

A Study on the Correlation of Salt Intake, Meal Serving Pattern and Health

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Summary

To elucidate the mutual relationship between dietary intake of the salt to health hazard, three consecutive studies were made in 1995, '96 and '97.

In 1995(Report I), we have studied on two checkpoints.

1) Validity of the screening methods for the assessment of the salt intake in the district (China) where meals are served in the large dish for the whole family. 2) Validity of the urinary salt measurement as a biomarker by the "Salt-paper" since it is the most convenient screening test method in the fieldworks. For 1), so-called "Inventory method" is good enough and the results were in good agreement with 24hour-recall method. For 2), urinary salt output of the subjects by the "Saltpaper" showed many scale-out measurements for some unsolved reasons.

In 1996(Report II), we have tried dilution (2x) of the original urine of the Chinese subjects which showed over 16/g, which is the highest scale of the Salt-paper, by distilled water. The results were in good agreement with those of the Atomic Absorption methods and other methods which make NaCl assessment by measuring Na⁺ ion. Another finding was that BMI of the subjects showed a significant correlation with NaCl intake.

In 1997, the final year of the project, we studied the inhabitants of a rural village in Aomori to compare the result with those of Chinese subjects to find out what measurement could be the best biomarker of the salt intake. The results are as follows: 1) Saltpaper method is a good for screening to check the output of the salt into urine which is said to have positive correlation with the salt intake. 2) It is difficult to be the best biomarker, however, because other markers such as gender, age, obesity, etc. are related as well. 3) Salt output did not correlate positively with blood pressures of the subjects.