

# Soy Protein Shows BP-Lowering Effect in Trial

BY BRUCE JANCIN  
Denver Bureau

VANCOUVER, B.C. — Increased intake of soybean protein may provide an important means of preventing and treating hypertension, Jiang He, M.D., declared at a meeting sponsored by the International Academy of Cardiology.

He presented results from a multicenter, double-blind, randomized, controlled trial of soybean protein in 302 Chinese adults with prehypertension or stage 1 hypertension. Participants in the 12-week trial ate cookies containing either 40 g/day of isolated soybean protein or 40 g of complex carbohydrates from wheat. The cookies were identical in taste and appearance. Most subjects ate them in lieu of their usual breakfast. Adherence was excellent, with 93% of all cookies in both groups being eaten.

Baseline mean blood pressure was 135.0/84.7 mm Hg.

The main study finding was a highly significant net blood pressure reduction of 4.3 mm Hg for systolic and 2.8 mm Hg for diastolic in the soy arm, compared with the control group.

This effect was larger than was found in studies of currently recommended lifestyle modifications, with the single notable exception of the National Heart, Lung, and Blood Institute-sponsored Dietary Approaches to Stop Hypertension (DASH) diet, noted Dr. He of Tulane University, New Orleans.

The blood pressure reduction was greater in subjects with stage 1 hypertension than in those who were prehypertensive. Indeed, stage 1 hypertensives experienced a net reduction of 7.9/5.3 mm Hg in response to soybean protein supplementation. The 2.4/1.3-mm Hg reduction in prehypertensive subjects didn't achieve statistical significance; however, the study wasn't powered for subgroup analysis, according to the physician.

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It's worth noting that soybean protein has ancillary health benefits, Dr. He added. It has been shown in randomized controlled trials to significantly reduce serum LDL, total cholesterol, and triglycerides.

Session cochair Martha L. Daviglus, M.D., of Northwestern University, Chicago, noted that the observational International Study on Macronutrients and Blood Pressure, in which she was an investigator, found an association between greater consumption of vegetable protein—but not animal protein—and lower blood pressure. This raises the question of whether the blood pressure-lowering effect documented in Dr. He's study is unique to soy protein or might be achievable with a diet enriched with mixed vegetable protein.

The daily portion of soy cookies contained 76 mg of total isoflavones, including 45 mg of genistein and 27 mg of daidzein.

The study was funded by Tulane University; the National Heart, Lung, and Blood Institute; and the Ministry of Science and Technology of the People's Republic of China. ■

## Aerobic Fitness Decreases All-Cause Mortality in Hypertensive Women

BY MICHELE G. SULLIVAN  
Mid-Atlantic Bureau

NASHVILLE, TENN. — Higher cardiorespiratory fitness is associated with lower all-cause mortality in hypertensive women, Carolyn E. Barlow said in a poster presented at the annual meeting of the American College of Sports Medicine.

Ms. Barlow, director of data management at the Cooper Institute, Dallas, presented the results of an open cohort study of almost 13,000 women who were followed for up to 26 years. The women were part of the Cooper Aerobics Center Longitudinal Study, a prospective observational study of lifestyle and health.

All the women were examined at the Cooper Aerobics Center in Dallas from 1971 to 1998, and followed up yearly for mortality.

At baseline, the women received a comprehensive medical examination and exercise prescription. They also took a treadmill test, which was used to determine their fit-

ness level. The lowest 20% in each age group were considered "unfit," while the upper 80% in each age group were considered "fit."

At baseline, their average age was 43 years. Of the cohort, 51% were normotensive, 31% were prehypertensive (120/80 mm Hg), and 18% were hypertensive (140/90 mm Hg or higher).

There were 298 deaths during the study period. After adjustment for age, exam year, and smoking, a trend toward lower mortality risk was seen in fit women, compared with unfit women in each blood pressure group, but only in the hypertensive group was the difference statistically significant. Fit hypertensive women were 54% less likely to die than unfit hypertensive women.

The decreased risk of death was 19% for normotensive fit women, compared with unfit ones, and 5% for prehypertensive fit women, compared with those who were unfit.

"We've shown a similarly decreased risk for hypertensive men," Ms. Barlow said. ■

## Ambulatory BP Tops In-Office Measures in Predicting CVD

BY SHERRY BOSCHERT  
San Francisco Bureau

SAN FRANCISCO — Ambulatory blood pressure monitoring in the general population was a better predictor of cardiovascular mortality and morbidity than in-office blood pressure measurements in a 10-year study, Tine Willum Hansen, M.D., reported.

The investigators recorded baseline ambulatory and in-office blood pressure readings and other risk factors in 1,700 people aged 41-72 years who had



**Only ambulatory blood pressure was a significant predictor of risk for cardiovascular events.**

DR. HANSEN

no major cardiovascular diseases. The subjects were followed up 9.5 years later; 156 subjects had died of cardiovascular disease, had a stroke, or developed ischemic heart disease during that decade, she said at the annual meeting of the American Society of Hypertension.

For ambulatory measurements, every 10-mm Hg increase in systolic blood pressure at baseline, the relative risk for these three end points combined (cardiovascular death, ischemic heart disease, and stroke) increased by 35%. For every 10-mm Hg increase in

diastolic blood pressure at baseline, the relative risk increased 27%, said Dr. Hansen of the Research Center for Prevention and Health, Copenhagen.

In contrast, for in-office measurements at baseline, every 10-mm Hg increase in systolic blood pressure raised the risk of the combined end points by 18%, and each 10-mm Hg increase in diastolic pressure raised the risk by 11%.

Only ambulatory blood pressure was a significant predictor of risk for the combined end points, Dr. Hansen said. Compared with normotensive subjects at baseline, those with sustained hypertension based on either ambulatory or in-office measurements were more than twice as likely to die of cardiovascular disease or develop ischemic heart disease or stroke. Of normotensive subjects, 6% developed one of these end points, compared with 17% of those with sustained hypertension—a significant difference.

Compared with normotensives, subjects with isolated ambulatory hypertension showed a trend toward increased risk for the combined end points; this trend did not reach statistical significance. A similar trend was not seen in subjects with isolated in-office hypertension.

Among 474 "nondippers" (people whose blood pressures fell less than 10% at night) based on ambulatory measurements, those with hypertension had a 68% higher risk for the combined end points than did normotensive subjects, Dr. Hansen said. ■

## High Blood Pressure Found in Almost Half of Obese Children

WASHINGTON — Almost half of the obese children presenting to one behavioral weight control program had blood pressure in the hypertensive or prehypertensive range, according to data presented at the annual meeting of the Pediatric Academic Societies.

Using new National Heart, Lung, and Blood Institute criteria for the diagnosis, evaluation, and treatment of high blood pressure, 29.2% of the 168 children involved in this study were hypertensive and 14.3% were prehypertensive, Monique Higginbotham, M.D., of Children's Hospital of Pittsburgh, said in a poster presentation at the meeting, which was sponsored by the American Pediatric Society, the Society for Pediatric Research, the Ambulatory Pediatric Association, and the American Academy of Pediatrics.

The cross-sectional study enrolled children aged 8-12 years with a mean body mass index (BMI) of 36 kg/m<sup>2</sup>, who had been referred to a 20-week, family-based behavioral weight control program. The children were predominantly white (70%) and there were

slightly more girls (56%) than boys.

At initial screening, the children were evaluated for height and weight, and their BMI was calculated. Blood pressure was measured three times at 5-minute intervals during a single visit, using a mercury sphygmomanometer. The mean of the three measurements was used as the final blood pressure.

According to the NHLBI guidelines, hypertension in children is defined as systolic or diastolic blood pressure levels that are at or above the 95th percentile for gender, age, and height. Prehypertension in children is defined as systolic or diastolic blood pressure levels that are at or above the 90th percentile but less than the 95th percentile. Normotensive children have systolic or diastolic blood pressure levels less than the 90th percentile.

Systolic blood pressure correlated positively with BMI. The prevalence of prehypertension and hypertension did not differ statistically by age, gender, or race/ethnicity.

—Kerri Wachter