A nutrition dilemma: Is MSG a good substitute for salt?

Hypertension and Sodium intake in Singapore

Hypertension or high blood pressure refers to the condition in which the blood is pumped around the body at too high a pressure. The prevalence of hypertension among Singaporean adults aged 18 to 69 years was 23.5% in 2010. Many factors are known to contribute to the elevated numbers: age, family history, stress, diet, activity level and underlying diseases, are just a few. It has been indicated that high salt intake is related to blood pressure increase which likely increase risk of heart disease and stroke. Thus, the reduction of dietary sodium intake is advisable to reduce risk of development of hypertension.

The World Health Organization (WHO) recommends the consumption of less than 5 g salt (or < 2g sodium) per day as a worldwide population nutrient intake goal. In Singapore, 9 in 10 Singaporeans consume two times the recommended daily allowance of salt. The average intake of salt of an average adult in Singapore is 9g per day, which is more than the recommended 5g per day.

Sodium chloride, commonly known as salt, consists of 40 percent sodium and 60 percent chloride. One level teaspoon of salt contains approximately 2,300 mg of sodium.

Monosodium Glutamate (MSG)

Glutamic acid is a natural constituent of many fermented or aged foods, including soy sauce, fermented bean paste, tomatoes, mushrooms and cheese, and is also a component of hydrolysed protein such as yeast extract.

MSG is the sodium salt of glutamic acid, one of the most abundant naturally occurring non-essential amino acids. It was classified by the U.S. Food and Drug Administration as generally recognized as safe (GRAS) and by the European Union as a food additive. MSG has the HS code 29224220 and the E number E621.

MSG has long been used in several Asian cuisines for its flavour, known as ‘umami’ in Japanese, and flavour-enhancement properties.
Despite a widespread belief that MSG can elicit a headache, among other symptoms, there are no consistent clinical data to support this claim. Findings from the literature indicate that there is no consistent evidence to suggest that individuals may be uniquely sensitive to MSG9.

Taste and smell losses can reduce appetite and may lead to inadequate dietary intake, commonly seen in the elderly population. MSG improves food palatability and taste10. Several studies showed that amplification of flavor and taste can improve food palatability, increase salivary flow and local immunity and thereby at least acceptance of food11, 12.

The report on the “Strategies to Reduce Sodium Intake in the United States” published by the Institute of Medicine of USA mentioned about these reports that have shown MSG could maintain food palatability with a lowered overall sodium level in a food when MSG was substituted for some of the salt13.

References:

8. Yamaguchi S, Ninomiya K. Umami and food palatability. J. Nutr 2000.130: (Suppl 4) 921S-926S.