

Appendix
Blood Lead Levels and Dental Caries in U.S. Children Who Do Not Drink Tap Water
Sanders and Slade

Appendix Table 1. Age-Stratified Associations of Tap Water Consumption With Blood Lead Levels and Dental Caries Experience^a

Characteristics	Blood lead level ≥3 µg/dL	<i>p</i> - value	≥1 Teeth with dental caries	<i>p</i> -value
2–5 years				
Drinks tap water	194 (6.9)	0.012	260 (20.5)	0.003
Does not drink tap water	53 (4.0)		118 (31.8)	
All	247 (6.3)		378 (22.5)	
6–11 years				
Drinks tap water	140 (2.8)	0.647	914 (53.1)	0.069
Does not drink tap water	23 (2.4)		265 (63.1)	
All	163 (2.8)		1,179 (54.7)	
12–19 years				
Drinks tap water	79 (1.5)	0.803	1,045 (59.2)	0.188
Does not drink tap water	18 (1.3)		172 (65.9)	
All	97 (1.5)		1,217 (59.8)	

Notes: Data are presented as unweighted n (weighted %).

^aBlood lead levels are from NHANES 2005–2010 and dental caries data are from NHANES 2011–2014.

NHANES, National Health and Nutrition Examination Survey

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Appendix Table 2. Average Consumption of Bottled Water Among Children who Do and Do Not Drink Tap Water

Characteristics	Drinks tap water (n=33,009)			Does not drink tap water (n=9,577)		
	Mean	95% CL	p-value	Mean	95% CL	p-value
Total bottled water intake (ml)	4.24	3.98, 4.51		12.04	11.35, 12.72	
Sex						
Male	3.91	3.61, 4.21	<0.001	11.43	10.61, 12.25	0.025
Female	4.58	4.27, 4.90		12.53	11.68, 13.38	
Age group, years						
2–5	4.98	4.27, 5.68		17.98	15.74, 20.23	<0.001
6–12	4.10	3.58, 4.62		11.25	9.86, 12.64	
13–19	5.21	4.55, 5.86		10.56	8.94, 12.18	
Race/ethnicity						
Mexican American	6.64	5.98, 7.31	<0.001	12.57	11.59, 13.55	0.002
Other Hispanic	5.85	4.99, 6.71		14.77	12.85, 16.69	
Non-Hispanic white	3.72	3.46, 3.99		11.21	10.09, 12.33	
Non-Hispanic black	4.89	4.50, 5.27		11.14	10.38, 11.90	
Other/Multiple	4.95	4.27, 5.64		13.93	12.35, 15.52	
Family income-to-poverty ratio						
<1 (below poverty threshold)	4.36	3.94, 4.78	0.087	11.19	10.34, 12.03	0.089
1 to <2.5 (near poverty)	3.96	3.62, 4.29		12.00	10.99, 13.01	
2.5 to <5 (not poor)	4.11	3.70, 4.53		12.79	11.23, 14.35	
5 (500% above threshold)	4.50	4.02, 4.99		12.74	10.76, 14.72	
Income not reported	4.92	4.12, 5.73		11.30	9.43, 13.16	
NHANES cycle						
2005–2006	3.98	3.59, 4.38	0.458	11.77	9.95, 13.60	0.085
2007–2008	4.31	3.64, 4.98		10.61	9.10, 12.11	
2009–2010	4.24	3.67, 4.81		11.59	10.60, 12.59	
2011–2012	3.98	3.32, 4.64		14.00	12.09, 15.92	
2013–2014	4.68	4.02, 5.34		12.33	11.37, 13.29	

Notes: Mean total bottled water drank the previous day (ml) per kilogram body weight, stratified according to whether or not participants drink tap water, 2005–2014 National Health and Nutrition Examination Survey (NHANES) (n=42,586). Differences tested for statistical significance using Pearson Chi-square test.

CL, confidence limit

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Appendix Table 3. Prevalence Ratios^{a,b} of Elevated Blood Lead Level (≥ 5 $\mu\text{g/dL}$)

Characteristics	Prevalence ratio (95% CL)
Tap water consumption	
Drinks tap water	ref
Does not drink tap water	0.57 (0.34, 0.93)
NHANES cycle	
2005–2006	1.00
2007–2008	0.87 (0.34, 2.20)
2009–2010	0.40 (0.19, 0.86)
2011–2012	0.49 (0.18, 1.33)
2013–2014	0.40 (0.11, 1.41)
Age in years	0.87 (0.81, 0.95)
Sex	
Male	ref
Female	0.57 (0.39, 0.83)
Race/ethnicity	
Mexican American	0.60 (0.27, 1.36)
Other Hispanic	0.71 (0.24, 2.13)
Non-Hispanic white	1.00
Non-Hispanic black	1.50 (0.78, 2.87)
Other/Multiple	0.21 (0.07, 0.64)
Family income to poverty ratio	
<1 (below poverty threshold)	55.14 (8.89, 342.14)
1 to <2.5 (near poverty)	24.56 (4.09, 147.36)
2.5 to <5	21.60 (3.25, 143.44)
5 (500% above threshold)	ref
Income not reported	39.87 (5.80, 274.23)
Intercept	0.00 (0.00, 0.01)

^aValues are from a multivariable generalized linear model.

^bU.S. population aged 2–19 years, 2005–2014 National Health and Nutrition Examination Survey (NHANES) (n=12,373)

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Appendix Table 4. Adjusted Prevalence Ratios^{a,b} of Elevated Blood Lead Level (≥ 3 $\mu\text{g/dL}$)
Adjusted for House Age

Characteristics	Prevalence ratio (95% CL)
Tap water consumption	
Drinks tap water	ref
Does not drink tap water	0.50 (0.28, 0.89)
Year home was built	
In 1978 or more recently	ref
Before 1978	2.30 (1.23, 4.29)
Age in years	0.86 (0.82, 0.91)
Sex	
Male	ref
Female	0.55 (0.34, 0.90)
Race/ethnicity	
Mexican American	0.93 (0.50, 1.72)
Other Hispanic	1.52 (0.65, 3.59)
Non-Hispanic white	ref
Non-Hispanic black	2.03 (1.10, 3.76)
Other/Multiple	0.61 (0.29, 1.27)
Family income to poverty ratio	
<1 (below poverty threshold)	2.30 (0.97, 5.45)
1 to <2.5 (near poverty)	1.45 (0.58, 3.63)
2.5 to <5	1.14 (0.44, 2.97)
5 (500% above threshold)	ref
Income not reported	0.60 (0.17, 2.09)
Intercept	0.06 (0.02, 0.15)

^aValues are from a multivariable generalized linear model.

^bU.S. population aged 2–19 years, 2005–2014 National Health and Nutrition Examination Survey (NHANES) (n=12,373).

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Appendix Table 5. Adjusted Prevalence Ratios^{a,b} of Dental Caries Experience Adjusted for 24-hour Sugar-Sweetened Beverage Consumption

Characteristics	Prevalence ratio (95% CL)
Tap water consumption	
Drinks tap water	ref
Does not drink tap water	1.12 (1.02, 1.22)
Age in years	1.05 (1.05, 1.06)
Sex	
Male	ref
Female	0.97 (0.89, 1.06)
Race/ethnicity	
Mexican American	1.17 (1.03, 1.32)
Other Hispanic	0.94 (0.82, 1.07)
Non-Hispanic white	ref
Non-Hispanic black	0.99 (0.90, 1.09)
Other/Multiple	1.00 (0.87, 1.16)
Family income to poverty ratio	
<1 (below poverty threshold)	1.48 (1.10, 1.97)
1 to <2.5 (near poverty)	1.36 (1.06, 1.74)
2.5 to <5	1.15 (0.87, 1.53)
5 (500% above threshold)	ref
Income not reported	1.34 (0.97, 1.85)
Sugar-sweetened beverage consumption (per 1,000 kcal)	1.42 (1.19, 1.69)
Intercept	0.20 (0.16, 0.26)

^aValues are from a multivariable generalized linear model.

^bU.S. population aged 2–19 years, 2011–2014 National Health and Nutrition Examination Survey (n= 5,585).

CL, confidence limit