
**Abstract**

**OBJECTIVES:** To examine sex-specific associations of nutritional factors with prevalent hypertension (HTN) and systolic blood pressure (SBP) in Alaska Natives. Diet is known to affect SBP, a major risk factor for cardiovascular disease.

**STUDY DESIGN:** Cross-sectional analysis of participants without diabetes in the Genetics of Coronary Artery Disease in Alaska Natives study.

**METHODS:** Macronutrients such as fat, carbohydrate and protein and micronutrients such as sodium were investigated. HTN was defined as SBP≥140 mmHg, diastolic blood pressure≥90 mmHg and/or taking anti-HTN medication. Analyses were stratified by sex and covariates included age, body mass index (BMI), energy intake, smoking and physical activity.

**RESULTS:** Mean age was 42 years for men (n=456) and women (n=602). Men with HTN (n=106) compared to men without HTN consumed a higher proportion of calories from total (p=0.01), saturated (p<0.01) and trans fatty acid (p=0.03) fats. Women with HTN (n=99) compared to women without HTN consumed more total (p=0.03) and monounsaturated (p=0.04) fat, higher protein (p=0.02) and lower total (p<0.01) and simple (p<0.01) carbohydrates. After covariate adjustment, men not on anti-HTN medications (n=407) had significantly higher average SBP with increasing quartiles of trans fatty acid intake (p for linear trend=0.01) and sodium intake (p for linear trend=0.02). For women not on anti-HTN medications (n=528), after covariate adjustment, average SBP decreased with increasing quartiles of omega 3 fatty acid intake (p for linear trend <0.01).

**CONCLUSIONS:** Prospective evaluation of the sex-specific associations of nutritional factors with HTN and SBP on outcomes is needed along with novel interventions to lower the risk of cardiovascular disease.