Table 5. Suggested Initial Workup for Acute Movement Disorders in Children

Movement Disorder	Differential Diagnosis	Initial Studies to Consider (immediately available results)	Other Suggested Evaluation (as inpatient or outpatient)
Tics	Simple motor tics Complex motor tics Tourette Syndrome	CT/MRI brain (if focal neurologic deficits)	
Stereotypies	Physiologic Autism disorder Rett syndrome	CT/MRI brain (if focal neurologic deficits)	Genetic testing - Autism disorder - Rett syndrome
Chorea Hemichorea Hemiballism Choreoathetosis	Wilson's disease - chorea - choreoathetosis - "wing-beating" tremor - progressive dystonia	Liver function enzymes CT/MRI brain (may see ventriculomegaly and brain atrophy in advanced cases) Slit lamp examination - Kayser-Fleischer rings (neurologic disease)	Serum/urine copper level Ceruloplasmin levels
	Systemic lupus erythematosus - chorea	CT/MRI brain (if focal neurologic deficits or seizure) CBC, reticulocyte count - hemolytic anemia, leukopenia, thrombocytopenia Urinalysis — cellular casts Electrocardiogram — pericarditis	ANA Anti-DNA antibody Anti-Sm antibody Antiphospholipid antibody Lupus anticoagulant
	Acute rheumatic fever (ARF) - Sydenham chorea	CBC with differential Throat swab (rapid streptococcal antigen test) ESR/CRP Electrocardiogram - prolonged PR interval Echocardiogram - valvulitis	Throat culture for group A streptococci ASO titer - negative titers do not exclude the diagnosis Anti-DNase B titer
	Pregnancy - chorea gravidarum (usually resolves spontaneously)	Urine beta HCG	- Consider ARF - antiphospholipid antibody syndrome - Wilson's disease - hyperthyroidism - toxic/metabolic etiology
	Kernicterus - choreoathetosis - ballism - tremor - dystonia	CT/MRI brain - increased T2-weighted signal intensity in the basal ganglia (bilirubin deposition) CBC - hemolytic anemia Serum bilirubin	Hearing screen Genetic testing - G6PD - Crigler-Najjar - galactosemia
	Diabetes mellitus - hemichorea - hemiballism	Serial blood glucose measurements Serum electrolytes and osmolarity - rule out DKA Glycosylated hemoglobin (A1c)	CT/MRI brain (basal ganglia pathology)
	Hyperthyroidism - chorea	TSH, T4	
	Toxic metabolic encephalopathy	CBC with differential PT/PTT Serum electrolytes (including Ca, Mg, Phos) Liver function enzymes, ammonia Arterial blood gas CSF studies Blood and urine toxicologic screens CT/MRI brain (or cranial ultrasound in newborn)	TSH Cortisol Blood lead level

Table 5. Suggested Initial Workup for Acute Movement Disorders in Children (continued)

Movement Disorder	Differential Diagnosis	Initial Studies to Consider (immediately available results)	Other Suggested Evaluation (as inpatient or outpatient)
Myoclonus	Epileptic	CT/MRI brain (if first presentation) EEG	
	Neuroblastoma - opsoclonus-myoclonus-ataxia syndrome	CT or MRI chest/abdomen/pelvis - tumor evaluation	Urinary vanillylmandelic acid (VMA) and homovanillic (HVA) 123-I-metaiodobenzylguanidine (MIBG) scan
	Cofactor deficiency - myoclonus	CBC (exclude anemia)	Biotin Pyridoxine Cobalamin
	Serotonin syndrome	CBC with differential PT/PTT Creatinine kinase Liver function enzymes Serum electrolytes, BUN, creatinine Urinalysis - myoglobinuria Core temperature monitoring	
Rigidity	Neuroleptic malignant syndrome	CBC with differential Creatinine kinase Liver function enzymes Serum electrolytes, BUN, creatinine Urinalysis - myoglobinuria Core temperature monitoring	
Dystonia	Huntington disease - rigidity - bradykinesia - dystonia	CT/MRI brain (neurodegeneration)	Genetic testing
Any movement disorder with associated psychiatric/ behavioral symptoms	NMDA receptor encephalitis	CBC with differential CT or MRI brain CSF studies	EEG (if concern for seizure)
Any movement disorder with associated fever/rigors	CNS infection - meningitis - encephalitis	CBC with differential PT/PTT Serum electrolytes, BUN, creatinine CT brain Blood cultures CSF studies	EEG (if concern for seizure)