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Thriving With Parkinson's Disease

Learn more about Parkinson's: What to expect and how you can advocate for your best treatment options

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We’d like you to know…

This educational program will feature information about Parkinson’s disease from a healthcare provider

This program is not intended to provide medical advice or care

We encourage you to talk with your own healthcare providers for questions about your personal medical condition or management

Out of consideration for their time, the speakers have been compensated by Amneal

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Introduction

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What is Parkinson's disease?

Parkinson's disease is the fastest growing neurological disorder and impacts millions[1,2]

By 2037, **1.64 million people** in the United States will have the disease[2]

The disease is characterized by **loss of dopamine-producing cells** in certain areas of the brain[3,4]

The primary symptoms are **motor,** but the disease includes **non-motor** symptoms as well[4]

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Parkinson’s disease: the who, what, and why

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Who gets PD—and why?

More men are diagnosed with PD than women, by a ratio of almost 3:2[1]

Age of onset for PD can vary, with majority of patients being >60 years old[2]

About 1% of the population over 60 years of age will have PD[3]

By 2037, 1.64 million people in the United States will have the disease[4]

Genetics may play a factor by predisposing some to PD[5]

Exposure to environmental toxins may be a risk factor[5]

People who have experienced head injuries may be at higher risk[5]

PD=Parkinson's disease.
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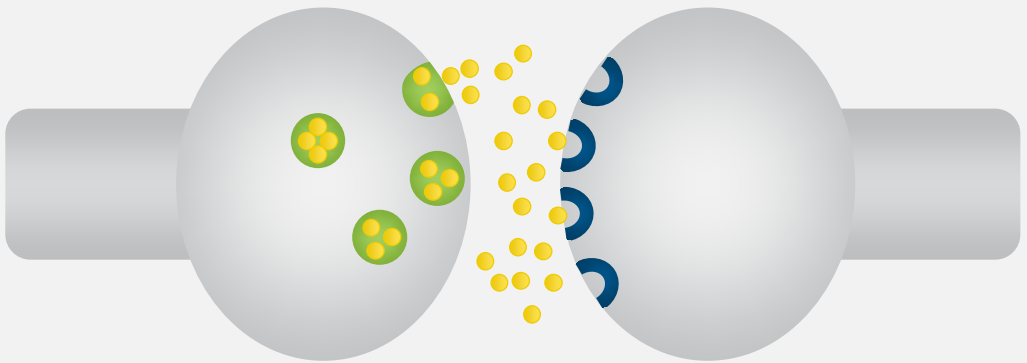
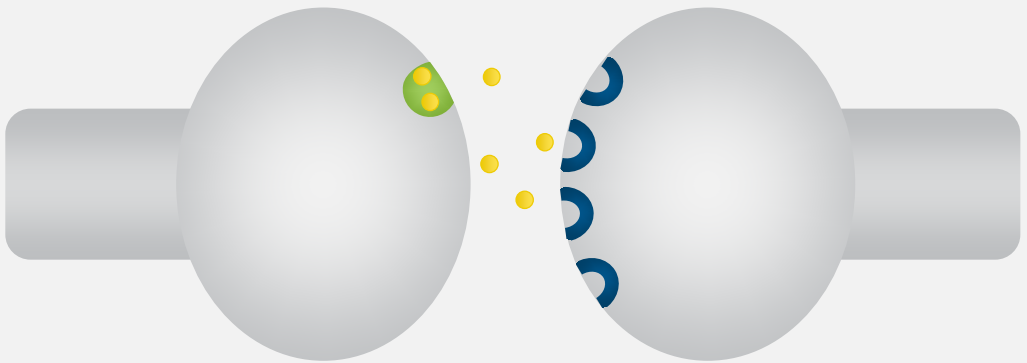
What's happening in PD?

PD is caused by a **loss of dopamine**, a neurotransmitter that carries chemical signals from one brain cell to another.[1-4]

Dopamine enables normal motor function in the body by facilitating communication between nerve cells[4]



In PD, the brain produces insufficient dopamine, leading to difficulty with normal movement[2,4]



Dopamine Dopamine receptor

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Motor symptoms[1,2]

Motor symptoms (those affecting your movements) include:

- Tremors; the classic symptom is a slow tremor of the hand at rest
- Rigidity, or stiffness
- Bradykinesia (also known as slowness), having trouble moving
- Freezing up, stoop posture, and shuffling gait
- Stability and balance problems when standing or walking
- Difficulty with speech and swallowing

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Non-motor symptoms[1,2]

Non-motor symptoms (those to do with your body and thinking in general) include:

- Depression
- Constipation
- Urinary urgency
- Pain
- Loss of sense of smell
- Sleep disorders, including acting out violently while dreaming
- Fatigue
- Slowness in thinking
- Feelings of anxiety and agitation

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Key characteristics that distinguish PD motor symptoms[1,2]

Unilateral onset: weakness or tremor that begins on one side of your body

Tremor at rest: shaking that happens when you are not using your hand or arm

Asymmetry of motor symptoms: one limb is affected more than the other

PD over time: symptoms may change over time

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Every person with PD experiences the disease differently[1-4]

Your **symptoms may be different** from those of others with PD.[1-4]

Take an active role in **optimizing your treatment**, especially as your symptoms change.[1-4]

Work with your doctor to discuss treatments requiring **fewer doses per day**.[5]

Take your medications as prescribed.[4,5]

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Daily life with Parkinson’s: the “On”/“Off” cycle

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What is “Good On” time?

Periods during the day when you **feel relief from** your movement-related **PD symptoms**[1,2]

AND

You are **free of uncontrollable movements,** known as dyskinesia, **or these movements don’t impact your daily activities**[1,2]

- **Tracking exercise and physical activity** with the help of care partner(s) can support symptom management[3]

You and your doctor can work together to develop a treatment plan with the goal of maximizing your “Good On” time[2]

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What is “Off” time?[1,2]

“Off” time happens when your **medication is wearing off or hasn’t fully kicked in yet.**
Different types of “Off” time can include:

Partial “On”	Dose failure
You may feel like you are between “Off” and “On”	Dose of medication does not help you feel “On”

Early morning “Off”	Wearing “Off”	Unpredictable “Off”
Poor control of motor symptoms when you wake up	Benefits of medicine lessen before your next dose	Can happen even if you’ve taken your medicine exactly as you are supposed to

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What does “Off” time feel like?[1-3]

“Off” time is experienced differently by each person living with PD.

Motor symptoms of “Off” time may include	Non-motor symptoms that can accompany “Off” time may include
Tremor	Feelings of anxiety or agitation
Stiffness	Fatigue
Slowness	Pain
Difficulty speaking	Sweating
Trouble with balance	Slowness of thinking

You may experience “Off” time differently from day to day

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How common is “Off” time?

“Off” time does not happen all at once but can occur during periods spread throughout the day. Among patients with PD,

>90%

experience **at least 1** “Off” episode per day

~65%

experience **at least 2 hours** of “Off” time per day

>20%

experience **more than 4 hours** of “Off” time per day

Talk to your doctor about your “Off” time and when it occurs

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Why do you need to openly communicate with your healthcare provider about “Off” time?

Signs of “Off” time can vary greatly among people living with PD[1,2]

More than half of people living with PD **do not discuss** their wearing “Off” symptoms at every appointment.[2]

While “Off” time **can be addressed**, effective treatment depends on **open communication** with your doctor about your symptoms.[1,2]

Don’t accept just being “fine” – if you are reaching for your doses early, or you experience wearing “Off,” consult with your doctor to optimize your care

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How Parkinson’s medications work

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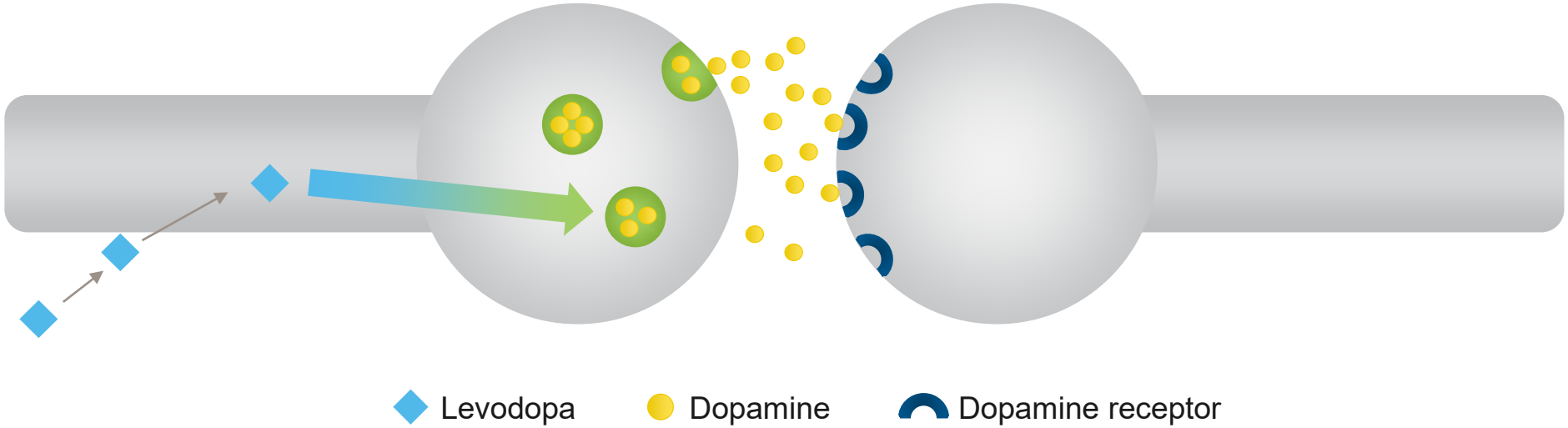
How does levodopa for PD work?

Gold-standard PD treatment is levodopa (LD), which replaces depleted dopamine in the brain and restores normal function. **LD is paired with carbidopa,** which helps LD reach the brain better.[1-3]

Synapse

(space between the end of a nerve cell and another nerve cell)



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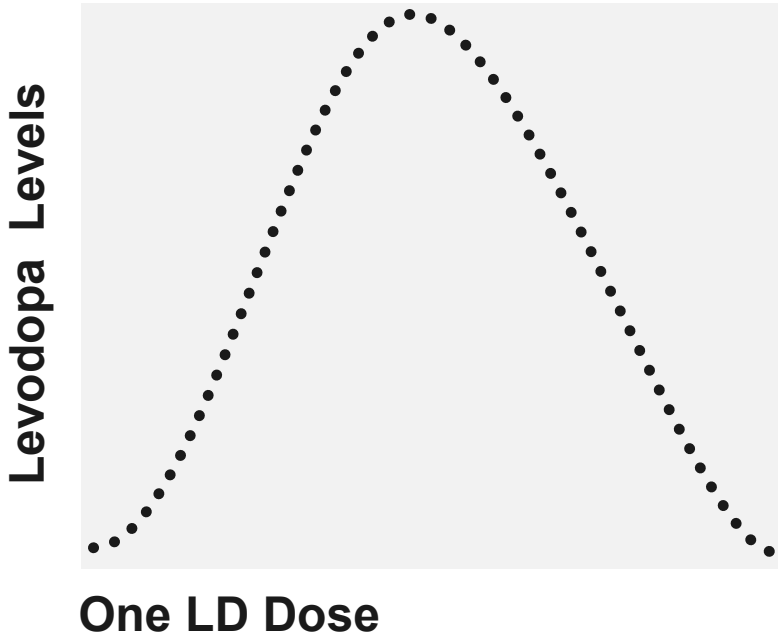
The LD efficacy cycle[1,2]



An LD dose is intended to return your dopamine levels to normal, but its effects will wear off as your body uses it up

LD=levodopa.
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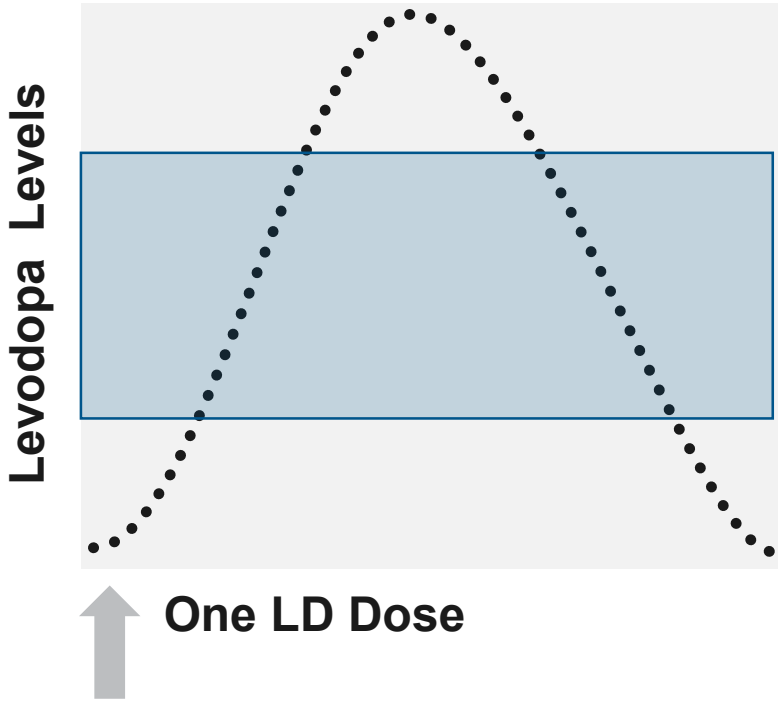
The LD efficacy cycle[1,2]

During times when LD levels are optimal, you'll have "Good On" time.



"Good On" time

Levels are just right: you feel like your PD symptoms are managed

LD=levodopa; PD=Parkinson's disease.
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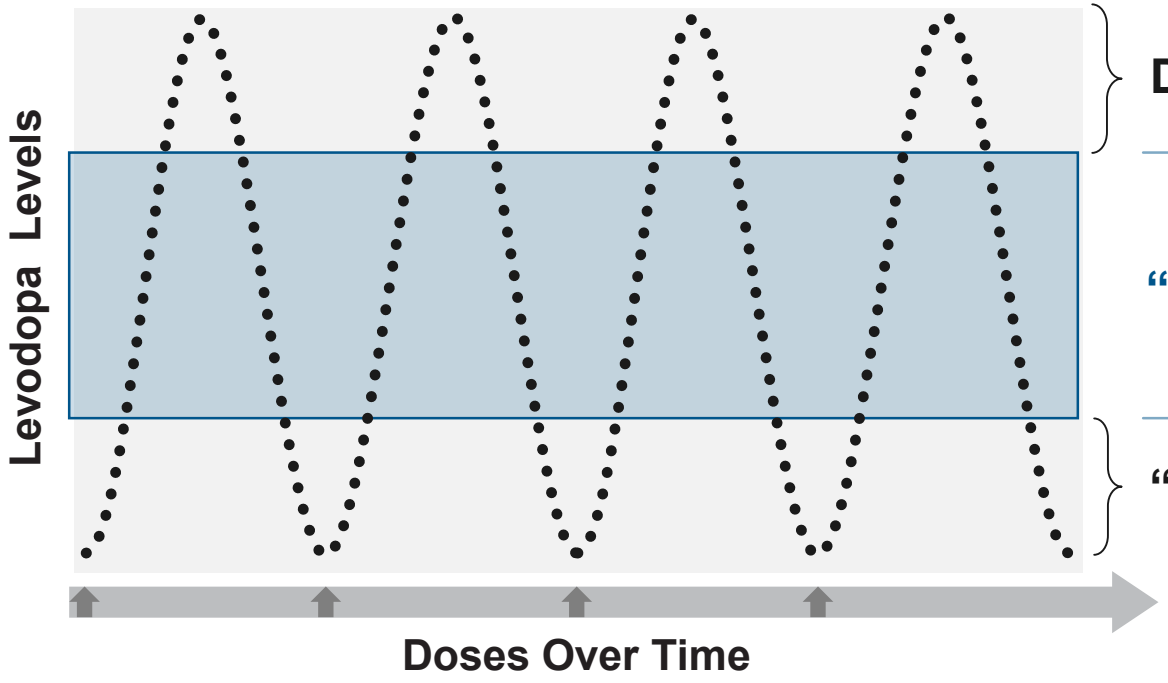
What does the LD “On”/“Off” cycle look like in a day?[1-3]

PD medication needs to be at just the right levels in your blood to give you “Good On” time.



Dyskinesia

Levels are **too high:** you experience **random, uncontrollable movements**

“Good On” time

Levels are **just right:** you feel like your **PD symptoms are managed**

“Off” time

Levels are **too low:** you feel like your **PD symptoms have returned**

The goal is to maximize “Good On” time and minimize motor complications

LD=levodopa; PD=Parkinson’s disease.
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There are options for increasing "Good On" time[1]

Treatment options can include:

Increasing dose/ frequency of IR CD/LD or current medication	**Adding an MAO-B inhibitor**	**Adding a COMT inhibitor**	**Adding a dopamine agonist**	**Adding a rescue medication**	**Adding amantadine or an adenosine A_{2A} antagonist**	**Switching to a longer-acting CD/LD**

When you begin to experience more "Off" time, talk to your doctor about ways to reduce it

CD/LD=carbidopa/levodopa; COMT=catechol-O-methyltransferase; IR=immediate release; MAO-B=monoamine oxidase type B.
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Oral carbidopa/levodopa (CD/LD) formulations

Immediate-release
Takes effect quickly; may wear off quickly too[1]

Controlled-release
Lasts longer than IR; may release more slowly into your body[2,3]

Extended-release
Bundled with multiple ingredients to release medicine rapidly *and* over an extended period of time[1,3]

Each version of CD/LD contains the same medication.
Formulations that last longer may require fewer daily doses.[1]

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Selecting and managing your treatment

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Setting a treatment goal

While PD may seem daunting, **the right medication can make your life much easier.**

Consult with your doctor to choose the best treatment regimen and to learn how to work with your PD in your life.

Bring your care partner(s) with you to each appointment to take notes and remind you of questions you have.

More “Good On” time can increase your quality of life and keep you more independent for longer.

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As PD progresses, you may need to adjust your treatment

Your doctor may **start you on a lower dose, then gradually increase** it as you become used to the medicine and its side effects.

Keeping track of your symptoms will help you communicate with your doctor and know when an adjustment is needed.

Don't be afraid to advocate for yourself when a part of your regimen is no longer working. Adjustments can be made—more "Good On" time is within your reach.

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Lifestyle changes to support your treatment

Actions you can take to achieve stable control of your symptoms and have more “Good On” time:

Eating a **healthy diet** rich in fruit, vegetables, legumes, whole grains, and lean proteins has been shown to have positive effects in people with PD[1]

Getting **adequate rest** is key; being well-rested will help you focus and give you energy[2]

Maintaining **exercise and work-related and household activities** can help manage symptoms of PD[3,4]

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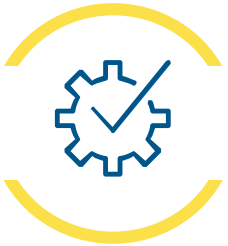
Hopamine: the “medicine” only you can give yourself[1]



“Hopamine” is a concept developed by a team of PD researchers and doctors—one of whom was living with PD. They believed that **patients who had a strong sense of control** in their treatment plan would **fare better and have a better quality of life**.

Be curious, ask questions, read, and talk with other people living with PD and their care partners. Set goals for your treatment, like achieving more “Good On” time. Stay active. And **don’t forget to take your “hopamine.”**

You are not alone. Your family, your healthcare team, countless researchers, and the worldwide PD community are all in this with you.

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What did we learn today?

"Off" time is different for everyone and can impact your life dramatically, so it's important to talk about it with your doctor

As time goes by, many people with PD find they need to adjust their medication

The goal of managing PD is to maximize "Good On" time without motor complications

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Questions?
Comments?

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References

Ayano G. Dopamine: receptors, functions, synthesis, pathways, locations and mental disorders: review of literatures. *J Ment Disord Treat*. 2016;2(2):1000120.

Bisaglia M. Mediterranean diet and Parkinson's disease. *Int J Mol Sci*. 2023;24(1):42.

Calabresi P, Di Filippo M, Ghiglieri V, Tambasco N, Picconi B. Levodopa-induced dyskinesias in patients with Parkinson's disease: filling the bench-to-bedside gap. *Lancet Neurol*. 2010:9(11):1106-1117.

Chaudhuri KR, Rizos A, Sethi KD. Motor and nonmotor complications in Parkinson's disease: an argument for continuous drug delivery? *J Neural Transm (Vienna).* 2013;120(9):1305-1320.

Dorsey ER, Sherer T, Okun MS, Bloem BR. The emerging evidence of the Parkinson pandemic. *J Parkinsons Dis*. 2018;8(suppl 1):S3-S8.

Ellis TD, Colón-Semenza C, DeAngelis TR, et al. Evidence for early and regular physical therapy and exercise in Parkinson's disease. *Semin Neurol*. 2021;41(2):189-205.

Emamzadeh FN, Surguchov A. Parkinson's disease: biomarkers, treatment, and risk factors. *Front Neurosci*. 2018;12:612.

Franke GH, Nentzl J, Jagla-Franke M, Prell T. Medication adherence and coping with disease in patients from a neurological clinic: an observational study. *Patient Prefer Adherence*. 2021;15:1439-1449.

Gupta HV, Lyons KE, Pahwa R. Old drugs, new delivery systems in Parkinson's disease. *Drugs Aging*. 2019;36(9):807-821.

Hametner E, Seppi K, Poewe W. The clinical spectrum of levodopa-induced motor complications. *J Neurol*. 2010;257(suppl 2):S268-S275.

Hauser RA, Deckers F, Lehert P. Parkinson's disease home diary: further validation and implications for clinical trials. *Mov Disord*. 2004;19(12):1409-1413.

Jankovic J. Parkinson's disease: clinical features and diagnosis. *J Neurol Neurosurg Psychiatry*. 2008;79(4):368-376.

Jankovic J, Tan EK. Parkinson's disease: etiopathogenesis and treatment. *J Neurol Neurosurg Psychiatry.* 2020;91(8):795-808.

Kalia LV, Lang AE. Parkinson's disease. *Lancet*. 2015;386(9996):896-912.

Kuhl M. Capturing and elevating the patient voice. Michael J. Fox Foundation for Parkinson's Disease. Foxfeed Blog. November 10, 2014. Accessed April 5, 2023. https://www.michaeljfox.org/foundation/news-detail.php?capturing-and-elevating-the-patient-voice.

Livingston C, Monroe-Duprey L. A review of levodopa formulations for the treatment of Parkinson's disease available in the United States. *J Pharm Pract.* 2023;8971900221151194.

Magrinelli F, Picelli A, Tocco P, et al. Pathophysiology of motor dysfunction in Parkinson's disease as the rationale for drug treatment and rehabilitation. *Parkinsons Dis*. 2016;9832839.

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References (cont'd)

Mantri S, Lepore M, Edison B, et al. The experience of OFF periods in Parkinson's disease: descriptions, triggers, and alleviating factors. *J Patient Cent Res Rev*. 2021;8(3):232-238.

Marras C, Best JC, Bower JH, et al. Prevalence of Parkinson's disease across North America. *NPJ Parkinsons Dis*. 2018;4:21.

Matthews H, Stamford J, Saha R, Martin A; Off-Park survey steering group. Exploring issues around wearing-off and quality of life: the OFF-PARK survey of people with Parkinson's disease and their care partners. *J Parkinsons Dis*. 2015;5(3):533-539.

Mayo Clinic. Parkinson's disease: symptoms and causes. Accessed April 7, 2023. https://www.mayoclinic.org/diseases-conditions/parkinsons-disease/symptoms-causes/syc-20376055?p=1.

Mayo Clinic. Parkinson's disease: diagnosis and treatment. Accessed April 7, 2023. https://www.mayoclinic.org/diseases-conditions/parkinsons-disease/diagnosis-treatment/drc-20376062.

Noordegraaf MA, van den Berg SW, Bloem BR. Hopamine as personalized medicine for persons with Parkinson's disease. *J Parkinsons Dis*. 2023;13(2):271-277.

Oertel W, Schulz JB. Current and experimental treatments of Parkinson disease: a guide for neuroscientists. *J Neurochem*. 2016;139(suppl 1):325-337.

Oguh O, Eisenstein A, Kwasny M, et al. Back to the basics: regular exercise matters in Parkinson's disease: results from the National Parkinson Foundation QII Registry Study. *Parkinsonism & Related Disorders*. 2014;20(11):1221-1225.

Parkinson's Foundation. Sleep disorders. Accessed April 11, 2023. https://www.parkinson.org/understanding-parkinsons/non-movement-symptoms/sleep-disorders.

Parkinson's Study Group. Levodopa and the progression of Parkinson's disease. *N Engl J Med*. 2004;351(24):2498-2508.

Reimer J, Grabowski M, Lindvall O, Hagell P. Use and interpretation of on/off diaries in Parkinson's disease. *J Neurol Neurosurg Psychiatry.* 2004;75(3):396-400.

SINEMET CR [package insert]. Whitehouse Station: Merck & Co., Inc.; 2014.

Tsukita K, Sakamaki-Tsukita H, Takahashi R. Long-term effect of regular physical activity and exercise habits in patients with early Parkinson disease. *Neurology*. 2022;98(8).

Tysnes OB, Storstein A. *Epidemiology of Parkinson's disease*. *J Neural Transm (Vienna)*. 2017;124(8):901-905.

Van Den Eeden SK, Tanner CM, Bernstein AL, et al. Incidence of Parkinson's disease: variation by age, gender, and race/ethnicity. *Am J Epidemiol*. 2003;157(11):1015-1022.

Yang W, Hamilton JL, Kopil C, et al. Current and projected future economic burden of Parkinson's disease in the US. *NPJ Parkinsons Dis*. 2020;6:15.

Zahoor I, Shafi A, Haq E. Pharmacological treatment of Parkinson's disease. In: Stoker TB, Greenland JC, eds. *Parkinson's Disease: Pathogenesis and Clinical Aspects*. Codon Publications; 2018:129-144.

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