

Pesticides Exposure Associated With Parkinson's Disease

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Boston, MA -- In the first large-scale, prospective study to examine possible links between chronic, low-dose exposure to pesticides and Parkinson's disease (PD), researchers at the Harvard School of Public Health (HSPH) have shown that individuals reporting exposure to pesticides had a 70 percent higher incidence of PD than those not reporting exposure. No increased risk of PD was found from reported exposure to other occupational hazards, including asbestos, coal or stone dust, chemicals, acids, or solvents. The study will appear in the July issue of *Annals of Neurology* (*Ann Neurol.* 2006; 60:197-203) and also appears online via *Wiley Interscience* (<http://www3.interscience.wiley.com/cgi-bin/abstract/112660877/ABSTRACT>).

Previous studies had suggested a link between PD and low-level exposure to pesticides, though the data remains inconclusive. The researchers, led by [Alberto Ascherio](#), associate professor of nutrition and epidemiology at HSPH, looked at data from the Cancer Prevention Study II Nutrition Cohort, a prospective study begun in 1992 by the American Cancer Society. Some 143,325 participants who responded to a follow-up survey in 2001 were included in the HSPH study. Researchers then contacted those individuals in the 2001 survey who reported a diagnosis of PD to ask if their medical records could be reviewed to confirm the diagnosis. Ultimately, Ascherio and his colleagues included in their study a total of 413 cases of PD with onset of symptoms and diagnosis after 1992.

The researchers used exposure data collected in 1982 from the CPS II mortality study, a study from which the Nutrition Cohort was drawn. Exposure to pesticides was reported by 5,203 men (8.2 percent) and 2,661 women (3.3 percent). Among those reporting exposure, after adjusting for age, sex, and other risk factors for Parkinson's disease, there was a 70 percent higher incidence of PD than among people who reported no exposure. Those reporting exposure were more likely to be male than female to report their occupation as farmer, rancher or fisherman and to be blue-collar workers, but none of these factors could account for the increased risk of Parkinson's disease, which was similar in men or women, and in non-farmers as well as farmers. The significant association between pesticide exposure and Parkinson's disease among individuals who are not farmers is most likely explained by use of pesticides at home or in gardening.

Future studies will need to examine which specific pesticides or classes of pesticides are likely to cause Parkinson's disease.

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