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High exposure to 'forever chemicals' may raise women's blood pressure

By American Heart Association News

(Kentaroo Tryman/Maskot via Getty Images)

Exposure to man-made chemicals found in common household products and in soil, air, food and water may raise the risk for high blood pressure in middle-aged women, a new study suggests.

The study found middle-aged women with higher blood concentrations of per- and polyfluoroalkyl substances, or PFAS, were 71% more likely to develop high blood pressure than their peers with lower levels of these substances. The findings appeared Monday in the American Heart Association journal Hypertension.

"PFAS are known as 'forever chemicals' because they never degrade in the environment and contaminate drinking water, soil, air, food and numerous products we consume or encounter routinely," lead study author Ning Ding said in a news release.

"One study estimated that two of the most common 'forever chemicals' are found in most household drinking water and are consumed by more than two-thirds of Americans," said Ding, a postdoctoral fellow in the department of epidemiology at the University of Michigan School of Public Health in Ann Arbor.

Senior study author Sung Kyun Park said scientists have known for some time that PFAS disrupt metabolism in the body. "Yet, we didn't expect the strength of the association we found," he said in the release.

"We hope that these findings alert clinicians about the importance of PFAS and that they need to understand and recognize PFAS as an important potential risk factor for blood pressure control," said Park, an associate professor of epidemiology and environmental health sciences at the University of Michigan School of Public Health.

According to the U.S. Environmental Protection Agency, thousands of PFAS are used in common household products, such as some shampoos, dental floss, cosmetics, non-stick cookware, food packaging, stain-resistant coatings for carpeting, upholstery and clothing. They also are found in fish caught in PFAS-contaminated water and dairy products from cows that have been exposed to PFAS-containing fertilizer.

Nearly all people tested in the U.S. have detectable concentrations of at least one PFAS in their blood, according to previously published data from the National Health and Nutrition Examination Survey. But even at low levels, PFAS have been shown to have negative health impacts. They have been linked to cardiovascular risks such as impaired blood vessel function and high cholesterol. However, little was known about how they may impact blood pressure levels.

In the new study, researchers analyzed blood concentrations of seven PFAS and the risk of high blood pressure among 1,058 middle-aged women enrolled in the Study of Women's Health Across the Nation-Multi-Pollutant Study.

The women – who were Black, Chinese, Japanese or white – were recruited from health institutions in Boston, Pittsburgh, southeast Michigan, Los Angeles and Oakland, California. They were 45 to 56 years old and had normal blood pressure when the study began. They were followed almost annually from 1999 to 2017.

The researchers chose to study middle-aged women because menopause is a period when a woman's risk for high blood pressure begins to rise, along with other cardiovascular risks.

"It's important to note that we examined individual PFAS as well as several PFAS together, and we found that the combined exposure to multiple PFAS had a stronger effect on blood pressure," Park said.

"Some states are beginning to ban the use of PFAS in food packaging and cosmetic and personal care products," he said. "Our findings make it clear that strategies to limit the widespread use of PFAS in products need to be developed. Switching to alternative options may help reduce the incidence of high blood pressure risk in midlife women."

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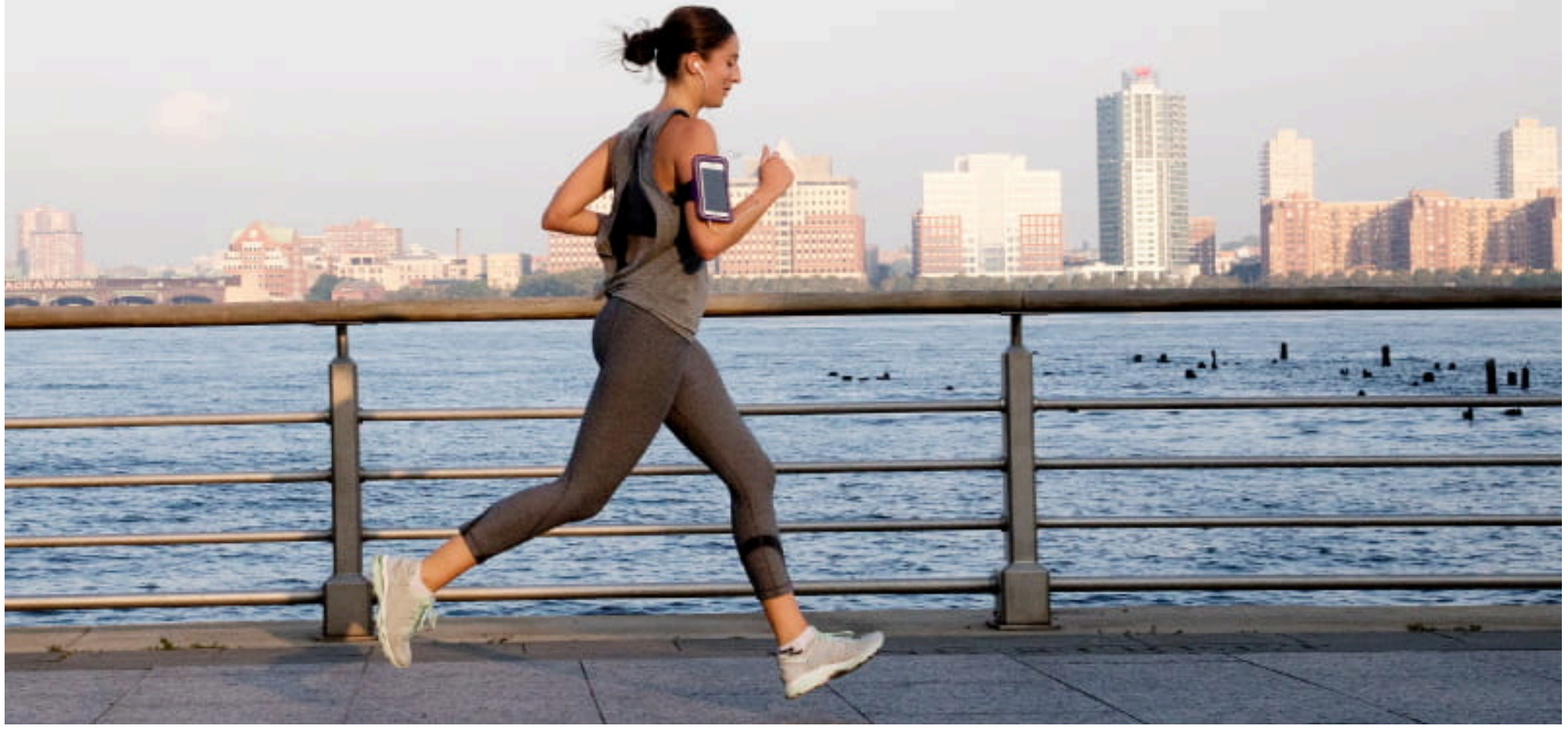

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