

Diet for Gastroparesis

Gastroparesis is a disorder in which the stomach takes too long to move food into the small intestines. This can cause nausea, vomiting, weight loss, poor appetite, reflux, bloating, abdominal discomfort, and early satiety (feeling of fullness when eating).

The purpose of a diet for gastroparesis is to **reduce the symptoms and maintain adequate nutrition**.

Nutrition goals are to stay hydrated and provide calories, protein and essential vitamins and minerals.

GENERAL GUIDELINES

People are different and what works for one person may not work for another. Symptoms can vary from day to day; you may have “good” days and “bad” days. When symptoms are active stay with a liquid diet. Advance your diet to soft foods as able.

The following suggestions can help minimize symptoms:

1. **Drink enough fluids to prevent dehydration.** Dehydration can increase symptoms of nausea. Sip liquids steadily throughout the day; don't gulp. For most adults, fluid needs are 6-10 cups or 1500-2400 ml per day. Your fluid needs are _____. Liquids can pass through the stomach more easily and quickly than solids. Liquid nutritional supplements such as Ensure® or Boost® may help you achieve adequate calories and protein.
2. **Eat small, frequent meals.** Many people find that frequent small meals (5-6 or more per day) produce fewer symptoms than large meals.
3. **Eat nutritious foods first before filling up on snacks or empty calories.** Some people find they tolerate solids better earlier in the day. Start with solids earlier in day and finish with light or liquid meal in the evening.
4. **Reduce fat intake.** Fat naturally slows stomach emptying. Consuming foods labeled “low fat,” “nonfat,” or “fat-free” may help with symptoms. Avoid all high fat, fried or greasy foods. ***Liquid fat in beverages, however, is often tolerated and is encouraged if you are experiencing unintentional weight loss.*** Liquid fat = fats and oils that remain liquid even when refrigerated, such as vegetable oils, cream, non-dairy cream, half-and-half.
5. **Reduce fiber intake.** Fiber slows stomach emptying. High-fiber foods should be avoided because they may remain in your stomach or may cause bezoar formation. A bezoar is a mixture of food fibers that may cause a blockage in your stomach and prevent it from being able to empty well. A bezoar is similar to a hairball in a cat. Refer to the table below on foods to avoid.
6. **Chew foods well.** Chew all food to a mashed potato or pudding consistency. Solid foods such as meat may be tolerated if ground or pureed. If you need to puree your food, many foods can be liquefied in a blender or food processor, but solid foods will need to be cut in pieces and thinned with some type of liquid. Here are some suggestions:
 - Meats, fish, poultry: Blend with broths, water, milk, vegetables or vegetable juice, tomato sauce, gravies.

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- Starches (potatoes, pasta): Blend with water, tomato juice, broths, or strained baby vegetables.
- Fruits: Blend with their own juices, other fruit juices, or strained baby fruits.
- Mixed dishes (such as lasagna, macaroni and cheese, spaghetti, chili, chop suey): add adequate liquid of your choice, blend well, and strain if necessary.
- If you do not have a blender, strained baby foods will work and can be thinned down as needed with milk, soy milk, rice milk, broth, etc.
- Always clean your blender after each meal: take apart, unscrew blender base and blade, and wash, as food will accumulate.
- At meals, take pureed foods and liquid supplements before coffee, tea, or carbonated beverages.

7. **Sit up while eating** and for at least 1 hour after finishing your meal; don't lay down.

8. **If you have diabetes, keep your blood sugar under control.** Call your doctor with any questions or concerns and work with your registered dietitian to follow a carbohydrate budget for the day. Keeping your blood sugars in goal ranges (before and after meals) may decrease gastroparesis problems. High blood sugars directly interfere with normal stomach emptying.

9. **Alcohol should be avoided**, since it can also impair gastric emptying.

10. **Exercise** has been shown to increase stomach emptying in healthy individuals and might improve symptoms. Walking after meals is recommended.

No controlled trials of treatment by food modifications are available. Recommendations are based on professional judgment and clinical practice and are based on logical interpretation of gastric physiology. Common food modifications include the following:

FOOD ITEMS	FOODS TO CONSUME	FOODS TO AVOID
MILK & MILK PRODUCTS**	Choose fat-free or low-fat/reduced-fat versions of: milk, yogurt, pudding, cottage cheese, cheeses, sour cream and cream cheese	2% or whole milk, light or heavy whipping cream, half and half, regular cottage cheese and regular cheeses, regular yogurt and puddings, sour cream, cream cheese Dairy products with berries, nuts, seeds, whole spices
SOUPS**	Soups made from fat-free/low fat milk or broth	Soups made with cream, whole milk, cheese. Any soup containing vegetables with skin-corn, peas, cabbage, potato skins.
FRUITS**	Fruit juices, canned fruits without skins (applesauce, peaches, pears), mandarin or canned orange or grapefruit sections without membranes; seedless melons, ripe banana. Peeled cooked fruit – such as baked apple or pears.	All raw and dried fruits, canned fruits with skins (apricots, cherries, plums, *blueberries, fruit cocktail, oranges, grapefruit, pineapple, persimmons*, figs*, blackberries*, raspberries*, apples*, strawberries*, kiwi, coconut*), rhubarb
MEAT & MEAT SUBSTITUTES	Eggs and egg whites, reduced-fat creamy peanut butter, powdered peanuts, poultry with skins removed, lean fish, lean beef, lean pork, lean veal, lean lamb	Bacon, sausage, bologna, salami, hot dogs, goose liver, duck, canned beef, spare ribs, organ meats, fish packed in oil, regular peanut butter, fibrous meats (steaks, roasts, chops), dried beans,

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	Pureed beans: example fat free refried beans, or cooked lentils or split peas pureed in a soup, or hummus; try small amounts for tolerance	garbanzo beans, soy beans, fava beans, navy beans, kidney beans, baked beans, black-eyed beans, black beans, pinto beans, northern beans, lentils
FATS & OILS	Fat-free or low-fat (< 3 gm fat per serving) salad dressings, mayonnaise; light margarine and spreads	Use fats and liquid oils (butter, margarine, cooking oils) as tolerated and in moderation, regular salad dressings, regular mayonnaise, lard, shortening
BREADS & GRAINS**	White breads, low-fiber cereal (<= 2 gm fiber per serving), Cream of Wheat®, grits, pasta, white rice, noodles, low-fat low-fiber crackers, seed-less breads, rolls or crackers; pretzels, rice cakes	Oatmeal, whole grain starches, Chinese noodles, croissants, donuts, bran cereals, Grape-Nuts®, shredded wheat, granola, whole grain crackers. Dense, compact starches such as bagels, dumplings, cavatelli, fettuccine, gnocchi, tortellini, fried dough, or thick pizza crust are often not tolerate and should be avoided.
VEGETABLES	Tomato juice, smooth tomato sauce or puree, well-cooked vegetables without skins (acorn squash, beets, carrots, mushrooms, potatoes, spinach, summer squash, strained tomato sauce, yams), leeks, onions, roasted skinless peppers, well-cooked and mashed cauliflower, asparagus tips, finely chopped onion, mashed avocado, pureed dry beans as tolerated	All RAW vegetables, cooked vegetables with skins; broccoli, *Brussels sprouts, cabbage, celery, *corn, eggplant, onions, peas, peppers, pea pods, *sauerkraut, turnips, water chestnuts, beans (*green, *wax, *lima), *potato skins, *tomato skins, asparagus stalks
CONDIMENTS	Fat-free gravy, mustard, ketchup, barbeque sauce	Gravies, meat sauces, mayonnaise, cream, or butter sauces
SWEETS & DESSERTS**	Fat-free and low-fat desserts such as angel food cake, fat-free/low-fat ice cream, frozen yogurt, Italian ice, sorbet, and gelatin	Cakes, pies, cookies, pastries, ice cream, regular frozen yogurt, fruit preserves
BEVERAGES	Gatorade®, diet soft drinks, coffee, tea, water, G2® Gatorade, or non-carbonated sugar-free drinks	Alcoholic beverages, carbonated beverages if bloated or feeling full
MISCELLANEOUS	Jelly, seedless berry jams, honey, syrup, apple butter**	Nuts, olives, pumpkin seeds, soy nuts, popcorn, chunky nut butters, marmalade, preserves
HIGH-FIBER MEDICATIONS/ BULK-FORMING AGENTS		Acacia fiber, Benefiber®, Citrucel®, Fiber Choice®, FiberCon®, Konsyl, Metamucil®, Perdiem® + +

* Foods associated with bezoar formation

** If you have diabetes, remember that these food groups listed above (dairy, fruits/juices, soups, breads/ grains, and desserts) are carbohydrate sources and should be included as part of your carbohydrate budget for the day.

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Sample menu:

Breakfast	<ul style="list-style-type: none">• 1 cup cooked farina (2 carbohydrate servings)• ½ cup nonfat milk (½ carbohydrate serving)• ½ cup orange juice (1 carbohydrate serving)• 1 scrambled egg
Morning snack	<ul style="list-style-type: none">• 1 packet instant breakfast mix (1½ carbohydrates)• 1 cup skim milk (1 carbohydrate serving)
Lunch	<ul style="list-style-type: none">• 1 cup chicken noodle soup (1 carbohydrate)• 6 soda crackers (1 carbohydrate)• ½ cup applesauce (1 carbohydrate)• ½ cup nonfat milk (½ carbohydrate)
Afternoon snack	<ul style="list-style-type: none">• 6 oz nonfat smooth yogurt (1 carbohydrate serving)• 1 small banana (1 carbohydrate serving)
Evening meal	<ul style="list-style-type: none">• 3 oz baked fish• ½ cup mashed potatoes (1 carbohydrate serving)• 1 teaspoon margarine• ½ cup cooked carrots• ½ cup skim milk (1 carbohydrate serving)• ½ cup canned fruit, in juice (1 carbohydrate serving)
Evening snack	<ul style="list-style-type: none">• ½ cup pudding (1 carbohydrate serving)

Tips to boost calories and protein when a liquid or semi-solid diet is needed

If you find that smaller, more frequent meals did not improve your symptoms, you may need to follow a liquid diet. Patients with gastroparesis will often tolerate liquids even if solids are not passing well.

The following tips and recipes are only suggestions for liquid calories at a time when it may be difficult to think of ideas. If you are able to tolerate liquid fat, you may use the following recipes as directed.

However, if you CANNOT tolerate liquid fat, substitute low-fat or fat-free dairy products in place of whole milk, regular cottage cheese, regular pudding, and ice cream.

- *Hot* cereals: Make with caloric beverage such as milk, soy or rice milk, juice, or liquid supplement instead of water. Add sugars, honey, molasses, syrups (if not diabetic), or small amounts of fat like butter or margarine for added calories.
- Add nonfat powdered milk, protein powders(whey, soy, pea or rice) or powdered egg to foods to boost protein intake. A single tablespoon of nonfat powdered milk adds 25 calories and 3 grams protein to your diet.

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Add 2 or more tablespoons of nonfat powdered milk to each serving of a the following:

Before cooking

- Instant mashed potatoes
- Scrambled eggs
- Pudding
- Custard
- Cream of Wheat® or Cream of Rice®

After cooking

- Creamed soup
- Mashed potatoes

- Drink high-protein milk (recipe below) or use it as an ingredient in cooking. Each cup of high-protein milk contains 200 calories and 14 grams of protein. It tastes best when thoroughly chilled.

Fortified milk recipe

To make 1 quart:

1 quart of 2% milk (1% or skim if intolerant of fat)
1 cup nonfat powdered milk

- Add powdered milk to liquid milk in a large deep bowl or blender
- Beat slowly with beater until powdered milk is dissolved.
- Refrigerate and serve cold.

To make 8 oz:

8 oz of 2% milk (1% or skim if fat-intolerant)
2 tablespoons of nonfat powdered milk

- Add powdered milk to liquid milk in a large oversized glass.
- Blend until powdered milk is dissolved.

- The following foods provide excellent sources of fat-free protein.

Product	Serving size	Protein (grams)
Liquid egg substitute	3 Tbsp	5-6 grams
Egg whites, separated, cooked	2	7 grams
Fat-free luncheon meat	1 oz	6 grams
Fat-free milk	8 oz	8 grams
Non-fat dry milk powder	2 Tbsp	4 grams
Evaporated skim milk	½ cup	9 grams
Non-fat cottage cheese	½ cup	13 grams
Fat-free ricotta cheese	¼ cup	6 grams
Peanut powder	3 Tbsp	8 grams
Commercial protein powder	1 scoop (varies)	10-20 grams

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RECIPES

- Many of the following recipes contain milk or other lactose-containing products. If you are lactose intolerant, you can **substitute soy or lactose-free milk** and maintain the same protein content of each recipe.
- Some recipes call for the use of liquid nutritional supplements. Two popular supplements: Boost and Ensure are both **lactose free** and **gluten free**.

Smoothies

Unless otherwise specified, mix all ingredients together in a blender until smooth.

Yogurt Smoothie

- 1 ripe medium banana **OR**
- 1 cup canned peaches
- 1 cup fortified milk (or soymilk)
- 1 cup vanilla yogurt
- 1-2 Tbsp powdered sugar
- ½ cup ice cubes

- Cut fruit into chunks. Combine all ingredients except ice in a blender until smooth. Add ice, one cube at a time. Blend until smooth.

Calories: 500 Protein: 22 grams

Strawberry Yogurt Frappe

- 1 Tbsp strawberry syrup or other flavoring
- ½ cup vanilla yogurt
- ½ cup fortified milk
- ¼ cup orange juice
- Dash vanilla

Calories: 250 Protein: 13 grams

Tropical Smoothie

- ½ cup Greek fruit yogurt
- ½ banana
- 4 oz orange juice

Calories: 240 Protein: 12 grams

Peach Plus

- ½ cup peaches, canned
- ¼ cup vanilla Greek yogurt
- ¼ cup milk
- Dash vanilla
- Dash nutmeg

Calories: 205 Protein: 8 grams

Shakes

The following recipes should **ONLY** be consumed if you are able to tolerate liquid fat.

Unless otherwise specified, mix all ingredients together in a blender until smooth.

Lactose-Free Banana Strawberry Shake

- 1 banana
- ½ cup soy OR almond milk
- ½ cup liquid nutrition supplement (such as Ensure® Plus)
- ¼ cup pasteurized liquid egg substitute or egg whites or 2 tablespoons soy protein powder
- 2 or more Tbsp strawberry syrup

Calories: 515 Protein: 18 grams

Creamy Peanut Butter Banana Shake

- 2 Tbsp creamy peanut butter
- 1 cup chilled fortified milk
- ½ soft banana
- ½ cup ice cream

Calories: 550 Protein: 27 grams

Mexican Chocolate Shake

- 8 oz. chocolate liquid nutrition supplement (such as Boost)
- 1 scoop whey protein powder
- Dash of cinnamon
- ½ tsp vanilla
- 3 ice cubes

Calories: 440 Protein: 34 grams

Standard Milk Shake

- ½ cup milk
- 2 cups frozen Greek yogurt OR ice cream
- 1 tsp vanilla extract
- 3 Tbsp chocolate syrup, option

Calories: 560-790 Protein: 16-20 grams

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Miscellaneous

Cauliflower Soup

- 4 cups cauliflower
- 3 cups chicken stock
- 1 Tbsp extra virgin olive oil
- 2 garlic cloves, minced
- ½ cup parmesan cheese

- Heat oil in pot on medium heat. Add garlic and sauté until soft. Add cauliflower and chicken stock. Cook cauliflower until it is tender (about 15 minutes). Using a blender, puree cauliflower until it reaches a desired consistency.

Simple Soup

- 3½ cups canned fat-free, reduced sodium chicken broth
- 2 (10½ oz) cans cream of potato soup
- 1 Tbsp extra virgin olive oil
- 2 cups nonfat Greek plain yogurt

- In a bowl, combine broth, soup, and yogurt, mixing well. Refrigerate for several hours.

Soymilk Eggnog

- ¼ cup pasteurized liquid egg substitute/egg whites or 2 Tbsp soy protein powder
- 2 cups soymilk
- 2 Tbsp sugar or to taste
- ¼ tsp vanilla
- ¼ tsp cinnamon
- ¼ tsp nutmeg
- ¼ tsp pumpkin pie spice

- Place all ingredient in blender and combine or use a hand whisk. Spices to taste.

Cookbooks:

- Eating for Gastroparesis: Guidelines, Tips & Recipes. Crystal Z. Saltreli. CreateSpace; 2011. Available in paperback and Kindle.
- The Gastroparesis Cookbook, 102 Delicious, Nutritious Recipes for Gastroparesis Relief. Karen Frazier. Rockridge Press; 2016

References and resources:

- Olauson EA, Storsrud S, Grundin H, Isaksson M, Attvall S, Simren M. A small particle size diet reduces upper gastrointestinal symptoms in patients with diabetic gastroparesis: A randomized controlled trial. *Am J Gastroenterol*. 2014; 109:375-85.
- Academy of Nutrition and Dietetics: www.eatright.org
- American Motility Association: www.motilitysociety.org
- Association of Gastrointestinal Motility Disorders: www.agmd-gimotility.org
- Gastroparesis Dysmotility Association: www.gpda.net
- International Foundation for Functional Gastrointestinal Disorders: www.aboutgastroparesis.org
- National Institute of Diabetes and Digestive and Kidney Disease: www.digestive.niddk.nih.gov/gastroparesis.

This information is not intended to replace the medical advice of your doctor or healthcare provider. Please consult your healthcare provider for advice about a specific medical condition.



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