Perinatal Substance Use: Evidence for Current Practice

Karen Clemmer,
MCAH Coordinator, Sonoma County
The impact of perinatal marijuana use on pregnancy outcomes & lactation

Learning Objectives

• Influence of Adverse Childhood Experiences on behavior & health
• The impact of perinatal marijuana use on birth outcomes
• The current evidence on marijuana use during breastfeeding
Applying a Life Course Lens

Adolescents
The next generation of parents!
DISCLAIMER

The following is a preliminary report of actions taken by the House of Delegates at its 2013 Interim Meeting and should not be considered final. Only the Official Proceedings of the House of Delegates reflect official policy of the Association.

AMERICAN MEDICAL ASSOCIATION HOUSE OF DELEGATES (I-13)

Report of Reference Committee K

Kenneth M. Certa, MD, Chair

Our AMA (1) discourages cannabis marijuana use, especially by persons vulnerable to the drug's effects and in high-risk situations; (2) supports the determination of the consequences of long-term cannabis marijuana use through concentrated research, especially among youth and adolescents; and (3) supports the modification of state and federal laws to emphasize public health based strategies to address and reduce cannabis use reduce the severity of penalties for possession of marijuana; (4) urges that educational efforts on the harms of cannabis use be extended to all segment of the population.
Updated AAP policy opposes marijuana use, citing potential harms, lack of research

AAP recommendations
The Academy:
• opposes marijuana use by children and adolescents;
• opposes the use of medical marijuana outside the regulatory process of the Food and Drug Administration but recognizes that marijuana may be an option for cannabinoid administration for children with life-limiting or severely debilitating conditions and for whom current therapies are inadequate;
• opposes legalization of marijuana because it encourages children and adolescents;
• discourages the use of marijuana by minors, even where legal, because of the modeling on child and adolescent behavior;
• supports studying the effects of recent marijuana to better understand the impact to reduce adolescent marijuana use;
• recommends changing marijuana from a Schedule II drug to facilitate research and develop cannabinoid; and

WHAT YOU NEED TO KNOW about teens & marijuana

ADVERSE CONSEQUENCES?
• LOWER IQ?
• ADDICTIVE?
• DEPRESSION?
• IMPAIRED DRIVING?
• BRAIN DEVELOPMENT?
• RESPIRATORY DISEASE?
• HIGHER POTENCY?
• LEADS TO OTHER DRUG USE?
• MOTIVATION?
• HARMFUL?
• RISKY BEHAVIOR?

MARIJUANA is the most commonly used illegal drug by youth, second only to alcohol. All forms of marijuana disrupt the way the brain and the body work.
PERCENTAGE OF U.S. 12 GRADE STUDENTS REPORTING DAILY MARIJUANA USE VS. PERCEIVED RISK OF REGULAR MARIJUANA USE

California Medical Marijuana Program established.

Perceived Risk

Daily Use

Source: National Institute on Drug Abuse (NIDA) (December, 2013)

...approximately 9% of people who use marijuana became dependent.

...the risk of addiction to marijuana is about 1 in 6 among those who start using as adolescents.
School achievement in 14-year-old youths prenatally exposed to marijuana

Lidush Goldschmidt a, *, Gale A. Richardson b, Jennifer A. Willford b, Stevan G. Severtson c, Nancy L. Day b

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c Denver Health and Hospital Authority, Denver, CO, 80204, USA

ABSTRACT

The relation between prenatal marijuana exposure (PME) and school achievement was evaluated in a sample of 524 14-year-olds. Women were recruited during pregnancy and assessed, along with their offspring, in multiple phases from infancy to early adulthood. The sample represents a low-income population. The majority of the adolescents are male and 55% are African American. School achievement was assessed with the Wechsler Individual Achievement Test (WIAT) Screener (Psychological Corporation, 1992). A significant negative relation was found between PME and 14-year WIAT composite and reading scores. The deficit in school achievement was mediated by the effects of PME on intelligence test performance at age 6, attention problems and depression symptoms at age 10, and early initiation of marijuana use. These findings suggest that the effects of PME on adolescent achievement are mediated by the earlier negative effects of PME on child characteristics. The negative impact of these characteristics on adolescent achievement may presage later problems in early adulthood.
What if I don’t smoke it, but eat it instead? Is there still a risk?
American Psychiatric Association Position Statement

American Psychiatric Association

TITLE: Position Statement on Marijuana as Medicine

Summary: Given the gravity of concerns regarding marijuana as medicine, professionals in both neurology and psychiatry have emphasized the importance of prospective studies to understand the mechanisms by which cannabis functions, and its impact on mental health and behavior before instituting changes in practice and policy.

Recommendations: Given the general lack of evidence-based information among the public and membership, it behooves the APA to actively disseminate this position paper and background information in whatever way it seems fit to the public, policy-making entities and medical organizations.

Organizations with Position Statements on Marijuana as Medicine, as of April 2013:

- American Academy of Child and Adolescent Psychiatry (AACAP)
- American Academy of Pediatrics (AAP)
- American Medical Association (AMA)
- American Society of Addiction Medicine (ASAM)
- American Cancer Society
The connection between infancy and adult health

Applying a Life Course Lens
A Brief review of ACES
“Never before in the history of medicine have we had better insight into the factors that determine the health of an individual from infancy to adulthood, which is part of the life course perspective—a way of looking at life not as disconnected stages but as integrated across time.”
Centers for Disease Control and Kaiser Permanente in San Diego, 17,300 Adults
Tracked health outcomes based on childhood ACEs

75% Caucasian, 39% college graduates, 36% some college, living wage jobs with insurance; median age 57 yr. old
What are the **Adverse Childhood Experiences**?

1. Child physical abuse
2. Child sexual abuse
3. Child emotional abuse
4. Physical Neglect
5. Emotional Neglect
6. Mentally ill, depressed or suicidal person in the home
7. Drug addicted or alcoholic family member
8. Witnessing domestic violence against the mother
9. Loss of a parent to death or abandonment, including abandonment by divorce
10. Incarceration of any family member
Prevalence

Adverse Childhood Experiences (ACEs) Study
Centers for Disease Control & Prevention (CDC)

Household dysfunction
- Substance abuse 27%
- Parental separation/divorce 23%
- Mental illness 19%
- Battered mother 13%
- Incarcerated household member 5%

Abuse
- Psychological 11%
- Physical 28%
- Sexual 21%

Neglect
- Emotional 15%
- Physical 10%
How the ACES Work

**Adverse Childhood Experiences**
- Abuse and Neglect (e.g., psychological, physical, sexual)
- Household Dysfunction (e.g., domestic violence, substance abuse, mental illness)

**Impact on Child Development**
- Neurobiologic Effects (e.g., brain abnormalities, stress hormone dysregulation)
- Psychosocial Effects (e.g., poor attachment, poor socialization, poor self-efficacy)
- Health Risk Behaviors (e.g., smoking, obesity, substance abuse, promiscuity)

**Long-Term Consequences**

<table>
<thead>
<tr>
<th>Disease and Disability</th>
<th>Social Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Depression, Suicide, PTSD</td>
<td>Homelessness</td>
</tr>
<tr>
<td>Drug and Alcohol Abuse</td>
<td>Prostitution</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>Criminal Behavior</td>
</tr>
<tr>
<td>Cancer</td>
<td>Unemployment</td>
</tr>
<tr>
<td>Chronic Lung Disease</td>
<td>Parenting problems</td>
</tr>
<tr>
<td>Sexually Transmitted Diseases</td>
<td>High utilization of health and social services</td>
</tr>
<tr>
<td>Intergenerational transmission of abuse</td>
<td>Shortened Lifespan</td>
</tr>
</tbody>
</table>

CANarratives.org
ACE Score Increases Suicide Attempt

1 of 100 people with 0 ACEs attempt suicide

10 of 100 people with 3 ACEs attempt suicide

20 of 100 people with 7 ACEs attempt suicide
A “Trauma Lens” can help to better understand a patient’s behavior.

A shift in perspective from:

“How is wrong with this person?”

to

“What has this person been through?”
Sonoma County ACEs Connection

Annjané's Story

http://www.acesconnection.com/g/sonoma-county-aces-connection/home

https://www.youtube.com/watch?v=fM4QWb3MBPU
The impact of perinatal marijuana use on birth outcomes

A review of the evidence
Birth outcomes associated with cannabis use before and during pregnancy

Mohammad R. Hayatbakhsh1,2, Vicki J. Flenady2, Kristen S. Gibbons2, Ann M. Kingsbury2, Elizabeth Hurrion2, Abdullah A. Mamun1 and Jake M. Najman1

first antenatal clinic visit. Use of cannabis during pregnancy strongly and significantly predicted negative birth outcomes, including low birth weight, preterm birth, SGA, and admission to the NICU. After controlling for mothers’ sociodemographic characteristics, smoking, alcohol consumption, and use of other illicit drugs, these increased levels of poor outcomes remained statistically significant.

The findings of this study are consistent with previous research, which has suggested that smoking cannabis during pregnancy may lead to lower birth weight (6–9), increased rate of premature birth (7), and shorter birth length (11,12).
• maternal health – mental & physical
• fetal & **long term child development**
• responsive parenting & attachment
• safe sleep*
• breastfeeding*

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risks. Marijuana has an affinity for lipids and accumulates in human milk,\textsuperscript{125} as can cocaine\textsuperscript{26} and amphetamines.\textsuperscript{101,102} Although the AAP considers the use of marijuana, opiates, cocaine, and methamphetamine to be a contraindication to breastfeeding, supervised methadone use not only is considered to be compatible with breastfeeding, with no effect on the infant or on lactation, but also is a potential benefit in reducing the symptoms associated with neonatal abstinence syndrome. Several available
animal species. The deleterious effects of marijuana on the fetus are thought to be attributable to complex pharmacologic actions on developing biological systems, altered uterine blood flow, and altered maternal health behaviors. Similar to other drugs, marijuana has been shown to alter brain neurotransmitters as well as brain biochemistry, resulting in decreased protein, nucleic acid, and lipid synthesis. Marijuana can remain in the body for up to 30 days, thus prolonging fetal exposure. In addition, smoking marijuana produces as much as 5 times the amount of carbon monoxide as does cigarette smoking, perhaps altering fetal oxygenation.
Timeline of Fetal Development

- **4th week**: Missed Period
- **5th week**: Central Nervous System
- **6th week**: Heart
- **7th week**: Arms
- **8th week**: Eyes
- **9th week**: Legs
- **10th week**: Teeth
- **11th week**: Palate
- **12th week**: External genitalia
- **Mean Entry into Prenatal Care**
The current evidence on marijuana use during breastfeeding

Lactation - THC in breastmilk
Parenting – sleep
Average THC and CBD Levels in the US: 1960 -

- **THC**: 0.2 0.24 0.39 0.47 1 1 1.5 3.3 3.3 3.5 3.5 3.1 3.1 4 4.5 4.5 4.6 4.6 4.6 4.6 4.6 4.9 5.1 5.6 7.2 7.1 8.3 8.0 9.0 10.3 10.4
- **CBD**: 0.28 0.31 0.38 0.36 0.33 0.31 0.42 0.4 0.41 0.43 0.45 0.47 0.42 0.46 0.46 0.46 0.53 0.48 0.41

**Psychoactive Ingredient**

**NON-Psychoactive**
MARYJUANA USE DURING PREGNANCY AND LACTATION

ABSTRACT: *Cannabis sativa* (marijuana) is the illicit drug most commonly used during pregnancy. The self-reported prevalence of marijuana use during pregnancy ranges from 2% to 5% in most studies. A growing number of states are legalizing marijuana for medicinal or recreational purposes, and its use by pregnant women could increase even further as a result. Because of concerns regarding impaired neurodevelopment, as well as maternal and fetal exposure to the adverse effects of smoking, **women who are pregnant or contemplating pregnancy should be encouraged to discontinue marijuana use**. Obstetrician–gynecologists should be discouraged from prescribing or suggesting the use of marijuana for medicinal purposes during preconception, pregnancy, and lactation. Pregnant women or women contemplating pregnancy should be encouraged to discontinue use of marijuana for medicinal purposes in favor of an alternative therapy for which there are better pregnancy-specific safety data. There are insufficient data to evaluate the effects of marijuana use on infants during lactation and breastfeeding, and in the absence of such data, marijuana use is discouraged.
Marijuana Use During Breastfeeding

- THC has an affinity for lipids and accumulates in human milk.
- The AAP considers marijuana use a contraindication to breastfeeding.

\textit{THC is fat-soluble and secreted in breast milk; with chronic heavy use levels can be 8x higher than in maternal plasma}

- May inhibit production of prolactin which could interfere with lactation

Source: American Academy of Pediatrics, 2013 Prenatal Substance Abuse
ABM Clinical Protocol #21: Guidelines for Breastfeeding and Substance Use or Substance Use Disorder, Revised 2015

Sarah Reece-Streman, Kathleen A. Marinelli, and The Academy of Breastfeeding Medicine

infant from the mother’s marijuana use must be carefully considered. Δ⁹-Tetrahydrocannabinol (THC), the main compound in marijuana, is present in human milk up to eight times that of maternal plasma levels, and metabolites are found in infant feces, indicating that THC is absorbed and metabolized by the infant. It is rapidly distributed to the brain and adipose tissue and stored in fat tissues for weeks to months. It has a long half-life (25–57 hours) and stays positive in the urine for 2–3 weeks, making it impossible to

subtle and long-lasting neurofunctional alterations. Several preclinical studies highlight how even low to moderate doses during particular periods of brain development can have profound consequences for brain maturation, potentially leading to long-lasting alterations in cognitive functions and emotional behaviors. Exposure to second-hand marijuana smoke by infants has been associated with an independent two times possible risk of sudden infant death syndrome.
Current Status: Active
PolicyStat ID: 1238584

Effective: 10/28/2013
Final Approved: 12/28/2013
Last Revised: 10/28/2013
Next Review: 12/27/2016
Owner: Wendy Boyer, Dir. Women & Infant Services
Policy Area: Obstetrics
References:
Applicability: Sutter Santa Rosa Regional Hospital

Breast Feeding with Positive Maternal THC Screen

PERSONNEL:
Medical Staff, Nursing, Social Service

SUPPORTIVE DATA:
A. The choice of breastfeeding by the pregnant or newly postpartum woman with a history of past or current drug use/abuse is challenging for many reasons. The purpose of this policy is to provide evidence-based guidelines for the evaluation and management of the drug-dependent woman choosing to breastfeed.
B. Non-medical use of marijuana cannot be condoned or supported by the medical community from a legal standpoint.
C. The safety of marijuana use by breastfeeding women remains controversial. There are two aspects of marijuana use that this policy will address. The effect of frequent and regular marijuana use on the mother and her care of the baby and the effect of frequent and regular marijuana use on the baby.

STANDARDS OF CARE:
A. The effect of marijuana on the mother:

1. Marijuana has mind and mood altering effects. These effects may have a direct influence on a person’s ability to care for a baby. Marijuana use is advised against when its use may put the safety and well-being of the baby in jeopardy.
2. There is some evidence that the use of marijuana may negatively impact milk supply, especially in women who have yet to fully establish lactation.
What Does a Safe Sleep Environment Look Like?

Reduce the Risk of Sudden Infant Death Syndrome (SIDS) and Other Sleep-Related Causes of Infant Death

- Use a firm sleep surface, such as a mattress in a safety-approved* crib, covered by a fitted sheet.
- Do not use pillows, blankets, sheepskin, or crib bumpers anywhere in your baby’s sleep area.
- Keep soft objects, toys, and loose bedding out of your baby’s sleep area.
- Do not smoke or let anyone smoke around your baby.
- Make sure nothing covers the baby’s head.
- Always place your baby on his or her back to sleep, for naps and at night.
- Dress your baby in sleep clothing, such as a one-piece sleeper, and do not use a blanket.
- Baby’s sleep area is next to where parents sleep.
- Baby should not sleep in an adult bed, on a couch, or on a chair alone, with you, or with anyone else.

*For more information on safe sleeping guidelines, contact the Consumer Product Safety Commission at 1-800-638-2772 or visit http://www.cpsc.gov

SAFE TO SLEEP

NIH (National Institutes of Health) Infant Sleep and Safety Initiative
In closing ....
DATE: FEBRUARY 10, 2014

ALL PLAN LETTER 14-004

TO: ALL MEDI-CAL MANAGED CARE HEALTH PLANS

SUBJECT: SCREENING, BRIEF INTERVENTION, AND REFERRAL TO TREATMENT FOR MISUSE OF ALCOHOL

PURPOSE: The purpose of this All Plan Letter (APL) is to explain the obligations of Medi-Cal managed care health plans (MCPs) to provide Screening, Brief Intervention, and Referral to Treatment (SBIRT) services for MCP members ages 18 and older who misuse alcohol.
Smoke Free Babies

Michelle Escobar-McGarry
Northern California Center for Well-Being
575-6043 x 19

Who to refer?
How to refer?
Cost?

Services we offer

Our services include:

1. Individual Support: Private appointments with a smoking cessation counselor.
2. Phone Support: Information to help you cope with day to day challenges.
3. Support Groups: Connect with other Moms who want to quit smoking.

Secondhand smoke and the harmful chemicals in it are known causes of Sudden Infant Death Syndrome, Respiratory Infections, Ear Infections, and Asthma attacks in infants and children. They are also known causes of Heart Disease, Stroke, and Lung Cancer in adult nonsmokers.
Drug Free Babies

Marena Koukis, Ph.D.
Perinatal Placement Specialist
County of Sonoma Behavioral Health
Cell 707-494-1283

Who to refer?
How to refer?
Cost?
Thank you!

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