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EDITORIAL

Ultra-Processed Foods Consumption and Cardiovascular Health

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Ultra-processed foods, as defined by the NOVA classification, are industrial formulations made from substances extracted or derived from food, containing little to no whole food in their composition. These foods are typically enhanced with flavorings, colorings, emulsifiers, and other additives that alter the sensory attributes of the final product. The ingredients and processes used in the ultra- processed foods manufacture aim to create low-cost, hyper-palatable, and convenient products that have the potential to replace fresh or minimally processed foods.[1]

Ultra-processed foods already constitute more than half of the total dietary energy consumed in high-income countries like USA,[2] and between one-fifth and one-third in middle-income countries such as Brazil.[3] These foods are not 'real food' and they are typically high in energy density, sugar, unhealthy fats, and salt, but low in dietary fiber, protein, vitamins, and minerals.

The consumption of ultra-processed foods affects health through various mechanisms. They impact the quality of food consumed, causing a general deterioration of the diet by replacing healthy foods, reducing the intake of bioactive compounds, and increasing the consumption of xenobiotics (acrylamide and acrolein, phthalates, and bisphenol), along with food additives. Another significant factor is the increase in energy consumption.[4]

Ultra-processed foods induce high glycemic responses, have low satiety potential, and create a gut environment that facilitates microbes promoting diverse forms of inflammatory disease. Low-grade chronic inflammation seems to be a unifying mechanism for health outcomes.

Keywords

Cardiovascular Diseases; Feeding Behavior; Food, Ultraprocessed; Diet.

The association between the consumption of ultra-processed foods and cardiovascular diseases was examined in a high methodological quality cohort study of French adults called NutriNet Santé. After adjusting for confounders, the consumption of ultra-processed foods was associated with a higher incidence of overall cardiovascular disease, as well as subgroups of coronary disease and cerebrovascular diseases.[5]

Lima et. al., additionally, investigated the impact of ultra-processed foods on the dietary micronutrient content in patients with cardiovascular disease. The cross-sectional study revealed that a higher consumption of ultra-processed foods was associated with a lower intake of essential micronutrients, potentially contributing to the development and progression of cardiovascular diseases.[6]

Thus, the avoidance of ultra-processed foods is the "golden rule" of national dietary guidelines recently issued in Latin American countries.[7]

Even with this range of evidence discouraging the consumption of ultra-processed foods, however, these foods had played a key role during the COVID-19 pandemic.

The pandemic measures, such as social distancing, has had a profound impact on individuals' lifestyles, leading to significant changes in routines and habits that have contributed to weight gain and exacerbated existing health conditions, particularly cardiovascular diseases.[8]

The implementation of lockdowns and restrictive measures had a substantial impact on dietary patterns, leading to a notable increase in the consumption of ultra-processed foods.[9]

Numerous factors contributed to this shift in eating habits. Limited access to fresh and perishable foods, such as fruits, vegetables, and meats, played

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a crucial role. Consequently, people increasingly relied on processed and shelf-stable alternatives that had a longer shelf life. Additionally, the heightened levels of stress, anxiety, and uncertainty during that time triggered emotional eating and a preference for comfort foods. Ultra-processed foods, known for their high content of sugar, salt, and unhealthy fats, offered temporary satisfaction and a sense of relief from negative emotions.

Furthermore, the convenience and simplicity of preparing ultra-processed foods made them an appealing choice for individuals juggling time constraints and increased responsibilities, such as working from home while managing household chores and childcare. As a result, these combined factors led to a significant change in dietary habits during the period of lockdowns and restrictive measures.[10,11]

A study conducted on the NutriNet Brasil cohort, has revealed significant dietary changes during the COVID-19 pandemic, characterized by the increased consumption of ultra-processed foods and decreased intake of fruits, vegetables, and whole grains.[9,12] These dietary shifts have been associated with various adverse health outcomes. Higher intake of ultra-processed foods has been linked to an increased risk of COVID-19 infection, as demonstrated by Zhou et. al, in a prospective cohort study.[13] Additionally, another study found that increased consumption of ultra-processed foods during the pandemic was associated with symptoms of anxiety and depression, highlighting the potential negative impact on mental health.[14]

In this issue of the *International Journal of Cardiovascular Sciences*, Lopes et al. it was presented a cross-sectional study investigating the relationship between metabolic phenotypes, changes in food consumption during the COVID-19 pandemic, and health outcomes in obese women. The study revealed that metabolically healthy women had better dietary intake and lower rates of health issues compared to metabolically unhealthy women. Significant differences were observed in anthropometric, glucose, and lipid profiles between the two groups, with the metabolically unhealthy group showing higher consumption of lipids, saturated fat, and sodium. These findings provided insights into the impact of the pandemic on food choices and suggested a potential link between dietary patterns, metabolic health, and overall well-being in obese women.[15]

Even though it is clear that the burden of cardiovascular diseases outcomes can be attributed to the consumption of ultra-processed foods, the consumption of this type of food only seems to increase, fostered due to its low cost, practicality, and the food industry appeal.

In conclusion, the negative health impacts of ultra-processed foods, particularly their contribution to cardiovascular diseases, make it imperative to implement interventions at individual, governmental, and community levels. The association between the consumption of ultra-processed foods and increased incidence of cardiovascular diseases indicates a significant public health concern that demands urgent action. Reducing the intake of ultra-processed foods and promoting fresh or minimally processed alternatives must be at the forefront of these strategies to improve cardiovascular health.

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