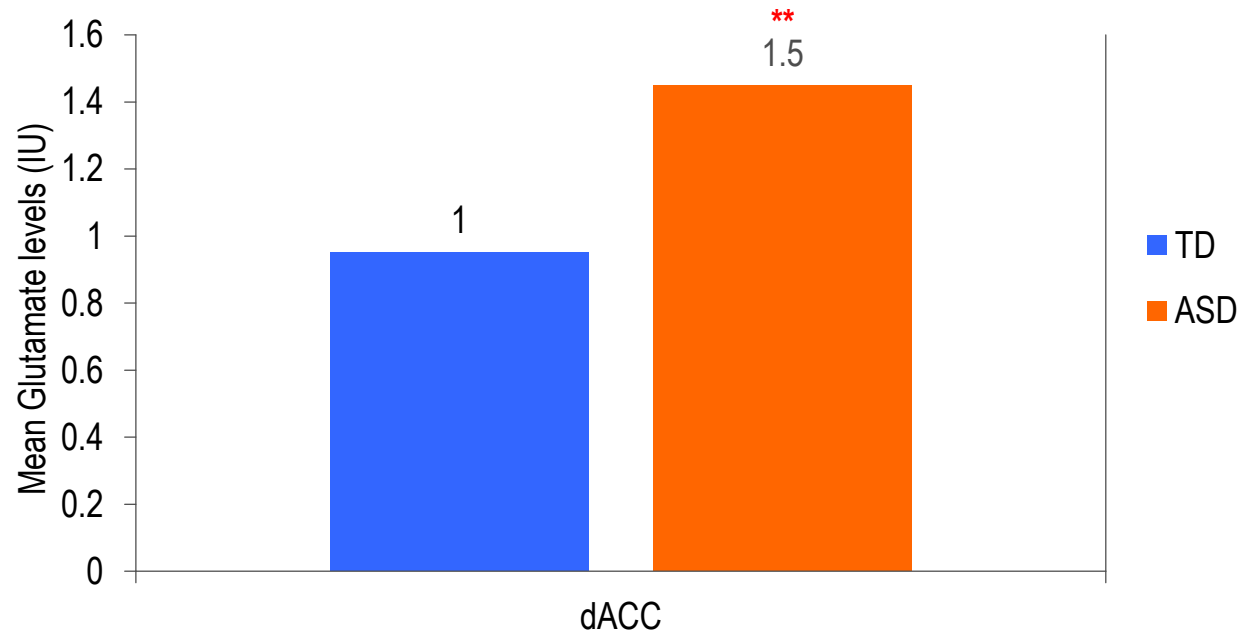
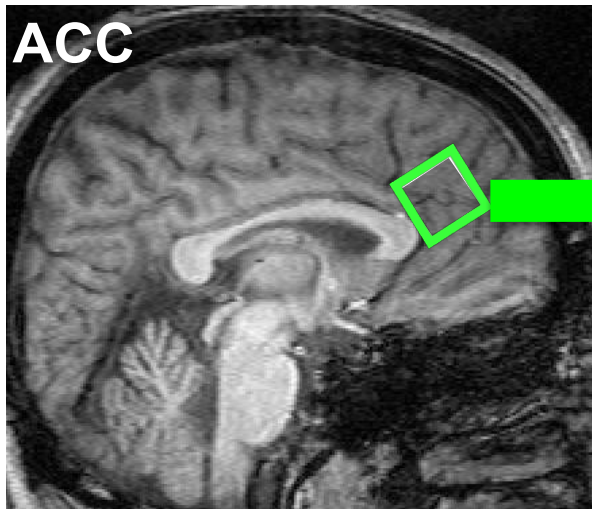


# Glutamate Activity in ACC

## Spectroscopy in Adolescent Males with HF-Autistic Disorder



*Higher glutamate in this area of the brain is hypothesized to be associated with ASD.*

Statistical Significance: \*\* $p \leq 0.01$

# 12-week Open-label Trial of Anti-Glutamate Agent Memantine Hydrochloride (Namenda) for the Treatment of Social Impairment in Young Adults with High-functioning Autism Spectrum Disorder

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Clinical Trials Registration @ ClinicalTrials.gov

Registration Number: NCT01333865

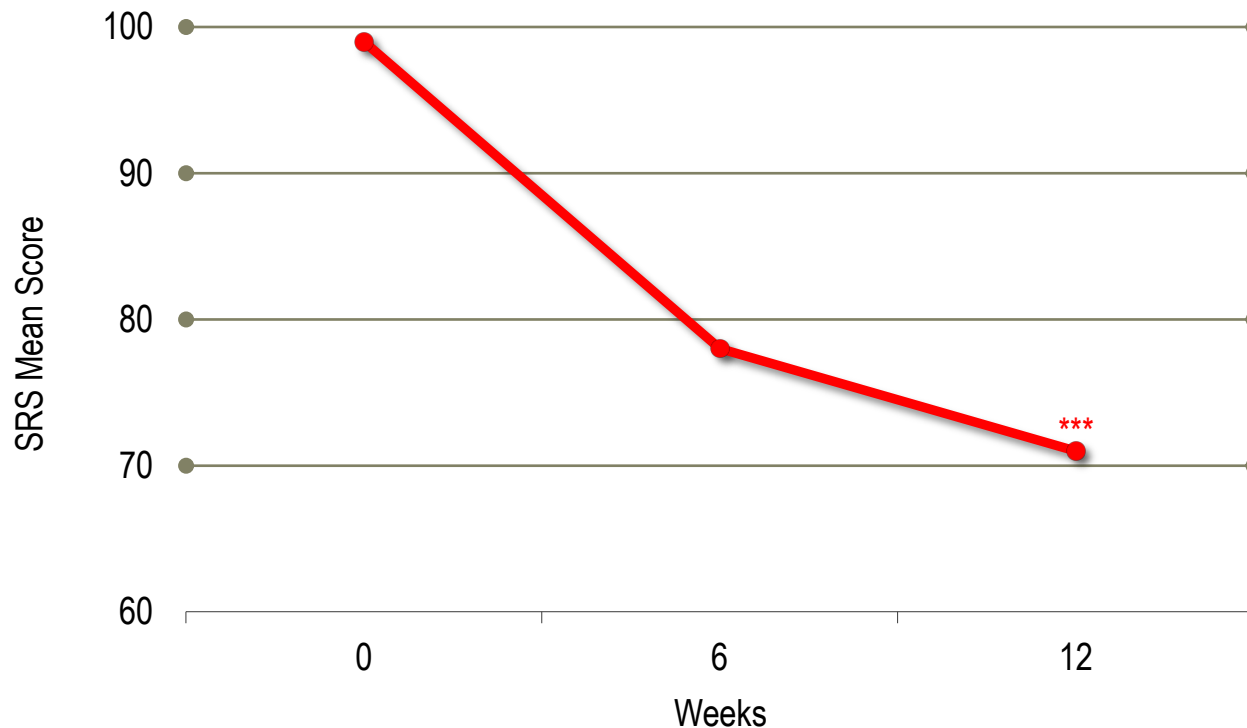
URL: <http://www.clinicaltrials.gov/ct2/show/NCT01333865>

Study Approved by: Partners Human Research Committee Institutional Review Board

Study Funded by: the Norma Fine Pediatric Psychopharmacology Fellowship Fund & the Pediatric Psychopharmacology Council Fund

# ASD Features: Mean Response

## Informant-Rated: Social Responsiveness Scale (SRS)



SRS: Mean Raw Score

Baseline:  $99 \pm 17$

Endpoint:  $71 \pm 18$

Reduction:  $28 \pm 25$

Effect Size: **1.57**

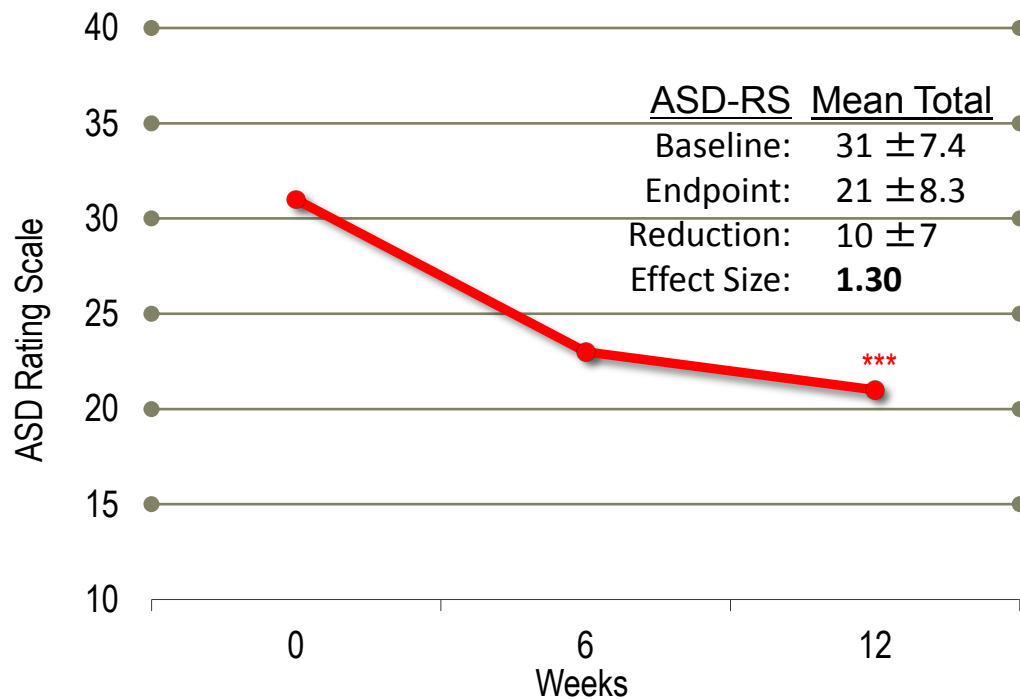
*Take away: Caretakers rated patients to have improvements in social skills and behavior after trial of Namenda.*

Statistical Significance: \* $p \leq 0.05$ , \*\* $p \leq 0.01$ , \*\*\* $p \leq 0.001$

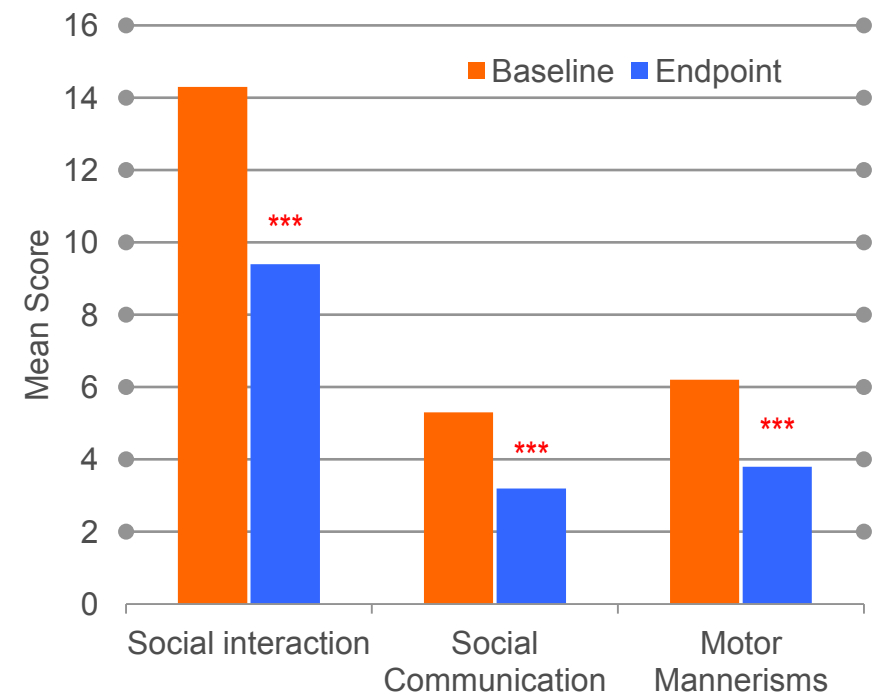
# ASD Features: Mean Response

## Clinician-Rated: ASD Rating Scale

### Total Mean Response



### Mean Response by Domain



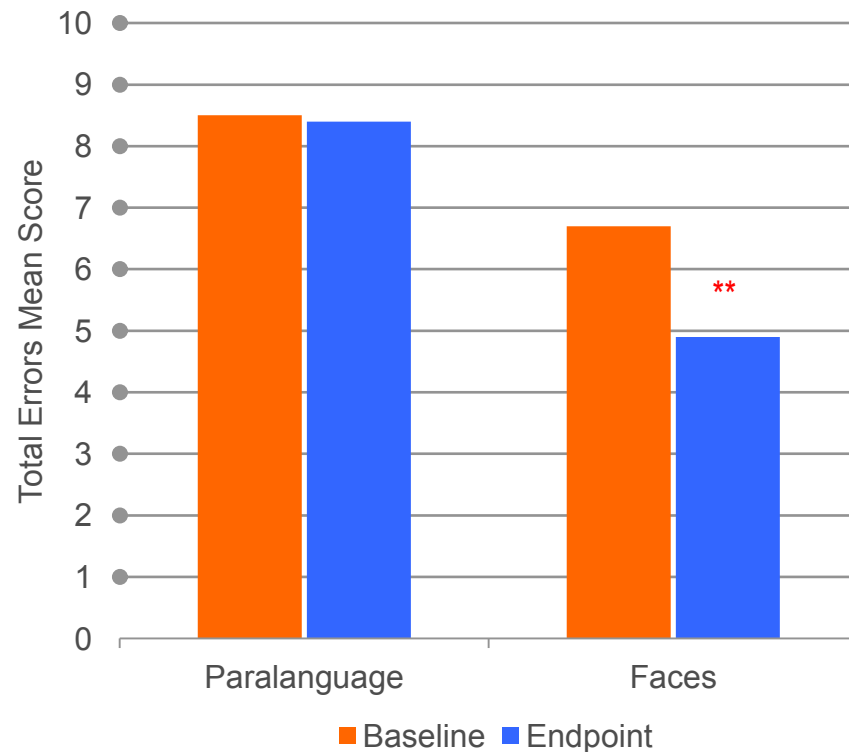
Statistical Significance: \*p<0.05, \*\*p<0.01, \*\*\*p<0.001

# Non-verbal Communication Performance

## Reading Non-Verbal Emotional Cues: DANVA2 Performance



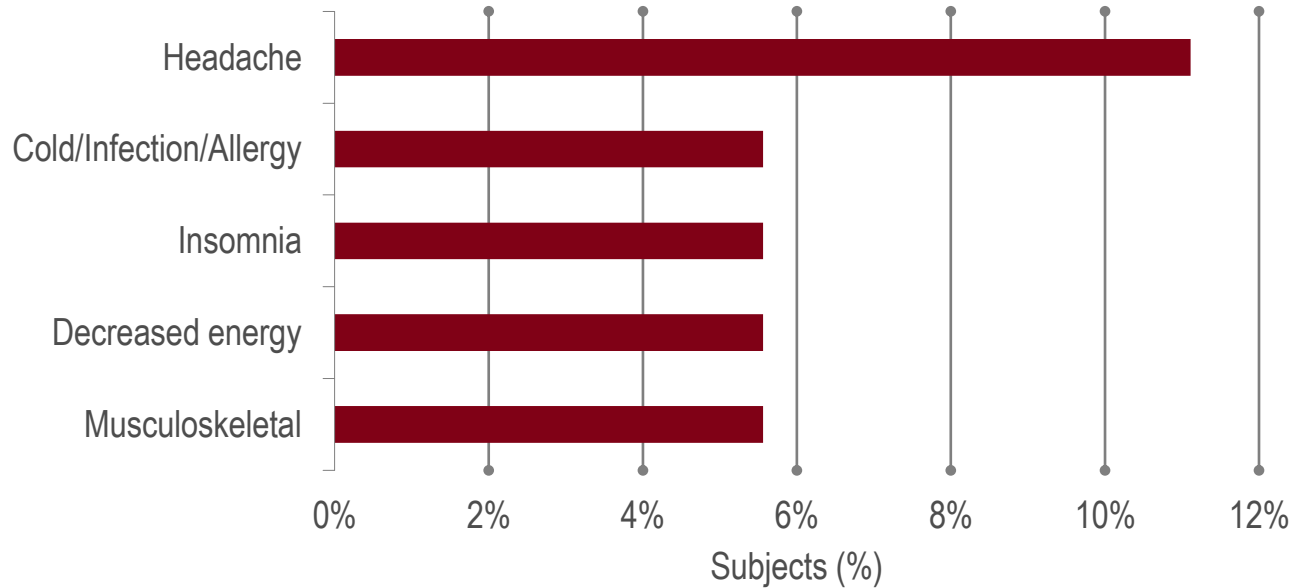
### Total Errors



*Take Away: After medication, patients show increase in ability to recognize emotions conveyed through facial expressions*

Statistical Significance: \* $p \leq 0.05$ , \*\* $p \leq 0.01$ , \*\*\* $p \leq 0.001$

# Adverse Events



## Reported > 1 visit

**Experienced any AEs:** 6 (33.3%)

**Serious AEs:** None

**Treatment Limiting AEs:** N=1

*Decreased energy,  
emotional numbness,  
feeling dissociated,  
feeling on edge  
(resolved on d/c)*

*Take away: Patients reported very few adverse side effects while on Namenda*

# Characterizing Driving Behavior in Young Adults with ASD

## The MIT AgeLab Driving Simulator



### **Difficulties attending to the roadway:**

- Higher vertical gaze position
- Wider dispersion of horizontal gaze scanning
- Focus more on the median

### **Drive at higher level of arousal:**

- Increased level of anxiety

**Impaired driving ability associated with autism**