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Dietary Nicotine May Hold Protective Key

New research reveals that ***Solanaceae*** **— a flowering plant family with some species producing foods that are edible sources of nicotine — may provide a protective effect against Parkinson's disease**. The study appearing today in *Annals of Neurology*, a journal of the American Neurological Association and Child Neurology Society, suggests that eating foods that contain even a small amount of nicotine, such as peppers and tomatoes, may reduce risk of developing Parkinson's.

Parkinson's disease is a movement

disorder caused by a loss of brain cells that produce dopamine. Symptoms include facial, hand, arm, and leg tremors, stiffness in the limbs, loss of balance, and slower overall movement. Nearly one million Americans have Parkinson's, with 60,000 new cases diagnosed in the U.S. each year, and up to ten million individuals worldwide live with this disease according to the Parkinson's Disease Foundation. Currently, there is no cure for Parkinson's, but symptoms are treated with medications and procedures such as deep brain stimulation.

Previous studies have found that cigarette smoking and other forms of tobacco, also a *Solanaceae*
plant, reduced relative risk of Parkinson's

disease. However, experts have not confirmed if nicotine or other components in tobacco provide a protective effect, or if people who develop Parkinson's disease are simply less apt to use tobacco because of differences in the brain that occur early in the disease process, long before diagnosis.

For the present population-based study Dr. Susan Searles Nielsen and colleagues from the University of Washington in Seattle recruited 490 patients newly diagnosed with Parkinson's disease at the university's Neurology Clinic or a regional health maintenance organization, Group Health Cooperative. Another 644 unrelated individuals without neurological conditions were used as controls. Questionnaires were

used to assess participants' lifetime diets and tobacco use, which researchers defined as ever smoking more than 100 cigarettes or regularly using cigars, pipes or smokeless tobacco.

Vegetable consumption in general did not affect Parkinson's disease risk, but as consumption of edible *Solanaceae* increased, Parkinson's disease risk decreased, with peppers displaying the strongest association. Researchers noted that the apparent protection from Parkinson's occurred mainly in men and women with little or no prior use of tobacco, which contains much more nicotine than the foods studied.

"Our study is the first to investigate dietary nicotine and risk of developing Parkinson's disease," said Dr. Searles Nielsen. "Similar to the many studies that indicate tobacco use might reduce risk of Parkinson's, our findings also suggest a protective effect from nicotine, or perhaps a similar but less toxic chemical in peppers and tobacco." The authors recommend further studies to confirm and extend their findings, which could lead to possible interventions that prevent Parkinson's disease.