

Lowering salt intake improves heart and kidney health of chronic kidney disease patients

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Reducing salt intake provides clear benefits for the heart and kidney health of patients with chronic kidney disease, according to a study appearing in an upcoming issue of the *Journal of the American Society of Nephrology* (JASN). The findings point to the power of salt restriction in potentially prolonging kidney disease patients' lives.

Excessive salt intake is consistently linked to increased risk of heart disease and worsening [kidney](#) function. People with [chronic kidney disease](#) (CKD) may be particularly susceptible to salt's detrimental effects due to the kidney's important role in controlling salt balance and their increased risk of dying from [heart disease](#). Until now, though, the effect of [salt restriction](#) in these patients has not been well explored.

The LowSALT CKD study represents the first blinded randomized controlled trial comparing a high vs low salt intake in people with CKD. During the study, Emma McMahon (PhD candidate, University of Queensland, in Australia) and her colleagues, led by principal investigator Katrina Campbell, PhD (Princess Alexandra Hospital, in Australia) compared the effects of a high salt diet (180 to 200 mmol/day) vs a low salt diet (60 to 80 mmol/day) maintained for two weeks each in a random order in 20 patients with CKD. (Dietary guidelines recommend limiting sodium to less than 100 mmol—which is 2300 mg or one teaspoon—per day.) The team measured various parameters related to heart and kidney health, including change in

extracellular fluid volume, blood pressure, and protein in the urine.

The researchers found that on average, low [salt intake](#) reduced excess extracellular fluid volume by 1 liter, lowered blood pressure by 10 /4 mm Hg, and halved protein excretion in the urine, without causing significant side effects.

"These are clinically significant findings, with this magnitude of [blood pressure](#) reduction being comparable to that expected with the addition of an anti-hypertensive medication and larger than effects usually seen with sodium restriction in people without CKD," said McMahon. She was particularly impressed with the 50% reduction in protein excretion in the urine. "If maintained long-term, this could reduce risk of progression to end-stage kidney disease—where dialysis or transplant is required to survive—by 30%."

The findings suggest that salt restriction is an inexpensive, low-risk and effective intervention for reducing cardiovascular risk and risk of worsening [kidney function](#) in people with CKD. "If these findings are transferable to the larger CKD population and shown to be sustainable long-term, this could translate to markedly reduced risk of cardiovascular events and progression to end-stage [kidney disease](#), and it could generate considerable health-care savings," said Dr. Campbell.

In an accompanying editorial, Cheryl Anderson, PhD, and Jochim Ix, MD (University of California San Diego School of Medicine) commended the researchers for providing important clinical trial data in support of current clinical practice consensus guidelines, noting that "this study makes us cautiously optimistic." They added that larger studies with longer follow-up specifically designed and carried out in CKD populations are needed to help inform recommendations to both individual patients and policymakers.

More information: The article, entitled "A randomized trial of dietary sodium restriction in chronic kidney disease," will appear online on November 7, 2013, [DOI: 10.1681/ASN2013030285](https://doi.org/10.1681/ASN.2013030285)

The editorial, entitled "Sodium Reduction in CKD: Suggestively Hazardous or Intuitively Advantageous?" will appear online on November 7, 2013, [DOI: 10.1681/ASN.2013090923](https://doi.org/10.1681/ASN.2013090923)

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