



Common Questions About

Gastroparesis (Delayed Gastric Emptying)

What is gastroparesis?

Gastroparesis is a condition where symptoms occur and the stomach empties too slowly. No blockage is evident. The delayed emptying is confirmed by a test.

What are the signs and symptoms of gastroparesis?

Symptoms usually occur during and after eating a meal. Typical symptoms include:

- Nausea and/or vomiting
- Retching (dry heaves)
- Stomach fullness after a normal sized meal
- Early fullness (satiety) – unable to finish a meal

There may also be bloating, heartburn, and stomach discomfort or pain. Decreased appetite may result in weight loss.

What causes gastroparesis?

In most people with gastroparesis, the cause is unknown and is termed “idiopathic.” Symptoms may begin following a virus infection. Other possible causes include diabetes, surgeries, some medications, and other illnesses.

How do I know if I have gastroparesis?

Diagnosis is by a doctor who will perform a physical exam and some tests. Tell your doctor about any medications you are taking. If the doctor suspects gastroparesis, a test to measure how fast the stomach empties is needed to confirm the diagnosis.

How is gastroparesis treated?

Treatments are aimed at managing symptoms over a long-term. This involves one or a combination of dietary and lifestyle measures, medications, and/or procedures that may include surgery.

Mild symptoms that come and go may be managed with dietary and lifestyle measures. Moderate to more severe symptoms additionally may be treated with medicines to stimulate stomach emptying and/or reduce nausea and vomiting.

Severe symptoms that are harder to treat may require added procedures to maintain nutrition and/or reduce symptoms.

Dietary and Lifestyle Measures – A nutrition specialist can help design a dietary plan to meet your needs. If you have diabetes, blood glucose levels will need to be controlled as well as possible. Blood glucose levels go up after stomach contents empty into the small intestine, and this is irregular in gastroparesis.

Medicines – Prokinetic (promotility) agents help the stomach empty more quickly and may improve nausea, vomiting, and bloating. Antiemetic agents are used to treat nausea and vomiting.

Procedures – Severe symptoms sometimes result in dehydration, loss of essential minerals (electrolyte imbalances), and malnutrition requiring hospitalizations. Special treatment measures to help manage may include:

- enteral nutrition,
- parenteral nutrition,
- gastric electrical stimulation, or
- other surgical procedures.

Be sure to ask questions so you understand any treatment and options, know the risks as well as benefits, and know what to do if side effects occur or symptoms return.

Keep hydrated and as nutritionally fit as possible. Persistence pays off, as most people with gastroparesis ultimately will do well.

Where can I learn more?

Learn more on our website at www.aboutGastroparesis.org or in our publication No. 556.

The International Foundation for Functional Gastrointestinal Disorders (IFFGD) does not guarantee or endorse any product mentioned in this publication. This article is in no way intended to replace the knowledge or diagnosis of your doctor. We advise seeing a physician whenever a health problem arises requiring an expert's care.

IFFGD is a nonprofit education and research organization. Our mission is to inform, assist, and support people affected by gastrointestinal disorders. Visit our websites at www.iffgd.org and www.aboutGastroparesis.org.



Gastroparesis

By: Frank Friedenber, M.D., Professor, Section of Gastroenterology, School of Medicine, Temple University, Philadelphia, PA; and Henry Parkman, M.D., Director, GI Motility Laboratory; and Professor, Section of Gastroenterology, School of Medicine, Temple University, Philadelphia, PA

Gastroparesis is a disorder in which the stomach empties very slowly. The delay in stomach emptying can result in bothersome symptoms that interfere with a patient's life. Gastroparesis most often occurs when the nerves to the stomach are damaged or don't work properly. Diabetes is the most common cause of gastroparesis. Gastroparesis can also occur after stomach surgery for other conditions. Other causes of gastroparesis include Parkinson's disease and some medications, especially narcotic pain medications. In many patients a cause of the gastroparesis cannot be found and the disorder is termed *idiopathic* gastroparesis. Over the last several years, as more is being found out about gastroparesis, it has become clear this condition affects many people and the condition can cause a wide range of symptoms of differing severity.

Symptoms of Gastroparesis

The symptoms of gastroparesis most often occur during and after eating a meal. Symptoms may include:

- Feeling of fullness after only a few bites of food
- Nausea and/or vomiting
- Vague stomach pain
- Weight loss due to a decreased appetite

Symptoms may range from none to severe. 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 become increasingly difficult to control.

Tests for Gastroparesis

The diagnosis of gastroparesis is confirmed with two types of tests. The first test is performed to make sure there is not an ulcer or an obstruction. This test could be an upper endoscopy where the doctor looks into the stomach with a flexible scope. Alternatively, this test could be an upper gastrointestinal series in which the patient drinks barium that outlines the stomach on an x-ray. The second test is one that actually measures how quickly food leaves the stomach. Most commonly, this test is a radioisotope gastric emptying scan. For this test, one eats food containing a small amount of a radioactive substance. The radioactivity in the body and particularly in the stomach can be imaged, allowing a doctor to see how quickly the meal leaves the stomach.

Treatment of Symptoms

Treatment of gastroparesis depends on the severity of the symptoms. Dietary changes may be helpful and include eating several small meals each day rather than three large meals. The meals should be low in fiber, fat, and roughage. Liquids are often better handled than solid food in patients with gastroparesis. For diabetic patients, controlling blood sugar levels may decrease symptoms of gastroparesis. [Ask your doctor or a registered dietician for dietary guidelines.]

Symptoms of gastroparesis may improve with treatment using medications prescribed by a doctor. When considering any medication, let your doctor know about all other drugs or supplements you are taking, both prescription and over-the-counter.

Some medications help the stomach empty more quickly (pro-motility agents). One pro-motility agent

is metoclopramide (Reglan), although this drug is often associated with side effects that limit its use. Be sure to talk to your doctor about alternative treatments and known risks as well as the intended benefit if considering treatment with Reglan. With any drug it is important to be aware of the risks and expected benefit, understand how to recognize possible side effects, and know what to do if side effects occur.

Erythromycin is an antibiotic that can also speed up stomach emptying. Another pro-motility agent, domperidone, has been used in countries outside of the U.S to treat gastroparesis. While not approved by the Food and Drug Administration (FDA) in the U.S., if needed, domperidone can now be obtained through a doctor by special arrangements from the FDA. Another treatment approach is to use medications which decrease symptoms of nausea and vomiting (antiemetic agents). These agents include prochlorperazine (Compazine) and trimethobenzamide (Tigan).

In very severe cases, generally with weight loss, a feeding tube is placed in the small intestine to provide nutrition in a way that avoids the stomach. Newer treatments that are still being evaluated include injection of botulinum toxin (Botox) into the pylorus muscle at the end of the stomach where contents pass into the small intestine. This can relax the pylorus and increase stomach emptying. Gastric electric stimulation using a pacemaker (a surgically implanted battery operated device) on the stomach may be used in some cases where all types of medications fail to adequately control the symptoms of nausea and vomiting.

Persons who experience symptoms of gastroparesis should talk to their doctor to find out what is wrong. If gastroparesis is diagnosed, the doctor can work with the patient to develop a treatment plan best suited for individual circumstances.

February 26, 2009: FDA Requires Boxed Warning and Risk Mitigation Strategy for Metoclopramide-Containing Drugs

Adverse events: Frequent and long-term use of metoclopramide has been linked to tardive dyskinesia, a disorder that causes uncontrollable, repetitive movements of the body such as lip smacking, grimacing, tongue protrusion, puckering and pursing of the lips, rapid eye movements or blinking, and rapid movements of the fingers, arms, legs, and trunk.

People at risk: Those at greatest risk include elderly people, especially older women, and people who have been on the drug for a long time.

Recommendations: Talk to your doctor before you use metoclopramide. Avoid using the drug for a long time in all but rare cases where you and your doctor decide that the benefits outweigh the risks.

Suggested IFFGD Reading

Whitehead W. *Gastrointestinal motility disorders of the esophagus and stomach*. IFFGD Fact Sheet No. 510, 2014.

Rees Parrish C, Soffer E, Parkman H. *Dietary and nutritional recommendations for patients with gastroparesis*. IFFGD Fact Sheet No. 537, 2014.

Opinions expressed are an author's own and not necessarily those of the International Foundation for Functional Gastrointestinal Disorders (IFFGD). IFFGD does not guarantee or endorse any product in this publication nor any claim made by an author and disclaims all liability relating thereto.

This article is in no way intended to replace the knowledge or diagnosis of your doctor. We advise seeing a physician whenever a health problem arises requiring an expert's care.

IFFGD is a nonprofit education and research organization. Our mission is to inform, assist, and support people affected by gastrointestinal disorders. For more information, or permission to reprint this article, write to IFFGD, 700 W. Virginia St., #201, Milwaukee, WI 53204. Call toll-free (In the U.S.): 888-964-2001. Visit our websites at: www.iffgd.org and www.aboutGastroparesis.org.



International Foundation for Functional Gastrointestinal Disorders

IFFGD
700 W. Virginia St., #201
Milwaukee, WI 53204

Phone: 414-964-1799
Toll-Free (In the U.S.): 888-964-2001
Fax: 414-964-7176
Internet: www.iffgd.org

© Copyright 2006-2014 by the American Neurogastroenterology and Motility Society and the International Foundation for Functional Gastrointestinal Disorders

GI Motility (537)

Dietary and Nutritional Recommendations for Patients with Gastroparesis

Tips for overcoming nausea, vomiting, and stomach fullness

By: Carol Rees Parrish, R.D., M.S., Nutrition Support Specialist, University of Virginia Health System, Charlottesville, VA; Edy Soffer, M.D., Co-Director, GI Motility Laboratory, Division of Gastroenterology, Cedars-Sinai Medical Center; Attending Physician, Department of Gastroenterology, USC Keck Hospital; and Professor, Clinical Medicine, Department of Medicine/Division of Gastroenterology, University of Southern California, Los Angeles, CA; and Henry Parkman, 5M.D., Director, GI Motility Laboratory and Professor, Section of Gastroenterology, School of Medicine, Temple University, Philadelphia, PA

Gastroparesis, or paralysis of the stomach, refers to a stomach that empties slowly. Gastroparesis is characterized by symptoms from the delayed emptying of food, namely: bloating, nausea, vomiting or feeling full after eating only a small amount of food. Gastroparesis can occur as a result of several conditions, especially in people with diabetes. However, in many individuals with gastroparesis, the cause of the disorder is not known. It is more common in women and can have a major impact on quality of life.

The general principles for treating symptomatic gastroparesis involve several strategies. First, attempts are made to correct fluid and nutritional deficiencies that may have occurred from chronic nausea and vomiting, and/or the inability to eat normally. Second, treatments are given for the unpleasant symptoms that accompany gastroparesis. Third, the underlying cause of gastroparesis, such as diabetes, thyroid disorders, etc., is treated if possible. The treatment of patients with gastroparesis generally relies on dietary modifications, medications that enhance gastric emptying, and medications that reduce nausea and vomiting.

A number of dietary recommendations have been developed based on the understanding of normal stomach emptying of different types of foods. These dietary recommendations are likely to be of greatest benefit to those with mild to moderate disease, but are also tried in patients with more severe gastroparesis to complement other medical treatments. It is recommended that anyone with gastroparesis, but especially those with other medical problems such as diabetes or kidney disease, seek dietary counseling with a dietician to help individualize nutrition therapy and maximize nutritional benefits.

Basic Dietary Guidelines for Patients with Gastroparesis:

- Small, frequent meals. Reducing the meal size reduces the distention of the stomach from the meal. By eating smaller meals, patients may not feel as full or bloated and the stomach may empty faster. With the reduction in meal size, increasing the number of meals to 4-6 per day is needed to maintain adequate nutritional intake.
- Avoid foods high in fat. Fat can delay emptying of the stomach. Eating less fat-containing foods will decrease the amount of time food stays in the stomach. However, fat-containing liquids, such as milkshakes, may be tolerated and provide needed calories.

- A diet low in fiber is suggested. Fiber delays gastric emptying. In addition, fiber may bind together and cause a blockage of the stomach, called a bezoar in some patients. Examples of high fiber foods that should be avoided include oranges, berries, green beans, potato peels, apples, sauerkraut, and Brussels sprouts. Fiber supplements for treatment of constipation should also be discontinued if possible.
- Chew food well before swallowing. Patients should avoid foods that may not be easily chewed such as broccoli, corn, popcorn, nuts, and seeds. Solid food in the stomach does not empty well. Dental problems, such as missing or broken teeth, may lead to poorly chewed food; this may add to the problem of inadequate breakdown of food into smaller particles in the stomach for passage into the small intestine for absorption.
- Taking fluids throughout the meal and sitting upright or walking for 1-2 hours after meals may help in the emptying of the meal from the stomach.
- A daily multivitamin/mineral supplement can be taken if dietary intake is inadequate.

If these measures are ineffective, the patient may be advised to consume the bulk of their meals as semi-solids or liquids, such as pureed foods or soups. Stomach emptying of liquids is often normal in patients with gastroparesis. Calorie-containing drinks, such as Hawaiian Punch or Hi C, provide fluid and calories, hence are better than water alone. Some options while on a liquid diet include milk, instant breakfast, milkshakes, yogurt, puddings, custard, cereals, and smoothies. To meet the nutritional needs of patients, it may be necessary to supplement the diet with a commercially available liquid nutrient preparation that is low in fiber such as Ensure, Boost, or even baby foods. Blenderized foods prepared by the patient may also be used as a liquid nutrient source. Any food can be blenderized; solid foods will need to be thinned with some type of liquid, such as broth, milk, juice, water. Remember to clean the blender well after each use.

There are quite a few medications that can delay stomach emptying. Ask your doctor if any of the medications you are taking could be slowing down your stomach emptying.

If the gastroparesis is due to diabetes, an important goal is to achieve or maintain good glucose control. This is achieved more easily by frequent monitoring of blood sugar levels and adjustment of insulin. Keeping your blood sugar under control

may help stomach emptying. Let your doctor know if your blood sugar runs > 200 on a regular basis.

Patients with kidney disease need to follow additional dietary advice. The dietary restrictions will depend on your kidney doctor's assessment. Adequate protein is needed for nourishment, but too much may increase a waste product called urea that your kidneys may not be able to get rid of. High sodium (salt) intake can increase blood pressure and fluid retention. Restriction of potassium varies depending on the stage of kidney disease. Generally, one should avoid high potassium foods such as bananas, oranges, kiwi, leafy greens, and broccoli. Kidneys may not be able to remove phosphorous from the blood. High phosphorous foods include dried beans, peas, nuts, and liver.

Patients with chronic symptoms of gastroparesis, despite these attempts at dietary intervention and medication, may develop dehydration and malnutrition. Occasionally, patients need an alternative method to obtain fluid and nutrition. This might involve delivering fluids and nutrients directly into the small intestine, bypassing the stomach, using a jejunostomy tube. In severe cases, intravenous fluids and nutrition may need to be provided.

For more in-depth diet information, go to:

- University of Virginia Health System Digestive Health Center web site at <http://www.healthsystem.virginia.edu/internet/digestive-health/nutrition/patientedu.cfm>.
- American Dietetic Association web site their web site at www.eatright.org or by telephone at 1-800-366-1655

Table 1:

Dietary Recommendations for Gastroparesis

- Eat smaller, more frequent meals
- Eat less fatty foods
- Avoid fiber
- Avoid foods that cannot be chewed well.

Table 2:

Additional Dietary Recommendations for Gastroparesis

- Liquid nutrients are better tolerated over solid food
Good glucose control in patients with diabetes (aim for blood sugars < 180 mg/dl)
- Avoid medications that can delay stomach emptying such as:
 - Aluminum-containing antacids (Amphojel)
 - Narcotic pain medications (Percocet, Tylenol #3, Tylox, Oxycontin, and others)
 - Anticholinergic agent (Bentyl, Levsin, Elavil, and others)
 - Bulk-forming agents (Metamucil, Perdiem, Fibercon, and others)

Table 3:

Foods that are encouraged

- Breads, Cereals, Crackers, ground or pureed meats
- Vegetables – cooked and, if necessary, blenderized/strained
- Fruits – cooked and, if necessary, blenderized/strained
- Juices, Beverages, Milk products, if tolerated

Table 4:

High fiber foods that should be avoided in gastroparesis

- Fruits - apples, berries, coconuts, figs, oranges, persimmons
- Vegetables - Brussels sprouts, green beans, green peas, lettuce, potato peels, sauerkraut
- Bran/whole grain cereals
- Nuts and seeds
- Legumes/Dried Beans – baked beans, lentils, soy beans

A Sample Diet for Patients with Gastroparesis

Sample Meal Plan for 6 Small Meals

Breakfast

- 1 cup cream of wheat cereal
- ½ cup skim milk
- ½ cup grape juice
- 1 scrambled egg

Snack

- 10 ounces of instant breakfast with skim milk

Lunch

- ½ cup vegetable soup
- ½ turkey sandwich
- ½ cup applesauce
- ½ cup milk
- 1 tablespoon mayonnaise

Snack

- 10 ounces banana shake made with 1 plain or vanilla yogurt, milk and sugar

Dinner

- 2-3 ounces baked chicken or fish
- ½ cup mashed potatoes
- 1 teaspoon margarine
- ½ cup spinach
- ½ cup milk
- ½ cup fruit cocktail

Snack

- ½ cup pudding, custard or gelatin

Opinions expressed are an author's own and not necessarily those of the International Foundation for Functional Gastrointestinal Disorders (IFFGD). IFFGD does not guarantee or endorse any product in this publication nor any claim made by an author and disclaims all liability relating thereto.

This article is in no way intended to replace the knowledge or diagnosis of your doctor. We advise seeing a physician whenever a health problem arises requiring an expert's care.

IFFGD is a nonprofit education and research organization. Our mission is to inform, assist, and support people affected by gastrointestinal disorders. For more information, or permission to reprint this article, write to IFFGD, 700 W. Virginia St., #201, Milwaukee, WI 53204. Toll-free: (in the U.S.) 888-964-2001 or 414-964-1799. Visit our websites at: www.iffgd.org or www.aboutGastroparesis.org.