Marijuana in Pregnancy

What are we telling our patients?

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University of Utah

Disclosure Statements

We have no relevant financial relationships to disclose or conflicts of interest to resolve.
Learning Objectives

• Describe prevalence of marijuana use in pregnancy and reported reasons for use
• Review the risks of marijuana use during pregnancy and lactation to the mother and fetus based on current evidence
• Discuss approaches and available resources for practitioners to assist with counseling women regarding marijuana use in pregnancy

Background

• Marijuana is the most common illicit drug used in pregnancy
• Crosses the placenta
• Anticipate increased use with increasing legalization of recreational marijuana
  • More social acceptance of marijuana use
What is marijuana?

- Cannabis sativa plant
- Contains over 600 chemicals
  - THC: psychoactive component
  - Cannabidiols: sedative; therapeutic use?
  - Hashish
- Modes of consumption
  - Smoking
  - Vaping
  - Eating
  - Topical (lotions)
General Population Prevalence

**ILlicit Drug Use Impacts Millions: Marijuana Most Widely Used Drug**

*Past Year, 2017, 12+

<table>
<thead>
<tr>
<th>Drug Type</th>
<th>Prevalence</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marijuana</td>
<td>15.0%</td>
<td>40.9 Million</td>
</tr>
<tr>
<td>Psychotherapeutic Drugs</td>
<td>6.6%</td>
<td>13.1 Million</td>
</tr>
<tr>
<td>Cocaine</td>
<td>2.2%</td>
<td>5.9 Million</td>
</tr>
<tr>
<td>Hallucinogens</td>
<td>1.9%</td>
<td>5.1 Million</td>
</tr>
<tr>
<td>Inhalants</td>
<td>0.6%</td>
<td>1.8 Million</td>
</tr>
<tr>
<td>Methamphetamines</td>
<td>0.6%</td>
<td>1.6 Million</td>
</tr>
<tr>
<td>Heroin</td>
<td>0.3%</td>
<td>300,000</td>
</tr>
</tbody>
</table>

*Prescription opioids, sedatives, tranquilizers, stimulants*

Prevalence Among Women

**Marijuana Use among Young Adults: Significant Increases in Women**

*Past Month, 2015 - 2017, 18 - 25*

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Prevalence</th>
<th>Male Prevalence</th>
<th>Female Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>6.9M</td>
<td>22.1%</td>
<td>19.8%</td>
</tr>
<tr>
<td>2016</td>
<td>7.6M</td>
<td>23.0%</td>
<td>20.8%</td>
</tr>
<tr>
<td>2017</td>
<td>7.0M</td>
<td>23.4%</td>
<td>22.3%</td>
</tr>
</tbody>
</table>

*Note: Special analysis of the 2017 NSDUH Report. Difference between this estimate and the 2017 estimate is statistically significant at the .05 level.*
Prevalence in Pregnancy

Marijuana Use among Women by Pregnancy Status

PAST MONTH, 2015 - 2017, 15 - 44

PREGNANT

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%</td>
<td>76k</td>
<td>111k</td>
<td>161k</td>
</tr>
<tr>
<td>4%</td>
<td>3.4%</td>
<td>6.9%</td>
<td>12.6%</td>
</tr>
</tbody>
</table>

NOT PREGNANT

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%</td>
<td>6.3M</td>
<td>6.7M</td>
<td>7.5M</td>
</tr>
<tr>
<td>4%</td>
<td>10.3%</td>
<td>11.0%</td>
<td>12.2%</td>
</tr>
</tbody>
</table>

Special analysis of the 2017 NSDUH Report.

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

Prevalence in Pregnancy

Daily or Almost Daily Marijuana Use among Women by Pregnancy Status

PAST YEAR, 2015 - 2017, 15 - 44

PREGNANT

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%</td>
<td>28k</td>
<td>60k</td>
<td>91k</td>
</tr>
<tr>
<td>2%</td>
<td>2.8%</td>
<td>2.8%</td>
<td>2.9%</td>
</tr>
</tbody>
</table>

NOT PREGNANT

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%</td>
<td>6.0M</td>
<td>1.7M</td>
<td>2.1M</td>
</tr>
<tr>
<td>2%</td>
<td>2.9%</td>
<td>2.8%</td>
<td>2.9%</td>
</tr>
</tbody>
</table>

Special analysis of the 2017 NSDUH Report.

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


![Graph showing rates of marijuana use during pregnancy before and after recreational legalization in Colorado.](chart.png)

Allshouse and Metz unpublished data 2015

Use and Legalization

- Data from the US Drug Testing Laboratories
- Compared Colorado meconium lab results to other states without legalization over same time period (1st 9 months 2012 and 2014)
- Increase by 10% in THC positive samples in CO consistent with rest of country
- However, concentration of THC in CO samples increased

Why are Pregnant Women Using Marijuana?

<table>
<thead>
<tr>
<th>Reasons for Use</th>
<th>Ever Users (%, n)</th>
<th>Current Users (%, n)</th>
<th>Past Users (%, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help with depression/anxiety/stress</td>
<td>35% (164)</td>
<td>63% (60)</td>
<td>28% (103)</td>
</tr>
<tr>
<td>Help with pain</td>
<td>29% (135)</td>
<td>60% (57)</td>
<td>21% (78)</td>
</tr>
<tr>
<td>Help with nausea/vomiting</td>
<td>23% (108)</td>
<td>48% (46)</td>
<td>17% (62)</td>
</tr>
<tr>
<td>For fun/recreation</td>
<td>59% (277)</td>
<td>39% (37)</td>
<td>65% (240)</td>
</tr>
<tr>
<td>Other reason</td>
<td>16% (75)</td>
<td>14% (13)</td>
<td>16% (58)</td>
</tr>
</tbody>
</table>

*CDPHE, Monitoring Health Concerns Related to Marijuana in Colorado: 2014*

Perceived Benefits

- Roberson et al found that women who used marijuana in pregnancy were more likely to report severe nausea
- Westfall, et al. reported on 79 women who used medicinal marijuana in pregnancy
  - 40 (51%) used marijuana to treat nausea and vomiting of pregnancy and 92% of them felt it was effective
- Effect of marijuana use on nausea and vomiting of pregnancy is unknown

CBD Oil

• Cannabidiol is extracted from the flowers and buds of marijuana or hemp plants. It does not produce intoxication; marijuana's "high" is caused by the chemical tetrahydrocannabinol (THC).

• Studies investigating CBD consumption during pregnancy are nearly non-existent. Findings in one study suggest that cannabinoids like CBD may reduce uterine contractions. Two separate 2013 preclinical studies did find evidence that the placental permeability in pregnant women who consume CBD might be influenced, meaning that foreign compounds could more likely to cross the placental barrier and into the fetus.

• Talk to your doctor...who has access to almost no literature in which to inform you on....
Laws and Maternal/Neonatal Marijuana Exposure

• Current Colorado law defines a baby testing positive at birth for a Schedule I substance (including recreational or medical THC or other drugs) as an instance of child neglect, which requires a report to social services (C.R.S. § 19-3-102)

• State of Idaho, Priority 1 classification (Idaho Child Family Services Priority Guidelines June, 2018)

Cannabis in Pregnancy/Lactation

• Evidence about cannabis in pregnancy is very hard to interpret, due to its illegal status, widespread use, and difficulty publishing positive studies.

• Some studies report improved nausea, (19, 20) and some report worse nausea. (21, 22)

• Evidence for neurobehavioral development and birth weight is conflicting, with some studies showing impairment, some showing improvement, and some showing no differences at all. (23, 24, 25, 26)

• It is well established that there is no link to congenital anomalies, preterm birth, cancer, or feeding problems. (26)

• Smoking anything is bad for your heart, lungs, and circulation.

• Cannabis can increase heart rate and blood pressure.

• Contaminants may be present in flower or dabs.

• Emerging evidence links dabbing to rare complications. (28)
Neonatal Concerns

- Fetal Growth
- Stillbirth
- Preterm Birth
- Congenital Abnormalities
- Withdrawal Symptoms
- Neurodevelopment
- Breastfeeding and exposure
- Post-birth, secondhand smoke exposure

Fetal Growth

- Mixed Data
Preterm Birth

- Mixed Data

Stillbirth

- Limited Data
Congenital Abnormalities

- Mixed and Limited Data

Neonatal Withdrawal

- Limited Data
Neurodevelopment

- Limited and Mixed Data

Breastfeeding

- Limited Data, inconclusive findings on long term impacts
Marijuana/Cannabis/Tetrahydrocannabinol (THC)

There is inadequate evidence to make a statement about the isolated use of marijuana in breastfeeding mothers. Uniform guidelines regarding breastfeeding and marijuana use are difficult to create due to multiple forms and marijuana and THC derivatives, amount of use, type of ingestion, etc... (ABM, 2015). Recreational legalization of marijuana also complicates matters, however in states with legalization, laws exist regarding in utero exposure in the instance that an infant tests positive for THC. In the state of Idaho, a positive THC drug test in an infant is a reportable case. Dr. Hale (2017) estimates that at least 15% of pregnant women use marijuana on a regular basis during pregnancy in the US.

- Small to moderate secretions of THC in breastmilk have been documented. If a mother has a positive drug test for marijuana at birth, strongly advise her against further use in breastfeeding. Advise that it may impact neurodevelopmental growth, it may impact milk supply, however allow breastfeeding of the infant (Hale, 2017)
- Breastfeeding has numerous valuable health benefits for the mother and the infant, particularly the preterm infant. Limited data reveal that THC does transfer into human milk, and there is no evidence for the safety or harm of marijuana use during lactation. Therefore, women also need to be counseled about what is known about the adverse effects of THC on brain development during early infancy, when brain growth and development are rapid (AAP, 2018)
- 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 and reducing or abstaining from marijuana use while minimizing exposure to marijuana smoke (LactMed)
- "It is our considered opinion that the benefits of breastfeeding probably outweigh the detriment caused by the occasional or casual exposure to cannabis. That detriment increases with more frequent use and, at some point, will exceed the benefits. We do not have enough information to say where that division lies. It will have to come down to a case-by-case judgment."
  - James Abbey, MD and Thomas W. Hale, PhD Infant Risk Center
- 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. Breastfeeding women should be informed that the potential risks of exposure to marijuana metabolites are unknown and should be encouraged to discontinue marijuana use. The American College of Obstetricians and Gynecologists' breastfeeding page, available at http://www.acog.org/About-ACOG/ACOG-Departments/Breastfeeding provides more resources about breastfeeding for clinicians and patients.
- Marijuana can be passed to infants through their mother's breast milk. Marijuana may also affect the quality and quantity of breast milk that you make. There are no good studies on how marijuana in breast milk might affect a nursing baby. Although no consistent effects have been noticed in infants exposed to marijuana through breast milk, the American Academy of Pediatrics and the Academy of Breastfeeding Medicine advise that breastfeeding mothers avoid using marijuana. (MotherToBaby.com)
- CBD (Cannabidiol) is a non-psychoactive compound, it is usually found in an oil form. There is no scientific/medical research about its safety in pregnancy. It is generally thought to be safer than THC, by the general public and use in pregnancy may be quite common as it is touted to be beneficial for symptoms including nausea, inflammation, pain, anxiety, and depression. The same guidelines and recommendations for THC at this time should be applied to CBD. Breastfeeding database websites are not differentiating CBD from THC at this time (Schmidt)
Second Hand Smoke Exposure

- Recommendations similar to tobacco smoke exposure
  - Sudden infant death
  - Asthma
  - Respiratory and Ear Infections
- Limited Data specific to marijuana exposure

Summary of Pregnancy Literature

- Marijuana use *may be* associated with:
  - Small decrement in fetal growth
  - Preterm birth, specifically SPTB
  - Stillbirth
  - Adverse fetal neurodevelopment
- Insufficient evidence to link marijuana use with a specific congenital abnormality/anomaly
- Data are limited and mixed
  - More research needed with bio sampling
Harm Reduction

- Harm reduction is an evidence based approach to significant positive change in an incremental process
  - Uses motivational interviewing and personal accountability to help people set goals
  - Moves away from the idea that people can just 'quit'
  - Acknowledges gains & defeats and focuses on obtainable goals
  - Addresses all areas of safety, not just drug exposure
    - Risks associated with drug use
    - Basic needs- housing, employment, relationship building
    - Can be gender specific for risk factors impacting women
  - Overall can greatly impact health, safety, and wellbeing

Harm Reduction for Cannabis

- Most actual harms are imposed by our systems, not due to the drug.
- Blood and urine may test positive for as long as 3 weeks after exposure.
- Use any method other than smoking:
  - If eating, take very small amount and wait 2 hours before taking more.
  - There is no pregnancy data on dabbing.
  - Lotions and salves applied to skin will not cause intoxication or positive drug test.
- Decreasing or stopping use may improve morning sickness for some people.
- Stop or decrease use if you have cardiovascular disease, or feel that your mental health is worsening.
What should we tell patients?

- No known benefits of marijuana use in pregnancy
- Possible risks of marijuana use in pregnancy
- Advise patients not to use marijuana during pregnancy
- No known “safe” amount of marijuana in pregnancy
- ALWAYS utilize harm reduction techniques

ACOG & AWHONN Statements

Recommendations

The American College of Obstetricians and Gynecologists recommends the following:

- Before pregnancy and in early pregnancy, all women should be asked about their use of tobacco, alcohol, and other drugs, including marijuana and other medications used for nonmedical reasons.
- Women reporting marijuana use should be counseled about concerns regarding potential adverse health consequences of continued use during pregnancy.
- Women who are pregnant or contemplating pregnancy should be encouraged to discontinue marijuana use.
- 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.

The Association of Women’s Health, Obstetric and Neonatal Nurses (AWHONN) supports the implementation of legislation, policies, and public health initiatives that help raise awareness, remove stigma, discourage use, and facilitate access to prenatal and maternity care for women who use marijuana during pregnancy. AWHONN also supports ongoing research on the prevalence of use of marijuana during pregnancy and the short- and long-term effects for the woman, fetus, and newborn.
AAP Statement

• Breastfeeding has numerous valuable health benefits for the mother and the infant, particularly the preterm infant. Limited data reveal that THC does transfer into human milk, and there is no evidence for the safety or harm of marijuana use during lactation. Therefore, women also need to be counseled about what is known about the adverse effects of THC on brain development during early infancy, when brain growth and development are rapid.

• The importance of the published findings and the emerging research regarding the potential negative effects of marijuana on brain development are a cause for concern despite the limited research and are the basis for the following recommendations:

• Women who are considering becoming pregnant or who are of reproductive age need to be informed about the lack of definitive research and counseled about the current concerns regarding potential adverse effects of THC use on the woman and on fetal, infant, and child development. Marijuana can be included as part of a discussion about the use of tobacco, alcohol, and other drugs and medications during pregnancy.

• As part of routine anticipatory guidance and in addition to contraception counseling, it is important to advise all adolescents and young women that if they become pregnant, marijuana should not be used during pregnancy.

• Pregnant women who are using marijuana or other cannabinoid-containing products to treat a medical condition or to treat nausea and vomiting during pregnancy should be counseled about the lack of safety data and the possible adverse effects of THC in these products on the developing fetus and referred to their health care provider for alternative treatments that have better pregnancy-specific safety data.

• Women of reproductive age who are pregnant or planning to become pregnant and are identified through universal screening as using marijuana should be counseled and, as clinically indicated, receive brief intervention and be referred to treatment.

• Although marijuana is legal in some states, pregnant women who use marijuana can be subject to child welfare investigations if they have a positive marijuana screen result. Health care providers should emphasize that the purpose of screening is to allow treatment of the woman’s substance use, not to punish or prosecute her.

• Present data are insufficient to assess the effects of exposure of infants to maternal marijuana use during breastfeeding. As a result, maternal marijuana use while breastfeeding is discouraged. Because the potential risks of infant exposure to marijuana metabolites are unknown, women should be informed of the potential risk of exposure during lactation and encouraged to abstain from using any marijuana products while breastfeeding.

• Pregnant or breastfeeding women should be cautioned about infant exposure to smoke from marijuana in the environment, given emerging data on the effects of passive marijuana smoke.

• Women who have become abstinent from previous marijuana use should be encouraged to remain abstinent while pregnant and breastfeeding.

Further research regarding the use of and effects of marijuana during pregnancy and breastfeeding is needed.

Pediatricians are urged to work with their state and/or local health departments if legalization of marijuana is being considered or has occurred in their state to help with constitutive, nonpunitive policy and education for families.

Summary for Clinicians

• Screen women for marijuana use
  • Verbally (using a validated tool)
  • Urine toxicology screen with consent before testing
  • Please refer to ASAM Appropriateness of Drug Testing Guidelines

• Recommend avoiding marijuana in pregnancy and lactation

• Do not use legal threats as a motivator, fear based approaches don’t tend to work

• Counsel emphasizing the uncertainty of effects on perinatal outcomes
Summary for Clinicians

• Refer women who desire cessation to appropriate resources
• Behavioral and mental health counseling
• Do not otherwise modify clinical care
• Research limited but some evidence of harms
  • Biologic sampling
  • Breastfeeding data VERY limited
• Additional areas of investigation
• Access resources for providers and patients

References

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- https://www.jognn.org/article/S0884-2175(18)30278-8/fulltext