

Supplemental Material

Supplemental Tables

eTable 1. Key results from sensitivity analyses among adults aged 20-69 years, NHANES 2014

Characteristic	SBP B-coefficient per 1000mg (95% CI)	Hypertension			
		Mid-value of estimated excretion Quartile 1 OR, 95% CI	Mid-value of estimated excretion Quartile 2 OR, 95% CI	Mid-value of estimated excretion Quartile 3 OR, 95% CI	Mid-value of estimated excretion Quartile 4 OR, 95% CI
1) Creatinine included as a covariate, n=766					
Sodium	3.76** (1.39, 6.13)	1.0*	1.61 (1.09, 2.38)	2.42 (1.18, 4.99)	4.79 (1.34, 17.16)
Potassium	-4.57** (-7.59, -1.55)	1.0	0.79 (0.62, 1.00)	0.61 (0.37, 1.01)	0.41 (0.16, 1.01)
Sodium to potassium ratio	1.74** (0.79, 2.68)	1.0	1.27 (0.97, 1.67)	1.61 (0.94, 2.76)	2.25 (0.90, 5.63)
2) Persons not taking anti-hypertensive medications, n=587					
Sodium	4.35** (1.43, 7.28)	1.0**	1.97 (1.31, 2.96)	3.49 (1.64, 7.45)	8.26 (2.30, 29.72)
Potassium	-3.25** (-5.41, -1.09)	1.0*	0.75 (0.59, 0.84)	0.53 (0.32, 0.88)	0.32 (0.13, 0.80)
Sodium to potassium ratio	1.22* (0.02, 2.43)	1.0*	1.37 (1.01, 1.85)	1.86 (1.02, 3.37)	2.83 (1.04, 7.69)
3) Persons without CVD, n=718					
Sodium	4.73** (2.71, 6.74)	1.0*	1.63 (1.13, 2.35)	2.46 (1.26, 4.81)	4.84 (1.49, 15.71)
Potassium	-3.65** (-6.00, -1.30)	1.0**	0.78 (0.66, 0.93)	0.60 (0.42, 0.86)	0.40 (0.21, 0.76)
Sodium to potassium ratio	1.63** (0.68, 2.59)	1.0	1.30 (0.99, 1.69)	1.67 (0.98, 2.84)	2.37 (0.97, 5.77)
4) Persons with complete 24 h urine collection based on Joossen's creatinine excretion criteria of ≥ 0.70 , n=565					
Sodium	2.19 (-0.47, 4.85)	1.0**	1.58 (1.16, 2.15)	2.36 (1.33, 4.19)	4.56 (1.65, 12.59)
Potassium	-3.00* (-5.36, -0.64)	1.0**	0.60 (0.47, 0.78)	0.36 (0.21, 0.61)	0.16 (0.06, 0.41)
Sodium to potassium ratio	1.04 (-0.06, 2.13)	1.0*	1.39 (1.06, 1.81)	2.02 (1.14, 3.56)	3.30 (1.25, 8.72)
5) Multiple imputation used for missing covariate values, n=827					
Sodium	3.40** (1.30, 5.51)	1.0*	1.38 (1.01, 1.87)	1.87 (1.02, 3.42)	2.95 (1.04, 8.34)
Potassium	-3.33** (-5.48, -1.19)	1.0*	0.80 (0.66, 0.97)	0.62 (0.41, 0.93)	0.43 (0.21, 0.88)
Sodium to potassium ratio	1.52** (0.56, 2.48)	1.0	1.23 (0.96, 1.56)	1.51 (0.93, 2.46)	1.99 (0.89, 4.48)
6) Including alcohol as a covariate, n=717					
Sodium	4.65** (2.80, 6.50)	1.0*	1.57 (1.10, 2.25)	2.26 (1.19, 4.30)	4.21 (1.35, 13.10)
Potassium	-3.82** (-6.14, -1.50)	1.0*	0.77 (0.60, 0.98)	0.59 (0.36, 0.97)	0.38 (0.16, 0.94)
Sodium to potassium ratio	1.85** (0.93, 2.77)	1.0	1.29 (0.96, 1.73)	1.66 (0.91, 3.03)	2.31 (0.86, 6.19)

All results presented here are from fully adjusted models, adjusting for age, sex, race/ethnicity, education, BMI, history of CVD, diabetes status, chronic kidney disease, smoking status, and physical activity.

β -coefficients for usual sodium and potassium indicate change in mmHg of blood pressure associated with 1000mg/d change in excretion; β -coefficient for sodium-to-potassium ratio represents change in mmHg of blood pressure associated with 0.5 unit change in molar ratio.
* indicates $p < 0.05$, ** indicates $p < 0.01$.

eTable 2. Association between sodium excretion, potassium excretion, and their ratio, with systolic blood pressure, stratified by BMI, among adults aged 20-69 years, NHANES 2014.

Systolic Blood Pressure	
B-coefficient per 1000mg (95% CI)	
Fully adjusted model - Sodium	
BMI <25	1.67 (-4.75, 8.09)
BMI 25-29.9	1.84 (-5.05, 8.74)
BMI ≥30	5.54** (2.21, 8.86)
Fully adjusted model - Potassium	
BMI <25	-5.77** (-9.64, -1.90)
BMI 25-29.9	-3.63 (-10.20, 2.94)
BMI ≥30	-1.86 (-5.31, 1.59)
Fully adjusted model – Sodium to potassium ratio	
BMI <25	0.66 (-1.89, 3.20)
BMI 25-29.9	1.34 (-0.57, 3.26)
BMI ≥30	2.28* (0.60, 3.96)

β-coefficients for usual sodium and potassium indicate change in mmHg of blood pressure associated with 1000mg/d change in excretion; β-coefficient for sodium-to-potassium ratio represents change in mmHg of blood pressure associated with 0.5 unit change in molar ratio.

* indicates p<0.05, ** indicates p<0.01

Fully adjusted models included age, sex, race/ethnicity, education, BMI, history of CVD, diabetes status, chronic kidney disease, smoking status, and physical activity.