

## Gastroparesis

Usually, stomach muscles contract strongly to digest food and propel it to the small intestines. In **gastroparesis**, the contraction of the stomach muscles are too weak or too slow. The food takes too long to be emptied out of the stomach into the intestines (delayed gastric emptying), even when there are no sign of any blockage. Gastroparesis is a long-term condition that affects the quality of life but may remain undiagnosed. It cannot be cured but can be managed through medications and diet changes.

**Gastroparesis** means “partial paralysis of the stomach”. It is also called **gastric stasis**.

### Causes

Any conditions that affect the nerves or muscles in (or related to) the stomach may lead to gastroparesis. In many situations, the exact cause is unknown. Here are some of the causes.

- **Damage to the vagus nerves**, which normally allow communication between the brain and the stomach
  - If the vagus nerves cannot send message, the brain cannot tell the stomach muscles to continue to work. Food stays in the stomach and does not get digested properly
- **Autoimmune diseases** – the immune system attack the nerves
- Conditions that affect the **endocrine system**
  - E.g. Diabetes (type 1 or type 2) – high blood sugar levels damage the vagus nerves as well as the blood vessels that bring oxygen to stomach muscles
- **After surgery in the digestive tract**
  - Gastroparesis may happen because of the surgery itself or a surgical damage to the vagus nerve
  - Can happen days, or years after the surgery
- Conditions that affect the **nervous system** (e.g. Parkinson’s)
- Collagen **connective tissue disorders** (e.g. Scleroderma)
- Virus or bacterial **infection** in the digestive system
- **Medications** including (but are not limited to):
  - Opioids (narcotics), nicotine, marijuana
  - Certain medications for depression and bipolar disorder
  - Certain medications to treat high blood pressure
  - Certain medications to treat diabetes
  - Certain medications to manage allergies
  - Certain hormones (e.g. for hormone replacement therapy)

### How Common is Gastroparesis?

- About [2% of the American population](#) have gastroparesis, but many people with the condition may not know it.
- Many people who have gastroparesis also have diabetes.
- Gastroparesis can be seen in children with 22q11.2DS.
- In a study with 206 adults with 22q11.2DS, [1 person had pyloromyotomy](#) to treat the condition.

### If not properly managed, gastroparesis can lead to:

- **Weight loss and malnutrition** – the patient cannot eat enough food
- **Acid reflux** – damage in esophagus
- **Dehydration** – the body does not have enough fluids to function
- **Bezoars** – Solid hardened food blocking the GI tract. These masses may (1) pass on their own; (2) need to be dissolved using oral solutions; or (3) need to be removed using surgery.
- Difficulties controlling **blood sugar levels**
- **Electrolyte deficiencies** – not having enough minerals (calcium, potassium, sodium, etc.) for the body to function

### Symptoms

Symptoms are variable. Here are the common ones:

- Nausea and vomiting
- Abdominal bloating, discomfort, or pain
- Early satiety – Feeling full after very few bites
- Low appetite – Not feeling hungry
- Acid reflux
- Low blood sugar (while food is in the stomach), then high blood sugar (when food finally reaches the intestines)

## Gastroparesis (continued)

### Diagnosis gastroparesis

An accurate diagnosis of gastroparesis is important since other GI conditions may have similar symptoms.

#### Checking the speed of stomach emptying

- [Gastric emptying scintigraphy](#) – Eat a small meal that includes a small amount of radioactive material. A small scanner is placed on your abdomen to see when the radioactive material leaves your stomach.
- [Gastric motility breath test \(GEBT\)](#) – Eat a small meal that contains carbon-13. Your breath is then measured for a few hours. Once the food reaches your intestines and get absorbed, your breath will include carbon dioxide gas that includes this carbon-13.

#### Checking for abnormalities or blockages

- [Upper gastrointestinal series](#) – Drink a solution that includes barium, which will make your GI tract visible under x-ray. Then take an x-ray “movie” to check the inside of the GI tract.
- [Gastroscopy](#) (a form of endoscopy) – The doctor inserts a small tube with a camera to look at the inside of the GI tract.
- [Ultrasound](#) – The technician uses high frequency sound waves to take pictures of the inside in your body. This checks if problems in other organs are causing your symptoms.

### Treating gastroparesis

#### Lifestyle and diet

- Eat smaller meals more frequently
- Chew every bite very well
- Limit foods with high fiber and high fat contents
- Supplement with nutritional beverage to make sure you are getting enough nutrients
- Ask a registered dietitian for advice about your diet

#### Medications

These medications do not treat the underlying cause, but they help with symptoms.

- Some medications stimulate muscles to help food go through the GI tract faster, but they may have serious side effects and may stop working over time.
- Some medications reduce nausea and vomiting.

#### Surgery

- [Pyloroplasty](#) or [Pyloromyotomy](#) – Expanding the **pylorus** (the opening between the stomach and the intestine).
- Inserting a feeding tube directly to the intestine.

### References / Resources

#### Clinical practice recommendations and research reports

- [Updated clinical practice recommendations for managing children with 22q11.2 deletion syndrome](#) – 2023
- [Updated clinical practice recommendations for managing adults with 22q11.2 deletion syndrome](#) – 2023
- [Gastrointestinal Features of 22q11.2 Deletion Syndrome Include Chronic Motility Problems From Childhood to Adulthood](#) – 2022

#### Websites of medical institutions and foundations

- [Gastroparesis](#) – Cleveland Clinic
- [Gastroparesis](#) – Mayo Clinic
- [Gastroparesis](#) – Canadian Digestive Health Foundation
- [Gastroparesis](#) – GI Society / Canadian Society of Intestinal Research



The mission of the [International 22q11.2 Foundation](#) is to improve the quality of life for individuals affected by chromosome 22q11.2 differences through family and professional partnerships.

This information is brought to you by the Foundation for educational purposes only. It is not intended to be taken as medical advice. If you have concerns, please talk to your healthcare provider.