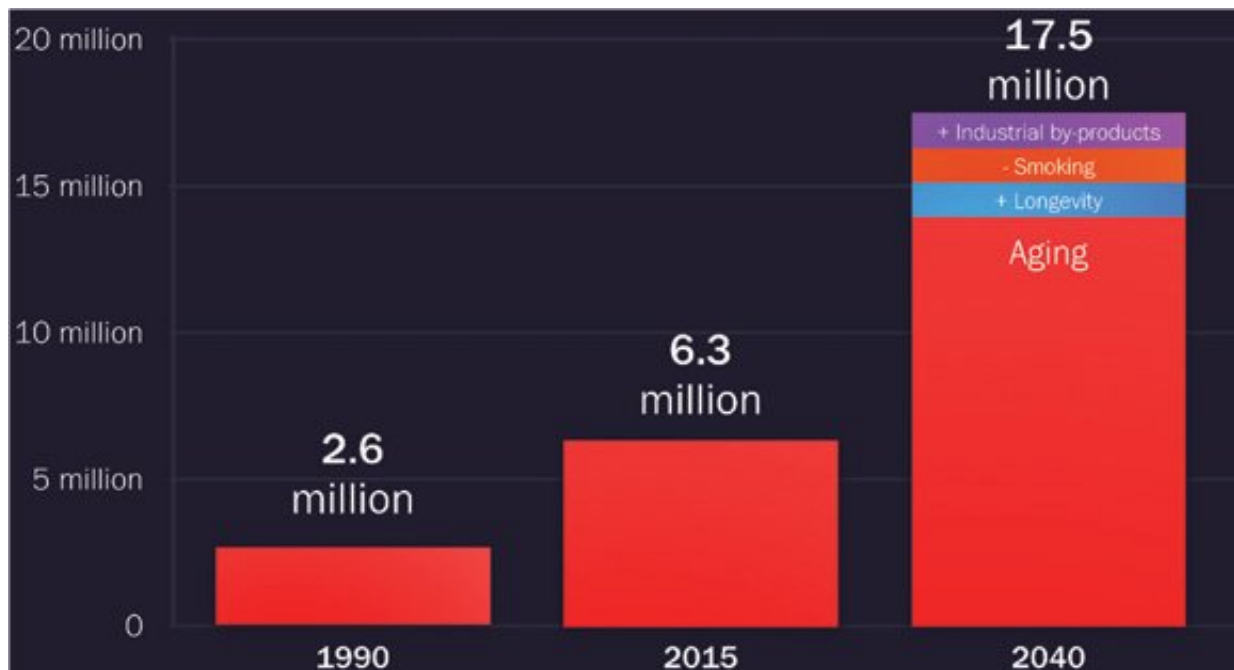


Emerging evidence of an impending Parkinson's disease pandemic identified

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Projected global burden of Parkinson's disease accounting for changes in aging, longevity, smoking rates, and industrialization, 1990-2040. Credit: Department of Neurology and Center for Health and Technology, University of Rochester Medical Center, Rochester, NY, USA

For most of human history Parkinson's disease (PD) has been a rare disorder. However, demography and the by-products of industrialization are now contributing to an impending Parkinson's pandemic, according

to experts writing in a supplement to the *Journal of Parkinson's Disease*. They say that this pandemic can be addressed by the Parkinson's community forming a "PACT" to prevent the disease, advocate for policies and resources aimed at slowing its spread, care for all those affected, and treat with effective and novel therapies.

Neurological disorders are now the leading cause of disability globally, and the fastest growing neurological disorder in the world is PD, a slowly progressive disorder that affects movement, muscle control, and balance. In 1855, forty years after Dr. James Parkinson first described the condition, approximately 22 people of 15 million in England and Wales died of PD. In 2014, roughly 5,000 to 10,000 individuals of 65 million in the UK died of PD. From 1990 to 2015, the number of people with PD doubled worldwide to over six million. Driven principally by aging, this number is projected to double again to over 12 million by 2040, and additional factors, including increasing longevity, declining smoking rates, and increasing industrialization, could raise the burden to over 17 million.

"By 2040, we can truly talk about a pandemic that will result in increased human suffering, as well as rocketing societal and [medical costs](#). How can the community be made aware of this scenario and implement changes in research priorities and care programs to lessen the burden of the upcoming pandemic?" cautioned Patrik Brundin, MD, Ph.D., Van Andel Research Institute, Grand Rapids, MI, USA, Editor-in-Chief of the *Journal of Parkinson's Disease*.

According to lead author Ray Dorsey, MD, from the Department of Neurology and Center for Health and Technology, University of Rochester Medical Center, Rochester, NY, USA, "The tide of PD is rising and spreading. PD exacts an enormous human toll on those with the disease and those around them. The strain of caregiving has adverse health consequences of its own. The economic costs of PD are also

substantial, poised to grow, and at least in the US, overwhelmingly directed at institutional care, which few desire."

The incidence of PD increases with age and the world's population is aging, as the number and proportion of individuals over 65 is rapidly growing. The combined result of these two factors is an unprecedented rise in the number of people with PD.

Independent of PD, global life expectancy has increased by six years in the last two decades. This will likely increase the number of individuals with advanced PD who are more difficult to treat and can have limited access to care. Numerous studies have found that the risk of PD decreases among smokers by approximately 40%. If the association is causal, which remains to be determined, decreasing smoking rates could lead to higher rates of PD.

Finally, the by-products of industrialization may be contributing to the rising rates of PD. Specific pesticides, solvents, and heavy metals, have been linked to PD—exposure to these agents is preventable.

"In the past century, society has successfully confronted pandemics of polio, breast cancer, and HIV to varying degrees. Central to the success of these efforts was unbridled activism," stated Dr. Dorsey. Following these examples, the authors propose that the Parkinson's community form a "PACT" to prevent, advocate for, care, and treat the disease through understanding the [root causes](#) (environmental, genetic, and biological), expanding new care models that seek to bring expert care to all, and developing new highly effective therapies. The most effective therapy (levodopa) is now fifty years old.

"We hope that this article will raise awareness of the challenge and form the basis for a community-led response to address one of the great health challenges of our time," added co-author and Associate Editor of the

Journal of Parkinson's Disease Bastiaan R. Bloem, MD, Ph.D., from the Radboud University Medical Center, Donders Institute for Brain, Cognition and Behavior, Department of Neurology, Nijmegen, The Netherlands.

"The PD pandemic is preventable, not inevitable," conclude the authors.

More information: E. Ray Dorsey et al, The Emerging Evidence of the Parkinson Pandemic, *Journal of Parkinson's Disease* (2018). [DOI: 10.3233/JPD-181474](https://doi.org/10.3233/JPD-181474)

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