

Title:**Influence of taste preferences on the risk of overweight in children and adolescents****SUMMARY****Introduction:**

In Poland, as in other countries, over recent years, a significant increase in the number of children and adolescents with excessive body weight has been observed. Obesity is a serious public health problem, as it contributes to increased morbidity and mortality. Habits and eating habits that play a special role in the prevention of overweight and obesity are most often shaped at an early age. Whether food product is accepted as food next to environmental or economic factors largely is determined by food preferences. The development of taste and food preferences is particularly intense in early childhood. The sensory sensitivity of the taste recognition apparatus is an individual characteristic that can affect the perception of food products and the daily choices of foods to be consumed. Preference for tastes with a clear sweet and fat taste may have an impact on increased consumption of high energy dense foods, which may consequently affect the risk of increased body weight. There are few reports of the influence of taste preferences on the risk of overweight and obesity in children. Therefore, it is appropriate to carry out a detailed analysis of the relationship between sweet and fatty taste preference with excessive body weight of children and adolescents.

Aim of the study:

The aim of the study was to investigate the influence of sweet and fatty taste preferences on the risk of overweight in children and adolescents. The purpose of the study was also to identify other possible factors that could influence taste preferences and, as a result, overweight and obesity in children and adolescents.

Materials and method:

The study included 150 children aged 8-15 from the Podkarpackie Voivodship. The study group consisted of 75 children who, due to their anthropometric parameters, were

classified as overweight. The comparative group consisted of 75 children who were not included in this group (age and sex matched for the study group).

Two sensory tests were conducted according to the test method: Sensory preference for sweet and fatty taste and Measuring the perceived sweetness and fatness of children, adolescence and their parents, which are part of the European project: Determinants of eating behaviour in European children, adolescents and their parents under the auspices of the I.Family Consortium.

Anthropometric parameters: height and weight were measured three times. Questionnaires: "Parental Questionnaire for Parents", "Food and drink preferences questionnaire" were distributed among the children and parents

Statistical analysis of the test results was performed by means of the statistical package Statistica PL 10.1, assuming the most commonly used rules for test probability values (p).

Results:

The fatty and sweet taste preferences in both test 1 and test 2 correlate with excessive body weight. Statistical analyses show the influence of fatty taste preferences on the risk of obesity ($p = 0.0178 *$). In the case of sweet taste, the statistical significance ($p = 0.0338 *$) was obtained as a function of taste preference and occurrence of overweight or obesity. The simultaneous evaluation of both tastes for overweight in three groups also results in significant correlations ($p = 0.0100 *$). As in the case of children, the mother's preference for sweetness predisposed them to being obese - in test # 1 ($p = 0.0011 **$) and in test # 2 ($p = 0.0004 ***$). The influence of the preference of fatty parents on the weight of children was shown. The richer in fat sample was chosen by the mother, the greater was the proportion of children with obesity. The results indicate that the sensitivity to the intensity of the children's taste is dependent on the taste perception of the mothers. The incidence of overweight or obesity (as well as obesity) of children depends very clearly on the occurrence of overweight or obesity in parents ($p = 0.0000 ***$).

Conclusions:

1. There is a relation between sweet and fat taste preferences and body weight. Children who prefer a sweet taste or a fatty taste, as well as sweet and fat are characterized by higher body weight;
2. There was no difference in taste sensitivity for sweet and fat children with hyperthyroidism in comparison to children with normal body weight;
3. Children show stronger preference for sweet taste compared to their mothers;
4. There is a relation between the sweet and fatty taste preferences and the weight of the mothers of children. Mothers who prefer a sweet taste or a fatty taste are characterized by higher body weight;
5. Sensitivity to the intensity of the children's taste is dependent on the taste perception of the mothers;
6. Fat tastes preferences are associated with the risk of overweight and obesity in children;
7. Parents' overweight and obesity significantly affect the occurrence of overweight and obesity in children;

Keywords: children, taste perception, taste preferences, overweight and obesity.