



# Nutrition Considerations for Gastroesophageal Cancer

*Ashley Draviam, MS, RD, CSO, LDN  
Clinical Nutrition Specialist  
MGH Cancer Center*



MASSACHUSETTS  
GENERAL HOSPITAL

CANCER CENTER



# Agenda

Nutrition Goals

How the RDCan Help

Nutrition During Treatment

- *Poor appetite*
- *Nausea/vomiting*
- *Diarrhea*
- *Constipation*
- *Taste changes*
- *Acid reflux*
- *Fatigue*

Considerations Prior to Surgery

- *Immunonutrition*

Nutrition After Surgery

- *Dumping syndrome*
- *Vitamin and mineral considerations*

Nutrition Myths and FAQs





# Nutrition goals

Weight maintenance = maintenance of muscle mass

- *High calorie, high protein diet*
- *Fortify where possible*
- *Nutrient dense foods*

Maintain good hydration

Exercise/physical activity



# There is a body of evidence showing a statistically significant impact of nutrition intervention with an RD:

## More likely to avoid breaks in treatment

- A 2010 study shows that head and neck cancer patients in chemo-radiation treatment receiving early nutrition guidance showed a 33% reduction in treatment breaks (of more than 5 days). Support Care Cancer. 2010;18:837-45

## Less likely to have unplanned hospital visits

- Patients undergoing chemo-radiation for esophageal cancer receiving nutrition interventions on average improved treatment completion by 40% and reduced unplanned hospitalizations by one-third. Clinical Oncology 2005;17:639-45

## Increased survival

- A 2012 randomized control trial of colorectal cancer patients undergoing radiation therapy showed that individualized nutrition counseling improved median overall survival by 2.4 years. Ravasco. Am J Clin Nutr 2012;96:1346-53

## Improved QOL

- Weight stabilization over an 8 week period in weight-losing patients with unresectable pancreatic cancer was associated with improved survival duration and QoL. Clinical Nutrition. 23(2):239-47, 2004

## Improved performance status

- Nutrition intervention is beneficial in oncology outpatients receiving radiotherapy to the gastrointestinal or head and neck area. 2004 Aug 2;91(3):447-52.

## Significantly fewer toxicity symptoms

- Weight loss contributes to more pain, N/V, increased infection rates)

# Decreased appetite

## Physical

Pain with eating (irritation, swelling)

Reflux, nausea/vomiting

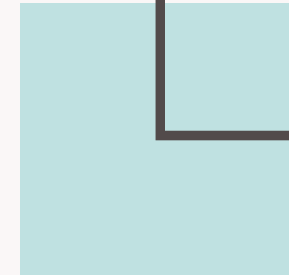
## Psychological

Anxiety

Depression

Stress

Changes in metabolism from cancer or treatment





# Decreased Appetite

Eat small portions, but more often - aim for every 2-3 hours

- Think of 6 snacks per day - eat a bedtime snack
- Have snacks available for when your appetite improves or for between meals

Include high-protein foods every time you eat

- le, cheese, yogurt, eggs, beans, nuts, nut butters, fish, chicken

Fortify foods as much as possible. Every little bit counts.

- Use liberal healthy fats when cooking- olive oil, avocado oil
- Drizzle olive oil into soups, pasta, eggs, potatoes
- Make hot cereal with whole milk/plant milk, stir in nut butter
- Add protein powder to beverages and sprinkle over food
- Use protein shakes as a base for smoothies and for making instant pudding





# Decreased Appetite

## Drink your nutrition

- Choose high-calorie fluids (juice, milk, sports drink, soups, shakes) instead of water
- Use bottled smoothies or nutrition supplements (Orgain/Ensure/Boost)
- Make homemade smoothies with flavors that appeal to you
- Take pills with a drink containing calories

Optimize your intake when you are feeling your best

Use a small plate to prevent feeling overwhelmed by large portions

Limit liquids during meals if they make you feel full



# Nausea

Take prescribed anti-emetics 30-60 minutes before eating

Small frequent meals

Low fat, low fiber

*Crackers*

*Yogurt*

*Banana*

*Pretzels*

Avoid fried, spicy, very sweet or fatty foods

Stay hydrated

*Check urine color*

Choose cold or room temperature foods that emit less odor

Ginger

*Ginger tea, ginger ale, add freshly grated ginger to recipes, candies*

Lemon

*Lemonade, fresh lemon in water or on meals, lemon ice, just smelling!*

Meditation

Acupuncture/pressure





# Diarrhea

Foods that can trigger diarrhea:

Fresh fruit & vegetables (water insoluble fiber)

Beans/lentils

Dried fruit

Nuts/ seeds

Bran, too much whole wheat

Too much total volume fiber

Lactose containing foods

*Try lactose-free milk or plant milks,  
aged cheeses (cheddar, Parmesan),  
Kite Hill farms ricotta*

Fruit juices

Caffeinated beverages

Fried, greasy or spicy foods

Foods that are well tolerated:

Bananas

Applesauce

Peaches (soft, no skin)

Mangos

Citrus

Peas

Beets

Squashes

Carrots

Potato/sweet potato (no skin)

Oats: *Oatmeal, oat bread, granola*

Chicken

Hummus

Tofu

Fish

Plain/vanilla yogurt

Rice/ Noodles/ Pasta



\*Drink plenty of fluids - broth, diluted juices +pinch table salt, sports drinks, coconut water

\*Take recommended anti-diarrheals

# Constipation

Increase fiber intake

Increase fluid intake

Try warm or hot beverages, prune juice

Prunes, pears, peaches, apricots (sorbitol)

Senna tea (Smooth Move)

Physical activity

Medications

Softener (colace) and a laxative (senna)





# Mucositis/Esophagitis

Choose soft, moist foods

Avoid spicy or acidic foods, tomato, citrus, pickled foods and some condiments

Careful with extreme temperature of foods

Gargle with 3/4 tsp salt + 1 tsp baking soda in 4 cups water

Can try Healios glutamine rinse

Gels and rinses containing lidocaine

Avoid alcohol containing mouthwashes

Suck on ice chips during chemo infusion 5FU push (not with Oxaliplatin - causes cold sensitivity)



# Immunonutrition

Specific nutrients and dietary components

Glutamine

Arginine

Omega-3 Fatty Acids

Nucleotides

Antioxidants (Vitamin E, C)



Potential to modulate the metabolic response to surgery or stress by enhancing immune function

Decreased risk of infection and length of hospital stay



# Post-Gastrectomy

## **\*\* Phase 1: 6-8 weeks post-op**

Eat 6-8 small meals per day

Choose soft, well-cooked foods. Avoid raw fruit and vegetables and foods high in fiber.

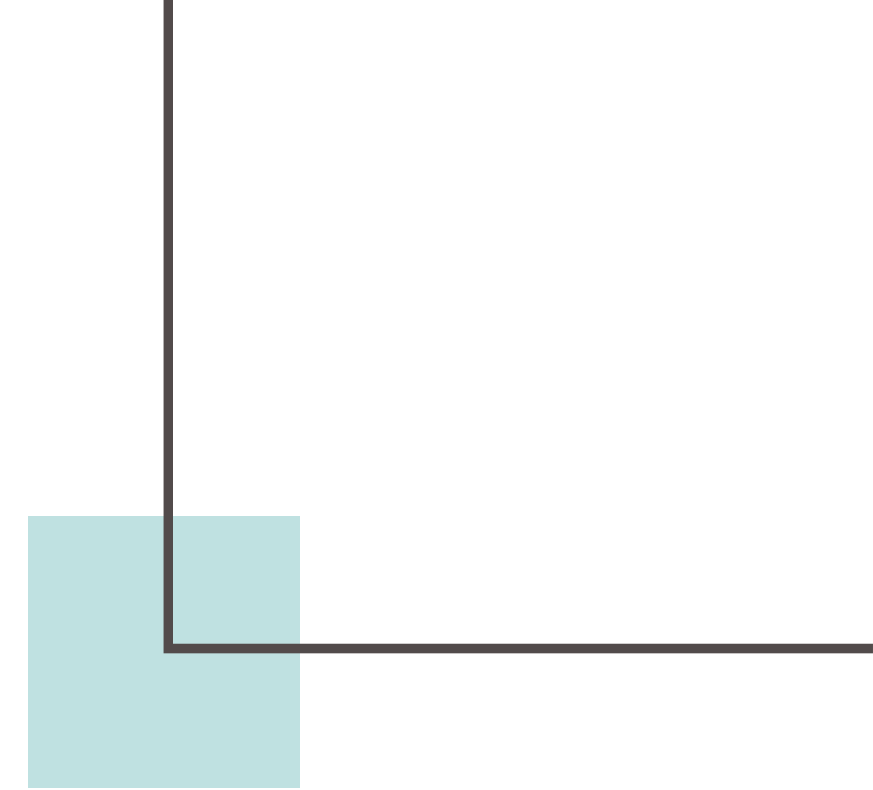
Have a protein source every time you eat to help with healing

- Tender meat or poultry, fish, eggs, cheese, yogurt, cottage cheese, hummus, tofu or smooth peanut/almond butter

Chew foods well, relax while you eat

Do not drink liquids or have soup with your meal

- Try to consume fluids 45-60 minutes before, or after eating



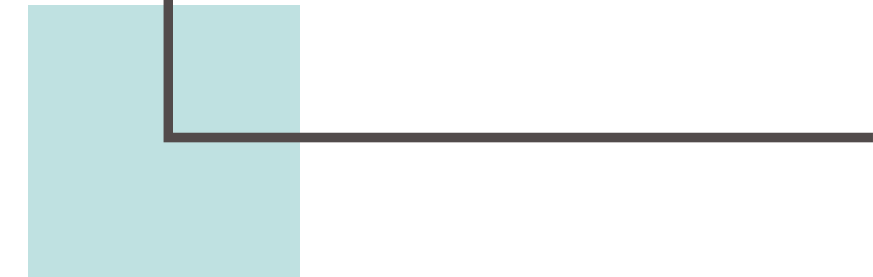
# Post-Gastrectomy

## \*\* Phase 1: 6-8 weeks post-op

Foods to avoid:

- High sugar foods
- Sugar alcohols
  - *xylitol (gum)*
  - *mannitol (sugarless hard candy, baked goods, ice cream)*
  - *sorbitol (diet foods, mints, cough drops, gum)*
  - *OK from yellow (sucralose), blue (aspartame)*
- If high fat foods cause discomfort, use low fat cooking methods

Limit fruit to 1/2c cooked or canned (in juice) at a time



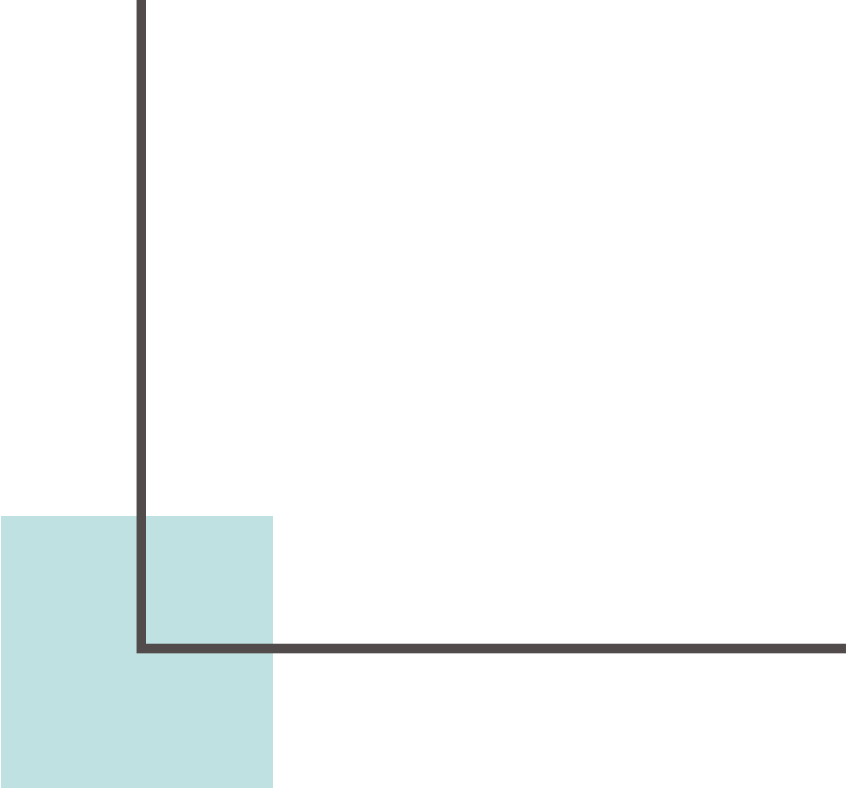


# Post-Gastrectomy

## Phase 1: Sample Menu with Timing Schedule

This sample has 2200 calories and 85 grams of protein.

Time	Food	Fluids
<i>Breakfast</i>  8:00am  8:45am	   1 boiled egg ½ cup cream of wheat with margarine or butter OR instant oatmeal + plain yogurt + nut butter	   1 cup decaf tea ¼ cup milk
<i>Snack</i>  10:00am    11:00am	  1oz cheddar cheese 6 saltines ½ cup canned peaches  	     1 cup water
<i>Lunch</i>  Noon  1:00pm	  3oz turkey on white bread with mayonnaise  	   1 cup milk
<i>Snack</i>  2:00pm  3:00pm	  ½ cup unsweetened apple sauce ¾ cup plain, Greek yogurt 6 crackers  	     1 cup chicken noodle soup
<i>Dinner</i>  6:00pm  7:00pm	  3oz baked chicken 1/2c cooked carrots w/small amount olive oil ½ cup rice with butter  	   1 cup water
<i>Snack</i>  8:15pm  9:00pm	   4 graham cracker squares with 2 tablespoons of smooth peanut butter	   1 ½ cups ginger tea



# Post-Gastrectomy

**\*\* Phase 2: When no longer experiencing symptoms**

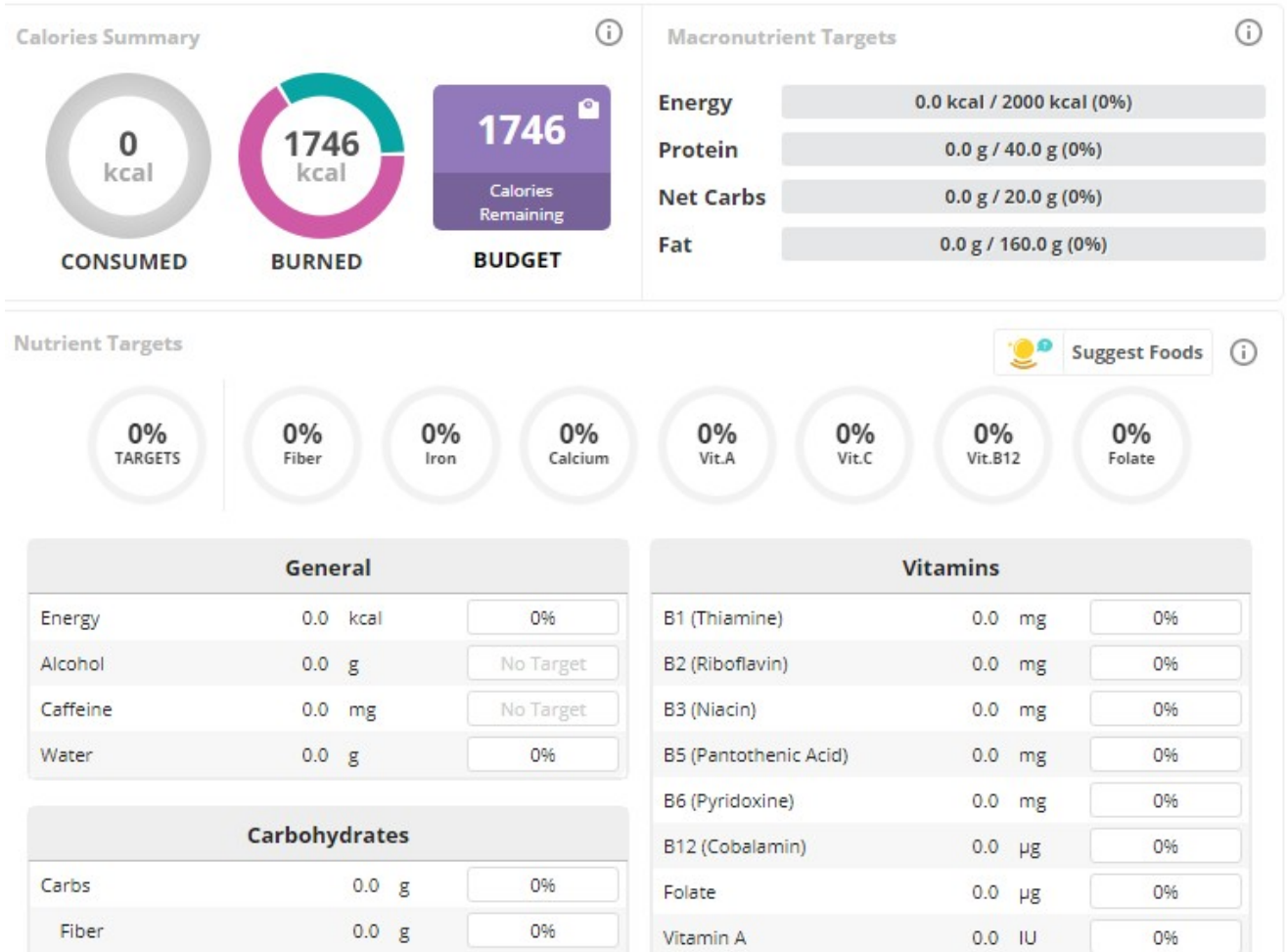
Can start introducing very small amounts fruits/vegetables and other higher fiber foods

Food portions should increase

Limit fluid to 1/2 cup with meals

Adjust based on symptoms and tolerance!

cronometer.com to help evaluate your calorie, protein, vitamin and mineral intake





# Common problems

## Dumping syndrome

Early dumping Syndrome occurs 15to 60 minutes after eating

- The body's response to concentrated sugar entering the small intestine too quickly. Your body tries to dilute the sugar by pulling fluid from your blood stream and tissues into your intestine.
  - *This can cause cramping, bloating, nausea and diarrhea, weakness, lightheadedness or fainting.*

# Common problems

## Dumping syndrome

Late dumping Syndrome occurs between 2 to 3 hours after eating

- When sugar from the intestine is absorbed into the blood stream quickly, your blood sugar levels rise so your body produces more insulin
- When more insulin is released, your blood sugar levels can suddenly drop below normal, causing “hypoglycemia” or low blood sugar
- Low blood sugar can cause:  
*weakness, rapid heart rate, dizziness, shakiness, sweating, fainting, and mental confusion*





# Common problems

## Prevention of Dumping Syndrome

Eat small but frequent meals - 5-6 times per day

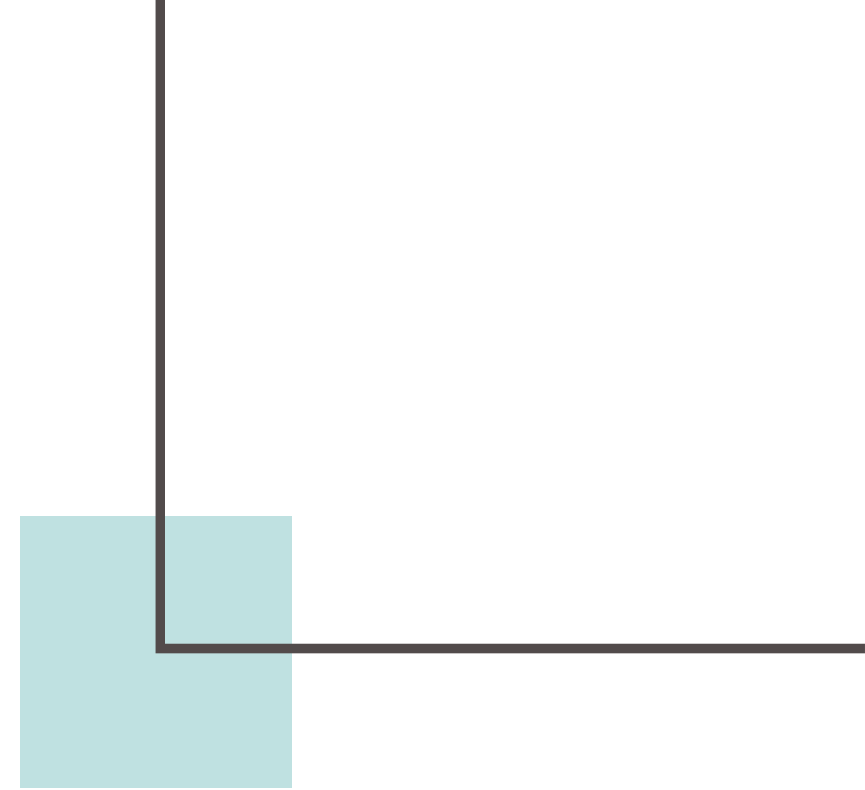
Eat slowly, chew food completely

Separate solid foods from fluids by at least 30 minutes

Eat protein with every meal

Avoid concentrated or added sugars (cane sugar, high fructose corn syrup, honey, brown sugar, syrup, agave, sucrose)

Try lying down for 15 minutes after eating



# Common problems

## Malabsorption

If you are experiencing light, clay colored stools that float or have a foul odor, you may need a prescription for digestive enzymes.

Reduced storage capacity, increased transit time, and decreased enzyme production lead to decreased digestion and absorption of macronutrients





# Common problems

## Lactose Intolerance

Symptoms: bloating, cramping, and diarrhea often occur within 2 hours of consuming milk or milk products

Small amounts of lactose may be OK

Fermented products, like yogurt or kefir, may be better tolerated. If you have trouble with soft cheese, try aged cheese.

High Lactose Foods (>5g per serving)	Alternatives
Acidophilus milk (1 cup) Buttermilk (1 cup) Milk, cow, goat, sheep's milk – all types (1 cup) Milk, evaporated (½ cup) Milk powder (½ cup) Milk, sweetened condensed (½ cup)	Almond milk Hemp milk Oat milk (Oatly is FODMAP-approved) Lactose-free milk Rice milk
Custard or pudding (½ cup)	Custard or pudding made with lactose-free milk
Ice cream (½ cup)	Lactose-free ice cream
Yogurt (whole, low-fat, fat-free) or kefir (1 cup)	Lactose-free yogurt

Medium Lactose Foods (2-4 g per serving)	Low Lactose Foods (<2 g per serving)
Cottage cheese (¼ cup) Milk or white chocolate (1 oz) Ricotta cheese (¼ cup)	Butter (1 tbsp) Cheese – cheddar, parmesan, swiss, feta, mozzarella, etc. (1 oz) Cream cheese (2 tbsp) Cream, heavy (2 tbsp) Sour cream (2 tbsp) Whipped cream (½ cup)

# Vitamins and Minerals

Risk of nutritional anemia due to decreased absorption:

B12

Folate

Iron

Risk of osteoporosis due to poor calcium absorption with rapid bowel emptying:

Calcium citrate

Vitamin D

Fat soluble vitamins (A, D, E, K) should be supplemented w/pancreatic enzyme supplementation



# Dietary Supplements

Many compounds have shown positive effects when they are consumed from food sources

Supplements are not regulated or tested

Supplements may be harmful because they can provide high doses and can interact with treatment or other medications

Example: Turmeric

Curcumin was found to significantly inhibit cyclophosphamide-induced tumor regression, may increase flow of bile, may also reduce iron absorption from foods





# Nutrition Myths and FAQs

Does sugar feed cancer?

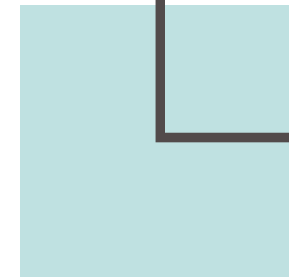
Ketogenic diet

Alkaline diet

Intermittent fasting

Gerson therapy: Juicing, enemas, supplements

Budwig diet: Cottage cheese and flaxseed



# Resources

MSKCC About Herbs for supplements

aicr.org American Institute for Cancer Research

cancer.gov National Cancer Institute

MGH Cancer Center Nutrition

<https://www.massgeneral.org/cancer-center/treatments-and-services/nutrition>

DFCI Nutrition page and app

Cancer Fighting Kitchen Cookbook by Rebecca Katz

Foods that Fight Cancer by Richard Béliveau, PhD and Denis Gingras, PhD