

Abstract:

OBJECTIVE: To demonstrate the magnitude, timing, and cause of changes in blood pressure that occur in migrants from a low blood pressure population on moving to an urban area.

DESIGN: A controlled longitudinal observational study of migrants as soon after migration as possible and follow up at three, six, 12, 18, and 24 months after migration. A cohort of controls living in a rural area who were matched for age, sex, and locality were also observed at the same periods. **SETTING:** 35 Villages on the northern shores of Lake Victoria in western Kenya and Nairobi. **PARTICIPANTS:** 325 Members of the Luo tribe aged 15 to 34 years who had migrated to Nairobi and 267 controls living in villages. The numbers of both groups reduced during follow up such that only 63 migrants and 143 controls were followed up for two years. **MAIN**

OUTCOME MEASURES: A medical questionnaire and three 24 hour diet histories were completed by migrants and controls. Height, weight, pulse, and blood pressure were measured. Three 12 hour overnight urine samples were collected from all participants and analysed for sodium, potassium, and creatinine concentrations. **RESULTS:** The mean systolic blood pressure of migrants was significantly higher than that of controls throughout the study, and the distribution of blood pressure was shifted to the right compared with controls. The mean diastolic blood pressure of the two groups diverged over time. Blood pressure differences were not due to selective migration. The migrants' mean urinary sodium:potassium ratio was higher than that of controls (p less than 0.001) throughout, and weight and pulse rate were also higher among migrants, although differences diminished with time. **CONCLUSIONS:** Urinary sodium:potassium ratio, pulse rate, and weight are important predictors of increased blood pressure among migrants from a low blood pressure community and may also be implicated in the initiation of essential hypertension.