

# Diet and Nutrition After Gastrectomy: What You Should Know

## General Guidelines and Issues to be Aware of

**Before your surgery**, your stomach played many important roles in your digestive system. The stomach:

- Held a liter or more of food
- Ground food into a purée for digestion and absorption
- Prepared food for absorption using digestive enzymes and stomach acid
- Controlled the release of food into the small intestine
- Sent signals to your brain when it was time to eat again (i.e., when you were hungry)

**After total gastrectomy**, your digestive system:

- Holds a smaller quantity of food
- Cannot grind food
- Cannot digest and absorb every nutrient in food effectively
- Will not send you the same signals to tell you to eat

**To compensate** for these effects, you will need to:

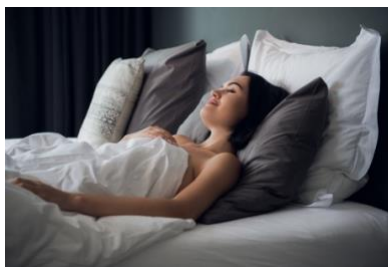
- Eat smaller meals, having at least 6-8 small meals per day
- Avoid drinking a lot of fluids with your meals
- Chew your food very well to make it easier to digest and absorb food. Chewing your food well will also help avoid pain or discomfort after eating
- Take the recommended vitamins every day to make sure you are getting all the nutrients you need
  - See the section on vitamin supplements later in this packet
  - Also talk to your dietitian about your individual needs
- Have small meals every few hours even when you don't feel hungry. It will take time to learn your body's new hunger cues. These may include feeling tired, weak, dizzy or light-headed

## Side effects to expect after total gastrectomy

- **Weight loss:** Your calorie and protein needs are higher right after your surgery to help you heal, but your body will not be able to absorb everything you eat. You will also feel full quickly and may forget to eat without your usual hunger cues. For these reasons, **weight loss is expected after total gastrectomy.**

- Weight loss is fastest the first month after surgery. You can then expect gradual weight loss for 6-12 months after gastrectomy. This weight loss includes loss of both fat tissue and muscle mass.
- Speak with your dietitian to get specific recommendations to help you avoid losing weight too quickly, to avoid losing too much weight or too much muscle mass and to maintain a healthy weight long-term after gastrectomy. Note that it is harder to regain weight after a total gastrectomy.
- **Early satiety**, or feeling full quickly. Right after surgery, you will feel full after only a few bites of food, approximately 1-2 ounces of food at a time (the amount that fills a shot glass).
  - To get enough nutrition despite early satiety, you will need to eat high-calorie and high-protein foods every 1-2 hours until you are able to eat larger amounts.
    - You can find guidance on your meal plan in [“Diet and Nutrition After Gastrectomy: Your Plan.”](#)
  - As your body adapts after surgery, you will gradually be able to increase portion sizes to child-size meals. This usually happens between 6-12 months after surgery.
- **Anorexia**, or not feeling hungry. After gastrectomy, your body does not have the usual signals to tell you to eat. Therefore, you may forget to eat or forget to eat often enough to meet your nutrition needs.
  - To counter the effects of anorexia:
    - Eat on a schedule, rather than waiting until you feel hungry.
    - Set timers or other reminders to eat and drink throughout the day.
    - If you find it hard to eat when you do not feel hungry, find ways to relax during mealtimes such as watching TV, reading a book or playing a game while eating.
    - Try protein drinks, which may feel easier than chewing solid foods when you do not feel hungry.
- **Nausea**: You may feel nauseous if you eat too much or don't chew your food well enough.
  - To avoid feeling nauseous, eat only small amounts of food, eat slowly and chew your food thoroughly before swallowing.
  - If it has been more than two hours since your last meal or snack, nausea may be a hunger signal. Try eating a small meal, making sure to eat slowly and chew your food well.

- If you are nauseous before eating, choose light, low fat, cold foods that do not have strong smells or flavors.
- **Constipation:** You are more likely to become constipated if you do not drink enough fluids, and it can be difficult to drink enough fluids after surgery because you feel full quickly (early satiety).
  - To avoid constipation:
    - Sip on fluids between your meals.
    - Aim for at least 64 ounces of fluid per day.
    - Choose unsweetened protein drinks for some of your small meals.
    - Take a short walk between meals and snacks.
  - Talk to your dietitian about when it is safe to add high-fiber foods back into your diet. Eating fiber without enough fluids can make constipation worse.
  - Talk to your dietitian and health care team about medications if constipation continues.
- **Bile reflux:** Without a stomach, you do not produce stomach acid, so you will not have acid reflux. However, you are at risk of bile reflux. Bile reflux is when bile, the digestive liquid produced by your liver, backs up into your esophagus (the tube between your mouth and the rest of your digestive tract). The causes of and treatments for bile reflux are different than acid reflux.
  - To avoid bile reflux:
    - Sleep with your head elevated at least 30 degrees, about 6 inches or more. You may want to purchase a wedge pillow to use at home. You are more likely to have bile reflux if you lie completely flat overnight.



Source: iStock/romankosolapov

- Stay upright for at least 30-60 minutes after eating.
- Maintain good posture and avoid leaning forward at the waist. Bend at your knees instead of at the waist for activities such as gardening, cleaning and picking up young children.
- Eat small meals throughout the day and chew your food well.
- Practice the tips mentioned above to avoid constipation because constipation can make bile reflux worse.

- If bile reflux continues despite taking these physical steps to avoid it, you may need medication. Talk your dietitian and health care team about your options.
- **Dumping Syndrome:** Dumping syndrome happens when large amounts of food or undigested food pass too quickly into the small intestine. Symptoms of dumping syndrome can happen right after you eat (**early dumping syndrome**) or hours after eating (**late dumping syndrome**).
- **Early dumping syndrome** usually happens within 15-60 minutes of eating and can be triggered by eating or drinking a large portion at once, eating and drinking at the same time or by ingesting food or drinks high in added sugar. (You can learn more about added sugar in "[Diet and Nutrition After Gastrectomy: Your Plan](#).") Early dumping syndrome occurs when your body tries to dilute sugar by pulling fluid from your bloodstream and tissues into your intestine.
  - Symptoms of early dumping syndrome include:
    - Abnormal cramping
    - Bloating
    - Nausea
    - Urgent diarrhea
    - Feeling faint or weak
- **Late dumping syndrome** occurs 1-3 or more hours after eating too much carbohydrate or added sugar. Your body quickly absorbs the carbohydrate or sugar, causing your blood sugar levels to rise quickly. When your blood sugar rises quickly, your body produces a lot of insulin (the hormone that regulates your blood sugar). When too much insulin is released, your blood sugars drop below normal, causing low blood sugar (hypoglycemia).
  - Symptoms of late dumping syndrome can include:
 

• Confusion	• Difficulty concentrating
• Sweating	• Cold Sensation
• Drowsiness	• Double vision
• Weakness	• Blurred vision
• Dizziness	• Hunger
• Heat sensation	• Nausea
• Difficulty speaking	• Fear/anxiety
• Palpitations	• Tiredness

- Tingling in the lips
- Shivering/trembling/shaking
  
- **To prevent** both early and late dumping syndrome:
  - Avoid foods and drinks with added sugars
  - Eat small meals often during the day
  - Eat protein at each meal and snack
  - Separate fluids from solid foods by at least 30 minutes
  - Chew food thoroughly
  - Avoid meals or snacks with large portions of carbohydrates (example: fruit, starch) and always eat carbohydrates with protein
  
- **To treat** dumping syndrome:
  - If you experience early dumping, sit upright in a chair or lie with the head of the bed at a 30-degree incline to slow the movement of food through your intestine. Eat or drink again as soon as possible to replace what your body did not fully absorb due to dumping.
  - If you experience late dumping, eat or drink as soon as possible to correct your low blood sugar.
    - Choose a soft-textured food (so that it does not take long to chew thoroughly) or a fluid that has carbohydrate and protein.
    - Examples include unsweetened yogurt, unsweetened peanut butter or unsweetened protein drink. Do not use sugar (such as juice or candy) to correct low blood sugar — that will cause you to have late dumping again.

## Staying Hydrated After Total Gastrectomy

Since you will feel full quickly and cannot drink large amounts while eating solid foods, you need to sip fluids throughout the day to avoid dehydration.



Source: <https://visualsonline.cancer.gov/details.cfm?imageid=8836>

Dehydration can lead to constipation, electrolyte imbalances, fatigue, dizziness, confusion and nausea. Chronic dehydration increases the risk of kidney stones.

Talk to your dietitian about your fluid goal. You may want to find a way to keep track of or measure your fluid intake throughout the day, such as a notes app in your phone or a water bottle with markings.

Symptoms of dehydration include:

- Dry mouth
- Dry lips
- Thirst
- Fatigue
- Headache
- Constipation
- Nausea
- Dark yellow urine
- Less frequent urination

To avoid dehydration after gastrectomy:

- Start sipping on fluids early in the day and sip continuously between meals.
- Keep a water bottle with you at all times.
- Don't wait until you feel thirsty to drink. If you are thirsty, you are already mildly dehydrated.
- Set a timer to remind yourself to drink.
- Use a food diary to track how much you are drinking.
- Avoid caffeinated beverages until you can meet your fluid needs every day.

All decaffeinated, sugar-free liquids (except alcohol) can count towards your fluid goal. This includes:

- Water
- Infused water
- Herbal tea
- Flavored drinks without added sugar
- Sports drinks without added sugar
- Broth or soup
- Popsicles without added sugar
- Protein drinks without added sugar
- Protein water without added sugar
- Milk

If you think you are dehydrated, drink sugar-free fluids with electrolytes such as sugar-free sports drinks. You can also drink sugar-free protein drinks instead of eating solid foods for some of your meals for more fluids.

Contact your health care team if you are unable to drink enough fluids to stay hydrated or if you experience severe dehydration. You may need intravenous (IV) fluids if you are very dehydrated.

### **Alcohol after total gastrectomy**

Alcoholic drinks increase the risk of dehydration. In addition, even small amounts of alcohol can cause intoxication and low blood sugar after a total gastrectomy.

Some studies suggest an increased risk of alcohol use disorder after gastrectomy. Be cautious with any alcohol intake.

### **Vitamins and Minerals**

You are a high risk for multiple vitamin and mineral deficiencies after total gastrectomy. This includes deficiencies in iron, vitamin B-12, thiamine, folate, zinc, calcium, fat-soluble vitamins A, D, E and K and other micronutrients.

The [American Society for Metabolic and Bariatric Surgery \(ASMBS\)](#) has established guidelines to prevent micronutrient deficiencies after stomach surgery, including gastrectomy. Specially formulated vitamins, referred to as bariatric vitamins, that meet these guidelines result in fewer deficiencies than standard multivitamins.

- Note: specially formulated bariatric vitamins provide vitamin B-12 in a dose and form that can be absorbed without the need for intramuscular vitamin B12 when the oral vitamins are taken daily.

Calcium citrate is the form of calcium that can be absorbed without stomach acid. Take the recommended calcium citrate supplements every day, and take them at least 2 hours apart from any iron-containing supplement, because iron interferes with calcium absorption.

You must take your multivitamin and calcium citrate every day to avoid problems associated with deficiencies, such as anemia, hair loss and low bone density. Talk to your dietitian about which specific bariatric formulated multivitamin and calcium citrate supplements are right for you. Your dietitian can make sure your supplements meet the ASMBS guidelines and are 3<sup>rd</sup> party tested for safety and accuracy.

## Dental Care After Total Gastrectomy



Source: <https://visualsonline.cancer.gov/details.cfm?imageid=4389>

After a total gastrectomy, you need to chew every bite of food completely so that your intestines can absorb your food, and you need healthy teeth to do this!

To make sure your teeth are healthy:

- See your dentist before your total gastrectomy
- See your dentist every 6 months after surgery
- Brush, floss and use mouthwash often during the day. When you eat more often, you need to brush your teeth more often to prevent cavities and other dental problems
- Take your vitamins every day to avoid any micronutrient deficiencies. Vitamins and minerals are important for dental health