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Ka-o-TV: A Novel Technique for Detecting Early Autism Spectrum Phenotype

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Symptoms of autism spectrum disorder (ASD) can be detected as early as during the first two years of life. However, there is no universal rule for this, and available techniques rely on recall by caregivers and/or observation of the infants' behaviour by assessors (e.g. paediatrician), which can be subject to a range of biases. A novel technique, eye gaze detector, provides us objective and useful findings that may be associated with early symptoms of ASD (Jones et al., 2013). Unfortunately, the technique has still not been well founded largely because of limited availability of the devices, difficulty in calibration for very young children, and limited data retrieval rate. To address these limitations, we invented a new eye gaze detector, "Ka-o-TV".

After careful examinations of data retrieval rates, test-retest reliability, and of criterion-related validity of varying indices provided by Ka-o-TV, I found 78% of sensitivity and 88% of specificity for correctly categorising 1:6-year-old infants later diagnosed with ASD (N=446, 36 infants with ASD). Also, Ka-o-TV has been shown to correlate with diagnosis, symptoms, and other biological markers of ASD among adults (Fujisawa et al., 2014).

References:

Jones W et al. Attention to eyes is present but in decline in 2-6-month-old infants later diagnosed with autism. *Nature* 2013;504(7480):427-31.

Fujisawa TX et al. Visual attention for social information and salivary oxytocin levels in preschool children with autism spectrum disorders: an eye-tracking study. *Front Neurosci* 2014;8:295.