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ReDyslexia

Understanding and targeting developmental dyslexia: from animal models to humans

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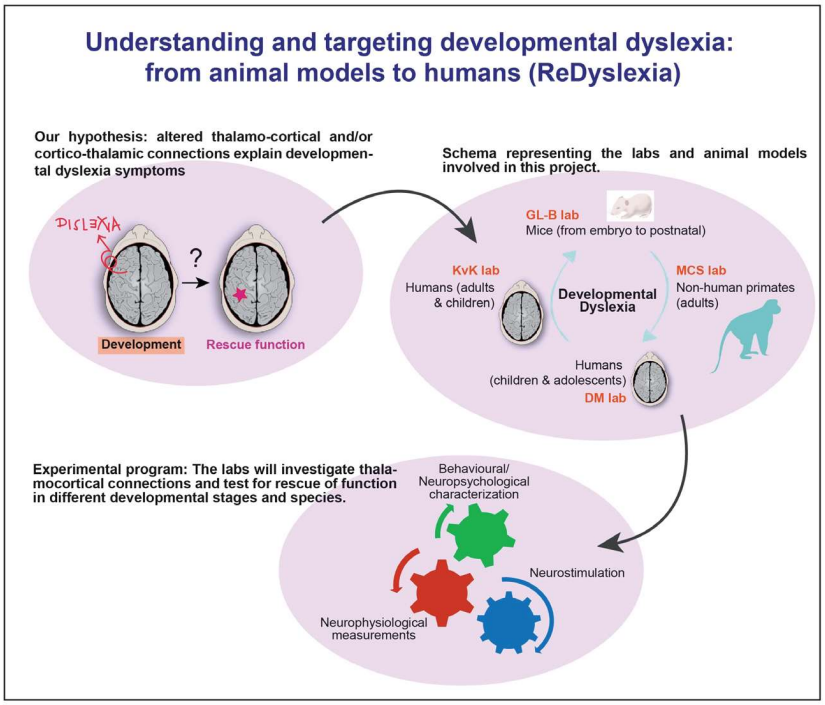
Developmental dyslexia (DD) is a brain-based developmental disorder. It is characterized by severe impairments in reading in otherwise healthy individuals. DD occurs in 5-10% of children worldwide and persists into adulthood. Since reading is so fundamental for modern societies, individuals with DD are hindered both in school and in the workforce. DD has high societal costs. Current treatment of DD consists of time-consuming training with speech therapists and psychologists over several years. Development of effective treatment is urgently needed, but hampered by a lack of knowledge about the brain dysfunction causing DD. For decades, researchers have focused on explaining DD by dysfunctional mechanisms of the brain's language centres. Findings from our laboratories offer a novel perspective on DD that emphasises dysfunction of sensory pathways.



Sensory pathways are structures that connect the eyes (and ear) with the rest of the brain to provide the sensory basis for reading. Motivated by our recent results, ReDyslexia will work for two major aims: (1) to better understand sensory pathway dysfunction in DD; (2) to directly use this knowledge for improving treatment strategies. To do that we combine experiments in two animal models (mice, monkeys) and studies in humans with DD at different developmental stages. Results from ReDyslexia will have direct implications for how DD is diagnosed and treated.