Laboratory Medicine Designed for Pediatric Patients

Testing solutions that are as varied, unique, and exceptional as they are.

ARUP LABORATORIES

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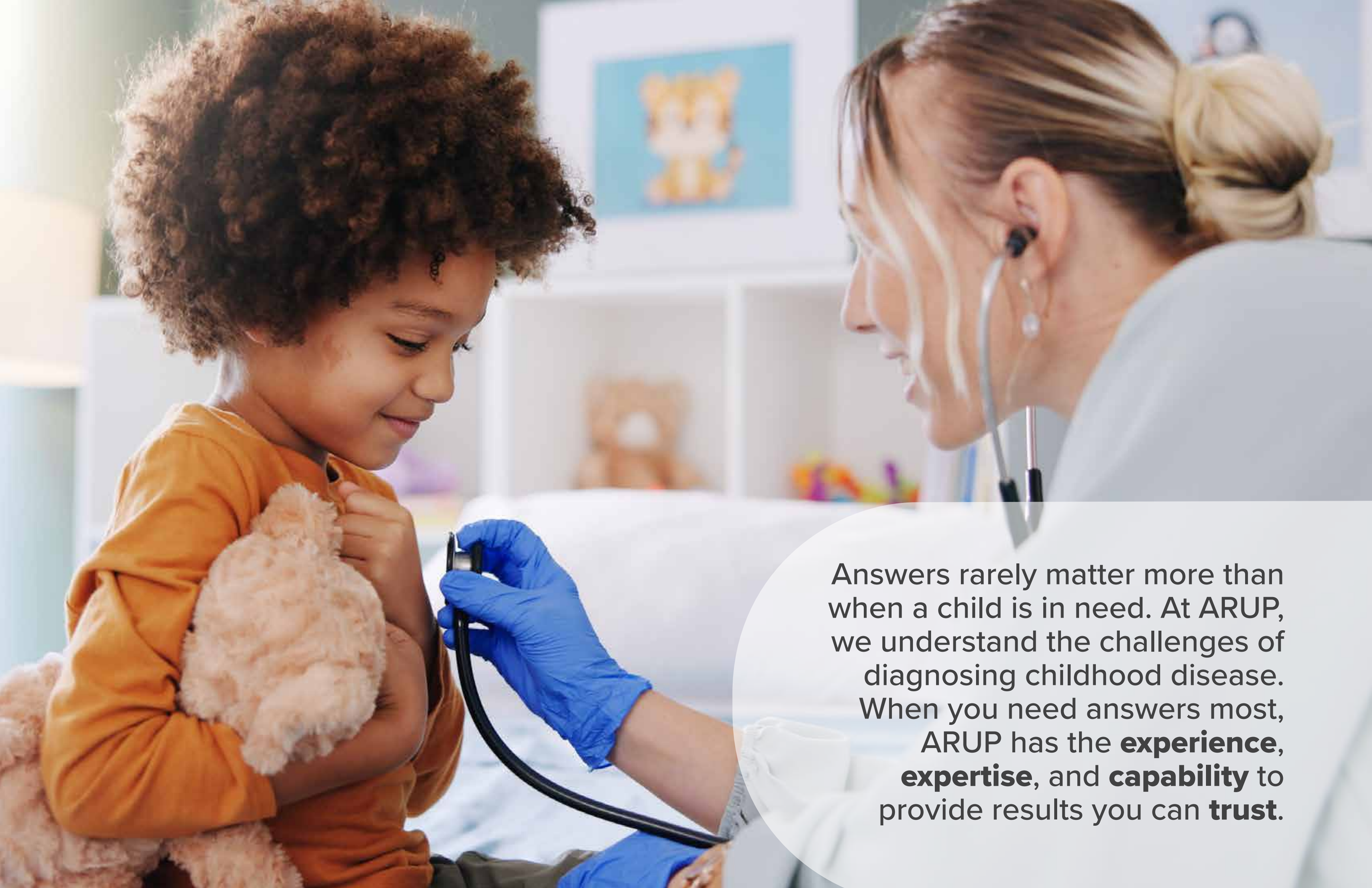

Answers rarely matter more than when a child is in need. At ARUP, we understand the challenges of diagnosing childhood disease. When you need answers most, ARUP has the **experience**, **expertise**, and **capability** to provide results you can **trust**.

Broad Test Menu Supports Pediatric Needs

Rare Disease

Children with rare diseases often face long diagnostic odysseys. ARUP's advanced testing enables a more straightforward pathway to diagnosis.

Rapid Genome Sequencing: Diagnosing Critically Ill Newborns

Rapid whole genome sequencing (rWGS), which rapidly analyzes the entire genome for pathogenic variants, makes it possible to receive a diagnosis in a matter of days. For critically ill newborns, rapid diagnosis is essential to initiate treatment.

Genomic sequencing can drastically reduce the time to diagnosis. One study found that the average time to diagnosis decreased from 289 days to just 13 days when rapid whole exome sequencing (WES)/rWGS was used as first-tier testing.

"Without WGS, … it would require multiple tests, multiple blood draws to arrive at a diagnosis." —Jessica Ponce Hidalgo, PhD, MS, LCGC, Genetic Counselor Lead in Cytogenetics

Infectious Disease

From the most routine bacterial cultures to advanced molecular methods, our comprehensive menu ensures accurate, timely care for children.

Measles: Dual-Target Assay Aids Public Health Response

ARUP Laboratories' dual-target molecular measles virus assay is a highly sensitive, specific, and rapid tool to aid the public health response to measles outbreaks.

As the first commercially available reference test that both detects the measles virus and distinguishes between vaccine-related and wild-type strains, this assay helps providers quickly determine which cases are active infections and pursue appropriate patient management strategies.

"ARUP has the expertise and the capability to address reemerging pathogens, and we are committed to doing what is right for the patient and supporting providers as they respond to outbreaks." —Benjamin Bradley, MD, PhD, Medical Director of High Consequence Pathogen Response, Virology, and Molecular Infectious Diseases

Pediatric Cancer

Our broad range of tests captures every aspect of the disease landscape, empowering you to target pediatric cancers with tailored treatment strategies.

Identifying Genetic Drivers of Childhood Cancer: ARUP Supports Children's Oncology Group (COG) Studies

For children who are diagnosed with acute lymphoblastic leukemia (ALL) or acute myeloid leukemia (AML), understanding the driver of disease can drastically affect their outcomes.

In ARUP's COG-certified Cytogenetics Laboratory, specialists apply their expertise and exhaustive effort to identify genetic abnormalities to better inform treatment strategies.

"Every study keeps increasing the odds for these patients. … Our team knows what they are looking for—how to dig into these cases and keep pushing until they find the answer." —Monica Theriot, MLS(ASCP)^{CM}CG^{CM}, Lab Supervisor, Cytogenetics Laboratory

Pediatric Neurology

ARUP understands the unique challenges of diagnosing neurologic conditions in pediatric patients, and our testing is designed to support clinicians with accurate, timely, and clinically relevant results.

Our panels for autoimmune pediatric central nervous system (CNS) disorders include the autoantibodies associated with autoimmune neurologic disease in patients younger than 18 years.

Integrated Testing Approach Provides More Holistic Results

For patients who have rare diseases such as juvenile dermatomyositis, detecting the correct autoantibody provides both diagnostic and prognostic information. ARUP is one of only three labs in the country that offer immunoprecipitation, the gold standard test method to detect these antibodies. By integrating immunoprecipitation results with immunoblot, ARUP provides a more holistic and accurate characterization of inflammatory myopathies. Immunoprecipitation also facilities the validation and discovery of new antibodies.

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Newborn Testing for Metabolic Disease

ARUP supports newborn screening programs by confirming abnormal results and promoting early diagnosis, ensuring inherited conditions are identified and treated before they affect a child's health.

Early Detection of Disease Improves Outcomes

ARUP has led efforts to expand newborn screening to include rare conditions such as guanidinoacetate methyltransferase (GAMT) deficiency, in which early detection and relatively simple treatments can dramatically change the lives of patients who are affected.

"We've always tried to do the best we can for families, but now we're taking it to a different level. We have the chance to give these kids a normal life. It's a terrible waste to do nothing."

—Marzia Pasquali, PhD, FACMG, Medical Director of Biochemical Genetics

Newborn Drug Testing

Our comprehensive drug detection panels detect a range of substances. ARUP analyzes specimens by mass spectrometry up front, providing specific, accurate results initially and eliminating unnecessary testing.

Alignment With Emerging Clinical Needs

ARUP continually evaluates developing trends in drug use to align newborn drug screening with clinical needs. ARUP was one of the first laboratories to add gabapentin and kratom, agents now associated with withdrawal symptoms in newborns, to its test menu. We have also led the industry in approaches to better address the unique challenges of testing in newborns, such as the validation of testing on umbilical cord tissue to facilitate easier specimen collection.

"Umbilical cord and meconium samples are irreplaceable. Our process goes straight to definitive testing first, so we can provide the best results while conserving these precious samples."

—Jessica Boyd, PhD, FCACB, DABCC (TC), Medical Director of Clinical Toxicology, Trace and Toxic Elements

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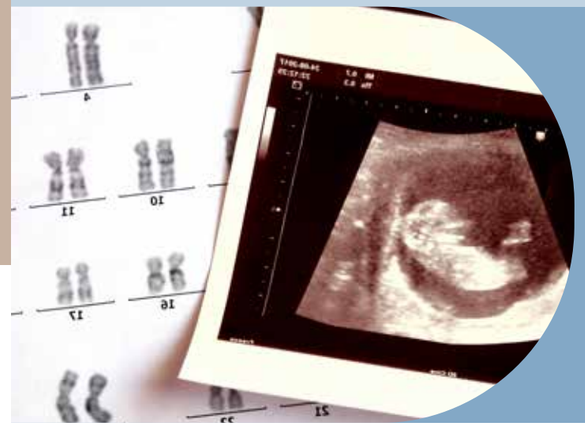
Prenatal and Constitutional Cytogenetics

ARUP's Cytogenetics Laboratory understands that every sample represents a patient, and our genetic counselors and specialists devote meticulous attention to each case to ensure optimal patient care.



Stewardship That Prioritizes Patients

Teams in ARUP's Cytogenetics and Microarray labs carefully review prenatal test orders to ensure the correct tests are ordered and performed in the right sequence to minimize the risk of a misdiagnosis that could lead to irrevocable clinical decisions.

"We recognize that each sample represents a patient, and we make sure that everything is handled the way we'd want our own samples to be handled."

—Danielle LaGrave, MS, LCGC, Genetic Counselor

Setting the Standard: Pediatric Reference Intervals

ARUP has led the way in establishing accurate, clinically meaningful reference ranges for children through landmark initiatives such as the Children's Health Improvement through Laboratory Diagnostics (CHILDx™) program and through the development of innovative indirect methods to determine reliable reference intervals.

[CHILDx]

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ARUP is a nonprofit enterprise of the University of Utah and its Department of Pathology.

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