Study: Consuming too much salt increases the risk of stomach cancer

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Added sugar may be the "bad guy" in the relationship between stomach cancer and unhealthy diet, while salt increases the risk of developing tumors even in people with healthy eating habits, according to a study conducted in Brazil and published in the scientific journal BMC Medicine.

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The researchers found that UDP was associated with an increased risk of stomach cancer, with added sugars – added during food processing to increase sweetness – contributing between 7% and 21% of the association. Sodium intake was identified as the main mediator linking HDP to stomach adenocarcinoma risk. No mediating effects were observed for saturated fatty acids or fiber.

Using an innovative approach, the study analyzed data from a large sample of individuals from four state capitals in different regions of Brazil. The study included 1,751 participants, including both patients and controls, from São Paulo, Goiânia, Fortaleza and Belém, with the group from Belém having the highest incidence of the disease.

Gastric Adenocarcinoma: A Dangerous Disease

Gastric adenocarcinoma is a malignant tumor that develops in the innermost layer (mucosa) of the stomach and accounts for more than 90% of stomach cancer cases. According to the Brazilian National Cancer Institute (INCA), stomach cancer is the sixth most common cancer in Brazil, with an estimated 21,000 new cases expected between 2023 and 2025. The mortality rate is also very high – 75% of patients die within 5 years.

In this multicenter case-control study, consumption patterns were determined by exploratory factor analysis (a statistical technique for identifying underlying patterns and relationships in a set of variables) using a 130-item food frequency questionnaire, adapted for each region of the country. To clarify the direct and indirect effects of these patterns on stomach cancer risk, the researchers performed mediational analyses.

The traditional approach in the scientific literature on the relationship between diet and cancer often focuses on individual foods or nutrients, ignoring the holistic perspective of dietary patterns, similar to the approach taken in this study.

Maria Paula Curado, oncologist and head of the Cancer Epidemiology and Statistics Research Group at the ACCamargo International Research Center, said: 'Each region and culture in Brazil has its own behaviour. The eating habits of the people of Belém are not the same as those of the people of Goiânia or São Paulo, but they can lead to the same disease. We decided to do a case-control study, meaning that for each patient, we found another person without the disease in the same area. This process was time-consuming, but it yielded important results that contributed to the elucidation of the mechanisms involved in gastric cancer from an epidemiological perspective, with implications for public health.'

The role of added sugars has been largely unexplored in the literature on diet and gastric cancer, which opens up new avenues for future research.

The relationship between sodium and stomach cancer

Sodium is a direct risk factor for carcinogenesis. Excessive consumption has a detrimental effect on the stomach lining, leading to inflammation and interactions with Helicobacter pylori, a bacteria normally found in the stomach but which can cause gastritis. Increased sodium intake can cause atrophic gastritis and metaplasia, complications of chronic irritation of the stomach lining, leading to cancer.

A recent national food survey estimated that around 60% of Brazilian adults consume more sodium than the recommended level, mainly due to their consumption of white bread, toast, beans, rice and beef. Products labeled 'whole grain', including breakfast cereals, breads and biscuits, can also contain high levels of sodium.

In the study, scientists pointed out that Brazil implemented a new food labeling law in 2022 to improve understanding of nutritional information, helping consumers make informed choices.

The World Health Organization (WHO) recommends that sodium intake be less than 2 grams per day, equivalent to five teaspoons of salt. Brazilians consume nearly double the recommended daily amount of sodium.

For added sugars, the maximum recommended intake is 10% of daily calories. For example, on a 2,000-calorie diet, this equates to 50 grams of sugar per day, or up to ten teaspoons. Meanwhile, a 350ml can of soft drink contains an average of 38 grams of added sugar.

In the study, the scientists recommend implementing additional initiatives and strategies to help consumers make healthier food choices and reduce sodium and added sugar intake to prevent stomach cancer.