

**Urinary bisphenol A and obesity in U.S. children**

**Web Tables**

Web Table 1. Association between urinary BPA levels and obesity in children, adding higher order polynomial term, National Health and Nutrition Examination Survey, 2003–2008

BPA Quartiles <sup>a</sup>	Sample size	Weighted %	Multivariable adjusted OR <sup>b</sup>	
			OR	95% CI
Quartile 1	547	10.0	1	Referent
Quartile 2	544	20.9	2.37	1.57, 3.57
Quartile 3	556	16.8	1.80	1.14, 2.84
Quartile 4	553	22.9	2.58	1.66, 4.00
P for trend			0.0019	
Log BPA	2200	17.7	1.25	1.10, 1.43

Abbreviations: BPA, Urinary bisphenol A; CI, confidence interval; OR, odds ratio

<sup>a</sup> BPA quartiles: quartile 1 (<1.5 ng/mL), quartile 2 (1.5-2.7 ng/mL), quartile 3 (2.8-5.4 ng/mL), quartile 4 (>5.4 ng/mL)

<sup>b</sup> Adjusted for age (years), sex (boys, girls), race/ethnicity (non-Hispanic white, non-Hispanic black, Mexican American, other), education (below high school, high school, above high school), moderate activity (absent, present), urinary creatinine (mg/dL), and serum cotinine (ng/mL).

Web Table 2. Association between urinary BPA levels and obesity in children, by pre- and post-puberty, National Health and Nutrition Examination Survey, 2003–2008

BPA Quartiles <sup>a</sup>	Pre-puberty (6-11 years)				Post-puberty (12-18 years)			
	Sample size	Weighted %	Multivariable adjusted OR		Sample size	Weighted %	Multivariable adjusted OR <sup>b</sup>	
			OR	95% CI			OR	95% CI
Quartile 1	219	10.4	1	Referent	328	9.7	1	Referent
Quartile 2	200	20.0	2.13	1.28, 3.54	344	21.6	2.44	1.25, 4.75
Quartile 3	212	18.1	1.69	0.91, 3.14	344	15.8	1.69	0.79, 3.59
Quartile 4	208	24.8	2.30	1.26, 4.18	345	21.4	2.47	1.34, 4.55
P for trend			0.0455				0.0378	
Log BPA	839	18.3	1.25	1.04, 1.49	1361	17.3	1.20	1.00, 1.43

Abbreviations: BPA, Urinary bisphenol A; CI, confidence interval; OR, odds ratio

<sup>a</sup> BPA quartiles: quartile 1 (<1.5 ng/mL), quartile 2 (1.5-2.7 ng/mL), quartile 3 (2.8-5.4 ng/mL), quartile 4 (>5.4 ng/mL)

<sup>b</sup> Adjusted for race/ethnicity (non-Hispanic white, non-Hispanic black, Mexican American, other), education (below high school, high school, above high school), moderate activity (absent, present), urinary creatinine (mg/dL), and serum cotinine (ng/mL);

p-interaction = 0.4058

Web Table 3. Demographic characteristics of the all NHANES children and NHANES children included in this study, National Health and Nutrition Examination Survey, 2003–2008

Characteristics	NHANES children in the study (n=2200 <sup>a</sup> )		All NHANES children (n==6559 <sup>a</sup> )	
	%	Mean (SE)	%	Mean (SE)
Age, years		12.3 ± 0.1		12.3 ± 0.1
Women	48.5		47.9	
Race/ethnicity				
Non-Hispanic white	62.4		61.2	
Non-Hispanic black	14.4		14.7	
Mexican American	12.5		12.7	
Other	10.7		11.4	
Parent/guardian education				
Below high school	20.1		19.6	
High school	24.5		25.7	
Above high school	55.4		54.6	
BMI, kg/m <sup>2</sup>		21.3 ± 0.2		21.3 ± 0.2
Annual household income				
Under \$25,000	23.2		23.6	
\$25,000 to \$54,999	29.0		28.3	
\$55,000 and over	47.8		48.1	

Abbreviations: BMI, Body mass index; SE, Standard error

<sup>a</sup> Un-weighted sample size

Web Table 4. Association between urinary BPA levels and obesity in children, by gender-specific BPA quartiles, National Health and Nutrition Examination Survey, 2003–2008

BPA Quartiles <sup>a</sup>	Girls				Boys			
	Sample size	Weighted %	Multivariable adjusted OR		Sample size	Weighted %	Multivariable adjusted OR <sup>b</sup>	
			OR	95% CI			OR	95% CI
Quartile 1	265	11.0	1	Referent	282	9.2	1	Referent
Quartile 2	279	19.5	1.76	1.00, 3.10	265	22.4	2.98	1.70, 5.23
Quartile 3	270	14.7	1.18	0.59, 2.37	289	19.0	2.40	1.48, 3.87
Quartile 4	270	18.8	1.59	0.94, 2.69	280	26.4	3.61	2.09, 6.24
P for trend			0.3689				0.0004	
Log BPA	1084	16.1	1.03	0.85, 1.23	1116	19.2	1.42	1.19, 1.70

Abbreviations: BPA, Urinary bisphenol A; CI, confidence interval; OR, odds ratio

<sup>a</sup> BPA quartiles:

Girls: quartile 1 (<1.5 ng/mL), quartile 2 (1.5-2.7 ng/mL), quartile 3 (2.8-5.3 ng/mL), quartile 4 (>5.3 ng/mL)

Boys: quartile 1 (<1.5 ng/mL), quartile 2 (1.5-2.7 ng/mL), quartile 3 (2.8-5.5 ng/mL), quartile 4 (>5.5 ng/mL)

<sup>b</sup> Adjusted for age (years), race/ethnicity (non-Hispanic white, non-Hispanic black, Mexican American, other), education (below high school, high school, above high school), moderate activity (absent, present), urinary creatinine (mg/dL), and serum cotinine (ng/mL).

Web Table 5. Association between urinary BPA levels and obesity in children, by race/ethnicity-specific BPA quartiles, National Health and Nutrition Examination Survey, 2003–2008

BPA Quartiles <sup>a</sup>	Non-white				White			
	Sample size	Weighted %	Multivariable adjusted OR		Sample size	Weighted %	Multivariable adjusted OR <sup>b</sup>	
			OR	95% CI			OR	95% CI
Quartile 1	399	18.1	1	Referent	160	5.1	1	Referent
Quartile 2	398	22.3	1.14	0.75, 1.73	153	20.8	5.10	2.02, 12.91
Quartile 3	391	24.8	1.26	0.87, 1.82	157	13.7	3.06	1.15, 8.17
Quartile 4	388	24.9	1.21	0.79, 1.86	154	20.3	4.93	1.97, 12.35
P for trend			0.3555				0.0036	
Log BPA	1576	22.4	1.05	0.91, 1.22	624	14.8	1.46	1.17, 1.84

Abbreviations: BPA, Urinary bisphenol A; CI, confidence interval; OR, odds ratio

<sup>a</sup> BPA quartiles:

Non-white: quartile 1 (<1.5 ng/mL), quartile 2 (1.5-2.7 ng/mL), quartile 3 (2.8-5.4 ng/mL), quartile 4 (>5.4 ng/mL)

White: quartile 1 (<1.6 ng/mL), quartile 2 (1.6-2.9 ng/mL), quartile 3 (3.0-5.7 ng/mL), quartile 4 (>5.7 ng/mL)

<sup>b</sup> Adjusted for age (years), sex (boys, girls), education (below high school, high school, above high school), moderate activity (absent, present), urinary creatinine (mg/dL), and serum cotinine (ng/mL).

Web Table 6. Association between urinary BPA levels and obesity in children: Prevalence Proportion Ratios, National Health and Nutrition Examination Survey, 2003–2008

BPA Quartiles <sup>a</sup>	Sample size	Weighted %	Age, sex adjusted hazard ratio		Multivariable adjusted hazard ratio <sup>b</sup>	
			Hazard ratio	95% CI	Hazard ratio	95% CI
Quartile 1	547	10.0	1	Referent	1	Referent
Quartile 2	544	20.9	2.10	1.47, 3.02	2.05	1.44, 2.92
Quartile 3	556	16.8	1.69	1.16, 2.45	1.64	1.11, 2.43
Quartile 4	553	22.9	2.28	1.63, 3.19	2.18	1.51, 3.16
P for trend			0.0003		0.0035	
Log BPA	2200	17.7	1.23	1.12, 1.35	1.20	1.07, 1.33

Abbreviations: BPA, Urinary bisphenol A; CI, confidence interval

<sup>a</sup> BPA quartiles: quartile 1 (<1.5 ng/mL), quartile 2 (1.5-2.7 ng/mL), quartile 3 (2.8-5.4 ng/mL), quartile 4 (>5.4 ng/mL)

<sup>b</sup> Adjusted for age (years), sex (boys, girls), race-ethnicity (non-Hispanic white, non-Hispanic black, Mexican American, other), education (below high school, high school, above high school), moderate activity (absent, present), urinary creatinine (mg/dL), and serum cotinine (ng/mL).

Web Table 7. Descriptive statistics for age, urinary BPA, and BMI by groups, National Health and Nutrition Examination Survey, 2003–2008

	Girls		Boys	
	Non-white Mean (SE)	White Mean (SE)	Non-white Mean (SE)	White Mean (SE)
No.	779	305	797	319
Age, years	12.0 (0.2)	12.7 (0.2)	12.1 (0.2)	12.4 (0.2)
BPA, ng/mL	4.6 (0.3)	4.5 (0.3)	5.1 (0.4)	5.0 (0.5)
BMI, kg/m <sup>2</sup>	22.0 (0.3)	21.1 (0.3)	21.2 (0.3)	21.1 (0.2)
Z-score for BMI index-for-age	0.6 (0.05)	0.4 (0.06)	0.5 (0.06)	0.5 (0.07)

Abbreviations: BPA, Urinary bisphenol A; BMI, Body mass index; SE, Standard error