

Date of search: Aug 2020

**Recently identified or confirmed forms of hereditary chorea**

Designation	Less common movement phenotype	Clinical clues	OMIM	MOI
CHOR- <i>PDE10A</i> <sup>1, 2</sup>		Recessive form: Childhood onset axial hypotonia, chorea, ballism, variable orofacial dyskinesia, variable cognition, and normal brain MRI Dominant form: slowly progressive chorea with normal cognition, brain MRI with bilateral T2 striatal hyperintensity	616921 (AR), 616922 (AD)	AR and AD, often de-novo
<b>Combined phenotypes: where chorea coexists with (an)other movement disorder(s) as a prominent and consistent feature</b>				
DYT/CHOR- <i>ADAR</i> <sup>3, 4</sup>	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- <i>FOXG1</i> <sup>5-7</sup>	Dyskinesia	Rett-like phenotype (with congenital encephalopathy)	613454	AD
DYT/CHOR- <i>GNAO1</i> <sup>8, 9</sup>	Myoclonus	Hypotonia, motor delay. Exacerbated by febrile illness, stress, high ambient temperature	617493	AD
ATX/CHOR- <i>RNF216</i> <sup>10-12</sup>		Huntington-like disorder, chorea develops in second or third decade, gait ataxia, nystagmus, dysarthria and dysmetria. Hypogonadotropic hypogonadism	212840	AR

AD = autosomal dominant, AR = autosomal recessive, MOI = mode of inheritance, OMIM = Online Mendelian Inheritance in

Man (<https://www.omim.org/about>)

## References

1. Diggle CP, Sukoff Rizzo SJ, Popiolek M, et al. Biallelic Mutations in PDE10A Lead to Loss of Striatal PDE10A and a Hyperkinetic Movement Disorder with Onset in Infancy. *Am J Hum Genet* 2016;98(4):735-743.
2. Mencacci NE, Kamsteeg EJ, Nakashima K, et al. De Novo Mutations in PDE10A Cause Childhood-Onset Chorea with Bilateral Striatal Lesions. *Am J Hum Genet* 2016;98(4):763-771.
3. Livingston JH, Lin JP, Dale RC, et al. A type I interferon signature identifies bilateral striatal necrosis due to mutations in ADAR1. *J Med Genet* 2014;51(2):76-82.
4. Rice GI, Kitabayashi N, Barth M, et al. Genetic, Phenotypic, and Interferon Biomarker Status in ADAR1-Related Neurological Disease. *Neuropediatrics* 2017;48(3):166-184.
5. Kortum F, Das S, Flindt M, et al. The core FOXP1 syndrome phenotype consists of postnatal microcephaly, severe mental retardation, absent language, dyskinesia, and corpus callosum hypogenesis. *J Med Genet* 2011;48(6):396-406.
6. Cellini E, Vignoli A, Pisano T, et al. The hyperkinetic movement disorder of FOXP1-related epileptic-dyskinetic encephalopathy. *Dev Med Child Neurol* 2016;58(1):93-97.
7. Papandreou A, Schneider RB, Augustine EF, et al. Delineation of the movement disorders associated with FOXP1 mutations. *Neurology* 2016;86(19):1794-1800.
8. Schirinzi T, Garone G, Travaglini L, et al. Phenomenology and clinical course of movement disorder in GNAO1 variants: Results from an analytical review. *Parkinsonism Relat Disord* 2019;61:19-25.
9. Yamashita Y, Ogawa T, Ogaki K, et al. Neuroimaging evaluation and successful treatment by using directional deep brain stimulation and levodopa in a patient with GNAO1-associated movement disorder: A case report. *J Neurol Sci* 2020;411:116710.
10. Santens P, Van Damme T, Steyaert W, et al. RNF216 mutations as a novel cause of autosomal recessive Huntington-like disorder. *Neurology* 2015;84(17):1760-1766.

11. Lieto M, Galatolo D, Roca A, et al. Overt Hypogonadism May Not Be a Sentinel Sign of RING Finger Protein 216: Two Novel Mutations Associated with Ataxia, Chorea, and Fertility. *Mov Disord Clin Pract* 2019;6(8):724-726.
12. Chen KL, Zhao GX, Wang H, et al. A novel de novo RNF216 mutation associated with autosomal recessive Huntington-like disorder. *Ann Clin Transl Neurol* 2020;7(5):860-864.