

# Blood pressure control system found in kidney's structural units

January 14 2011

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A new finding shows how the million working units in the kidney regulate salt handling. This identifies a new possible therapeutic target for treating high blood pressure.

The kidney is made up of roughly 1 million working units called nephrons. These basic structural units remove waste products from the blood, recycle some substances to be reused and eliminate what is left as urine. The end segment of nephrons, called the distal nephron, helps set blood pressure by controlling the amount of sodium in our blood.

Today scientists at The University of Texas Health Science Center San Antonio reported how this essential function of the distal nephron is regulated. They demonstrated that sodium handling by the distal nephron is under the control of a local regulatory system.

Loss or dysfunction of this system leads to [hypertension](#) resulting from improper salt retention by the kidneys, the scientists found in mouse studies.

"These studies provide the first unequivocal evidence of a blood pressure control system in the distal nephron of the kidney," said senior author James Stockand, Ph.D., professor of physiology at the Health Science Center. "It turns out control of [sodium](#) re-absorption by this system is as important to normal [blood pressure regulation](#) as is a better-understood system, called the renin-angiotensin-aldosterone system, which works outside the kidney."

Many medications that treat [high blood pressure](#) target salt handling in the [kidney](#). "Our work identifies a possible new therapeutic target," Dr. Stockand said.

**More information:** The findings are in the Jan. 14 issue of the *Journal of Biological Chemistry*.

Provided by University of Texas Health Science Center at San Antonio

Citation: Blood pressure control system found in kidney's structural units (2011, January 14)  
retrieved 27 April 2024 from <https://phys.org/news/2011-01-blood-pressure-kidney.html>

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