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Why we prefer happy faces: The role of the cannabinoid receptor

Babies look longer at happy faces and this early interest in positive emotional expressions is a potential driving force for them to socialize. This preference for happy faces is also seen in typical adults, who prefer to look longer at happy faces compared to those showing disgust. In contrast, people with autism look less at other people's faces from an early age, and have difficulty in understanding facial expressions of emotion. One theory is that this is because they do not find faces and other social stimuli rewarding.

New research published today in the journal *Molecular Autism* has found that depending on which variations of the cannabinoid receptor (CNR1) gene a person carries influences the amount of time people look at happy faces. The CNR1 gene is involved in the brain's reward circuitry (and gets its name because it codes for the molecule that cannabis attaches itself to) and expressed primarily in the regions of the brain involved in reward processing.

The new research was led by Dr Bhisadev Chakrabarti at the University of Reading and Professor Simon Baron-Cohen at the University of Cambridge. Their earlier research had shown polymorphisms (naturally occurring mutations) in CNR1 were associated with activity within the striatum (a region of the brain involved in reward processing) in response to happy faces. In the new study the researchers analysed the DNA from 28 adult volunteers who were tested (using a "gaze tracker") for how long they looked at eyes and mouths of faces in video clips of facial expressions of emotion. The team found variations within two of the four polymorphisms in CNR1 correlated with a longer gaze at happy (but not disgust) faces.

Dr Chakrabarti commented, "This is the first study to have shown that how much we gaze at faces is influenced by our genetic make-up. If replicated it has profound implications for our understanding of the drive to socialize, and in turn, the atypical use of gaze in autism".

Notes to editors:

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3. **Article:** Chakrabarti, B, & Baron-Cohen, S (2011) Variation in the human Cannabinoid Receptor (CNR1) gene modulates gaze duration for happy faces, *Molecular Autism online*