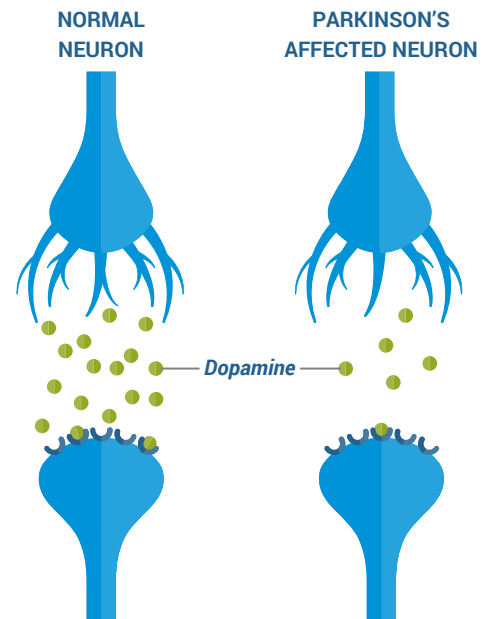


OFF PERIODS IN PARKINSON'S DISEASE

THE BIOLOGY OF PARKINSON'S

- Parkinson's is characterized by a progressive loss of certain nerve cells, or neurons, in the brain
 - Losing these particular nerve cells, called **dopaminergic neurons**, reduces the ability of the brain to make and store dopamine
 - **Dopamine** is a chemical signal released by nerve cells that regulates many different functions throughout the body
- Parkinson's symptoms are related to **low levels of dopamine** and the goal of Parkinson's treatment is to maintain dopamine levels throughout the day
- Most treatments for Parkinson's act on the dopamine system to **compensate for the loss of nerve cells** that produce dopamine
- Over time, Parkinson's symptoms become **more challenging to control**, despite treatment, due to the deterioration and loss of nerve cells (neurodegeneration)



WHAT ARE OFF PERIODS?

Many people with Parkinson's **fluctuate** between **ON periods**, during which symptoms are controlled and OFF episodes, also known as **OFF periods**, which are the return of Parkinson's symptoms that result from **low levels of dopamine** between doses of treatment.

OFF periods can:

- Occur throughout the day and be **unpredictable**
- Be **unique** for each patient and vary day to day
- Include **motor symptoms**
- Return more **frequently** over time

Of the approximately **1 MILLION** people with Parkinson's, about **40%** experience OFF periods

SYMPTOMS OF OFF PERIODS

Each person with Parkinson's experiences symptoms of OFF periods in different ways and at different times throughout the day.



Motor symptoms can affect a person's ability to move.

Commonly reported **OFF symptoms** include:

- Tremor or shaking
- Slowness
- Stiffness
- Difficulty walking
- Weakness
- Muscle cramping
- Problems with balance
- Speech difficulties
- Change in facial expression
- Lack of coordination
- Difficulty getting out of a chair
- Posture stooped or leaning to one side
- Dexterity challenges

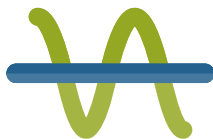
Additional information on symptoms can be found at: www.apdaparkinson.org/what-is-parkinsons/symptoms/ or www.parkinson.org/understanding-parkinsons

DISCUSSING OFF PERIODS

Despite how common OFF periods may be, it can be **challenging to talk about OFF periods** because of the:



Hard-to-recognize OFF symptoms for patients and their healthcare professionals



Variability of OFF symptoms within and between individuals



Lack of common language between people with Parkinson's and their doctor



Disconnection between symptoms and the 'wearing off' of medicines

Treatment options are available for OFF periods, so it's important for people with Parkinson's and their care partners to understand and discuss all symptoms with their healthcare professionals.