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Study: Pesticides Linked to 70% Increased Risks for Parkinson's Disease

Pesticides Could Raise Parkinson's Risk _Type and duration of exposure needed isn't yet clear, researchers say _By Alan Mozes _HealthDay News, June 26, 2006 _http://www.healthday.com/view.cfm?id=533466

Exposure to pesticides, but not other environmental contaminants, may boost the long-term risk for developing Parkinson's disease by 70%, a new study suggests.

The researchers did not assess the length, frequency, or strength of pesticide exposure, and they stressed that the absolute risk of developing Parkinson's remains relatively small.

However, their finding does back up earlier animal studies linking pesticide exposure to motor function abnormalities and lower levels of the brain neurotransmitter dopamine. Declines in dopamine have long been associated with Parkinson's.

"This is the first large human study that shows that exposure to pesticide is associated with a higher incidence of Parkinson's," said study lead author Dr. Alberto Ascherio, associate professor of nutrition and epidemiology at the Harvard School of Public Health in Boston.

"It is, of course, a relative increase," emphasized Ascherio. "So, whereas normally the lifetime risk for developing Parkinson's is three percent, pesticide exposure will bring the risk to five percent."

Ascherio and his colleagues discussed their work in the July issue of the Annals of Neurology.

The authors reviewed lifestyle surveys completed in both 1982 and in 2001 by over 143,000 participants in the U.S. "Cancer Prevention Study II Nutrition

Cohort," launched in 1982.

In addition to pesticide exposure, participants were asked about exposure to a host of chemicals and dusts, such as: asbestos, acids, solvents, coal and stone dust, coal tar, asphalt, diesel engine exhaust, dyes, formaldehyde, gasoline exhaust, herbicides, textile fibers, wood dust, and x-ray or radioactive materials. Nearly all the patients were white, with an average age just of over 60.

In total, 413 participants went on to develop Parkinson's disease.

The surveys revealed that just over eight percent of the men and just over three percent of the women reported exposure to pesticides.

Exposed patients were twice as likely to be blue-collar workers and 14 times more likely to work as either a farmer, rancher, or fisherman.

However, no differences were found in terms of risk increase between patients who experienced exposure because of their work, such as farmers, and those who came into contact with the chemicals because of home or garden use.

The Harvard team found that, regardless of occupation, pesticide exposure boosted long-term Parkinson's risk by 70% over the long-term.

Ascherio stressed that although the association found in his study was stronger than any previously documented, more work is needed to pinpoint what exactly it is about pesticides that may help spur Parkinson's.

"The key point would be to identify which chemicals cause Parkinson's," he said. "It's not very practical to tell people to avoid pesticides, because many people find it very useful. So this will require more detailed study," he added.

Robin Elliot, executive director for the Parkinson's Disease Foundation in New York City, described the findings as "important and solid."

"This is certainly the biggest and most serious populations study on people, and it appears to be the best proof today that there is a general association between pesticide and Parkinson's among people," said Elliot. "It merits further investigation," he said.

In a separate smaller study, published in the June issue of Movement Disorders, a team of researchers from the Mayo Clinic in Olmsted County, Minnesota, found that pesticide exposure seemed to increase Parkinson's risk for men, but not women.

Telephone interviews were conducted with 149 men and women, all local-area Parkinson's patients who developed the illness between 1976 and 1995. The Mayo team also interviewed 129 healthy individuals.

They found that male patients were 2.4 times more likely than healthy individuals to have been exposed to pesticides. No such increased risk was evident among the female patients.