

Supplementary Table 1. Behavioral and cognitive characteristics according to the urinary bisphenol A concentration in boys

Tertile group of urine bisphenol A	Q1 (n = 101)	Q2 (n = 97)	Q3 (n = 98)	F	<i>p</i> value
K-ARS					
Total	10.9 ± 11.5	15.9 ± 12.1	18.6 ± 11.4	11.45	< 0.001**
Hyperactivity-Impulsivity	4.5 ± 5.3	7.2 ± 6.2	8.1 ± 5.8	10.47	< 0.001**
Inattention	6.3 ± 6.6	8.8 ± 6.5	10.5 ± 6.4	10.33	< 0.001**
BASC-2					
Hyperactivity	46.4 ± 9.3	50.7 ± 12.4	50.7 ± 11	5.21	0.006**
Aggression	46.2 ± 7.8	48.7 ± 10.3	48.5 ± 7.9	2.48	0.085
Conduct problems	46.2 ± 9.0	50.4 ± 10.5	49.0 ± 10.1	4.60	0.011*
Anxiety	41.5 ± 7.0	43.3 ± 7.9	44.4 ± 8.0	3.80	0.024*
Depression	47.1 ± 8.5	49.6 ± 9.7	50.2 ± 9.1	3.21	0.042*
Somatization	44.2 ± 9.1	43.8 ± 8.0	45.1 ± 8.3	0.64	0.528
Atypicality	47.9 ± 8.2	49.9 ± 11.0	51.1 ± 10.7	2.60	0.076
Withdrawal	48.4 ± 8.9	50.0 ± 10.2	50.4 ± 9.2	1.22	0.296
Attention problems	52.2 ± 10.6	55.3 ± 11.7	54.7 ± 10.3	2.30	0.103
Adaptability	49.2 ± 8.5	48.4 ± 10.2	48.9 ± 8.8	0.22	0.804
Social skills	43.5 ± 9.4	42.6 ± 10.1	43.5 ± 9.8	0.31	0.734
Leadership	44.7 ± 9.0	43.8 ± 9.4	44.8 ± 9.4	0.30	0.741
Activities of daily living	46.3 ± 10.1	44.1 ± 10.3	43.3 ± 11.1	2.17	0.116
Functional communication	50.1 ± 8.6	45.9 ± 11.2	45.5 ± 10.1	6.21	0.002**
Externalizing problems	45.8 ± 8.6	49.9 ± 11.5	49.4 ± 9.5	4.94	0.008**
Internalizing problems	42.8 ± 8.1	44.5 ± 8.6	45.8 ± 8.7	2.92	0.055
Behavioral symptom index	47.4 ± 9.0	50.9 ± 11.0	51.2 ± 9.8	4.43	0.013*
Adaptive skills	46.2 ± 8.4	44.0 ± 10.0	44.4 ± 9.6	1.47	0.231
ADS					
Visual omission error	55.7 ± 20.0	62.5 ± 25.3	66.1 ± 35.3	3.57	0.029*
Visual commission error	58.0 ± 21.4	60.9 ± 20.3	69.7 ± 27.8	6.52	0.002**
Visual response time	50.1 ± 12.6	49.5 ± 12.4	50.3 ± 15.4	0.08	0.924
Visual response time variability	57.9 ± 16.9	63.4 ± 23.8	67.7 ± 28.8	4.16	0.017*
Auditory omission error	50.4 ± 11.8	52.5 ± 15.2	53.8 ± 18.4	1.19	0.305
Auditory commission error	48.5 ± 12.3	50.3 ± 14.4	55.7 ± 21.9	4.83	0.009**
Auditory response time	56.3 ± 17.4	57.2 ± 16.6	54.5 ± 18.4	0.57	0.569
Auditory response time variability	53.4 ± 13.6	57.2 ± 15.1	57.9 ± 14.5	2.73	0.067

Values are presented as mean ± standard deviation.

K-ARS, Korean version of the Attention Deficit/Hyperactivity Disorder Rating Scale; BASC-2, Behavior Assessment System for Children, Second Edition; ADS, Attention Deficit/Hyperactivity Disorder Diagnostic System.

p* < 0.05; *p* < 0.01.

Supplementary Table 2. Behavioral and cognitive characteristics according to the urinary bisphenol A concentration in girls

Tertile group of urine bisphenol A	Q1 (n = 47)	Q2 (n = 50)	Q3 (n = 51)	F	<i>p</i> value
K-ARS					
Total	13.9 ± 13.2	13.8 ± 11.4	15.1 ± 11.8	0.18	0.837
Hyperactivity-Impulsivity	5.9 ± 5.9	6.1 ± 5.2	6.7 ± 6.0	0.25	0.776
Inattention	8.0 ± 7.6	7.8 ± 6.5	8.4 ± 6.2	0.13	0.880
BASC					
Hyperactivity	51.0 ± 11.4	50.4 ± 9.7	53.1 ± 10.9	0.84	0.432
Aggression	48.0 ± 8.5	49.5 ± 7.6	50.7 ± 8.9	1.28	0.280
Conduct problems	50.1 ± 11.3	47.8 ± 8.6	50.3 ± 9.6	0.97	0.382
Anxiety	42.6 ± 8.4	42.3 ± 8.0	44.1 ± 9.7	0.63	0.534
Depression	48.5 ± 9.6	49.8 ± 9.4	53.2 ± 10.9	2.91	0.058
Somatization	45.3 ± 9.6	43.5 ± 8.2	47.9 ± 11.8	2.43	0.092
Atypicality	50.6 ± 9.6	51.0 ± 11.1	52.3 ± 11.5	0.31	0.733
Withdrawal	49.0 ± 8.5	50.3 ± 10.3	50.9 ± 9.8	0.54	0.582
Attention problems	55.3 ± 11.5	54.3 ± 10.5	56.8 ± 9.6	0.71	0.495
Adaptability	46.3 ± 9.3	47.8 ± 9.1	45.5 ± 9.9	0.77	0.465
Social skills	43.4 ± 6.7	42.9 ± 8.5	41.0 ± 7.3	1.44	0.240
Leadership	43.6 ± 8.5	44.4 ± 8.6	42.8 ± 9.0	0.41	0.662
Activities of daily living	44.9 ± 11.6	45.7 ± 10.0	43.2 ± 11.8	0.63	0.533
Functional communication	46.7 ± 10.3	46.5 ± 11.4	43.1 ± 11.3	1.69	0.189
Externalizing problems	49.6 ± 10.4	49.2 ± 8.6	51.5 ± 9.6	0.83	0.440
Internalizing problems	44.3 ± 9.8	44.0 ± 8.4	48.1 ± 12.1	2.43	0.092
Behavioral symptom index	50.5 ± 9.9	51.1 ± 9.5	53.6 ± 9.9	1.35	0.263
Adaptive skills	44.2 ± 8.3	44.8 ± 8.9	42.1 ± 8.9	1.33	0.268
ADS					
Visual omission error	59.5 ± 22.4	53.1 ± 15.1	62.1 ± 24.8	2.37	0.097
Visual commission error	53.7 ± 21.3	50.9 ± 15.3	56.6 ± 23.2	1.01	0.366
Visual response time	52.3 ± 13.5	54.4 ± 10.5	53.7 ± 12.9	0.38	0.687
Visual response time variability	58.9 ± 21.6	56.6 ± 16.3	59.3 ± 20.9	0.27	0.763
Auditory omission error	53.7 ± 12.2	50.0 ± 14.4	51.9 ± 14.5	0.89	0.412
Auditory commission error	48.4 ± 8.5	45.9 ± 13.2	48.6 ± 17.6	0.63	0.535
Auditory response time	61.5 ± 14.3	60.0 ± 10.7	58.3 ± 14.4	0.73	0.485
Auditory response time variability	58.9 ± 14.1	57.3 ± 13.1	59.5 ± 13.2	0.37	0.692

Values are presented as mean ± standard deviation.

K-ARS, Korean version of the Attention Deficit/Hyperactivity Disorder Rating Scale; BASC-2, Behavior Assessment System for Children, Second Edition; ADS, Attention Deficit/Hyperactivity Disorder Diagnostic System.

Supplementary Table 3. Behavioral and cognitive characteristics according to the urinary bisphenol A concentration in control group

Tertile group of urine bisphenol A	Q1 (n = 93)	Q2 (n = 82)	Q3 (n = 74)	F	<i>p</i> value
K-ARS					
Total	5.4 ± 8.6	8.1 ± 8.7	9.9 ± 9.4	5.41	0.005**
Hyperactivity-Impulsivity	2.1 ± 3.9	3.5 ± 4.4	4.1 ± 4.6	4.62	0.011*
Inattention	3.3 ± 5.0	4.6 ± 4.7	5.8 ± 5.3	5.35	0.005**
BASC-2					
Hyperactivity	43.5 ± 7.6	45.7 ± 9.3	47.3 ± 10.2	3.63	0.028*
Aggression	43.7 ± 5.2	46.1 ± 8.4	47.2 ± 7.6	5.19	0.006**
Conduct problems	43.3 ± 5.8	45.6 ± 8.6	46.8 ± 9.3	4.23	0.016*
Anxiety	40.9 ± 6.9	42.9 ± 7.4	43.8 ± 8.7	3.18	0.043*
Depression	44.6 ± 6.8	47.0 ± 8.3	48.7 ± 9.2	5.27	0.006**
Somatization	42.4 ± 7.5	43.3 ± 7.6	45.3 ± 10.6	2.40	0.093
Atypicality	46.0 ± 6.5	47.5 ± 10	48.8 ± 9.6	2.22	0.111
Withdrawal	47.8 ± 8.1	50.4 ± 11.3	49.1 ± 9.3	1.52	0.221
Attention problems	48.7 ± 9.4	49.8 ± 9.7	51.1 ± 10.6	1.18	0.309
Adaptability	49.6 ± 8.9	50.1 ± 9.9	50.3 ± 9.1	0.13	0.874
Social skills	44.5 ± 8.3	45.1 ± 9.6	44.9 ± 9.1	0.09	0.911
Leadership	45.2 ± 8.7	45.8 ± 9.4	46.5 ± 9.0	0.41	0.664
Activities of daily living	50.0 ± 8.8	48.8 ± 9.5	47.5 ± 11.4	1.29	0.277
Functional communication	51.5 ± 8.6	48.7 ± 11.1	47.9 ± 10.0	3.01	0.051
Externalizing problems	42.8 ± 5.8	45.3 ± 9.0	46.8 ± 9.0	5.27	0.006**
Internalizing problems	40.9 ± 7.0	43.0 ± 7.9	45.0 ± 10.4	4.70	0.010*
Behavioral symptom index	44.5 ± 7.0	47.1 ± 9.6	48.3 ± 9.4	4.18	0.016*
Adaptive skills	47.9 ± 7.8	47.3 ± 9.8	47.1 ± 9.2	0.17	0.846
ADS					
Visual omission error	51.9 ± 15.1	53.0 ± 21.0	52.7 ± 18.0	0.08	0.923
Visual commission error	50.5 ± 14.9	51.9 ± 14.7	54.8 ± 23.6	1.19	0.306
Visual response time	50.8 ± 10.7	49.3 ± 10.8	51.3 ± 12.8	0.63	0.534
Visual response time variability	52.9 ± 13.9	52.6 ± 16.5	53.4 ± 18.5	0.05	0.953
Auditory omission error	48.9 ± 10.5	45.1 ± 8.9	46.2 ± 11.4	3.22	0.042*
Auditory commission error	45.9 ± 9.1	44.1 ± 11.5	46.7 ± 18.5	0.80	0.450
Auditory response time	57.6 ± 16.1	57.4 ± 12.7	56.4 ± 14.2	0.15	0.860
Auditory response time variability	51.2 ± 12.7	51.7 ± 10.4	54.6 ± 13.9	1.59	0.205

Values are presented as mean ± standard deviation.

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p* < 0.05; *p* < 0.01.

Supplementary Table 4. Behavioral and cognitive characteristics according to the urinary bisphenol A concentration in ADHD group

Tertile group of urine bisphenol A	Q1 (n = 55)	Q2 (n = 65)	Q3 (n = 75)	F	<i>p</i> value
K-ARS					
Total	22.7 ± 8.9	24.2 ± 8.8	24.9 ± 8.3	1.06	0.348
Hyperactivity-Impulsivity	9.7 ± 4.5	11.0 ± 4.8	11.1 ± 4.9	1.59	0.206
Inattention	12.9 ± 5.3	13.2 ± 5.1	13.7 ± 4.8	0.43	0.652
BASC-2					
Hyperactivity	55.0 ± 10.0	56.8 ± 11.2	55.8 ± 10.1	0.44	0.646
Aggression	51.9 ± 9.2	52.7 ± 9.5	51.4 ± 8.4	0.35	0.704
Conduct problems	54.2 ± 11.7	54.4 ± 9.4	52.1 ± 9.9	1.00	0.370
Anxiety	43.4 ± 8.2	43.1 ± 8.6	44.9 ± 8.4	0.90	0.409
Depression	52.3 ± 9.8	53.1 ± 10.0	53.8 ± 9.9	0.33	0.718
Somatization	48.0 ± 10.8	44.2 ± 8.6	46.8 ± 8.6	2.76	0.066
Atypicality	53.4 ± 9.9	53.6 ± 11.3	54.2 ± 11.6	0.10	0.905
Withdrawal	49.9 ± 9.6	49.8 ± 8.6	52.2 ± 9.2	1.46	0.234
Attention problems	60.7 ± 9.2	61.5 ± 9.5	59.9 ± 7.2	0.55	0.578
Adaptability	46.2 ± 8.4	45.8 ± 9.3	45.1 ± 8.8	0.26	0.772
Social skills	41.7 ± 8.9	39.7 ± 8.7	40.4 ± 8.5	0.85	0.427
Leadership	42.9 ± 8.8	41.8 ± 8.3	41.6 ± 9.0	0.34	0.715
Activities of daily living	39.0 ± 9.7	39.4 ± 8.4	39.0 ± 9.6	0.05	0.954
Functional communication	44.8 ± 8.9	42.8 ± 10.7	41.4 ± 10.1	1.86	0.158
Externalizing problems	54.1 ± 9.8	55.1 ± 9.9	53.5 ± 9.0	0.50	0.604
Internalizing problems	47.3 ± 9.7	46.1 ± 8.9	48.2 ± 9.4	0.89	0.412
Behavioral symptom index	54.9 ± 9.2	55.8 ± 9.5	55.9 ± 8.9	0.21	0.809
Adaptive skills	41.7 ± 8.0	40.5 ± 8.0	40.1 ± 8.2	0.65	0.521
ADS					
Visual omission error	65.2 ± 25.8	67.2 ± 22.6	76.6 ± 38.1	2.72	0.069
Visual commission error	66.7 ± 26.3	64.5 ± 22.1	75.4 ± 26.2	3.66	0.027*
Visual response time	50.9 ± 15.9	53.6 ± 13.0	51.6 ± 16.3	0.51	0.600
Visual response time variability	67.0 ± 21.6	71.8 ± 22.9	75.9 ± 28.6	2.01	0.137
Auditory omission error	55.7 ± 13.1	60.0 ± 16.8	59.7 ± 19.1	1.21	0.301
Auditory commission error	52.7 ± 12.8	54.8 ± 14.9	59.5 ± 20.8	2.77	0.065
Auditory response time	58.6 ± 17.5	59.0 ± 17.3	55.3 ± 19.7	0.87	0.421
Auditory response time variability	61.7 ± 13.7	64.1 ± 15.8	62.2 ± 13.3	0.48	0.619

Values are presented as mean ± standard deviation.

ADHD, attention deficit hyperactivity disorder; K-ARS, Korean version of the Attention Deficit/Hyperactivity Disorder Rating Scale; BASC-2, Behavior Assessment System for Children, Second Edition; ADS, Attention Deficit/Hyperactivity Disorder Diagnostic System.

**p* < 0.05.