Cigarette Smoking Reduces Parkinson’s Risk

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A pooled analysis of 11 clinical studies has confirmed that cigarette smoking protects against Parkinson’s disease in a dose-dependent manner.

Many studies have suggested that smoking may play a protective role in PD, but most have been too small to provide definitive answers. Dr. Beate Ritz of the University of California San Francisco and her colleagues conducted a pooled analysis of eight case-control studies and three cohort studies involving 2,816 subjects who had PD and 1,069 control subjects. This large data set enabled us to investigate aspects of cigarette smoking and subgroup-specific associations that could not be addressed adequately in previous studies,” they noted.

The risk of developing PD decreased as pack-years of cigarette smoking increased, so that the average relative risk for the disease dropped 5%-8% for every 10 pack-years of smoking. This dose-response pattern was seen both men and women, and it was not affected by subjects’ educational status.

There was also a strong dose-response trend for the number of years that had elapsed since smoking cessation. Current smokers and smokers who had recently quit showed the lowest risk for PD. People who had quit smoking in the past had a higher risk of PD, but their risk was still lower than that of people who had never smoked (Arch. Neurol. 2007;64:990-7).

Two possible mechanisms for this protective effect have been proposed. Substances such as nicotine in tobacco smoke may promote the survival of dopaminergic neurons, or smoking may alter the activity of metabolic enzymes and thus the production of toxic metabolites.

It is also possible that the same genetic or constitutional traits that raise susceptibility to PD may also reduce the risk of smoking. Such traits could be a common cause for both smoking behavior and PD, Dr. Ritz and associates said.

Tobacco’s protective effect appeared to wane in subjects aged 75 and older, another finding that has been reported in previous studies. This is consistent with the hypothesis that smoking delays rather than prevents the onset of PD, the researchers added.