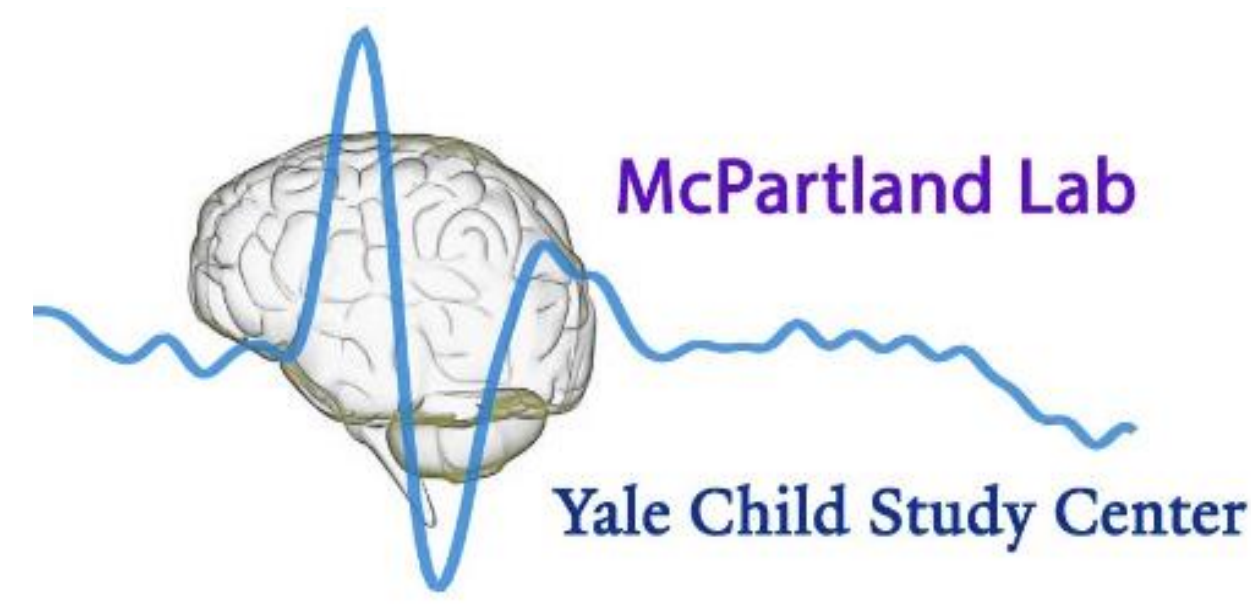


Socioeconomic Status and Developmental Trajectories of Adaptive and Maladaptive Function in Autism: Results from the Autism Biomarkers Consortium for Clinical Trials (ABC-CT)



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Background

- Autistic children often exhibit lower adaptive and more maladaptive behaviors than non-autistic peers.¹
- Nevertheless, considerable individual variability exists in these behaviors and in how they change over time.²
- While some of this variability reflects differences in individual child characteristics, socioeconomic status (SES) may account for additional variation by influencing access to therapeutic and educational supports and broader developmental opportunities.^{3,4}

Objectives

Characterize distinct trajectories of maladaptive and adaptive functioning in autistic children and how these relate to differences in SES.

Methods

- Data were collected across five U.S. sites through the Autism Biomarkers Consortium for Clinical Trials (ABC-CT).⁵
- Participants included 280 autistic children ($M_{age}=8.53$, $SD=1.63$; $M_{IQ}=96.58$, $SD=18.19$; 75% male, 72% white).
- Child adaptive and maladaptive behaviors were assessed at study entry, 6 weeks, and 6-months, via the caregiver-reported Pervasive Developmental Disorder Behavior Inventory (PDDBI).
- Parents also reported a range of household income, with a majority of the sample reporting $\geq \$75,000$ (Table 1).
- Household-level socioeconomic status was estimated using the income-to-needs ratio (INR), calculated by dividing household income by the U.S. Census Bureau poverty threshold adjusted for family size ($M = 5.26$, $SD = 1.99$). An INR of ≤ 1.0 indicates living at or below the federal poverty line (Figure 1).

Figure 1. Distribution of INR across Participants

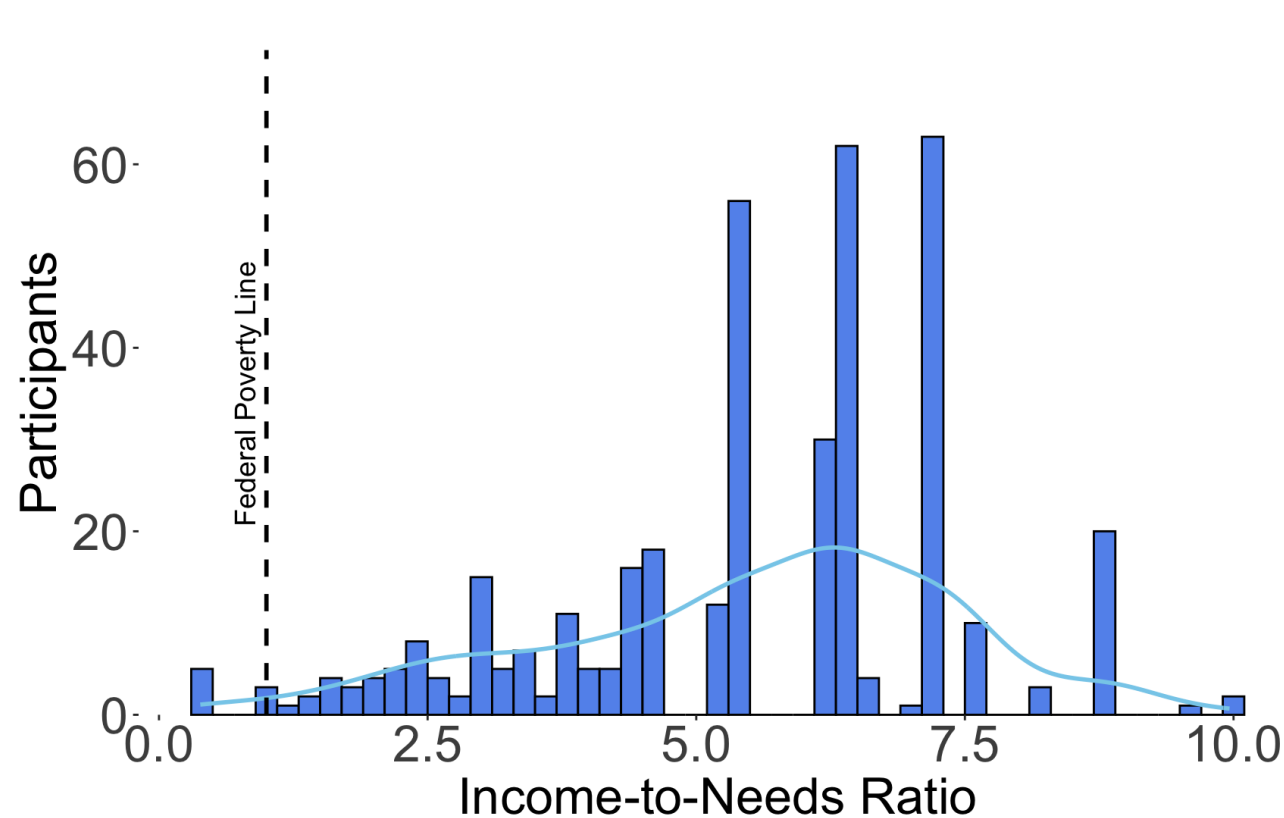


Table 1. Annual Family Income

N (%)	Annual Family Income
9 (3.2%)	\$10,001 – \$35,000
28 (10%)	\$35,001 - \$75,000
93 (33.2%)	\$75,001 - \$150,00
141 (50.3%)	>\$150,000
9 (2.5%)	Not reported

- A parallel-process latent class growth analysis (LCGA) identified subgroups of children with distinct longitudinal trajectories of PDDBI adaptive and maladaptive composite scores.
- ANOVAs compared INR and child characteristics (autism severity, IQ, age, sex) across identified subgroups.
- ANCOVAs explored subgroup differences in INR while controlling for those child factors that differed across subgroups.

Results

- A 3-class solution provided the best balance between model fit and parsimony (Table 2).

Table 2. Fit Indices for Latent Class Growth Models of Adaptive and Maladaptive Behavior

Classes	N	AIC	BIC	aBIC	Entropy	VLMRT	LMRT	BLRT
1	$C_1 = 280$	16248.22	16284.57	16252.86	-	-	-	-
2	$C_1 = 77$ $C_2 = 203$	15739.27	15793.79	15746.23	.901	<.001	<.001	<.001
3	$C_1 = 71$ $C_2 = 63$ $C_3 = 146$	15516.11	15588.81	15525.39	.871	.032	.036	<.001
4	$C_1 = 105$ $C_2 = 103$ $C_3 = 51$ $C_4 = 21$	15291.70	15382.57	15303.29	.889	.109	.115	<.001

Note. The best fitting solution is bolded.

Results (Cont.)

- Subgroup 1 ($n=71$) demonstrated high adaptive functioning (intercept=197.44, slope=0.66) and low, decreasing maladaptive behaviors (intercept=58.94, slope=-8.30). Subgroup 2 ($n=63$) showed increasing moderate adaptive functioning (intercept=128.92, slope=4.12), alongside high, declining maladaptive behaviors (intercept=144.30, slope=-7.32). Subgroup 3 ($n=146$) exhibited moderate-to-high increasing adaptive functioning (intercept=172.56, slope=2.31), and moderate, decreasing maladaptive behaviors (intercept=113.67, slope=-5.71) (Figure 2).

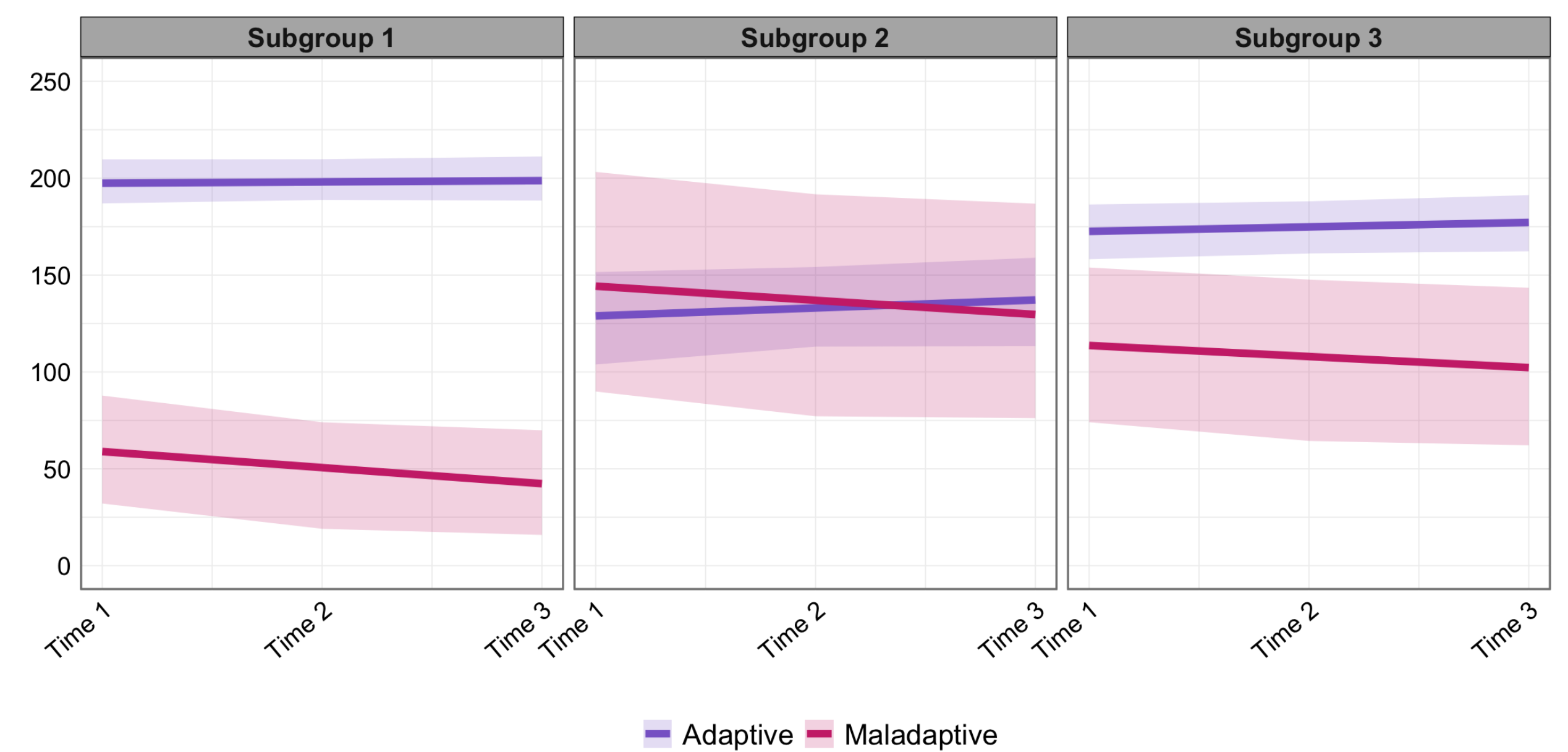


Figure 2. Subgroup trajectories of adaptive and maladaptive functioning T-scores across three time points.

- Subgroups differed in autism severity ($F(2,279)=4.61$, $p=.05$, $\eta^2_p=.03$), IQ ($F(2,260)=14.58$, $p<.001$, $\eta^2_p=.10$), and age ($F(2,279)=3.33$, $p=.03$, $\eta^2_p=.037$), but not sex ($\chi^2=1.57$, $p=.458$).
- There were significant differences in INR between subgroups ($F(2,270)=9.46$, $p<.001$, $\eta^2_p=.066$), which remained significant after covarying for age, IQ, autism severity ($F(2,252)=6.76$, $p=.001$, $\eta^2_p=.052$).
- Post-hoc comparisons revealed higher socioeconomic advantage (i.e., higher INR) in Subgroup 1 relative to Subgroup 2 ($p<.001$) and Subgroup 3 ($p=.02$) and marginal differences in socioeconomic disadvantage/advantage between Subgroups 2 and 3 ($p=.054$) (Figure 3).

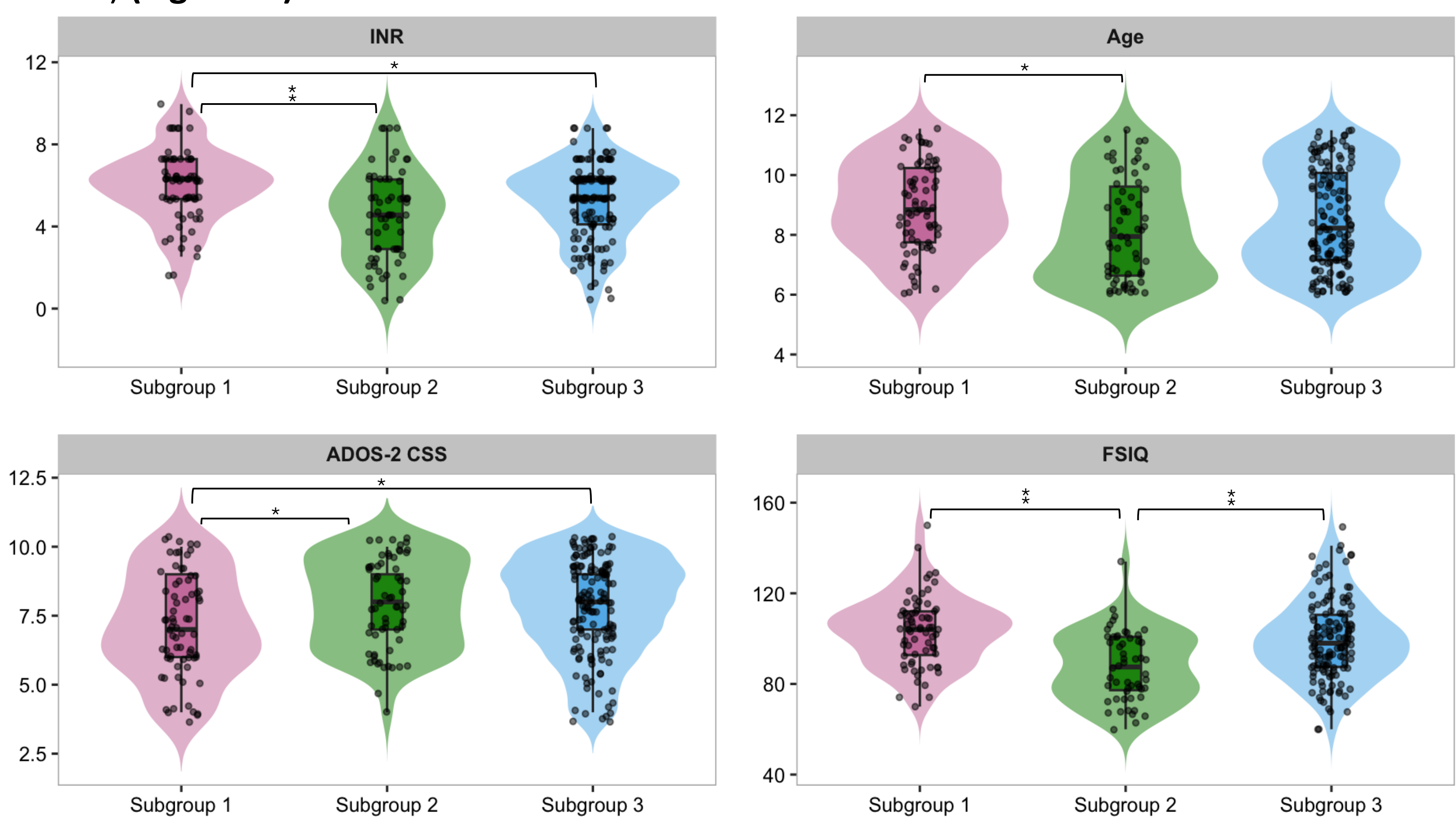


Figure 3. Subgroup differences in INR, age, ADOS-2 Calibrated Severity Scores (CSS), and full-scale IQ * $p<.05$; ** $p<.001$.

Conclusions

- Findings indicate heterogeneous developmental patterns in adaptive and maladaptive functioning in autistic children over six months. Identifying these subgroups can inform more intensive or tailored supports to mitigate the progression of behavioral challenges.
- Lower SES was associated with higher maladaptive and lower adaptive functioning over time, highlighting the potential role of socioeconomic context in shaping early developmental trajectories. This finding may be attributable to access to supports and opportunities; however, additional research is required to disentangle the underlying mechanisms.
- These results underscore the importance of considering both individual and socioeconomic factors when monitoring adaptive functioning and planning supports.

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