

Associations of salt-sensitivity in cardiovascular system  
with stress responses and relaxation responses: a study of mental arithmetic testing  
and blood pressure biofeedback treatment

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### Summary

The purpose of the present study was to assess the effects of salt-sensitivity on blood pressure elevations due to mental stress and on blood pressure lowering of biofeedback treatment in hypertension.

Through a low-sodium diet for two weeks, 15 essential hypertensive outpatients were classified into a salt-sensitive group (n=6) or non-salt-sensitive group (n=9). After a baseline period with regular diet for two weeks, mental arithmetic testing was performed to all the subjects. Blood pressure biofeedback treatment was conducted four times with the interval of one week, and the change of blood pressure was followed up two weeks, one month, and three months after the treatment period.

Although the degree of elevation of mean blood pressure was greater in the salt-sensitive group (28mmHg in average) than in the non-salt-sensitive group (23mmHg in average), the difference was not significant ( $0.5 < P < 0.10$ ). By the biofeedback treatment, the mean blood pressures were significantly decreased at the assessments of all the three follow-up periods in both groups.

In the setting of the present study, mental arithmetic testing did not discriminate salt-sensitive hypertension and non-salt-sensitive hypertension. Blood pressure biofeedback treatment seems to be effective in hypertensive patients regardless of salt-sensitivity.