

Impaired Face Perception in Individuals with Autism Spectrum Disorder: Insights on Diagnosis and Treatment

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Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by impaired social interaction and communication along with restricted and repetitive behaviors. For a long period of time, ASD was considered to be a rare mental disorder, with a prevalence of less than 1/100,000. However, the prevalence of diagnosed ASD has increased rapidly in recent years to approximately 1/100 in the USA. Relative epidemiological investigations have not yet been performed across China because of complex public health situation and insufficient public awareness. ASD children are usually considered peculiar and suffer prejudice. Unfortunately, this disorder is hard to cure and continues to develop during adolescence and adulthood. As a result, ASD has become a serious public issue in our society and deserves much more attention from scientists in revealing the mechanisms underlying the disorder and developing effective treatments.

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Hereditary factors have been shown to be important in the pathogenesis of ASD. Evidence from twin studies has shown that the risk of an individual having ASD is 90% if the monozygotic twin is also diagnosed as having ASD [1]. Biologists and geneticists have worked tirelessly to reveal the underlying genetic mechanism of ASD, and achieved many significant findings. For example, *Ambra1* deficiency has been shown to result in autism-like phenotypes in female mice, and suggests a role of

presented. Observers are then instructed to indicate whether the face stimulus is novel or not. This task has been shown to be very reliable and sensitive in identifying individuals with selective impairments in face processing and thus might be a promising test in ASD diagnosis.

Our neural system has specific circuitries to process face stimuli. For example, the circuitry used to process face identity includes the lateral occipital cortex, fusiform area, and anterior temporal cortex. The emotional information of the face may be processed by the superior temporal cortex, amygdala, and insula. The normal functioning of each region and interregional connection forms the basis of face perception. Given that face perception is selectively impaired in ASD, it follows that neurophysiological studies

3. Bailey A, Le Couteur A, Gottesman I, Bolton P, Simonoff E, Yuzda E *et al.* Autism as a strongly genetic disorder: evidence