



**G**astro $p$ aresis &  $D$ ysmotilities  $A$ ssociation

# Diabetes Mellitus and Gastroparesis / Dyspepsia.

## What to Eat?

Suggested diet tips and guidelines

This pamphlet is one in a series discussing symptoms and symptom management for patients living with **Digestive Motility Diseases**.

GPDA's

Mission is to provide accurate information to patients; increase awareness to the public and medical community about *Digestive Motility Diseases*; and facilitate the search for a cure

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### Food Suggestions and Tips for People who have Gastroparesis and Diabetes Mellitus

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Digestive Health Center of Excellence

Tables and recipes provided by: **University of Virginia Health System,  
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**Gastroparesis** can be a very confusing, and frustrating digestive illness.

This booklet has been written to provide you and your family with more  
information regarding diet suggestions.

It is strongly recommended and advised that you obtain professional guidance  
to help tailor an approach which best meets your individual medical needs and  
dietary requirements.

For further information about Gastroparesis and motility disorder, visit:  
< [www.digestivedistress.com](http://www.digestivedistress.com) >

We wish to gratefully acknowledge the contribution by Carol Rees Parish RD,  
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# F

## ood suggestions and tips,



What to eat when your stomach is not working right can be challenging for anyone, but is particularly so for individuals with Type I diabetes mellitus, who are also faced with a slow-emptying stomach (gastroparesis).

Wide swings in blood sugar levels can be an early sign of gastroparesis in someone with diabetes mellitus. Others may experience digestive symptoms that punctuate life's routines, rob one's appetite, or develop into patterns of nausea and vomiting.

Dietary manipulation can greatly assist you in regaining blood glucose control. Proper use of your insulin or diabetic medication is also of utmost importance. You will have good days and bad days. Your medical team will help you get through the tough patches. Your team members should include a diabetologist, or primary care physician, dietitian, psychologist, and diabetes nurse specialist.

For those who are experiencing moderate to more severe digestive symptoms, eating may become inconsistent from meal to meal, day to day, or week to week, depending upon the frequency and intensity of digestive distress. Getting a handle on good blood sugar control while still attempting to eat enough calories in order to maintain your weight may seem daunting. Our aim is to provide you with knowledge and suggestions to aid your efforts as you work towards optimal management with your medical team.

**In general:** Little research is available in the area of diet and gastroparesis. What works for one person may not work for all. Therefore, some basic guidelines, trial and error will serve as your guide. Our goal – provide you with the basic principles to assist you in good food choices.

**Remember:** Your best efforts may not be enough to control symptoms. Don't get discouraged. Ask for help and work with your team. Gastroparesis is a challenging digestive disease and can have unpredictable flare-ups for unexplained reasons. If you are underweight due to gastroparetic symptoms, then restriction of calories in an attempt to combat the symptoms (through eating low fat or low carbohydrate, or highly restricted diets) is not advised. You need to consult with a dietitian and your doctor. Or, if you have unintentionally lost more than 10% of your body weight due to gastroparetic symptoms, you need to consult with your doctor.

Feeding tubes (enteral nutrition) are not covered in this guide. However, in more symptomatic individuals, a feeding tube can help to control blood glucose levels, deliver medication, help keep you nourished and well hydrated; all which helps you to feel better.

# L

## ets get started:



**Get a good registered dietitian** to help you troubleshoot. To locate one near you, access the websites of the two organizations below depending on whether you live in Canada or the United States.

American Dietetic Association: [www.eatright.org](http://www.eatright.org)  
800-366-1655

Dietitians of Canada: <http://www.dietitians.ca/>

**Don't abandon principles of good nutrition** remember your food guide!

**Learn more about diabetic gastroparesis** from:  
[www.digestivedistress.com](http://www.digestivedistress.com)

**Tighten up blood sugar control!** Work with your diabetologist or primary care physician. Keep good records of blood glucose levels and bothersome foods.

**Report any problems** to your diabetologist or primary care physician right away in order to rework your insulin or oral diabetic medication regimen.

**Be consistent with the amount of carbohydrates you eat** with each meal! It is the overall amount of carbohydrate, not the type of carbohydrate that impacts your blood sugar levels. Insulin requirements may actually increase if liquid nutritional supplements are used.

**Pay attention to your daily symptom pattern.** Go for an easy walk if symptoms allow. Remember, regular exercise helps to improve blood sugar control and helps to move food out of your slow emptying stomach.

**Review all medications** with your doctor, especially any over-the-counter purchases. Many medications can slow down digestion.

**Food odors trigger nausea.** Go with a fried-food-free household! Invite the rest of the household to go with cold cuts, outdoor BBQ and low-odor, cooked foods.

**Avoid** smoking, alcohol, coffee, spicy foods and mints. All of these things can irritate the lining of the stomach, causing irritation and more acid reflux.

**Regular dental checkups are a must!** Stomach acid is damaging to teeth if vomiting, regurgitation or acid reflux is a regular problem.

# R

## Review: Nutrients & Fluids:



**Calories** are the units of energy found in our food. Our body converts the protein, carbohydrates, and fats we eat into usable energy, which we measure in calories. To lose weight, we need to eat fewer calories. To gain weight means eating more calories.

**Proteins** are needed every day to maintain growth or repair muscle and tissues in our bodies. The average adult needs about 50 to 60 grams of daily protein. Examples: meats, fish, poultry, milk, eggs.

**Carbohydrates** found in starchy foods and the natural sugars in fruits and vegetables, represent the easiest nutrient class for our bodies to digest and utilize as energy. From the abundant choices we have, meeting daily carbohydrate needs is easy. Usually 210 to 240 grams of carbohydrates are needed each day. Examples: toast, crackers, potatoes, rice, pasta, fruits and vegetables.

**Fat** is vital to good health, and makes food taste good! All fats, from any source, provide the most concentrated supply of calories. One gram of fat has more than double the calories as an equal amount of protein or carbohydrates. Fat can be a wonderful source of calories in underweight individuals. Examples: butter, mayonnaise, margarine, vegetable oil.

**Vitamin and mineral** Essential to healthy functioning, eating a wide variety of foods insures that you will meet your daily needs. Some people with gastroparesis tend to restrict their diets greatly, based upon personal experience gained from learning which foods create fewer symptoms for them. In doing so, you run into problems with vitamin and mineral deficiencies. Ask your doctor or dietitian regarding simple, routine blood work to monitor your vitamin and mineral levels. You may need vitamin and mineral supplements -- best in a chewable or liquid form, and should be done under the guidance of a physician and registered dietitian. The most common nutrient deficiencies seen in patients with gastroparesis are iron, vitamin B12 (cyanocobalamin), vitamin D and calcium.

**Water and Fluids** Anything liquid will supply the body with needed water. The average adult puts out about 1.5 liters of urine each day. Each of us lose close to an additional liter of water each day through sweating, breathing, and bowel movements. Our food usually replaces about 20 percent of loss these lost fluids, so drinking about 2 liters of water, or other beverages, a day (approximately 8 cups) along with your normal diet, replaces the lost fluids. These are averages, generally men will have higher requirements.

# U

## nderstanding the principles:



**Volume:** Many people with gastroparesis experience a feeling of fullness after a few bites of food; for others, the rapid eating of a large meal, by sheer volume alone, may inhibit stomach emptying. So, go easy and go slowly with volume, selecting good quality food choices.

**Liquids vs. Solids:** In general, liquids, no matter what the nutrient content, will empty from the stomach much more easily than solids.

When is it time to switch to **liquid nutritional supplements?**

- Digestive symptoms remain so severe as to cause food avoidance;
- Vomiting up undigested food hours after eating, thus leading to weight loss;
- For the type I diabetic, blood sugars still widely fluctuating;
- Ending up in the hospital or emergency department too frequently.

### Experiment with your food,

When symptoms are bad, stick to complete liquid meals. Add liquid nutritional supplements to ensure adequate calories, and as an easy way to get calories in without preparation when feeling poorly. Once you have gained back some control over your symptoms, step up to thin-downed, puréed foods. Just about any food item can be blenderized, so making something apart from the rest of the family meal isn't necessary. As blended foods are tolerated, you may progress to soft foods; you can even try baby foods. Also, if symptoms worsen by evening, or a sense of fullness is felt later in the day, try reserving more solid foods for breakfast while moving to more liquid foods as the day progresses. Keep the foods simple, soft and easy to chew.

**Fat:** Any type of fat will slow stomach emptying. For this reason, many doctors and dietitians will recommend curtailing the amount of fat in your foods. However, fat found in a liquid form, as in milkshakes, whole milk, nutritional supplements and liquid meal replacements, can usually be managed without increasing symptoms. Many of the liquid nutritional supplements come in choices of low-fat, moderate-fat and high-fat formulations. There are no hard and fast rules, so experiment and find what works best for you. For someone who is seriously underweight, fats should not be restricted. They are an enormously rich source of calories.

**Fiber:** is found in many fruits, vegetables and grains, and normally acts to slow down stomach emptying. For gastroparetics who sufferer an early feeling of fullness after a few bites of food it may be helpful to avoid high fiber foods and commercial fiber/bulk-forming laxatives. Low fiber lets you eat more calories.

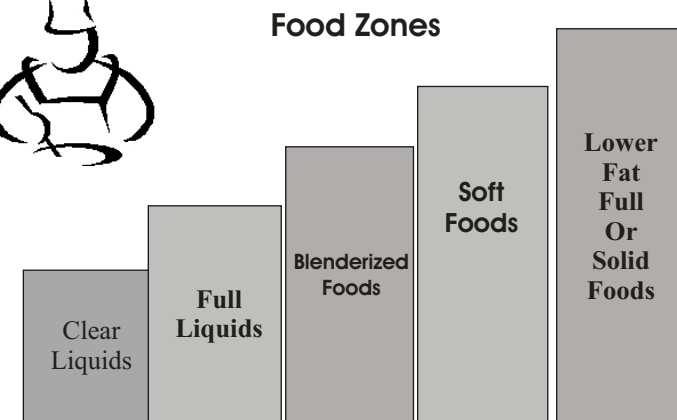
# Summary of, Symptom management



- > Avoid large meals, and if not insulin dependent: eat at least 5 small meals each day (if on insulin, consult with your physician as to time of meals and type of insulin for the best management of your blood glucose pattern).
- > Cut back on high-fat foods or added fats.
- > Liquid fats found in shakes, or liquid meal supplements, are a good source of calories and you may find them to be easily tolerated.
- > Eat nutritious foods first before filling up on empty calories. For instance, start your meal with puréed foods and liquid supplements before drinking, tea or soda.
- > Chew foods well; solid food, such as meat, may be tolerated better if ground or puréed.
- > On days when symptoms are worse, let your stomach rest by sticking with liquids or anything that can be liquefied, thinned, blenderized or strained.
- > High-fiber foods should be avoided because they may be more difficult for your stomach to empty or may cause bezoar formation (congealed mass of old food).
- > Sit up while eating, and for 1 hour after finishing; consider taking a quiet walk after meals.
- > Check your weight twice a week. If weight is decreasing, increase your consumption of liquid supplements or caloric beverages such as milkshakes, popsicles, gelatin, etc. If you lose more than 10 percent of body weight *unintentionally*, report this to your doctor.
- > Persistent vomiting makes staying hydrated difficult. Remember to take sips of simple juices or sodas or any other fluids that is appealing. During symptom flair-ups, many sufferers just want to curl up and not make the effort to grab a drink.

**Dehydration can make your symptoms much worse and cloud your reasoning. Fluid replacement, during symptom flair-ups, is very important.**

# Putting it all together, The Food Zones for Symptom Management of Gastroparesis:



**Step up, or Step down: Food Zone management for the symptoms of gastroparesis and / or functional dyspepsia.**

**Remember: You can go zone to zone depending upon your symptom pattern. During times of “flare-ups”, return to the beginning zones. You will learn what is right for you!**



# M

## Meal planning tips,

### Semi-liquid meal pattern:

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#### **BREAKFAST** (6 Carb choices)

- Citrus Juice (1/2 cup: 15g CHO)
- Thinned Cooked Cereal (1/2 cup cooked cereal: 19g CHO)
- Liquid Supplement or Milkshake (see suggestions)  
(10 oz milkshake: 32g CHO)
- Milk (1 cup: 12g CHO)
- Coffee or Tea (unsweetened: 0g CHO)
- Cream, Sugar (1 Tbsp sugar: 15g CHO)

#### **LUNCH AND DINNER** (6 Carb choices)

- Thinned Soup (1 cup chicken broth: 1g CHO)
- Thinned or Puréed Meat or Substitute
- Thinned Potato or Substitute (3 oz potato: 15g CHO)
- Thinned or Puréed Vegetable
- Thinned Dessert or Puréed Fruit (1/2 cup fruit: 15g CHO)
- Liquid Supplement or Milkshake (milkshake: 32g CHO)
- Milk (1 cup: 12g CHO)
- Coffee or Tea (unsweetened: 0g CHO)
- Cream, Sugar (1 Tbsp sugar: 15g CHO)
- Salt and Pepper

#### **SNACK: MID-MORNING, AFTERNOON AND BEDTIME** (1 Carb choice)

- Milk or Fruit Juice (1 cup milk, 1/2 cup juice: 15g CHO)
- Liquid Supplement or Milkshake (see suggestions)

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# S

## moothie Tips & Flavoring Ideas:



When preparing smoothies, fortified milk can be substituted to increase protein, and calories if needed. For smoothie recipes, visit: [www.digestivedistress.com](http://www.digestivedistress.com)

#### **To make fortified milk:**

- 1 quart whole milk
- 1 Cup nonfat instant dry milk
- Pour liquid milk into deep bowl. Add dry milk and beat slowly with beater until dry milk is dissolved.

#### **Refrigerate and serve cold.**

- Soy or rice milks can be substituted for milk in any recipe.
- Flavor extracts such as vanilla, almond, coffee, etc can be added for interest.
- Other flavorings such as dry gelatin (e.g., Jell-O) or pudding mixes, syrups, etc. can be added for additional flavors or extra calories.
- Ice/ ice chips can always be blended in if desired.
- Frozen yogurt, ice creams, sorbets, sherbets, soy and rice products can be substituted in any recipe.
- Sugar free ice creams, yogurt and gelatins, etc., can be substituted as needed for regular ones.
- For extra flavor, texture, and calories, add a frozen banana

**Freezing Bananas:** when bananas are ripe, peel, cut in half, and place in a covered container or baggie, freeze overnight. Or, mash and place in an ice cube tray -- freeze. Once frozen remove and place individual servings into a freezer bag for longer storage. Add a cube or two to your favorite recipe. You can do the same with any soft, ripe fruits, like: peaches, pears, or nectarines. Add a sprinkle of lemon juice to preserve color, then prepare and freeze as outlined above.

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#### **Other flavor boosters:**

- Try brewing flavored teas: green, mint, fennel, ginger, lemon, licorice, or apple. Ginger, licorice and fennel teas have been found to help sooth minor digestive up-sets. Mint, while soothing for problems of intestinal bloating and gas, can actually increase problems of stomach acid reflux. Reflux can greatly add to the symptoms of nausea, so be aware of any increase symptom problems.

- The teas may be prepared as mentioned above. Steep the tea, cover and let cool to room temperature. Then you may individually portion in an ice cube tray to freeze and add to smoothie recipes at a later time.

# C

## lear liquids, and Full Liquids:



### OPTIONS WHILE ON A LIQUID DIET (1 Carb Choice = 15 g)

Note: Sometimes clear liquids are better tolerated if small amounts of plain rice, potatoes, saltines, etc are eaten along with the clear liquids.

<u>Clear Liquids</u>	<u>Carbohydrates (CHO) in grams</u>
All teas and coffees (plain, no sugar)	0
<b>Clear juices such as:</b>	
Apple - 1/2 cup	15
“Cranberry - 1/3 cup	15
“Grape - 1/3 cup	15
Fruit-flavored drinks (1/3 cup)	15
Carbonated beverages/soda (Regular 12 oz)	39
Carbonated beverages/soda (Diet 12 oz)	0
Sports Drinks (Gatorade, All-Sport, etc.- 8 oz)	14
Broth, bouillon, consume' (1 cup)	1
Plain, flavored gelatins (Regular 1/2 cup)	19
Popsicle	24
Sorbet (1/2 cup)	22
<b>Clear liquid type supplements:</b>	
“Boost Breeze (Mead Johnson) 8 oz	31
“Enlive (Ross) 8 oz	65
“Resource Fruit Beverage (Novartis) 8 oz	54

<u>Full Liquids</u>	<u>Carbs (g)</u>
All juices (nectars, fruits juices), tomato or V-8 juice (1/3, 1/2 cup)	15
<b>Milks:</b>	
Regular milk (1 cup 1% low fat, 2% reduced fat or skim)	12
Chocolate milk (1 cup 1% low fat, 2% reduced fat)	26
Buttermilk (1 cup)	12
Lactaid milk (1 cup)	12
Soy or rice milk (1 cup)	4
Carnation instant breakfast (or equivalent of powder and milk)	38-40
Ovaltine (4 Tbsp with 1 cup of milk)	30
Nesquik (2 Tbsp chocolate)	19
Nesquik No Sugar Added (2 Tbsp chocolate)	7
Flavored syrups such as strawberry (1 cup reduced fat milk & 1 Tbsp syrup)	30

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# F

## ull fluids continued:



<u>Full Liquids</u>	<u>Carbohydrates (CHO) in grams</u>
Eggnog (1 cup)	34
Milkshakes (10 oz milkshake)	32
<b>All tea and coffee drinks (plain, no sugar: 0g CHO)</b>	
Add whole milk, cream or flavored creamers (1 Tbsp)	3
Starbuck's Frappaccino's, Mocha, 9.5 oz.	27
Hot or cold cocoa (1 packet mixed with water)	22
Hot or cold cocoa (1 packet mixed with milk)	30
Kefir (liquid yogurts), Yoplait Nouriche, Go-gurts, etc. (2.25oz)	11
Light'n Fit Smoothie (7 oz)	7
Creamy type yogurt (vanilla, lemon, key lime, etc) (1 cup low-fat custard style)	43
Custard, puddings (4 oz custard pudding)	25
Skim milk pudding (4 oz )	23
Smooth ice cream (no nuts, etc - 1/2 cup)	18
Hot cereal (low in fiber) such as: grits, cream of wheat, cream of rice, farina (1/2)	19
Strained creamed soups (1 cup)	10
<b>Thinned down strained vegetables, fruits, meats (such as strained baby foods) can also add to broths or cream soups to increase nutritional value and calories.</b>	
<b>Also allowed:</b>	
Butter, margarine	
Sugar, hard candy, honey, syrups (1 Tbsp)	15

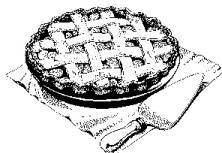
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### COMMERCIAL NUTRITIONAL SUPPLEMENTS

<u>Product</u>	<u>Portion</u>	<u>CHO (g)</u>	<u>Company</u>
Ensure	8 oz	46	Ross
Ensure Plus	“	50	“
Enlive	“	65	“
Resource	8 oz	39-47	Novartis
Resource Plus	“	52	
Resource Fruit Bev.	“	54	“
Boost	“	41	“
Boost Plus	“	45	“
Boost Breeze	“	31	“

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# C Commercial drinks cont.:

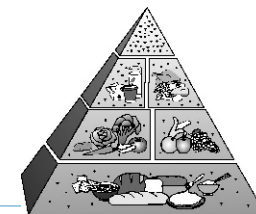


## COMMERCIAL NUTRITIONAL SUPPLEMENTS

<u>Product</u>	<u>Portion</u>	<u>CHO (g)</u>	<u>Company</u>
<b>Nutra /SHAKE:</b>			
Supreme	4 oz	32	Nutra/
Sugar Free	“	25	Balance
High Fiber	“	60	
Citrus	“	44	
Citrus Free	“	39	
<b>NuBasics</b>			
NuBasics Plus	8 oz	33	Nestle
NuBasics Juices	“	44	
Scandishakes	“	34	
	3 oz powder	58	Scandipharm
<b>Diabetic Formulas:</b>			
Choice DM	8 oz	24	Novartis
Choice Sugar Free	“	8 - 12	“
DiabetiSource AC	“	26	“
Glucerna Select	“	24	Ross
Glytrol	“	25	Nestle
Resource Diabetic	8 oz	23	Novartis
<b>Slim Fast</b>	8 oz	40	Slim Fast
<b>Atkins Advantage</b>			
Ready-To-Drink Shakes	8 oz	4 - 5	Atkins

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# B blenderized food:



**Any food can be blenderized, but solid foods will need to be Thinned with some type of liquid.**

- o Meats, fish, poultry, ham: blend with broths, water, milk, vegetable or V-8 juice, tomato sauce, gravies.
- o Vegetables: Blend with water, tomato juice, broths, strained baby vegetables.
- o Starches: potatoes, pasta: Blend with soups, broth, milk, water, gravies; add strained baby meats, etc to add protein if needed. Consider using hot cereals such as cream of wheat or rice, grits, etc as your “starch” at lunch and dinner.
- o Fruits: Blend with its own juice, other fruit juices, water, strained baby fruits.
- o Cereals: Make with caloric beverage such as whole milk, soy or rice milk, juice, Ensure or equivalent, etc., instead of water. Add sugars, honey, molasses, syrups, or other flavorings, butter or margarine for extra calories.
- o Mixed dishes: Lasagna, macaroni and cheese, spaghetti, chili, chop suey add adequate liquid of your choice, blend well and strain.
- o If the blenderized item comes out “lumpy”, you can strain it through a fine metal kitchen strainer (get at a kitchen store, Wal-Mart, etc) or cheesecloth (a fine material available at most fabric stores) such as Linens 'N' Things, or call 1-866-568-7378.
- o If you do not have a blender, strained baby foods will work and can be thinned down as needed with milk, soy or rice milk, water, broth, etc.
- o Always clean the blender well. Any food left on the blender could cause food poisoning.

### High Fiber Foods:

**Legumes/Dried Bean:** Refried beans, baked beans, black-eyed peas, lentils, black, pinto, northern, fava, navy, kidney, and garbanzo beans, soy beans.

**Bran /Whole Grain Cereals:** Bran cereals, Grape nuts, shredded wheat type, granolas

**Nuts and Seeds:** Pumpkin seeds, soy nuts, chunky nut butters

**Fruit:** Dried fruits (apricots, dates, figs,\* prunes, raisins), blackberries\* blueberries\* raspberries\* strawberries\* oranges, apples\* kiwi, apples\* Coconuts\* Persimmons\*

**Vegetables:** Green peas, broccoli, Brussels sprouts\*, green beans\*, corn\*, potato peels\*, sauerkraut\*, Tomato skins\*

\* **Foods associated with bezoar (collection of undigested, retained food).**

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