Abstract

Cereal products are a common component of children's diets. Significant sodium intake from cereal products, which are salted during production, affects most of the population, including the youngest. Excessive sodium consumption has serious health consequences, such as hypertension, obesity, and stomach cancer. The aim of this study was to analyze selected cereal products for their sodium and salt content and assess their contribution to meeting adequate sodium intake in children's diets. Sodium content was determined using inductively coupled plasma emission spectrometry (ICP-OES), and the results per serving were compared to adequate intake levels for children in the appropriate age groups. The study also included *in vitro* simulations of the digestion of cooked pasta with and without added salt. The results confirmed that salt in cereal products, both added during production and cooking, is a significant source of sodium in children's diets. Among the cereal products analyzed, the main source of sodium in children's diets is bread, but also confectionery and bakery products. Although the other sweet cereal products analyzed do not contribute significantly to sodium intake, when consumed with other sodium-rich foods and in excessive quantities, they can also contribute to excess sodium intake. The study demonstrated that adding salt to the water used to cook pasta significantly increases the sodium content of cooked pasta and the sodium intake per serving. Rinsing the pasta after cooking reduces the sodium content, but not to the pre-salting level. Cooking pasta in salted water significantly increase sodium absorption in an *in vitro* gastrointestinal model, and the percentage of sodium absorption from pasta was positively correlated with the sodium content of the product. In summary, due to the global excess salt intake among children, various forms of nutritional education are necessary, such as teaching children to read food labels and encouraging them to reduce salting. From a food technology perspective, the most important and easiest change to implement is reducing the salt content in bread and baked goods. Children should be encouraged to eat minimally processed snacks, preferably whole grains, which provide young bodies with more nutrients while maintaining a low sodium intake.

Keywords: cereal products, sodium, salt, sodium absorption, child nutrition