

PARKINSON'S DISEASE & AIRBORNE PARTICULATES

How might airborne particulates be related to Parkinson's? Mounting evidence suggests the disease is associated with inflammation and may partially begin in the nose. Here's a quick look at what might be going on behind the scenes.

2

Cellular Housekeeping Affected

The inflammation interferes with cellular housekeeping, allowing abnormal alpha-synuclein proteins to clump together to form Lewy bodies.



3

The Sense of Smell is Affected

The alpha-synuclein proteins damage the cells. They are also mobile, and travel from the nose into the olfactory system of the brain, which controls sense of smell.



4

Dopamine

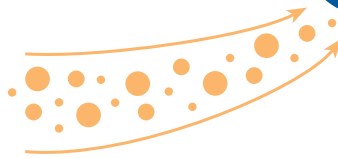
Alpha-synuclein continues moving from cell to cell, eventually reaching an area of the brain called the substantia nigra, which is packed with dopamine-producing cells. Dopamine is an important chemical required for voluntary movement.



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Airborne Particulates

Airborne particulates are inhaled through the nose, where they cause inflammation.



5

Disease Symptoms Set In

Once 50 percent or so of the dopamine-producing cells are damaged and killed, the hallmark symptoms of the disease—tremor, rigidity and slowness of movement—being to set in.

50%



Parkinson's disease is likely the result of a complex storm of genetic, epigenetic and environmental factors rather than a singular cause. If scientists can identify the factors that increase risk for susceptible individuals, they may be able to develop ways to slow the disease's progress or prevent it all together.