

# Neonatal Toxicology Market to Reach USD 931.7 Million by 2035 Amid Rising Prenatal Substance Exposure - By TMR

Global market projected to grow at 10.9% CAGR through 2035, driven by rising neonatal drug screening, advanced mass spectrometry, and expanding NICU care.

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-- [Neonatal Toxicology Market](#)

The global Neonatal Toxicology Market was valued at US\$ 302.5 million in 2024 and is projected to reach more than US\$ 931.7 million by 2035, expanding at a CAGR of 10.9% from 2025 to 2035.

The market's strong growth trajectory is attributed to the increasing prevalence of prenatal substance exposure, growing awareness regarding neonatal drug testing, and advancements in diagnostic technologies.

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North America dominated the market in 2024, accounting for 47.2% of the global revenue share, driven by advanced healthcare infrastructure, mandated newborn screening programs, and high awareness levels. By drug type, the cannabinoids segment held the largest market share of 30.2% in 2024, reflecting the rise in cannabis exposure during pregnancy and expanding legalization trends globally.

## Market Overview

Neonatal toxicology focuses on identifying drugs, toxins, and harmful substances in newborns to ensure early intervention and improved clinical outcomes. Testing is primarily conducted using biological specimens such as meconium, umbilical cord tissue, urine, and blood, with advanced technologies such as mass spectrometry and immunoassays playing a pivotal role in accurate



Neonatal Toxicology Market

detection.

The market is expanding rapidly due to increasing cases of maternal substance abuse, opioid exposure, and neonatal abstinence syndrome (NAS). Healthcare systems are prioritizing early detection to prevent long-term developmental complications in infants. Improved assay sensitivity, non-invasive specimen collection techniques, and expanded drug panels are transforming neonatal toxicology testing practices worldwide.

Additionally, government health agencies such as the Centers for Disease Control and Prevention (CDC) report that approximately 13% of all cases reported to child welfare services are associated with neonatal substance exposure, highlighting the urgent need for structured screening and monitoring programs.

## Key Market Growth Drivers

### 1. Rising Maternal Substance Abuse

The increasing prevalence of opioid use, illicit drug consumption, and prescription drug misuse among pregnant women is a primary growth driver.

Prenatal exposure to substances can lead to:

- Neonatal Abstinence Syndrome (NAS)
- Low birth weight
- Premature birth
- Developmental and neurological disorders

According to public health data, withdrawal symptoms often begin within 72 hours of birth and may include tremors, irritability, and feeding difficulties. These alarming trends are intensifying demand for early neonatal toxicology screening and confirmatory testing.

### 2. Expansion of Specialized Care Units

The global expansion of Neonatal Intensive Care Units (NICUs) and pediatric toxicology centers is supporting market growth. Specialized facilities enable:

- Advanced diagnostic procedures
- Immediate intervention protocols
- Integrated maternal-infant healthcare pathways

International initiatives such as collaborations supported by the Korea International Cooperation Agency are investing in high-risk maternal and neonatal care infrastructure, particularly in emerging economies.

### 3. Technological Advancements in Testing

Mass spectrometry and immunoassay technologies are enhancing detection accuracy, turnaround times, and multi-drug screening capabilities. Laboratories are expanding

cannabinoid panels to detect synthetic variants and new drug formulations, further driving adoption.

#### 4. Growing Awareness and Regulatory Support

Mandated newborn screening programs, especially in North America and Europe, are strengthening early identification frameworks. Public health advocacy and maternal education campaigns are also contributing to increased testing demand.

#### Analysis of Key Players – Key Player Strategies

The neonatal toxicology market features several prominent players focusing on strategic expansion, mergers & acquisitions, technological innovation, and laboratory network enhancement.

Leading companies include:

Omega Laboratories, Inc.  
Laboratory Corporation of America Holdings  
Clinical Reference Laboratory, Inc.  
Medpace  
Cordant Health Solutions  
ARUP Laboratories  
Quest Diagnostics Incorporated  
NMS Labs  
Agilent Technologies, Inc.  
Bio-Rad Laboratories, Inc.  
Charles River Laboratories  
Eurofins Scientific  
United States Drug Testing Laboratories  
QuidelOrtho Corporation  
Thermo Fisher Scientific, Inc.  
Other Prominent Players

Strategic Focus Areas:

1. Portfolio Expansion: Development of broader drug panels including synthetic cannabinoids and ketamine.
2. Geographic Expansion: Strengthening laboratory presence in emerging markets.
3. M&A Activities: Acquisition of genetics and toxicology assets to integrate comprehensive diagnostic solutions.
4. Technology Integration: Leveraging high-resolution mass spectrometry and automated immunoassay systems.
5. Collaborative Partnerships: Aligning with hospitals and NICUs to implement standardized

testing protocols.

## Market Challenges & Opportunities

### Challenges

- High cost of advanced diagnostic instruments
- Limited access to testing facilities in low- and middle-income countries
- Lack of standardized testing protocols across regions
- Ethical and regulatory complexities surrounding neonatal drug screening

### Opportunities

- Expansion in Asia-Pacific healthcare systems
- Growing cannabis screening demand
- Increasing public-private partnerships
- Integration of genetic testing with toxicology diagnostics
- AI-powered laboratory workflow optimization

As healthcare systems emphasize preventive neonatal care, early detection technologies present significant untapped potential.

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### Recent Developments

- In July 2025, USDTL introduced the testing of ketamine in umbilical cord tissue (UCT) to determine in-utero exposure. This test can be available either as part of a 20-panel or as an add-on, thereby providing the neonatal toxicology screening with a wider range of drugs.
- In January 2025, Brown Gibbons Lang & Company (BGL), a leading independent investment bank and financial advisory firm, announced the sale of United States Drug Testing Laboratories Inc. (USDTL), a prominent forensic toxicology laboratory, to Northlane Capital Partners (NCP), a private equity firm focused on healthcare and business services.
- In July 2025, RetinalGenix Technologies partnered with LabCorp to advance its DNA/RNA/GPS Pharmaco-Genetic Mapping platform, integrating genetic testing with high-resolution retinal imaging for early detection of ocular and systemic diseases.
- In August 2024, Labcorp (NYSE: LH), a global leader in innovative and comprehensive laboratory services, announced the completion of its acquisition of select assets from Invitae (OTC: NVTAQ), a prominent medical genetics company. Through this integration, Labcorp and

Invitae aim to strengthen support for patients, clinicians, and pharmaceutical partners across the full continuum of care-ranging from therapy development to accurate diagnosis and personalized treatment.

## Investment Landscape and ROI Outlook

The neonatal toxicology market presents strong ROI potential due to:

- Rising regulatory mandates
- Expansion of diagnostic networks
- Increasing healthcare budgets

Private equity investments and strategic acquisitions reflect confidence in laboratory service consolidation and technological advancement. Companies investing in high-sensitivity testing platforms and automated lab infrastructure are expected to achieve competitive advantage. North America remains the most mature investment hub, while Asia-Pacific offers high-growth potential due to healthcare infrastructure expansion and rising maternal health initiatives.

## Market Segmentations

### By Specimen

- Urine
- Umbilical Cord
- Meconium
- Others

Meconium and umbilical cord tissue testing are gaining prominence due to non-invasive collection and extended detection windows.

### By Technology

- Mass Spectroscopy
- Immunoassay

Mass spectrometry dominates due to higher sensitivity and confirmatory accuracy.

### By Drug

- Cannabinoids (30.2% share in 2024)
- Opioids
- Cocaine
- Benzodiazepines
- Amphetamines
- Others

## By End-user

- Hospitals
- Clinical Laboratories
- Others

Hospitals and clinical laboratories collectively account for the majority of testing volumes.

## By Region

- North America
- Europe
- Asia Pacific (Fastest Growing)
- Latin America
- Middle East & Africa

North America benefits from structured screening programs, while Asia-Pacific is emerging due to expanding healthcare infrastructure.

## Why Buy This Report?

- Comprehensive analysis of market size and 10-year forecast (2025–2035)
- In-depth segment and regional breakdown
- Detailed competition matrix and company profiles
- Insights into regulatory frameworks and clinical trends
- Strategic investment outlook and growth opportunities
- Coverage of recent mergers, acquisitions, and product launches
- Value chain and qualitative trend analysis
- Data available in PDF + Excel format for strategic planning

This report provides actionable insights for diagnostic companies, healthcare providers, investors, and policymakers aiming to capitalize on neonatal toxicology market expansion.

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## Frequently Asked Questions (FAQs)

### 1. What is driving the growth of the neonatal toxicology market?

Rising maternal substance abuse, increasing neonatal abstinence syndrome cases, and advancements in mass spectrometry technologies are the primary growth drivers.

### 2. Which region dominates the market?

North America leads with 47.2% market share in 2024 due to strong healthcare infrastructure and mandatory newborn screening programs.

3. Which drug segment holds the largest share?

The cannabinoids segment holds the largest share (30.2% in 2024), driven by increased cannabis exposure during pregnancy.

4. What technologies are commonly used in neonatal toxicology testing?

Mass spectrometry and immunoassay are the primary technologies, with mass spectrometry offering superior sensitivity.

5. What is the market forecast by 2035?

The market is projected to exceed US\$ 931.7 million by 2035, growing at a CAGR of 10.9%.

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