

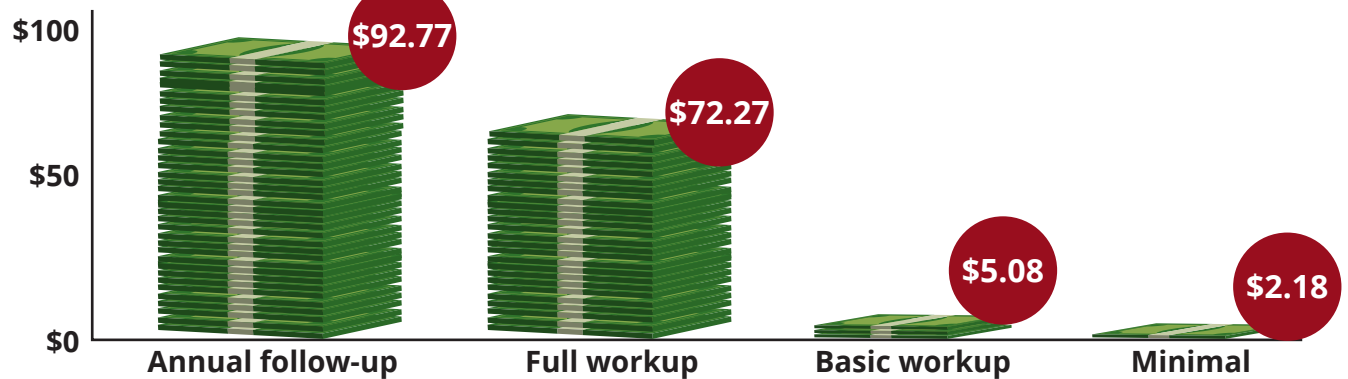
Duffy Testing to Benefit Children's Population Health: A Cost-Effectiveness Analysis

Misinterpretation of low ANC in Duffy null individuals can lead to costly and unnecessary workups. Researchers evaluated the cost-effectiveness of Duffy serology testing at 9–12 months of age across four common neutropenia workup scenarios in the U.S.

9% Duffy null prevalence at which Duffy serology testing is cost-effective across all workup scenarios

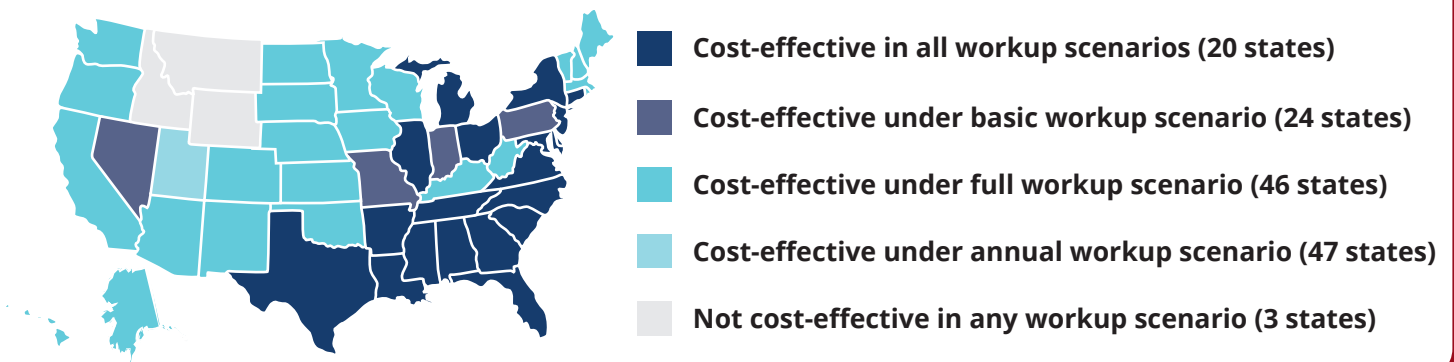
~10% U.S. Duffy null prevalence

Net Savings per Child Tested*



*Values are iNMB (USD) at a WTP threshold of \$120,000/QALY. Annual follow-up: CBC, and hematology referral until age 18. Full: Basic workup + testing for; fecal elastase/amylase (± pancreatic ultrasound if clinically indicated to assess Shwachman-Diamond syndrome), nutritional deficiencies, inflammatory and autoimmune markers, infectious disease, lymphocyte subset analysis, and bone marrow biopsy with cytogenetic analysis. Basic: 3 CBCs with differential, peripheral blood smear, anti-neutrophil antibody testing, immunoglobulin levels, and a hematology referral. Minimal: A CBC, and a hematology referral. CBC, complete blood counts; iNMB, incremental net monetary benefit; WTP, willingness-to-pay; QALY, quality-adjusted life-year.

State-Level Cost-Effectiveness Across Clinical Workup Scenarios



Why test at 9–12 months?

We can test for Duffy status at the same venipuncture instance as current routine infant blood tests. Identifying Duffy status early means we can use Duffy null-specific ANC RIs throughout life, reducing inappropriate referrals and health inequalities.

Scan to learn more on this study & DANC



ANC, absolute neutrophil count; DANC, Duffy null associated neutrophil count; RI, reference interval.
Reference: Merz LE, Ito S, et al. Blood Advances. 2026.

