

ACCELERATING MEDICINES PARTNERSHIP® (AMP®)

Parkinson's Disease

Overview

The Accelerating Medicines Partnership® (AMP®) program is a public-private partnership between the National Institutes of Health (NIH), multiple biopharmaceutical and life sciences companies, and non-profit organizations. Managed through the Foundation for the NIH (FNIH), AMP aims to identify and validate the most promising biological targets for therapeutics. In 2016, the AMP Executive Committee approved the planning of an AMP effort to confront the challenges presented by Parkinson's disease (PD). A critical component of this partnership is that all members have agreed to make the AMP Parkinson's disease (AMP PD) data and analyses publicly available to the broad biomedical community.

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About Parkinson's Disease

PD is a chronic and progressive neurological disease that is marked by tremors in the resting muscles, rigidity, slowness of movement, impaired balance and a shuffling gait. In addition, many people with PD develop non-motor symptoms such as behavioral changes and cognitive impairment. Because the worldwide population is living longer, PD represents a significant and increasing threat to public health. In the United States alone it has been estimated that up to 1 million people may have PD. That number is expected to increase in the coming years, and the current annual cost of treatment for PD in the United States has been estimated at \$14.4 billion. Though it is a complex neurodegenerative disorder, the two primary hallmarks of PD are the progressive loss of dopamine-containing neurons in a specific area of the brain called the substantia nigra and the buildup within neurons of a protein, α -synuclein, into clusters called Lewy bodies.

Need for New Therapies

The cause of PD has been linked to several genetic, epigenetic and environmental factors; however, the exact causes of neuronal death and Lewy body formation are not known. Despite large investments in research and development, no disease-modifying drugs have been approved for PD. It has become clear that a breakthrough in this area will require strong and transformative public-private partnerships that can produce bold discoveries.

AMP Approach

The success of clinical trials aimed at developing new treatments for PD hinges on identifying and validating biomarkers that can track the progression of the disease. A wealth of information has been collected from individuals with PD through such programs as the NINDS's Parkinson's Disease Biomarkers Program (PDBP), The Michael J. Fox Foundation (MJFF)'s Parkinson's Progression Markers Initiative, the MJFF/NINDS BioFIND cohort and the Harvard Biomarkers Study. However, the resources, time, and cost required to perform a large-scale analysis of that data has been prohibitive for individual researchers, companies and organizations. AMP PD will provide the expertise and support needed to determine which biomarkers show the greatest potential for predicting PD and the progression of the disease.

AMP PD Knowledge Portal

Launched in November 2019, the AMP PD Knowledge Portal contains data from cerebrospinal fluid, RNA, plasma and DNA samples from more than 4,000 Parkinson's disease patients and healthy controls. The data are accessible to academic and industry researchers for the identification and validation of biomarkers for Parkinson's disease. In addition, the [AMP PD Knowledge Portal](#) provides a platform that can incorporate additional data sources and new types of data, including proteomics, a project already planned.

PD Biomarker Validation

Once the Knowledge Portal is created and the existing PD data incorporated, the AMP PD researchers will collaborate to identify the most promising biomarkers for use in clinical trials for new treatments to affect the progression of PD. The partners will ask the following key questions in their analyses:

- Does the biomarker offer insight into the mechanism of the disease?
- Does the biomarker change over the course of PD and can it be used to track disease progression?
- Can the biomarker be used to separate PD patients into discrete groups?
- Can the biomarker be used as a prognostic indicator during early-stage PD?

Governance

The steering committee (SC) for AMP PD consists of representatives from each of the research partner organizations. The SC operates under the direction of the overall AMP Executive Committee and is organized by the FNIH.

Budget: 5 years (\$24 million Total Project Funding)

(\$Millions)	Total Project	Total NIH	Total Industry	Total non-profit funding
Parkinson's Disease	24 (+ 2 in-kind)	12	8 (+2 in kind)	4.0

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Related Links

[AMP research efforts on Parkinson's disease](#)

AMP Parkinson's Disease: The partners

Government

- NIH/NINDS
- FDA

Industry/Non-Profit

- Aligning Science Across Parkinson's (ASAP) Initiative
- Celgene Corporation
- Foundation for the NIH
- GlaxoSmithKline plc
- Michael J. Fox Foundation for Parkinson's Research

- Pfizer Inc.
- Sanofi US Services Inc.
- Verily Life Sciences

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