Parkinson's Linked To Residential Pesticide Use

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A recent study of people newly diagnosed with Parkinson's disease has found that home pesticide use and exposure is associated with an increased risk of developing the disease. The study, led by Lorene Nelson, Ph.D., a neuroepidemiologist at Stanford University's School of Medicine, in Palo Alto, California, is the largest ever of individuals with newly diagnosed Parkinson's, and the first to show an association between home pesticide use and the risk of developing Parkinson's disease. The study's findings were presented in May 2000, at the American Academy of Neurology's 52nd Annual Meeting in San Diego, and the full report is expected to be released in early 2001.

Nelson and her colleagues questioned 496 people who were first diagnosed with Parkinson's in 1994 and 1995 about their past use of pesticides in their homes or gardens. The subjects were each asked detailed questions about types of pesticides used, frequency of use, and when they were first exposed to household and garden pesticides. The researchers also asked subjects about their cigarette, alcohol and coffee consumption. A control group of 541 people without the disease were asked the same questions.

When researchers compared the life histories of the subjects and the control group, they found that people exposed to in-home insecticides were 70% more likely to develop the disease than those who had not been exposed. The average amount of time that people reported being exposed to products in this category was 77 days. Exposure to garden insecticides carried a 50% increased risk of the disease, according to the study. Among herbicide users, risk of developing Parkinson's increased as the number of days that people were in contact with herbicides accumulated. Respondents who reported handling or applying those products for up to 30 days were 40% more likely to develop the disease, whereas respondents that reported higher levels of exposure, an average of 160 days, had a 70% increased risk of developing the disease. Exposure to fungicides, while linked to other health problems, was not determined to be a risk factor for Parkinson's disease in this study.

According to Nelson, damage to nerve cells in a part of the brain called the basal ganglia and subsequent deficiency in the neurotransmitter dopamine leads to the balance and movement difficulties characteristic of Parkinson's disease. People exposed to chemicals that have a certain affinity to this region of the brain may be at particular risk for developing the disease, says Nelson.

Source: Technical Report, Beyond Pesticides/National Coalition Against the Misuse of Pesticides, Vol. 15, No. 7, July 2000.

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