Supplemental Materials

Supplemental Table 1. Relationship between potential confounders and As exposure variables

Variables	n	TWA (µg/L)		Total urinary As (µg/L)		Total urinary creatinine-adjusted As (µg/g of creatinine)	
		Median	p-value [a]	Median	p-value [a]	Median	p-value [a]
Gender							
Women	6463	63.0	0.52	83.5	0.07	214.8	<0.01
Men	4856	62.0		92.0		182.2	
Age							
20-39	6817	63.0	0.72	86.0	0.01	202.9	<0.01
40-49	2933	64.5		86.0		197.3	
40+	1569	60.0		93.0		183.7	
BMI in kg/m^2							
< 18.0	3491	66.0	<0.01	91.0	<0.01	222.7	<0.01
18.1-20.0	3038	65.0		90.0		208.8	
20.1-22.0	1893	65.0		83.0		194.3	
22.1+	2238	54.0		82.0		159.2	
Education attainment in years							
0	5088	62.0	0.28	93.0	<0.01	219.2	<0.01
1-5	3344	63.0		89.0		202.1	
6-9	1662	65.0		77.0		180.1	
10-16	1219	61.6		72.0		147.7	
TV ownership							
No	7447	65.8	<0.01	91.0	<0.01	215.5	<0.01
Yes	3870	59.0		80.0		170.7	
Land Ownership							
No	5718	64.5	0.09	89.0	0.07	205.9	<0.01
Yes	5585	62.0		86.0		192.9	
Cigarette smoking status							
Never	7306	64.0	<0.01	86.0	0.05	205.1	0.44
Past	745	67.0		93.0		191.6	

Current	3263	60.0		89.0		188.5	
Ever users of betel nut							
No	6961	63.2	0.13	88.0	0.15	201.0	0.91
Yes	4331	62.0		86.0		195.8	

Abbreviations: TWA, time-weighted As concentration in well water

[a] P-value from linear regression using As exposure variables as independent variables with adjustments for age, gender, and BMI (except for these three variables which were adjusted for the other two variables)

Supplemental Table 2. Association between As exposure and prevalence of diabetes by sex, age groups, and within participants with 4+ years of known As exposure

Arsenic exposure variables	OR (95% CI) for diabetes					p for trend [a]
	Q1	Q2	Q3	Q4	Q5	
Among those with > 4 years of known well water As concentration						
TWA (µg/L)	0.1-8.0	8.1-41.0	41.2-91.7	91.8-176.1	176.2-864.0	
Model 1 [b]	1.00	1.03 (0.64-1.66)	1.20 (0.76-1.90)	0.69 (0.40-1.19)	0.92 (0.56-1.50)	0.44
Model 2 [c]	1.00	1.09 (0.67-1.75)	1.21 (0.76-1.93)	0.70 (0.40-1.21)	0.94 (0.58-1.55)	0.44
Urinary arsenic (µg/L)	1-36	37-66	67-114	115-204	205+	
Model 1 [b]	1.00	1.33 (0.83-2.13)	0.97 (0.59-1.59)	0.85 (0.50-1.43)	0.94 (0.56-1.58)	0.28
Model 2 [c]	1.00	1.33 (0.83-2.13)	1.03 (0.62-1.70)	0.88 (0.52-1.49)	1.03 (0.61-1.74)	0.45
Model 3 [d]	1.00	1.42 (0.90-2.49)	1.29 (0.76-2.19)	1.19 (0.67-2.10)	1.30 (0.82-2.77)	0.77
Among Men						
TWA (µg/L)						
Model 2 [c]	1.00	1.11 (0.63-1.95)	1.23 (0.70-2.15)	1.05 (0.59-1.87)	1.50 (0.88-2.55)	0.12
Urinary arsenic (µg/L)						
Model 2 [c]	1.00	1.23 (0.68-2.24)	1.33 (0.74-2.38)	0.81 (0.43-1.53)	1.08 (0.57-2.04)	0.28
Model 3 [d]	1.00	1.46 (0.79-2.69)	1.76 (0.90-3.28)	1.16 (0.57-2.34)	1.75 (0.84-3.69)	0.89
Among Women						
TWA (µg/L)						
Model 2 [c]	1.00	1.02 (0.54-1.91)	0.98 (0.51-1.83)	0.98 (0.51-1.87)	0.88 (0.45-1.70)	0.83
Urinary arsenic (µg/L)						
Model 2 [c]	1.00	1.34 (0.79-2.28)	0.77 (0.41-1.44)	1.09 (0.61-1.95)	0.80 (0.42-1.50)	0.31
Model 3 [d]	1.00	1.51 (0.88-2.61)	0.93 (0.49-1.77)	1.41 (0.75-2.65)	1.13 (0.54-2.34)	0.89
Among participants with age 35 +						
TWA (µg/L)						
Model 2 [c]	1.00	1.44 (0.90-2.29)	1.54 (0.90-2.45)	1.02 (0.61-1.70)	1.29 (0.81-2.08)	0.73
Urinary arsenic (µg/L)						
Model 2 [c]	1.00	1.36 (0.87-2.13)	1.10 (0.68-1.76)	0.99 (0.61-1.60)	1.02 (0.62-1.68)	0.30
Model 3 [d]	1.00	1.60 (0.92-2.54)	1.46 (0.89-2.40)	1.45 (0.83-2.46)	1.71 (0.95-3.04)	0.68
Among participants with age < 35						
TWA (µg/L)						
Model 2 [c]	1.00	1.09 (0.48-2.45)	0.53 (0.20-1.42)	0.79 (0.33-1.90)	0.57 (0.21-1.53)	0.40
Urinary arsenic (µg/L)						
Model 2 [c]	1.00	1.14 (0.48-2.74)	0.93 (0.37-2.32)	0.80 (0.29-2.12)	0.66 (0.24-1.85)	0.22

Model 3 [d]	1.00	1.15 (0.47-2.80)	0.93 (0.35-2.44)	0.79 (0.27-2.30)	0.66 (0.20-2.12)	0.24
With additional adjustment for fish and rice intake [e]						
TWA (μg/L)						
Model 2 [c]	1.00	1.34 (0.88-2.02)	1.29 (0.85-1.96)	1.00 (0.64-1.57)	1.15 (0.75-1.75)	0.89
Urinary arsenic (μg/L)						
Model 2 [c]	1.00	1.39 (0.93-2.09)	1.13 (0.74-1.72)	0.94 (0.61-1.46)	0.98 (0.62-1.55)	0.14
Model 3 [d]	1.00	1.40 (0.90-2.23)	1.24 (0.80-1.92)	1.19 (0.75-1.89)	1.26 (0.76-2.10)	0.95

Abbreviations: TWA, time-weighted As concentration in well water

[a] P-value from linear regression using As exposure variables as continuous variables

[b] Model 1: Means were adjusted for age, gender, BMI, smoking status, and educational attainment.

[c] Model 2: Means were adjusted for age, gender, BMI, smoking status, educational attainment, and urinary creatinine.

[d] Model 3: Means were adjusted for age, gender, BMI, smoking status, educational attainment, urinary creatinine, and total urinary As concentration

[e] With additional adjustment for dietary intake of rice and fish

Supplemental Table 3. Association between Arsenic Exposure and HbA1c in Blood

Arsenic exposure variables	Adjusted means (SE) [a] of HbA1c					p for trend [a]
	Q1	Q2	Q3	Q4	Q5	
TWA (µg/L)	0.1-8.0	8.1-41.0	41.2-91.7	91.8-176.1	176.2-864.0	
n (cases/non-cases)	417	421	412	418	417	
Model 1 [b]	5.03 (0.04)	4.89 (0.04)	4.94 (0.04)	4.96 (0.04)	4.96 (0.04)	0.44
Urinary arsenic (µg/L)						
n (cases/non-cases)	427	405	410	415	412	
Model 1 [b]	5.04 (0.04)	4.94 (0.04)	4.88 (0.04)	4.91 (0.04)	4.97 (0.04)	0.93
Model 2 [c]	5.03 (0.04)	4.94 (0.04)	4.88 (0.04)	4.91 (0.04)	4.97 (0.04)	
%InAs						
n	74	74	73	74	74	
Model 3 [d]	4.95 (0.10)	5.00 (0.10)	4.94 (0.10)	4.95 (0.10)	5.13 (0.10)	0.17
%MMA						
n	74	74	73	74	74	
Model 3 [d]	4.99 (0.10)	4.98 (0.10)	4.94 (0.10)	4.94 (0.10)	5.11 (0.10)	0.28
% DMA						
n	74	74	74	73	74	
Model 3 [d]	5.12 (0.10)	5.00 (0.10)	4.87 (0.10)	5.00 (0.10)	4.98 (0.10)	0.10
PMI (MMA/InAs)						
n	74	73	74	74	74	
Model 3 [d]	4.98 (0.10)	4.89 (0.10)	5.14 (0.10)	5.00 (0.10)	4.94 (0.10)	0.83
SMI (DMA/MMA)						
n	74	74	74	73	74	
Model 3 [d]	5.10 (0.10)	4.94 (0.10)	4.97 (0.10)	4.97 (0.10)	5.00 (0.10)	0.79

Abbreviation: SE, standard error of the adjusted mean; MMA, monomethylarsonic acid ; DMA, dimethylarsinic acid; PMI, primary methylation index; SMI, secondary methylation index; TWA, time-weighted As concentration in well water

[a] P-value from linear regression using As exposure variables as continuous variables

[b] Model 1: Means were adjusted for age, gender, BMI, smoking status, and educational attainment.

[c] Model 2: Means were adjusted for age, gender, BMI, smoking status, educational attainment, and urinary creatinine.

[d] Model 3: Means were adjusted for age, gender, BMI, smoking status, educational attainment, urinary creatinine, and total urinary As concentration