

## How does the klotho gene relate to hypertension and salt sensitivity?

**CJASN**  
Clinical Journal of American Society of Nephrology

### Methods and Cohort



**Evaluation of:**  
 • Role of klotho polymorphisms  
 • Alpha-klotho serum levels

**Salt sensitivity**  
 • Mean BP increase > 4mmHg at the end of infusion

**32 SNPs in klotho gene (KL)**  
 • Studied for pressure-natriuresis relationship

### Findings

35% of hypertensives were salt-sensitive  
 GG and GT genotypes of the missense common SNP rs9536314 were more represented among salt-sensitives

The SNP rs9536314 best associated with pressure-natriuresis and replicated association in an independent replication cohort and combined analysis

Carriers of the G allele showed a less steep pressure-natriuresis  
 Meaning a significant increase in mean BP was needed to excrete the same quantity of salt compared to salt-resistant subjects

Circulating klotho inversely related to BP changes after saline infusion  
 ( $r = -0.14$ ,  $p = 0.03$ )  
 Circulating alpha-klotho directly related to kidney function at baseline eGFR  
 ( $r = 0.22$ ,  $p < 0.001$ )

**Conclusions** KL rs9536314 is associated with salt-sensitive hypertension in naive hypertensive patients. Moreover, circulating alpha-klotho levels were mainly related to diastolic BP changes at the end of a salt load and to eGFR as expression of kidney-aging.

Lorena Citterio, Simona Delli Carpini, Sara Lupoli, et al. *Klotho Gene (KL) in Human Salt-Sensitive Hypertension*. CJASN doi: 10.2215/CJN.08620719. **Visual Abstract** by Michelle Lim, MBChB, MRCP