

Relationship between the Cation Concentrations in Saliva and the Sensitivity of Salt Taste

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Summary

Excessive salt intake can lead to high blood pressure and kidney disease, so an appropriate amount of salt intake has been established. Although the salt intake of Japanese people has been decreasing year by year, it still significantly exceeds the recommended value by the WHO. There are more than 40 million people in Japan who suffer from hypertension, and controlling salt intake, which is a risk factor, is considered important for managing the Japanese people's health and reducing medical costs. Salt intake is expected to be influenced by both the recognition threshold, which is the lowest concentration that can be perceived as salty, and the salt concentration that makes food taste good (salt taste preference concentration), but both have large individual differences, and the determining factors are not clear. In this study, we measured salt recognition threshold, salt taste preference concentration, and ion concentration in resting and stimulated saliva. In addition, we conducted a questionnaire survey on subjects' daily preference degree for salty taste and intake frequency.

From the results of measurement of recognition threshold, the subjects were divided into low- and high-threshold groups. The sodium ion concentration in the resting saliva of the low-threshold group was lower than that of the high-threshold group. Conversely, the potassium ion concentration was higher than that of the high-threshold group, which indicates that ions in the resting saliva influence taste recognition threshold. There were correlations between sodium concentration in the resting saliva with preference concentration and preference degree, respectively. These results suggest that a preference for salty taste increases the sodium ion concentration in the resting saliva by increase in salt intake, and that an increase in the salivary sodium ion concentration may lead to a desire for a higher salt concentration.