

# 1 Neurodevelopmental disorders

The development of the human brain is a complex and a tightly regulated process during which changes occur at both anatomical and functional levels (Silbereis et al., 2016). The processes of brain development are highly dependent on the appropriate expression of RNA and proteins. Mutations altering the expression of genes involved in brain development can cause or contribute to neurodevelopmental disorders (NDDs) (Tebbenkamp et al ., 2014).

10

## 1.1 Autism spectrum disorders

Autism spectrum disorder (ASD is a group of NDDs characterized by a high degree of clinical and genetic heterogeneity, Among the human brain regions implicated in the pathophysiology of ASD, the prefrontal cortex has always been focused on due to its role in the cognitive, decision-making and social behavior.