

**Titel:****Validating the Movie for the Assessment of Social Cognition in ASD adolescents – Additional insights from eye tracking analyses**

Author(s):

Nico Müller (1), Luise Poustka (2), Tobias Banaschewski (1) &amp; the EU-AIMS group

Institution(s):

(1) Zentralinstitut für Seelische Gesundheit, Mannheim

(2) Universitätsklinik für Kinder- und Jugendpsychiatrie, Wien

**Background:**

The Movie for the Assessment of Social Cognition (MASC) is a validated tool to assess reduced social cognition in ASD adults by lower scores (Dziobek et al., 2006). Eye tracking is a method to reveal aberrant social information processing in ASD contributing to reduced social cognition (Klin et al., 2002; Senju et al., 2009). Although the MASC has high ecological validity (Chevallier et al., 2015), it has not been investigated for non-adult populations. The present study operationalizes the MASC with concurrent eye tracking for a validation in the adolescent population.

**Methods:**

A sample of ASD adolescents ( $n = 38$ ) and age-matched controls ( $n = 36$ ) is assessed. ASD diagnosis is confirmed by ADOS-G and ADI-R. Comorbid disorders are recorded by clinical reports. MASC stimuli are analyzed for areas of interest (AOI; eyes, mouth, body, object; Klin et al., 2002) and pupil dilation characteristics (Laeng, 2012). Social Responsiveness Scale (SRS), Empathy Quotient (EQ), and Reading Mind in the Eyes task (RMET) are compared as convergent measures of autistic symptoms.

**Results:**

Overall, the ASD sample achieves significantly lower MASC-scores (25.8) compared to the control group (29.1,  $t = -2.23$ ,  $p = 0.02$ ). The main effect is confirmed by an analysis of covariance with a significant effect of ASD-diagnosis ( $F = 9.75$ ,  $p = 0.003$ ) while controlling for gender, IQ, fixation on eyes, and comorbid disorders. Substantial correlation of the MASC with measures of autistic symptoms are observed ( $r = .46-.50$ ,  $p < 0.01$ ). Eye-Tracking analysis reveal that higher MASC performance is explained by increased fixation duration on eyes and increased pupil dilation.

**Conclusion:**

As a conclusion, the MASC is also a suitable measure to assess social cognition in adolescent samples. Lower social cognition in ASD can be explained by less eye fixation and decreased pupil dilation.

**Sponsoring:**

part of the EU-AIMS project

**Conflict of Interest:**

none