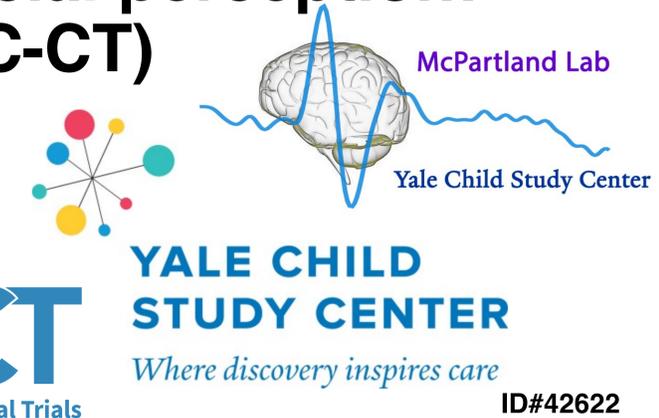


# Autistic children utilize different visual processing strategies during social perception: Results from the Autism Biomarkers Consortium for Clinical Trials (ABC-CT)

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## Objective

Quantify visual processing strategies during social perception in autistic and neurotypical children

Evaluate relationship of visual processing strategy and social, neuropsychological, and attention domains of function in autism

## Background

Reduced social attention is a hallmark feature of autism<sup>1</sup>

Studies of social attention in autism rely on summary statistics (total and average looking times) that do not capture the patterns over time during social perception<sup>2</sup>

Using a computational modeling approach to model the spatiotemporal dynamics of eye movement patterns provides richer insight into **how** autistic individuals may process social information<sup>3</sup>

## Method

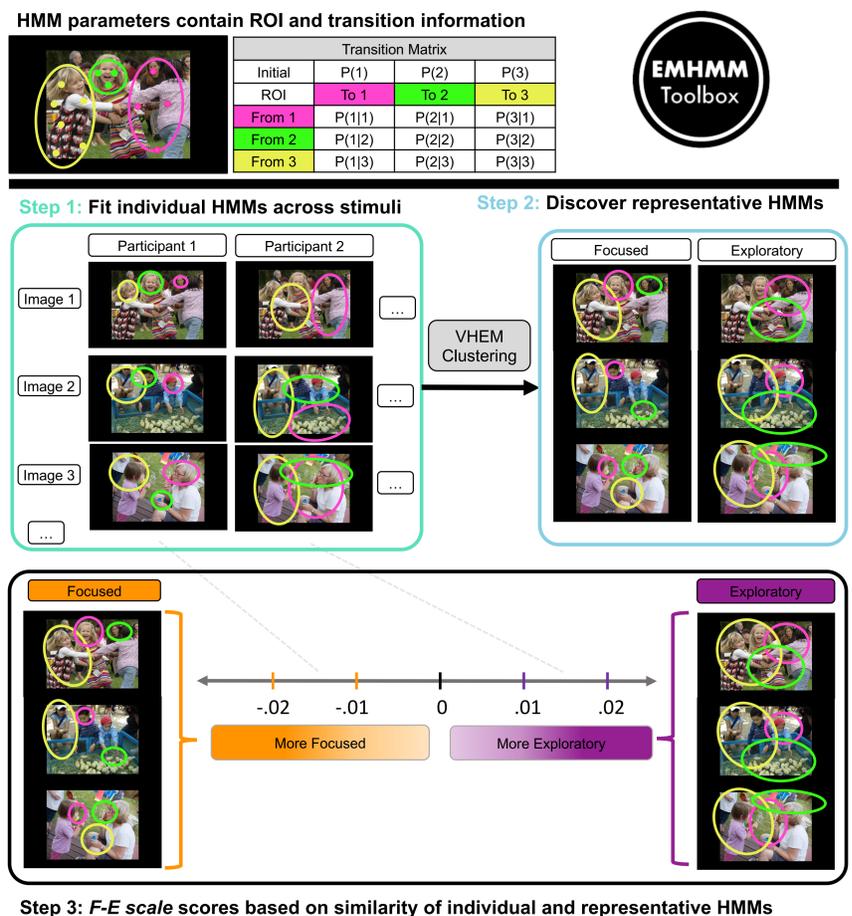
**Autism Biomarkers Consortium for Clinical Trials (ABC-CT)<sup>4</sup>**  
Large ( $N = 399$ ), multi-site study evaluating multiple eye-tracking (e.g., social scenes, visual exploration, activity monitoring) and electroencephalography assays in autistic and neurotypical children across multiple time points. Only a subset of ET assays are presented here

### Assessment measures

Vineland Adaptive Behavior Scales (VABS-3) – adaptive social function  
Social Responsiveness Scale (SRS-2) – social functioning  
Child and Adolescent Symptom Inventory (CASI-5) - Attention  
A Developmental Neuropsychological Assessment (NEPSY-II) – Face memory

	Autistic	Neurotypical
N	280	119
% Male	76.8%	69.7%
Age (years)	8.55 (1.64)	8.51 (1.61)
Full Scale IQ	96.58 (18.11)	115.12 (12.55)
SRS-2 Total	73.54 (10.92)	42.57 (4.66)
VABS-3 ABC	73.37 (11.14)	102.74 (9.84)

## Method



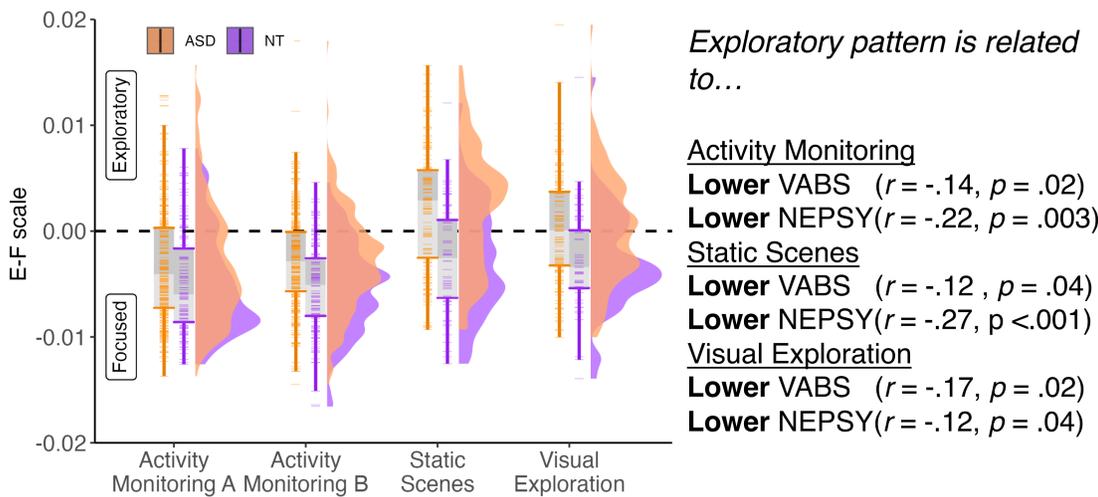
## Results

**Exploratory pattern**  
Fewer face ROIs  
Less probability of initially fixating to faces

**Focused pattern**  
Small face ROIs  
Higher probability of initially fixating to faces

## Results

### Autistic children used **more exploratory** visual processing strategy during social perception



## Conclusions

Autistic children tended to use a more exploratory visual processing strategy that was characterized by less efficient and rapid looking at faces, and a lower probability of initial looking to faces early in the visual processing sequence.

Visual processing strategies generalized to all ET assays, were stable across 6 months, and were linked with adaptive social functioning and face memory, but not attention.

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