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International Foundation for Gastrointestinal Disorders ([www.iffgd.org](http://www.iffgd.org))

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## Definitions

Parkinson's disease (PD) is a movement disorder that occurs when the brain does not produce enough dopamine. Symptoms usually develop slowly and get worse over time. Typically, PD starts on one side of the body and then affects both sides. As symptoms continue to develop, people living with PD may have trouble walking, talking, or doing simple tasks. There is no specific test to diagnose PD. A healthcare provider carefully reviews a person's medical history and does an exam to check balance and coordination. This will then allow the healthcare provider to give a correct diagnosis.

**Dopamine** is a chemical that is used by the nervous system to send messages between nerve cells.

Gastroparesis (GP) is a condition of slowed stomach emptying with no visible blockage. Healthcare providers often refer to this as delayed gastric emptying, a motility disorder where the stomach doesn't empty food as quickly as it should. GP is a condition that has a significant impact on GI symptoms in patients that can vary from mild to severe and life-threatening. There are three types of gastroparesis:

- **Idiopathic** – This is the most common subset of gastroparesis. The term idiopathic simply means that there is no known cause of the disease.
- **Diabetic** – This occurs when slow emptying of the stomach occurs in people with diabetes.
- **Post-surgical** – GP can occur when surgery changes the stomach. This can be through damage to nerves or the formation of scar tissue damage to the stomach.

**Motility** is often used to refer to GP and describes movement of food through the gastrointestinal (GI) tract.

The **GI tract** includes all digestive organs and begins with the mouth and ends with the anus.

## Parkinson's disease (PD) and Gastroparesis (GP) Occurring Together

GP commonly exists in patients with Parkinson's disease. About 25% of people with PD have symptoms of GP, including nausea and vomiting, and up to 45% reported abdominal bloating, a buildup of gas in the stomach and intestines. GP symptoms may cause significant issues for Parkinson's patients by interfering with how well PD medications are absorbed by the body. Most medications require normal stomach emptying for them to be fully effective. Proper treatment of GP in people with PD is needed to give each person the best quality of life possible.

The following symptoms may be present in all individuals with GP, including those who are also living with PD:

- **Abdominal pain** – dull to sharp pain that occurs inside the belly, often in the stomach or intestines
- **Nausea** – a feeling of sickness and feeling the need to vomit
- **Vomiting** – bringing food back up from the stomach into the mouth
- **Early satiety** – feeling full after only a small amount of food
- **Reflux** – a burning feeling in the esophagus (the tube that connects the mouth and stomach)
- **Losing weight without trying**

## Diagnosing Gastroparesis (GP)

## Gastroparesis (GP) Symptoms

Diagnosis of GP may begin with many tests to rule out a physical blockage or other conditions. This may include blood work, urine tests, imaging tests, and an upper endoscopy.

**Imaging Tests** – This type of test allows doctors to see inside the body. Examples are x-rays, CT scans and MRIs

Endoscopy is when a healthcare provider puts a long flexible tube into the mouth, down the esophagus, and into the stomach and beginning of the small intestine. This tube has a camera and light on the end, allowing your healthcare provider to see inside your GI tract during the test.

The following tests are commonly used in the diagnosis of GP, including people who have PD. Your healthcare provider will decide what test is right for you based off the severity of your symptoms, any medications you take, and other conditions you have.

- **Gastric emptying scintigraphy (GES)** – GES consists of eating a meal of typically eggs and toast that contains a small amount of radioactive substance. This allows images to be taken during digestion, determining the rate of stomach emptying. The test can take between 2 to 4 hours; however, the most accurate results occur when the test is performed for the full four hours.
- **Wireless motility capsule** – This is a pill that is swallowed and then travels through the GI tract. This collects information on the acidity, pressure, temperature, and time the GI tract takes to move foods through and empty.
- **Gastric emptying breath test (GEBT)** – This test involves eating a meal that contains a nonradioactive ingredient. This allows the food to be tracked and measured in your breath over a few hours. This test can be done in a doctor's office and can show how quickly the stomach empties.

### **Treatment of Gastroparesis (GP) with Parkinson's Disease (PD)**

Treatment of GP in those who are also living with PD creates a challenge that must be carefully considered by a healthcare provider. Medications used to treat PD may slow down the stomach's ability to empty. This can worsen many symptoms for people with GP. In addition, some medications used to treat GP and the related symptoms may poorly affect PD. The only Food and

Drug Administration (FDA) approved treatment for GP, metoclopramide, should not be given to those with PD due to the risk of tardive dyskinesia. This is a condition involving repeated nerve and muscle movements that cannot be controlled. These symptoms can be especially harmful for those with PD since controlled body movements become more difficult with the disease.

**The Food and Drug Administration (FDA)** is one of the U.S. government's regulatory agencies. This agency oversees a broad range of topics that pertain to food, drugs and other products used daily. Drugs approved by the FDA have been deemed safe, with benefits outweighing risks, after a careful review of all clinical and laboratory testing for the drug.

A complete and honest discussion between patients and their healthcare providers or healthcare teams is very important. This will help healthcare providers decide on the best treatment option for each person. Below are some of the treatment options for GP. Treatment of GP will vary from person to person and depends on their type of GP. All the treatment options listed here can be used in all patients with GP not just those who also have PD.

- **Antiemetics** – These are medications that block neurotransmitters in the body to lessen symptoms of nausea or vomiting. Neurotransmitters are chemicals that travel through the nervous system (the brain, spinal cord, and nerves). These medications are not currently approved by the FDA as a treatment of either PD or GP, unless used short-term after an operation. Many other antiemetics that are not listed should not be used by people with PD. Some of these medications can also cause muscle and nerve movements that cannot be controlled.
- **Dietary management** – Small meals eaten more often are sometimes recommended by healthcare providers. A licensed registered dietitian who specializes in GI illnesses can help create a diet high in nutrients.

IFFGD's **Dietitian Listing** is a resource that allows you to search for a dietitian that is in your area or treats a specific condition.

<https://www.iffgd.org/resources/dietitian-listing.html>

- **Feeding tube** – In more severe cases of GP a tube may be inserted in the stomach during surgery. A 6 to 12-inch tube comes out of the stomach to allow foods, liquids, and medications to be fed through the tube. This is managed with the support of a doctor and/or dietitian.
- **Parenteral Nutrition** – In severe GP cases an intravenous catheter (a small flexible tube that goes into a vein) may be inserted to provide nutrition while avoiding the GI tract. Formula placed into the catheter is specially made to provide nutrients that the body does not need to digest. This allows nutrients to go directly into the blood and be absorbed by the body.
- **Proton Pump Inhibitors (PPI's)** – These medications may be recommended for those who experience a burning feeling in the esophagus or chest regularly. This is diagnosed as refractory gastroesophageal reflux disease (GERD). PPI's are medications that lower the amount of acid that is made by the stomach. Lowering the amount of acid decreases the stomach's ability to digest solid foods. This can then slow the rate that foods leave the stomach.
- **Prokinetics** – These medications may speed up the movement of food through the GI tract. This happens by increasing the strength and number of muscle contractions. Another common name for this type of drug is a pro-motility agent.
  - **Erythromycin and Azithromycin** – Can speed up the movement of food through the GI tract but is not approved by the FDA for use with GP.
  - **Domperidone** – A medication that may improve stomach emptying in some patients. This medication is not available in the U.S. due to possible serious adverse events, unless approved for use through the FDA's expanded access program and application process.

Drug	Brand name examples
<b>Antiemetics</b>	
<b>Ondansetron</b>	Zuplenz, Zofran
<b>Prochlorperazine</b>	Copazine
<b>Proton Pump Inhibitors</b>	
<b>Pantoprazole</b>	Protonix
<b>Rabeprazole</b>	AcipHex
<b>Omeprazole</b>	Prilosec OTC, Zegerid OTC, OmePPI
<b>Prokinetics</b>	
<b>Erythromycin</b>	Erythrocin, EryPed
<b>Azithromycin</b>	Zithromax, Z-Pak
<b>Domperidone*</b>	Motilium

This table does not include all drugs available but can be used as a guide to help discuss treatment options with your healthcare provider.

\*Domperidone is not approved for use in the U.S.

## Conclusion

The occurrence of GP with PD can lead to a significant impact on daily living and a poor quality of life for patients. Nearly all patients with PD have GI symptoms since PD can affect all areas of the GI tract (i.e. esophagus, stomach, small bowel, colon, and rectum). These symptoms must be openly discussed and treated to ensure good quality of life and overall disease management. It is important to fully discuss all symptoms with your healthcare provider.

### About IFFGD

The International Foundation for Gastrointestinal Disorders (IFFGD) is a 501(c)(3) nonprofit education and research organization. We work to promote awareness, scientific advancement, and improved care for people affected by chronic digestive conditions. Our mission is to inform, assist, and support people affected by gastrointestinal disorders. Founded in 1991, we rely on donors to carry out our mission. Visit our website at: [www.iffgd.org](http://www.iffgd.org).

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For more information on common gastrointestinal concerns with Parkinson's disease please view the following publications available on these conditions in IFFGD's publication library:

- Parkinson's Disease and GI Motility (401)
- Parkinson's Disease and Constipation (402)
- Parkinson's Disease and SIBO (403)
- Parkinson's Disease and Dysphagia (405)