High consumption of ultra-processed foods increases a sensitive marker of inflammation

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Ultra-processed foods (UPFs) are industrially altered products – like soda, snacks and processed meats – packed with additives and stripped of nutrients. Hundreds of new ingredients, previously unknown to the human body, now make up nearly 60% of the average adult's diet and almost 70% of children's diets in the United States.

These products reduce nutritional value, extend shelf life, and tend to increase how much people consume. In the U.S., UPFs account for about 60% of daily calorie intake. High consumption of these foods has been linked to greater risks of obesity, cancer, metabolic and cardiovascular diseases, mental health issues, and even premature death.

New research from Florida Atlantic University's Charles E. Schmidt College of Medicine shows that people who consume the most UPFs have significantly higher levels of high-sensitivity C-reactive protein (hs-CRP), a sensitive marker of inflammation and a strong predictor of cardiovascular disease.

Until now, there have been limited data from nationally representative U.S. populations on the link between UPF intake and hs-CRP levels.

Results of the study, published in *The American Journal of Medicine*, show that participants consumed a median of 35% of their daily calories from UPFs, ranging from just 0% to 19% in the lowest group to 60% to 79% in the highest. After accounting for factors like age, gender, smoking, physical activity and other health indicators, researchers found that individuals in the highest UPF intake group (60% to 79% of daily calories) had an 11% higher likelihood of elevated hs-CRP levels compared to those in the lowest intake group. Even moderate UPF consumers (40% to 59%) showed a 14% increase in likelihood. Those with 20% to 39% intake had a smaller, nonsignificant 7% increase.

The likelihood was especially high in certain groups. Adults aged 50 to 59 had a 26% higher risk of elevated inflammatory markers compared to those aged 18

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to 29. Obesity contributed to an 80% higher risk compared to people with a healthy weight. Current smokers also had a higher risk (17%) than people who never smoked. Interestingly, individuals who reported no physical activity did not have a statistically significant increase in risk compared to those who met activity guidelines.

> *These findings, based on a large and nationally representative sample of U.S. adults, clearly show that people who consume the highest amounts of ultra-processed foods have significantly higher levels of high-sensitivity C-reactive protein, a key marker of inflammation. These results carry important implications not only for clinical practice and public health strategies but also for future research aimed at understanding and reducing the health risks associated with ultra-processed food consumption."*
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> *Allison H. Ferris, M.D., FACP, senior author, professor and chair of the FAU Department of Medicine*

Researchers analyzed data from 9,254 U.S. adults in the National Health and Nutrition Examination Survey, including diet, hs-CRP and other health factors. UPF intake was measured as a percentage of total calories and grouped into four levels. They used statistical methods, including logistic regression, to examine the link between UPF consumption and inflammation.

"C-reactive protein is produced by the liver, and the hs-CRP protein test is a simple, affordable and highly sensitive measure of inflammation as well as a reliable predictor of future cardiovascular disease," said Charles H. Hennekens, M.D., FACPM, FACC, co-author, the First Sir Richard Doll Professor of Medicine and Preventive Medicine, and senior academic advisor, Schmidt College of Medicine. "We believe that health care professionals may wish to consider actively engaging with their patients about the risks of UPFs and benefits of increasing whole food consumption."

The authors also highlight a significant rise in colorectal cancer rates in the U.S., particularly among younger adults. They suggest that increased consumption of UPFs may be a contributing factor, along with its potential role in several other gastrointestinal diseases.

Drawing a parallel to the history of tobacco, the authors note that it took decades for mounting evidence and the efforts of progressive health officials to lead to policies discouraging cigarette use. They believe a similar trajectory is likely for UPFs, with growing awareness eventually driving meaningful public health action.

"The multinational companies that produce ultra-processed foods are very influential, much like tobacco companies were in the past, so policy changes to promote whole foods and reduce UPF consumption may take time," said Hennekens. "However, government efforts to reduce harmful additives, improve food labeling, and promote healthier options in programs and schools are important steps in the right direction. At the same time, health care providers should be aware of the challenges many people face in accessing affordable, healthier choices, which calls for a broader and coordinated public health response."

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