

# A substantial number of Parkinson's disease cases can be attributed to preventable risk factors, researcher says

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Haydeh Payami, Ph.D. Credit: Steve Wood

New research [published](#) by neurology researchers from the University of Alabama at Birmingham in *npj Parkinson's Disease* found that preventable risk factors play a significant role in a person's potential of developing Parkinson's disease.

The 1,223 persons studied at UAB hailing from the Southern region of the United States included 808 with PD and 415 neurologically healthy controls. Researchers came away with two significant findings that indicated that preventable risks affect the risk of Parkinson's disease: Repeated blows to the head sustained in activities like football and exposure to herbicides and pesticides.

First, the study found that repeated blows to the head in sports or military combat that seem harmless and may not even cause concussion doubled a person's risk of developing PD later in life. Second, 23% of cases of PD in both men and women were associated with exposure to pesticides, herbicides or military-related chemical exposures. Together, head injury and exposure to environmental toxins may account for nearly 1 in 3 cases of PD in men, and 1 in 4 in women.

"Parkinson's disease is rising fast globally, and there is an unspoken assumption that there is no prevention—but there is," said Haydeh Payami, Ph.D., professor and John T. & Juanelle D. Strain Endowed Chair in the UAB Department of Neurology, faculty in the Center for Neurodegeneration and Experimental Therapeutics, and the study's lead author.

"Our research demonstrated that a substantial fraction of PD in the Deep South is attributable to risk factors that can be reduced or avoided. Our paper puts a number on how many cases of PD could potentially be prevented if [toxic chemicals](#) were eliminated and if we made [contact sports](#) like football safer."

While genes play an important part in a person's exposure to PD cases, with about 5% of cases caused by [genetic mutations](#) that are hereditary, the other 95% of PD cases are thought to be caused by various external factors that cause disease in individuals who are genetically susceptible to their damaging effect.

As the research for this study was conducted at UAB and research participants were all from the Deep South, Payami shared that findings indicate that incidence of disease will likely vary by population depending on how prevalent the risk factors are.

For instance, in Europe, where many of the toxic chemicals that are commonly found in American products are banned, a lower fraction of Parkinson's disease could be attributed to those specific chemicals. Furthermore, numbers could change with time for better or worse, depending on actions taken now to clean the environment and improve health and safety standards.

**More information:** Haydeh Payami et al, Population fraction of Parkinson's disease attributable to preventable risk factors, *npj Parkinson's Disease* (2023). [DOI: 10.1038/s41531-023-00603-z](https://doi.org/10.1038/s41531-023-00603-z)

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