| **Study** | **Participants** | **Exposure** | **Intake Status Ascertainment** | **Results** |
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| Singer, 2015150  Location: US  Setting: a union- sponsored, worksite hypertension program  Design: Prospective Cohort study  . | Study of: Adults N: 3505  % Male: 64 Mean Age/Range/Age at Baseline: mean 52 (SD 10) Race: Q1 black 30.2% white 31.7% Hispanic 33.7% other 4.4%; Q2 black 30.5% white 33.7% Hispanic 34.8% other 2.1%; Q4 black 30.5% white 31.7% Hispanic 35.7% other 2.1%; Q4 black 28.6% white 29.3% Hispanic 38.3% other 3.8% Systolic BP: mean (SD) Q1 146.4 (18.5) Q2 145.3 (17.7) Q3 145.2 (16.5) Q4 145.8 (16.3) Diastolic BP: mean (SD) Q1 93.6 (10.0) Q2 93.9 (9.7) Q3 94.1 (9.4) Q5 (95.1 (9.6) Magnesium: NR Calcium: NR Other Minerals: NR Mean BMI: mean (SD) Q1 27.4 (4.1) Q2 27.8 (4.1) Q3 28.9 (4.5) Q4 30.0 (4.9) % with Hypertension: drug use Q1 37.0% Q2 39.9% Q3 40.2% Q4 35.2% % with history of CVD: MI Q1 1.1% Q2 0.5% Q3 1.0% Q4 1.5%; Stroke Q1 0.9% Q2 0.6% Q3 0.9% Q4 0.7% % with Type 2 diabetes: Q1 4%; Q2 6.3% Q3 5.6% Q4 6.0% % with Kidney disease: Q1 1.5%; Q2 1.4%; Q3 1.2%; Q4 2.2% % with history of Kidney stones: NR  Inclusion: Participants with an SBP >= 140 mm Hg (>= 160mm Hg before Joint National Committee 5), DBP >= 90 mmHg (>= 95 Hg before Joint National Committee 5), or being on antihypertensive medication at the time of screening were included. Exclusion: not report | Exposure Type: Urine sodium Exposure Unit: mmol/24 h  Duration: NR Exposure to Follow Up Time: in-pregram 6.5 years, follow-up from initial intake to death or last known alive 18.6 years  All cardiovascular mortality (Coronary artery disease, including MI, ischemic heart disease, heart failure, and hypertensive heart disease: ICD-9: 402.9, 410–414.9, 427.5, 429.2;ICD-10: I10–11.9, I13–I13.2, I20–I25.9, I46–I46.9;stroke: ICD-9: 434–434.9, 436–438.9; ICD-10: I61–I64.9; o), Limited cardiovascular mortality (Only MI, ischemic or hypertensive heart disease, and heart failure) Dose format: mean (SD) Q1, Dose: 55 (20) Q2, Dose: 102 (17) Q3, Dose: 143 (20) Q4, Dose: 221 (56)  All-cause mortality Dose format: mean (SD) Q2, Dose: 102 (17) Q3, Dose: 143 (20) Q4, Dose: 221 (56) | Sodium measure: Single 24-hour urinary analysis without reported quality control measure Best sodium measure recorded: once at baseline  How was blood pressure measured? not reported Mortality Outcomes-Method of Ascertainment: National Death Index Plus and the Social Security Administration Death Master File | All cardiovascular mortality (Coronary artery disease, including MI, ischemic heart disease, heart failure, and hypertensive heart disease: ICD-9: 402.9, 410–414.9, 427.5, 429.2;ICD-10: I10–11.9, I13–I13.2, I20–I25.9, I46–I46.9;stroke: ICD-9: 434–434.9, 436–438.9; ICD-10: I61–I64.9; o) (mmol/24 h/Outcome): Mean 18.6 years FU Q1 cases: 128, total: 890, Q2 cases: 97, total: 876, Q3 cases: 96, total: 865, Q4 cases: 78, total: 874 Adjustment: Age, sex, race, BMI, SBP, eGFR, urine potassium, hematocrit, plasma renin activity, HxDM, Hx smoking, history of baseline left ventricular hypertrophy No significant association between urinary sodium excretion and cardiovascular death was observed  All-cause mortality ( /Outcome): Q2 cases: 276, total: 876, Q3 cases: 234, total: 865, Q4 cases: 216, total: 874  Limited cardiovascular mortality (Only MI, ischemic or hypertensive heart disease, and heart failure) (mmol/24 h/Outcome): Mean 18.6 years FU Q1 cases: NR, total: 890, Q2 cases: NR, total: 876, Q3 cases: NR, total: 865, Q4 cases: NR, total: 874 Adjustment: Age, sex, race, BMI, SBP, urine creatinine, plasma renin activity, HxDM, Hx smoking, history of baseline left ventricular hypertrophy No significant association between urinary sodium excretion and limited cardiovascular mortality. |
| Yang, 2011146; Cohen, 2008147  Location: US  Setting: Community  Design: Prospective Cohort study  Study Name: NHANES III  . | Study of: Adults N: NR  % Male: 48.1% Mean Age/Range/Age at Baseline: ranged 25-74 years Race: NR Systolic BP: NR Diastolic BP: NR Magnesium: NR Calcium: NR Other Minerals: NR Mean BMI: NR % with Hypertension: NR % with history of CVD: NR % with Type 2 diabetes: NR % with Kidney disease: NR % with history of Kidney stones: NR  Inclusion: Included non pregnant adults ages 20 and older, those who completed a physical examination, and who had mortality follow-up information. Exclusion: Excluded survey participants with incomplete data on one or more 24-hour dietary recalls. Excluded those partaking a reduced salt diet for hypertension and those with a history of heart attack, stroke, or congestive heart failure. | Exposure Type: Sodium-Potassium Ratio Exposure Unit: mg/mg  Exposure Type: Usual Potassium Intakes Exposure Unit: mg/d  Exposure Type: Usual Sodium Intakes Exposure Unit: mg/d  Duration: NR Exposure to Follow Up Time: NR  All-cause mortality (ICD-10 codes I00-I78) Dose format: median Q1, Dose: 0.9 Q1, Dose: 1790 Q1, Dose: 2018 Q2, Dose: 1.06 Q2, Dose: 2483 Q2, Dose: 2875 Q3, Dose: 1.18 Q3, Dose: 3123 Q3, Dose: 3705 Q4, Dose: 1.33 Q4, Dose: 4095 Q4, Dose: 4974 per 1000 mg/d, Dose: NR for HYPERTENSIVE per unit change, Dose: NR for HYPERTENSIVE  CVD mortality (ICD-10 codes I00-I78) Dose format: median Q1, Dose: 0.9 Q1, Dose: 1790 Q1, Dose: 2018 Q2, Dose: 1.06 Q2, Dose: 2483 Q2, Dose: 2875 Q3, Dose: 1.18 Q3, Dose: 3123 Q3, Dose: 3705 Q4, Dose: 1.33 Q4, Dose: 4095 Q4, Dose: 4974 per 1000 mg/d, Dose: NR per unit change, Dose: NR | Sodium measure: 24-hour diet recall Best sodium measure recorded: single 24-hour dietary recall Sodium, Method of Validation: a subgroup of 8% adults provided a second 24-hour dietary recall, 24-hour "diet recall" Best potassium measure recorded: single 24-hour dietary recall Potassium, Method of Validation: a subgroup of 8% adults provided a second 24-hour dietary recall Mortality Outcomes-Method of Ascertainment: National death index | All-cause mortality (ICD-10 codes I00-I78) (mg/d/Outcome): Median 14.8 y FU Q1 cases: NR, total: NR, per 1000 mg/d cases: 1155, total: NR, person-years: 35640, per unit change cases: 1155, total: NR, person-years: 35640, Q2 cases: NR, total: NR, Q3 cases: NR, total: NR, Q4 cases: NR, total: NR Adjustment: Sex, race/ethnicity, educational attainment, body mass index, smoking status, alcohol intake, total cholesterol, high-density lipoprotein cholesterol, physical activity, family history of cardiovascular disease, and total calorie intake In multivariable analysis, higher sodium intake was associated with increased all-cause mortality. Significant association between higher sodium potassium ratio and all-cause mortality among those with hypertension.  CVD mortality (ICD-10 codes I00-I78) (mg/d/Outcome): Median 14.8 y FU Q1 cases: NR, total: NR, per 1000 mg/d cases: 490, total: NR, person-years: 35640, per unit change cases: 490, total: NR, person-years: 35640, Q2 cases: NR, total: NR, Q3 cases: NR, total: NR, Q4 cases: NR, total: NR Adjustment: Sex, race/ethnicity, educational attainment, body mass index, smoking status, alcohol intake, total cholesterol, high-density lipoprotein cholesterol, physical activity, family history of cardiovascular disease, and total calorie intake In multivariable analysis, higher sodium intake was associated with increased all-cause mortality. Significant association between higher sodium potassium ratio and CVD mortality among those with hypertension.  All-cause mortality (ICD-10 codes I00-I78) (mg/d/Outcome): Median 14.8 y FU Q1 cases: NR, total: NR, per 1000 mg/d cases: 1155, total: NR, person-years: 35640, Q2 cases: NR, total: NR, Q3 cases: NR, total: NR, Q4 cases: NR, total: NR Adjustment: Sex, race/ethnicity, educational attainment, body mass index, smoking status, alcohol intake, total cholesterol, high-density lipoprotein cholesterol, physical activity, family history of cardiovascular disease, and total calorie intake Among subgroups of Hispanic, non-Hispanic, hypertensive, non-hypertenseive participants, there is no evidence of significant interactions between potassium intake and risk of mortality.  CVD mortality (ICD-10 codes I00-I78) (mg/d/Outcome): Median 14.8 y FU Q1 cases: NR, total: NR, per 1000 mg/d cases: 490, total: NR, person-years: 35640, Q2 cases: NR, total: NR, Q3 cases: NR, total: NR, Q4 cases: NR, total: NR Adjustment: Sex, race/ethnicity, educational attainment, body mass index, smoking status, alcohol intake, total cholesterol, high-density lipoprotein cholesterol, physical activity, family history of cardiovascular disease, and total calorie intake Among subgroups of Hispanic, non-Hispanic, hypertensive, non-hypertenseive participants, there is no evidence of significant interactions between potassium intake and risk of mortality. |