

Association Found Between Consumption of Ultra-Processed Foods and Drinks and Increased Colorectal Cancer Risk

A new large-scale study in Spain involving almost 8,000 people has analysed the association between ultra-processed foods and drinks and three types of cancer

Barcelona, 23 March 2021. Consumption of ultra-processed foods and drink could increase the risk of developing colorectal cancer. This was the conclusion of a large study undertaken by the Barcelona Institute for Global Health ([ISGlobal](#)), a centre supported by the "la Caixa" Foundation, based on questionnaires about food behaviours completed by around 8,000 people in Spain. The study, the first of its kind in the country, also analysed the relationship between ultra-processed food and drink products and two other cancers; while no association was observed with prostate cancer, in the case of breast cancer a higher risk was observed in the sub-group of former and current smokers who reported a diet high in ultra-processed products.

Social, economic and industrial changes have driven a rise in ultra-processed food and drink consumption, which currently accounts for [between 25% and 50%](#) of the total energy intake in diets in Europe and in high- and middle-income countries. The [Nova classification system](#) groups all foods and drinks into four categories according to how much processing they undergo. Ultra-processed foods—those that undergo the most processing—are industrial formulations with more than five ingredients which usually contain additional substances, such as sugar, fats, salt and additives. Examples of products in this category include sugary soft drinks, ready meals and mass-produced industrial baked goods.

Several studies have linked the consumption of ultra-processed foods and drinks to health risk factors, cardiovascular diseases, type 2 diabetes and an increased risk of premature death. There are only a few studies on the relationship of these food products with cancer and the results are not entirely conclusive. A [French study](#) found an association between the consumption of ultra-processed foods and an increased cancer risk. A [Canadian study](#) found an increased risk of developing prostate cancer with a higher intake of processed foods, but not with ultra-processed foods.

The aim of the present study was to assess whether the consumption of ultra-processed foods and drinks is associated with an increased risk of colorectal, breast or prostate cancer. To this end, the researchers undertook a **case-control study of 7,843 adults** living in different Spanish provinces: half of the participants had a diagnosis of colorectal (1,852), breast (1,486) or prostate cancer (953); and the other half were people with the same characteristics who did not have cancer. Data were obtained from the multicase-control study [MCC-Spain](#). Dietary data was collected using a validated questionnaire designed to evaluate the frequency of consumption of usual food and drink items over a one-year period. The results were then classified according to the level of processing using the Nova classification.

The [study](#), published in *Clinical Nutrition*, concluded that the consumption of ultra-processed foods and beverages is associated with an **increased risk of colorectal**

cancer: a **10% increment in the consumption of ultra-processed foods and drinks** was found to be associated with an **11% increase in the risk of developing colorectal cancer.**

Dora Romaguera, first author of the study and researcher at ISGlobal, the Institut d'Investigació Sanitària Illes Balears (IdISBA) and the CIBEROBN, says that this relationship can be explained, in part, “by the **low intake of fibre, fruits and vegetables**, which are known to offer protection against colorectal cancer, among people who eat a lot of ultra-processed foods, but also by the additives and other substances with carcinogenic potential typically used in processed food products.”

In the case of **breast cancer**, no strong relationship was found, but an association was observed in the group of current and former smokers. Romaguera explains that “smoking is a risk factor for breast cancer, and smoking and certain dietary factors, such as the consumption of ultra-processed foods and beverages, are known to have synergetic effects on cancer development.”

No association was found between **prostate cancer** and a diet high in ultra-processed products. “This finding is not surprising and is consistent with the results of previous studies of dietary factors and prostate cancer risk, in which no link was found,” adds Romaguera.

Colorectal and Breast Cancer Cases: Less Healthy Diets

The results of the study showed that people with **breast and colorectal cancer**, but not those with prostate cancer, reported **less healthy diets** than people without cancer in the control group. “We found differences in terms of their intake of energy, fibre, energy density and saturated fatty acids. Consumption of ultra-processed foods and beverages was higher among colorectal and breast cancer cases than in the controls”, says ISGlobal researcher **Sílvia Fernández**, joint first author of the study.

The food groups that accounted for the largest proportion of ultra-processed food consumption were **sugary beverages** (35%), **sugary products** (19%), **ready-to-eat foods** (16%) and **processed meats** (12%). Processed meats have already been classified as carcinogenic by the International Agency for Research on Cancer (IARC). However, according to **Pilar Amiano**, researcher at the Guipúzcoa Public Health Service, which coordinated the study: “ultra-processed foods and drinks in general are not yet classified as carcinogenic because the aim of the **IARC was not to assess the overall risk of an individual's diet, but rather to focus on specific components that might be dangerous**, such as processed meats”.

She goes on to say that, in light of the results of the present study and the current scientific evidence on the health risks associated with ultra-processed foods and drinks, in particular with respect to cancer, the authors believe “that **food and public health policies and the IARC should already be taking food processing into account** and discouraging the consumption of ultra-processed products”.

Reference

Dora Romaguera, Sílvia Fernández-Barrés, Esther Gracia-Lavedán, Eva Vendrell, Mikel Azpiri, Emma Ruiz-Moreno, Vicente Martín, Inés Gómez-Acebo, Mireia Obón, Amaia Molinuevo, Ujué Fresán, Ana Molina-Barceló, Rocío Olmedo-Requena, Adonina Tardón, Juan Alguacil, Marta Solans, Jose M. Huerta, José Manuel Ruiz-Dominguez, Nuria Aragonés, Tania Fernández-Villa,

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About ISGlobal

The Barcelona Institute for Global Health, ISGlobal, is the fruit of an innovative alliance between the "la Caixa" Foundation and academic and government institutions to contribute to the efforts undertaken by the international community to address the challenges in global health. ISGlobal is a consolidated hub of excellence in research that has grown out of work first started in the world of health care by the Hospital Clínic and the Parc de Salut MAR and in the academic sphere by the University of Barcelona and Pompeu Fabra University. The pivotal mechanism of its work model is the transfer of knowledge generated by scientific research to practice, a task undertaken by the institute's Education and Policy and Global Development departments. ISGlobal has been named a Severo Ochoa Centre of Excellence and is a member of the CERCA system of the Generalitat de Catalunya.

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