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Genetic Modifications of Developmental Dyslexia and Its Representation Using In Vivo, In Vitro Model

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Abstract

Dyslexia is a genetic and heritable disorder that has yet to discover the treatment of it, especially at the molecular and drug intervention levels. This review provides an overview of the current findings on the environmental and genetic factors involved in developmental dyslexia. The latest techniques used in diagnosing the disease and macromolecular factors findings may contribute to a higher degree of development in detangling the proper management and treatment for dyslexic individuals. Furthermore, this review tried to put together all the models used in the current dyslexia research for references in future studies that include animal models as well as in vitro models and how the previous research has provided consistent data across many years and regions. Thus, we suggest furthering the studies using an organoid model based on the existing gene polymorphism, pathways, and neuronal function input.

Keywords
- dyslexia
- genetic of language disorder
- developmental disorder

Introduction

Dyslexia has been indicated since over a hundred years ago, with intensive research done circa the 1950s. However, no massive progression exists in determining the mechanism and its treatment. Meanwhile, the cases have increased over the years. The outcome or burden is not rapidly apparent as in other chronic diseases. Nevertheless, it may cause implications for the human resources burden in the long run. Increasing cases will be reflected in the time increase, and teachers need to concentrate on the dyslexic classes. Multiple factors, including cognitive disabilities, symptomatic, sensorimotor, as well as comorbidities, are used to categorize dyslexia.

Dyslexia diagnosis has been consistent across the globe. Nonetheless, multiple recent reports are suggesting that dyslexia has turned into a spectrum similar to autism as it needs multiple facades for confirmation rather than simply reading and speech problems. Despite being a reading and phonological abnormality, dyslexia is discovered across many languages with different word sounds and meanings. The current gold standard for dyslexia worldwide involves structured literacy (Orton Gillingham). Due to the fact that reading requires clearly taught linguistic components, this therapy course structure is internalized. This covers syllabification, phonology, morphology, as well as encouraging children to automatically use this information for language decoding (reading) and encoding (spelling). This gold

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