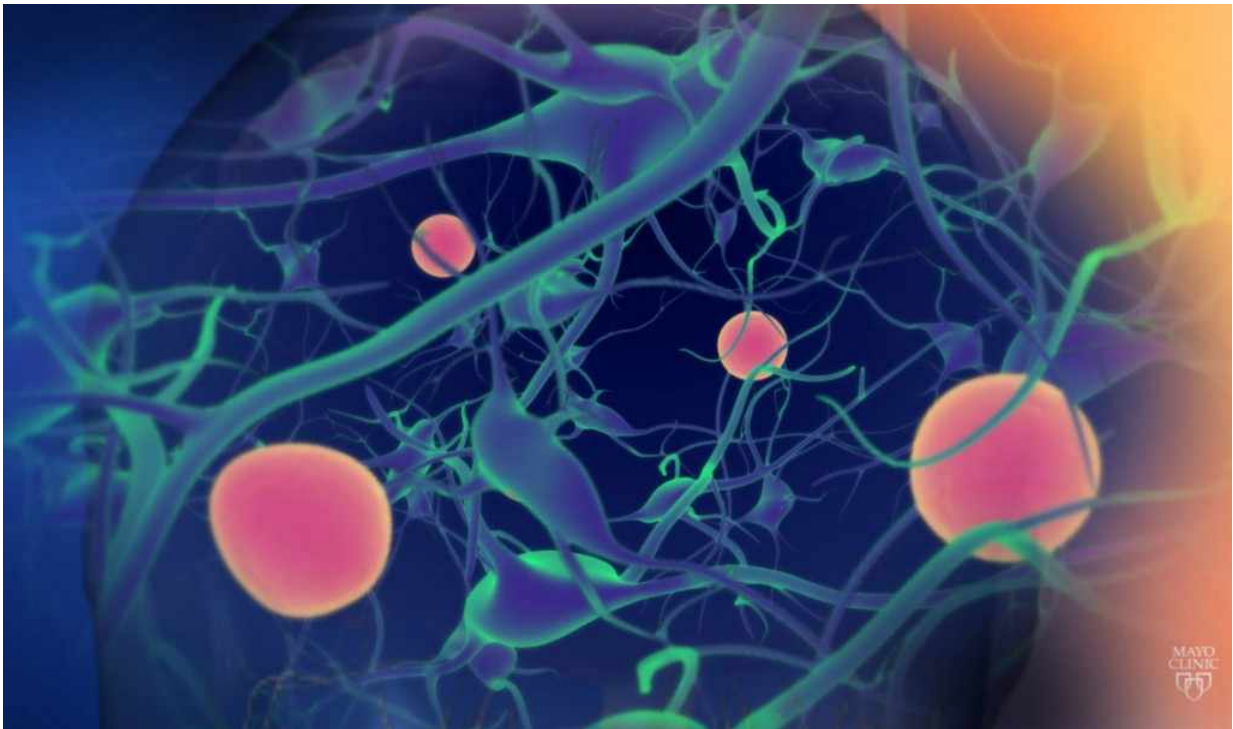


# Study shows increase in Parkinson's disease over 30 years (Update)

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Credit: Mayo Clinic

The incidence of Parkinson's disease and parkinsonism increased significantly in 30 years from 1976 to 2005, Mayo Clinic researchers reported today in *JAMA Neurology*. This trend was noted in particular for men age 70 and older. According to the researchers, this is the first study to suggest such an increasing trend.

The study shows that men of all ages had a 17 percent higher risk of developing parkinsonism and 24 percent higher risk of developing Parkinson's disease for every 10 calendar years.

The study also showed that men 70 and older had an even greater increase—a 24 percent higher risk of developing parkinsonism and 35 percent higher risk of developing Parkinson's disease for every 10 calendar years.

Using the Rochester Epidemiology Project, Mayo Clinic researchers were able to look at the complete medical records—from birth to death—of anyone in Olmsted County, Minnesota, who received at least one of the diagnoses related to parkinsonism. The records were reviewed by a movement disorders specialist to confirm the diagnosis and to classify different types of parkinsonism, including the most common type, Parkinson's disease.

"We have reasons to believe that this is a real trend," says Rodolfo Savica, M.D., Ph.D., lead author and neurologist at Mayo Clinic. "The trend is probably not caused merely by changes in people's awareness or changes in medical practice over time. We have evidence to suggest that there has been a genuine increase in the risk of Parkinson's disease.

"The researchers point to environmental and lifestyle changes as potential causes for the increase.

"There has been a dramatic change in exposure to some risk factors in the United States," Dr. Savica says. "We know that environmental agents like pesticides or smoking or other agents in the environment have changed in the last 70 years or so. Changes in exposure to a number of risk factors may have caused Parkinson's disease to rise."

The study, based on almost 1,000 patients affected by parkinsonism, is

the first to consider long-term trends in risk over 30 years. It also provides evidence contrary to two previous U.S. studies and one Canadian study that showed no trend, and particularly contrary to three United Kingdom studies that suggested a possible decline in the occurrence of Parkinson's disease over time.

The Mayo Clinic study also revealed a possible higher incidence of both parkinsonism and Parkinson's disease in men and women born from 1915 to 1924.

"This observation is important because the persons born in that particular decade may have been exposed to some environmental or other factors during their intrauterine life or early after birth that increased the risk," Dr. Savica says. "We need to confirm this hypothesis.

"Parkinsonism is the umbrella term that includes Parkinson's disease but also may include other disorders. The diagnosis of parkinsonism requires the presence of slowness of movement and at least one other symptom—a tremor while at rest, muscle rigidity or a tendency to fall. Parkinson's disease is defined as having the manifestations of parkinsonism but without any other known causes, and it is the most common type of parkinsonism.

The researchers urged caution in interpreting the trends, which may be from an increased awareness of symptoms and improved access to care. In the study's earlier years, for example, patients with cancer or severe cardiac disease may not have been diagnosed with parkinsonism or Parkinson's disease if doctors did not consider their movement disorder to be important in their care.

"Parkinson's disease is an important disease and a cause of disability, especially in older ages, and we don't want to have people untreated for a condition that is treatable just because they have four or five other

diseases that are more prominent," Dr. Savica says.

The observation that the time trends were more evident in men than in women may support a genuine trend in incidence. Recognition of symptoms in the context of multiple illnesses should have changed similarly over time in men and women, the study notes. Thus, if the trend was not genuine it should have been similar in men and women.

Parkinsonism and Parkinson's disease tend to affect more men than women in general. But Dr. Savica also notes that the increase was more dramatic in men, but the study also showed a similar trend in women—an increase in Parkinson's disease in women 70 years of age and older. However, the trend in women did not reach statistical significance.

"Differences in men and women may be important in understanding the environmental causes of Parkinson's disease," Dr. Savica says.

If the trend of increasing incidence rates is genuine, and can be replicated in other populations, it has major implications for finding the causes of Parkinson's disease and for public health, the researchers note. From a research perspective, the trend should prompt studies to identify environmental or lifestyle changes during the study subjects' lifespan. Environmental or lifestyle factors could include smoking, pesticide use, head trauma, coffee consumption and other factors.

**More information:** Rodolfo Savica et al. Time Trends in the Incidence of Parkinson Disease, *JAMA Neurol*. Published online June 20, 2016. [DOI: 10.1001/jamaneurol.2016.0947](https://doi.org/10.1001/jamaneurol.2016.0947)

Provided by Mayo Clinic

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