

Management of Alcohol, Opioid, and other Substance Use During Pregnancy

Julia Frew, MD
Brandon Hage, MD



Disclosures/Disclaimers/Acknowledgments

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How to use this material

- Review slides individually or as a self study group.
- For questions, go to normal view and read the notes.

Learning Objectives:

- Understand the prevalence and risk factors of substance use disorders in the perinatal period with a focus on alcohol and opioid use
- Discuss the effects of substance use disorders on pregnancies and offspring, including biological and psychiatric impacts.
- Understand evidence-based treatments for substance use disorders and prevention strategies for relapse.

Outline:

- Introduction
- Epidemiology: rates/incidence, risk factors and screening
- Diagnostic Criteria
- Clinical Features: clinical presentation and course/prognosis
- Differential Diagnosis and Assessment
- Pathophysiology
- Treatment: psychopharmacology and non-pharmacology
- Key Clinical Points
- Conclusion

Introduction:

- Substance use is common among reproductive-aged women
- Concerns of substance use in pregnancy
 - Potential teratogenicity of substances
 - Risk of maternal withdrawal symptoms with cessation of use
 - Neonatal withdrawal
 - Impact of substance use on parenting



Introduction:

- Barriers to diagnosis and treatment
 - Stigma and fear of child protection involvement
 - Lack of provider competence in management of SUD in pregnancy
 - Misinformation about safety of treatment
- Recommendations
 - Universal screening for substance use in pregnancy using a validated screening tool
 - Integrated care models → individuals receive both prenatal care and addiction treatment by an interdisciplinary team
 - Trauma-informed approach with wraparound supports for social determinants of health needs

Epidemiology: incidence and risk factors

- Risk factors for substance use in pregnancy include:
 - Age less than 25
 - Highest usage is between 18–29 (also peak reproductive years)
 - History of childhood trauma
 - Co-occurring psychiatric disorders (up to 40% of cases)
 - Family history of substance use disorder
 - Intimate partner violence
 - Low education level or socioeconomic status
 - Polysubstance use prior to pregnancy (up to 50% of cases)
 - Most common
 - Alcohol
 - Tobacco
 - Cannabis→ has increased significantly in recent years

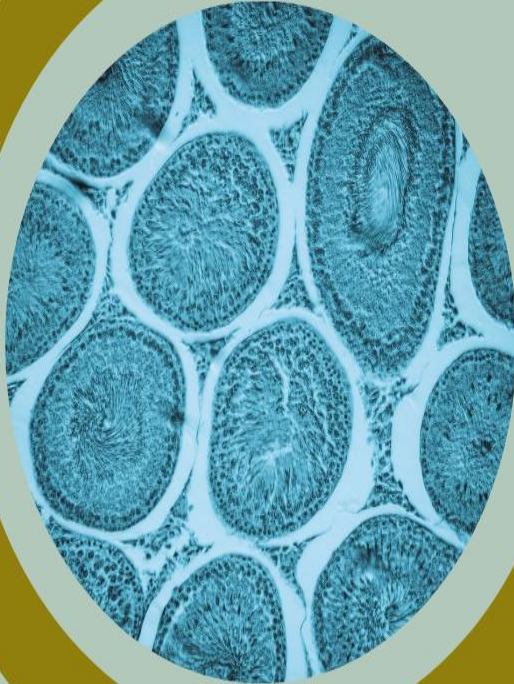
Epidemiology: screening

- Universal screening for substance use is recommended for all pregnant individuals
 - Validated instruments include:
 - 4 P's (parents, partners, past use, present use)
 - Substance Use Risk Profile- Pregnancy
 - T-ACE
 - Other screening tools designed for general medical settings (AUDIT-C, DAST, NIDA quick screen, etc.) may also be appropriate

•Parents	Did either of your parents ever have a problem with alcohol or drugs?
•Partner	Does your partner have a problem with alcohol or drugs?
•Past	Have you ever drunk beer, wine, or liquor?
•Pregnancy	
	-In the month before you knew you were pregnant, how many <i>cigarettes</i> did you smoke?
	-In the month before you knew you were pregnant, <i>how many beers/how much wine/how much liquor</i> did you drink?

Epidemiology: screening

- Screening, Brief Intervention, and Referral to Treatment (SBIRT) model
 - Providers should be aware of local treatment resources and know how to refer
- Universal urine drug testing is NOT recommended
 - Poor sensitivity and specificity for detecting substance use disorder compared with validated screening tools
 - High rates of false positives and false negatives; confirmatory testing may be needed, but even a positive test is not diagnostic of SUD



DSM-5 Diagnostic Criteria (same for all substances)

1. Substance is used in larger amounts or over a longer period than intended
2. Persistent desire or unsuccessful attempts to cut down
3. Great deal of time spent obtaining, using, or recovering from substance use
4. Craving (strong desire or urge to use)
5. Use resulting in failure to fulfill major role obligations
6. Continued use despite recurrent interpersonal problems caused by use
7. Important activities given up due to substance use
8. Recurrent use in situations where it is physically hazardous (DUI, infections, etc.)
9. Continued use despite having a physical or psychological problem caused or exacerbated by substance use
10. Tolerance
11. Withdrawal

Diagnostic Criteria:

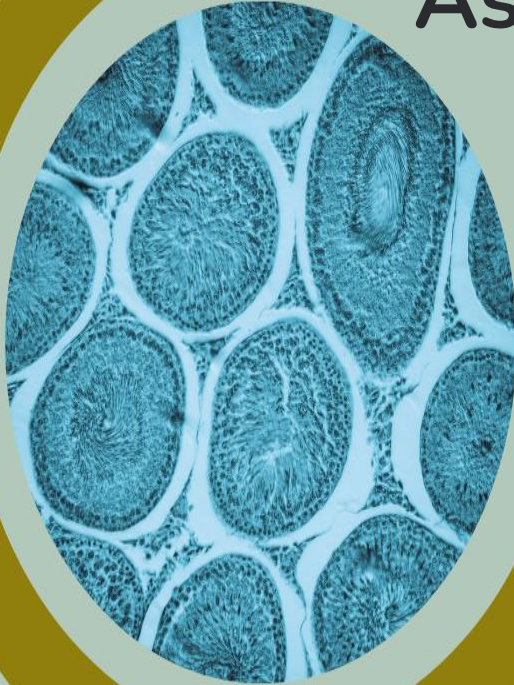
- Important considerations
 - No specific amount or frequency of substance use is required to meet criteria→ not all substance use meets criteria for an SUD!
 - Tolerance and withdrawal criteria are not met for prescribed substances if the substance is being used as prescribed under appropriate medical supervision (e.g. benzodiazepines or opioids being taken as prescribed)
 - Tolerance and withdrawal are NOT required to meet criteria for SUD
- Severity of SUD
 - Mild= 2-3 criteria
 - Moderate= 4-5 criteria
 - Severe= 6+ criteria



Clinical Features: clinical presentation and course/prognosis

- Women are more likely than men to:
 - Transition from casual drug use to use disorder (called “telescoping”) for both physiological and psychological reasons
 - Start using substances with their partners vs. other environments
- Pregnant individuals with SUD are at risk for:
 - Inadequate prenatal care
 - Poor nutrition
 - Intimate partner violence
 - Co-occurring mental health disorders
 - Teratogenic, obstetric, or neonatal complications
 - Substance use related infections such as HIV or hepatitis C
 - Overdose

Differential Diagnosis and Assessment:



- Assessment for perinatal individuals with SUD includes:
 - Review of diagnostic criteria for SUD
 - Screening for:
 - Co-occurring mental health disorders
 - Social determinants of health (housing, transportation, food security, etc.)
 - Intimate partner violence
 - Labs: consider screening for HIV, hepatitis C, sexually transmitted infections if history of IV use or sex work
 - Risk of substance withdrawal
 - Alcohol, benzodiazepines, and opioids may require medically-supervised detox
 - Overdose risk
 - Opioids: ensure patient has naloxone (Narcan) kit



Pathophysiology: Alcohol

- Fetal alcohol spectrum disorders (FASD)/Fetal Alcohol Syndrome
 - Most common preventable cause of intellectual disability in the US
 - Features
 - Low birth weight (LBW)/small for gestational age (SGA)
 - Craniofacial malformations
 - Developmental delay
 - Behavioral problems
- NO safe amount of alcohol use in pregnancy
- Alcohol withdrawal
 - Associated with abrupt cessation
 - Physical discomfort, anxiety, VS instability→ seizures or delirium tremens (can be fatal)
- Management in pregnancy: oral or IV benzodiazepines
 - Similar protocol as non-pregnant person (reviewed later in slides)

Pathophysiology: Tobacco

- Adverse effects due to exposure to both smoke AND nicotine
- Obstetric risks
 - Miscarriage
 - Ectopic pregnancy
 - Placental abruption
- Neonatal risks
 - Preterm birth
 - LBW/SGA
 - Orofacial clefts or other congenital anomalies



Pathophysiology: Tobacco

- Developmental risks
 - Infants with in-utero tobacco exposure are at higher risk for SIDS
 - Unclear relationship between smoking and risk of developing mental illness (ADHD, bipolar disorder, schizophrenia)
- Breastfeeding
 - Nicotine transfers in relatively high quantity in breastmilk
 - Smoking more than ½ ppd may be associated with mildly decreased milk supply

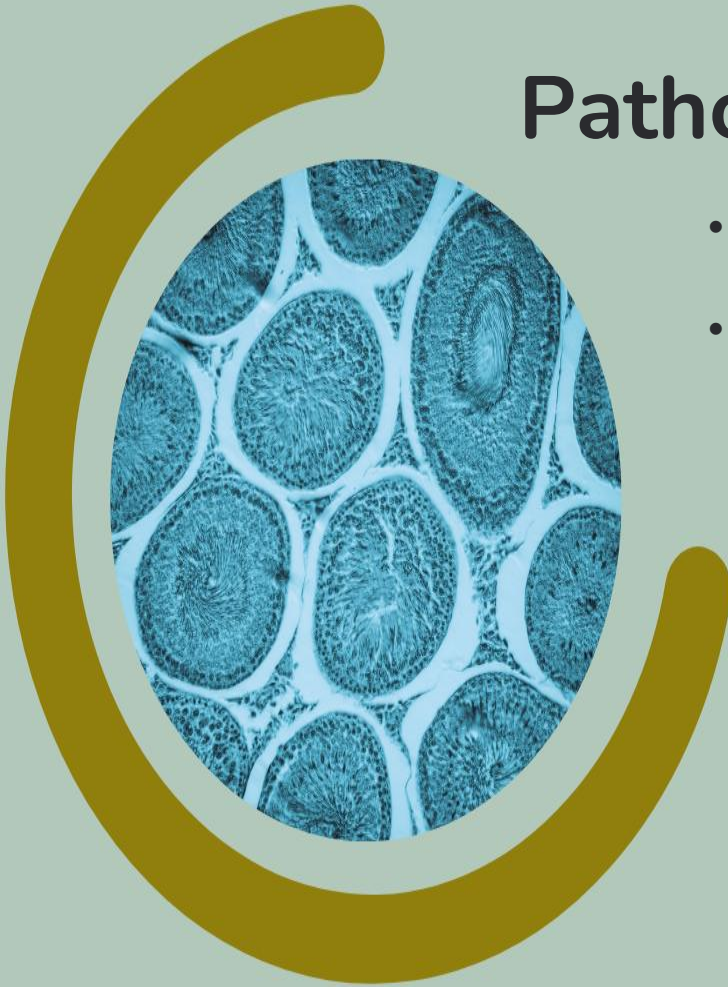
Pathophysiology: Cannabis

- Effects difficult to study
 - Co-exposure with tobacco
 - Difficult to quantify use
- Growing perception of safety among patients with increasing legalization
- Current evidence
 - No known associations with specific malformations
 - Inconsistent findings
 - Obstetric/neonatal
 - Stillbirth, preterm birth, fetal growth restriction (FGR), LBW
 - Adverse neurodevelopmental outcomes– growing body of literature
 - Behavioral disturbances, ADHD
 - Autism
- Breastfeeding and THC
 - Lipophilic→ present in breastmilk
 - Levels up to 8 times higher than maternal plasma levels
 - Can remain in breastmilk for up to 6 days following use



Pathophysiology: Opioids

- Not known to be directly teratogenic
- Untreated maternal Opioid Use Disorder (OUD)
 - Associated with: growth restriction, placental insufficiency and abruption, PPRM, preterm labor, fetal demise
 - Pathophysiology: Repeated peaks and troughs of serum level and repeated episodes of withdrawal as well as other lifestyle factors
 - Can be mitigated by medication for opioid use disorder (MOUD) → methadone or various buprenorphine or buprenorphine/naloxone preparations



Pathophysiology: Opioids

- Neonatal opioid withdrawal syndrome (NOWS)
 - Also known as neonatal abstinence syndrome (NAS)
 - Irritability, poor feeding, tremor, respiratory distress
 - Onset: 24–72 hours, sometimes up to 5 days after birth
 - May respond to non-pharmacologic treatment or may require treatment with opioid agonists
 - Not to be confused with neonatal ADAPTATION syndrome (from SSRIs)



Pathophysiology: Stimulant Drugs of Abuse

- Cocaine
 - Systemic vasoconstriction→ increased risk for PROM, placental abruption, preterm birth, LBW, SGA
 - Long-term neurodevelopmental effects: inconsistent findings, likely due to confounding effects of postnatal environment
 - Breastfeeding: Case reports indicate infants may develop cocaine intoxication
- Methamphetamines
 - Obstetric/neonatal risks: preterm birth, LBW, fetal demise, pre-eclampsia
 - Infant risks: trouble sleeping, poor feeding, and abnormal muscle tone
 - Breastfeeding: Methamphetamines may inhibit lactation

Treatment: non-pharmacologic

- Pregnancy: window of opportunity for access to SUD treatment
 - Increased engagement with the health care system and
 - High levels of motivation
- Improved outcomes
 - Integrated treatment: pregnant individuals receive both OB care and SUD treatment
 - Treatment programs specially designed for pregnant or parenting people
- Psychosocial approaches
 - Mutual help groups (AA/NA)
 - Outpatient individual or group counseling
 - Intensive outpatient programs
 - Residential treatment
- Barriers to care:
 - Lack of transportation
 - Lack of childcare



Treatment: pharmacologic



Important to weigh
Risks of medication treatment

vs.

Risks of ongoing substance use



Treatment: pharmacologic: Alcohol

- Withdrawal Management/Detoxification: symptoms/signs include diaphoresis, tremor, tachycardia, hypertension
 - Benzodiazepines
 - Diazepam: early peak and long lasting, can give PO or IV
 - Lorazepam: can give PO or IV, 1st line in patients with liver disease
 - Chlordiazepoxide (Librium): only PO but long-acting, good for outpatient detox
 - Time frame
 - Scheduled taper or symptom-triggered scale such as Clinical Institute Withdrawal Assessment (CIWA)
- Medication treatment for alcohol use disorder (MAUD)
 - Naltrexone: PO daily or IM monthly, increasing body of evidence for good benefit and low risk in pregnancy
 - Acamprosate: limited data in pregnancy
 - Disulfiram: not currently recommended in pregnancy
 - Chronic benzodiazepine use not supported by evidence as treatment for alcohol use disorder

Treatment: pharmacologic: Tobacco

- Nicotine replacement (gum, lozenge, patch)
 - Evidence of benefit in pregnancy is inconsistent
 - Nicotine itself can be harmful to pregnancy→ treatment should be used for limited duration and accompanied by behavioral interventions
- Bupropion→ first-line agent for depression
 - Also FDA indication for smoking cessation
 - Not associated with increased overall congenital malformations
- Varenicline: not recommended→ lack of reproductive safety data
- Electronic nicotine delivery systems (e-cigarettes, vaping)
 - Efficacy and safety during pregnancy is unknown



Treatment: pharmacologic: Cannabis

- No pharmacological treatments are available for cannabis use disorders
- Explore reasons for use
 - Anxiety, insomnia, nausea, pain→ explore alternative treatment options
- Educate about withdrawal
 - Typical symptoms→ insomnia, anxiety, dysphoria, irritability, and poor appetite
 - Withdrawal symptoms improve with time



Treatment: pharmacologic: Opioids

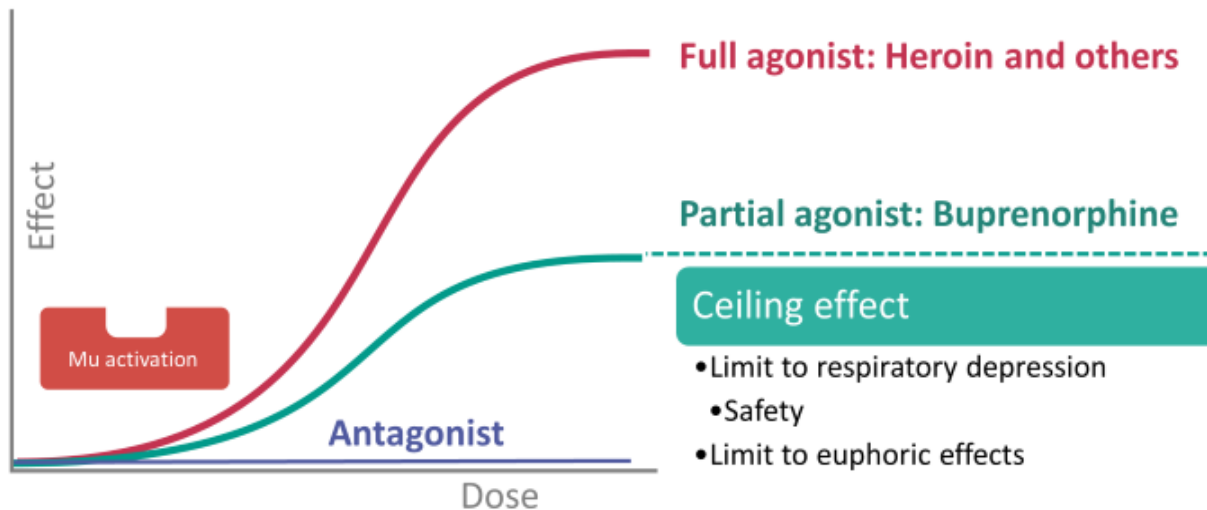
- Standard of care: methadone or buprenorphine
 - Both improve maternal and neonatal outcomes to similar degree
 - Benefit of buprenorphine→ infants are less likely to require medication treatment for NOWS
 - Treatment should be dictated by availability, patient preference, and prior treatment response
- Opioid taper or “medication-assisted withdrawal” not recommended in pregnancy
 - High risk for relapse and associated maternal and fetal consequences
- Growing body of reproductive safety data for naltrexone
 - Probably most feasible for those not currently physiologically dependent on opioids
- Prescribe naloxone rescue kit and educate regarding its use

Treatment: pharmacologic: Opioids (continued)

- Methadone: dosed daily at an Opioid Treatment Program
 - Dose increases may be needed in pregnancy→ should be decreased postpartum to minimize sedation
 - Divided dosing optimal
 - Risk of NOWS may be dose-dependent
 - Initial dose 20–30mg; must be uptitrated slowly due to risk for respiratory depression as drug can accumulate due to long half-life; usual doses in pregnancy 80–120mg per day
- Buprenorphine: prescribed in office-based practice
 - 8 hour training no longer required to obtain X-waiver
 - Either buprenorphine monotherapy (Subutex) or buprenorphine/naloxone (Suboxone) may be used→ BOTH relatively safe in pregnancy
 - Dose increase or divided dosing may be required in pregnancy
 - Initiate when patient is experiencing moderate withdrawal symptoms or use low-dose initiation protocol to prevent precipitated withdrawal
- Naltrexone: PO daily or IM monthly (Vivitrol)
 - Relatively safe in pregnancy
 - Requires detoxification from opioids (5–10 days)

Buprenorphine Pharmacology

Buprenorphine MOA



Lutty, K., & Cowan, A. (2004). Buprenorphine: a unique drug with complex pharmacology. *Current neuropharmacology*, 2(4), 395-402.

 PSYCHOPHARMACOLOGY
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[Buprenorphine for Opioid Use Disorder: Mechanism of Action – Psychopharmacology Institute](#)

NATIONAL CURRICULUM



IN REPRODUCTIVE PSYCHIATRY
FOR OBSTETRICS AND GYNECOLOGY

Buprenorphine Tips

- Partial agonist at mu opioid receptor with high binding affinity
- Precipitated withdrawal occurs when buprenorphine “knocks” a full agonist off the receptor
- Buprenorphine itself causes precipitated withdrawal (not the naloxone moiety in combination product, which is relatively inert when taken sublingually as prescribed)
- Initiate buprenorphine only after patient is in moderate opioid withdrawal
- New “micro-induction” protocols are being developed in which very low doses of buprenorphine gradually displace full agonists
- Buprenorphine can be continued throughout delivery hospitalization
- Adding full agonist opioids when someone is on buprenorphine maintenance treatment (e.g. for post-surgical pain) will NOT cause precipitated withdrawal

Treatment: Pharmacologic: Stimulants (cocaine, methamphetamines)

- No current FDA-approved pharmacological interventions for stimulant use disorders
- Educate about withdrawal, which is characterized by
 - Fatigue, irritability, depressed mood, and intense cravings
 - Uncomfortable but not life-threatening
- Treat co-occurring psychiatric illness and other substance use disorders



Special Considerations

- Historically marginalized groups, such as BIPOC individuals, have been targeted by punitive substance related legislation (e.g. media focus on “crack babies” in the 1980s) and continue to be more likely to be reported to child protection for concerns related to parental substance use or toxicology
- Punitive policies that assume maternal unfitness due to maternal SUD tend to worsen outcomes
- Pregnant people who use substances have unmet needs for treatment and support
- Treatment programs that address barriers to treatment and provide comprehensive supports improve outcomes
- Receiving appropriate prenatal care improves outcomes even if substance use continues

Special Considerations

- All substance-exposed infants require a Plan of Safe Care upon discharge from the birth hospitalization
 - <https://www.childwelfare.gov/pubPDFs/safecare.pdf>
- The below link summarizes state rules regarding the reporting of substance use in pregnancy to child protection authorities
 - <https://www.guttmacher.org/state-policy/explore/substance-use-during-pregnancy>
- The American College of Obstetricians and Gynecologists opposes punitive legislation regarding substance use in pregnancy and supports approaching substance use in pregnancy as a health concern
 - <https://www.acog.org/advocacy/policy-priorities/substance-use-disorder-in-pregnancy>



Helpful Resources

[Providers Clinical Support System \(PCSS\) | SAMHSA](#)

(SAMHSA resource to support providers caring for individuals with SUD)

[Clinical Guidance for Treating Pregnant and Parenting Women With Opioid Use Disorder and Their Infants \(samhsa.gov\)](#)

(SAMHSA guidelines for treatment of OUD in pregnancy)

<https://www.asam.org/advocacy/public-policy-statements/details/public-policy-statements/2022/10/12/substance-use-and-substance-use-disorder-among-pregnant-and-postpartum-people>

ASAM Public Policy Statement on Substance Use and Substance Use Disorder Among Pregnant and Postpartum People



Key Clinical Points:

- Substance use in pregnancy is common and can lead to adverse pregnancy and birth outcomes
- Screen all pregnant individuals for substance use disorder
- Treatment is effective and improves outcomes
- Management of alcohol withdrawal in pregnancy is similar to management for non-pregnant individuals
- Standard of care for OUD in pregnancy is treatment with buprenorphine or methadone
- Know your local addiction treatment and mental health resources if your practice does not offer integrated care for SUD in pregnancy
- Be aware of local laws regarding reporting of substance use in pregnancy in your jurisdiction



Conclusion:

- Pregnancy is a tremendous window of opportunity for individuals with substance use disorder to engage with the healthcare system and seek treatment, but fear and stigma can be barriers to seeking care
- A non-judgmental, supportive approach is important to help women disclose use
- Integrated treatment programs providing both prenatal care and addiction treatment may improve outcomes through increasing engagement with care
- If integrated treatment is not available, close coordination among obstetric and addiction treatment providers is key



Key references

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Resources