

Daily salt intake in 3 years old infants estimated from 24 h urine analysis

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Summary

It is nationally important to reduce salt intake. The exposure to salty food during the childhood may affect the salt intake in adults. Accordingly information on salt intake in infants is inevitable. Nevertheless, such information is amazingly little. Therefore, we estimated daily salt intake in 48 three-year old healthy infants of both sexes. We recruited volunteers at legislative regular health check. After the explanation about the aim, public benefit, expected risk, use of data and free withdrawal from the study, those who agreed to volunteer produced written consent. They were asked to collect all the urine of the infant for 24 hours, to report health status and drug(s) taken, and to fill the questionnaire about food environment. Infants who had any disease or drug on the day of urinary collection as well as those who were using diaper were omitted from the study. Thus, we collected urine from 48 infants in 9 municipalities in Miyagi prefecture. Urine volume and urinary sodium concentration was measured within 12 hours of collection using commercial test paper (Uro-paper salt, EIKEN) and flat ion electrode for sodium (Compact Na ion-meter, HORIBA). We considered that daily sodium chloride excretion calculated from the above two parameters represented daily salt intake.

Results were analyzed by Student's t-test, analysis of variance and regression analysis, and considered significant at error probability smaller than 0.05.

Sodium concentration measured by the above two methods showed a statistically significant positive correlation. However, the coefficient of regression was less than 0.7. Test paper gave higher values than ion electrode. Thus, we decided to use results obtained with ion electrode.

The median of urinary volume and daily salt intake were 373(range 180 to 985) ml/d and 2.7 (range 0.3 to 5.9) g/d, respectively. There was no significant effect of municipal, gender and their interaction. The source of stock was the only significant food-related modifier of salt intake.