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Plant based diets can help lower blood pressures of women in the U.S.

Approximately 65% of adults over 60 years in the US are hypertensive. Poor dietary habits and sedentary lifestyles are fueling the hypertension epidemic. Higher consumption of plant foods can help lower blood pressures in developed countries. Moreover, blood pressure exhibits considerable day-to-day variations and it is important to develop robust empirical models for investigating the effects of individuals' behavioral factors, intakes of α–tocopherol, triglyceride levels, and anthropometric indicators such as waist circumference for systolic and diastolic blood pressures. In addition, clinicians need jointly utilize the information on systolic and diastolic blood pressures rather than mechanically adopt "pulse pressure" that is the difference between systolic and diastolic blood pressures.

This article investigated the effects of higher intakes of fruits and vegetables and whole grains products on systolic and diastolic blood pressures using data at baseline, 6 and 12 months on 349 and 573 subjects, respectively, in Control and Intervention groups of the Women's Health Trial: Feasibility Study in Minority Populations. While empirical models for systolic and diastolic blood pressures have been previously estimated using cross-sectional data from different countries, it is important to estimate comprehensive dynamic random effects models that take into account inter-relationships between systolic and diastolic blood pressures as well as the effects of dietary intakes and biomarkers for formulating evidence-based policies. The main findings were, first, there were significantly greater reductions ($P<0.05$) between baseline and 12 months in systolic and diastolic blood pressures in the Intervention group. Second, ratios of α–tocopherol to energy intakes were negatively and significantly associated with systolic and diastolic blood pressures in the Intervention group. Third, "lipid accumulation product" was positively associated with systolic and diastolic blood pressures in the Control and Intervention groups. Fourth, estimated coefficients of diastolic and systolic blood pressure variables in the respective models for systolic and diastolic blood pressures showed that combining the two measures as the "pulse pressure" can lead to misleading inferences. Overall, dietary interventions promoting higher consumption of fruits and vegetables and whole grain products can help lower blood pressures of women in the U.S. and reduce the prevalence of chronic diseases.

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Publication

Dietary Modifications and Lipid Accumulation Product Are Associated with Systolic and Diastolic Blood Pressures in the Women's Health Trial: Feasibility Study in Minority Populations.
Bhargava A
Curr Hypertens Rep. 2018 May 19