

A complicated risk/benefit analysis for Colorado breast/chestfeeding families who use *Cannabis*:

Health, Policy, Legal and Child Welfare Implications

presented by
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Elephant Circle

supporting strong people during vulnerable times

We work from a family support, family ecology perspective



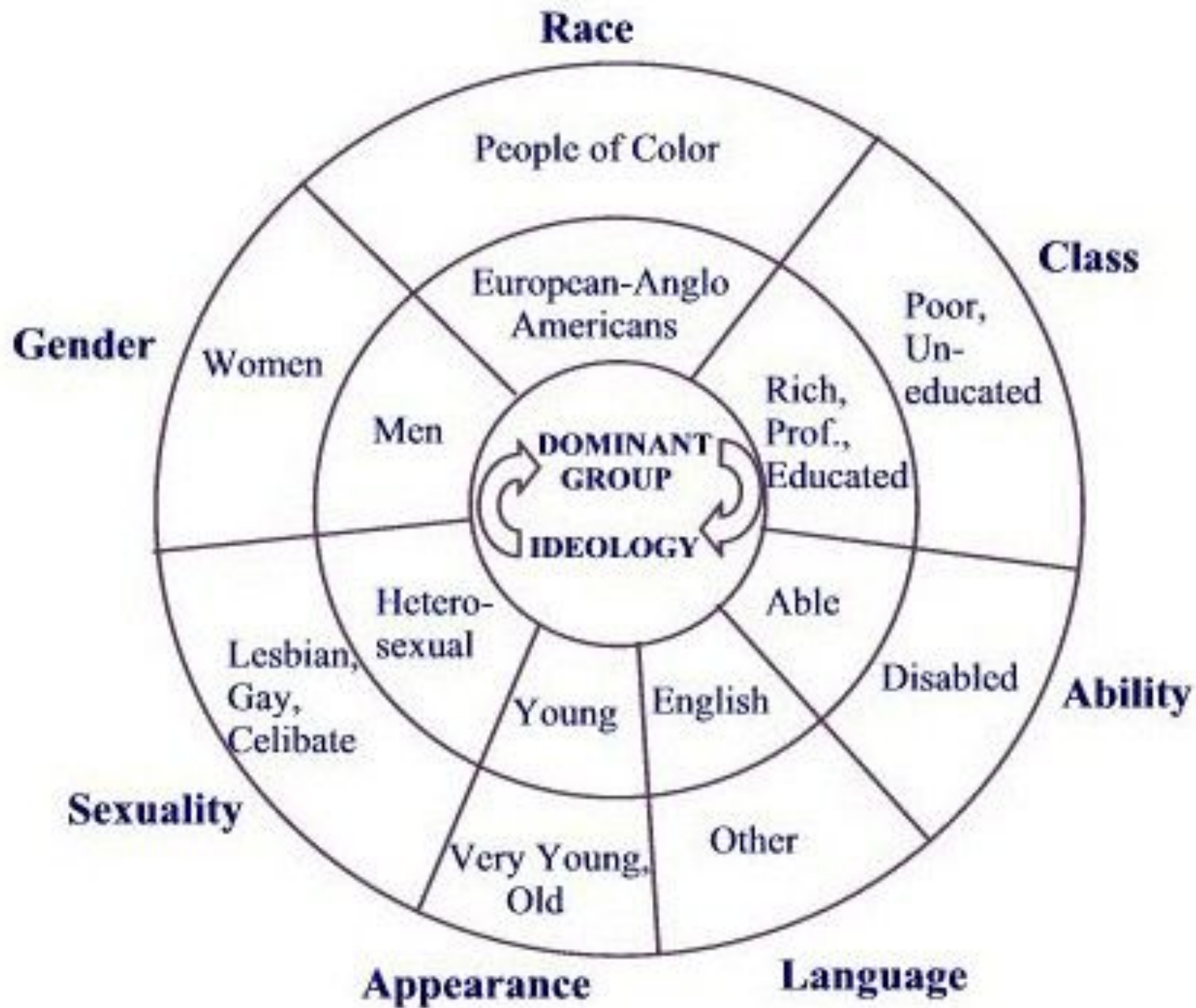
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My perspective

- Background in physiologic birth and midwifery model of care
- In-home postpartum care provider
- Facilitated hundreds of conversations about perinatal cannabis use with parents and providers
- I am not going to talk about the safety of cannabis use while breastfeeding, but I am not promoting its safety

My Biases

- I am a scientist, I am not a clinician
- I think about how mammalian biology exerts protective factors during the perinatal period
- I center my conversations in harm reduction
- Born and raised in Colorado
- I am a white, owning-class, queer, english-speaking, educationally privileged human with US citizenship



Harm Reduction



Strategies that reduce negative consequences

Belief in and respect for people who use drugs



Physiologic Harm Reduction

using physiology to reduce harm that comes
from substance use



"Words are a form of action,
capable of influencing change."

Ingrid Bengis

Combat in the Erogenous Zone, 1973

Today's journey

Introduction: terms, concepts and historical reminders

Implications of cannabis use while breastfeeding

- Health – *2 new 2018 papers*
- Policy
- Legal
- Child Welfare

Practical suggestions for risk/benefit conversations

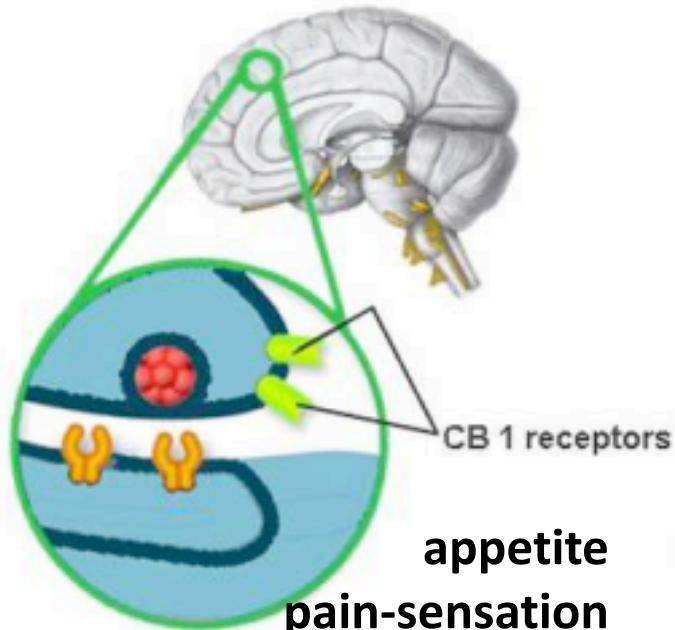
Questions, discussion

Endocannabinoid action

Mode of action

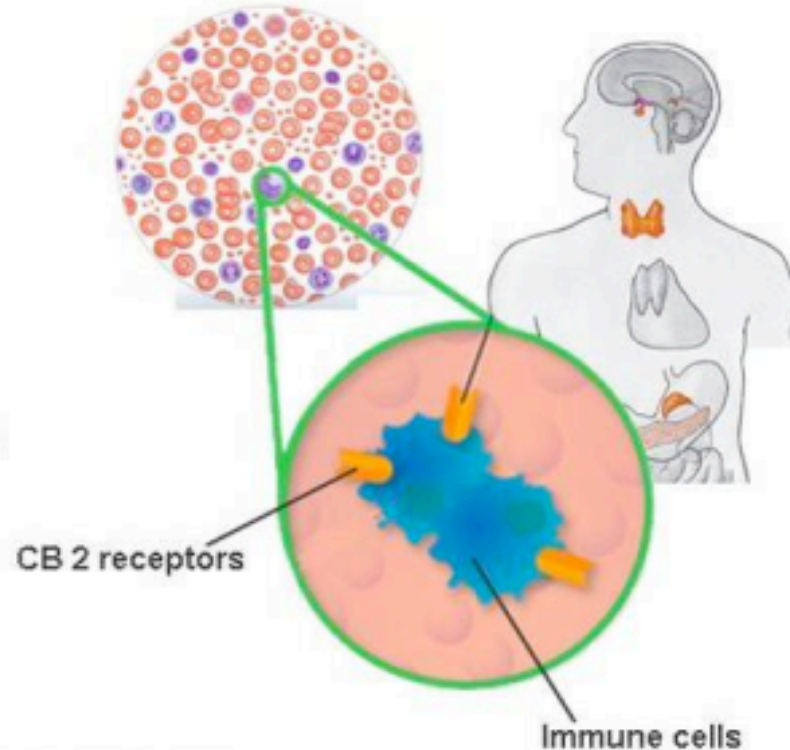
CB1 receptors

mainly localized in the brain
(hippocampus, cerebellum and cerebrum)



CB2 receptors

mainly situated in the periphery
(spleen, tonsillar and immune cells)



A brief history of Cannabis as medicine



Third millennium B.C.: First medicinal use recorded by Chinese Emperor Shen Nung

Until 1942: *Cannabis* part of US Pharmacopeia; tinctures were commonly used for menstrual cramps, labor pains, gout, malaria, rheumatism, nausea, lack of appetite and to improve mood

Marihuana Stamp Act of 1937: “There are 100,000 total marijuana smokers in the U.S., and most are Negroes, Hispanics, Filipinos and entertainers....This marijuana causes white women to seek sexual relations with Negroes, entertainers and any others,” and “Reefer makes darkies think they’re as good as white men.”

Harry Anslinger, 1st commissioner of the Federal Bureau of Narcotics

A brief note about the War on Drugs

In June 1971, President Nixon declared a “war on drugs.”

A top Nixon aide, John Ehrlichman, later admitted: “You want to know what this was really all about. The Nixon campaign in 1968, and the Nixon White House after that, had two enemies: the antiwar left and black people. You understand what I’m saying. **We knew we couldn’t make it illegal to be either against the war or black, but by getting the public to associate the hippies with marijuana and blacks with heroin, and then criminalizing both heavily, we could disrupt those communities. We could arrest their leaders, raid their homes, break up their meetings, and vilify them night after night on the evening news. Did we know we were lying about the drugs? Of course we did.**”

Nixon temporarily placed marijuana in Schedule One, the most restrictive category of drugs, pending review by a commission he appointed led by Republican Pennsylvania Governor Raymond Shafer.

Schedule I

heroin, lysergic acid diethylamide (LSD), marijuana (cannabis), 3,4-methylenedioxymethamphetamine (ecstasy) and peyote

High potential for abuse, no accepted medical use and no safe use even under medical supervision

Schedule II (high potential for abuse/dependence but medical use):

cocaine, methamphetamine, methadone, hydromorphone (Dilaudid), meperidine (Demerol), oxycodone (OxyContin), fentanyl, Dexedrine, Adderall, and Ritalin

Schedule III (moderate potential for abuse or dependence):

combination products with less than 15 milligrams of hydrocodone per dosage unit (Vicodin), Products containing less than 90 milligrams of codeine per dosage unit (Tylenol with codeine), ketamine, anabolic steroids, testosterone, ***Marinol***

Schedule IV (little risk of abuse or dependence):

Xanax, Soma, Darvon, Darvocet, Valium, Ativan, Talwin, Ambien

Schedule V

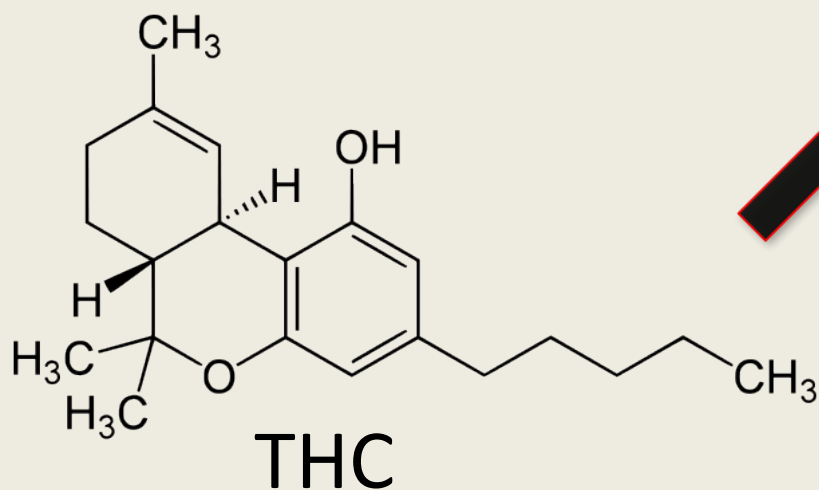
cough preparations with less than 200 milligrams of codeine or per 100 milliliters (Robitussin AC), Lomotil, Motofen, Lyrica

Complications of this regulation

- The Office of the National Drug Control Policy (ONDCP) is required by law to oppose legalization of Schedule I substances
- DEA has rejected petitions to reschedule *Cannabis*
- The 1961 Single Convention on Narcotic Drugs bars the DEA from de-scheduling non-medicinal *Cannabis*
- The NIDA has a monopoly on the legal supply of cannabis (it is at a farm in Mississippi)
- One of Colorado's definitions of child abuse and neglect is evidence of prenatal exposure to a Schedule I or Schedule II substance

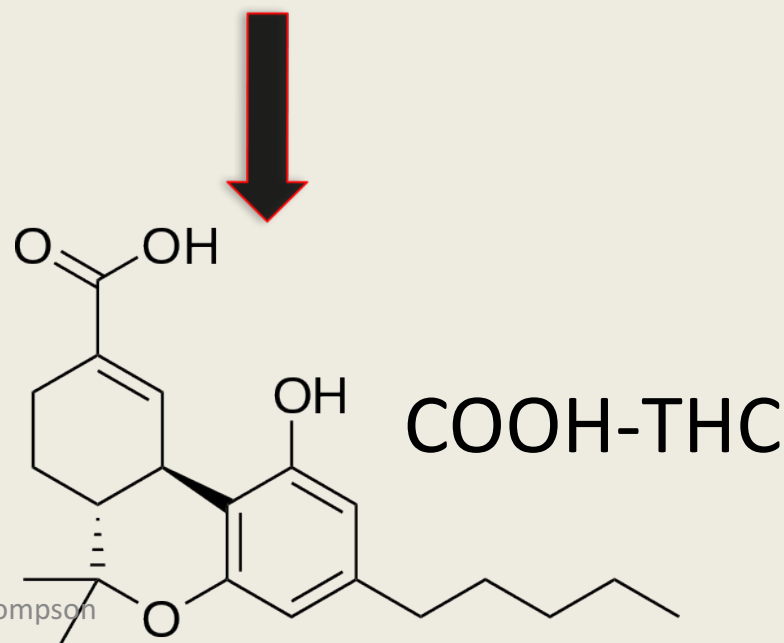
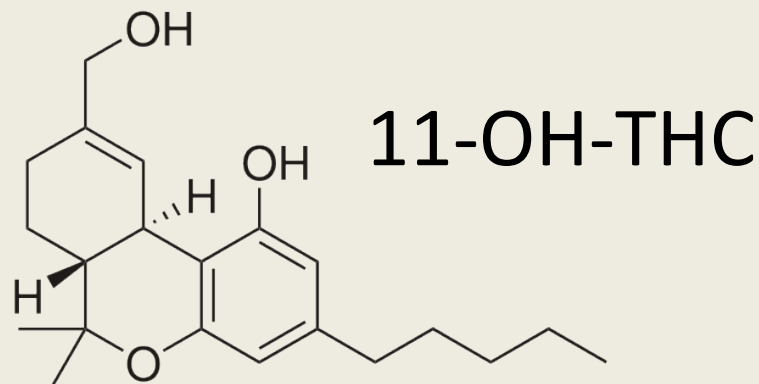
Cannabis in the body: the metabolism of THC

THC -> 11-OH-THC and THC-COOH

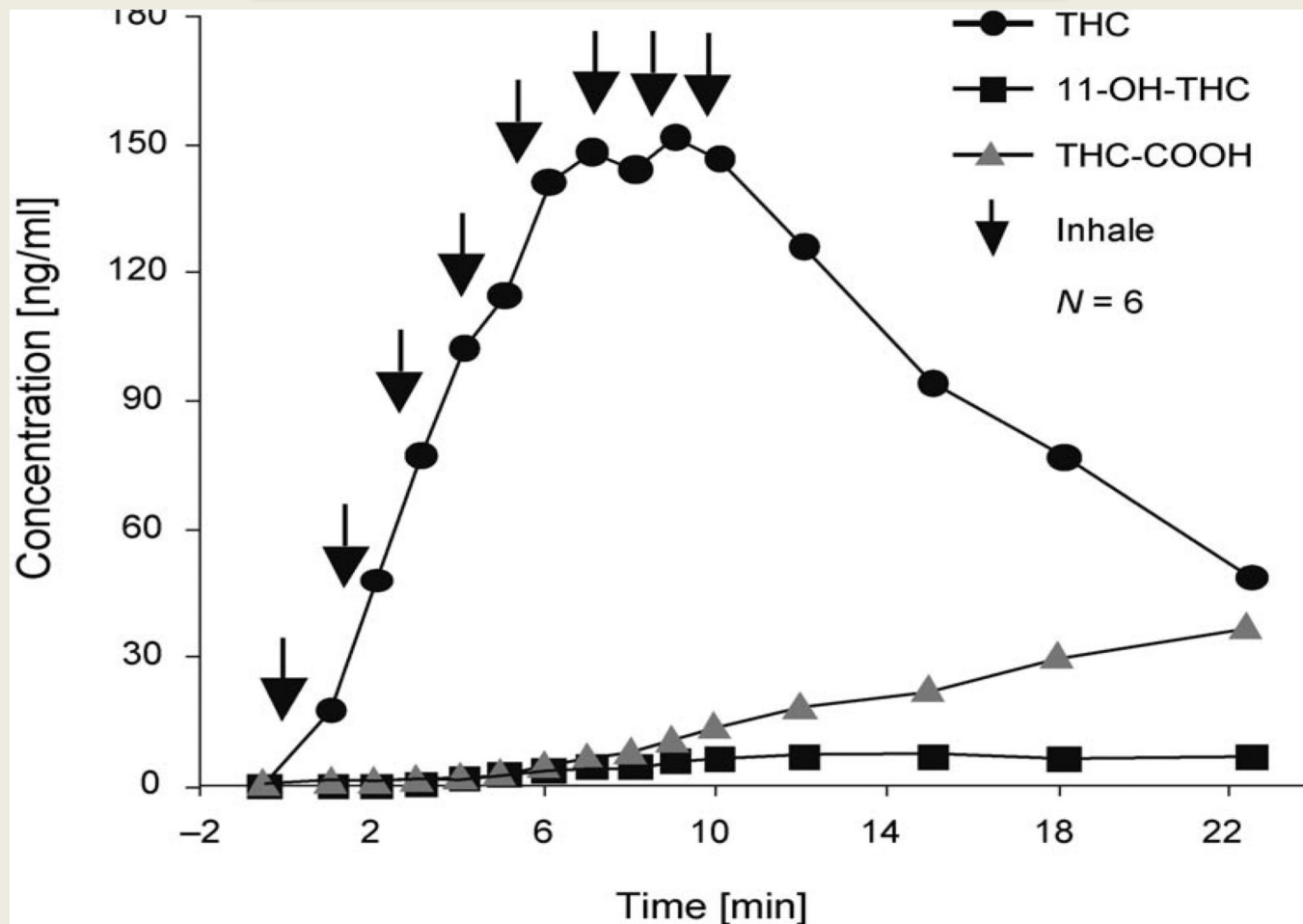


trans- Δ^9 -tetrahydrocannabinol

THC and 11-OH-THC
are both psychoactive molecules
COOH - THC is *not* psychoactive



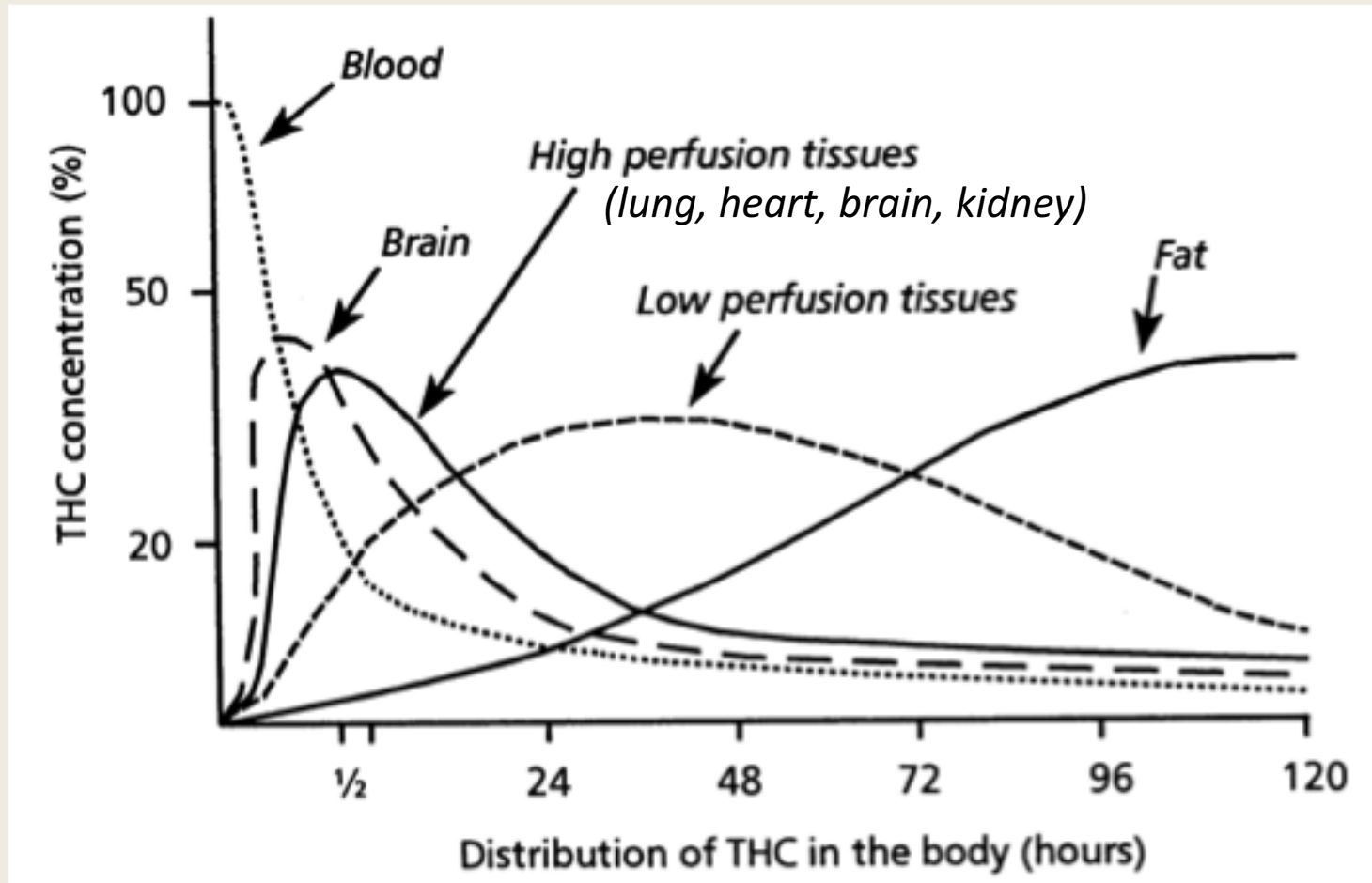
Smoking cannabis



Mean (N=6) plasma concentrations of THC, 11-OH-THC, and THC-COOH during smoking of a single cannabis cigarette containing 3.55% of THC. Arrows (↓) indicate one inhalation or puff on the cannabis cigarette.

Reprinted and adapted with permission by Springer-Verlag, 'Handbook of Experimental Pharmacology', 2005, p. 660, Fig. 1.
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Less than 1% of an administered THC dose is retained in the brain
After 7d of continuous exposure, fat to brain ratio = 21:1
21d = 64:1



Neutral fat tissue (adipose tissue) has the highest retention of THC and COOH-THC
THC blood levels = THC levels in kidney, heart, lung, spleen, muscle

A Word about Cannabis production

- ✓ The potency of flower and the number of potent products have increased over the last 20 years.
- ✓ Terpene concentrations have also increased. These are the molecules that give cannabis its smell and can now hang around for hours (and sometimes days).
- ✓ There can be products that are high in CBD and low in THC. CBD is known to reduce the “high” of THC.

Prevalence of cannabis use while breastfeeding in Colorado

- ✓ 2014 PRAMS data *published in 2018*
- ✓ 2014 Tri-County Health Department WIC study

Cannabis Use During the Perinatal Period in a State With Legalized Recreational and Medical Marijuana: The Association Between Maternal Characteristics, Breastfeeding Patterns, and Neonatal Outcomes

Tessa L. Crume, PhD, MSPH¹, Ashley L. Juhl, MSPH², Ashley Brooks-Russell, PhD, MPH³, Katelyn E. Hall, MPH⁴, Erica Wymore, MD, MPH⁵, and Laura M. Borgelt, PharmD⁶

A cross-sectional study was conducted using data from the 2014 and 2015 Colorado PRAMS. The Colorado Department of Public Health and Environment collected population-based data regarding cannabis use during and after pregnancy from a stratified random sample of women who delivered a live-born infant between January 1, 2014, and December 31, 2015 (n = 3285).

Table I. Prevalence of self-reported cannabis use during pregnancy by selected maternal characteristics—PRAMS, Colorado, 2014-2015

| Maternal characteristics | Use at any time during pregnancy* | | | Use in the first trimester of pregnancy* | | | Use in the last (third) trimester of pregnancy* | | |
|-------------------------------------|-----------------------------------|----------|----------------------|--|----------|----------------------|---|---------|----------------------|
| | % (SE) [†] | 95% CI | P value [‡] | % (SE) [†] | 95% CI | P value [‡] | % (SE) [†] | 95% CI | P value [‡] |
| Overall | 5.7 (0.5) | 4.8-6.8 | | 4.8 (0.5) | 4.0-5.9 | | 2.4 (0.3) | 1.8-3.1 | |
| Age (y) | | | <.0001 [§] | | | <.0001 [§] | | | .008 [¶] |
| 15-24 | 12.3 (1.7) | 9.5-16.0 | | 11.1 (1.6) | 8.3-14.7 | | 4.1 (0.9) | 2.6-6.4 | |
| 25-29 | 5.4 (1.0) | 3.7-7.7 | | 4.5 (0.9) | 3.1-6.6 | | 2.8 (0.7) | 1.7-4.5 | |
| ≥30 | 3.0 (0.5) | 2.2-4.3 | | 2.3 (0.5) | 1.6-3.4 | | 1.4 (0.3) | 0.9-2.2 | |
| Highest level of maternal education | | | .0001 [¶] | | | .002 [¶] | | | 0.2 |
| <High school | 11.5 (2.7) | 7.3-17.9 | | 9.2 (2.4) | 5.4-15.2 | | 3.0 (1.3) | 1.2-6.9 | |
| High school or GED | 9.1 (1.4) | 6.7-12.4 | | 7.4 (1.3) | 5.2-10.4 | | 3.7 (0.9) | 2.3-5.9 | |
| >High school | 4.0 (0.5) | 3.1-5.1 | | 3.5 (0.5) | 2.7-4.6 | | 2.0 (0.4) | 1.4-2.8 | |
| Race/ethnicity | | | .003 [¶] | | | .004 [¶] | | | .04 ^{**} |
| White non-Hispanic | 6.2 (0.7) | 5.0-7.7 | | 5.3 (0.6) | 4.2-6.7 | | 2.9 (0.5) | 2.2-3.9 | |
| Any Hispanic | 5.5 (1.1) | 3.7-8.1 | | 4.8 (1.1) | 3.1-7.3 | | 1.7 (0.6) | 0.8-3.5 | |
| Black non-Hispanic | 1.4 (0.7) | 0.5-3.8 | | 1.3 (0.7) | 0.5-3.8 | | 1.2 (0.7) | 0.4-3.8 | |
| Other Non-Hispanic | 5.3 (2.0) | 2.5-10.8 | | 3.0 (1.0) | 1.5-5.8 | | 1.0 (0.5) | 0.4-2.8 | |
| Medicaid recipient | | | <.0001 [§] | | | <.0001 [§] | | | .0001 |
| Yes | 10.8 (1.2) | 8.6-13.4 | | 9.4 (1.1) | 7.4-11.9 | | 4.4 (0.8) | 3.1-6.1 | |
| No | 2.6 (0.4) | 1.9-3.6 | | 2.0 (0.4) | 1.4-2.9 | | 1.2 (0.3) | 0.7-1.8 | |
| WIC recipient | | | .0003 [§] | | | .0002 [§] | | | .004 [¶] |
| Yes | 9.3 (1.3) | 7.1-12.1 | | 8.3 (1.2) | 6.2-10.9 | | 4.1 (0.8) | 2.8-6.0 | |
| No | 4.3 (0.6) | 3.3-5.5 | | 3.5 (0.5) | 2.6-4.6 | | 1.7 (0.3) | 1.1-2.5 | |
| Poverty level | | | <.0001 [§] | | | <.0001 [§] | | | .0008 [§] |
| <250% FPL | 8.5 (0.9) | 6.8-10.5 | | 7.3 (0.9) | 5.8-9.2 | | 3.7 (0.6) | 2.7-5.1 | |
| ≥250% FPL | 3.0 (0.6) | 2.0-4.3 | | 2.3 (0.5) | 1.6-3.5 | | 1.2 (0.3) | 0.7-1.9 | |
| Marital status | | | <.0001 [§] | | | <.0001 [§] | | | .008 [¶] |
| Married | 4.3 (0.5) | 3.4-5.4 | | 3.4 (0.5) | 2.6-4.4 | | 1.7 (0.3) | 1.3-2.4 | |
| Other | 11.5 (1.6) | 8.7-15.1 | | 10.6 (1.6) | 7.9-14.2 | | 4.9 (1.2) | 3.0-7.8 | |

1. Pregnancy is a motivating time to change behaviors

2. White, non-hispanic women use more cannabis in the first *and* third trimester

3. Age and poverty impact cannabis use during pregnancy

What is the prevalence of cannabis use among Colorado folks who breastfeed?

Table III. Prevalence of self-reported cannabis use during the postnatal period among women who breastfed—PRAMS, Colorado, 2014-2015

| | Use during the postnatal period* | |
|-------------------------------|----------------------------------|----------|
| Breastfeeding characteristics | % (SE)† | 95% CI |
| Any breastfeeding | 5.0 (.53) | 4.1-6.2 |
| Breastfeeding duration | | |
| 1 d-8 wk | 10.2 (1.9) | 7.1-14.6 |
| ≥9 wk | 4.1 (.5) | 3.2-5.2 |

*At the time of survey administration, which occurs at approximately 2-4 months postpartum.

†Prevalence estimates as percentage of the population of women aged <15 years who delivered a live-born infant between January 1, 2014, and December 31, 2015, based on weighted data analysis.

How does cannabis use affect breastfeeding initiation and duration?

Table IV. Breastfeeding initiation and duration according to cannabis use during or after pregnancy—PRAMS, Colorado, 2014-2015*

| | No | | Yes | | P value† |
|---|------------|-----------|------------|-----------|----------|
| | % (SE) | 95% CI | % (SE) | 95% CI | |
| Cannabis use at any time during pregnancy‡ | | | | | |
| Breastfeeding initiation | | | | | 0.1 |
| Never breastfed | 6.2 (0.6) | 5.1-7.5 | 11.4 (3.2) | 6.5-19.2 | |
| Ever breastfed | 93.8 (0.6) | 92.5-94.9 | 88.6 (3.2) | 80.8-93.5 | |
| Breastfeeding duration | | | | | .02§ |
| 1 d-8 wk | 15.4 (0.9) | 13.7-17.3 | 24.2 (4.1) | 17.1-33.1 | |
| ≥ 9 wk | 78.3 (1.0) | 76.2-80.3 | 64.4 (4.6) | 54.9-72.9 | |
| Cannabis during the early postnatal period‡ | | | | | |
| Breastfeeding initiation | | | | | .08 |
| Never breastfed | 6.1 (0.6) | 5.1-7.4 | 12.6 (3.6) | 7.1-21.4 | |
| Ever breastfed | 93.9 (0.6) | 92.6-94.9 | 87.4 (3.6) | 78.6-92.9 | |
| Breastfeeding duration | | | | | .001¶ |
| 1 day-8 wk | 15.1 (0.9) | 13.4-16.9 | 29.8 (4.8) | 21.3-39.9 | |
| ≥ 9 wk | 78.7 (1.0) | 76.6-80.6 | 57.6 (5.1) | 47.4-67.2 | |

Tri-County WIC data



Data collected
fall of 2014

N=470

Tri-County Health Department serves 26%
of the Colorado population
About 25,000 WIC cases per year



Key Survey Findings

- Overall prevalence of ever using marijuana among WIC mothers was 29.1%.
- Overall prevalence of current marijuana use among WIC mothers was 5.9%.
- Marijuana use was correlated with age, with the majority of marijuana users aged 30 years and younger.
- Marijuana use was also correlated with race and ethnicity, with a higher percentage of white, non-Hispanics using marijuana compared to Hispanics (despite a higher percent of survey respondents being Hispanic).

Prevalence of cannabis use among Tri-County WIC mothers during breastfeeding

Table 4. Timing of marijuana use during most recent pregnancy among ever, current, or past marijuana users

| Survey respondents - WIC mothers | Ever users[¶] % (#) | Current users[¶] % (#) | Past users[¶] % (#) |
|---|---|--|---|
| Used marijuana during pregnancy | 10.9% (51) | 35.8% (35) | 4.5% (17) |
| Used marijuana since the baby was born | 9.6% (45) | 41.1% (39) | 1.6% (6) |
| Used marijuana while breastfeeding | 3.0% (14) | 13.7% (13) | <1% (1) |

[¶] Percent of WIC mothers in the marijuana user group; N=470 ever users; N=95 current users; N=375 past users.

Reasons for cannabis use

Table 5. Reason for marijuana use[§]

| Survey respondents - WIC mothers | Ever users % (#) | Current users % (#) | Past users % (#) |
|---|-----------------------------|--------------------------------|-----------------------------|
| To help with depression/anxiety/stress | 35% (164) | 63% (60) | 28% (103) |
| To help with pain | 29%(135) | 60% (57) | 21% (78) |
| To help with nausea/vomiting | 23% (108) | 48% (46) | 17% (62) |
| For fun/recreation | 59% (277) | 39% (37) | 65% (240) |
| Other reason | 16% (75) | 14% (13) | 16% (58) |

[§] Other reasons (write in response) included: sleep, cancer, seizures, migraines, and increase appetite. A couple of direct quotes from respondents were:

“To help with nausea and vomiting in first trimester of pregnancy”

“All the reasons above and plus when I was pregnant, it helped me want to eat.”

Health Implications

The US scientific literature: *Cannabis* and Human milk

Perez-Reyes and Wall (1982), *NEJM*

Semi-quantitative analysis of transfer of THC into human milk
“Both mothers and babies were in good health.” n=2

Tennes *et al.* (1985), *NIDA Research Monograph Series*



No significant growth, weaning, mental/motor development differences with cannabis use at one year postpartum. n=27

Astley and Little (1990), *Neurotoxicology and Teratology*

Reported a marginally significant relationship (clinically relevant?) between prenatal and 1 month pp exposure and decreased *motor* development at one year; no such relationship if use occurred after 3rd month pp. Intellectual development was not affected. n=68

The scientific literature: Italy and Brazil

Marchei *et al.* (2011) *Journal of Pharmaceutical and Biomedical Analysis*

- Identified THC and 11-OH-THC in the milk of a woman with a “history of drug abuse”

DeOliveira Silveria *et al.* (2017) *Forensic Toxicology*

- 109 randomly collected milk samples
- Detected THC in 2/109 and CBD in 1/109

The scientific literature: Jamaica

Dreher *et al.* (1994) *Pediatrics*

Hayes *et al.* (1991) *West Indian Medical Journal*

- Followed children of “Roots Daughters” in rural Jamaica
- Found that kids exposed to cannabis performed better than non-exposed kids, up to 5 years of age.
- This was shown to be the result of a home environment conducive to a child’s development.
- Cannabis ***did not have an independent effect.***
- Originally funded by NIDA, funding discontinued
- n=24

“Conventional wisdom would suggest that mothers who are long-term marijuana users are less likely to create optimal caregiving environments for the neonates ***it seems that roots daughters have the capacity to create a postnatal environment that is supportive of neonatal development.***”

What did we learn from studying the development of babies exposed to crack cocaine *in utero* in the 1990s?

In 1989 a study in Philadelphia found that nearly one in six newborns at city hospitals had mothers who tested positive for cocaine.

Poverty

is a more powerful influence on the outcome of inner-city children than gestational exposure to cocaine

*Dr. Hallum Hurt,
lead investigator for the 25+ year longitudinal study
Investigating the effect of prenatal cocaine use*

Drugs in Pregnancy: *Original Research*

Transfer of Inhaled Cannabis Into Human Breast Milk

Teresa Baker, MD, Palika Datta, PhD, Kathleen Rewers-Felkins, MS, Heather Thompson, PhD, Raja R. Kallem, PhD, and Thomas W. Hale, PhD

**Obstetrics and Gynecology
2018**

Table 1. Prestudy Self-Reported Cannabis Smoking

| Patient No. | Postpartum (Mo) | Cannabis Use/Wk (No. of Times) | Daily Cannabis Use (g) | Method of Consumption |
|-------------|-----------------|--------------------------------|------------------------|-----------------------|
| 1 | 5 | 1 | 0.25 | Inhalation |
| 2 | | ND | | |
| 3 | 3 | 7–10 | 0.5–1 | Inhalation |
| 4 | 5 | 3–5 | 0.05 | Inhalation |
| 5 | 5 | 5 | 0.05 | Inhalation |
| 6 | | ND | | |
| 7 | 3 | 1–3 | 0.025 | Inhalation |
| 8 | | ND | | |

ND, not disclosed.



Individual responses

Reported using 5x/wk

Table 3. Drug Concentrations Observed Across the Dose Interval for Each Individual

| | Sample ID | | | | | | | |
|--------------------------|-----------------------|-------|-------|------|-------|-------|------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | Concentration (ng/mL) | | | | | | | |
| Time (h) | | | | | | | | |
| 0 | ND | ND | ND | ND | 5.8 | 15.8 | ND | ND |
| 0.33 | 7.0 | 11.1 | 16.3 | 12.3 | 47.1 | 115.8 | 8.2 | 23.4 |
| 1 | 11.3 | 34.8 | 47.2 | 5.9 | 115.8 | 420.2 | 19.3 | 97.3 |
| 2 | 17.3 | 42.2 | 28.5 | 12.2 | 95.2 | 193.3 | 27.8 | 83.5 |
| 4 | 9.2 | 21.7 | 10.7 | 4.7 | 67.2 | 43.0 | 24.2 | 24.4 |
| AUC (ng/h/mL) | 48.9 | 119.7 | 101.3 | 33.9 | 331.1 | 744.4 | 89.1 | 242.7 |
| C _{avg} (ng/mL) | 12.2 | 29.9 | 25.3 | 8.4 | 82.7 | 186.1 | 22.2 | 60.6 |
| C _{max} (ng/mL) | 17.6 | 42.1 | 47.2 | 12.2 | 115.8 | 420.3 | 29.8 | 97.3 |
| RID (%) | 0.6 | 1.4 | 1.2 | 0.4 | 3.8 | 8.7 | 1.0 | 2.8 |

ND, not determined (below the level of detection); AUC, area under the drug concentration time curve; C_{avg}, average drug concentration across the dose interval; C_{max}, maximum drug concentration across the dose interval; RID, relative infant dose for delta-9-tetrahydrocannabinol in milk.

- Only 2/8 had detectable THC at time zero = 5.8 and 15.8 ng/mL
- THC concentration peaked one hour after dosing with lots of variability
- At 4 hours after dosing, THC levels were declining and nearing baseline

| Parameter (Units) | Calculated Value* | Median (Range) |
|-------------------------------|-------------------|-------------------|
| C _{max} (ng/mL) | 94 | 44.7 (12.2–420.3) |
| T _{max} (h) | 1 | 1 (1–2) |
| Infant dose (micrograms/kg/d) | 8 | 4.1 (1.3–27.9) |
| RID (%) | 2.5 | 1.3 (0.4–8.7) |

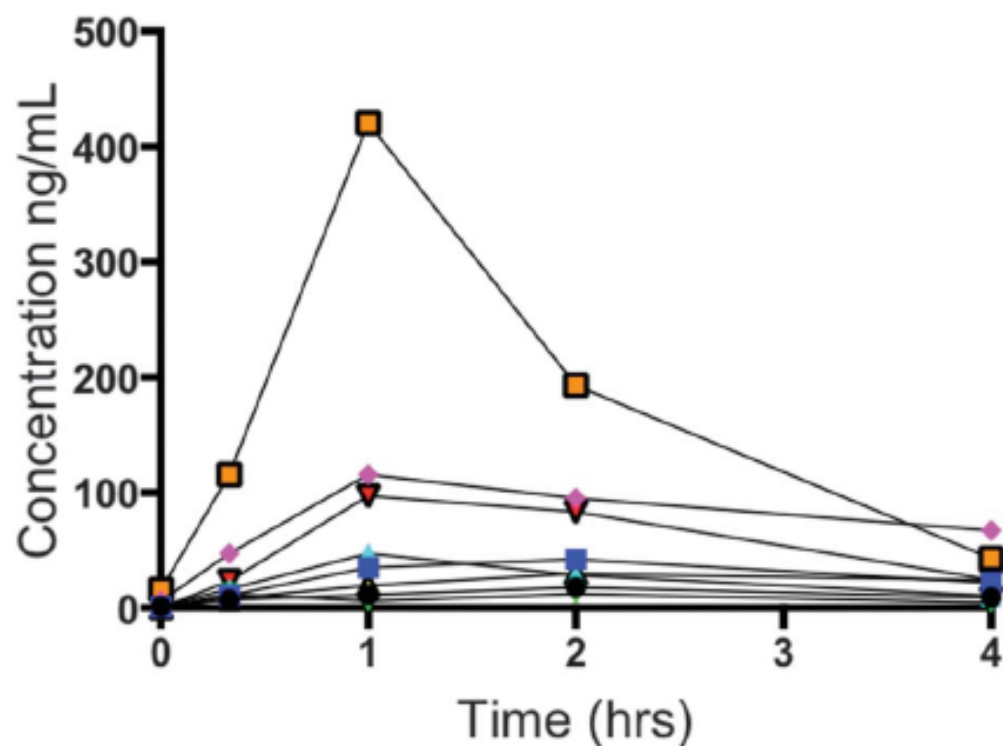


Fig. 3. Illustrated graph of each patient's data points (n=8). Each color represents an individual.

Baker. Inhaled Cannabis in Human Breast Milk. *Obstet Gynecol* 2018.

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Baker *et al.* 2018
Obstetrics and Gynecology

Marijuana Use by Breastfeeding Mothers and Cannabinoid Concentrations in Breast Milk

Kerri A. Bertrand, MPH, Nathan J. Hanan, PharmD, Gordon Honerkamp-Smith, MS,
Brookie M. Best, PharmD, MAS, Christina D. Chambers, PhD, MPH

Pediatrics, 2018

- Mommy's Milk Human Milk Research Biorepository
- Grant funding from NIH and Gerber
- Samples from folks who reported use in the last 14 days, limit of detection $\geq 1\text{ng/mL}$
- 64% used inhalation as their primary consumption method
- 88% reported at least daily use

- ✓ 20/54 samples did not show any detectable THC
- ✓ median milk THC concentration = 9.47 ng/mL (1.01 – 323), N = 34
- ✓ 11-OH-THC detected in 5 samples, CBD detected in 5 samples
- ✓ CBN was not detected in any samples
- ✓ In 76.5% of the samples with detectable THC, exclusive inhalation was the method of consumption (vs 36.8% in the no THC samples)
- ✓ Calculated a $\frac{1}{2}$ life of ~ 27 hours
- ✓ The longest duration between use and THC was detected in one sample at 6d after use

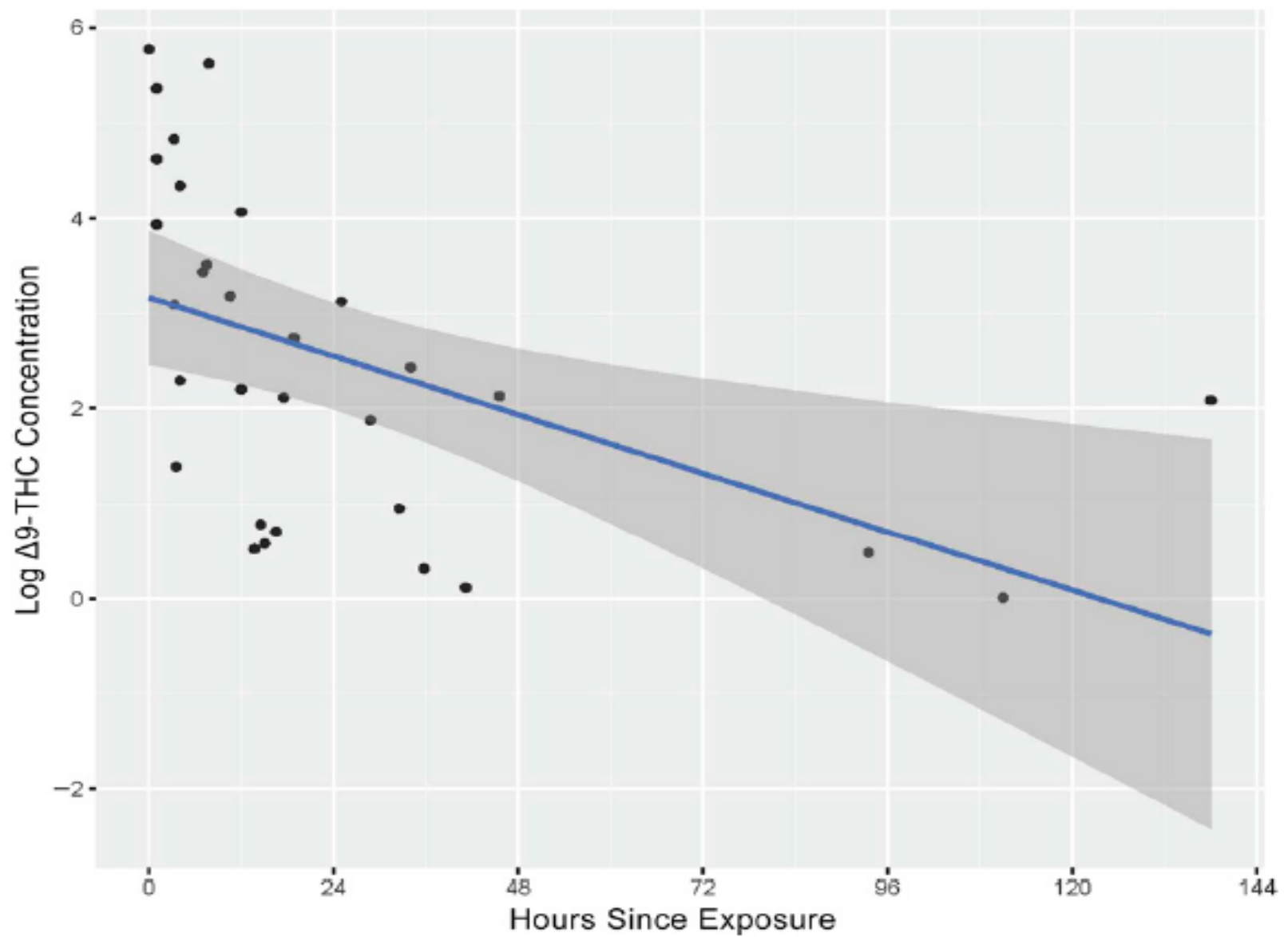


FIGURE 1

Scatterplot and fitted regression line of log concentration of $\Delta 9$ -THC by hours since last use of marijuana, $n = 34$. The fitted regression line is shaded with 95% confidence limits around the regression line.

Bertrand *et al.* 2018
Pediatrics

- ✓ Only one sample had all three molecules: THC, 11-OH-THC and CBD
- ✓ In this sample THC = 323 ng/mL (the highest in the study)
- ✓ The sample with the highest CBD had *no detectable* THC (11-OH-THC was detected)
- ✓ The no THC cohort had fewer daily users and a longer average time since the last use (53h vs 24h). Neither of these findings were significant.

Key messages from these data

- ✓ Nursing infants are exposed to a dose that is probably 100-1000 less than the parent's dose. Remember, a baby is exposed to THC orally. The bioavailability of THC when consumed by mouth is between 1-5%.
- ✓ There appears to be a curve for THC metabolism in human milk
 - The shape of the metabolic curve is quite consistent between individuals
 - The THC concentration at the peak of this curve varies dramatically between individuals
 - Peak THC levels may occur between 60 and 120 minutes after use (apparent lag behind plasma metabolism)
 - The half-life of THC in breastmilk is ~ 1d in daily users

- ✓ The perinatal environment plays a demonstrable role in a child's development
 - There are still no data to show that the exposure of cannabis through human milk negatively impacts development (***the absence of a known risk is not the same as confirmation of safety***)
 - Current data and historical perspective confirms that environment is more of an independent effect than substance exposure (*ie. An infant's exposure to poverty was more impactful than their exposure to crack cocaine*)
- ✓ THC detection and metabolism in human milk most likely varies dramatically between regular (daily) and occasional users
 - Clinical advice should distinguish between these two types of users in both perspective and advice

What do we know about the risks or harms of not breastfeeding?

The Surgeon General's Call to Action to Support Breastfeeding

2011



Maternal & Child Nutrition

2016

Suboptimal breastfeeding in the United States: Maternal and pediatric health outcomes and costs

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Not breastfeeding costs \$18.5 Billion dollars annually
Maternal deaths made up 78% of deaths
Maternal medical costs were 79% of all costs
The US ranks 26/29 for infant mortality

Breastfeeding is more than just food,
it is also about place.

The chest of a primary caregiver is baby's
natural habitat.

Simply being in that place increases survival.

- ✓ Hormonal profiles (including oxytocin) promote bonding, stimulate reward centers
- ✓ Eyegaze is a part of this biology
- ✓ Olfactory cues promote milk production, bonding and attachment
- ✓ Immunity and physiologic stability are maximized

Oxytocin: Protective Capacity Hormone

If we are looking for things that help mitigate risks and demonstrate the possibility for successful caretaking we will find it in the hormone oxytocin.

- “breastfeeding women are calmer in the face of exercise and psychosocial stress than bottle-feeding mothers.”
- “When it is operating during times of low stress, oxytocin physiologically rewards those who maintain good social bonds with feelings of well-being.”
- “When it comes on board during times of high social stress or pain, it may ‘lead people to seek out more and better social contacts’.”

Tori DeAngelis, "The two faces of oxytocin: Why does the 'tend and befriend' hormone come into play at the best and worst of times?" Science Watch, American Psychological Association, Vol 39, No. 2, February 2008.

Policy Implications

Colorado-specific language



Language for patients: *THC is stored in body fat. A baby's brain and body are made with a lot of fat. Since your baby's brain and body may store THC for a long time, you should not use marijuana while you are breastfeeding.*

Because of the potential risks to the baby, the American Academy of Pediatrics states that marijuana should not be used while breastfeeding.



MARIJUANA USE WHILE BREASTFEEDING

Know how marijuana use can affect breastfeeding women and their babies.

If THC gets into your breast milk, it can be passed to your baby, and may impact your baby's ability to learn later in life.

If you use marijuana at all while breastfeeding, it gets passed to your baby. THC (Tetrahydrocannabinol, the chemical that makes you "high") is stored in fat cells, which means it stays in your breast milk much longer than alcohol does, so "pumping and dumping" doesn't work the same way with marijuana.



To learn more, visit [GoodToKnowColorado.com/Baby](https://www.GoodToKnowColorado.com/Baby).

Academy of Breastfeeding Medicine: Cannabis

“Therefore, basing recommendations on marijuana use and concurrent breast-feeding from a purely legal standpoint becomes inherently complex, problematic, and impossible to apply uniformly across all settings and jurisdictions. As laws shift and marijuana use becomes even more common in some areas, it becomes increasingly important to carefully weigh the risks of initiation and continuation of breastfeeding while using marijuana with the risks of not breastfeeding while also considering the wide range of occasional, to regular medical, to heavy exposure to marijuana.”

Academy of Breastfeeding Medicine: Nicotine

“Nicotine and other compounds are known to transfer to the infant via milk, and considerable transfer of chemicals via second-hand smoke also occurs when infants are exposed to environmental tobacco smoke. Increases in the incidence of respiratory allergy in infants and in SIDS are just two significant well-known risks of infant exposure to environmental tobacco smoke. Most sources endorse promotion of breastfeeding in the setting of maternal smoking while vigorously supporting smoking cessation.”

Lactmed

“Because breastfeeding can mitigate some of the effects of smoking and little evidence of serious infant harm has been seen, it appears preferable to encourage mothers who use marijuana to continue breastfeeding while minimizing infant exposure to marijuana smoke and reducing marijuana use.”

Other less biased approaches

“Based on these findings, mandatory reporting of marijuana use during [pregnancy] or breast-feeding do not seem medically warranted. A consistent message of ‘breast is best’ seems appropriate for mothers who continue to use marijuana while breast-feeding.”

Hill & Reed, 2013, Obs. Gyn. Survey

“Depending on family circumstances, the benefits of breast feeding, even with continued cannabis use, may outweigh the negative side-effects, especially in infrequent cannabis users. Each institution should work towards a policy of ensuring best practices for their particular population of cannabis users.”

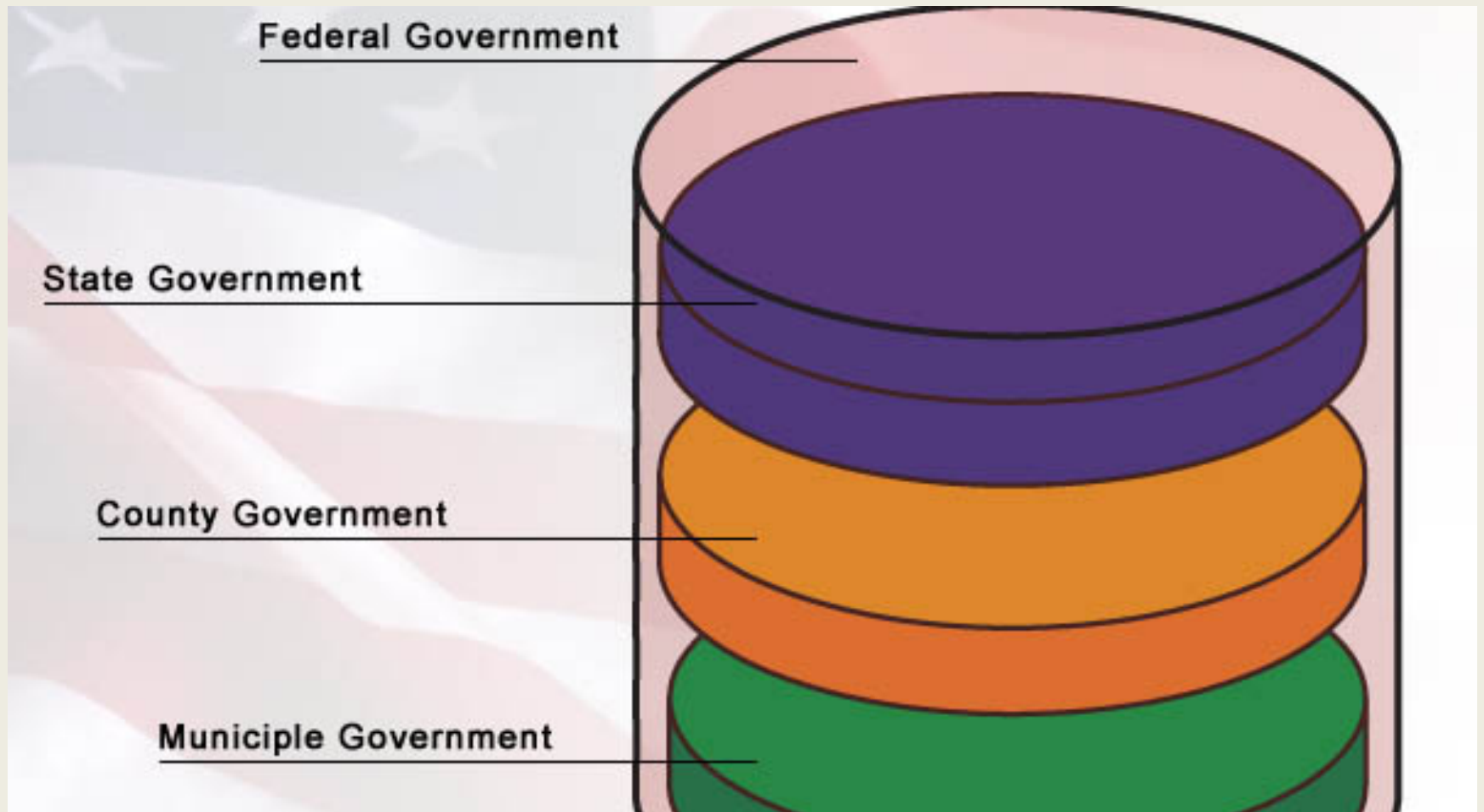
Jaques, SC, 2014, J. Perinat.

Legal and Child Welfare Implications

What is the law?



State Versus Federal?



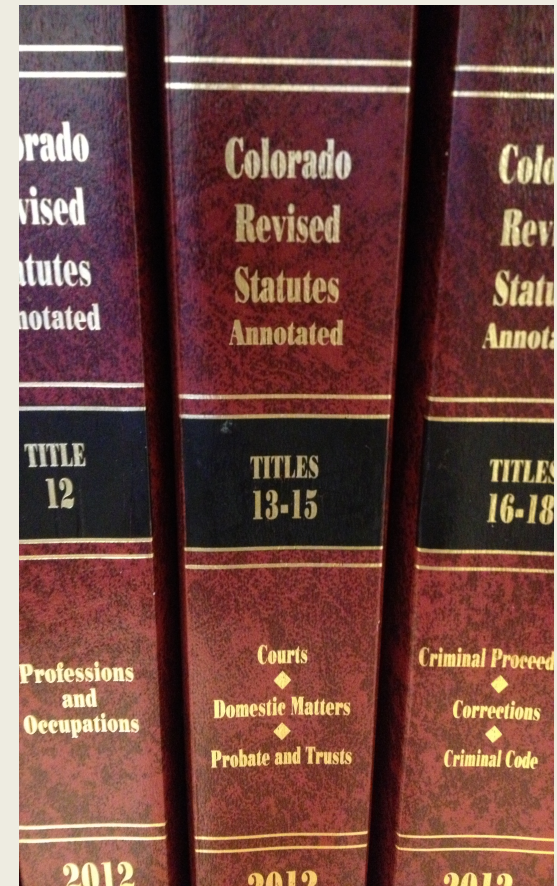
Key Legal moments in Colorado

1917 – Cannabis is first criminalized in Colorado

2000 - Amendment 20, “it shall be an exception from the state's criminal laws for any patient or primary care-giver in lawful possession of a registry identification card to engage or assist in the medical use of marijuana”

2010 – Medical Marijuana Code

2012 – Amendment 64, “the people of the state of Colorado find and declare that the use of marijuana should be legal for persons twenty-one years of age or older and taxed in a manner similar to alcohol”



Use versus Abuse?

There is no legal definition for abuse of a legal substance



Current Colorado Law



- If pregnant women report their substance use to their prenatal health care provider and/or have a positive drug test during a prenatal care visit, Colorado law prevents that information from being used in criminal prosecution (C.R.S. § 13-25-136)
- cannabinoids, both recreational and medical, are considered a Schedule I drug under both federal and Colorado law (C.R.S. § 18-18-203)
- A current definition of child abuse, therefore it requires mandatory reporting to Child Protective Services

“Any case in which a child tests positive at birth for either a **schedule I controlled substance**, as defined in section [18-18-203](#) (tetrahydrocannabinols) , C.R.S., or a schedule II controlled substance, as defined in section [18-18-204](#) , C.R.S., unless the child tests positive for a schedule II controlled substance as a result of the mother's lawful intake of such substance as prescribed” (C.R.S. § 19-1-102)

Child Abuse and the Law

There are two kinds:

Criminal



and

Civil



Dependency & Neglect:
Social Services Could
Take Away Your Children

Child protective services works with the courts in both of these cases, but CPS investigations can exist outside the legal system.

Dr. Fried, principal investigator of the OPPS study

“Based on my 30 plus years of experience examining the newborn, infants, toddlers, children, adolescents and young adults born to women who used marihuana during pregnancy *it is important to emphasize that to characterize an infant born to a woman who used marihuana during pregnancy as being ‘physically abused’ and/or ‘neglected’ is contrary to all scientific evidence (both mine and subsequent work by other researchers).*

The use of marijuana during pregnancy ... has not been shown by any objective research to result in abuse or neglect.... There have been a few mildly negative effects in high-risk populations...but, in those studies, these effects were no longer present after a few months. This is in contrast to many other substances that are commonly used during pregnancy, including alcohol and cigarettes, where the effects on growth are much more pronounced.”



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Does Breastfeeding Protect Against Substantiated Child Abuse and Neglect? A 15-Year Cohort Study

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The answer is YES!

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CAPTA was most recently amended by the Comprehensive Addiction and Recovery Act of 2016 (P.L. 114-198, 7/22/16). Title V, section 503 of the act **modified the CAPTA state plan requirement for infants born and identified as being *affected by substance abuse* or withdrawal symptoms or Fetal Alcohol Spectrum Disorder** by adding criteria to state plans to ensure the safety and well-being of infants following the release from the care of health-care providers, to address the health and substance use disorder treatment needs of the infant and affected family or caregiver, and to **develop the plans of safe care for infants affected by all substance abuse** (*not just illegal substance abuse as was the requirement prior to this change*).

Substance Exposed Newborns Summit

November, 2 2017



COLORADO
Department of Human Services



American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™



Colorado Chapter

ZOMA
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The Colorado
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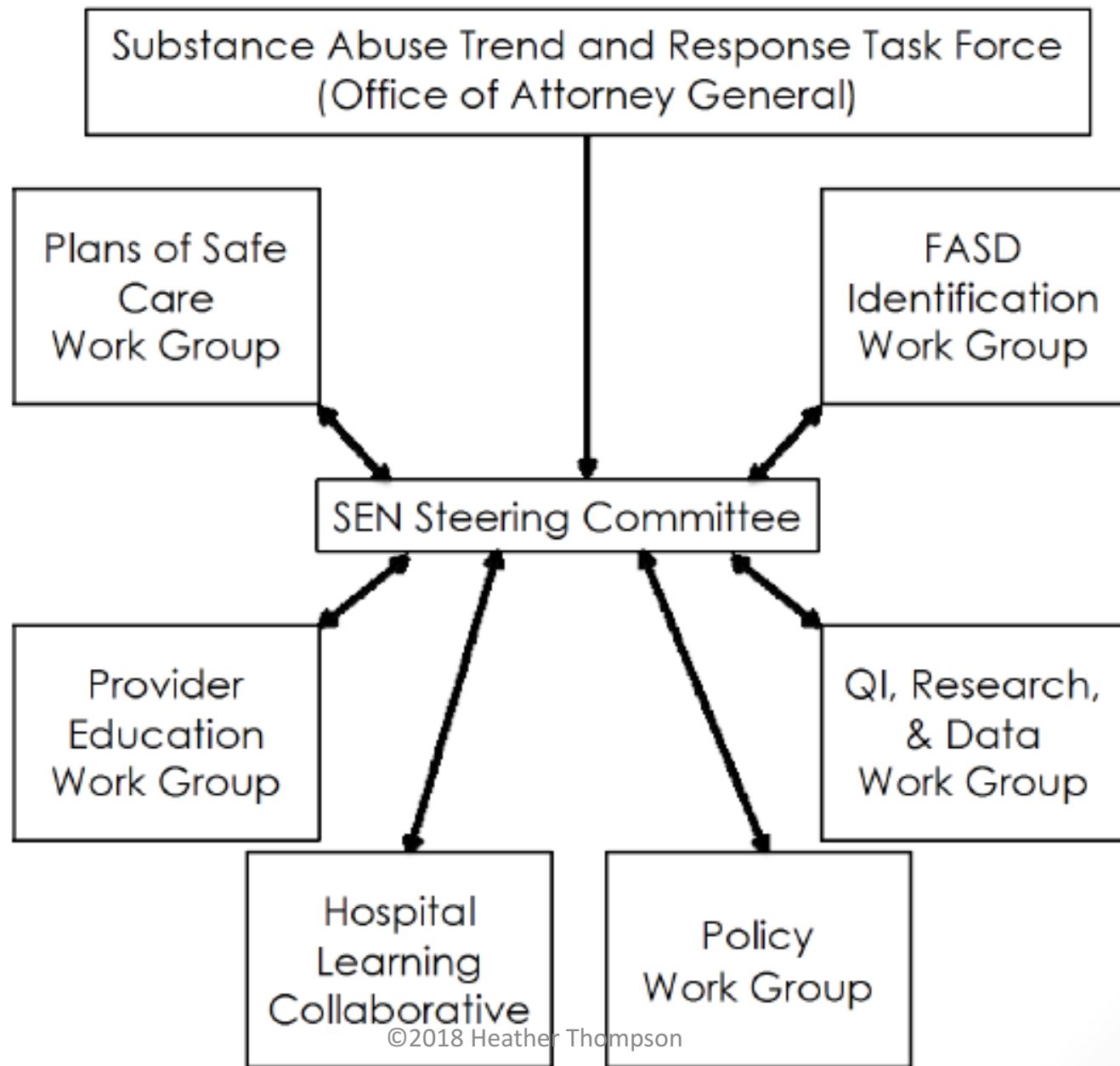
SEN Hospital Learning Collaborative

Objective: Increase consistency in implementation of best practice approaches in identification of and response to newborns prenatally exposed to substances at time of birth across Colorado.

Components:

- Assessment of Current Practice
- Identification of Priority Areas & Action Steps
- Documentation of Ongoing Progress
- Ongoing Data Collection & Reporting
- Participation in SEN ECHO Series
- Involvement in collaborative retreats

Committee Structure

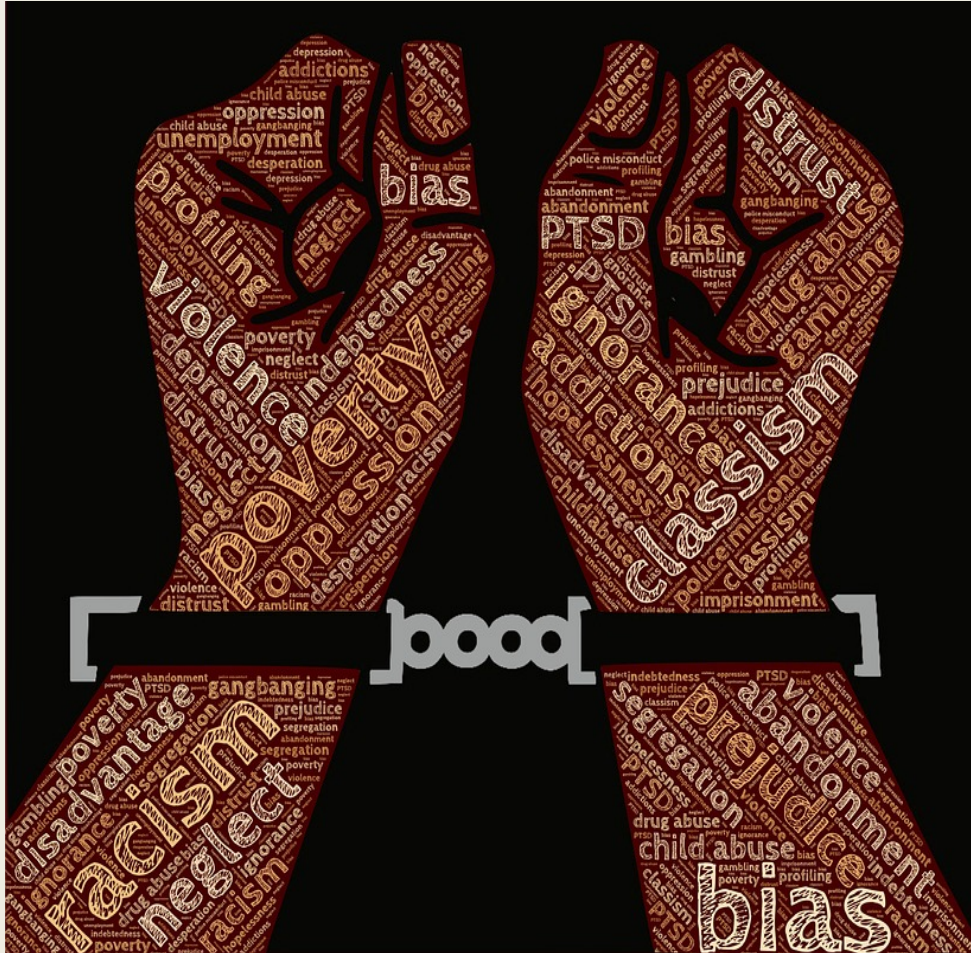


Suggestions for conversations
about a risk/benefit analysis of
cannabis use and breastfeeding

Building a Therapeutic Relationship

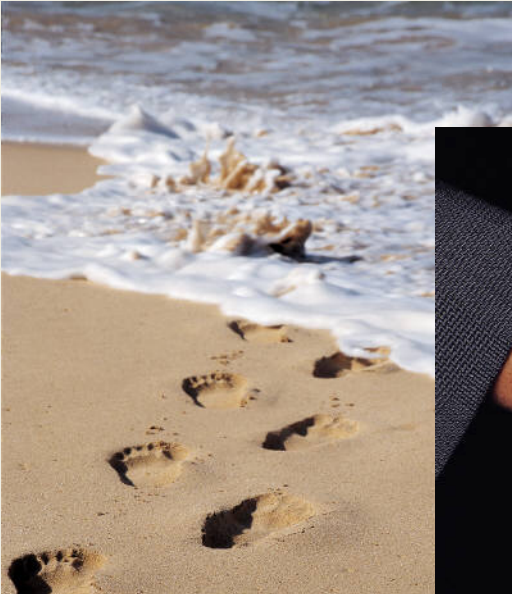
- What is the potential of a therapeutic relationship here? Will you see the client several times? Are you helping parents right after birth?
- Your first conversation with a client will leave an imprint. The more they feel included in the process and the conversation, the better strategizing together can be.
- Appreciate honesty about cannabis use disclosure – it can be a scary experience for parents. Acknowledge that.
- Explore why, how, when they use cannabis. Provide a non-judgmental place for them to talk about it.
- New babies can inspire a lot of change, listen to how clients describe their relationship with their cannabis use.
- Acknowledge that babies come with a lot of new stress! Is cannabis use part of handling that? Is there a way to redirect that stress even occasionally?

Trauma/Oppression



- Consider how this could be triggering for you/your client/others.
- Consider how your client may be vulnerable due to one of the 4 I's.
- Help them anticipate/strategize. Also, validate.

Physiologic Support



Elements of an data-driven conversation

- How and how often is cannabis being used? Use does *NOT* equal abuse.
- Are there other substances being used concurrently?
- What is the perinatal environment like?
- Is there opportunity for physiologic harm reduction?
- Are there socioeconomic, race or other social factors?
- How is *Cannabis* being consumed?
- The same suggestions you would give to cigarette smoking parents applies if they smoke cannabis.
- The same suggestions you would give to a mom taking Percoset postpartum about keeping their eye on sober parenting and planning for that applies to anyone using a substance with the potential to alter their judgement.
- Is there trauma? Active oppression? How can I apply an intersectional lens?
- What biases do I bring to this conversation?

Strategies for you and your clients

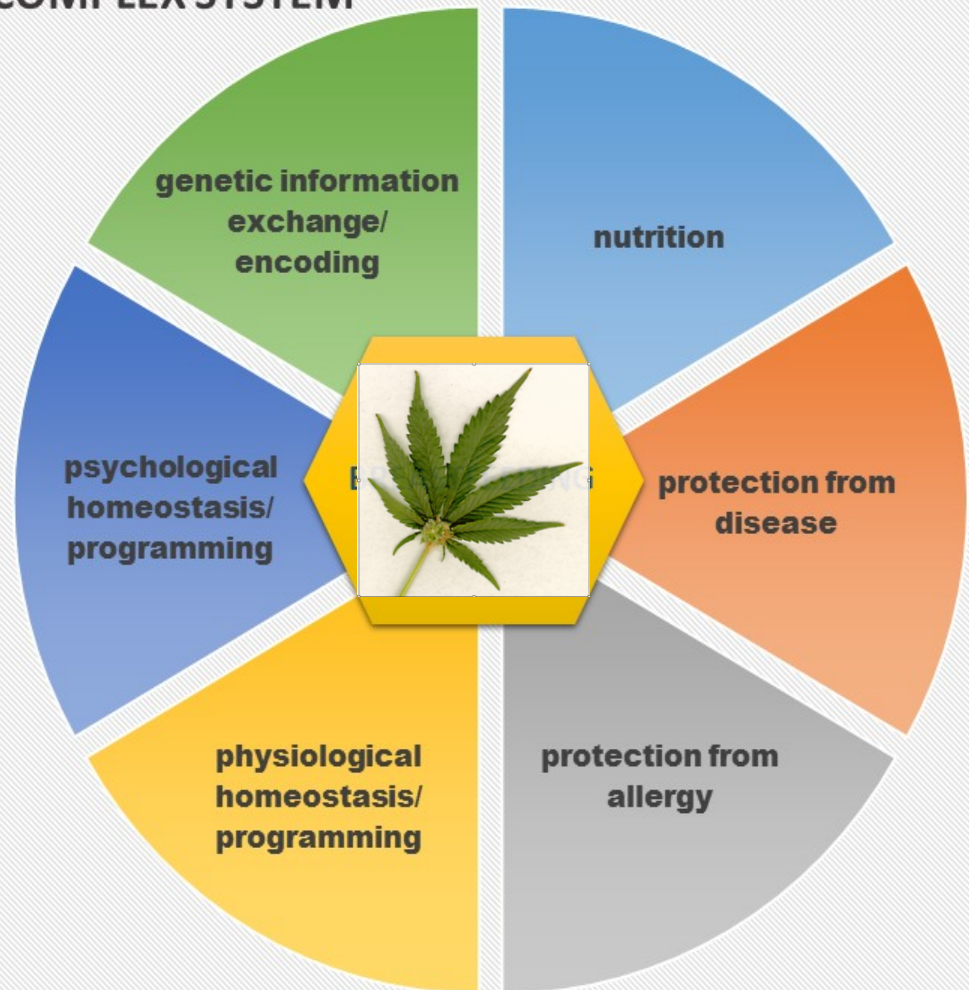
- Educate clients on what we do know about effects of *Cannabis* in breastfeeding – a lack of evidence does not make it safe
- Provide resources for reducing or eliminating substance use, use a risk-reduction/harm reduction approach
- Strive for an open and honest conversation in the context of a therapeutic relationship
- Doulas! All the time, everywhere, for everyone
- Prototype and innovate!

BREASTFEEDING AS COMPLEX SYSTEM

Breastfeeding/nursing is a complex adaptive reciprocal relationship between a female and her offspring that is *not* limited to passing of milk from mother to child but encompasses genetic information exchange and encoding, protection from disease and immunological reactions, physiological and psychological homeostasis and programming. All of these functions are fulfilled with active interaction of a woman and her child with the environment, not via the abstract substance of milk.

Feeding human milk from a bottle does not fulfill all the functions of breastfeeding/nursing for mother and child. Thus it is incorrect to discuss breastfeeding in terms of nutrition, milk, or physiological process of making milk (lactation).

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Resources

- Harm Reduction Action Center
 - harmreductionactioncenter.org
- National Advocates for Pregnant Women
 - advocatesforpregnantwomen.org
- Elephant Circle
 - elephantcircle.net
- Trauma Stewardship Institute
 - traumastewardship.com
- Family Defense Center
 - Medical Ethics Concerns in Physical Child Abuse Investigations: A Critical Perspective
- National Perinatal Association
 - nationalperinatal.org



Educate. Advocate. Integrate.



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