

Health & Wellness

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Neonatal Abstinence Syndrome (NAS): What You Need to Know

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National overdose deaths continue to rise, with 2021 marking the first time U.S. overdose deaths topped 100,000 in a 12-month timeframe. Substance use, such as alcohol, cocaine, opioids, and marijuana, during pregnancy is also increasing.¹ As the U.S. struggles with harmful substance use, a growing number of infants are born with neonatal abstinence syndrome (NAS), a harmful outcome of fetal exposure to substances.²

This fact sheet will talk about **why** and **what to do**, with recommendations for safe treatment and support during pregnancy.

In the U.S., one newborn is diagnosed with NAS every 24 minutes.²⁰

What Is Neonatal Abstinence Syndrome (NAS)?

NAS is the cluster of withdrawal symptoms infants experience after birth caused by exposure to substances in utero.³ All opioids can cause NAS, including illegal drugs like heroin, prescription drugs like oxycodone or fentanyl, and drugs used for treating opioid use disorder.^{4,5}

7% of females report opioid use during pregnancy, and 21% of those report misuse of opioids.¹⁹



irritability,
sweating,
sneezing,
fevers,
yawning,
low birth weight,
heart defects



difficulty feeding,
increased muscle tone,
tremors,
jitteriness,
diarrhea,
short sleep cycles

Symptoms of NAS^{4,5,6}

Females who have a substance use disorder (SUD) can have social, psychological, and medical histories that may present risk factors affecting the health of the pregnancy and the infant.⁷

Associated risk factors of SUD and NAS

include:^{4,5,6,7,8}

- Parents, family members, and friends who also have a SUD.
- Adverse childhood experiences (ACEs), such as sexual, physical, and emotional abuse.
- Mental health conditions, such as depression and exposure to trauma.
- Use of tobacco or other substances, such as alcohol or sedatives.
- Exposure to infectious diseases.
- Poverty.



Is NAS Something I Should Worry About?

When an infant is born to a person using substances, the infant is at risk of withdrawal. Withdrawal symptoms of NAS can develop within 24 hours after birth or take longer to appear, with the recommendation that infants be monitored for up to 72 hours.^{5,6} For infants experiencing significant NAS symptoms, despite supportive treatment, medications are used.⁶ Once the infant is displaying fewer symptoms of NAS, healthcare professionals will slowly wean the infant off the medications. An infant no longer needs to stay in the hospital once they are no longer receiving NAS treatment medications for at least 24 hours, are medically stable, and are eating and growing properly.^{5,6}

Since NAS co-occurs with other developmental stressors, it can be difficult to isolate the impact. ACEs, like NAS, can have long-term negative impact on brain development, immune systems, and stress-response systems during childhood.⁹ Children born with NAS are more likely to experience maltreatment, mental health problems, and behavioral problems.³

There were 4x as many females with opioid use disorder in 2014 than just 15 years before.²¹

What Medications Treat Dependency in Pregnancy?

Although medication-assisted treatment (MAT) contributes to fetal exposure, it is the recommended treatment for a pregnant individual.^{7,10} MAT reduces the risk of severe neonatal abstinence syndrome, preterm birth, overdose, HIV/AIDS, and death.¹⁰

Detoxing as a form of treatment is associated with high rates of relapse and overdose and is consequently not recommended for pregnant individuals.^{7,10} Careful medication management should be encouraged. The symptoms of NAS can be more severe if an infant is additionally exposed to nicotine, benzodiazepines, or antidepressants (although, the benefits of antidepressants in pregnancy outweigh the risks).^{5,6,7} Overall, medication for addiction treatment is currently the best treatment option for most pregnant people and their infants.

Figure 1. Timeline for Maternal Withdrawal Symptoms

- Alcohol: 6–60 hours
- Opioids: 12–72 hours
- Benzodiazepines: 1–12 days
- Barbiturates: 4–10 days

Note: Estimations were provided by the New York State Office of Alcoholism and Substance Abuse Services.

Medication-Assisted Treatment

Methadone: a synthetic, long-acting opioid that prevents withdrawal symptoms, decreases cravings, and does not have a euphoric effect if used appropriately.

Buprenorphine: an opioid-similar drug that is used by itself or in combination with naloxone (an opioid antagonist) to prevent the euphoric high effect of the opioid.

Naltrexone: an opioid antagonist that removes the euphoric high of opioid use. Naltrexone is rarely used in pregnancy.

Note that **Kratom**, an opioid-like herbal extract used for pain relief, is used recreationally. It should not be used during pregnancy.¹⁰

Figure 2. *Self-Evaluation of Possible Substance Use Disorder (SUD)*

Have you ever felt that you ought to cut down on your drinking or drug use?	<input type="radio"/> Yes <input type="radio"/> No
Have people annoyed you by criticizing your drinking or drug use?	<input type="radio"/> Yes <input type="radio"/> No
Have you ever felt bad or guilty about your drinking or drug use?	<input type="radio"/> Yes <input type="radio"/> No
Have you ever had a drink or used drugs first thing in the morning to steady your nerves or to get rid of a hangover (eye opener)?	<input type="radio"/> Yes <input type="radio"/> No

Scoring: One or more "yes" responses indicates a possible substance use disorder and a need for further testing.

Note. Information was adapted.^{11,12}

How Do Moms Get Needed Help?

Infants born where harsh penalties for substance-using pregnant females exist had higher rates of NAS than those born in states without such punitive policies. Many individuals with SUD reported they did not want to alert anyone that they used substances for fear of losing the custody of their child. The fear of losing custody can keep females from seeking treatment or from being compliant in their treatment.

Females who use substances during the prenatal and postpartum periods should seek health care providers who are respectful, empathic, and willing to have a collaborative relationship. This type of care will go further than stern reprimands to encourage engagement with clinical services and reduce feelings of stigma.³

Postpartum females who have an opioid use disorder (OUD) are more likely to overdose in the postpartum period compared to the prenatal period. This could be attributed to the lack of resources provided for females with OUD. Professional peer support, where clients work with someone who has overcome similar behavioral health challenges, can be a less stigmatizing environment for females who are pregnant.¹⁷

Of children in foster care for SUD involvement, 73% are reunified with family members.²²

How Do Babies Get Needed Help?

Supportive measures can prevent the use of medication or decrease the amount of medication needed to treat NAS in infants.⁵

Figure 3. *Examples of Supportive Treatments*

- Providing individualized care, such as swaddling, rocking, etc.
- Recognizing and responding to disorganization.
- Tailoring the environment through decreased noise and light.
- Clustering infant cares.
- Providing small and frequent feedings.
- Using a pacifier.
- Promoting positive interactions with caregivers.
- Rooming in, or having the caregiver stay in the infant's room.
- Frequently changing diapers and using rash creams if needed.
- Breastfeeding.

Sources ^{5,6}


Breastfeeding is recommended for many infants with NAS. Breastfeeding should be encouraged for mothers who are currently abstaining from substances or receiving MAT as prescribed.^{5,7,10} If an infant previously diagnosed with NAS is displaying any developmental problems, it is important to talk to the child's pediatrician, who may refer the child to an early intervention service.⁵

What Can Communities Do?

Community members can minimize diversion of medications by safely disposing of prescription opioids. All unused or expired medications must be disposed of properly. See the suggestions for proper methods for safe medication disposal in the picture below.


Proper Medication Disposal Steps

Drop Box




Medication drop boxes are a free and permanent method to dispose of medications. Drop boxes can be located at participating pharmacies and law enforcement agencies.

At Home



Mix the medications with kitty litter, coffee grounds, or a soiled diaper and place in a sealed bag and then dispose of in the trash. Never flush down the toilet, sink, or throw in the garbage untreated.

Drug Take-Back Event



Biannual drug take-back community events are held on the last Saturday of April and October every year across Utah.

Source¹⁸

Everyone can also work to give support to those who use substances or might be struggling due to NAS. Avoiding stigma helps individuals get the help they need.

Additional Resources

Use these websites and resources to find more information on treatment for substance use during pregnancy. Remember to consult a doctor or health care professional before starting any treatment program.

Organization	Website
Al-Anon/Alateen	al-anon.org/
Alliance for Innovation on Maternal Health	safehealthcareforevery-woman.org/aim/
Communities That Care	communitiesthatcare.net/
CRAFT Family Support	myusara.com/support/craft/
Early Intervention Program	https://health.utah.gov/cshcn/programs/baby-watch.html
Naloxone	naloxone.utah.gov/
National Harm Reduction Coalition	harmreduction.org/
National Substance Use Treatment Locator	findtreatment.gov/
National Suicide Prevention Lifeline Dial 988	suicidepreventionlifeline.org/
Parents Empowered	parentsempowered.org/
SafeUT	safeut.med.utah.edu/
SMART Recovery	myusara.com/smart-recovery-at-usara/
Substance Abuse Mental Health Services Administration (SAMHSA)	samhsa.gov 1-800-662-HELP (4357)
The Opidemic	opidemic.org/
United Way (2-1-1)	211utah.org/
Use Only as Directed	useonlyasdirected.org/
USU Health Extension: Advocacy, Research Teaching (HEART) Initiative	extension.usu.edu/heart/
Utah Coalitions for Opioid Overdose Prevention	ucoop.utah.gov/
Utah Department of Human Services, Substance Abuse and Mental Health	dsamh.utah.gov/
Utah Poison Control Center (1-800-222-1222)	poisoncontrol.utah.edu/
Utah Prevention Coalition Association	utahprevention.org/
Utah Support Advocates for Recovery Awareness	myusara.com/

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