

Does Mild-to-Moderate Salt-Restricted Diet Based on Japanese Cuisine Contribute to Hypertension Treatment for the Japanese Population?

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Hypertension is one of major health problems around the world. According to WHO fact sheets¹⁾, an estimated 1.13 billion people have hypertension, and hypertension is a major cause of premature death worldwide. In particular, a pooled analysis showed that increased mean estimated blood pressure was observed for both sexes in Asian regions²⁾. One of features of the Asian population is a high intake of salt³⁾, which is major risk factor for hypertension. The national mean levels of systolic blood pressure and salt intake in Japanese men and women have declined for half a century. This is because of the health care system established under the Health and Medical Service Act for the Aged (1980–2007), Act on Assurance of Medical Care for Elderly People (2008–), and health programs based on evidence from epidemiological studies, including frontier prevention programs for stroke in 1960s⁴⁾, although the Japanese population still has high mean values of blood pressure levels and salt intake. According to National Health and Nutrition Survey in Japan (2019)⁵⁾, mean levels of systolic blood pressure for ages ≥ 20 years was 132 mmHg in men and 127 mmHg in women and salt intake for ages ≥ 20 years was 10.9 g/day and 9.3 g/day for men and women, respectively (Fig. 1).

In the last two decades, the evidence for blood pressure-lowering effect of the DASH (Dietary Approaches to Stop Hypertension) diet has increased. However, because the DASH⁶⁾ diet, which is characterized by low intakes of salt and saturated fat and a high intake of vegetables, fruits, and low-fat dairy foods, was developed based on a western diet, it may not necessarily be acceptable for Japanese

population in particular seasoning.

As shown in Fig. 1, the DASH diet has 3.8g or 5.8g of salt⁶⁾, and this amount is lower than the amount recommended by the Japanese Society of Hypertension⁷⁾ as well as the mean levels of salt intake among the Japanese population.

Umemoto and the colleagues developed a Japanese cuisine-based DASH (J-DASH) diet (supplying approximately 8.0g NaCl per day) that could be considered as mild-to-moderate salt-restricted diet and examined the feasibility of the J-DASH diet based on its effects on the blood pressure among untreated high-normal blood pressure or stage 1 hypertension patients^{8, 9)}. They found the lowering effect of the J-DASH diet on both systolic and diastolic blood pressure levels⁸⁾ and on home blood pressure variability⁹⁾. Additionally, they found that weekly consumption rate gradually declined but mean consumption rate was high ($< 80\%$)⁹⁾. A recent meta-analysis¹⁰⁾ showed that even the lowest sodium change group (mean values: -43 mmol sodium) had significant blood pressure reduction (mean difference in systolic blood pressure: -4.26 mmHg). In contrast, the longer duration (> 6 months) had small blood pressure reduction compared with shorter duration. Therefore, mild-to-moderate salt-restricted diet, such as the J-DASH diet, may be one of the potential diets for hypertension treatment; however, further studies are needed to ascertain whether long duration intervention of the J-DASH diet is reasonable for Japanese.

Because Japan has an aging population, malnutrition is one of the important health problems faced by the elderly population that needs attention in order to prevent frailty and dementia. Thus, main and side dishes are important sources of protein,

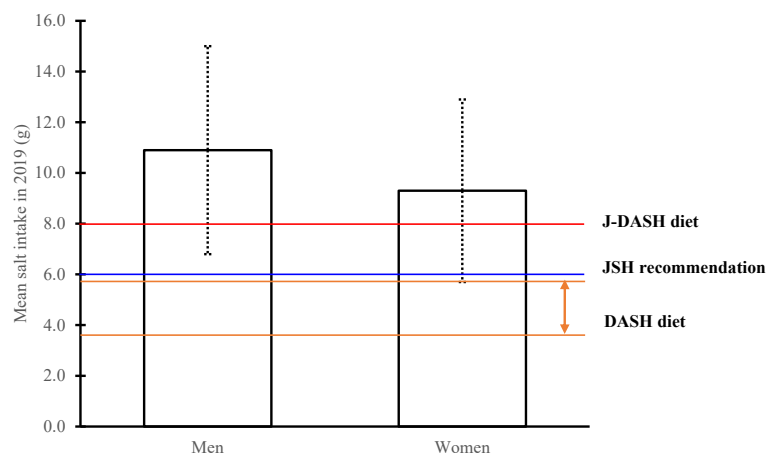


Fig. 1. The mean salt intake among Japanese in 2019 and salt level for the DASH diet, J-DASH diet, and recommended amount by the Japanese Society of Hypertension

Error bars show standard deviation. Orange line indicates salt supply amount in the DASH diet; blue line indicates recommended salt amount by the Japanese Society of Hypertension; red line indicates salt supply amount in the J-DASH diet.

unsaturated fatty acids, vitamins, and minerals, which may be potentially protective nutrients for frailty and dementia. However, main and side dishes may also supply salt; thus, a well-balanced diet is needed to prevent health problems for the middle-to-elderly Japanese population. Regarding this point, the findings from J-DASH diet studies may also help in examining what well-balanced diet is.

Conflicts of Interest

None.

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