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**Title :** Effects of a reduced sodium increased potassium salt substitute on peripheral and central blood pressure among high risk individuals in rural China: a randomised controlled trial

**Background :** The effects of long term use of a reduced sodium and increased potassium salt substitute on surrogate markers of subclinical cardiovascular diseases such as central blood pressure measured by pulse wave analysis are not known.

**Methods :** The China Salt Substitute Study was a randomised, controlled trial designed to establish the long-term effects of salt substitute (65% sodium chloride, 25% potassium chloride, 10% magnesium sulphate) compared to regular salt (100% sodium chloride) on blood pressure among 600 high-risk individuals living in rural northern China for a 12 month period. Data on central aortic blood pressure, aortic pressure augmentation (AUG) and AIx were collected at randomisation and the completion of follow-up in 187 participants using the Sphygmo-Cor pulse wave analysis system.

**Results :** Mean baseline blood pressure was 139.5/21.8/86.8/12.5 mmHg, mean age was 58.4/9.6 and 41% were male. There were significant net reductions in peripheral (7.4 mm Hg,  $p=0.009$ ) and central (6.9mm Hg,  $p=0.011$ ) systolic blood pressure levels and mean aortic pressure (4.2mm Hg,  $p=0.035$ ). There was no detectable reductions in peripheral (2.8mm Hg,  $p=0.14$ ) or central (2.4mm Hg,  $p=0.13$ ) diastolic blood pressure levels, AUG (1.5mm Hg,  $p=0.074$ ) or AIx (0.06%,  $p=0.96$ ).

**Conclusion :** The salt substitute resulted in the significantly similar reduction of both brachial pressure and central aortic pressure without the change of augmentation index, which could exclude definite benefit on central aortic pressure than brachial pressure.