

With an Unexpected Parkinson's Disease Link Living near a Dry Cleaner may Come

A group of researchers examined whether residential proximity to dry cleaners is associated with the risk of developing [Parkinson's disease](#) among older United States Medicare beneficiaries.



Study

The researchers conducted a nationwide population-based case-control study using [Medicare](#) research data collected between 2014 and 2018. The study adhered to the Declaration of Helsinki and was approved by the Institutional Review Board of Barrow Neurological Institute and conducted under a data-use agreement with the Centers for Medicare & Medicaid Services. Informed consent was waived since de-identified claims data were utilized for analysis.

The study sample consisted of Medicare recipients aged 67 years or older who met all eligibility requirements and provided complete demographic and address information. Individuals older than 110 years, those enrolled in Medicare Advantage, and those with atypical Parkinsonism or Lewy body dementia were excluded. Incident Parkinson's disease cases were identified using the International Classification of [Diseases](#), Tenth Revision, Clinical Modification diagnosis code G20, while previous diagnosis codes from the International Classification of Diseases, Ninth Revision, Clinical Modification and earlier Tenth Revision records were used to exclude existing cases.

Locations of 32,723 dry-cleaning establishments in 2013 were determined using data from Esri Business Analyst, which was followed by measuring the distance from the dry-cleaning location closest to the residential [Zip+4 location](#) of each participant two years before diagnosis or the control reference date.

Statistical analyses evaluated the relationship between residential distance and Parkinson's disease while adjusting for age, [sex](#), race, smoking probability, healthcare utilization, neighborhood income, Rural-Urban Commuting Area classification, and area-level average annual mean particulate matter with an aerodynamic diameter less than 2.5 micrometers (PM2.5).

[Logistic regression](#) was used to evaluate the associations, and additional sensitivity and geographic analyses were performed to evaluate the robustness and regional distribution of the findings.

Residential proximity served as a proxy for potential exposure to dry-cleaning chemicals because the researchers did not measure individual [trichloroethylene](#) (TCE) or perchloroethylene (PCE)

exposure. The business classification could also include establishments that serve only as garment drop-off locations rather than sites where dry cleaning and solvent use actually occur.

Findings

The analysis included 180,982 individuals with incident Parkinson's disease and 18,848,268 control participants living within five miles of a [dry cleaner](#). As expected, Parkinson's disease cases were generally older and more likely to be male and White than controls.

A clear nationwide [distance-response pattern](#) emerged: People living closest to a dry cleaner had the highest odds of Parkinson's disease, and the association gradually weakened as residential distance increased.

Compared with people living four to five miles away, those residing within 500 feet (0.10 miles) of a dry cleaner had 14% higher odds of developing Parkinson's disease. Elevated odds persisted across progressively greater distances before weakening, demonstrating a consistent distance-dependent trend. Continuous analysis likewise showed that shorter [residential distance](#) was associated with higher odds of Parkinson's disease.

Associations varied across claims-defined Parkinson's disease clinical feature groups, with the strongest association observed among individuals with prior [gait disturbance](#) codes. Those living within 0.10 miles of a dry cleaner had 23% higher odds of Parkinson's disease with gait disturbance compared with those living four to five miles away.

The odds were 25% higher for Parkinson's disease cases with dementia or cognitive-decline [codes](#) and 19% higher for cases with prior falls among people living within 0.10 miles of a dry cleaner.

In contrast, no significant association was identified for the claims-defined tremor group, although the researchers cautioned that tremor may have been incompletely captured in administrative claims. These clinical feature groups were not mutually exclusive, meaning individuals could contribute to more than one [subgroup analysis](#).

[Sex-stratified analyses](#) demonstrated that the relationship between residential proximity and Parkinson's disease was present in both men and women, although it remained stronger and extended across greater distances in men.

Among women, significant associations were primarily limited to the two nearest distance categories. Sensitivity analyses that included only Parkinson's disease cases with a [G20 diagnosis](#) recorded by a neurologist produced similar findings, supporting the robustness of the results.

Exploratory geographic [mapping](#) indicated that the relationship between proximity to dry cleaning services and Parkinson's disease was not limited to a single area but showed a broadly positive pattern across much of the United States.

Various areas, including the Dallas–Fort Worth and Detroit metropolitan areas and southern Illinois, showed stronger associations between living near dry cleaning establishments and Parkinson's disease. Other clusters included the [Tennessee-Kentucky border](#), central

Pennsylvania, north-central Indiana, parts of southern California, and the New York City-New Jersey region.

Several limitations warrant consideration. Dry-cleaner proximity was only a proxy for [potential solvent](#) exposure; dry-cleaner locations came from 2013, and residential locations were assessed two years before diagnosis or the control reference date, while longer-term residential stability had to be assumed. The researchers also could not exclude unmeasured neighborhood confounding or co-exposures, and the findings among older Medicare beneficiaries may not generalize to younger populations.

Conclusion

The findings showed that living closer to dry cleaners was associated with higher odds of developing Parkinson's disease among older [Medicare](#) beneficiaries in the United States. The association followed a distance-response pattern, with the greatest odds observed among individuals residing nearest to dry-cleaning facilities.

Stronger associations were identified for Parkinson's disease with gait disturbance, [dementia](#) or cognitive decline, and prior falls, while no significant relationship was found for the claims-defined tremor group, although incomplete coding may have influenced this finding.

Overall, the findings suggest that residential proximity to dry cleaners, potentially reflecting community-level exposure to dry-cleaning solvents, may be associated with Parkinson's disease risk, warranting further [environmental investigation](#).

Source:

<https://www.news-medical.net/news/20260807/Living-near-a-dry-cleaner-may-come-with-an-unexpected-Parkinsons-disease-link.aspx>