Direct vs indirect link between sodium intake and vascular disease

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The relationship between salt and hypertension is well established, and salt restriction is widely recommended in the management of hypertension. However, people living in northeast Asia have consumed large amount of salt, and the prevalence of hypertension and the incidence of stroke have been high in that area. Mechanisms of salt-induced hypertension may be complex, but volume expansion in the presence of impaired natriuretic capacity of the kidney and action on the central nervous system and neurohormoral pathways seem to be important. Salt is also involved in blood pressure (BP) elevation caused by other factors, such as weight gain, stress, catecholamines, angiotensin and aldosterone. The interaction between sodium and aldosterone appears to play a critical role in the development of organ damage. The depressor effect of salt restriction in hypertensive patients is well demonstrated although the response of BP varies widely among individuals. It is suggested that population-wide reduction in salt intake may have huge impact on the prevention of cardiovascular disease and on medical coat through decrease in BP. Recent studied have also shown that the association of salt consumption and cardiovascular diseases, such as stroke and heart failure, is independent of BP. The adverse interaction between salt and aldosterone is also BP-independent. Although salt restriction is important to control blood pressure and to prevent cardiovascular diseases, the effect and safety of aggressive salt restriction remain to be clarified. There are large limitations to accomplish and maintain a low-salt diet. Both population strategy and individualized approach should be incorporated to reduce salt consumption.