

Yin-yang effect of sodium and chloride presents salt conundrum

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'Eat less salt' is a mantra of our health-conscious times and is seen as an important step in reducing heart disease and hypertension.

Too much salt in the diet – and specifically sodium – is widely acknowledged as a major risk factor for [high blood pressure](#) however, scientists have found that salt's other oft-overlooked constituent chloride might also play an important role.

A study by researchers at the University of Glasgow has revealed that low chloride levels in the blood is an independent indicator of [mortality risk](#) in people with hypertension.

The role of chloride in [hypertension](#) has received little attention from scientists hitherto.

After analysing data from almost 13,000 patients with high blood pressure, followed up over 35 years, the researchers found that low levels of chloride was associated with a higher risk of death and [cardiovascular disease](#).

The group with the lowest level of chloride in their blood had a 20% higher mortality rate compared to the other subjects. The results are published in the journal *Hypertension*.

Dr Sandosh Padmanabhan of the Institute of Cardiovascular and Medical Sciences, said: "Sodium is cast as the villain for the central role it plays in increasing the risk of high blood pressure, with chloride little more than a silent extra in the background.

"However, our study has put the spotlight on this under-studied chemical to reveal an association between low levels of chloride serum in the blood and a higher mortality rate, and surprisingly this is in the opposite direction to the risks associated with high sodium.

"It is likely that chloride plays an important part in

the physiology of the body and we need to investigate this further."

Chloride is already measured as part of routine clinical screening and so monitoring of [chloride levels](#) could easily be incorporated into clinical practice to identify individuals at high risk.

Dr Padmanabhan added: "The results we see from this study are confounding against the knowledge that excess salt is a bad thing, yet higher levels of chloride in the blood seems to be an independent factor that is associated with lower mortality and cardiovascular risk. We seem to have entered a grey area here that requires further investigation.

"It is too early to draw any conclusions about relating this finding to salt intake and diet. We need more research to establish exactly what the relationship between chloride and health risk is."

Provided by University of Glasgow

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