

New potential treatment approach for patients with salt-sensitive hypertension

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High blood pressure (hypertension) affects one in two U.S. adults and can cause hardening and thickening of the arteries (atherosclerosis), which can lead to heart attacks, strokes or other complications including chronic kidney disease. Dietary salt intake can evoke salt-sensitive hypertension, which exists in approximately half of hypertensive patients.

A new study from Boston University School of Medicine (BUSM) has found that an alpha adrenoceptor blocker (a class of drugs that relaxes smooth muscle or [blood vessels](#)) may represent a new treatment approach for patients with salt sensitive hypertension. This is the first study to demonstrate that α 1-adrenoceptor antagonism reduces the activity of a mechanism in the kidney that reabsorbs salt to reduce [blood pressure](#).

The researchers used an [experimental model](#) that was fed a high salt diet (to model the content of a Western diet) which led to an increase in their blood pressure. A portion of these models were then treated with an alpha 1 adrenoceptor blocker that reduced their blood pressure by decreasing

the activity of a pathway in the kidney that reabsorbs salt. "Our data suggest blocking renal α 1-adrenoceptors may represent a new treatment approach for patients with salt sensitive hypertension," said corresponding author Richard Wainford, Ph.D., associate professor of Pharmacology & Experimental Therapeutics at BUSM.

According to the researcher this study highlights the critical role of looking at the disease of hypertension in an integrated way by examining the interaction between multiple organ systems, in this case the sympathetic nervous system and kidney versus working in isolation. "We hope that these studies, that highlight a new mechanism underlying the salt sensitivity of blood pressure, will drive new treatment approaches for hypertension."

More information: Franco Puleo et al, Sympathetic Regulation of the NCC (Sodium Chloride Cotransporter) in Dahl Salt-Sensitive Hypertension, *Hypertension* (2020). DOI: [10.1161/HYPERTENSIONAHA.120.15928](https://doi.org/10.1161/HYPERTENSIONAHA.120.15928)

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