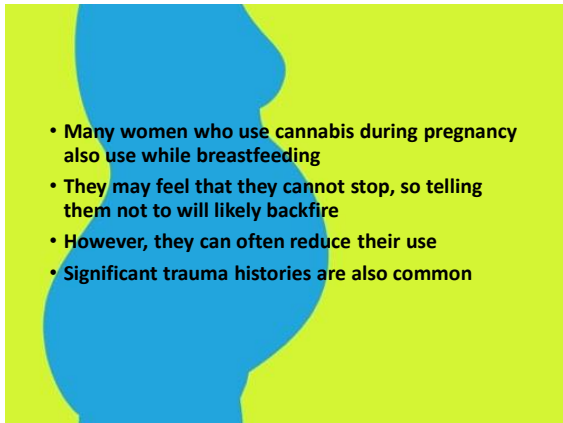




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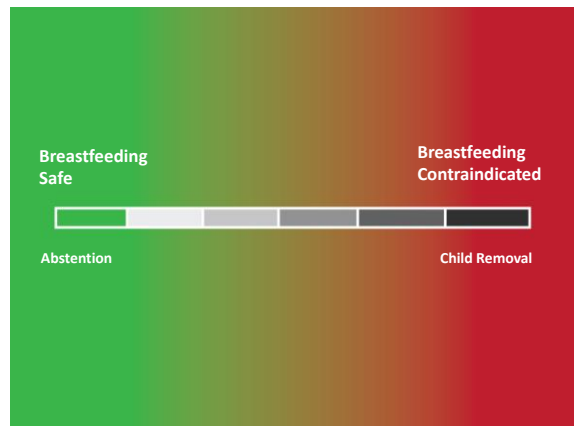
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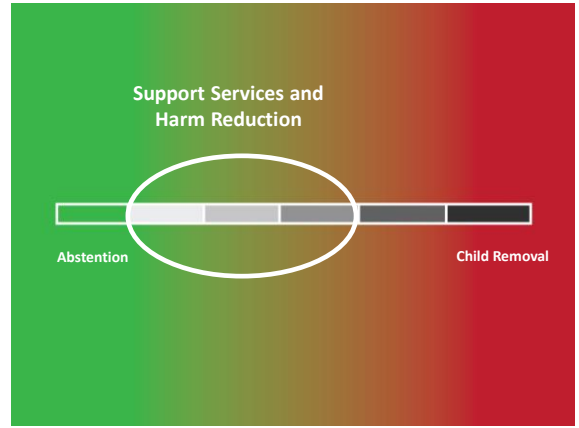
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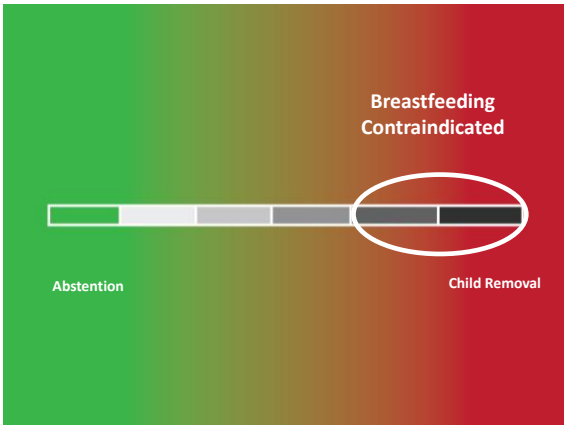
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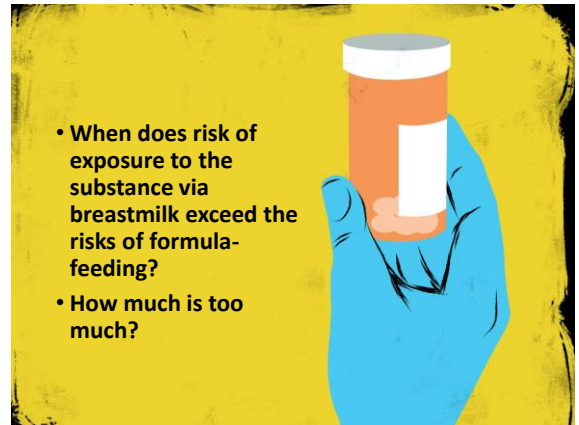
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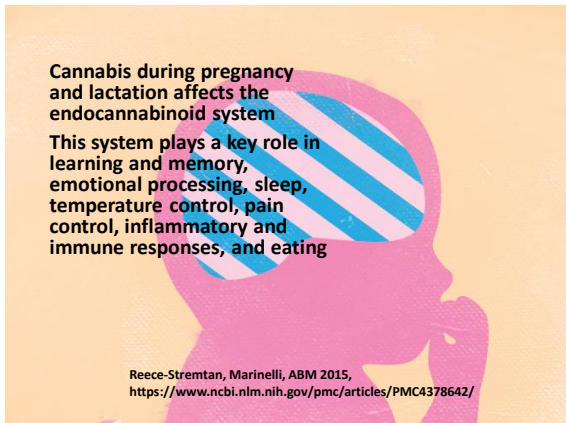
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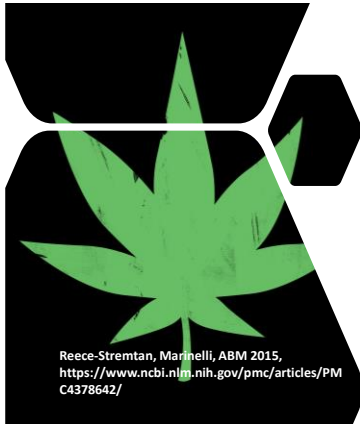
16



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18



- Tetrahydrocannabinol (THC) present in human milk 8 times level in maternal plasma
- Metabolites also found in infant feces

Reece-Stremtan, Marinelli, ABM 2015, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4378642/>

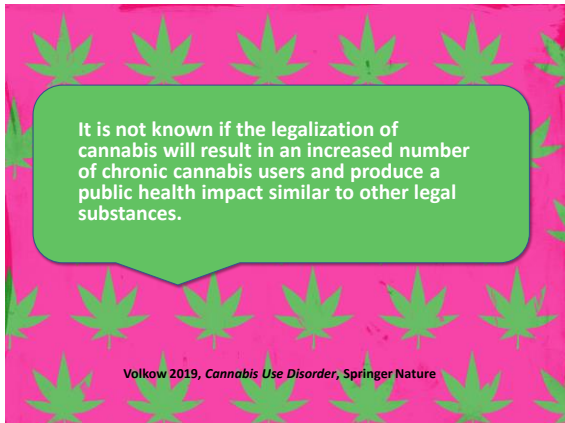
19



Some concerning beliefs

- It's "natural" therefore it's safe
- Cannabis is not addictive

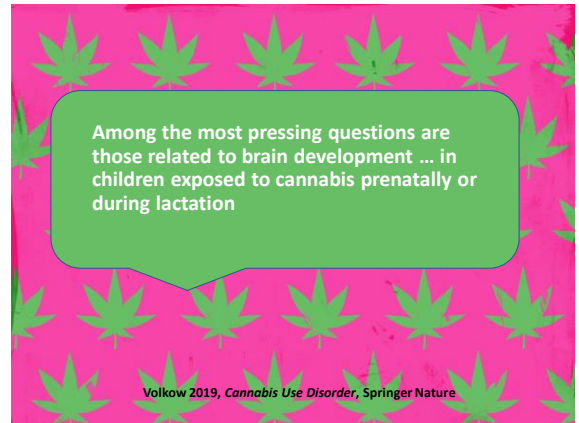
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It is not known if the legalization of cannabis will result in an increased number of chronic cannabis users and produce a public health impact similar to other legal substances.

Volkow 2019, *Cannabis Use Disorder*, Springer Nature

21



Among the most pressing questions are those related to brain development ... in children exposed to cannabis prenatally or during lactation

Volkow 2019, *Cannabis Use Disorder*, Springer Nature

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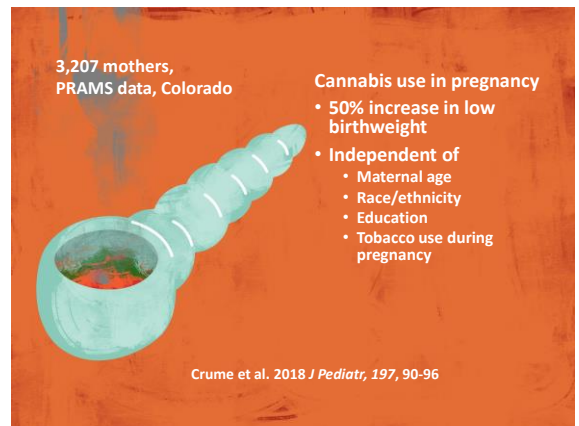


Evidence for THC exposure only during breastfeeding is "sparse and conflicting"

- 84% of mothers who use cannabis during pregnancy also use while breastfeeding

Metz & Strickrath 2015, *Am J Obstet Gynecol*, 213(6), 761-778; Reece-Stremtan, Marinelli, ABM 2015, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4378642/>

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3,207 mothers, PRAMS data, Colorado

Cannabis use in pregnancy

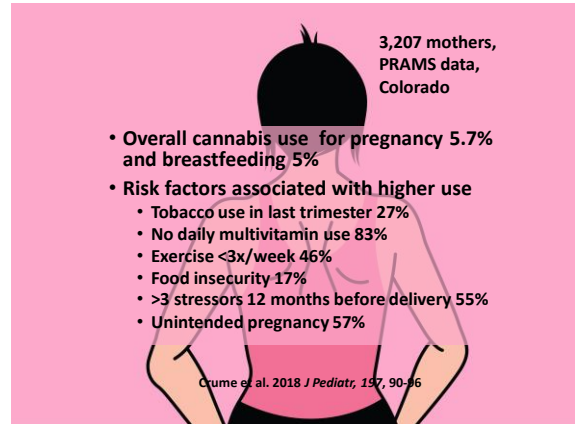
- 50% increase in low birthweight
- Independent of
 - Maternal age
 - Race/ethnicity
 - Education
 - Tobacco use during pregnancy

Crume et al. 2018 *J Pediatr*, 197, 90-96

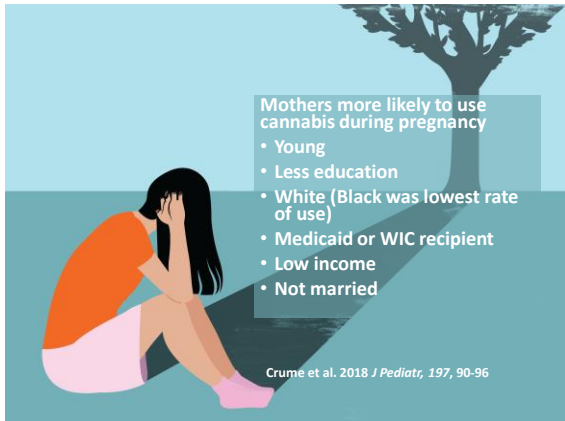
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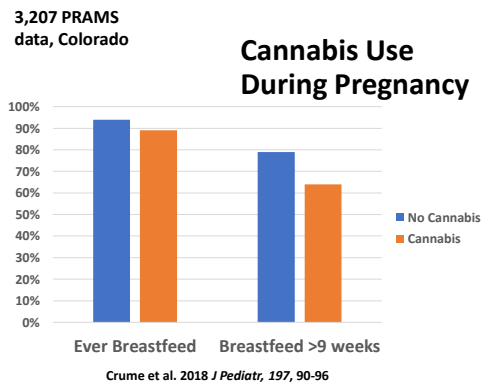
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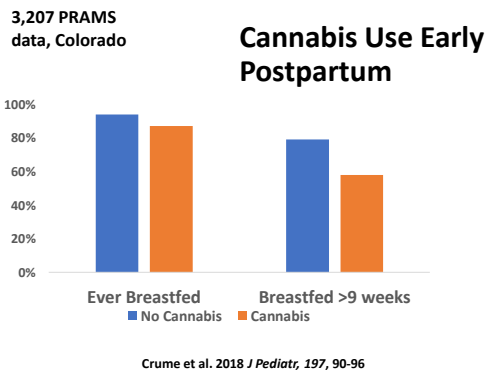
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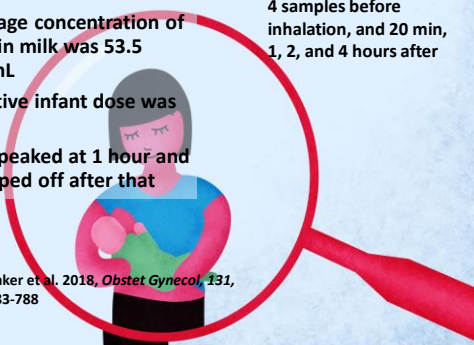
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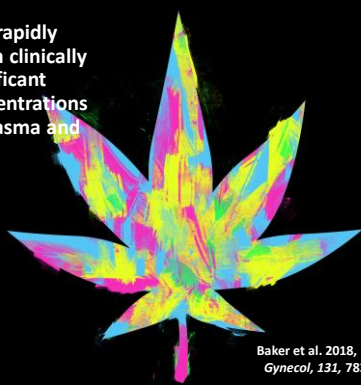


- Average concentration of THC in milk was 53.5 ng/mL
- Relative infant dose was 2.5%
- THC peaked at 1 hour and dropped off after that

8 EBF mothers collected 4 samples before inhalation, and 20 min, 1, 2, and 4 hours after

Baker et al. 2018, *Obstet Gynecol*, 131, 783-788

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- THC rapidly reach clinically significant concentrations in plasma and CNS

Baker et al. 2018, *Obstet Gynecol*, 131, 783-788


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- Rapid distribution to skeletal muscle and adipose tissue
- Reduces concentration in breast milk

Baker et al. 2018, *Obstet Gynecol*, 131, 783-788

33



- No measurable concentrations of metabolites in breast milk within 4 hours of the study

Baker et al. 2018, *Obstet Gynecol*, 131, 783-788

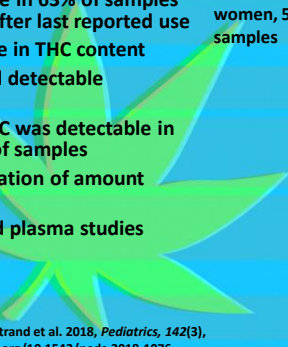
34



- Full pumping
- Combined milk from right and left breasts
- Submitted 1-2 oz from each pumping
- Controlled type and how much they smoked

Baker et al. 2018, *Obstet Gynecol*, 131, 783-788

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- THC detectable in 63% of samples up to 6 days after last reported use
- Highly variable in THC content
- 5 samples had detectable metabolites
- Concluded THC was detectable in the majority of samples
- No standardization of amount consumed
- Need milk and plasma studies

50 breastfeeding women, 54 samples

Bertrand et al. 2018, *Pediatrics*, 142(3), doi.org/10.1542/peds.2018-1076


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- Full pumping that included more fatty milk
- Concentration predicted by number of times/day the mother smoked
- Older mothers smoked more
- Most detectable in first 24 hours
- If baby is exposed daily, concerns for cannabinoid accumulation in infants

Bertrand et al. 2018, *Pediatrics*, 142(3), doi.org/10.1542/peds.2018-1076

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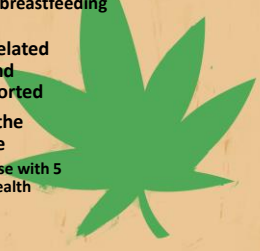


- Frequency of use is a key variable
- Frequency predicts accumulation of THC in breast milk

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Online survey of 1327 women who used cannabis while pregnant or breastfeeding

- Frequency of cannabis use related to the number of physical and mental health problems reported
- The more health problems, the more likely was frequent use
 - Increased by 13 times for those with 5 or more physical or mental health problems



Garner, Kendall-Tackett et al. in press. *Breastfeeding Med.*

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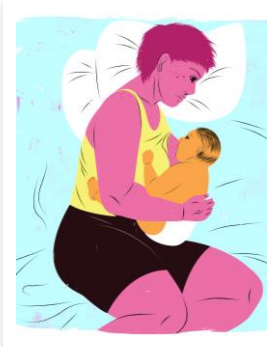
- After using cannabis (inhaled or edible), THC and CBD accumulate in breastmilk
- Remain present for 1-2 days
- Breast milk THC concentration increased from visit 1 to visit 2 by 30.2 ng/ml
- THC concentrates more in milk than plasma

20 chronic cannabis users, plasma and milk samples at 2 weeks and 2 months pp, all had used cannabis in the previous 48 hours

Moss et al. 2021, *Pediatr Res*, doi: 10/1038/s41390-020-01332-2

40

- No participants were only using CBD
- CBD detected in 37% of samples
- 13 participants with CBD detectable in milk had higher THC in their milk
- 1-2 hours for highest plasma concentration
- Detectable for 3-4 hours



Moss et al. 2021, *Pediatr Res*, doi: 10/1038/s41390-020-01332-2

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Questions with CBD

- Would you see as much CBD accumulation without THC?
- Even if CBD accumulates in the milk, since it is not psychoactive, is it harmful?



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- The effects of cannabis exposure do not appear until babies are in their teens
- Controlled for the demographic factors that confound findings
- Significant problems with learning and memory, verbal reasoning, and visual perception

Velez et al. 2019, *Cannabis Use Disorder*, Spring Nature

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- Harm reduction strategies
 - What types of support do mothers need to help them use less? (Trauma treatment, partner violence intervention, housing assistance)
 - If mothers are using for specific symptoms, could a CBD product be used instead?
 - If mothers are using to get high, an edible product may be better because it eliminates second-hand smoke

Indiana Perinatal Quality Improvement Collaborative 2019, <https://www.in.gov/laboroflove/files/breastfeeding-and-substance-use-final.pdf>;
 Kendall-Tackett 2020, *Cannabis and breastfeeding*; Reece-Stretman, Marinelli, ABM 2015, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4378642/>

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- Mothers should NEVER sleep with their babies while using cannabis
- Have another adult around to care for the baby while high
- Periodic users can pump and dump or wait at least 4 hours before breastfeeding

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Breastfeeding is contraindicated for heavy cannabis users

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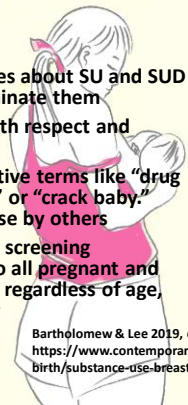
Interventions

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For greater success toward reaching health and parenting goals, all women with SUD need a plan for ongoing social and mental health support as well as treatment for SUD

Indiana Perinatal Quality Improvement Collaborative 2019, <https://www.in.gov/laboroflove/files/breastfeeding-and-substance-use-final.pdf>

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- Identify our biases about SU and SUD and work to eliminate them
- Treat patients with respect and dignity
- Don't use pejorative terms like "drug seeker," "addict," or "crack baby." Don't condone use by others
- Use validated SU screening questionnaires to all pregnant and lactating women regardless of age, race, or ethnicity

Bartholomew & Lee 2019, *Contemp OB/Gyn*, 64(9), <https://www.contemporaryobgyn.net/pregnancy-and-birth/substance-use-breastfeeding-woman>


49



- Use evidence-based recommendations and individualize for breastfeeding
- Formula or donor milk should not be the default if things are not going well
- Individualize support and build self-esteem

Bartholomew & Lee 2019, *Contemp OB/Gyn*, 64(9), <https://www.contemporaryobgyn.net/pregnancy-and-birth/substance-use-breastfeeding-woman>

50



- Affirm these women as mothers
- Focus on abstinence or harm reduction
- Address the symptoms mothers have
- Ensure infant safety

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Work with women to

- Identify environmental stresses
- Equip them to cope with stress without substances
- Address social determinants of health
- Develop supportive social structures

NSW Ministry of Health 2014, www.health.nsw.gov.au

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- Counsel women how to breastfeed when it is safe
- Promote attachment for all babies even when breastfeeding is unsafe due to use of substances
- Avoid abrupt weaning when on medically assisted therapy. This can cause withdrawal in the infant

Indiana Perinatal Quality Improvement Collaborative 2019, <https://www.in.gov/laboroflove/files/breastfeeding-and-substance-use-final.pdf>

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- Use trauma-informed care
- Create a safe and comfortable environment
- Ask permission before talking about SUD, exposing, or touching

Bartholomew & Lee 2019, *Contemp OB/Gyn*, 64(9), <https://www.contemporaryobgyn.net/pregnancy-and-birth/substance-use-breastfeeding-woman>

54

- Help moms with feelings that come with breastfeeding
- Relaxation and guided imagery
- Use apps such as
 - Calm
 - Stop, breathe, think
 - Simply being

Indiana Perinatal Quality Improvement Collaborative 2019, <https://www.in.gov/laboroflove/files/breastfeeding-and-substance-use-final.pdf>

55

- Minimize guilt over bottle-feeding
 - Encourage her to maximize her attachment behaviors and enjoy her baby
- All mothers should feel empowered in their decisions for their children

Indiana Perinatal Quality Improvement Collaborative 2019, <https://www.in.gov/laboroflove/files/breastfeeding-and-substance-use-final.pdf>

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Contraindications and cautions

- Not engaged in substance abuse treatment
- Not engaged in prenatal care
- Positive urine tests for substances other than cannabis
- No plans for postpartum substance abuse treatment or pediatric care
- Relapse 30 days before delivery
- Behavioral indicators of active substance use
- Chronic alcohol use

Reece-Stremtan, Marinelli, ABM 2015, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4378642/>

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• “No effort should be spared in assisting the mother to receive treatment for her addiction for her own and her baby’s future.

• Giving birth and then breastfeeding can be an empowering and life changing experience for a women and may be the catalyst that causes her to stop substance abuse.

• Before counselling a women to feed artificial baby milk, consider giving her the opportunity to meet this challenge.”

Denise Fisher

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Email: kkendallt@gmail.com

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SCAN ME

For free resources to take the next step, go to <https://bit.ly/3q7wx7s>

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