

## A pilot study on salt taste sensitivity threshold in Turkish young adults

To the Editor,

High salt consumption is associated with chronic diseases and cardiovascular events, especially hypertension. People with low salt sensitivity are likely to increase their salt consumption in order to achieve “nice” tastes; high amounts of salt consumption will decrease the sensitivity, which will lead to them consuming more salt in order to achieve taste satisfaction. Reduction of salt intake significantly decreases the salt taste threshold values and influence salt taste preference. The aim of this study was to determine salt taste thresholds at young individuals.

This study was conducted with 45 students [68% (n=31) female and 31% (n=14) male; mean age  $23.2\pm 3.6$  years]. For assessment of salt sensitivity, eight glasses with salt containing solutions at different dilutions and 8 glasses with distilled water opposite to them were used. These solutions were prepared at concentrations of 2, 4, 8, 16, 32, 64, 128, and 256 mmol/L. The participants were requested to try 15 mL from these solutions, starting with the most concentrated one. After every part of the test, they flushed their mouth for 30 seconds with distilled water. The test was continued until the level when participants could not sense the salt taste (sensed equal with the control glass). Thus, the participants’ salt taste determination thresholds were specified. Later, the participants tested the solutions in the same way by starting from the most diluted one. The test was continued until the level at which the participants sensed the salt taste (sensed different from the control glass), and these values were specified as participants’ salt taste recognition thresholds.

The mean salt taste recognition threshold of the participants was determined as  $12.4\pm 5.6$  mmol/L, and the mean salt taste determining threshold was  $20.7\pm 19.9$  mmol/L. The mean salt taste recognition threshold of females were significantly lower than that of males ( $p=0.04$ ), but there was no meaningful difference among their salt taste determining thresholds ( $p=0.190$ ). Half of participants (55.5%) have recognized salt taste at a level of 16.0 mmol/L and 31.1% at a level of 8 mmol/L.

Salt taste threshold values were reported in the literature to range between 5 and 43.3 mmol/L (1–5). These differences between countries may be resulting from nutritional habit discrepancies. Cultural factors influence the nutritional behavior of individuals. Salt-free food is perceived as “tasteless” in the Turkish society. The reason may be feeding with highly salty food in childhood.

It is hard to decrease salt consumption at the community level. Compliance to programs, where salt consumption is reduced, is low. It was indicated that 10%–20% yearly or bi-yearly reduction of salt intake should be carried out, which is non-detectable by human salt taste receptors but significantly decreases the salt taste threshold values and influence salty taste preference.

The first impacts of the national salt reduction program will be on the individuals' salt taste thresholds so to determine the current salt thresholds is important for following the efficacy of these health policies in long term.

There were some limitations of the study: small sample size, similar nutritional habits of the study population, and inability to compare national data.

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