Excessive Antibiotic Use May Raise Parkinson's Risk

Some antibiotics' effect on bacteria in the gut may predispose some to this disease, scientists say.

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Findings have shown that antibiotic use is associated with a greater risk of developing health problems such as psychiatric disorders and Crohn's disease. Now, a new study suggests that overuse of some oral antibiotics is linked with an increased risk of Parkinson's disease, a progressive nervous system disorder that affects movement, reports the University of Helsinki in Finland.

For the study, researchers from Helsinki University Hospital compared antibiotic exposure between 1998 and 2014 in about 14,000 individuals with Parkinson's disease with that of 40,697 people without the condition. Participants were matched for age, sex and place of residence.

Scientists examined antibiotic use during three different periods: one to five, five to 10 and 10 to 15 years prior to the date when the drug was first used, based on the purchase information for the oral antibiotic. In addition, exposure was classified based on the number of antibiotics bought, the medicine's chemical structure, antimicrobial spectrum and mechanism of action.

Results suggested that indiscriminate use of some antibiotics can make folks susceptible to Parkinson's, with a delay of up to 10 to 15 years. Researchers found that broad spectrum antibiotics and those that act against anaerobic bacteria and fungi showed the strongest association with the development of the disease. What's more, scientists noted that the timing of exposure to antibiotics also seemed to matter.

According to study team leader Filip Scheperjans MD, PhD, of the Department of Neurology of Helsinki University Hospital, the connection between antibiotic exposure and Parkinson's disease fits the current view that in a significant proportion of patients the pathology of Parkinson's may originate in the gut and is possibly related to microbial changes that occur years before the onset of typical symptoms of the illness, such as slowness, muscle stiffness and shaking of the extremities.

"It was known that the bacterial composition of the intestine in Parkinson's patients is abnormal, but the cause is unclear," he said. "Our results suggest that some commonly used antibiotics,

which are known to strongly influence the gut microbiota, could be a predisposing factor."

Scheperjans observed that this discovery could affect future prescribing practices for antibiotics. Besides issues such as antibiotic resistance, doctors who dispense antibiotics should also consider the potentially long-lasting effects of these drugs on the gut microbiome and the development of certain diseases, he advised.

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