

Nutrition, nutrition everywhere,
but not a bite to eat

Optimizing nutrition for people with stomach cancer

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What is a “healthy diet”?

What should people with stomach cancer eat?

5 to 9 servings of fruit and vegetables per day

No carbohydrates!

No meat!

Keto diet!

No processed foods

Only drink water

No dairy!

Only whole grains

No sugar!

No snacks between meals

Watch your calories! No high fat or high calorie foods.

No gluten!

Vegan diet!

Only eat when you are really hungry

All raw diet!

Nutrition for people with stomach cancer

- For people with a diagnosis of stomach cancer:
 - It can be hard to eat
 - It can be hard to digest comfortably
 - It can be hard to absorb micronutrients (vitamins and minerals)
 - It can be hard to maintain weight
- After partial or total gastrectomy:
 - It is hard to eat
 - It is harder to digest comfortably
 - It is harder to absorb micronutrients (vitamins and minerals)
 - It is harder to maintain weight
 - It is harder to maintain bone density

Defining a “healthy diet”

- A healthy diet
 - Makes you feel energized
 - Allows you to maintain a healthy weight
 - Allows you to maintain lean body mass (muscle and bone)
 - Provides the right amount of vitamins and minerals

AND

- Supports your recovery after treatment or surgery
- Prevents unhealthy weight loss
- Tailored to individuals' needs

Defining a “healthy diet”

- Individualized based on
 - Treatment course
 - Weight trends
 - GI symptoms

While also considering:

- Cultural norms
- Family traditions
- Celebrations
- Work schedules
- Gender norms
- Social norms

Overview

- ❑ Discuss nutrition goals during and after cancer treatment
- ❑ Review tips to make eating easier
- ❑ Discuss the role of dietary supplements
- ❑ Review eating after gastrectomy
- ❑ Provide resources for evidence based diet and nutrition information

Nutrition goals during and after treatment

- ❑ Minimize symptoms that make it harder to eat
 - Poor appetite
 - Early satiety (feeling full quickly)
 - Nausea
 - Change in bowel patterns (diarrhea or constipation)
- ❑ Prevent unintentional weight loss
 - Maintain strength for treatment
 - Maintain quality of life
 - Minimize treatment delays
 - Minimize health consequences of poor nutrition/malnutrition
- ❑ Prevent (or treat) micronutrient deficiencies

Eating tips

Eating tips for poor appetite or early satiety

- ✓ Eat small meals often – every bite counts!
- ✓ Choose high calorie, high protein foods and drinks
- ✓ Drink your calories – choose protein shakes or smoothies
- ✓ Avoid the sight or smell of food between meals
- ✓ Distract yourself while eating
- ✓ Create a pleasant eating environment
- ✓ Avoid stressful conversations during meals

Eating tips for nausea

- ✓ Eat small meals often
- ✓ Choose bland foods and foods that don't have strong smells
- ✓ Choose cold or room temperature foods
- ✓ Avoid the sight and smell of food between meals
- ✓ Time nausea medications around meals

Eating tips for changes in bowel habits

- Constipation
 - ✓ Increase fluid intake!
 - ✓ Eat enough fiber but not too much
 - ✓ Take medicine when needed
 - ✓ Be active when able
- Diarrhea
 - ✓ Avoid foods with insoluble fiber
 - ✓ Choose foods with soluble fiber
 - ✓ Increase fluid intake!
 - ✓ Take medicine when needed

Key point: Recommendations change!

**A high fiber diet may not be
“healthy” at all times.**

Unintentional weight loss

- ✓ Use the tips to manage the symptoms that make it harder to eat
- ✓ Eat small meals often – every bite counts!
- ✓ Choose high calorie, high protein foods and drinks
- ✓ Avoid unnecessary diet restrictions

Defining “healthy eating”

General nutrition recommendations

- Goal: avoid *excess nutrition*
- Balance high calorie foods with many lower calorie foods to achieve a healthy weight
- Eat a large variety of fruit, vegetables and whole grains
- Eat only when hungry (avoid overeating)

Nutrition recommendations for people with stomach cancer

- Goal: avoid *undernutrition*
- Choose high calorie, high protein foods when appetite is low to maintain a healthy weight
- Choose foods that are well-tolerated
- Avoid too much fiber if having poor appetite, early satiety or diarrhea
- Eat on a schedule, regardless of hunger cues

- Do not use supplements to prevent or treat cancer

Use of dietary supplements

- Do not use supplements to prevent or treat cancer
- Do not use supplements in place of healthy diet
- Use caution with supplements
 - Supplements are not regulated like medications
 - Supplements can interfere with prescription medications
 - Supplements can interfere with chemotherapy agents
 - Supplements can cause other complications
 - Discuss ALL supplements with your physician, oncologist and dietitian
- Dietary supplements are necessary in certain situations
 - To treat documented deficiency (example: vitamin D deficiency)
 - To prevent deficiencies for specific diagnoses (example: pernicious anemia)
 - To prevent deficiencies after specific surgeries (example: total gastrectomy)

Nutrition after gastrectomy

Role of the stomach

- **Contributes to hunger signals**
- **Holds a large quantity of food**
 - The stomach can expand after a meal to hold more than a liter of food and fluid.
- **Prepares food for absorption**
 - Mechanical: The stomach mechanically grinds food into a puree for digestion.
 - Chemical: The stomach mixes food with digestive enzymes and stomach acid.
- **Controls how quickly food moves into the small intestine**
 - The stomach releases small amounts of food slowly into the small intestine.

Eating *without* a stomach

- **Loss of normal hunger cues**
 - Can cause anorexia (absence of hunger) for 6-12+ months after total gastrectomy
 - Must eat in the absence of hunger
- **Cannot hold a large quantity of food**
 - Need small but frequent meals due to early satiety
 - Need to modify diet to prevent dumping syndrome
- **Cannot break down food for absorption**
 - Food must be chewed VERY thoroughly before swallowing
 - Need *bariatric formulated* multivitamins and separate calcium citrate
- **Cannot control how quickly food moves into the small intestine**
 - Need to modify diet to prevent dumping syndrome

Post-Gastrectomy Diet

- Eat small, frequent meals **every** day
 - Immediately post-op: start with 2 ounces of food total per meal, eat **every** 2 hours
 - Slowly increase portion sizes with time from surgery

Post Gastrectomy Diet: Small, Frequent Meals

Time	Food	Fluid	Vitamin
7-7:30 AM		2-4 oz tea or coffee + protein powder	
8-8:30 AM	1 scrambled egg with cheese		
9-9:30 AM		Sip on water or unsweetened drink	
10-10:30 AM	2-4 oz oatmeal with protein modular		Multivitamin
11-11:30 AM		Sip on water or unsweetened drink	
12-12:30 PM	2 oz tuna fish with mayo on crackers		
1-1:30 PM		2-4 oz unsweetened protein drink	Calcium citrate
2-2:30 PM	1 Tbsp unsweetened peanut butter and banana		
3-3:30 PM		2-4 oz unsweetened protein drink	
4-4:30 PM	2-4 oz unsweetened Greek yogurt		Calcium citrate
5-5:30 PM	4 oz soup made with protein modular		
5:30-6 PM		Sip on water or unsweetened drink	
7-7:30 PM		2-4 oz unsweetened protein drink	Calcium Citrate

Post-Gastrectomy Diet

- Eat small, frequent meals **every** day
- Separate fluids from solids by at least 30 minutes **every** time
- Eat protein at **every** meal and snack
- Chew **every** bite thoroughly before swallowing
- Avoid added sugars at **every** meal and snack

Dumping syndrome

- **Early** dumping syndrome
 - Occurs 15 minutes to 1 hour after a meal
 - Symptoms include sudden onset diarrhea, nausea, abdominal cramping
- **Late** dumping syndrome
 - Occurs 1-3+ hours after eating
 - Symptoms are symptoms of low blood sugar
- Prevention of early and late dumping syndrome
 - Eat small but frequent meals
 - Chew food thoroughly
 - Separate solid foods from fluids by at least 30 minutes
 - Eat protein with every meal
 - Avoid **added** sugars (cane sugar, high fructose corn syrup, honey, brown sugar, syrup, agave, sucrose)

Added sugars

Nutrition Facts		Amount/serving	% Daily Value*	Amount/serving	% Daily Value*
Serving size 1 Container (150g)		Total Fat 9g	12%	Total Carbohydrate 19g	7%
		Saturated Fat 0.5g	3%	Dietary Fiber 4g	14%
		Trans Fat 0g		Total Sugars 12g	
		Cholesterol 0mg	0%	Incl. 10g Added Sugars	20%
Calories 180 per serving		Sodium 10mg	0%	Protein 10g	5%
		Vit. D 0mcg 0% • Calcium 104mg 8% • Iron 1mg 6% • Potas. 81mg 2%			
*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet.					

Predictable sources

- Traditional desserts
- Candy
- Syrup
- Soda
- Sugar sweetened drinks
- Table sugar

Hidden sources

- Yogurt
- Ketchup
- Sauces and marinades
- Salad dressings
- Granola bars
- Breakfast cereals
- Traditional protein drinks such as Ensure[®] and Boost[®]
- Restaurant meals

Nutrition goals after gastrectomy

- Minimize GI symptoms
- Avoid food aversions and fear of eating
- Maximize calorie and protein intake despite early satiety
- Slow the rate of weight loss

Long term nutrition concerns after gastrectomy

- Unintentional weight loss
 - Includes loss of lean body mass (muscle mass)
 - After a total gastrectomy, unlikely to regain significant weight
- Risk of decreased bone density
 - LIFELONG use of calcium citrate
 - Prevent malabsorption (early dumping syndrome)
 - Continue weight bearing and resistance exercise
- Risk of micronutrient deficiencies
 - Prevention is key!
 - LIFELONG use of specific vitamins
 - LIFELONG monitoring
 - Any deficiencies must be treated aggressively

Optimizing nutrition care

- Nutrition counseling from a qualified professional (Registered Dietitian/Registered Dietitian Nutritionist)

Optimizing nutrition care from qualified professional

- Registered Dietitian/ Registered Dietitian/Nutritionist (RD/RDN)
 - ✓ Must meet national standards to become qualified.
 - ✓ Must complete at least a Bachelor's Degree in nutrition and dietetics
 - ✓ Must complete an accredited, supervised practice program in addition to a Bachelor's
 - ✓ Must pass a national board examination
 - ✓ Must complete continuing educational requirements to maintain credentials
- There is no standard definition or training for a “nutritionist” who does not have the RD/RDN credential

How to find a Registered Dietitian (RD/RDN)

- Ask a member of your health care team for a referral to an RD/RDN
- Log on to the Academy of Nutrition and Dietetics website: eatright.org
 - Click on “Find a Registered Dietitian”
 - Search by location
 - Search by expertise (Oncology Nutrition)

Optimizing nutrition care

- Nutrition counseling from a qualified professional (Registered Dietitian/Registered Dietitian Nutritionist)
- Nutrition counseling before, during and after treatment or surgery
- Nutrition intervention in collaboration with interdisciplinary team
 - Surgeon, Oncologist, Pharmacist, Social Worker, Nurse Practitioner, Physician Assistant, Mental Health Providers among other team members

Conclusion

- Stomach cancer can make it hard to eat and to meet nutrition needs.
- Treatment for stomach cancer can make it even harder.
- To optimize nutrition care before, during and after treatment or surgery, see an experienced Registered Dietitian (RD/RDN) as part of your health care team.

References and Resources

- Academy of Nutrition and Dietetics: www.eatright.org
- American Institute for Cancer Research: www.aicr.org
- Office of Dietary Supplements: <https://ods.od.nih.gov/>
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- [Postgastrectomy Syndromes and Nutritional Considerations Following Gastric Surgery.](#) Davis JL, Ripley RT. Davis JL, et al. Surg Clin North Am. 2017 Apr;97(2):277-293, PMID: 28325187

Questions?

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