

International comparison of dietary intake and urinary excretion
of salt and trace elements among Japan and Asian countries

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Summary

To examine the nutritional state of sodium chloride among people in Asian countries, in reference to quantify its dietary intake and urinary excretion.

In 1990-1997, a nutritional survey was conducted in Japan and Asian countries, in which adult women at the ages of 20-70 years volunteered to offer 24-hr total food duplicates and, 24-hr total urines and a spot urine. 675 non-smoking women in 30 sites in Japan and 446 non-smoking women in 9 sites in nations (China, Thailand, Philippines and Malaysia) in Asia, out of Japan.

The chloride contents in the food duplicates and the urines were measured by the chloride counter.

The daily dietary chloride intakes distributed essentially normally. Its mean values and standard deviations of all of Japanese and all of Asian people were representatively, 5.87 ± 2.05 g/day and 5.86 ± 3.22 g/day. There was some regional difference of the chloride intakes in both of Japan and Asia. By district in Japan, the highest chloride intakes were 6.54 ± 2.05 g/day of Hokkaido and the lowest that was 4.88 ± 2.26 g/day of Nansei islands. In Asian countries, out of Japan, the highest chloride intake by district was 9.56 ± 3.79 g/day of Zhangqiu and the lowest was 2.09 ± 2.26 g/day of Kuala Lumpur at low latitude.

The highest daily urinary chloride excretion by district in Japan was 8.02 ± 3.11 g/day of Tohoku and the lowest was 4.78 ± 1.83 g/day of Nansei islands. In China, the urinary chloride excretion of the rural Zhangqiu, 11.00 ± 3.52 g/day was apparently higher than that of the urban Jinan, 7.38 ± 2.75 g/day.

Correlation coefficients between the daily dietary chloride intakes and the daily urinary chloride excretions were statistically significant for both of individual and district in Japan and China.

Of particular interest was the fact that correlation coefficients between the daily dietary intakes of protein and chloride were statistically significant and it seemed that a dietary protein increased linearly about 0.6g/day of the chloride intake by 10g/day of protein intake in Japan and China commonly.

It is noticeable that the Chinese people of the much dietary chloride intake in rural show higher blood pressure and hypertension.