

Parkinson's disease diagnosis may be preceded by increased risk of injury-causing falls

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Immunohistochemistry for alpha-synuclein showing positive staining (brown) of an intraneural Lewy-body in the Substantia nigra in Parkinson's disease. Credit: Wikipedia

Years before Parkinson's disease (PD) is diagnosed, patients may be at higher risk for injurious falls or hip fractures, according to research published this week in *PLOS Medicine*. Peter Nordström and colleagues at Umeå University, Sweden, found that patients with PD were more likely to have had a hip fracture or injurious fall in the years preceding their diagnosis than controls without PD, and individuals who suffered injurious falls were more likely than controls with no fall-related injuries to be diagnosed with PD in the following years.

Nordström and [colleagues](#) used data from the Swedish National Patient Register to identify 24,412 Swedish citizens who were diagnosed with PD between 1988 and 2012, matching each case with up to ten controls (a total of 243,363). During an average of 20 years prior to PD [diagnosis](#), 18.0% of cases and 11.5% of controls had at least one fall that caused an injury requiring emergency care. After adjusting for other factors that might affect an individual's risk of a fall, PD was associated with a 19% higher risk of injurious falls up to ten years before diagnosis and with a 36% higher risk of [hip fracture](#) more than 15 years before diagnosis, with stronger associations closer to the diagnosis. In a second cohort, 622,333 individuals with a record of injurious falls were matched with individuals with no history of falls. The researchers found 0.7% of [individuals](#) with an injurious fall and 0.5% of controls were diagnosed with PD during follow-up, and after adjusting for other factors, there was an 18% greater risk of PD diagnosis in the ten years following an injurious fall.

The use of diagnoses obtained from registers means PD could not be clinically confirmed, which may limit the accuracy of these findings. Additionally, this study cannot prove that there is a shared causal link between injurious falls and PD and the findings need to be confirmed in other settings and populations. Nevertheless, this study provides insights into the early stages of PD. The authors say: "These findings suggest that clinically relevant neurodegenerative impairment could be present many

years before the clinical onset of the disease."

More information: Nyström H, Nordström A, Nordström P (2016) Risk of Injurious Fall and Hip Fracture up to 26 y before the Diagnosis of Parkinson Disease: Nested Case-Control Studies in a Nationwide Cohort. *PLoS Med* 13(2): e1001954. [DOI: 10.1371/journal.pmed.1001954](https://doi.org/10.1371/journal.pmed.1001954)

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