

Marijuana and Risks to Children: New Dosage Forms That Are Particularly Appealing to Youngsters

by

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### How Well Do You Know Your Friends?



## Creepy Picture, huh?



### *Can You Guess the Hidden Item?*



### PHARMACISTS KNOW A LOT ABOUT DRUGS, BUT.....

- Many curricula do not contain coursework in substance abuse
- Thus, they are not schooled in this "other" use of pharmaceutical products
- Most have limited personal experience with recreational drugs (thankfully)
- But, pharmacists are often sought out by parents, family members, etc. for help

# THREE DRUG EXPERTSFROM THE 1960s



James Marshall Hendrix Born- 11/27/42 Died- 9/18/70



Paul Louis Doering Born- 2/25/49 Not Dead Yet



Janis Lyn Joplin Born- 1/19/43 Died- 10/4/70









### **Synthetic Marijuana aka Spice or K2**





## "Synthetic Marijuana"



Cannabicyclohexanol



**JWH-073** 



Tetrahydrocannabinol



### **JWH-018**



HU-210

### **Δ-9 Tetrahydrocannabinol (THC)**

best known cannabinoid. occurs naturally in the plant primarily as THCA Responsible for the effect most patients are familiar with. Typically, a sample of flower will contain 8% – 20% THCA depending on the strain and cultivation method.

### **Cannabidiol (CBD)**

second most prominent compound Many of the medical benefits of cannabis are attributed to the CBD Believed to have strong anti-inflammatory and anti-convulsive properties. Not psychoactive cannabinoid like THC, Some evidence that it may even inhibit the psychoactive effects of THC. Normal flower would contain less than 1% CBD, 'Enriched' strains may have contained up to 4%.

### **Cannabinol (CBN)**

not directly synthesized by the cannabis plant, but one that occurs as a byproduct of the degradation of THC over time.

Is also non-psychoactive, but cannabis samples with higher CBN content are generally attributed with a sedative effect. Since CBN occurs during the degradation of THC over time, the typical amount of CBN found in most samples of cannabis is less than 1%. Samples that are older, such as flowers that have been subjected to a curing process, will generally have higher CBN content than newer samples.

### Tetrahydrocannabinolic Acid (THC-A)

Most prominent compound in raw cannabis.

When cannabis is burned, vaporized or heated for a short time, the naturally non-psychoactive THC-A will convert into the psychoactive cannabinoid, THC.

Naturally occurs in fresh, undried cannabis.

Believed to play a significant role in anti-inflammatory effects.

### Tetrahydrocannabivarin (THC-V)

another cannabinoid that is most commonly found in cannabis sativa. Recent research shows that THCV may be helpful in treating metabolic disorders including diabetes. THCV is a homologue of THC that contains a propyl (3-carbon) side chain. It is one of the compounds found naturally in cannabis.

### **Cannabigerol (CBG)**

another of the non-psychoactive Usually found in high concentrations among hemp,

it is attributed with relief of intraocular pressure, one of the main symptoms of glaucoma.

This cannabinoid is also associated with the antibacterial properties of some cannabis medicine, offering potential for treatment of bacterial infections like MRSA.

### Cannabichromene (CBC)

Non-psychoactive, and it does not impact the psychoactive effects of THC. may play a role in the anti-viral and anti-inflammatory effects of cannabis,



## Colorado Department of Revenue

### Marijuana Enforcement Division 1 CCR 212-2

Permanent Rules Related to the Colorado Retail Marijuana Code

## What's <u>Really</u> in this Stuff?

### Edibles' THC claims versus lab tests reveal big discrepancies

An independent Denver Post study shows marijuana-infused product labeling often doesn't match THC content

PUBLISHED: MAR 9, 2014, 12:16 AM

By Ricardo Baca, The Denver Post

"Right now testing the product is permissive," said Colorado Department of Revenue communications director Daria Serna. "Starting in May 2014, it could become mandatory for MIPs to test every production batch of edibles for potency.

"Potency testing measures the value of THC in a product, and it also determines if the THC is homogenized in the product."

The MED investigates complaints, but until testing regulations become firmly standardized, a

### Complaints About Potency

BotanaCare owner Robin Hackett knew something was off at her Northglenn recreational pot shop when her customers started calling, reaching out on social media and coming into the store with complaints — all about Dr. J's products, Hackett said. As of last week, Hackett had received nearly 450 individual complaints, she said.

### Complaints About Potency

"People kept coming in saying, 'I ate 100 milligrams ... 150 ... 200 ... 300 ... and I didn't feel anything.' And you don't eat 200 milligrams of activated THC and not feel anything," said Hackett, who has sold 15,000 Dr. J's edibles since Jan. 1. "Then somebody brought one back unopened, and I had it tested. There was nothing in there. No (THC) at all. The lab confirmed that Dr. J's is selling chocolate. He duped me and every patient who bought one."

### Denver Post Study

One Dr. J's milk chocolate Star Barz labeled for 100 milligrams of THC had 0.37 milligrams of the valued psychoactive component, according to three tests conducted by Steep Hill Halent of Colorado, a state-licensed marijuana testing facility. Another popular Dr. J's chocolate bar, the 100-milligram Winter Mint flavor, tested similarly in two experiments, showing 0.28 milligrams of THC.

http://www.thecannabist.co/2014/03/12/thc-levels-edibles-see-lab-tests-denver-post-study/6708/

## **Dosing Recommendations**



### What is the Proper "Dose?"



## A "Good" Reference Site

	News 🔻	Culture 👻	Reviews 👻	Food 👻	Resources -	Map 👻	Search	Q
Cannabist								

Oct. 6, 2014



#### NEWS

### 'Weeding out the stoners': How ad agency lost client

The founders of a Denver-based ad company lost a major client and alienated activists when they said, "We're weeding out the stoners," in a recent New York Times piece on legal marijuana's everchanging image. Making matters more severe: The ad company, Cannabrand, deals solely with marijuana clients.

#### FOLLOW THE CANNABIST



#### FIND A STORE NEAR YOU



RECREATIONAL SHOPS | MEDICAL DISPENSARIES SELL MARIJUANA? GET YOUR STORE LISTED HERE.

http://www.thecannabist.co/

### A Great Advertisment



# *"Necessity is the Mother of Invention"*



## The Old Fashioned Way





















## **Blunts**



## A Gravity Bong



## A Gravity Bong



## A Really "Bright" Idea





### How to Make a Steam Roller

Get a Soda Can or any other can, really. You just need one that is at least similar to a typical soda can.



<u>Pax™ Vaporizer by Ploom</u> www.vapeworld.com/pax-by-ploom Tried the rest, but want the best? Experience Pax™ Portable Vaporizer.

AdChoices 🕞


**Get a Pin or any other sharp, pointy object that can make small holes**. (You can also break off the tab on top, snap it in half, and use it as a poking device.)





**Make an Indent** on the opposite side of the mouth part that you drink out of. indent that whole side of the can. This is where the holes will be poked and whatever you are smoking will be placed, so make sure it's flat.



Poke Small Holes, this is obviously what you will place that which you smoke on, and where the lighter will light it. This is done with the pin or other sharp, pointy, object spoke of earlier.



**Poke a Large Hole on the side**. Preferably, the side to the left of you when you hold the can to your mouth as you would any other pipe. The picture shows the finished can with the large hole on the side circled in red, the smaller holes where the stuff is placed in green, and the original drinking hole that you smoke through in blue. Click for a larger picture.



5

## **Example of a Vaporizer**







Price: \$49.50

**Bud Bomb Original - Metal Hand Pipe - Chrome** 

http://www.grasscity.com/us\_en/the-bud-bomb-originalchrome.html#.VDQLG01OV1M

# An Impromptu Smoking Device



Sometimes call a carburetor

## The Bong Spear



\$14.95 - Bong Spear - turn any bottle into a bong bongspear.com/ -

## How to make Cannabis Butter (Cannabutter)



## Cannabutter cont'd



## Cannabutter cont'd



## Cannabutter cont'd



## **Dixie One THC Infused Elixir**



### **Dixie One Watermelon Cream**

It may look small, but it packs a good punch. Lightly carbonated and made with all natural flavors, our Watermelon Cream Elixir is all kinds of cool just in time for summer. And with 5 mg of THC in each bottle – you can sip, savor and see how a single dose of THC affects you.

- 5mg Single Serving Bottle
- Absorbed through the liver so can take 45 minutes to an hour to take effect
- •Great for those who are new to THC or don't like to share
- Triple lab tested for quality and consistency

# Dixie Elixirs THC Infused Drinks



## http://dixieelixirs.com/

## Sparkling Peach



### Sparkling Peach

Colorado has some of the best peaches. And Dixie just made them even better. All the luscious flavor of a perfectly ripe peach infused with expertly extracted THC give Dixie's Sparkling Peach Elixir the best of both worlds. Available in 40mg and 75mg strength Absorbed through the liver so can take 45 minutes to an hour to take effect Great for sharing with friends Triple lab tested for quality and consistency

## **THC Infused Chocolate Bar**



### Colorado Bar

Dixie's Colorado Bar is small, mighty and hand-crafted with potent THC extract to make sure that you can enjoy all Colorado has to offer. Infused with 100mg of THC for recreational use and 300mg of THC for medical use.

Dixie Colorado Bar Details: • Hand-crafted sunflower seed fudge covered in dark chocolate and vanilla chocolate.

Small and powerful for dependable results
Absorbed through the liver so product may take up to one hour to take effect
Triple lab tested for quality and consistency

## "The CannaCurve"



LiveLabels LiveLabels patented CannaCurve technology helps cannabis users visually understand the head/body effects of specific products over time, and connects our partner's medical and retail product catalog to the cannabis community. - See more at:

http://www.thcbiz.com/directory/resources/misc/livelabels.html#sthash.9DY0KlMC.dpuf

## Chocolate Truffles



#### **Chocolate Truffles**

A pair of perfect truffles infused with sativa dominant THC oil. These chocolate treats are available in a 300mg package for medical use and either 100mg or 50mg for recreational use.

Dixie Chocolate Truffle Details:

- Dixie's decadent chocolate truffles are expertly crafted and perfectly enhanced with CO2 THC extract.
- French vanilla chocolate, cocoa, organic heavy cream, butter, pure vanilla extract combine with THC (Tetrahydrocannabinol) CO2 oil for the most delicious infused handmade truffle.
- Absorbed through the liver so product may take up to one hour to take effect
- Triple lab tested for quality and consistency



## **Dixie Rolls**



### Dixie Rolls

Small and mighty, these chewy, chocolaty treats pack a lot of punch. Infused with pure, CO2 extracted THC, Dixie Rolls are great on the go and perfect to share with friends.

- Each roll contains 25mg for recreational use or 50mg for medicinal use.
- Absorbed through the liver so product may take up to one hour to take effect.
- Triple lab tested for quality and consistency.





### **Cinnamon Dew Drops**

A little spicy, a little sweet, Dixie's Cinnamon Dew Drops have just the kick cinnamon lovers are looking for. Enhanced with premium THC extract, place a few drops under the tongue for maximum effect.

- Fast-acting alternatives for discrete use.
- Each bottle contains 100mg of THC.
- •Effective relief from all forms of general inflammatory and neuropathic pain, these dew drops reduce stress and pain while promoting relaxation.
- Drops should be placed under the tongue for :30 -:60 seconds for maximum results
- Dixie Dew Drops should be titrated one dropper at a time to ensure proper dosing
- Triple lab tested for quality and consistency



#### **Dixie Relaxing Scrips**

Reduce stress and promote physical relaxation with Dixie's Relaxing Scrips. Extraordinarily concentrated THC extract capsules are enhanced with organic herbs known for their calming and soothing benefits.

• Available in 10mg and 25mg for recreational use and 50mg for medicinal use

• Contains theanine and hops along with natural cannabis to reduce mental and physical stress and promote relaxation.

•Great for night-time pain and trouble falling or staying asleep.

• Are absorbed by the liver and can take 45 minutes or more to take effect

•Scrips should be taken one at a time to ensure proper dosing

• Triple lab tested for quality and consistency

# Pain Relief Capsules



#### **Dixie Scrips General Pain Relief**

Dixie Scrips Pain Relief are available in 50mg capsules. Reduce stress and promote physical relaxation with Dixie's Pain Relief Scrips. Extraordinarily concentrated THC extract capsules are enhanced with organic herbs known for their anti-inflammatory and pain relief benefits.

#### Dixie Scrips Pain Relief Details

•THC, white willow bark and turmeric provide pain relief effects similar to aspirin to reduce stress and pain while promoting relaxation

- Available in 50mg capsule for medicinal use only
- •Effective relief from all forms of general inflammatory and neuropathic pain
- Are absorbed by the liver and can take 45 minutes or more to take effect
- •Scrips should be taken one at a time to ensure proper dosing
- Triple lab tested for quality and consistency

## Vaporizer for THC



### Prime Vape Pen

The perfect way to enjoy our connoisseur smoking extracts. With extended battery life and leak-proof cartridge, Prime Pen is engineered to give you best-in-class vaporization.

• Rapid absorption of THC through the lungs

•Use with Dixie Pure CO2 oil for best results

## THC Oil



### Pure

Breathe the fire. Connoisseur grade THC (Tetrahydrocannabinol) CO2 oil from the extract masters at Dixie. The future of cannabis.

•This is highly potent, highly concentrated cannabis.

The intoxicating effects of this product can be immediate and may last five hours.
Triple lab tested for quality and consistency

# **Topical THC Formulation**



### Relief Balm

Luxurious salve infused with cannabis proven to relieve stress and repair the skin – restoring smoothness and suppleness. Thicker and more potent then the Pain Relief Lotion, this salve is formulated for deep aches and pains. With fast acting THC, our salve relieves your aches and relaxes you deeply.

- For topical application only
- Apply to effected area and rub into skin for maximum benefit
- Triple lab tested for quality and consistency

## The New York Times

THE OPINION PAGES | OP-ED COLUMNIST | NYT NOW

### Don't Harsh Our Mellow, Dude

JUNE 3, 2014

Maureen Dowd



The caramel-chocolate flavored candy bar looked so innocent, like the Sky Bars I used to love as a child.

Sitting in my hotel room in Denver, I nibbled off the end and then, when nothing happened, nibbled some more. I figured if I was reporting on the social revolution rocking Colorado in January, the giddy culmination of pot Prohibition, I should try a taste of legal, edible pot from a local shop.

What could go wrong with a bite or two?

Everything, as it turned out.

Not at first. For an hour, I felt nothing. I figured I'd order dinner from room

http://www.nytimes.com/2014/06/04/opinion/dowd-dont-harsh-our-mellow-dude.html?\_r=0

## The Scary Part

"But then I felt a scary shudder go through my body and brain. I barely made it from the desk to the bed, where I lay curled up in a hallucinatory state for the next eight hours. I was thirsty but couldn't move to get water. Or even turn off the lights. I was panting and paranoid, sure that when the room-service waiter knocked and I didn't answer, he'd call the police and have me arrested for being unable to handle my candy."

## The Scary Part cont'd

"It took all night before it began to wear off, distressingly slowly. The next day, a medical consultant at an edibles plant where I was conducting an interview mentioned that candy bars like that are supposed to be cut into 16 pieces for novices; but that recommendation hadn't been on the label."





## 10 Commandments of Marijuana Edible Safety



### 1. Thou shalt go low and slow

Start with a low dose of 10 milligrams of THC and wait two hours before consuming any more cannabis. Your digestive system processes pot slowly, especially if you've already eaten a substantial meal. Once inside your liver, THC is converted into another chemical called 11-hydroxy-THC, which is actually more potent, explaining the intensity of an edibles high.

### 2. Thou shalt label homemade pot foods

If you prefer to create your own cannabis-infused foods at home, be sure to always label items to prevent accidental ingestion by a roommate, neighbor, friend, babysitter, house-guest, family member, etc.

### 3. Thou shalt not mix with alcohol

Combining edibles with alcohol should only be attempted by those who have mastered both substances. Smoking a jay while rocking a beer is a completely different vibe than scarfing a pot brownie when you're already wasted. Keep in mind that a few glasses of Chardonnay will magnify the effects of pot chocolate significantly, causing nausea and dizziness, aka "the spins."



### 4. Thou shalt eat a proper dinner

Edibles are much more intense when consumed on an empty stomach. Be sure to eat a solid, nutritious meal before taking your THC dose.

### 5. Thou shalt not drive or operate heavy machinery

Save the cannabis until you're at home, ready to relax and rejuvenate.

### 6. Thou shalt keep away from children

Store your edibles in a locking cabinet or box. At an appropriate age, educate any minors about the effects of edibles and make sure they understand these substances are for adult use only.

### 7. Thou shalt have unmedicated snacks on hand

Don't let yourself get too stoned from sheer hunger. If you're eating pot chocolate, keep some regular chocolate on hand if you need to taste more deliciousness.



### 8. Thou shalt keep CBD capsules on hand

CBD, another important cannabinoid with healing properties, is known for it's confounding effect on THC. Meaning that CBD can lessen the paranoid, panicky feelings that come on after ingesting too much THC. Keep some CBD-rich cannabis on hand for smoking, as well as high-CBD capsules, as antidotes that will take the edge off and return balance to your high.

### 9. Thou shalt remain calm

If you do happen to overindulge on pot-laden treats, remember that you will recover just fine. Retreat to a safe place where you can lay down, and most likely you will drift off to sleep for 10 or 12 hours. Upon waking, you will feel incredibly rested, if not a little groggy.

### 10. Thou shalt never prank!

Never prank people by giving them infused foods without their knowledge, as such actions are criminally irresponsible. Ingesting pot food without expecting its effects is scary and dangerous.

## Unpredictable Effects

#### LOCAL NEWS

# Denver coroner: Man fell to death after eating marijuana cookies

By John Ingold

**The Denver Post** 

POSTED: 04/02/2014 09:20:26 AM MDT | UPDATED: 6 MONTHS AGO

257 COMMENTS

A college student visiting Denver jumped to his death from a hotel balcony after eating marijuana-infused cookies, according to a coroner's report that marks the first time authorities have publicly linked a death to marijuana since legal sales of recreational cannabis began in Colorado.

Levy Thamba, a 19-year-old student at Northwest College in Powell, Wyo., died last month at a Holiday Inn in northeast Denver. On Wednesday, the Denver coroner released a report



Levy Thamba was a student at Northwest College in Powell, Wyo., who was also known as Levi Thamba Pongi.

http://www.denverpost.com/news/ci\_25475533/denver-coronerman-fell-death-after-eating-marijuana?source=infinite



Robin Hackett, co-owner of BotanaCare, speaks with Dr. J's owner Tom Sterlacci about an order she recently placed for edible cannabis treats from Dr. J's that customers called to complain had no effect. She sent a sample to an independent lab where the supposed 100mg THC treats registered near zero ...

## THE DENVER POST **\* BREAKING NEWS** Children's Hospital sees surge in kids accidentally eating marijuana

By John Ingold *The Deriver Post* POSTED: 05/21/2014 11:26:53 AM MDT UPDATED: 05/22/2014 08:27:52 AM MDT

AURORA — The number of children coming into Colorado's largest pediatric emergency department after accidentally eating marijuana is on pace to more than double last year's total.

Michael DiStefano, the medical director of the Children's Hospital Colorado emergency department, said nine kids so far this year have been brought into the hospital for accidental marijuana ingestion. Of those, seven were admitted to the hospital's intensive-care unit — most commonly for what DiStefano said was either extreme sedation or agitation. One of those kids had breathing problems that required a respirator, DiStefano said.

Most of the children admitted are between 3 and 7 years old, DiStefano said.

### 243 COMMENTS



A grow light shines through the leaves of a cannabis plant at a grow facility in Denver. (Seth McConnell, The Denver Post)

#### Aug 17:

 Consumer demand for pot edibles spurs Denver manufacturing surge

## THE DENVER POST **X** MARIJUANA

## Edible pot review continues in Colorado

Kristen Wyatt Associated Press POSTED: 05/16/2014 08:36:15 AM MDT UPDATED: 05/16/2014 08:36:36 AM MDT

1 COMMENT

GOLDEN, Colo. (AP) — Producers of edible marijuana in Colorado met again Thursday with state regulators and health officials to come up with stricter standards for marijuana-infused foods. From new warning labels on so-called "edibles" to requiring pot sellers to verbally warn consumers not to eat too much pot, the group is working in advance of a bill expected to be signed into law next week. The new law will require edible marijuana to be stamped or marked to state potency and that it is not for children.

The Department of Revenue, which is the state's marijuana regulator, suggested a new guideline on how marijuana is packaged.

Colorado already requires edible pot sold on the recreational market to come in serving sizes of 10 milligrams of marijuana's psychoactive chemical, with a maximum of 10 total servings. The proposed rule would require each of those servings to come individually wrapped, akin to individual complete the serving of carries.

http://www.denverpost.com/marijuana/ci\_25766724/edible-pot-review-continues-colorado

# **Regulations Enacted in Colo.**

C. <u>THC Content Container Restriction</u>. Each individually packaged Edible Retail Marijuana Product, even if comprised of multiple servings, may include no more than a total of 100 milligrams of active THC. See Rule R 1004 – Labeling Requirements: Specific Requirements, Edible Retail Marijuana Product.

c. <u>Serving Size Statement</u>. "The standardized serving size for this product includes no more than ten milligrams of active THC."




http://www.sweetgrasskitchen.com/





http://www.sweetgrasskitchen.com/

## A Small Sample of Edibles



## **THC Infused Gummies**

#### **EdiPure**<sup>™</sup>

EdiPure<sup>®</sup> Infused THC Gummies - The One, The Only, The Original



http://edipureca.com/

## More Gummies

#### Sour Gummi Bears 100mg from Edipure Edibles July 2014 Jul 5, 2014 Reviews **9** 0 0 1792 Εc The One. The Only. The Origin www.thcmag.com

## Yummy. Grapefruit Tarts!

18/17 Edi-Pure **Pink Grapefruit Tarts** 10 X 25mg Value Pack Net 57.1g / Not For Resale 250mg Active THC 450mg Trichome Oil Extract For Medical Use Only **Keep From Children** 

## Hashish



The resin contains much higher levels of THC, thus the hashish is more powerful than marijuana, containing 40 % THC compared to 10 % in marijuana

## Butane Hash Oil (BHO)



## **Composition of BHO**



### More Potent BHO



## Potent Cookies



## Cola Beverages



## An Assortment of Vaporizers



TAKE THE HIGH ROAD. For child safety, disconnect the cartridge from 0.penVAPE battery and store go.pen in locked position when not in use. Keep away from

children! Please take safety precautions.

## The People in Charge



## Child Resistant Packaging is Required

"Child-Resistant" means special packaging that is:

a. Designed or constructed to be significantly difficult for children under five years of age to open and not difficult for normal adults to use properly as defined by 16 C.F.R. 1700.20 (1995) and ASTM classification standard D3475-13, <u>http://www.astm.org/Standards/D3475.htm</u>. Note that this rule does not include any later amendments or editions to the Code of Federal Regulations or the ASTM classification standards. The Division has maintained a copy of the applicable federal regulation and ASTM classification standard, which are available to the public.

# Doing a Dab



## How to "Do a Dab"

## The Volcano Vaporizer







# An Interesting Article

#### PEDIATRICS/ORIGINAL RESEARCH

#### Association of Unintentional Pediatric Exposures With Decriminalization of Marijuana in the United States

George S. Wang, MD\*; Genie Roosevelt, MD, MPH; Marie-Claire Le Lait, MS; Erin M. Martinez, MS; Becki Bucher-Bartelson, PhD; Alvin C. Bronstein, MD; Kennon Heard, MD

\*Corresponding Author. E-mail: george.wang@childrenscolorado.org.

Study objective: We compare state trends in unintentional pediatric marijuana exposures, as measured by call volume to US poison centers, by state marijuana legislation status.

**Methods:** A retrospective review of the American Association of Poison Control Centers National Poison Data System was performed from January 1, 2005, to December 31, 2011. States were classified as nonlegal if they have not passed legislation, transitional if they enacted legislation between 2005 and 2011, and decriminalized if laws passed before 2005. Our hypotheses were that decriminalized and transitional states would experience a significant increase in call volume, with more symptomatic exposures and more health care admissions than nonlegal states.

**Results:** There were 985 unintentional marijuana exposures reported from 2005 through 2011 in children aged 9 years and younger: 496 in nonlegal states, 93 in transitional states, and 396 in decriminalized states. There was a slight male predominance, and the median age ranged from 1.5 to 2.0 years. Clinical effects varied, with neurologic effects the most frequent. More exposures in decriminalized states required health care evaluation and had moderate to major clinical effects and critical care admissions compared with exposures from nonlegal states. The call rate in nonlegal states to poison centers did not change from 2005 to 2011. The call rate in decriminalized states increased by 30.3% calls per year, and transitional states had a trend toward an increase of 11.5% per year.

**Conclusion:** Although the number of pediatric exposures to marijuana reported to the National Poison Data System was low, the rate of exposure increased from 2005 to 2011 in states that had passed marijuana legislation. [Ann Emerg Med. 2014;63:684-689.]

Please see page 685 for the Editor's Capsule Summary of this article.

Wang GS, Roosevelt G, Le Lait MC, Martinez EM, Bucher-Bartelson B, Bronstein AC, Heard K. Ann Emerg Med. 2014 Jun;63(6):684-9.

## **Another Interesting Article**

#### Anticipated Medical Effects on Children From Legalization of Marijuana in Colorado and Washington State A Poison Center Perspective

William Hurley, MD; Suzan Mazor, MD

**On November 4, 2012,** Amendment 64 passed in Colorado and Initiative 502 passed in Washington State to legalize the possession of small amounts of marijuana and marijuana-related products by adults. Possession by anyone younger than 21 years and the growing of marijuana without authorization remain illegal in both states. In Colorado, adults are permitted to possess up to 1 oz of marijuana or 6 marijuana plants. In Washington, adults are permitted to possess up to 1 oz of marijuana, 16 oz of marijuana-infused product in solid form, 72 oz of marijuana-infused product in liquid form, or any combination of all 3. The possession of marijuana remains illegal under federal law and marijuana remains a Schedule I agent under the Drug Enforcement Administration.

The medical use of marijuana and marijuana-infused products is legal in 18 states and the District of Columbia. Seven additional states are considering legalization of medical marijuana. The medical use of marijuana has been legal in Colorado since 2009.

In this issue, Wang et al<sup>1</sup> describe an increase in cases of accidental ingestion of marijuana by children after decriminalization of medical marijuana in Colorado. Marijuana inwith THC levels climbing from around 2% to nearly 8%.<sup>4</sup> The risk of significant toxic reactions from exposures is more likely today than in the past.

Emergency medicine, pediatric emergency medicine, and primary care pediatric providers will be first to see patients accidentally exposed to marijuana. They may need additional training to recognize and manage significant marijuana toxic reactions. Signs and symptoms can include anxiety, hallucinations, panic episodes, dyspnea, chest pain, nausea, vomiting, dizziness, somnolence, central nervous system depression, respiratory depression, and coma.<sup>5</sup> Similar signs and symptoms occur in a large variety of diseases and poisonings. The providers and staff should investigate the availability of marijuana in the child's environment and use rapid tests to identify the metabolites of marijuana in the urine.<sup>6</sup> No antidote exists for marijuana toxic reactions and supportive care should be provided, including control of anxiety, control of vomiting, airway control, and ventilation as needed. The regional Poison Center should be contacted to report the episode and obtain additional advice on evaluation and management.

Hurley W, Mazor S. JAMA Pediatr. 2013 Jul;167(7):602-3.

## Seattle Police Video

http://spdblotter.seattle.gov/2012/11/09/marijwhatnow-a-guide-to-legalmarijuana-use-in-seattle/