

Abstract

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterised by repetitive behaviour and impairments in social behaviour and social communication. The whole aetiological heterogeneity is still not fully elucidated. It is then very important to focus on experimental research, especially on animal models, to help with drug development and recovery. To broaden the variability of focus of behavioural tests on mouse sociability, a new modification of a test to assess transfer of emotional information was proposed. A similar test was published recently for the first time, but it is still not common to use it in mice. Results show that it is possible to measure transfer of fear between conspecifics only during their immediate direct encounter through behavioural evaluation, but not in further standardised anxiety-evaluating tests. Self-grooming behaviour was the only parameter significantly affected by transferred anxiety in the experimental setup used, and therefore should be considered as the most sensitive behavioural parameter describing animal emotional state. However, the variability in individual animal behaviour is still considerably large, which confounds the results to a great degree. Such a behavioural test for transfer of emotional information may be especially useful in experiments with genetic models of ASD, for example the 16p11.2del mouse model, currently the most commonly used model of ASD. Together with a link to neurostructural changes in this model, it would bring us closer to understanding the nature of autism pathology.

Keywords

Autism Spectrum Disorder, mouse model, transfer of emotional information, behavioural test