| **Study** | **Participants** | **Exposure** | **IntakeStatus Ascertainment** | **Results** |
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| Alderman, 1997138; Alderman, 1995139Location: USSetting: CommunityDesign: Prospective Cohort study. | Study of: AdultsN: 1900% Male: 64.7Mean Age/Range/Age at Baseline: men mean 52 (SD 10) years; women mean 54 (SD 9) yearsRace: NRSystolic BP: men mean 150; women mean 150Diastolic BP: men mean 98; women mean 94Magnesium: NRCalcium: NROther Minerals: NRMean BMI: men mean 27.5; women mean 28.2% with Hypertension: NR% with history of CVD: NR% with Type 2 diabetes: NR% with Kidney disease: NR% with history of Kidney stones: NRInclusion: Need Alderman article to answer this questionExclusion: Need Alderman article to answer this question | Exposure Type: 24-h urinary sodium excretionExposure Unit: mmol/dDuration(in months): unclearExposure to Follow Up Time: 3.8 yearsDose format: rangeQ1, Dose: <89 mmolQ2, Dose: 89-126 mmolQ3, Dose: 127-174 mmolQ4, Dose: >=175 mmol | Sodium measure: Single 24-hour urine analysis with validationBest sodium measure recorded: Single 24-hr urine analysis at beginning of the programSodium, Method of Validation: Validated by using formula described by Cockcroft and Gault and Robertshaw et al. Only included patients whose estimated urinary creatinine clearance values fall within +/-35% of the observed valuesMortality Outcomes-Method of Ascertainment: Hospital records, Death certificateCVD, CHD, stroke, kidney stones/disease Outcomes-Method of ascertainment: Hospital records, Death certificate reports | CVD (Cardiovascular disease, includes myocardial infarction (MI), stroke, coronary revascularization, unstable angina, congestive heart failure. and other CVD deaths. CVD events included MI (code 410) and cerebrovascular disease (codes 430 to 434 and 436 to 43) (mmol/d/Outcome):Average 3.8 years FUQ1 cases: 20.5 (unadjusted case specific incidence rates per 1000 person-years), total: NR, Q2 cases: 12.1, total: NR, Q3 cases: 13.8, total: NR, Q4 cases: 7.7, total: NRAdjustment: UnadjustedNo statistically significant association was observed.MI (Myocardial Infarction incidence code 410) (mmol/d/Outcome):Average 3.8 years FUQ1 cases: 12.2 (unadjusted case specific incidence rates per 1000 person-years), total: NR, Q2 cases: 5.5, total: NR, Q3 cases: 5.7, total: NR, Q4 cases: 2.4, total: NRAdjustment: UnadjustedNo statistically significant association was observed.Non-CVD (Includes hospitalizations, emergency room visits, and deaths.) (mmol/d/Outcome):Average 3.8 years FUQ1 cases: 18.9 (unadjusted case specific incidence rates per 1000 person-years), total: NR, Q2 cases: 14.8, total: NR, Q3 cases: 10.3, total: NR, Q4 cases: 16.5, total: NRAdjustment: UnadjustedNo statistically significant association was observed.Stroke (Stroke Incidence) (mmol/d/Outcome):Average 3.8 years FUQ1 cases: 2.8 (unadjusted case specific incidence rates per 1000 person-years), total: NR, Q2 cases: 2.2, total: NR, Q3 cases: 2.9, total: NR, Q4 cases: 1.8, total: NRAdjustment: UnadjustedNo statistically significant association was observed. |
| Khaw, 1987140Location: USSetting: CommunityDesign: Prospective Cohort study. | Study of: AdultsN: 356% Male: NRMean Age/Range/Age at Baseline: range 50-79 yearsRace: NRSystolic BP: No stroke associated death (men) mean 141.5 mmHg, stroke-associated death (men) mean 143.2 mmHg; No stroke-associated death (women) mean 136.4 mmHg, stroke-associated death (women) 147.2 mmHgDiastolic BP: No stroke-associated death (men) mean 84.3 mmHg, stroke-associated death (men) mean 83.2; No stroke-associated death (women) mean 81.3 mmHg, stroke-associated death (women) mean 86.3 mmHgMagnesium: No stroke-associated death (men) mean 11.6, stroke-associated death (men) mean 9.9; No stroke-associated death (women) mean 9.1 mmHg, stroke-associated death (women) mean 8.0 mmolCalcium: No stroke-associated death (men) mean 20.2, stroke-associated death (men) mean 16.1; No stroke-associated death (women) mean 15.1 mmHg, stroke-associated death (women) mean 14.9 mmolOther Minerals: NRMean BMI: NR% with Hypertension: NR% with history of CVD: NR% with Type 2 diabetes: NR% with Kidney disease: NR% with history of Kidney stones: NRInclusion: Men and Women who were 50 to 79 years old and who had no personal history of heart attack, heart failure, or stroke at the base-line examination were included in the study.Exclusion: NR | Exposure Type: Dietary Potassium IntakeExposure Unit: Dietary Potassium IntakeExposure Type: Dietary Potassium IntakeExposure Unit: mmol/dDuration(in months): 144 (12 years)Exposure to Follow Up Time: NRDBP (ICDA 430 to 438), SBP (ICDA 430 to 438)Dose format: NRmmol/d, Dose: NRStroke-associated All-cause mortality (ICDA 430 to 438)Dose format: rangeT1, Dose: <59T2+T3, Dose: >=59-76, >=76per 10 mmol | Sodium, Method of Validation: 24-hour "diet recall"Best potassium measure recorded: Once (at baseline)Potassium, Method of Validation: A 24-hour recall of dietary intake was obtained by a certified Lipid Research Clinic dietician. The data were coded for nutrient intake by the Nutrition Coordinating Center, University of Minnesota, with use of their data base.How was blood pressure measured? BP was measured by trained observers who used a standard mercury sphygmomanometer after the subject had been seared at rest for at least five minutes. BP was only measured once at baseline.Mortality Outcomes-Method of Ascertainment: Interview, tracing, national death index searches, deaths confirmed from death certificatesCVD, CHD, stroke, kidney stones/disease Outcomes-Method of ascertainment: Death certificate reports | DBP (ICDA 430 to 438) (Dietary Potassium Intake/Outcome):ICDA 430 to 438 FUmmol/d cases: NR, total: NR, person-years: per unit increaseAdjustment: AgeAfter adjusting for age, there is a marginal negative association between potassium intake and DBP in both men and women.SBP (ICDA 430 to 438) (Dietary Potassium Intake/Outcome):ICDA 430 to 438 FUmmol/d cases: NR, total: NR, person-years: per unit increaseAdjustment: AgeAfter adjusting for age, there is a marginal negative association between potassium intake and SBP in both men and women.Stroke-associated All-cause mortality (ICDA 430 to 438) (mmol/d/Outcome):12 y FUT1 cases: NR, total: 118, per 10 mmol cases: 9, total: 356, T2+T3 cases: NR, total: 238Adjustment: AgeThe age-adjusted stroke rates, according to tertile of potassium intake, suggest a dose response (more marked in the women than in the men), with no stroke deaths in the highest tertile.Potassium intake was inversely and independently related to stroke. The results were the same when diastolic pressure was used in place of systolic pressure. |
| Mills, 2016120; He, 2016121; Yang, 2014122; Lash, 2009123Location: USSetting: CommunityDesign: Prospective Cohort studyStudy Name:The Chronic Renal Insufficiency Cohort (CRIC) Study. | Study of: AdultsN: 1950% Male: Q1 35.0, Q2 49.9, Q3 61.3 Q4 76.0Mean Age/Range/Age at Baseline: Q1 mean 57.2 (SD 10.9) Q2 mean 57.6 (SD 11.3) Q3 mean 58.2 (SD 10.8) Q4 mean 58.0 (SD 10.6) yearsRace: Q1: White 38.6% Black 51.4% Other 10.0 %; Q2: White 45.6% Black 44.0% Other 10.3%; Q3 White 50.6% Black 37.4% Other 12.0%; Q4 White 54.3% Black 32.9% Other 12.8%Systolic BP: Q1: mean 125.6 (SD 21.7); Q2 mean 126.3 (SD 20.9); Q3 mean 128.1 (SD 21.7); Q4 mean 132.3 (SD 22.4) mmHgDiastolic BP: Q1: mean 70.7 ( SD 12.7); Q2 mean 71.0 (SD 12.8); Q3: mean 71.4 (SD 12.3); Q4: mean 72.7 (SD 13.0) mmHgMagnesium: NRCalcium: NROther Minerals: NRMean BMI: Q1: mean 31.7 (SD 8.0); Q2 mean 32.1 (SD 7.5); Q3 mean 31.9 (SD 7.3); Q4 mean 31.8 (SD 7.5) kg/m^2% with Hypertension: Q1 80.2; Q2 86.5; Q3 86.7; Q4 90.8% with history of CVD: Q1 27.3; Q2 30.0; Q3 34.9; Q4; 39.7% with Type 2 diabetes: Q1 37.7; Q2 43.8; Q3 49.3; Q4 60.3% with Kidney disease: NR% with history of Kidney stones: NRInclusion: Participant aged 21 to 74 years with mild to moderate CKD designed to identify and examine risk factors for CKD progression and development of CVD in those with CKD, who met age-specific estimated glomerular filtration rate (eGFR) criteria of 20 to 70 mL/min/1.73 m^2 were included.Exclusion: People with a history of kidney transplant, dialysis for at least 1 month, glomerulonephritis requiring immunosuppression, advanced heart failure, cirrhosis, or polycystic kidney disease were excluded. | Exposure Type: 24 h urinary sodium excretion calibrated to mean urinary creatinine excretion of 1569 mg/24 hours inExposure Unit: per 1000 mg/24 hDuration(in months): 163.2 (6.8 years)Exposure to Follow Up Time: NRDose format: NRNR, Dose: NR for male | Sodium measure: Multiple 24-hour urine analysis with validationBest sodium measure recorded: 3 times, 1 year apartCVD, CHD, stroke, kidney stones/disease Outcomes-Method of ascertainment: Hospital records, Interview with participant or proxy, followup visit | Composite CVD (Defined as congestive heart failure, stroke, and myocardial infarction) (per 1000 mg/24 h/Outcome):Median 6.8 years FUNR cases: NR, total: 1946Adjustment: Age, sex, race, clinic site, education, waist circumference, lean body mass index, body mass index, cigarette smoking, alcohol drinking, physical activity, LDL-cholesterol, glucose, history of CVD, antidiabetic medications, lipid-lowering medications, diuretics, renin-angiotensin system blocking agents, and other antihypertensive medications, urinary creatinine excretion, baseline eGFRAmong male, greater sodium excretion was associated with an increased risk of compostive CVD.Congestive Heart Failure (Congestive heart failure was identified by hospital admission for new or worsening CHF signs and symptoms, in addition to diminished cardiac output) (per 1000 mg/24 h/Outcome):Median 6.8 years FUNR cases: NR, total: 1949Adjustment: Age, sex, race, clinic site, education, waist circumference, lean body mass index, body mass index, cigarette smoking, alcohol drinking, physical activity, LDL-cholesterol, glucose, history of CVD, antidiabetic medications, lipid-lowering medications, diuretics, renin-angiotensin system blocking agents, and other antihypertensive medications, urinary creatinine excretion, baseline eGFRAmong male, greater sodium excretion was associated with an increased risk of compostive CVD.Myocardial Infarction (Myocardial infarction was defined by characteristic changes in troponin and creatinekinase–MB levels, symptoms of myocardial ischemia, electrocardiogram changes, or new fixed profusion abnormalities.) (per 1000 mg/24 h/Outcome):Median 6.8 years FUNR cases: NR, total: 1951Adjustment: Age, sex, race, clinic site, education, waist circumference, lean body mass index, body mass index, cigarette smoking, alcohol drinking, physical activity, LDL-cholesterol, glucose, history of CVD, antidiabetic medications, lipid-lowering medications, diuretics, renin-angiotensin system blocking agents, and other antihypertensive medications, urinary creatinine excretion, baseline eGFRAmong male, greater sodium excretion was associated with an increased risk of compostive CVD.Stroke (Stroke was defined as rapid onset of neurologic deficit, headache, or other nonvascular cause and clinically relevant lesion on brain imaging for longer than 24 hours or deathwithin24 hours.) (per 1000 mg/24 h/Outcome):Median 6.8 years FUNR cases: NR, total: 1950Adjustment: Age, sex, race, clinic site, education, waist circumference, lean body mass index, body mass index, cigarette smoking, alcohol drinking, physical activity, LDL-cholesterol, glucose, history of CVD, antidiabetic medications, lipid-lowering medications, diuretics, renin-angiotensin system blocking agents, and other antihypertensive medications, urinary creatinine excretion, baseline eGFRAmong male, greater sodium excretion was associated with an increased risk of compostive CVD. |
| Pfister, 2014141Location: UKSetting: CommunityDesign: Prospective Cohort studyStudy Name:The EPIC-Norfolk study. | Study of: AdultsN: 9017% Male: 45.4Mean Age/Range/Age at Baseline: mean 58.0 (SD 9.2) yearsRace: NRSystolic BP: reported by quintiles of sodium excretion q1 135 (17) q2 135 (17) q3 136 (17) q4 138 (17) q5 141 (19)Diastolic BP: reported by quintiles of sodium excretion q1 83.1 (10.9) q2 83.1 (10.9) q3 83.9 (10.6) q4 85.2 (10.6) q5 86.8 (11.5)Magnesium: NRCalcium: NROther Minerals: NRMean BMI: reported by quintiles of sodium excretion q1 25.9 (SD 3.1) q2 26.1 (SD 3) q3 26.4 (SD 3.2) q4 26.7 (SD 3.2) q5 27.1 (SD 3.5)% with Hypertension: NR% with history of CVD: NR% with Type 2 diabetes: NR% with Kidney disease: NR% with history of Kidney stones: NRInclusion: Included Norfolk residents between 39-79 years old.Exclusion: Excluded participants with a history of heart attack, stroke, or any cancer. Also excluded those using medical heart failure treatment and those failed to provide data on estimated 24 h urinary sodium excretion. | Exposure Type: Urinary sodium excretionExposure Unit: mmol/dayDuration: NRExposure to Follow Up Time: 3.5 yearsDose format: mean (SD, range)Q1, Dose: 115 (17, <134)Q2, Dose: 145 (6, 134-154)Q3, Dose: 163 (5, 154-172)Q4, Dose: 182 (6, 172-193)Q5, Dose: 218 (31, >193) | Sodium measure: Multiple 24-hour urine analysis with validationBest sodium measure recorded: 24-hr urine analysis at baseline and second health check.Sodium, Method of Validation: Obtained spot urine samples in a random sample of 1551 women.CVD, CHD, stroke, kidney stones/disease Outcomes-Method of ascertainment: Hospital records, Death certificate reports, National Death Index | Incident heart failure (Heart failure death was defined as ICD-10 I50 anywhere on the death certificate. Incident heart failure was defined as heart failure death or hospital discharge code ICD-10 I50, which proved to be specific in a recent validation study) (mmol/day/Outcome):Mean 12.9 y FUQ1 cases: 167, total: 1803, Q2 cases: 131, total: 1803, Q3 cases: 127, total: 1804, Q4 cases: 127, total: 1803, Q5 cases: 150, total: 1804Adjustment: Age, body mass index, known diabetes, cholesterol, social class, educational level, smoking, physical activity, alcohol consumption, and sex where appropriateThere was a suggested U-shaped association between quintiles of estimated urinary sodium excretion and hazard of heart failure in age-adjusted analyses in men and women.When further adjusting the analysis for systolic blood pressure and baseline blood pressure medication, the HR for the highest quintile of estimated urinary sodium excretion was strongly attenuated whereas the HR for the lowest quintile was materially unchanged (Tables 2 and 4). |
| Tunstall-Pedoe, 1997142; Tunstall-Pedoe, 1999143; Smith, 1987144Location: ScotlandSetting: CommunityDesign: Prospective Cohort studyStudy Name:The Scottish Heart Health Study. | Study of: AdultsN: 5754% Male: 49.5Mean Age/Range/Age at Baseline: ranged 40-59 yearsRace: NRSystolic BP: NRDiastolic BP: NRMagnesium: NRCalcium: NROther Minerals: NRMean BMI: NR% with Hypertension: NR% with history of CVD: NR% with Type 2 diabetes: 1.5%% with Kidney disease: NR% with history of Kidney stones: NRInclusion: Included randomly selected patients from general practitioners' offices in 23 local government districts. Participants aged between 40-59.Exclusion: Excluded those who failed to complete the study questionnaire, clinic appointment, or both. | Exposure Type: Urinary potassium ion excretionExposure Unit: mmol/dayExposure Type: Urinary sodium ion excretionExposure Unit: mmol/dayDuration(in months): 3 yearsExposure to Follow Up Time: 6 yearsDose format: rangegroup 1, Dose: 17.6 - 47.2 mmol/daygroup 1, Dose: 46.8 - 129.6 mmol/daygroup 2, Dose: 129.6 - 168.4 mmol/daygroup 2, Dose: 47.2 - 59.5 mmol/daygroup 3, Dose: 168.4 - 204.1 mmol/daygroup 3, Dose: 59.5 - 71.3 mmol/daygroup 4, Dose: 204.1 - 251.3 mmol/daygroup 4, Dose: 71.3 -86.3 mmol/daygroup 5, Dose: 251.3 - 416.7 mmol/daygroup 5, Dose: 86.3 - 138.1 mmol/day | Sodium measure: Single 24-hour urine analysis with validationBest sodium measure recorded: one 24 hour urine collectionSodium, Method of Validation: Urine was analyzed for electrolytes and creatinine.CVD, CHD, stroke, kidney stones/disease Outcomes-Method of ascertainment: Hospital records, Death certificate reports | All CHD (All coronary heart disease) (mmol/day/Outcome):Average 7.6 years FUgroup 1 cases: NR, total: NR, group 2 cases: NR, total: NR, group 3 cases: NR, total: NR, group 4 cases: NR, total: NR, group 5 cases: NR, total: NRAdjustment: AgeAmong male participants, no statistically significant association was observed between urinary sodium excretion and risk of CHD.All-cause mortalitys (Deaths from all causes) (mmol/day/Outcome):Average 7.6 years FUgroup 1 cases: NR, total: NR, group 2 cases: NR, total: NR, group 3 cases: NR, total: NR, group 4 cases: NR, total: NR, group 5 cases: NR, total: NRAdjustment: AgeAmong male partcipants, no statistically significant association was observed between urinary sodium excretion and risk of mortality.CHD deaths (Fatal coronary heart disease) (mmol/day/Outcome):Average 7.6 years FUgroup 1 cases: NR, total: NR, group 2 cases: NR, total: NR, group 3 cases: NR, total: NR, group 4 cases: NR, total: NR, group 5 cases: NR, total: NRAdjustment: AgeAmong male participants, no statistically significant association was observed between urinary sodium excretion and risk of CHD mortality.All CHD (All coronary heart disease) (mmol/day/Outcome):Average 7.6 years FUgroup 1 cases: NR, total: NR, group 2 cases: NR, total: NR, group 3 cases: NR, total: NR, group 4 cases: NR, total: NR, group 5 cases: NR, total: NRAdjustment: AgePotassium excretion showed a highly significant protective gradient for all deaths in both sexes and significantly protected against all coronary heart disease in men.All-cause mortalitys (Deaths from all causes) (mmol/day/Outcome):Average 7.6 years FUgroup 1 cases: NR, total: NR, group 2 cases: NR, total: NR, group 3 cases: NR, total: NR, group 4 cases: NR, total: NR, group 5 cases: NR, total: NRAdjustment: AgePotassium excretion showed a highly significant protective gradient for all deaths in both sexes and significantly protected against all coronary heart disease in men.CHD deaths (Fatal coronary heart disease) (mmol/day/Outcome):Average 7.6 years FUgroup 1 cases: NR, total: NR, group 2 cases: NR, total: NR, group 3 cases: NR, total: NR, group 4 cases: NR, total: NR, group 5 cases: NR, total: NRAdjustment: AgeNo significant association between urinary potassium excretion and CHD mortality among male. |
| Tuomilehto, 2001145Location: FinlandSetting: CommunityDesign: Prospective Cohort study. | Study of: AdultsN: 1161% Male: 48.2Mean Age/Range/Age at Baseline: age reported by sodium quartile and gender: men q1 mean 45.4 (SD 11.6) years, men q2 mean 45.3 (SD 11.0) years, men q3 mean 46.2 (SD 10.4) years, men q4 mean 45.4 (SD 10.6) years; women q1 mean 45.7 (SD 11.6) years, women q2 mean 45.4 (SD 11.8) years, women q3 mean 44.8 (SD 11.1) years, women q4 mean 45.6 (SD 11.3) years.Race: NRSystolic BP: Systolic blood pressure reported by sodium quartile and gender: men q1 mean 144 (SD 22), men q2 mean 145 (SD 19), men q3 mean 148 (SD 20), men q4 mean 147 (SD 19); women q1 mean 141 (SD 22) years, women q2 mean 140 (SD 22), women q3 mean 141 (SD 22), women q4 mean 142 (SD 22).Diastolic BP: Diastolic blood pressure reported by sodium quartile and gender: men q1 mean 86 (SD 11), men q2 mean 86 (SD 12), men q3 mean 89 (SD 13), men q4 mean 90 (SD 13); women q1 mean 83 (SD 12) years, women q2 mean 83 (SD 12), women q3 mean 83 (SD 12), women q4 mean 85 (SD 12).Magnesium: NRCalcium: NROther Minerals: NRMean BMI: BMI reported by sodium quartile and gender: men q1 mean 25.5 (SD 2.4), men q2 mean 26.4 (SD 3.3), men q3 mean 26.9 (SD 3.3), men q4 mean 28.1 (SD 4.2); women q1 mean 24.6 (SD 4.2) years, women q2 mean 25.1 (SD 4.02), women q3 mean 26.3 (SD 4.6), women q4 mean 27.8 (SD 5.4).% with Hypertension: NR% with history of CVD: NR% with Type 2 diabetes: NR% with Kidney disease: NR% with history of Kidney stones: NRInclusion: Finnish men and women between 25-64 years old. Analysis of this study included both the 1982 and 1987 cohorts.Exclusion: Excluded those with incomplete collection of urine, and those with incomplete data of risk factors. Also excluded those who had a non-fatal acute coronary event or cerebrovascular event before baseline survey. | Exposure Type: 24 h urinary sodium excretionExposure Unit: mmolDuration: NRExposure to Follow Up Time: up to 14 yearsDose format: NRper 100 mmol increase, Dose: mean 216 mmol (SD 83) | Sodium measure: Single 24-hour urinary analysis without reported quality control measureBest sodium measure recorded: single 24 hour urinary analysis without reported quality control measureHow was blood pressure measured? Blood pressure was measured once using a standard sphygmomanometer with a 13 cm wide and 42 cm long cuff bladder.CVD, CHD, stroke, kidney stones/disease Outcomes-Method of ascertainment: Hospital records, National database | All-cause mortality (Death) (mmol/Outcome):Up to 13 years FUper 100 mmol increase cases: 136, total: 1173Adjustment: Age and study year, and sex when analyses included both sexes combined, and for the following cardiovascular risk factors: serum total cholesterol, serum HDL cholesterol, blood pressure, body mass index, and smokingAmong male participants, no significant association was observed between urinary sodium excretion and risk of mortality, stroke, CVD mortality, and coronary heart disease and mortality.Cardiovascular death (Death, ICD 390-448) (mmol/Outcome):Up to 13 years FUper 100 mmol increase cases: 72, total: 1173Adjustment: Age and study year, and sex when analyses included both sexes combined, and for the following cardiovascular risk factors: serum total cholesterol, serum HDL cholesterol, blood pressure, body mass index, and smokingAmong male participants, no significant association was observed between urinary sodium excretion and risk of mortality, stroke, CVD mortality, and coronary heart disease and mortality.Coronary heart disease death (Death, ICD 410-411) (mmol/Outcome):Up to 13 years FUper 100 mmol increase cases: 54, total: 1173Adjustment: Age, study year, smoking, serum total and HDL cholesterol, systolic blood pressure, and BMIAmong male participants, no significant association was observed between urinary sodium excretion and risk of mortality, stroke, CVD mortality, and coronary heart disease and mortality.Coronary heart disease incident (Event, ICD 410-411) (mmol/Outcome):Up to 13 years FUper 100 mmol increase cases: 98, total: 1145Adjustment: Age and study year, and sex when analyses included both sexes combined, and for the following cardiovascular risk factors: serum total cholesterol, serum HDL cholesterol, blood pressure, body mass index, and smokingAmong male participants, no significant association was observed between urinary sodium excretion and risk of mortality, stroke, CVD mortality, and coronary heart disease and mortality.Stroke incident (Event, ICD 430-438) (mmol/Outcome):Up to 13 years FUper 100 mmol increase cases: 43, total: 1161Adjustment: Age and study year, and sex when analyses included both sexes combined, and for the following cardiovascular risk factors: serum total cholesterol, serum HDL cholesterol, blood pressure, body mass index, and smokingAmong male participants, no significant association was observed between urinary sodium excretion and risk of mortality, stroke, CVD mortality, and coronary heart disease and mortality. |
| Yang, 2011146; Cohen, 2008147Location: USSetting: CommunityDesign: Prospective Cohort studyStudy Name:NHANES III. | Study of: AdultsN: 5899% Male: 48.1%Mean Age/Range/Age at Baseline: ranged 25-74 yearsRace: NRSystolic BP: NRDiastolic BP: NRMagnesium: NRCalcium: NROther Minerals: NRMean BMI: NR% with Hypertension: NR% with history of CVD: NR% with Type 2 diabetes: NR% with Kidney disease: NR% with history of Kidney stones: NRInclusion: 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 RatioExposure Unit: mg/mgExposure Type: Usual Potassium IntakesExposure Unit: mg/dExposure Type: Usual Sodium IntakesExposure Unit: mg/dDuration: NRExposure to Follow Up Time: NRCVD mortality (ICD-10 codes I00-I78)Dose format: medianQ1, Dose: 1.01Q1, Dose: 2276Q1, Dose: 2908Q2, Dose: 1.17Q2, Dose: 2973Q2, Dose: 3785Q3, Dose: 1.29Q3, Dose: 3588Q3, Dose: 4570Q4, Dose: 1.43Q4, Dose: 4506Q4, Dose: 5751per 1000 mg/d, Dose: NRper unit change, Dose: NRAll-cause mortality (ICD-10 codes I20-I25)Dose format: medianQ1, Dose: 1.01Q1, Dose: 2276Q1, Dose: 2908Q2, Dose: 1.17Q2, Dose: 2973Q2, Dose: 3785Q3, Dose: 1.29Q3, Dose: 3588Q3, Dose: 4570Q4, Dose: 1.43Q4, Dose: 4506Q4, Dose: 5751per 1000 mg/d, Dose: median 3272 (IQR 2660-3964) mgper 1000 mg/d, Dose: median 4165 (IQR 3390-5043) mgper unit change, Dose: median 1.29 (IQR 1.14-1.46) | Sodium measure: 24-hour diet recallBest sodium measure recorded: single 24-hour dietary recallSodium, 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 recallPotassium, Method of Validation: a subgroup of 8% adults provided a second 24-hour dietary recallMortality Outcomes-Method of Ascertainment: National death index | All-cause mortality (ICD-10 codes I20-I25) (mg/d/Outcome):Median 14.8 y FUQ1 cases: NR, total: NR, per 1000 mg/d cases: 1267, total: 5899, person-years: 80982, per unit change cases: 1267, total: 5899, person-years: 80982, Q2 cases: NR, total: NR, Q3 cases: NR, total: NR, Q4 cases: NR, total: NRAdjustment: 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 intakeIn multivariable analysis, higher sodium intake was associated with increased all-cause mortality.No association between sodium potassium ratio and all-cause mortality among male participants.CVD mortality (ICD-10 codes I00-I78) (mg/d/Outcome):Median 14.8 y FUQ1 cases: NR, total: NR, per 1000 mg/d cases: 437, total: 5899, person-years: 80982, per unit change cases: 437, total: 5899, person-years: 80982, Q2 cases: NR, total: NR, Q3 cases: NR, total: NR, Q4 cases: NR, total: NRAdjustment: 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 intakeIn multivariable analysis, higher sodium intake was associated with increased all-cause mortality.Significant association between higher sodium potassium ratio and CVD mortality among male participants.All-cause mortality (ICD-10 codes I20-I25) (mg/d/Outcome):Median 14.8 y FUQ1 cases: NR, total: NR, per 1000 mg/d cases: 1267, total: 5899, person-years: 80982, Q2 cases: NR, total: NR, Q3 cases: NR, total: NR, Q4 cases: NR, total: NRAdjustment: 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 intakeAmong male participants, no significant association between potassium intake and risk of all-cause mortality.CVD mortality (ICD-10 codes I00-I78) (mg/d/Outcome):Median 14.8 y FUQ1 cases: NR, total: NR, per 1000 mg/d cases: 437, total: 5899, person-years: 80982, Q2 cases: NR, total: NR, Q3 cases: NR, total: NR, Q4 cases: NR, total: NRAdjustment: 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 intakeAmong male participants, no significant association between potassium intake and risk of all-cause mortality. |