

# Identifying Neonatal Abstinence Syndrome (NAS) and Treatment Guidelines

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## What is Neonatal Abstinence Syndrome?

- Neonatal withdrawal after intrauterine exposure to certain drugs (illicit or prescription)
- Occurs with the abrupt cessation of the drug exposure at birth
- Most commonly seen with opioid exposure, but also seen after exposure to sedatives, selective serotonin reuptake inhibitors (SSRI), polysubstance abuse, and occasionally barbiturates and alcohol
- Develops in 55-94% of opioid drug-exposed infants and 28-30% of SSRI-exposed infants

## Screening

- Maternal history
- Urine drug screen
- Meconium drug testing
- Umbilical cord testing

## Clinical Signs of Withdrawal

Central Nervous System	Metabolism/Vasomotor/Respiratory	Gastrointestinal
<ul style="list-style-type: none"><li>• Irritability</li><li>• Increased wakefulness</li><li>• High-pitched cry</li><li>• Tremor</li><li>• Increased muscle tone</li><li>• Hyperactive deep tendon reflexes</li><li>• Frequent yawning</li><li>• Sneezing</li><li>• Seizures</li></ul>	<ul style="list-style-type: none"><li>• Diaphoresis</li><li>• Nasal stuffiness</li><li>• Fever</li><li>• Mottling</li><li>• Temperature instability</li><li>• Piloerection</li><li>• Mild elevations in respiratory rate and blood pressure</li></ul>	<ul style="list-style-type: none"><li>• Vomiting</li><li>• Diarrhea</li><li>• Dehydration</li><li>• Poor weight gain</li><li>• Poor feeding</li><li>• Uncoordinated and constant sucking</li></ul>

## Onset of withdrawal symptoms

- Onset of withdrawal depends on the half-life of the drug, duration of the addiction, and time of last maternal dose prior to delivery. On average, observation period for symptoms to appear is 3 days.

Drug	Approximate time to onset of withdrawal symptoms
Barbiturates	4-7 days but can range from 1-14 days
Cocaine	Usually no withdrawal signs but sometimes neurobehavioral abnormalities (decreased arousal and physiologic stress) occur at 48-60 hours
Alcohol	3-12 hours
Heroin	Within 24 hours
Marijuana	Usually no clinical withdrawal signs
Methadone	3 days but up to 5-7 days; rate of severity of withdraw cannot be correlated to dose of maternal methadone
Methamphetamines	Usually no withdrawal signs but sometimes neurobehavioral abnormalities (decreased arousal, increased physiologic stress, and poor quality of movement) occur at 48-60 hours
Opioids	24-36 hours but can be up to 5-7 days
Sedatives	1-3 days
SSRIs	Usually 2 <sup>nd</sup> day of life—ranges from 5-48 hours

## Preterm Infants and NAS

- Due to immaturity, less total body fat, and differences in total drug exposure, preterm infants may exhibit fewer signs of withdrawal than near-term and term infants.