



CANCER NUTRITION CONSORTIUM™

Nutritional Guidance & Support

TREATMENT COMPENDIUM | Issue No. 9

RESEARCH, RESOURCES, AND RECIPES TO HELP PEOPLE
DURING CANCER TREATMENT AND RECOVERY

by Josh McHugh, CEO Attention Span, Editor-in-Chief AttentionFWD

New CNC Research Study on Taste During Treatment

A Discussion About the Results with Dr. Joel Epstein, Principal Investigator

When the CNC Newsletter last caught up with Joel Epstein, DMD, MSD, FRCD(C), FDS RCS(E), Dipl ABOM back in April 2018, he was embarking on a study of the effects of head and neck cancer treatment on taste experience, diet and nutrition.

While studies had been conducted on various components of the connection between the effects of cancer treatment on taste, Epstein had something much more in-depth in mind – something that caregivers and food companies could use as a guide for creating nutritious and palatable meals for patients at all stages of treatment and beyond.

The large number of degrees Epstein holds is a useful clue as to why such a study hadn't been done yet: since the treatment of head and neck cancers requires expertise in oncology, neurology, dentistry and nutrition science, coordinating research and normalizing data across all these disciplines is complex.

"There's a lot of complexity involved in obtaining a complete picture of what's happening to patients' ability to taste food and get the nutrition they need while going through treatment," Epstein. "The various care providers in the process each had their own pieces of the puzzle, but those pieces weren't combined in a standardized and comprehensive manner."

So Epstein – along with collaborators from Rutgers, Cedars Sinai Medical System, Chicago's Advocate Health Care, and the University of Dayton – designed the first study that incorporated highly-detailed data from stages of the patient journey starting with the early days of treatment

and up to a year after treatment. This included oral exam and oral function evaluation including oral condition, saliva function, taste and smell testing, patient reported outcomes, and interview.

The study, "Assessment of Oral Function and Food Product Preference in Patients with Head and Neck Cancers," published last November, provides a detailed picture of what patients experience, from difficulty in eating and drinking, to loss or abnormality in taste function, to the ability to satisfy minimum nutritional requirements.

In addition to spanning the full treatment and post-treatment experience, the study looks beyond the effects of treatment on taste in general. Using multiple techniques to gauge the effects of treatment throughout the process on seven separate taste profiles: sweet, sour, salty, bitter, spicy, savory and fatty.

As part of the study, participants ate a selected array of Hormel Vital Cuisine meals, specifically designed for cancer patients and survivors and reported their experiences to researchers. While half of the patients in the study reported having poor appetites, 70% of the participants who ate the Vital Cuisine meals reported no burning sensation or aftertaste, which are commonly experienced by patients during and after treatment.

Assessment of Oral Function and Food Product Preference in Patients with Head and Neck Cancers

Authors: Joel B. Epstein, Dana Villines, Geena L. Epstein, Shristi Rawal, Jennifer Dalton, Riva Touger-Decker

Published in *Clinical Oncology and Research*, December 2020

Read the complete study at CancerNutrition.org/Research

RESEARCH

One major takeaway from the study:

For people who go through treatment for head and neck cancers, adapting how they approach nutrition and eating is a journey with multiple phases. Taste change and taste loss were much more dramatic in patients during treatment than in the period following treatment.

What's next? A larger version of the study. While Epstein and his colleagues broke new ground with this 10-patient study, major food companies and care providers will need to see results of the same approach taken with a larger number of participants before they start to re-engineer their offerings and practices.

Beyond that, Epstein is working on ways to expand the ranks of experts in what, until now, has been a highly specialized hybrid field. To that end, he's working with Harvard, UCSF and other universities on creating a curriculum that builds expertise not just in each of the multiple fields involved in Epstein's work, but also in the ability to synthesize treatment across all of them.

"We're designing mini-residencies and rotational experiences that will unify oral medicine and oncology," Epstein says. "It's very interdisciplinary."

A new field of medicine calls for a new name. We'd like to kick off the naming process with the following suggestion: **EPSTEINISTRY.**

RESOURCE

Liz Puris, MS, RD, LDN

Oncology Dietitian Nutritionist at Dana Farber Cancer Institute

Tips FOR Caregivers

Caregiving and Nutrition:

Preparing or providing food is a natural way many people show their love and care.

Loved ones going through treatment can have specific needs sometimes requiring creativity in the kitchen.

MAKE SURE AND COMMUNICATE!

Ask your loved one what is working best for them in terms of diet, symptoms, and nutrition. Also, ask if their dietitian has recommended a specific type of diet. Be careful with information you find online. When evaluating trustworthy sources ask yourself if the site ends in ".org" ".edu" - if so, you're on the right track! While personal stories can be captivating, make sure they are also not offering products for sale or offering an easy, quick solution to a complex medical issue.

ASK YOUR LOVED ONE TO MAKE A GROCERY SHOPPING LIST.

If they can't decide on foods that sound appealing, try neutral, easy to eat foods such as smoothies, yogurt, pudding, applesauce, mashed potatoes, squash and soups.

POOR APPETITE CAN BE A COMMON SYMPTOM.

It is understandably worrisome for caregivers if their loved one is eating less than usual. Understand that smaller, more frequent meals and snacks may work better than their usual portions. Setting a timer or reminder on their phone can also be a helpful gentle reminder. Almost like taking medication at a certain time, schedule a few minutes to have a few bites of food.

SPEAKING OF MEDICATION, TRY STAYING AHEAD OF SYMPTOMS BY TAKING MEDICATIONS PREVENTATIVELY.

Keeping up with anti nausea medications or medications to help regulate bowels can help to keep your loved one feeling well and allow them to eat more.

ORGANIZE A MEAL TRAIN.

If many friends and family members want to provide meals, assign different days of the week. That way your loved one won't get overwhelmed with food! Alternatively, a nice gift can be a grocery store gift card so your loved one can choose what they would like.

Additional Tips for Caregivers:

In addition to organizing your loved one's nutrition needs, help your loved one with other essential tasks.

ORGANIZE A RIDE TRAIN.

Similar to a meal train, organizing a ride train can be helpful. If there is a primary caregiver who accompanies your loved one to appointments, have a back up plan in case there is a day they are unavailable.

DOCUMENT APPOINTMENTS.

If you or a family member attends appointments with your loved one, take notes! Then organize paperwork into a binder or folders. Ask for providers' business cards and purchase a clear business card sheet protector to keep them organized. Alternatively, an electronic, shareable document such as "googledocs" can be helpful to share notes between caregivers.

TAKE CARE OF YOU!

Don't forget to take care of yourself! Watch for signs of burnout such as irritation, exhaustion, and trouble managing your own to-do list. Ask another close family member or friend to occasionally help your loved one. Ask your center if there are support groups for caregivers, either in person or virtually.

Caregiving can require a lot of time and effort, although it is rewarding. Many people wouldn't think twice about providing love and support, that is surely appreciated by your loved one.

If your loved one is having trouble accessing or preparing food, ask your dietitian or resource specialist about meal delivery services that may be available in your community.

RESOURCE

Christina L. DiSegna, MS, RD, CSO, CNSC, LDN

Senior Clinical Dietitian | Dana-Farber/Brigham and Women's Cancer Center

Phytonutrients

WHAT ARE THEY & WHY ARE THEY IMPORTANT?

Research indicates that eating a diet rich in plant-based foods, including fruits, vegetables, whole grains, and legumes, is one of the most important pieces for cancer prevention and survival, as well as for overall health. But why are these foods so significant? Evidence is now pointing to the phytonutrient content of these particular food groups.

Phytonutrients are natural chemicals produced by plant foods. Plants use phytonutrients as defense systems against insects, UV rays, disease, and other threats. Some scientists estimate there are thousands – perhaps over 25,000 – phytonutrients found in plant foods. These phytonutrients are also biochemically active in humans and have been shown to provide significant benefits such as antioxidant and anti-inflammatory effects, detoxification, modulation of immune function, and DNA repair. Phytonutrients are not considered essential nutrients for humans as protein, carbohydrates, fats, vitamins, and minerals are but provide significant benefits to those who consume them. Some well-known classes of phytonutrients include polyphenols, carotenoids, flavonoids, omega-3 fatty acids, probiotics, and resveratrol.

Phytonutrients often give plants their pigmentation so an easy way to identify phytonutrient-rich foods is to choose colorful fruits and vegetables frequently. The diverse colors of fruits and vegetables are often due to different phytonutrient compounds so a variety of different colors in the diet throughout the day and week can optimize phytonutrient intake. Aim to fill half of your plate with fruits and vegetables at each eating opportunity with goal of 5-10 servings each day. Cruciferous vegetables*, such as broccoli, cauliflower, Brussels sprouts, kale, and cabbage have additional benefit as one of their phytonutrients helps aid in detoxification of carcinogens; this may help prevent cancer by limiting cell damage. Thus, including at least one serving of a cruciferous vegetable daily is recommended for added benefit.

In addition to fruits and vegetables, spices also have notable phytonutrient activity. Seasoning

food with a variety of spices such as turmeric, cilantro, parsley, onions, garlic, and ginger help provide valuable phytonutrients and also make meals much more enjoyable. Similarly, teas, such as green or black tea, also contain phytonutrients and can be a valuable source. Other less colorful phytonutrient-rich foods include nuts, beans and legumes, flax seeds, soy products, and whole grains; these foods should be included regularly as part of a healthy, plant-based diet.

Since these phytonutrients are varied and so important for health, why not take one supplement that includes all of them? Supplements that contain the isolated phytonutrient compound have not shown promising results in a variety of studies and many have shown that there is no benefit as compared with eating the whole food itself. Many scientists believe that this is due to interactions between the phytonutrient compound itself and many other aspects of the plant that provide the health benefit; others feel that it is a combination of many phytonutrients present in the whole plant food that provide the desired result. Regardless of the cause, the best way to maximize the benefit of phytonutrients is to eat a variety of colorful plant foods as opposed to taking supplements.

Diets rich in phytonutrients have shown many health benefits, including cancer prevention and survival. Including a variety of colorful fruits and vegetables, along with other plant-based foods, will provide the greatest benefit over specific dietary supplements. Aiming for half plate of fruits and vegetables at each meal is the easiest way to boost the phytonutrient content in your diet; use the following list for suggestions to get started.



PHYTONUTRIENT-RICH FOODS

Aim for 5-10 servings per day

One serving =

- 1 cup leafy greens, berries or melon;
- 1/2 cup of other fruits/vegetables; or
- 1 medium piece of fruit/vegetable (such as apple or tomato)

Cruciferous vegetable*

RED

Apples / Cherries / Tomatoes / Beets / Red Peppers / Red Grapes / Raspberries / Strawberries / Pomegranate / Watermelon / Cranberries / Radishes*

YELLOW & ORANGE

Banana / Cantaloupe / Carrots / Lemon / Mango / Oranges / Papaya / Peaches / Pumpkin / Butternut or Acorn Squash / Spaghetti Squash / Sweet Potatoes / Tangerine / Turmeric

GREEN

Asparagus / Avocados / Bok Choy* / Broccoli* / Brussels Sprouts / Cabbage* / Cilantro / Collard Greens* / Leafy Greens / Kale* / Kiwi / Lettuce / Parsley / Peppers / Spinach / Artichokes

BLUE & PURPLE

Blackberries / Blueberries / Eggplant / Plums

WHITE

Caiflower* / Onions / Garlic / Ginger / Flaxseed

OTHER

Teas / Legumes / Nuts / Beans / Soy Products / Whole Grains

References

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Berry Berry Smoothie



Ingredients

2 cups ORANGE JUICE
1 BANANA, SLICED
3 oz RASPBERRIES
3 oz BLACKBERRIES
3 oz STRAWBERRIES, SLICED
6 oz VANILLA GREEK YOGURT,
NON-FAT
1 Tbsp AGAVE

SERVINGS: 4

CALORIES: **160**
SATURATED FAT: **0g**
SODIUM: **20mg**
POTASSIUM: **479mg**
CARBS: **36g**
FIBER: **4g**
PROTEIN: **6g**
CALCIUM: **6%**
IRON: **6%**

Directions

Place all ingredients in a pitcher and blend with a hand held stick mixer and blend all ingredients well. Make sure to puree all fruit.

Chill and serve.

Banana Yogurt Smoothie



Ingredients

8 oz VANILLA GREEK YOGURT
3 BANANAS, FRESH OR FROZEN
1/2 cup 2% MILK
(USE MORE IF YOU WANT
A THINNER SMOOTHIE)
2 Tbsp PEANUT OR ALMOND
BUTTER (FOR EXTRA PROTEIN)

Optional

1 Tbsp FLAXSEED, GROUND
1 Tbsp COCOA POWDER

SERVINGS: 4

CALORIES: **200**
SATURATED FAT: **2g**
SODIUM: **40mg**
POTASSIUM: **480mg**
CARBS: **29g**
FIBER: **3g**
PROTEIN: **96g**
VITAMIN D: **6%**
CALCIUM: **8%**

Directions

Combine all ingredients in a blender, mixing until smooth.



COMFY T-SHIRTS FOR CHAMPIONS BATTLING CANCER

Each t-shirt purchase helps us accomplish our important mission to help more people get through cancer treatment.

T-shirts & other products available at shop.CancerNutrition.org

CNC Carepack Grant Initiative Update

1400+ Carepack donations as of September 2021!



Many people undergoing treatment don't have the resources they need to get adequate nutrition.

The CNC initiated a Carepack Grant program, with additional support from Hormel Foods to provide free nutritional care packs to help them in their time of biggest need.

Anyone in need of additional nutritional support during their treatment can apply!

» CancerNutrition.org/Send-A-Carepack



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During Treatment, Recovery, & Beyond

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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://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://cancernutrition.org/chef)



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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://cancernutrition.org/make-a-donation)




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://cancernutrition.org/recipes)

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.

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