Medical Xpress

Study finds that a lifestyle intervention may mitigate PFAS-related weight gain

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A new study finds that perfluoroalkyl and polyfluoroalkyl substances (PFASs) are associated with increases in weight, but exercise and diet may reduce the obesogenic effects of these environmental contaminants. The study, entitled Association of Perfluoroalkyl and Polyfluoroalkyl Substances with Adiposity, led by researchers from the Harvard Pilgrim Health Care Institute and the Harvard T.H Chan School of Public Health (HSPH) was published on August 31 in *JAMA Network Open*.

PFASs are a group of synthetic chemicals that are detected in over 95% of the U.S. population. These substances have been used in nonstick cookware, oil- and water-resistant textiles, greaseproof food packaging, personal care products, floor polish, and firefighting foams and as industrial surfactants among other applications. Exposure to PFASs occurs through direct and indirect sources including contaminated drinking water and food, personal care products, soil, dust, and air. The study sought to determine the extent to which PFASs are associated with increases in weight and body size and to evaluate whether a lifestyle intervention of exercise and diet, modifies this association.

The prospective cohort study included 957 individuals who participated in the Diabetes Prevention Program Outcomes Study and were followed for approximately 15 years. Study participants who were randomized to a lifestyle intervention group received training in diet, physical activity, and behavior modification. Participants randomized to placebo were given standard information about diet and exercise. The investigators found that among adults at high risk for diabetes, higher plasma PFAS

concentrations were associated with a prospective and long-term increase in weight and hip girth among individuals randomized to the placebo group, but not for those randomized to the lifestyle intervention. The results indicate that lifestyle changes of exercise and diet can reduce the obesogenic effects of environmental exposures.

"Exercise and a balanced diet confer multiple benefits; our study results suggest that another added benefit is fighting the obesogenic action of environmental chemicals such as PFAS" said lead author Andres Cardenas, Ph.D., MPH, Research Fellow in the Department of Population Medicine at the Harvard Pilgrim Health Care Institute.

The paper, "Association of Perfluoroalkyl and Polyfluoroalkyl Substances With Adiposity," was published on August 31 in *JAMA Network Open*.

More information: Andres Cardenas et al, Association of Perfluoroalkyl and Polyfluoroalkyl Substances With Adiposity, *JAMA Network Open* (2018). DOI: 10.1001/jamanetworkopen.2018.1493

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