**Identifying Neonatal Abstinence Syndrome (NAS)**

**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, poly-substance abuse, and occasionally barbiturates and alcohol
* Develops in 55-94% of drug-exposed infants

**Screening**

-Maternal history -Meconium drug testing

-Urine drug screen -Umbilical cord testing

**Clinical Signs of Withdrawal**

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| **Neurological Gastrointestinal Autonomic** | **Gastrointestinal** | **Autonomic** |
| • Irritability  • Increased wakefulness  • High-pitched cry  • Tremor  • Increased muscle tone  • Hyperactive deep tendon reflexes  • Frequent yawning  • Sneezing  • Seizures | •Vomiting  • Diarrhea  • Dehydration  • Poor weight gain  • Poor feeding  • Uncoordinated and  constant sucking | •Diaphoresis  • Nasal stuffiness  • Fever  • Mottling  • Temperature instability  • Piloerection  • Mild elevations in  respiratory rate and  blood pressure |

*Onset of withdrawal symptoms 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.*

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| **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 | Several hours to several days—withdrawal linked with 3rd trimester use |

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.