

Pesticides May Increase Parkinson's Risk

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Pesticide use and exposure in the home and garden increase the risk of developing Parkinson's disease, according to a study of almost 500 people newly diagnosed with the disease.

Researchers announced their findings at a presentation at the American Academy of Neurology's 52nd annual meeting in San Diego, CA, April 29 May 6, 2000.

This study is the largest yet of newly diagnosed individuals with Parkinson's disease and it is the first study to show a significant association between home pesticide use and the risk of developing

Parkinson's disease," said study lead author Lorene Nelson, PhD, a neuroepidemiologist at Stanford University School of Medicine. The preliminary results from this study mirror what is already known about the increased risk of Parkinson's disease associated with occupational exposure to pesticides.

The researchers questioned 496 people who had been diagnosed with Parkinson's disease about past use of pesticides. Each patient was asked if they had used or been exposed to insecticides in the home or garden, herbicides or weed killers in the garden, or fungicides to control mold or mildew in the home or garden. Researchers asked detailed questions about past pesticide use including first exposures and frequency of pesticide contact.

The Parkinson's patients' lifetime histories were then compared to 541 people without the disease. Researchers found that people who had been exposed to pesticides were approximately two times more likely to develop Parkinson's disease than people not exposed to pesticides.

In-home exposure to insecticides carried the highest risk of developing the disease. Parkinson's patients were more than twice as likely to have been exposed to insecticides in the home than those without the disease. Past exposure to herbicides was also associated with the disease, whereas exposure to insecticides in the garden and fungicides were not found to be risk factors.

Damage to nerve cells in a part of the brain called the substantia nigra leads to the movement difficulties characteristic of Parkinson's disease. Therefore, people exposed to chemicals that have a particular affinity for this region of the brain may be at particular risk for developing the disease.

"Certain chemicals that an individual is exposed to in the environment may cause selective death of brain cells or neurons," stated Nelson. "If we could understand why these neurons are being killed in certain circumstances, we can then try and prevent it."

But Nelson cautioned that more studies are needed before any conclusive statements can be made about the causes of Parkinson's disease, including any genetic influence on a person's probability of developing the disease.

Nelson also stressed that the results of the study must be interpreted with caution. "No specific guidelines regarding avoidance of pesticides can be given at this time but, in general, this is an area of public health importance that needs to be pursued," said Nelson.

Parkinson's disease is a slowly progressive, neurodegenerative disease that affects more than 500,000 people in the United States. Parkinson's causes the loss of dopamine, a chemical in the brain, which results in muscle stiffness and rigidity, slowness in movement and tremor of the arms and legs.

The National Institutes of Health provided funding for the study.

The American Academy of Neurology, an association of more than 16,500 neurologists and neuroscience professionals, is dedicated to improving patient care through education and research. For more information about the American Academy of Neurology, visit its Web site at <http://www.aan.com>. For online neurological health and wellness information, visit NeuroVista at <http://www.aan.com/neurovista>.

hose of previous studies and "deserve serious attention."