

## **Soda and Pesticides Worsen another but Black Tea Helps in One Parkinson's Type**

Researchers investigated how lifestyle factors and environmental exposures affect the severity of motor symptoms in patients with [Parkinson's disease](#) over time.

They found that the consumption of [black tea](#) was linked to milder motor symptoms in one form of the disease. At the same time, pesticide exposure and the consumption of caffeinated soda have been implicated in worsening motor symptoms in another disease type.



### **Study**

This study used data from two large online cohorts. Participants with Parkinson's disease were recruited and followed through routine online assessments of non-motor and [motor symptoms](#), as well as detailed questionnaires on lifestyle habits and environmental exposures.

Ethical approval and [informed consent](#) were secured for both cohorts.

To ensure consistency, only participants with an age at onset of over 25 years, a disease duration of under 50 years, and at least three motor assessments were included. This resulted in 5,134 iPD patients and 81 [LRRK2-PD patients](#).

Motor symptom severity was measured using a cumulative score, consistently collected in both cohorts. Follow-up lasted up to 35 months for one cohort and 60 months for the second, divided into discrete periods for [analysis](#).

Environmental and lifestyle factors, including pesticide exposure, [smoking](#), and caffeine intake, were measured using standardized Parkinson's disease Risk Factor Questionnaires.

Linear mixed-effects models were used to assess the relationship between these factors and motor symptom progression over time. The models adjusted for age at onset, disease duration, experience of OFF episodes, and [sex](#), with the patient's identification number as a random effect.

Significance thresholds were adjusted for multiple comparisons in [pesticide](#) exposure analyses; other analyses were exploratory. This approach ensured a robust, longitudinal assessment of how environment and lifestyle may influence Parkinson's disease motor outcomes.

### **Results**

Across multiple assessments, motor symptoms worsened gradually in both groups, but iPD patients generally showed more severe [progression](#) than LRRK2-PD patients.

Notably, exposure to pesticides at work was linked to greater motor severity in iPD patients in the PPMI-Online cohort, with a similar but non-significant trend observed in the [Fox Insight](#) cohort. This association persisted after adjusting for sex. No such association was found in LRRK2-PD patients.

Smoking was also associated with increased motor symptom [severity](#) over time in iPD patients. This effect was significant in the PPMI-Online cohort, but only a subtle trend was observed in the Fox Insight cohort. This effect held after controlling for sex.

Regarding caffeinated drinks, [black tea consumption](#) did not influence motor severity in iPD but was linked to milder symptoms in LRRK2-PD patients. While the authors caution that this subgroup was small, they strengthened this preliminary finding by replicating it in a second, independent cohort of LRRK2-PD patients.

Conversely, caffeinated soda consumption was associated with more severe motor symptoms in iPD patients and showed a similar trend in LRRK2-PD, though less robustly. The paper notes that caffeinated diet soda, which lacks high [sugar content](#), showed no such association.

Interestingly, the link between caffeinated soda intake and worse motor symptoms was stronger among women than men with iPD. Consumption of coffee and green tea showed no clear impact on motor [symptom](#) progression in either group.

## **Conclusion**

This study highlights the impact of environmental and lifestyle factors on the progression of Parkinson's disease. It found that pesticide exposure and [caffeinated soda](#) intake were linked to worse motor symptoms in iPD, while smoking showed a weaker association that was not consistent across both study cohorts.

For LRRK2-PD, black tea consumption appeared protective, though this effect was not seen in iPD, suggesting [subtype-specific impacts](#). This finding is notable because it was observed in two independent cohorts, although both were small.

The study's strengths include its large sample size, long follow-up period, and use of two independent cohorts, which support robust findings. However, small LRRK2-PD samples limit generalizability, and other monogenic forms have not been thoroughly examined. Lack of data on medication doses, dietary details (such as [sugar](#) intake), and potential recall bias are additional limitations.

Despite these, the study emphasizes that environmental exposures, which are harder to control than lifestyle choices, can worsen Parkinson's symptoms even after disease onset. The findings also underscore how a factor like smoking can be protective before onset but potentially harmful after, and suggest how ingredients like sugar in soda may play a role separate from [caffeine](#).

Future research should confirm these results in larger, diverse [genetic groups](#) and use objective measures of exposure. Understanding these relationships may help tailor prevention and management strategies for different Parkinson's disease subtypes.

**Source:**

<https://www.news-medical.net/news/20250616/Black-tea-helps-in-one-Parkinsons-type-but-soda-and-pesticides-worsen-another.aspx>