containing – 26% THC, concentrates can contain 30-99%)
Marijuana Use Has Increased Among Young Adults, Ages 18-25

Marijuana Use among Young Adults

Past Month Use

2017: 22.1% with 7.6M users
2016: 20.8% with 7.2M users
2015: 19.8% with 6.9M users

Daily or Almost Daily Use

2017: 7.6% with 2.6M users
2016: 6.4% with 2.2M users
2015: 6.7% with 2.4M users

10% Increase

Special analysis of the 2017 NSDUH Report.

+ Difference between this estimate and the 2017 estimate is statistically significant at the .05 level.

National Survey on Drug Use and Health, SAMHSA
Slide source: Dr. Roneet Lev
Teens More Likely to Use Marijuana Than Cigarettes

Monitoring the Future 2018 Survey Results
Slide credit Dr. Roneet Lev
Vaping as a Method of Marijuana Consumption Is Increasing Among Teens

Monitoring the Future 2018 Survey Results
Slide credit Dr. Roneet Lev
ED Visits for Cannabis-Related Diagnoses Increasing in San Diego County

The Center for Community Research prepared this analysis for the San Diego County Marijuana Prevention Initiative with data from the California Department of Public Health, March 2016.
Marijuana Use Is Increasing Among Pregnant Women

- Among pregnant women, marijuana is the most commonly used illicit drug.

- Risks of maternal marijuana use: health issues in infancy; behavioral and cognitive issues through adolescence and early adulthood.

*National Survey on Drug Use and Health, SAMHSA*

*Slide source Dr. Roneet Lev*
Cannabis Use Disorder

- DSM-5. Diagnostic and Statistical Manual of Mental Disorders (DSM)

- In 2013 added “cannabis withdrawal”

- Americans who reported using marijuana in the past year more than doubled between 2002 and 2013, and the increase in marijuana use disorders during that time was nearly as large.
Mandatory testing of cannabis products effective 7/1/2018.

- 20% failure rate

- High levels of pesticides, solvents and bacteria, including E. coli and salmonella, according to data provided by the state Bureau of Cannabis Control.
• State excise tax imposed on recreational pot (15% State Marijuana tax plus the regular State Sales Tax, local taxes) not on “medicinal” pot products.

• 2018 CA. Marijuana Revenue **$2.5 billion** this is lower than the Governor projected in his State budget.

• **21 million** going back to prevention and education in 2019.
California Assembly OKs medical marijuana on K-12 campuses

SACRAMENTO — California schools may soon allow parents to administer medical marijuana to their children on K-12 campuses.

The California Assembly approved a bill Monday that lets school boards decide whether parents can administer medical marijuana on school campuses. It would allow the use of marijuana in non-smoking form.

"Jojo’s Act – Allows non FDA approved marijuana on K-12"
CBD-infused products are being sold everywhere in California — but are they legal?

By Laura Newberry Los Angeles Times (TNS) 11 hrs ago

LOS ANGELES — Greg and Gary Avetisyan make no secret of it: They proudly sell all manner of products infused with CBD, from essential oils to bath bombs to fruity tealike beverages that promise calming relief in a frantic world.

CBD, short for cannabidiol, is a molecule derived from cannabis. But unlike its chemical cousin THC, it won't get you high. What it might do, according to some research, is alleviate anxiety, seizures, chronic pain and dozens of other ailments.

The Avetisyan brothers' belief in the alleged benefits of the extract is so steadfast that they opened California's first CBD-only store, Topikal, in Tarzana last year and opened a second along the Venice Beach boardwalk in April.

In the eyes of California, however, the Avetisyans' products are being sold illegally, even though they are non-psychoactive.
What is CBD?

CBD stands for cannabidiol. It is a cannabinoid in the same chemical family as THC.

It is the second most prevalent of the active ingredients of marijuana.

CBD is a component of marijuana (one of hundreds), by itself it does not cause a “high.”

Source: Dr. Peter Grinspoon Harvard Health » Cannabidiol (CBD) — what we know and what we don’t - Harvard Health Blog
CBD has been touted for a wide variety of health issues, but the strongest scientific evidence is for its effectiveness in treating childhood epilepsy syndromes, such as Dravet syndrome and Lennox-Gastaut syndrome (LGS).

Recently the FDA approved the first ever cannabis-derived medicine for these conditions, Epidiolex, which contains CBD.

Source: Dr. Peter Grinspoon Harvard Health » Cannabidiol (CBD) — what we know and what we don’t - Harvard Health Blog
The drug, Epidiolex, is derived from cannabidiol (CBD), one of the hundreds of chemicals found in the marijuana plant, and contains less than 0.1 percent of tetrahydrocannabinol (THC), the psychoactive component that makes people high.

The drug's approval permits its use in patients aged two years and older with Dravet Syndrome (DS) and Lennox-Gastaut Syndrome (LGS), rare childhood-onset forms of epilepsy that are among the most resistant to treatment.
Side effects of CBD include nausea, fatigue and irritability. CBD can increase the level in your blood of the blood thinner coumadin.

A significant safety concern with CBD is that it is primarily marketed and sold as a supplement, not a medication. Currently, the FDA does not regulate the safety and purity of dietary supplements. So you cannot know for sure that the product you buy has active ingredients at the dose listed on the label. In addition, the product may contain other (unknown) elements. We also don’t know the most effective therapeutic dose of CBD for any particular medical condition.

Source: Dr. Peter Grinspoon Harvard Health » Cannabidiol (CBD) — what we know and what we don’t - Harvard Health Blog
There is no uniform testing of CBD products to ensure consumer safety.

How do you know the product has CBD in it? Can you trust the label?

THC is often present in products claiming to be pure CBD.

In some products labeled CBD, no amounts of CBD were present.
The bottom line with CBD we need more research.

Some CBD manufacturers have come under government scrutiny for wild, indefensible claims, such that CBD is a cure-all for cancer, which it is not.

Without sufficient high-quality evidence in human studies we can’t pinpoint effective doses, and because CBD is currently mostly available as an unregulated supplement, it’s difficult to know exactly what you are getting. **If you decide to try CBD, talk with your doctor — if for no other reason than to make sure it won’t affect other medications you are taking.**
Unproven Claims

• Combats tumor and cancer cells;

• CBD makes cancer cells commit ‘suicide’ without killing other cells;

• CBD ... [has] anti-proliferative properties that inhibit cell division in certain types of cancer.

• Non-psychoactive cannabinoids in pot may be effective in treating breast cancer.”
Local Data
DAILY MARIJUANA USE AMONG SAN DIEGO COUNTY YOUTH:
% OF STUDENTS REPORTING SMOKING POT 20 OR MORE TIMES IN THE PAST 30 DAYS

*The response rate for non-traditional students participating in the 2013 Survey was lower than in 2009, 2011, 2015, 2017 and 2019 which may in part account for the decrease in ease of access rates among this population in 2013.

Source: CHKS Main Reports, San Diego County: 2009 – 2019
Perception of Harm Among San Diego County Youth:
% OF STUDENTS REPORTING PEOPLE GREATLY RISK HARMING THEMSELVES PHYSICALLY OR IN OTHER WAYS BY USING MARIJUANA OCCASIONALLY

*The response rate for non-traditional students participating in the 2013 Survey was lower than in 2009, 2011, 2015, 2017 and 2019 which may in part account for the decrease in ease of access rates among this population in 2013.

Source: CHKS Main Reports, San Diego County: 2009 – 2019
Access to Marijuana Among San Diego County Youth:
Where youth are accessing marijuana – top four mentions

- Friend, Relative, or Family Member: 3%, 12%, 22%, 32%
- Someone You Just Met or Didn't Know Well: 0%, 3%, 6%, 11%
- Drug Dealer: 2%, 5%, 9%, 20%
- Medical Marijuana Dispensary/Pot Shop: 0%, 2%, 6%, 17%
How Youth are Using Marijuana - San Diego County

If you ever used marijuana or concentrated marijuana, how did you consume it?

- I have never used marijuana: 85% non-traditional, 73% 11th, 21% 9th
- Smoke: 43% non-traditional, 21% 11th, 11% 9th
- Vape: 29% non-traditional, 17% 11th, 10% 9th
- Eat/Drink: 28% non-traditional, 13% 11th, 7% 9th
- Other: 7% non-traditional, 3% 11th, 2% 9th
Perception of Harm: Frequent Marijuana Use
SD Community Survey

Implementation of Prop 64
12% decrease in perception of harm

Percent change indicates the difference in percentages from 2011 to 2019.
Perception of Harm: Edible Marijuana

*Survey item:* Eating edible marijuana food products.

3 out of 4 San Diegans believe using marijuana (smoking, vaping, etc.) if a person is under 21 is harmful to someone's health.

*Percent change indicates the difference in percentages from 2016 to 2019.*
Marijuana is the **primary drug** of choice for youth ages (12-17) in SD County drug treatment.

Higher use rate than alcohol for this age group.

Treatment providers observing higher level THC ratios in urine drug tests.
• Increases in the number of marijuana exposure cases from 2011 - 2015

Number of Marijuana Human Exposure Cases for San Diego County: 2011-2015*

*Timeframe for 2011-2014 is from January-December; timeframe for 2015 is from January-November.

Source: California Poison Control Center, personal communication (March 2015).
Marijuana’s Effects

Pot is associated with a range of side effects:

- Panic attacks
- Seizures
- Hallucinations
- Psychosis
- Sedation
- CH syndrome
- Dry mouth
- Heart palpitations
- Cognitive impairment and slower reaction times
Top 3 Reasons For ER Visits

The most common reasons of seeing marijuana poisoning in the ER:

1. Cannabinoid Hyperemesis (CH)
2. Psychosis
3. Chest pain
Scromiting Video
New CH Treatment Guidelines

- New treatment guidelines published here: https://escholarship.org/uc/item/59z5q826

- Treatment should focus on the need for cannabis cessation.

- Capsaicin is a readily available topical preparation that is reasonable to use as first-line treatment.

- Emergency physicians should **avoid opioids** if the diagnosis of CHS is certain and educate patients that cannabis cessation is the only intervention that will provide complete symptom relief.
Edibles
Edible Effects

- After ingestion of an edible there may be no effect for **30 to 60 minutes** (on a full stomach may take nearly two hours to feel full effects).

- The high can last **4 to 8 hours** while the effects from smoking can wear off in an hour or less.

- Edibles can be very potent!
1. The identity of the product in a text size reasonably related to the most prominent printed matter on the panel, and the words “cannabis-infused” immediately above in a text size larger than the text size used for the identity of the product.

2. The universal symbol below, printed conspicuously and legibly, not less than a half-inch by a half-inch.

3. Net weight or volume of the contents.

4. THC and CBD content of the package, as well as the THC and CBD content per serving, all expressed in milligrams.
Mental Health
THC and Mental Health

- Studies have shown that THC can awaken pre-existing mental health issues in people with a genetic history of mental health issues.

- Specifically, psychosis related to schizophrenia.

- Paranoia, anxiety, panic, hallucinations and delusions are some possible side effects.
• College student ate an entire marijuana cookie that had been purchased from a licensed and legal pot shop in Colorado, despite the clerk having advised that it be split up and consumed in small portions.

• Soon after he began to exhibit what witnesses described as erratic behavior, then, the Denver coroner’s report, “The decedent eventually reportedly jumped out of bed, went outside the hotel room and jumped over the balcony railing.”

• The coroner acknowledged at the time that marijuana intoxication was a contributing factor.
Several studies have found that more frequent use of pot is associated with a higher risk of psychosis or losing touch with reality.

Consuming pot on a daily basis and especially using high-potency products increases the odds of having a psychotic episode.
However, controlled studies have not been conducted to evaluate the safety or effectiveness of medical marijuana for PTSD. Thus, there is no evidence at this time that marijuana is an effective treatment for PTSD.

In fact, research suggests that marijuana can be harmful to individuals with PTSD.
Marijuana use and schizophrenia: New evidence suggests link

Written by Yvette Brazier

Published: Monday 26 December 2016

A new study, published in Psychological Medicine, has added to the body of evidence pointing to a link between schizophrenia and the use of cannabis.

Recent research suggests that not only are people who are prone to schizophrenia more likely to try cannabis, but that cannabis may also increase the risk of developing symptoms.

Studies show that cannabis use is more common among people with psychosis than in the general population, and that it may also increase the risk of psychotic symptoms.

Its use has been linked to symptoms of psychosis, such as paranoia and delusional thinking, in up to 40 percent of users.

Earlier this year, scientists warned that young people who use cannabis could be putting themselves at risk of psychotic disorders. People with schizophrenia appear to have a higher chance of experiencing psychosis if they use cannabis.

Previous warnings had voiced concerns regarding the particularly powerful strains of cannabis, such as "skunk," currently circulating among young people.
• **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% to 7%) between 2002 and 2017.

• Maternal marijuana use dangerous to the baby after birth. May affect the newborn’s brain development and result in hyperactivity, poor cognitive function, and other long-term consequences.

• THC can be present in breast milk up to six days after last use.
Marijuana-Involved Opioids Deaths

SD Medical Examiner cases 2016:

- THC was found in 25.8% (125 out of 484) accidental overdose deaths.

- THC found in 25.2% of prescription drug overdose deaths, more than any single medication, and a higher association than benzodiazepines.
How did Juul become so popular?
JUUL Marketed to Teens

- JUUL spent millions of dollars for online marketing at its launch in 2015.
- Utilized social media platforms (i.e., Twitter, Instagram, YouTube) to promote company-sponsored ads associating JUUL with being cool, fun, relaxing, and having sex appeal.
Epidemic in 3 years

• By 2018 - Juuling/vaping was an epidemic among youth
• Under FDA scrutiny - Juul suspended Facebook and Instagram accounts on November 13th 2018.
OUR MISSION

IMPROVE THE LIVES OF THE WORLD’S ONE BILLION ADULT SMOKERS.
Many countries produce JUUL “like” products that look very similar to actual JUUL brand. Many have unknown ingredients and no product testing standards.
• January 2017 E cigs fall under tobacco use on school campus and CA. Dept of Education required to update policies to include electronic devices.

• Penalty is same as tobacco use, referral to intervention program, second offense up to district could be a suspendable offense after a few times.
Vape Mist

- Vape mist consists of propylene glycol, largely responsible for making your breath look like a cloud of mist, is also found in fog machines has been linked to chronic lung problems among stagehands.

- May also contain lead, nickel, tin, and silver from the machinery inside the devices along with formaldehyde, manganese, toluene. (Linked to Cancer)

- May contain other oils, pesticides and chemicals that when heated up and inhaled may be harmful to health. (ie. Recent Vaping Illness)
Vaping Devices
Hoodies, watches and other camouflaged vaping devices confound parents, schools
The E-liquids contain few ingredients most notably, nicotine. The high concentration of nicotine that can be consumed all at once if orally ingested makes them a potentially hazardous material.

The e-liquids may be seen as a tasty treat to young children; e-liquids are small and come in appetizing looking flavors and packages that can look like candy to a young eye.
Challenges with Vaping

- You can vape, dab, a variety of substances with virtually no odor.

- Produces stronger drug effect when combined with THC.

- Hard to test the device for verification of substance.

- Explosion risks with some devices! (lithium-ion battery)
Injuries

E-cigarette explosions prompt three lawsuits in California

Vicente Garza
October 16, 2015

- Severe injuries to his mouth, tongue, and left index finger
- 14-day hospitalization
- Two surgeries on his tongue
- Two surgeries on his left index finger, including amputation at the knuckle
- Ongoing treatment at the Grossman Burn Center

A 16-Year-Old Teen Suffered Second Degree Burns When an E-Cigarette Exploded in His Face

A 16-year-old Ty Greer, a teen in Alberta, Canada, who suffered second degree burns and broken teeth after his e-cigarette spontaneously exploded just inches from his mouth while he was using it in his car.

"It lit my kid’s face on fire, busted two teeth out," Perry Greer, Ty’s father, told the Canadian Press. "It burned the back of his throat, burned his tongue very badly. If he wasn’t wearing glasses, he possibly could have lost his eyes. ... He wanted to die. That is how much pain he was in."

In Case You Missed It

Doctors’ message to Latin Americans: Watch out for diabetes as young as 15

Global News
Vaping marijuana results in stronger drug effects and higher peak concentrations of THC in blood, compared with equal doses of smoked marijuana.

This increases the active metabolite Delta 9 THC; the psychoactive chemical.

Source: Acute Effects of Smoked and Vaporized Cannabis in Healthy Adults Who Infrequently Use Cannabis - JAMA 2018
Eight teens were hospitalized in July with seriously damaged lungs in Wisconsin, the state Department of Health Services reported Thursday.

"We suspect that these injuries were caused by vaping," said Dr. Michael Gutzeit, chief medical officer at Children's Hospital of Wisconsin where the teens were admitted, at a press conference.

Their symptoms, including cough, shortness of breath, and fatigue, worsened over days or weeks before the patients arrived at Children's Hospital. Some reported fever, anorexia, chest pain, nausea and diarrhea. Scans and X-rays showed inflammation or swelling throughout
By Aug. 27, 2019, 215 cases in 25 states.

Patients reported a gradual start of symptoms, including:

- Breathing difficulty
- Shortness of breath
- Chest pain
- Mild to moderate gastrointestinal illness including vomiting and diarrhea
- Fevers or fatigue.

In many cases, patients have also acknowledged recent use of e-cigarette-cartridges containing tetrahydrocannabinol (THC).
Number of Lung Injury Cases reported to CDC as of October 8, 2019 (N = 1,299)

Source CDC. Downloaded 10/14/19 from: Slide credit Dr. Eric McDonald
https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html
EVALI – E-Cig Vaping Associated Lung Injury

- 40 deaths as of November 2019

- Over 2000 hospitalized Nationally and 31 locally.

- About 85% of individuals have reported using THC cartridges.

- Average age of patients is 23.

- No uniform testing for product safety!
Facing ‘Certain Death,’ Teenager With Vaping Injury Gets Double Lung Transplant

The surgery on the 17-year-old was the first transplant reported in the recent nationwide outbreak of vaping-related lung injuries.
How long has this been around?

• Doctors are calling it - E-cigarette, or vaping, product use associated lung injury (EVALI)

• May have been occurring for a long time but there was no way to report it.

• No ICD code at this time for hospitals to document cases and does not fall under FDA jurisdiction.
Why were vaping devices allowed to be sold without proper testing?

There’s evidence that scientists, regulators and e-cigarette proponents missed, ignored or downplayed signs that vaping could significantly damage the lungs for nearly a decade, a review of medical literature, government documents and interviews with doctors shows.
“Second Hand” Marijuana Smoke

- In Colorado, THC were found in one in six infants and toddlers admitted to Children’s Hospital (CHC) for coughing, wheezing, and other symptoms of bronchiolitis.

- As with secondhand tobacco smoke, children can be exposed to the chemicals in marijuana when it is smoked by someone nearby.
What we can do!
GOOD SAMARITAN LAWS

• Do not fear calling 911 if you or friend need help!

• Good Samaritan policies protect the caller and overdose victim from arrest and/or prosecution for simple drug possession, possession of paraphernalia, and/or being under the influence.
When In Doubt – Drug Test!

- If your child is obtaining a driving permit, drug test.
- There are over the counter drug tests available.
- Synthetic drug testing is more expensive but available.
Test Swab Vape Device

The marijuana test kit is so small and simple and it detects pot right away.

The kit uses test strips and a pre-treated swab that detect THC, the active ingredient in marijuana.

https://www.s2detect.com/marijuana-test-kit-mtk
San Diego police go after drugged drivers with new mouth swab test

The machine tests for the presence of seven drugs — marijuana, cocaine, opiates, methamphetamine, amphetamine, methadone and benzodiazepines. The device does not read the level of intoxication; drivers would have to take a blood test for that information. (Cost about $6000.00)
The measure puts a one-year moratorium on the sale of vaping devices and permanently bars flavored nicotine.
Be a Public Health Educator

Speaking to Youth Groups:

• Ask youth – “Do you have addiction in your family”

Share a personal story – become human!

• Know the science, discuss like you are teaching a class.

• Have a positive take away! And allow questions?

• Have resources available for treatment.
MPI provides TA to prevention groups, schools and civic organizations.

Examples:
- Information and data for download.
- Drugged Driving Campaign
- Check out our - MPI Prevention TOOLKIT.

Visit our MPI website & YouTube page:
http://www.ccrconsulting.org/mpi
Questions?