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Title:
Cortical representations of social deficits gated by cerebellum dysregulation

Abstract:
Patients who suffer neuropsychiatric disorders, including autism, schizophrenia, depression and Alzheimer’s disease, often show abnormal social interaction. Therefore, it is important to understand the neural basis of social behavior in search of innovative treatments. Emerging evidence suggests that the cerebellum plays a key role in the neural networks essential for social functions. To investigate the mechanisms, we manipulated the cerebellar activity in a mouse model by precisely controlling the firing of a distinct population of neurons. This manipulation specifically impaired remembrance of previously encountered conspecifics, i.e., social recognition memory. We furthered delineated the anatomical and functional connections between the cerebellum and the cerebrum that mediate social memory. These insights will help develop clinical interventions for mental illness.