

Abstract:

A relationship between salt intake and blood pressure has been described in cross-sectional studies of several populations. However, serious methodological problems in many studies could have resulted in erroneous results. In the present studies, the blood pressure profiles of a Kenyan tribe have been shown to differ according to environment, being lower in rural and higher in urban communities. Although several factors could explain the observed blood pressure differences, dietary factors, including sodium and potassium intake, could be important determinants of the observed differences. A within-population study of 1,737 rural male subjects was carried out in which it was found that systolic and diastolic pressures correlated positively with urinary sodium/potassium ratios. In this rural group, within subject day-to-day variations in dietary electrolytes are small, as indicated from multiple urinary collections, and are less than those observed in Western societies. We have demonstrated in this rural population that casual samples of urine correlated well with average sodium and potassium excretion over a 7-day period. Preliminary results are reported of a longitudinal study of migrants from a low to a high blood pressure environment and a nonmigrant population. The blood pressure rise consequent to migration was related independently to changes in body weight and urinary electrolytes. The implications of these observations for active intervention studies are discussed.