Neurodevelopmental disorder

Neurodevelopmental disorders are impairments of the growth and development of the brain and/or central nervous system. A narrower use of the term refers to a disorder of brain function that affects emotion, learning ability, self-control and memory which unfolds as an individual develops and grows.

The purpose of a review of Ernst was to provide an overview of pitfalls and mitigation strategies for the nonstem cell biologist using induced pluripotent stem cells and investigating neurodevelopmental disorders. What sample sizes are reasonable? What derivation and purification protocols should be used to make human neurons? In what way should gene editing technologies be used to support discoveries? What kinds of preclinical studies are the most feasible? This roadmap hopes to provide the necessary details for experimental planning and execution for those less familiar in the area of stem cell disease modeling. High-quality human preclinical models will allow for the discovery of molecular and cellular phenotypes specific to different neurodevelopmental disorders, and may provide the assays to advance translational medicine for unmet medical needs [1)].

1)
Ernst C. A roadmap for neurodevelopmental disease modeling for non-stem cell biologists. Stem Cells Transl Med. 2020 Feb 13. doi: 10.1002/sctm.19-0344. [Epub ahead of print] Review. PubMed PMID: 32052596.