

Characteristics	All (n = 10744)	Urine Cobalt 0.02-0.22 (n = 2669)	Urine Cobalt 0.22-0.36 (n = 2691)	Urine Cobalt 0.36-0.58 (n = 2693)	Urine Cobalt 0.58-37.40 (n =2691)	P value
Age (years) (mean ± SD)	47.45 ± 16.67	48.21 ± 16.19	49.14 ± 16.60	47.05 ± 16.52	45.47 ± 17.11	<0.0001
20-34 (%)	26.98	24.75	23.19	27.38	32.42	
35-49 (%)	27.99	27.36	26.26	28.54	29.74	
50-64 (%)	27.3	30.3	31.01	26.83	21.23	
≥65 (%)	17.73	17.59	19.54	17.25	16.61	
Poverty Income Ratio (mean ± SD)	2.98 ± 1.65	3.16 ± 1.65	3.01 ± 1.65	2.99 ± 1.64	2.77 ± 1.63	<0.0001
≤1.3 (%)	19.97	17.9	19.54	19.46	22.95	
>1.3 and ≤3.5 (%)	33.15	31.08	33.33	33.72	34.44	
>3.5 (%)	38.86	44.11	39.96	38.12	33.35	
Missing (%)	8.02	6.91	7.17	8.7	9.26	
Body Mass Index (kg/m²) (mean ± SD)	29.02 ± 6.78	28.07 ± 6.27	28.97 ± 6.74	29.48 ± 6.94	29.55 ± 7.02	<0.0001
<25 (%)	29.73	35.34	31.13	25.44	27.06	
25-30 (%)	32.74	34.52	30.84	34.73	30.84	
≥30 (%)	37.52	30.14	38.03	39.83	42.09	
Urine Cobalt (ug/L) (mean ± SD)	0.54 ± 1.28	0.14 ± 0.05	0.29 ± 0.04	0.46 ± 0.06	1.28 ± 2.38	<0.0001
Kidney stone (%)						0.0002
No	90.19	92.06	89.37	90.63	88.71	
Yes	9.81	7.94	10.63	9.37	11.29	
Gender (%)						<0.0001
Male	49.19	47.65	52.71	55.46	41.15	
Female	50.81	52.35	47.29	44.54	58.85	
Race (%)						0.0003
Mexican American	8.73	7.36	8.99	9.52	9.05	
Other Hispanic	5.99	5.76	5.84	6.02	6.33	
Non-Hispanic white	65.98	68.98	66.01	65.03	63.9	
Non-Hispanic black	11.28	9.2	12.05	11.92	11.97	
Other races	8.03	8.7	7.1	7.51	8.76	
Education (%)						0.0024
Less than 9th grade	5.76	5.93	5.74	5.88	5.5	
9-11th grade	10.26	9.49	10.18	10.98	10.37	
High school graduate	23.38	21.07	24.2	23.62	24.64	
Some college	31.15	31.42	29.6	30.88	32.65	
College graduate or above	29.45	32.1	30.29	28.63	26.84	
Marital Status (%)						0.0004
Married	54.76	54.87	57.27	56.15	50.88	

Widowed	5.54	5.86	5.93	4.93	5.45
Divorced	10.43	9.93	10.7	9.91	11.19
Separated	2.36	2.28	2.05	2.25	2.83
Never married	18.33	18.75	16.88	17.85	19.78
Living with a partner	8.58	8.3	7.16	8.93	9.87
Smoking (%)					0.3228
<100 cigarettes in life	55.35	56.15	54.49	54.41	56.31
≥100 cigarettes in life	44.65	43.85	45.51	45.59	43.69
Alcohol (%)					<0.0001
<12 drinks/year	16.87	18	15.24	15.82	18.37
≥12 drinks/year	59.05	61.78	63.08	59.03	52.5
Missing	24.08	20.22	21.69	25.15	29.13
High Blood Pressure (%)					0.0001
No	68.23	68.69	64.71	69.57	69.84
Yes	31.77	31.31	35.29	30.43	30.16
Diabetes (%)					<0.0001
No	87.97	89.12	85.88	88.02	88.79
Yes	9.65	9.06	11.97	9.52	8.14
Missing	2.38	1.82	2.15	2.46	3.07
Congestive Heart Failure (%)					0.0117
No	97.96	98.57	97.72	98.16	97.37
Yes	2.04	1.43	2.28	1.84	2.63
Cancer (%)					0.0022
No	89.9	91.53	88.59	90.23	89.19
Yes	10.1	8.47	11.41	9.77	10.81
Gout (%)					0.0333
No	95.85	95.41	95.16	96.53	96.26
Yes	4.15	4.59	4.84	3.47	3.74
Vigorous activity (%)					0.3916
No	74.1	72.96	74.54	74	74.89
Yes	25.9	27.04	25.46	26	25.11
Moderate activity (%)					<0.0001
No	54.64	50.65	55.87	55.74	56.31
Yes	45.36	49.35	44.13	44.26	43.69

For continuous variables, the t-test for slope was used in generalized linear models.

Values are expressed as means+SE or %. SE=standard error; BMI = body mass index; PIR = Poverty Income Ratio; HBP = High Blood Pressure; CHF = Congestive Heart Failure.

Table 1: Characteristics of participants by categories of urine cobalt content: NHANES 2007–2018

