

Salt substitution—an effective way to reduce blood pressure in rural India

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Replacing regular common salt consumed by hypertensive patients in rural areas with a salt substitute can have a significant impact in terms of lowering their blood pressure, a new study by The George Institute for

Global Health has revealed.

Researchers found that substituting a small part of the sodium in [salt](#) with potassium without altering the taste led to a substantial reduction in systolic [blood pressure](#) in these patients, supporting salt substitution as an effective, low-cost intervention for lowering [blood](#) pressure in rural India.

The study entitled "Effects of reduced-sodium added-potassium [salt substitute](#) on blood pressure in rural Indian hypertensive patients: a randomized, double-blind, controlled trial" provides the first-of-its-kind evidence from rural India on the effectiveness of a salt substitute and has been published in the *American Journal of Clinical Nutrition*.

Excess salt intake causes [high blood pressure](#), a leading risk for cardiovascular disease. Almost all adult populations worldwide consume more than the recommended level of salt including those living in rural India, where average salt intake is nearly double the World Health Organization (WHO) recommendations of less than 5 g/day (2 g/day sodium).

"A large proportion of dietary salt in India comes from salt added to food cooked at home, but whether reduced-sodium salt substitutes can help to lower blood pressure had not been tested thus far," said Dr. Jie Yu, Research Fellow, Cardiovascular Program, The George Institute and lead author of the study. "Our study is the first to show that salt substitutes could make a real difference in these communities."

"The study was conducted in the Siddipet region of Telangana State, and 502 participants with hypertension from 7 villages were enrolled," She added, "Participants were randomized to receive either regular salt (100% sodium chloride) or the salt substitute (70% [sodium chloride](#) /30% potassium chloride blend) and advised to replace all home salt use

with the substitute."

The primary outcome was the change in [systolic blood pressure](#) from baseline to 3 months in the salt substitute group compared to the regular salt groups. Secondary outcomes included the change in diastolic blood pressure, 24-hour urinary biomarkers, and self-reported use and satisfaction with the study salts provided.

"At 3 months, the salt substitute intervention significantly decreased average systolic blood pressure by about 4.6 units, an effect comparable to some commonly prescribed anti-hypertensive medications," said Sudhir Raj Thout, Research Fellow, The George Institute India, the study co-author who led the study's field operations.

"There was also a significant increase in the amount of potassium consumed in the salt substitute group. Participants reported that they used the study salt nearly every day of the week and rated the taste of the study salts similarly, indicating that the reduced-sodium salt substitutes are acceptable for home cooking for our study participants." he added.

The findings have policy implications. "Our data suggest that using reduced-sodium, added-potassium salt substitute to replace regular salt for home cooking will likely be an effective and scalable intervention for blood [pressure](#) control in rural India," said Jason Wu, Associate Professor and Scientia Fellow at The George Institute, and supervisor of the study.

"As none of the participants were aware of the existence of reduced-sodium salt at the beginning of the study, this suggests policymakers should consider supporting increased access to, and education about the use of such salt substitutes for hypertensive patients in India."

More information: Jie Yu et al, Effects of a reduced-sodium added-

potassium salt substitute on blood pressure in rural Indian hypertensive patients: a randomized, double-blind, controlled trial, *The American Journal of Clinical Nutrition* (2021). [DOI: 10.1093/ajcn/nqab054](https://doi.org/10.1093/ajcn/nqab054)

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