

Gastroparesis

It has been reported that nearly 45% of people with Parkinson's disease (PD) suffers from gastroparesis¹ and as many as 81% of patients with PD develop some form of gastrointestinal (GI) disturbance.²

WHAT IS GASTROPARESIS

Gastroparesis (GP) is a chronic disorder where the stomach muscles don't move food fast enough for proper digestion.³ In other words, it is a condition of delayed gastric emptying that occurs despite no physical blockages in the stomach or intestine. For Parkinson's patients, GP may worsen nutrition and quality of life, even potentially interfering with the absorption of oral PD medications such as levodopa. When levodopa is absorbed unpredictably, motor symptom control can become less reliable.⁴

The Enteric Nervous System: Your "Second Brain"

The ENS is a network of neurons that helps control digestion located in the walls of the digestive tract.⁵ More specifically, the ENS helps moves food through the GI tract, coordinate muscle contractions, regulate secretions, manage local blood flow, and support gut immune defenses. People call it a "second brain" because it can operate independently of the central nervous system while still sending and receiving signals from the brain.⁶

The Gut-Brain Connection in Parkinson's

Studies have shown that, PD is linked to **alpha-synuclein accumulation** in the GI tract. This pathological buildup may impair ENS and CNS signalling that coordinates bowel movement and stomach emptying.⁷ Additionally, **degeneration of dopaminergic neurons** and autonomic NS dysfunction can further impair communication along the gut-brain axis.⁸ Collectively, these PD symptoms can significantly contribute to and worsen GP.

The Ripple Effect: From Gut to Daily Function

In PD, ENS dysfunction can contribute to many of the GI discomforts experienced by patients, including constipation, bloating, nausea, and delayed stomach emptying. Beyond digestive discomfort, these symptoms can interfere with nutrition, reduce energy levels, and affect emotional well-being.⁶ As such, disruptions to either the gut or brain further creates a ripple effect that contributes to stress and reduced quality of life.

Recognizing the Symptoms of Gastroparesis



Nausea and Vomiting

The most common and disruptive symptom. Food sitting in the stomach too long causes persistent nausea, and in more severe cases, vomiting which can sometimes last hours after eating.³



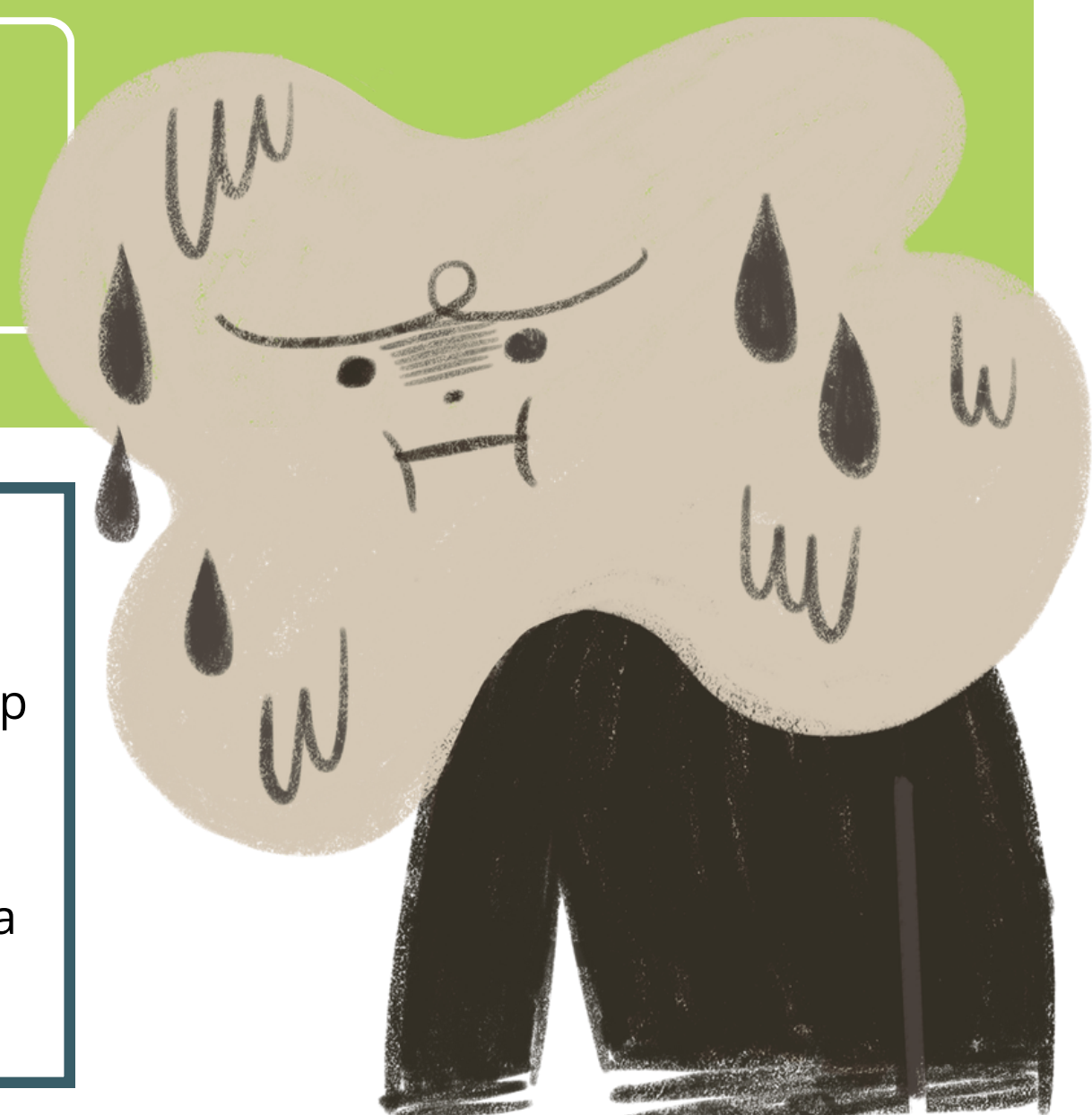
Bloating and Distension

A buildup of gas and pressure in the stomach and intestines causing visible swelling and discomfort. Up to 45% of PD patients report abdominal bloating.¹⁰



Early Satiety and Meal Heaviness

Unlike normal fullness, GP symptoms cause uncomfortably full after only a few bites, or a heavy, bloated sensation that can persist for many hours because food is emptying from the stomach far too slowly, causing patients to reduce portion sizes or skip meals altogether.



Methods for Diagnosing GP

- **Gastric emptying scintigraphy:** Patient eats a typical meal that contains a small amount of radioactive substance which allows images to be taken over up to 4 hours to track the rate of stomach emptying.
- **Wireless motility capsule:** A swallowed pill travels through the GI tract, which collects data on acidity, pressure, temperature, and movement time.
- **Gastric emptying breath test:** This is the simpler, office-based option where a non-radioactive meal is eaten and stomach emptying is measured through breath samples taken over a few hours

The Medication Problem: Why This Matters for PD Control

GP makes oral Parkinson's medications—especially **levodopa**—absorb unpredictably, producing delayed or reduced benefit and more motor “off” time. In order for medication like levodopa to be absorbed, it must pass from the stomach into the small intestine.¹¹ However, if the PD patient also suffers from GP, the delayed gastric emptying they experience holds levodopa tablets in the stomach for too long and postpones absorption.¹ Since levodopa can only actually be absorbed in the proximal small intestine, not in the stomach, slower gastric emptying leaves the dose sitting in a stomach full of food and sometimes might be delayed past the point where the patient expected symptom relief.³

As a result, even though a patient takes doses on schedule, they probably feel little to no improvement for a long time because of a lack of absorption.¹² Sometimes, doses sit in the stomach for far too long and it never reaches effective levels. This produces more frequent and prolonged OFF periods as well as motor fluctuation in PD patients. Furthermore, when a delayed dose finally empties, the drug can be absorbed too rapidly and cause a sudden switch to ON periods, thus creating variable and unpredictable responses throughout the day.¹¹

The Protein Dilemma

The “protein dilemma” is a tradeoff between getting enough protein for healthy nutrient intake while avoiding interference with levodopa's effect because protein can compete with levodopa for transport and decreases the predictability of the medication's effects.¹³ For PD patients also suffering from GP, the protein dilemma is further complicated because delayed gastric emptying and competition between dietary proteins and levodopa can impair medication absorption and reduce symptom control. This is especially important in PD because many people already have levodopa-related fluctuations, and gastroparesis can make meal-based strategies less reliable. In other words, simply shifting protein to a different meal may not fully solve the issue if stomach emptying is still slow.¹⁴

DID YOU KNOW?

In PD, gut symptoms can show up before movement symptoms by years, sometimes making the digestive tract an early warning system.

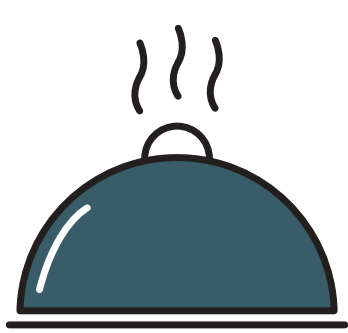
Taking Back Control: Managing Gastroparesis with PD^{2,10,15}



Keep track of when nausea, fullness, bloating, and delayed levodopa response happen relative to meals



Choose softer, easier-to-empty foods like soups, smoothies, soft-fruits, etc.



Avoid high-fat and high-fiber meals that can slow gastric emptying



Lower protein intake earlier in the day when medication is taken, increase in evening meals



Choose refined carbohydrates such as white rice, pasta, etc. that empty fast

Parkinson

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