Updated complete list of hereditary chorea

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| **Designation** | **Less common movement phenotype** | **Clinical clues** | | **OMIM** | **MOI** |
| CHOR-*FTL*-(NBIA)354 | Dystonia, parkinsonism | Neuroferritinopathy355: dystonia, chorea, parkinsonism, and variable additional clinical features including oromandibular dyskinesia, dysphagia, cognitive impairment, behavioral symptoms, low serum ferritin  Iron accumulation: GP, caudate, putamen, SN, red nucleus; cystic BG changes – pallidal necrosis | | 606159 | AD |
| CHOR-*HTT*792 |  | Huntington’s disease (HD): predominant chorea and dementia, young onset may have predominant parkinsonism (Westphal variant), additional clinical signs including myoclonus, ataxia, epilepsy, cognitive problems, and behavioral abnormalities | | 143100 | AD |
| CHOR-*JPH3*793 |  | HD-like phenotype, to date only found in patients of African descent | | 606438 | AD |
| CHOR-*NKX2*-1794 |  | Phenotypes  1. Brain–lung–thyroid syndrome (50%): infantile onset global developmental delay, childhood onset chorea-athetosis, hypothyroidism and pulmonary dysfunction  2. Brain and thyroid disease (30%): infantile onset global developmental delay childhood onset chorea-athetosis, hypothyroidism  3. Isolated benign hereditary chorea (13%)795 | | 600635 | AD |
| CHOR-*PDE10A796, 797* |  | Recessive form: Childhood onset axial hypotonia, chorea, ballism, variable orofacial dyskinesia, variable cognition and normal brain MRI | | 616921 | AR |
|  | Dominant form: slowly progressive chorea with normal cognition, brain MRI with bilateral T2 striatal hyperintensity | | 616922 | AD |
| CHOR-*PRNP*798 |  | HD-like phenotype, seizures, dementia (variable) | | 603218 | AD |
| CHOR-*VPS13A*799, 800 |  | Neuroacanthocytosis801: chorea, occasionally parkinsonism, dystonia (feeding dystonia)  Additional clinical features: orofacial dyskinesias, seizures, dementia, myopathy, psychiatric symptoms, acanthocytosis (variable), elevated CK, reduced chorein | | 605978 | AR |
| CHOR-*XK*802 |  | McLeod syndrome803: chorea  Additional clinical features: behavioral and psychiatric symptoms, seizures, myopathy, cardiomyopathy, cardiac arrhythmias, neuropathy, acanthocytosis, elevated CK and liver enzymes, reduced or absent Kx and Kell blood group antigens | | 314850 | XL |
| **Combined phenotypes: where chorea coexists with (an)other movement disorder(s) as a prominent and consistent feature** | | | | | |
| DYT/CHOR-*ACAT1*443 |  | Mitochondrial acetoacetyl-CoA thiolase deficiency: metabolic decompensation and basal ganglia injury during acute stress resulting in dystonia and chorea444 | | 203750 | AR |
| DYT/CHOR-*ADAR445, 446* | Spasticity | Aicardi-Goutières syndrome, includes dystonia and spastic paraparesis, MRI may reveal isolated bilateral striatal necrosis, adult-onset psychological difficulties, linked to characteristic interferon signature (upregulation of interferon-stimulated genes) | | 615010 | AR, rarely AD |
| DYT/CHOR-*FOXG1447-449* | Dyskinesia | Rett-like phenotype (with congenital encephalopathy) | | 613454 | AD |
| DYT/CHOR-*GCDH*450 |  | Glutaric aciduria type I451, 452: dystonia, chorea (usually following acute metabolic crises), parkinsonism (later)  Additional clinical features: acute metabolic crises with basal ganglia injury (predominantly putamen and caudate nucleus), severe truncal hypotonia, macrocephaly, orofacial dyskinesias, spasticity, cognitive impairment (variable), enlarged subdural space, subdural hygroma/hemorrhages, headaches, seizures453 | | 231670 | AR |
| DYT/CHOR-*GNAO1804, 805* |  | Hypotonia, motor delay, exacerbated by febrile illness, stress, high ambient temperature | | 617493 | AD |
| DYT/CHOR-*HPRT*454 |  | Lesch-Nyhan syndrome: dystonia, chorea, occasionally ballism  Additional clinical features: hyperuricemia, crystalluria, developmental delay/intellectual disability, eye movement abnormalities, spasticity, compulsive self-injurious behavior, gouty arthritis, nephrolithiasis, renal failure | | 300322 | XL |
| DYT/CHOR-*MUT*455 |  | Methylmalonic aciduria456: dystonia, chorea, occasionally ataxia  Additional clinical features: Neonatal-onset vomiting, seizures, lethargy and hypotonia, ketoacidosis, hyperammonemia, developmental delay, spasticity, pancreatitis, nephritis, growth failure, acute metabolic crises with confusion/encephalopathy, basal ganglia injury (predominantly globus pallidus) | | 251000 | AR |
| DYT/CHOR-*PCCA/PCCB*457 |  | Propionic aciduria456: dystonia, occasionally chorea  Additional clinical features: neonatal-onset vomiting, seizures, lethargy and hypotonia, ketoacidosis, hyperammonemia, developmental delay, spasticity, cardiomyopathy, acute metabolic crises with confusion/encephalopathy, basal ganglia injury (predominantly putamen and caudate nucleus) | | 606054 | AR |
| ATX/CHOR-*RNF216806-808* |  | Huntington-like disorder, chorea develops in second or third decade, gait ataxia, nystagmus, dysarthria and dysmetria, hypogonadotropic hypogonadism | | 212840 | AR |
| **Disorders that usually present with other phenotypes but can have predominant chorea** | | | | | |
| ***Gene*** | **Associated disease** | **OMIM** | **Clinical phenotype** | | **MOI** |
| ATX-*ATN1487, 809* | Dentatorubral-pallidoluysian atrophy (DRPLA) | 125370 | Dentatorubral-pallidoluysian atrophy (DRPLA): various combinations of myoclonus, ataxia, chorea, parkinsonism, dementia, supranuclear gaze palsy, and seizures (particularly in young patients) | | AD |
| ATX-*TBP511, 512* | Spinocerebellar ataxia | 607136 | Marked non-ataxia features, can present with predominant chorea, may be HD-like | | AD |
| DYT- *DCAF17*-(NBIA)*415* | Woodhouse-Sakati syndrome | 241080 | Woodhouse-Sakati syndrome417: predominant dystonia, chorea416 less common, variable additional clinical features including dysarthria, deafness, seizures, cognitive impairment, hypogonadism, alopecia, diabetes mellitus, thyroid dysfunction, acanthosis nigrans, keratoconus, camptodactyly  Iron accumulation: GP, SN, other BG (variable) | | AR |
| DYT-*PANK2-*(NBIA)352 | Neuro-degeneration with Brain Iron Accumulation 1 | 234200 | Pantothenate kinase-associated neurodegeneration (PKAN); dystonia, parkinsonism, chorea, and variable additional clinical signs: spasticity, dysarthria, cognitive decline, gaze palsy, psychiatric symptoms, pigmentary retinopathy  Iron accumulation: GP – eye of the tiger sign | | AR |
| DYT/PARK-*CP-*(NBIA)*327* | Aceruloplasminemia | 604290 | Aceruloplasminemia328: dystonia, ataxia, chorea, parkinsonism, tremors  Iron accumulation: more homogeneous involvement of primarily caudate, putamen, thalamus, dentate  Additional clinical features: cognitive impairment, psychiatric symptoms, diabetes mellitus, retinal degeneration, anemia, liver iron storage | | AR |
| *C9orf72* 810, 811 | Frontotemporal dementia (FTD) and/or Amyotrophic Lateral Sclerosis (ALS) | 105550 | Broad phenotypic spectrum including frontotemporal dementia and features of motor neuron disease, atypical parkinsonism, dystonia, cerebellar signs, or chorea | | AD\* |

AD = autosomal dominant, AR = autosomal recessive, BG = basal ganglia, CK = creatine kinase, GP = Globus pallidus, HD = Huntington’s disease, MOI = Mode of inheritance, SN = Subthalamic nucleus, OMIM = Online Mendelian Inheritance in Man (<https://www.omim.org/about>), SPG = Spastic paraplegia, TCC = thinning of the corpus callosus, WML = white matter lesions, XL = x-linked

\* Repeat expansions

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