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Determination of the salty taste threshold in the Moroccan population

Introduction

Following the recommendations of the World Health Organization to reduce the average salt consumption in the population by 30% to reach a target of less than 5 g per day by 2025, Morocco has recently developed a plan of salt reduction in order to reinforce prevention of non-communicable diseases which is a major problem at the national level.

A reduction in the salt content can lead to a loss of overall acceptability of the food by the consumer resulting in a negative economic impact. Indeed, several studies have shown that a reduction in the salt content of foods is systematically associated with a sharp decrease in their appreciation and acceptability by consumers. Gustatory perception is a sensory characteristic, the role of which seems obvious in determining feeding behaviors. However, in human populations, this characteristic must be studied within a broader context of food perception resulting both from biological parameters and a sociocultural environment that can, in certain cases, change the initial psychological and physiological perception.

The present study is a masterpiece of this national strategy since its objective is to determine the threshold of perception of salt taste in water among the Moroccan population. The national plan for the reduction of salt consumption will take this into account in order to gradually reduce the salt content in processed foods.

Methods

The study involved 201 testers divided into 4 age groups [15-29 years], [30-44 years] [45-59 years] and over 60 years. The panelists tested NaCl solutions at concentrations of 1, 2, 4, 8, 15, 30, 60, 125, 250, 500 mmol/l in random order using the blind Alternative Forced Choice method. The rinsing between each test was carried out using flat water. Information's on age, gender, height, weight and Body Mass Index was collected and transcribed on SPSS software for statistical processing.

Results

Results show that 38.80% of the testers began to perceive the salty taste from the concentration of 30 mmol/l (1.75 g/l) and 31.84% from the concentration of 15 mmol/l (0.875 g/l), while 10, 94% and 13, 93% of the testers perceived the salty taste respectively at concentrations of 8 mmol/l (0,46g/l) and 60 mmol/l (3,5g /l). The khi2 test shows a significant correlation between the perception of the salty taste and the sex (p value = 0,035) and the perception of the salty taste and the BMI (p value = 0,034). The age has no significant effect on the threshold of perception of the salty taste (p value 0.500).

Conclusion

Analysis of the results shows that the Moroccan population perceives the salty taste at 15mmol / l; this is attributable to the Moroccan diet with high levels of salt.

Findings offer a very important data that can be used as part of the national salt reduction strategy to convince industrials to reduce salt levels in processed foods

Keywords

Determination, salty taste, perception, Morocco

Institution

Joint Research Unit in Nutrition and Food., URAC 39 (Ibn Tofaïl University. CNESTEN). Regional Designated Center of Nutrition(AFRA-IAEA), Morocco.

Country

Morocco

Author: Ms GUENNOUN, Yasmine (Joint Research Unit in Nutrition and Food. , URAC 39 (Ibn Tofaïl University. CNESTEN). Regional Designated Center of Nutrition(AFRA-IAEA),Morocco.)

Co-authors: Dr ELMOUZOUNI, Fatimazahra (Non communicable diseases Division , Ministry of Health Morocco.); Prof. BENKIRANE, Hasnae (Joint Research Unit in Nutrition and Food. , URAC 39 (Ibn Tofaïl University. CNESTEN). Regional Designated Center of Nutrition(AFRA-IAEA),Morocco.); Prof. AGUENAOU, Hassan (Joint Research Unit in Nutrition and Food. , URAC 39 (Ibn Tofaïl University. CNESTEN). Regional Designated Center of Nutrition(AFRA-IAEA),Morocco.); Dr EL BERRI, Hicham (Non communicable diseases Division , Ministry of Health Morocco.); Dr EL KARI, Khalid (Joint Research Unit in Nutrition and Food. , URAC 39 (Ibn Tofaïl University. CNESTEN). Regional Designated Center of Nutrition(AFRA-IAEA),Morocco.); Dr EL KARI, Khalid (Joint Research Unit in Nutrition and Food. , URAC 39 (Ibn Tofaïl University. CNESTEN). Regional Designated Center of Nutrition(AFRA-IAEA),Morocco.); Dr EL AMMARI, Leila (direction of the population, Morocco); Prof. TABOZ, Youness (Joint Research Unit in Nutrition and Food. , URAC 39 (Ibn Tofaïl University. CNESTEN). Regional Designated Center of Nutrition(AFRA-IAEA),Morocco.);

Presenter: Ms GUENNOUN, Yasmine (Joint Research Unit in Nutrition and Food., URAC 39 (Ibn Tofaïl University. CNESTEN). Regional Designated Center of Nutrition(AFRA-IAEA),Morocco.)

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