

Physical activity decreases salt's effect on blood pressure

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The more physically active you are, the less your blood pressure rises in response to a high-salt diet, researchers reported at the American Heart Association's Nutrition, Physical Activity and Metabolism/Cardiovascular Disease Epidemiology and Prevention 2011 Scientific Sessions.

"Patients should be advised to increase their physical activity and eat less sodium," said Casey M. Rebholz, M.P.H., lead author of the study and a medical student at the Tulane School of Medicine and doctoral student at the Tulane University School of Public Health & Tropical Medicine in New Orleans. "Restricting sodium is particularly important in lowering [blood pressure](#) among more sedentary people."

Investigators compared study participants' blood pressure on two one-week diets, one low in sodium (3,000 mg/day) and the other high in sodium (18,000 mg/day).

The American Heart Association recommends consuming less than 1,500 mg/day of sodium.

If a person's average systolic blood pressure (the top number in the reading, measured when the heart is contracting) increased 5 percent or more from the low-sodium to the high-sodium regimen, the researchers labeled them as high salt-sensitive.

Based on physical activity questionnaires, researchers divided

participants into four groups ranging from very active to quite sedentary.

The average increases in systolic blood pressure after switching from low to high [sodium](#), adjusted for age and gender, were:

- 5.27 mm Hg in the least active group
- 5.07 mm Hg in the next-to-lowest activity group
- 4.93 mm Hg in the next to highest activity group
- 3.88 mm Hg in the most active group

Compared with the sedentary group, the odds of being salt-sensitive, adjusted for age and gender, fell:

- 10 percent in the next-to-lowest activity group
- 17 percent in the next-to-highest activity group
- 38 percent in the most active group

"In all the analyses we found a dose-response relationship with the more activity, the better," Rebholz said.

The participants were 1,906 Han Chinese adults (average age 38) in the Genetic Epidemiology Network of Salt Sensitivity (GenSalt), a large project to identify genetic and environmental factors contributing to salt sensitivity. Siblings and their parents were invited to become involved in GenSalt if at least one sibling had pre-hypertension (blood pressure between 120/80 and 139/89 mm Hg) or stage-1 hypertension (between

140/90 and 159/99 mm Hg). No one was on blood pressure medication during the study.

The GenSalt project is located in rural China because the homogeneous population makes it more likely that genes influential to blood pressure control will be identified.

"The study needs to be repeated, but I suspect that the relationship between [physical activity](#) and salt-sensitivity will apply to other populations," Rebholz said.

Provided by American Heart Association

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