Title: *DYNC1H1*-Related Disorders *GeneReview* Additional Findings

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Note: The following information is provided by the authors listed above and has not been reviewed by *GeneReviews* staff.

DYNC1H1-Related Neuromuscular Disorder (*DYNC1H1*-NMD)

Histologic findings

- Sural nerve may reveal degenerative axonal neuropathy [Harms et al 2010, Weedon et al 2011, Gelineau-Morel et al 2016, Becker et al 2020, Li et al 2023], potentially leading to end-stage neurogenic atrophy [Fiorillo et al 2014, Peeters et al 2015].
- Muscle biopsy may reveal pathologic alterations consistent with secondary muscle involvement by denervation, including predominance of type 1 or type 2 fibers, hypertrophy of type 1 fibers, fiber size variation, internalized nuclei, rimmed vacuoles, excessive connective tissue, core-like areas, and other myopathic changes consistent with secondary muscle involvement due to primary denervation [Weedon et al 2011, Scoto et al 2015].
- Note that histologic examination is not required to either consider the diagnosis of *DYNC1H1*-related disorder or evaluate an affected individual.

DYNC1H1-Related Neurodevelopmental Disorder (*DYNC1H1*-NDD)

Neuropathologic findings

- Examination of two fetal brains with *DYNC1H1* variants demonstrated corticospinal tract dysgenesis and severely disrupted cortical lamination. Histopathologic examination revealed defects in cell proliferation and migration failure of the postmitotic neuroblast toward the cortical plate [Laquerriere et al 2017].
- Neuropathologic examination of three other fetal brains demonstrated focal polymicrogyria with major neuronal migration defects and abnormal axonal guidance with anarchial tracts in the brain stem and white matter [Zillhardt et al 2016]. These results highlight the function of DYNC1H1 in neuronal development.

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