

## Salt intake physiologically set in humans, new study finds

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Salt intake is controlled by networks in the brain and not by the salt in one's food.

(Medical Xpress)—Don't toss your saltshaker out just yet. A new study led by scientists affiliated with the University of California, Davis, adds further credence to the notion that concern about the amount of salt you

consume may be misplaced.

The study documents in humans what neuroscientists have reported for some time: animals' sodium (salt) intake is controlled by networks in the brain and not by the salt in one's food. The findings have important implications for future U.S. [nutrition policy](#) directed at sodium intake.

Findings from the new study, entitled "Normal Range of Human Dietary Sodium Intake: A Perspective Based on 24-hour Urinary Sodium Excretion Worldwide," will be published online in advance of the print edition of the *American Journal of Hypertension*, appearing Aug. 26.

For decades, U.S. health policies have emphasized the importance of limiting [salt consumption](#) in order to lower the risks of cardiovascular disease related to [high blood pressure](#). This new scientific review, however, found that people have a very predictable and narrow range of daily sodium intake (approximately 2,600 mg to 4,800 mg per day) that has remained quite constant during more than 50 years and across at least 45 countries.

"Our data clearly demonstrate that humans' sodium (salt) intake is regulated within a relatively narrow 'normal' range that is defined by the body's physiology and biological need rather than by the food supply," said the study's lead author David McCarron, a physician and adjunct professor in the UC Davis Department of Nutrition. "The nation's future [health policies](#) and guidelines should be developed based on that biologically determined range."

He noted that these findings were recently presented to an Institute of Medicine committee, which prepared the report "Sodium Intake in Populations—Assessment of Evidence."

"In releasing that report, the Institute of Medicine acknowledged for

administrative reasons that it remained silent on what constituted the 'normal range' of sodium intake for humans and specifically what defined 'excessive' intake," McCarron said. He noted that the institute's report was explicit in stating that the current U.S. sodium guidelines for healthy individuals (no more than 2,300 mg per day) and for those at risk of heart disease (no more than 1,500 mg per day) were unsupported by data in the medical literature.

"However, our research team's new study, combined with our 2009 publication, now defines what for humans is the normal range of sodium or [salt intake](#) and suggests what would constitute both an excessive and deficient sodium intake in terms of promoting optimal health," McCarron said. "Our data demonstrate that past U.S. guidelines for sodium (salt) intake are well below human needs."

Co-author Joel Geerling, a physician and neuroscientist at Harvard Medical School's Beth Israel Deaconess Hospital, said: "These findings are consistent with the idea that eating salt is physiologically controlled, as predicted by decades of efforts by the neuroscience community directed at understanding the brain's role in the regulation of sodium appetite."

"Our new study explains why decades of government efforts have failed to lower the sodium, or salt, intake in the U.S.," said Judith Stern, one of the study's authors and a professor emeritus of nutrition and internal medicine at UC Davis. "Policy simply cannot change physiology."

## **About the new study**

The new study's combined data represent more than 69,000 research participants in 190 government-sponsored studies in 45 countries over the past five decades. Salt intake was measured in terms of sodium excreted in the urine during a 24-hour period. The average and range of

the combined data were nearly identical to those first reported in the researchers' 2009 study on salt intake.

The study reported an average intake of sodium of approximately 3,650 mg per day and a normal range of 2,600 to 4,800 mg per day.

"This analysis defines the normal range and mean value for sodium intake in humans and documents that the range has not changed during five decades, nor has it been influenced by ethnicity or the unique dietary practices of various cultures around the world," McCarron said.

"If future nutritional guidelines are to be effective, they must be based on the scientific reality reflected in these data, which have documented that a normal range for human [sodium intake](#) exists," he said. "Sodium intake will not be changed by altering the salt content of food products or other public-policy attempts to limit sodium consumption."

Collaborating with McCarron, Stern and Geerling on the new review study were Alexandra Kazaks of Bastyr University, Seattle, Wash.; and Niels Graudal of University Hospital, Rigshospitalet, Copenhagen, Denmark.

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**More information:** [ajh.oxfordjournals.org/lookup/ ...  
i/10.1093/ajh/hpt139](http://ajh.oxfordjournals.org/lookup/...i/10.1093/ajh/hpt139)

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