

also speed up stomach emptying. Another pro-motility agent, **domperidone**, is used in several countries outside the U.S. to treat gastroparesis. Domperidone is not approved by the FDA in the United States, but it may be obtained through a doctor by special arrangements with the FDA.

Another treatment approach is to use drugs that decrease symptoms of nausea and vomiting.

These drugs are called antiemetic agents. These agents include **prochlorperazine** (Compazine®), **trimethobenzamide** (Tigan®), and **ondansetron** (Zofran®). These are most often used on an as-needed basis.

What happens if these treatments fail?

- To control more severe bouts of symptoms, a hospital stay and intravenous forms of promotility and antiemetic drugs may be tried.
- In very severe cases of gastroparesis, generally with weight loss, a feeding tube is placed in the small intestine (jejunostomy tube) to provide nutrition in a way that bypasses the stomach.
- **Botox** injections into the pylorus (the muscle that controls the emptying of the stomach) may help this muscle to relax and move food into the small intestine. However, the effects of Botox are not consistent. The duration of the effect is short-lived; and the best studies do not show any benefit over a placebo (an inactive medicine, like a salt injection).
- Antidepressant drugs (like amitriptyline or nortriptyline) may be used, not necessarily for depression, but to treat persistent symptoms of gastroparesis, including nausea, vomiting, and abdominal pain. However, these drugs may slow stomach emptying, and hence, must be carefully monitored.

- Newer treatments being tested include **gastric electrical stimulation**, which involves the use of a pacemaker to stimulate the nerves and muscles in the stomach. An operation by a surgeon is needed to implant the pacemaker. This treatment may be tried if medications fail to control nausea and vomiting. This treatment is approved by the FDA as a Humanitarian Use Device. Your doctor will discuss the pros and cons of this treatment.

For a list of doctors in your area who specialize in gastrointestinal motility problems, go to our web site:

[www • motilitysociety • org](http://www.motilitysociety.org)



Founded in 1980, the American Neurogastroenterology and Motility Society (ANMS) is a national organization dedicated to the study, training, and practice of gastrointestinal motility and neurogastroenterology. ANMS represents a broad group of academic and practicing physicians, scientists, trainees, technicians, and nurses. ANMS seeks to foster excellence in patient care and research, and to promote a better understanding and cure of disorders that affect gastrointestinal motility and function.

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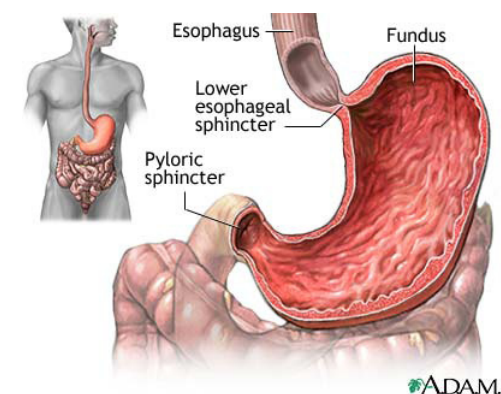
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Gastroparesis

An educational brochure for patients



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American Neurogastroenterology and Motility Society

What is gastroparesis?

The word gastroparesis (gas-tro-paresis) means paralysis of the muscles in the stomach. Gastroparesis is a disorder in which the food empties slowly from the stomach, resulting in bothersome symptoms that interfere with daily life. Gastroparesis may occur when the nerves to the stomach are either damaged or not working properly. Other conditions can cause similar symptoms, so a careful evaluation should be done to make the diagnosis.

What are the symptoms of gastroparesis?

Over the last several years, it has become clear that gastroparesis affects many people. It can cause a wide range of symptoms of varying severity. The symptoms of gastroparesis most often occur during and after eating a meal.

- feeling of fullness after eating a small amount of food
- nausea
- vomiting
- vague stomach pain
- weight loss due to a decreased appetite

A person with diabetic gastroparesis may have episodes of high and low blood sugar levels due to the unpredictable emptying of food from the stomach. Gastroparesis may be suspected in a person with diabetes who has blood sugar levels that are hard to control even with treatment.

What causes gastroparesis?

Diabetes is the most common cause of gastroparesis. Gastroparesis can also occur after surgery for a stomach ulcer or to repair a hiatal hernia. Gastroparesis can be the result of a disease, such as Parkinson's disease, or it may be caused by a viral infection. Gastroparesis may be caused by medications that slow stomach emptying, such as narcotic pain medications. In many patients, a cause cannot be found, and the disorder is termed idiopathic gastroparesis.

What are the complications of gastroparesis?

Severe vomiting can occur. During a severe vomiting episode, the contents of the stomach may be accidentally swallowed into the lungs, causing aspiration pneumonia. The vomiting can also injure the blood vessels in the esophagus. The patient may vomit blood. In people with diabetes, the symptoms can make it difficult to control glucose levels. A hospital stay may be needed to control frequent spells of severe vomiting. If the symptoms last a long time, malnutrition, weight loss, and feeding problems may result.

What are the tests for gastroparesis?

The diagnosis of gastroparesis is confirmed with two types of tests.

The **first test** is done to make sure you don't have an ulcer or an obstruction in the stomach slowing down the movement of food out of the stomach. This test could be an upper endoscopy, which involves looking at the inside the stomach with a flexible scope. Another option for the first test is an upper gastrointestinal (GI) series. This test involves drinking barium, which outlines the stomach on an X-ray.

The **second test** measures the time it takes for your stomach to empty. The most common test of this type is a **gastric emptying scintigraphy study**. For this test, you eat food containing a small amount of a radioactive substance. Then, you stand in front of a special scanner that measures the rate at which your stomach empties over the next 2–4 hours. This test tells your doctor how slowly the meal leaves your stomach.

Alternative tests to a gastric emptying scintigraphy study are **breath tests** and the **wireless motility capsule** test. For the wireless motility capsule test, you are asked to swallow a special capsule. The movement of the capsule through your stomach is tracked by a recorder that you wear for several hours.

What are the usual ways to treat symptoms of gastroparesis?

If you have symptoms of gastroparesis, you should talk to your doctor to find out what is wrong. If gastroparesis is diagnosed, your doctor can help you to develop a treatment plan. Let your doctor know about all other drugs or supplements you are taking, both prescription and over-the-counter. The treatment of gastroparesis depends on the severity of your symptoms and the possible underlying cause

Dietary changes may be helpful. Try eating small meals several times during the day, rather than three large meals. The meals should be low in fiber and low in fat. Liquids are often better emptied than solid food in patients with gastroparesis. Switching to a liquid, puréed diet and taking a multivitamin may help. Small portions – up to 6 times a day – of low-fat, low-fiber, liquid, soft food will help sustain calorie intake. For diabetic patients, controlling blood sugar levels may decrease the symptoms of gastroparesis.

Avoid drugs that slow stomach emptying. Ask your doctor for a list of these drugs. Some prescription medications prescribed by a doctor help the stomach to empty more quickly. These are called promotility agents. One promotility agent is **metoclopramide** (Reglan®). This drug can have side effects, such as agitation, anxiety, depression, menstrual irregularity, breast tenderness or discharge, and rarely, involuntary movements. Be sure to talk to your doctor about the benefits, risks, and any alternative treatments before taking metoclopramide.

With any drug, you should be aware of the risks and benefits. You should also understand how to recognize possible side effects, and know what to do if side effects occur. The Food and Drug Administration (FDA) recommends that treatment with metoclopramide should not be longer than 3 months. **Erythromycin** is an antibiotic that can