

RESOURCE

Christina L. DiSegna, MS, RD, CSO, CNSC, LDN
Senior Clinical Dietitian at Dana-Farber/Brigham and Women's Cancer Center

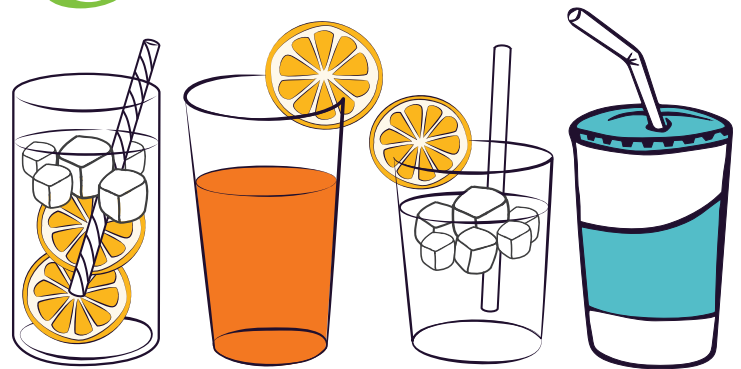
Managing Nausea

DURING TREATMENT

One of the most common side effects of cancer treatment is nausea. Nausea is a feeling of sickness or distress in the stomach leading to a feeling of vomiting or regurgitation. It may also manifest as a queasy or unsettled feeling in the stomach accompanied by food distaste.

Chemotherapy, immunotherapy and radiation therapy all have the potential to cause nausea. The likelihood of developing nausea with treatment depends on a lot of factors including, but not limited to: the type of treatment, dose given, frequency of administration, type of cancer, and other individual factors such as age, being prone to vomiting, having had morning sickness or motion sickness. Nausea is classified based on the timeframe for onset: anticipatory (prior to treatment), acute (within 24 hours of treatment), delayed (one to seven days after treatment). Nausea may also be classified as breakthrough (occurring despite prophylactic medication) or refractory (not responding to any medication). Complications of nausea and subsequent vomiting during treatment include: dehydration, electrolyte imbalances, inadequate nutritional intake, weight loss, malnutrition, and could lead to delays in treatment or inability to complete treatment.

Nausea is often managed with a combination of medications, nutrition interventions and complementary therapies. Because nausea and vomiting are triggered by different pathways in the body, there are groups of anti-nausea medications that work on the various pathways to help control symptoms. Often, multiple medications may be needed to be most effective. Because it is easier to prevent nausea than improve it once it starts, medications are often given before starting treatment and on a schedule for as long as nausea is anticipated to occur. Other medications can be taken "as needed" at the first sign of feeling nauseated. If certain medications are not effectively controlling symptoms, different combinations can be tried or doses adjusted.



In addition to medical management, there are a variety of nutritional interventions that may help manage nausea and ensure adequate nutrition and hydration.

- **Aim for small, frequent eating opportunities throughout the day.** Time eating when nausea medications are most effective.
- **Avoid strong-smelling perfumes, lotions, soaps, etc.**
- **Rinse your mouth often** to eliminate bad tastes.
- **Avoid skipping meals and snacks.** Nausea can be worse on an empty stomach.
- **Focus on hydration.** Try drinking liquids in between meals rather than with meals.
- **Add lemon to food and drink.** Lemons contain neutralizing acids that help soothe an upset stomach.
- **Choose bland, starchy foods.** Aim to include protein at each eating opportunity.
- **Try ginger.** The properties of ginger help to improve digestion which may decrease nausea. Ginger ale and ginger tea are two common uses. Crystallized ginger or ginger hard candies may also help manage nausea.
- **Avoid high fat** or highly seasoned foods.
- **Try cold or room temperature foods** to decrease food smells.
- **Lastly, complementary therapies** have proven effective for some patients, especially those with anticipatory nausea. These include **acupressure bracelets, acupuncture, relaxation and meditation techniques, and massage.** Aromatherapy with lemon or ginger may also help to manage nausea.
- **Avoid food/cooking odors** by using fans, opening windows, and avoiding food preparation areas.
- **Avoid laying down** for 30 minutes after eating.

References

Voss, AC; Williams, V. "Chapter 11: Managing Nutrition Impact Symptoms of Cancer Treatment". Oncology Nutrition for Clinical Practice, 2nd Edition. Chicago: Academy of Nutrition and Dietetics, 2021. pp. 210-211. | Nausea and Vomiting. Accessed 19 May 2022. Available at: <https://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/nausea-and-vomiting.html> | Managing Nausea and Vomiting. Accessed 19 May 2022. Available at: <https://www.cancer.net/coping-with-cancer/physical-emotional-and-social-effects-cancer/managing-physical-side-effects/nausea-and-vomiting> | Nausea and Vomiting: Cancer Side Effects. Accessed 19 May 2022. Available at: https://www.cancercare.org/tagged/nausea_and_vomiting | Nausea and Vomiting Related to Cancer Treatment. Accessed 19 May 2022. Available at: <https://www.cancer.gov/about-cancer/treatment/side-effects/nausea/nausea-pdq>

Cancer Nutrition Consortium
9 East Street
2nd Floor
Boston, MA 02111



CancerNutrition.org offers valuable resources, research, recipes, and answered questions from leading cancer experts in one convenient location. We're here to help!

VALUABLE RESOURCES

Look at frequently asked questions, or ask your own. Read more articles and download our partner, Dana Farber's mobile nutrition app! All sources in the 'Resources' section on [CancerNutrition.org](https://www.CancerNutrition.org) offer reliable suggestions and resources to help answer your questions about cancer nutrition.



RECIPES FROM 16 CHEFS



Adi Goldberg & Ron DeSantis are only two of the chefs featured on the Cancer Nutrition Consortium. View all chef recipes & bios at [CancerNutrition.org/chef](https://www.CancerNutrition.org/chef)

130+ RECIPES

All recipes featured on our website were carefully crafted by chefs, nutritionists, and cancer patients. These unique recipes offer functional nutrition and great taste for those undergoing cancer treatments. View more recipes at [CancerNutrition.org/recipes](https://www.CancerNutrition.org/recipes)



SUPPORTED BY YOUR DONATIONS






We are providing healthy, tasty nutrition to patients during their cancer treatment, who may not be able to otherwise afford it. Your gifts provide much-needed nutrition to a patient in need. Any size donation is helpful and appreciated. Click the 'Donate' tab on [CancerNutrition.org/make-a-donation](https://www.CancerNutrition.org/make-a-donation)

Our Mission

The Cancer Nutrition Consortium recognizes the importance of food and nutrition to positive medical outcomes of cancer treatment. Our recipes and recommendations incorporate a wide range of insights. Key among them is that they can be adopted at home to make life easier for patients to achieve optimal health during cancer treatment.

Contact the CNC

Cancer Nutrition Consortium, Inc.
9 East Street, Suite 2
Boston, MA 02111

-  contact@cancernutrition.org
-  [cancernutrition](https://www.facebook.com/cancernutrition)
-  [cancernutrition](https://www.instagram.com/cancernutrition)
-  [CancerNutrition](https://twitter.com/CancerNutrition)
-  [Cancer Nutrition Consortium](https://www.youtube.com/CancerNutritionConsortium)



CANCER NUTRITION CONSORTIUM™

Nutritional Guidance & Support

TREATMENT COMPENDIUM | Issue No. 10
RESEARCH, RESOURCES, AND RECIPES TO HELP PEOPLE
DURING CANCER TREATMENT AND RECOVERY

by Stacey J. Bell, Pei-Ra Ling, Bruce Moskowitz
Published in Journal of Food & Nutritional Sciences [2021; 3(2):44-55]

**NEW CNC Research
Study Results Released**

Portion-Controlled & Tailored Food Offerings for Cancer Patients Undergoing Treatment:

A Pilot Study Identifying Characteristics of Those Requesting Them

Cancer patients actively undergoing treatment are often not recipients of dietary counseling, yet experience fatigue and food aversions that lead to weight loss.

The Cancer Nutrition Consortium is an organization that funds research related to nutritional issues that affect those undergoing cancer treatments. Based on these studies, Hormel Foods created easy-to-prepare food and beverage offerings to meet the unique, and short-term nutritional needs of these cancer patients. These included meals (beef, chicken, and vegetarian), shakes (chocolate and vanilla), and a protein powder. The purpose of this pilot study was to determine patient characteristics of those requesting these items using a survey to capture information about the patient and how they liked the food offerings.

One hundred thirty-seven cancer patients undergoing treatment (79% female) were provided the special foods and beverages, and resided in 38 of the 50 States in the United States. Of this group, 125 completed the survey and had a mean age of 56 ± 14

years. The most common type of cancer represented was breast (45%) followed by cancer of the reproductive system (12%). Nearly half (43%) reported having more than one treatment (e.g., chemo- and radio-therapy, surgery). Most participants experienced a decreased appetite (69%), dry mouth (74%), and food aversion (74%). More than half (53%) lost weight.

Using a rating scale of one (worst) to five (best), all offerings had at least 3.9 ratings in flavor, texture and odor. The highest rated offerings were the two shakes and two meals (beef and chicken). More than 80% of the participants were able to consume most of the shakes, and 75% of the group was able to consume most of the meals. About half of the participants stated they felt pleasantly full after consuming all the food offerings except, as expected, after the protein powder, due to its comparatively low energy content. Gastric-related side effects were nearly non-existent (fewer than 4% of the group reporting any discomfort).

NEARLY ALL (96%) OF THE PARTICIPANTS RATED THE FOOD OFFERINGS WERE A NUTRITIONAL ASSET.

KEY TAKEAWAY

Easy-to-prepare food offerings, tailored to meet the nutritional needs of patients undergoing cancer treatment, were well received, satisfying, and produced virtually no side effects. Patients with a variety of types of cancer would likely benefit from using these food offerings based on the current findings.



Read the complete study at CancerNutrition.org/Research



RESOURCE

Mae Reilly, MS, RD, LDN

HOW TO OPTIMIZE YOUR NUTRITION WHEN

Preparing for Surgery

Surgery may be used as part of the treatment plan for many different types of cancer. Surgery can put stress on your body, and your nutritional status can play a role in the outcome of the procedure. If you are preparing for an upcoming surgery, there are several ways you can optimize your nutrition to help support your healing and recovery.

Prioritize protein at meals and snacks. Protein is necessary for the growth and repair of all cells in your body, including red blood cells, white blood cells, muscles and hormones. Protein also helps your body heal. Protein is made up of amino acids, some of which cannot be made by your body. It is therefore important to try to incorporate protein-rich foods at meals and snacks. Protein can be found in both animal and plant-based foods. Some animal sources include poultry, fish, eggs, yogurt, cheese and milk. Plant-based sources include soy foods like tofu or edamame, nuts and seeds, nut butters, beans, lentils and whole grains. Some people may include protein drinks or powders to help meet their needs if they are unable to consume enough protein through whole foods. Daily protein requirements are individualized and differ person to person. Work with a Registered Dietitian to understand how much protein you need leading up to your surgery and afterwards.

Establish a consistent eating pattern. Eating throughout the day will help you get the calories and protein your body needs going into surgery. It will also help support your energy levels and help minimize fatigue. Some people find it helpful to eat three meals per day with one or two snacks while others prefer to eat smaller, more frequent meals every two to three hours throughout the day. Find an eating routine that feels best to you.

Stay well hydrated. Most people do not understand how much fluid their bodies need to function optimally. Most adults need at least 64 ounces per day, but some people require more. Anything that is liquid at room temperature counts toward your daily fluid goal including things like herbal tea, smoothies, milk, ice cream, ice cubes and popsicles. It is important to prevent dehydration because that can contribute to nausea, fatigue and constipation.

Include foods that support your immune system and decrease inflammation. Plant-based foods contain hundreds of different phytonutrients, or immune supporting properties. Phytonutrients often give plants their pigmentation, so an easy way to identify phytonutrient-rich foods is to choose colorful fruits and vegetables. Aim to fill half of your plate with fruits and vegetables with a goal of five to ten servings each day. In addition to supporting your immune system, vegetables and fruit can also help decrease inflammation along with nuts, whole grains and fish.

Consider meal planning, prepping and grocery shopping in advance. Having a plan in place and groceries on hand can make the postoperative stage go more smoothly when it comes to meals and snacks. Think about dishes you can make in advance and freeze, such as soups, stews and casseroles.

Discuss with your care team any vitamin, mineral or herbal supplements you may be taking. You may need to stop taking some before surgery.

Follow the pre-surgery instructions given by your doctor. These are meant to minimize complications before and after surgery and may include some restrictions on food and beverage intake leading up to your surgery date.

Meet with a registered dietitian who can come up with an individualized plan. They can help optimize your nutrition to support you going into surgery and promote healing and recovery afterwards.





Marinated Beef Kabobs

MICHAEL TANGEN | MAYO CLINIC CANCER CENTER

Ingredients

- 1 lb** BEEF TENDERLOIN (cut into 8 pieces)
- 4 oz** RED PEPPER (cut into 8 pieces)
- 4 oz** YELLOW PEPPER (cut into 8 pieces)
- 1 1/2 oz** RED ONION (cut into 8 pieces)
- 4 oz** CRIMINI MUSHROOM (cut into 4 pieces)
- 1/2 tsp** MONTREAL STEAK SEASONING
- 1 tsp** FRESH ROSEMARY (chopped)
- 2 cups** BROWN RICE

MARINADE

- 1 tbsp** DIJON MUSTARD
- 2 tbsp** OLIVE OIL
- 1/2 each** ORANGE JUICE & ZEST
- 1/2 each** LEMON JUICE & ZEST
- 1 tbsp** PARSLEY CHOPPED
- 1 tbsp** RED WINE VINEGAR
- 1 tbsp** AGAVE NECTAR

Directions

On a metal skewer place the crimini mushroom and slide to the end of the skew.

Add red pepper, yellow pepper and red onion onto the skew and slide to the mushroom.

Add first piece of tenderloin and slide the beef up to meet the vegetables.

Add second red pepper, yellow pepper and red onion onto the skew and slide to the beef.

Add second piece of tenderloin and slide the beef up to meet the vegetables.

Repeat this process 3 times to assemble all four kabobs

Sprinkle rosemary and season evenly over all four kabobs.

Reserve half of the marinade to spoon over when plating finished kabob.

Brush half of marinade over kabob during grilling.

On a hot oiled grill place kabobs, cook until seared and then turn over about 4 minutes per side until desired internal temperature is met.

Remove and serve over 1/2 cup of brown rice.

Calories: **200** | Saturated Fat: **2g** | Sodium: **40mg** | Potassium: **480mg**
Carbs: **29g** | Fiber: **3g** | Protein: **96g** | Vitamin D: **6%** | Calcium: **8%**



Spinach Oat Smoothie

MARTIN BRESLIN | HARVARD UNIVERSITY, MEMBER OF THE BOARD OF DIRECTORS

Ingredients

- 4 oz** SPINACH
- 3/4 cup** OAT MILK
- 4 oz** BLUE BERRIES
- 1 tsp** CHIA SEEDS

Directions

Place all ingredients into a blender.

Blend on high until smooth.

Calories: **190** | Total Fat: **3g** | Saturated Fat: **0g** | Cholesterol: **0mg** | Sodium: **180mg**
Potassium: **187mg** | Carbs: **35g** | Fiber: **8g** | Sugar: **15g** | Protein: **7g** | Calcium: **10%** | Iron: **30%**

PROFILE

Laura Arnold | CNC Food Stylist & Photographer



Where Nourishment & Deliciousness Coexist

From culinary producing ABC's "The Chew" to food styling for the CNC, Laura Arnold unites excellent flavor and thorough nutrition.

Laura Arnold regularly and eagerly dips her toes into various culinary adventures: she's an Emmy-nominated freelance culinary producer, she's authored four cookbooks, and more often than not, you can find her collaborating with celebrities, chefs, brands and other food professionals to bring their next great cookbook to life. To no one's surprise, Laura has always known this type of collaboration and exploration would forge her path.

"In culinary school, I always knew I wanted to be in food media and tell people's stories through food," she says. "It's a uniting topic that allows you to nurture yourself and others." With this inclination to nurture, Laura's path also led her to the Cancer Nutrition Consortium (CNC), where she tests, styles and photographs some delicious recipes in an effort to give back.

Laura was connected with the CNC through an industry colleague. Having seen family members battle cancer, Laura was thrilled to deploy her food styling and photography expertise to give back. "I'm a big charity and volunteer person in general, but to be able to use my own skills to do that is really exciting."

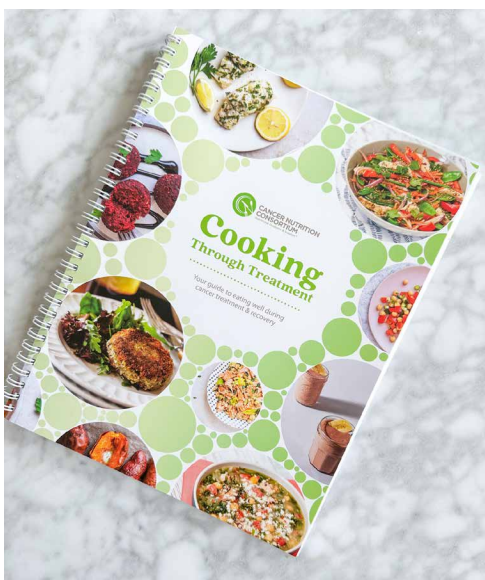
Exciting is the perfect word for Laura's work, too; she's well aware that cooking helps you find joy, and in the age of the internet, that joy of cooking goes hand-in-hand with a great picture of a delectable dish. "You eat with all your senses, and your eyes are first!"

Laura also understands that there may not be a specific point at which culinary exploration for the joy of it and culinary exploration for physical nourishment intersect (though she is sure deliciousness and nourishment can co-exist). It just depends on the person. As a culinary producer, Laura tests foolproof prep instructions. In her personal work,

she prioritizes approachable health recipes. As such, she's learned that recipes are guidelines written in water, not stone.

"Especially when you're healing, try those new fruits and vegetables and see how you can incorporate them into your diet with a recipe that excites you," she says. "You may not like it the first time, but don't be afraid to twist that recipe into your own liking to make something delicious that still has that nutritional value."

As far as her experience with the CNC goes, Laura says it was just wonderful. One of her favorite parts of the experience was learning about the unique range of chefs and the diverse index of recipes they brought to the table. That being said, it wasn't just the remarkable recipes that captivated her. "I get to work on amazing recipes for people during a really difficult time in their lives. I get to help them find joy."



From the Cancer Nutrition Consortium

Cooking Through Treatment: A Cancer Nutrition Cookbook

Containing a curated selection of recipes carefully crafted by chefs, nutritionists, and cancer patients using the CNC's research-based guidelines, these unique recipes offer functional nutrition and great taste for those undergoing cancer treatments and recovery.

SCAN NOW TO ORDER

or visit CancerNutrition.org/shop

