

# **Breastfeeding is not a risk factor for clinical severity in Autism Spectrum Disorder in children from the ELENA cohort**

*Scientific Report*

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**Supplementary Table S1.** Description of missing data for each confounders included in the multiple imputation models

<b>Confounders</b>	<b>Missing value n (%)</b>
Mothers' age (years)	0
Mother's tobacco smoking during pregnancy	3 (1.2)
Mother's obesity before pregnancy	8 (3.3)
Child's sex	0
Gestational age (weeks)	16 (6.6)
Parental education level	1 (0.41)
Number of older siblings	4 (1.64)
Parental socioeconomic status (SES)	2 (0.8)

**Supplementary Table S2.** Comparison of clinical characteristics at inclusion between participants considered in the analyses and the other participants involved in the ELENA Cohort

		<b>Participants included in our study (n = 243)</b>	<b>Other participants included in ELENA Cohort (n = 633)</b>	<b>p value</b>
<b><u>Children characteristics at assessment</u></b>				
<b>Age</b> (years)		5.8 (±3.4)	6.0 (±3.3)	0.34
<b>Sex</b>				
	<i>Boy</i>	199 (81.9%)	525 (82.9%)	0.72
	<i>Girl</i>	44 (18.1%)	108 (17.1%)	
<b>Intellectual quotient</b>		<b>77.1 (±28.0)</b>	<b>71.3 (±25.7)</b>	<b>0.01</b>
<b>VABS-II standard scores</b>				
	<i>Communication SS</i>	<b>72.6 (±15.5)</b>	<b>68.9 (±15.2)<sup>a</sup></b>	<b>0.001</b>
	<i>Daily living skills SS</i>	<b>75.6 (±12.8)</b>	<b>72.5 (±12.7)</b>	<b>0.001</b>
	<i>Social skills SS</i>	70.9 (±10.6)	69.5 (±10.8) <sup>a</sup>	0.20
<b>Level of autism spectrum (ADOS-2 CSS)</b>				
	<i>No evidence to low related symptoms</i>	29 (13.7%) <sup>b</sup>	61 (10.8%) <sup>c</sup>	0.47
	<i>Moderate related symptoms</i>	100 (47.1%)	263 (46.6%)	
	<i>High related symptoms</i>	83 (39.2%)	240 (42.6%)	
<b>ABC</b>				
	<i>Irritability / aggressiveness</i>	31.1 (17.8 - 46.7) <sup>d</sup>	31.1 (17.8 - 47.8) <sup>g</sup>	0.55
	<i>Lethargy / social withdrawal</i>	25.0 (12.5 - 35.4) <sup>e</sup>	25.0 (14.6 - 37.5) <sup>h</sup>	0.56
	<i>Stereotyped behaviors / self-harm</i>	23.8 (9.5 - 47.6) <sup>e</sup>	28.6 (14.3 - 52.4) <sup>h</sup>	0.10
	<i>Hyperactivity / lack of cooperation</i>	43.8 (20.8 - 64.6) <sup>e</sup>	43.6 (27.1 - 60.4) <sup>i</sup>	0.88
<b>SRS-2 T-score</b>		94.9 (±19.0) <sup>f</sup>	93.9 (±18.3) <sup>j</sup>	0.62
<b><u>Parents characteristics</u></b>				
<b>Age at birth</b> (years)				
	<i>Mother</i>	31.8 (±5.4)	31.2 (±5.4)	0.24
	<i>Father</i>	35.3 (±7.3)	34.2 (±6.4)	0.16
<b>Mother's education level</b>				
	<i>High school or lower</i>	66 (34.4%)	145 (41.4%)	0.11
	<i>University</i>	126 (65.5%)	205 (58.6%)	
<b>Father's education level</b>				
	<i>High school or lower</i>	91 (47.6%)	168 (49.1%)	0.74
	<i>University</i>	100 (52.4%)	174 (50.9%)	

Data are presented as the mean (±SD), median (IQR), or n (%).

<sup>a</sup> 1 missing value, <sup>b</sup> 31 missing values, <sup>c</sup> 69 missing values, <sup>d</sup> 59 missing values, <sup>e</sup> 58 missing values, <sup>f</sup> 95 missing values, <sup>g</sup> 321 missing values, <sup>h</sup> 323 missing values, <sup>i</sup> 320 missing values, <sup>j</sup> 410 missing values

ADOS-2 CSS, autism diagnostic observation schedule second version calibrate severity scale; VABS-II, Vineland second version; ABC, Aberrant Behavior Checklist; SRS-2, Social-Responsiveness Scale, second version.

**Supplementary Table S3.** Association between predominant and any breastfeeding in tertiles and ASD clinical severity at inclusion

	Predominant Breastfeeding				Any Breastfeeding			
	Low tertile (<2 months) (N = 60)	Middle tertile (2-4.5 months) (N = 76)	High tertile (≥4.5 months) (N = 41)	P value	Low tertile (<3 months) (N = 62)	Middle tertile (3-8 months) (N = 61)	High tertile (≥8 months) (N = 54)	P value
<b>Intellectual quotient</b>								
<i>IQ</i>	74.0 (±24.4)	82.2 (±30.7)	77.2 (±27.1)	0.23	77.5 (±24.4)	76.2 (±30.0)	81.4 (±29.6)	0.60
<b>VABS-II standard scores</b>								
<i>Communication</i>	73.8 (±14.0)	74.8 (±14.3)	71.5 (±18.4)	0.53	74.5 (±14.1)	71.8 (±14.9)	74.9 (±16.8)	0.47
<i>Daily living skills</i>	77.9 (±11.7)	76.9 (±13.0)	76.4 (±13.9)	0.82	76.9 (±11.8)	77.4 (±13.2)	77.1 (±13.5)	0.98
<i>Socialization</i>	73.0 (±10.4)	70.1 (±11.3)	71.4 (±12.1)	0.33	71.3 (±11.3)	71.23 (±11.4)	71.54 (±11.1)	0.99
<b>ADOS-2 CSS</b>								
	7.0 (±1.5)	6.6 (±2.3)	6.9 (±1.8)	0.75	6.8 (±1.9)	7.2 (±1.9)	6.4 (±2.0)	0.09
<b>ABC</b>								
<i>Irritability/ aggressiveness</i>	26.7 (11.1 - 40.0)	33.3 (20.0 - 51.1) <sup>a</sup>	37.8 (20.0 - 44.4)	0.14	26.7 (13.3 - 46.7)	31.1 (13.3 - 42.2) <sup>a</sup>	37.8 (20.0 - 48.9)	0.30
<i>Lethargy/ social withdrawal</i>	22.9 (12.5 - 35.4)	22.9 (10.4 - 41.7)	27.1 (12.5 - 35.4)	0.85	22.9 (12.5 - 43.8)	22.9 (10.4 - 38.5)	25.0 (12.5 - 31.3)	0.91
<i>Stereotyped behaviors/ self-harm</i>	19.1 (4.8 - 42.9)	28.6 (9.5 - 47.6)	23.8 (9.5 - 52.4)	0.28	28.6 (9.5 - 47.6)	26.2 (9.5 - 47.6)	23.8 (9.5 - 42.9)	0.99
<i>Hyperactivity/ lack of cooperation</i>	35.4 (20.8 - 62.5)	45.8 (20.8 - 68.8)	50.0 (37.5 - 64.6)	0.23	37.5 (22.9 - 64.6)	43.8 (22.9 - 65.6)	50.0 (31.3 - 66.7)	0.63
<b>SRS-2 T-score</b>								
	93.3 (±18.1)	93.8 (±17.9)	99.7 (±21.7)	0.38	93.3 (±18.6)	98.7 (±18.7)	91.9 (±19.1)	0.26

Data are presented as the mean (±SD) or median (IQR).

<sup>a</sup> 1 missing value

VABS-II, Vineland second version; ADOS-2 CSS, autism diagnostic observation schedule second version calibrate severity scale; ABC, Aberrant Behavior Checklist; SRS-2, Social-Responsiveness Scale, second version.