

# Risk of Parkinson's disease increases with pesticide exposure and head trauma

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## **Environmental risk factors for Parkinson's disease and Parkinsonism: the Geoparkinson study**

Exposure to pesticides and traumatic head injury may have a causative role in Parkinson's disease, according to a study published online ahead of print in the journal *Occupational and Environmental Medicine*.

And the risk of developing Parkinson's disease increases according to the level of exposure, the results showed.

The two risk factors are potentially modifiable, the authors say. Head trauma resulting from contact sports such as boxing can be avoided and further research could identify more specifically which pesticides are associated with this effect, so that these agents can be substituted.

People who had been exposed to low levels of pesticides were found to be 1.13 times as likely to have Parkinson's disease compared with those who had never been exposed. Those who had been exposed to high levels of pesticides were 1.41 times as likely to be affected.

Parkinson's disease occurred 1.35 times more frequently in people who had been knocked unconscious once compared with those who had never been knocked out, and arose 2.53 times more frequently in those who had been knocked out more frequently.

The European Commission funded study is one of the largest case-control studies to date of genetic, environmental and occupational risk factors for Parkinson's disease or other degenerative parkinsonian syndromes. It involved 959 prevalent cases of parkinsonism (767 with Parkinson's disease) and 1989 controls recruited in Scotland, Italy, Sweden, Romania and Malta.

Cases were defined using the UK Parkinson's

Disease Society Brain Bank criteria. Patients with drug-induced or vascular parkinsonism or dementia were excluded.

Subjects completed a questionnaire regarding their lifetime occupational and recreational exposure to solvents, pesticides, iron, copper and manganese. Their lifetime exposure was then estimated blind to disease status and the results were adjusted, as appropriate, for age, sex, country of residence, tobacco use, ever having been knocked unconscious and family history of Parkinson's disease.

Source: *BMJ Specialty Journals*

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