

# What to Know About Inpatient Neonatal Toxicology Testing for Outpatient Providers

## OVERVIEW

Toxicology testing is one of many tools used to detect in utero substance exposure in newborns during the birth hospitalization. In the past, a variety of medical AND social criteria have been used to prompt this testing, and positive test results led to automatic Department of Human Services (DHS) reports by law. However, in 2020, the law defining child abuse and neglect in Colorado changed such that a positive toxicology test result alone no longer substantiates child abuse or neglect. Instead, child abuse and neglect related to in utero substance exposure is defined as a newborn being born **AFFECTED** by substance use and **THREATENED** by ongoing substance use<sup>1</sup>. Subsequently, many organizations have begun to examine toxicology testing practices in the perinatal period, and how benefits and harms of testing impact patient care.

Type of test	Window of Detection	Benefits	Limitations
Urine Immunoassay	Typically 1-3 days, though can be substantially longer (weeks) for certain substances (e.g. cannabis)	<ul style="list-style-type: none"> <li>• Easy to obtain</li> <li>• Inexpensive</li> <li>• Fast results</li> <li>• often performed “in-house”</li> </ul>	<ul style="list-style-type: none"> <li>• Require early urine sample, difficult collection in newborn</li> <li>• Fraught with false positives and false negatives</li> <li>• Short window of detection</li> <li>• Requires confirmatory testing*</li> <li>• Limitations regarding detection of synthetic opioids, emerging substances of use in the general population</li> </ul>
Meconium	Presumed to be 2nd and 3rd trimester	<ul style="list-style-type: none"> <li>• Non-invasive</li> <li>• Long history of use (so more is known about limitations)</li> </ul>	<ul style="list-style-type: none"> <li>• Substances not evenly distributed in meconium, so need to collect and store meconium samples over several days before mixing and sending to lab</li> <li>• Sample requires refrigeration</li> <li>• Results take several days, often send-out lab</li> </ul>
Umbilical cord tissue	3rd trimester	<ul style="list-style-type: none"> <li>• Easily collected, non-invasive</li> <li>• Can be stored until potential need for test identified</li> </ul>	<ul style="list-style-type: none"> <li>• Data on drug deposition within the umbilical cord tissue matrix is limited</li> <li>• Presence of blood in tissue leading to positive result from medications administered in labor</li> <li>• Results take several days, often send-out lab</li> </ul>

\*Confirmatory testing should be performed for any positive result. Confirmatory tests use different analytical techniques than immunoassays and have a longer turnaround time (usually several days).



SCAN HERE FOR MORE RESOURCES



Colorado Chapter

American Academy of Pediatrics  
DEDICATED TO THE HEALTH OF ALL CHILDREN®



## Frequently Asked Questions:

### **Do I have to report a positive toxicology test in a newborn to DHS?**

No. In Colorado, the law regarding child abuse and neglect definition no longer requires the presence of a positive toxicology test as criteria for abuse and neglect. The inpatient medical team may choose to report to DHS or not, regardless of toxicology test results (if obtained). We recommend speaking with the inpatient team to determine if a plan of supportive care would benefit the family.

### **Aren't toxicology tests really accurate?**

#### **It depends on the type of test.**

The most commonly performed toxicology tests—immunoassays—have significant limitations, and harms of testing can significantly impact a birthing person-infant dyad.

### **What doesn't a toxicology test really tell us?**

A toxicology test does NOT tell us how much of a substance a newborn was exposed to, how that substance was used, if the substance was used voluntarily or not, when that substance was used, and it does NOT tell us about a birthing person's substance use history or their ability to parent.

### **What does a toxicology test result really tell us?**

A toxicology test result may show the presence or absence of a substance (or similar chemical causing a false positive) at a moment in time for that manufacturer's definition of positivity or negativity.

For more information on best practices regarding neonatal toxicology testing, scan this QR code



SCAN HERE  
FOR MORE  
RESOURCES

## **INFORMED CONSENT**

Given the unique consequences that neonatal toxicology testing can have at delivery, efforts should be made to obtain parental permission before testing. When considering toxicology testing of a newborn in your care, there should be a clear indication as to how test results will inform clinical management. Testing should only be performed 1) in compliance with established written guidelines of the hospital/birthing center; and 2) if there is clinical suspicion that it will provide new and actionable information. If testing is deemed necessary, parents should be informed that the test is being performed, provided with results, and notified about who the information will be shared with.

### **Resources:**

1. Colorado Senate Bill 20-028. Substance Use Disorder Recovery Bill. [https://leg.colorado.gov/sites/default/files/2020a\\_028\\_signed.pdf](https://leg.colorado.gov/sites/default/files/2020a_028_signed.pdf)
2. Kapur BM, Aleksa K. What the lab can and cannot do: clinical interpretation of drug testing results. *Crit Rev Clin Lab Sci.* 2020 Dec;57(8):548-585. doi: 10.1080/10408363.2020.1774493. Epub 2020 Jul 1. PMID: 32609540.
3. Siegel MR, Cohen SJ, Koenigs K, et al. Assessing the clinical utility of toxicology testing in the peripartum period. *Am J Obstet Gynecol MFM* 2023;5:100963
4. Support Colorado Indications for Toxicology Testing in Colorado Birthing Facilities. <https://illuminatecolorado.org/wp-content/uploads/2023/12/Toxicology-One-Page.pdf>

**Authors:** Halmo, L., Wymore, E., Gold, C. on behalf of the Colorado Hospital Substance Exposed Newborns Quality Improvement Collaborative Steering Committee

## **Colorado Chapter**

**CH<sub>osen</sub>**

American Academy of Pediatrics  
DEDICATED TO THE HEALTH OF ALL CHILDREN®

