



# MINDFUL EATING FOR CANCER PATIENTS

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## ABSTRACT

Mindful Eating Intervention (MEI) is a new, promising technique designed to change the way we think about our food and bodies. Mindfulness and MEI have shown significant, positive impact on wellbeing and attitudes in people with cancer. More research is needed on effects of MEI in patients with brain cancer, as well as a synergistic collaboration between yoga therapists and other allied medical professionals.

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## **What is Mindful Eating?**

There are many definitions of mindfulness, but perhaps, the most widespread is the one given by John Kabat-Zinn, the professor emeritus of medicine and the creator of the Stress Reduction Clinic, and the Center for Mindfulness, Health Care, and Society at the University of Massachusetts Medical School. He defined mindfulness as “awareness that arises through paying attention, on purpose, in the present moment, non-judgmentally. Mindfulness is used in the service of self-understanding and wisdom” (1). The Mindfulness-Based Stress Reduction Program (MBSR) created in 1979 by John Kabat-Zinn became the first mindfulness-based intervention (MBI) program. The success of MBSR programs sparked interest in the medical community followed by the creation of various mindfulness-based therapies including Mindful Eating Programs (2).

The Center for Mindful Eating states that Mindful Eating brings mindfulness to our food choices and the experience of eating. Mindful Eating helps us become aware of our thoughts, and feelings, reconnecting us with our innate inner wisdom about hunger and satiety (3).

## **Difference Between Intuitive Eating and Mindful Eating**

In 1995, two prominent dietitians, Elyse Resch and Evelyn Tribole, published their work and first introduced the principles of Intuitive Eating in their book “Intuitive Eating: The Revolutionary Program that Works”. They teach how to reject the diet mentality, how to find satisfaction in eating, how to work with emotions without using food, how to have a safe relationship with food and the body, how to raise an “intuitive eater” and much more (4).

The principles of Mindful Eating are based on principles of Intuitive Eating, but the fundamental difference is that Mindful Eating is about bringing awareness to the food we eat, and lessening

the distractions surrounding it, while intuitive eating is all about reconnecting with the body by rooting up deep-seated negative beliefs about oneself. Essentially, intuitive eating is the way to rectify our relationship with the food and thus, our body (5).

### **Mindful Eating Techniques**

A typical ME intervention program includes the introduction to mindfulness and several techniques designed to change the way we think about food and our bodies. In the initial stage of the program, participants learn how to reject the diet mentality and how to be compassionate toward themselves. Next, the concept of BASICS is introduced. The participants are encouraged to practice the following steps while they eat (Figure 1), understand the hunger and satisfaction scale, investigate satiety with STOP (Figure 2), learn to love their body, and recognize emotional triggers with RAIN technique (Figure 3) (6).



*Figure 1*

## Investigate Your Satiety

- **S** - Stop when you are half way through the meal
- **T** - Take a breath
- **O** - Observe the signs of satiety and taste
- **P** - Proceed



Figure 2

- **R** - Recognize
- **A** - Accept
- **I** - Non-judgmental investigative mindfulness
- **N** - Unbiased curiosity of non-attachment

Figure 3

A comprehensive Mindful Eating Questionnaire (MEQ) has been developed by the Fred Hutchinson Cancer Research Center in Seattle, WA in collaboration with the University of Washington, Department of Epidemiology (7).

### **Mindful Eating Intervention for Cancer Patients**

There are numerous publications related to the benefits of MBSR and CBT on the quality of life of cancer patients and survivors. For instance, a large randomized trial demonstrated that the Mindfulness-based stress reduction program significantly reduced stress, anxiety, and fatigue among breast cancer survivors. Specifically, the study measured the stress hormone cortisol and

the proinflammatory cytokine interleukin-6 (IL-6). In this study, 322 BC patients were assigned to a 6-week MBSR program or typical care. The levels of cortisol and IL-6 were reduced significantly after 6 weeks (8).

The field of mindfulness is relatively new to the scientific community. At this time, only a few studies explored the correlation between mindful eating and the rate of recovery and change in the quality of life in breast cancer (BC) and head and neck cancer (HNC) survivors. One study explored the benefits of the mindful eating intervention program on weight management in postmenopausal breast cancer survivors (9). After eight 2-hour ME group-based training sessions the BMI changed slightly ( $-0.4 \pm 0.21 \text{ kg/m}^2$ ,  $p=0.0002$ ), but the weight showed a significant change ( $-0.8 \pm 0.8 \text{ kg/m}^2$ ,  $p=0.015$ ).

A study at the University of Maryland School of Nursing examined the effect of a mindful eating intervention program on weight loss in African American women following treatment for breast cancer (10). The results demonstrated a significant weight loss ( $-1.166 \text{ kg}$ ,  $p=0.044$ ), and higher MEQ scores ( $p=0.043$ ).

Obesity is a big concern in postmenopausal BC survivors (BCS). Approximately, 50% of the BCS population is facing health complications being at increased risk for chronic disease development and premature death. More research is needed to determine further benefits of mindful eating interventions for Breast Cancer survivors.

The article published in the Topics in Clinical Nutrition introduced mindful eating as a newly emerging area in clinical nutrition and pondered whether ME intervention program could be used with survivors of head and neck cancer who often face challenges with transitioning to oral intake after the chemoradiation therapy is completed (11).

Living with a brain tumor is overwhelming. Patients may find themselves consumed with a lot of different thoughts and priorities. Mindfulness can help reduce stress and create space between thoughts and reactions.

A researcher and a Buddhist Chaplin, Brenda Phillips, at Boston University, Department of Psychological and Brain Sciences, lead the survey study of 130 women who had been diagnosed with cancer in the past five years. Phillips found that approximately 90 percent reported that mindfulness and meditation played a very important role in their lives and helped them feel empowered (12).

Research on a ketogenic diet in brain cancer patients has been ramped up recently suggesting that this type of diet creates an unfavorable metabolic environment for cancer cells and therefore, can be regarded as a promising adjuvant (a therapy applied after the initial treatment to suppress secondary tumor formation) as a patient-specific multifactorial therapy (13). Concurrently with mindfulness, this therapy may positively affect the quality of life of patients with malignant brain tumors.

More research is needed in this area exploring the effects of ME depending on the type of cancer, the stage of cancer, the duration of ME intervention, race, gender, and more.

**Pilot Study:**

*Study Participants:* Twelve patients with any of the four major types of brain cancer (metastatic, meningioma, glioblastoma, astrocytoma) and undergoing chemo or radiation therapy.

*Specific Aim:* To determine the effects of ME intervention program on anthropometric measurements (weight, BMI), stress level (cortisol and IL-6), and the MEQ score in patients with

brain cancer after the initial treatment. The working hypothesis is there will be a positive effect on anthropometric measurements, a reduction in stress levels, and an increase of the MEQ score.

**Methods:** 14 weeks ME intervention, MEQ, BMI, Weight (kg), cortisol, IL-6.

**Budget:**

Expense description	Duration	Cost
Facility and utilities (\$60/hour)	21 hours	\$1,260
Equipment (chair, 4 blocks, yoga mat, 2 yoga blankets, 2 yoga bolsters, yoga strap) for 12 participants + 1 therapist	N/A	\$3,445 (\$265 each x 13)
Yoga Therapist (\$75/h)	21 hours	\$1,575
Analysis of study results, creating materials and promo content (\$35/h)	40 hours	\$1,400
Therapist Assistant (\$35/h)	14 hours	\$490
Other expenses (stationary, internet/website, phone, promo materials)	N/A	\$200
Travel Expenses (20 miles reimbursed at 0.56 per mile, 28 rides: 2 people)		\$627.20
<b>Total Cost</b>		<b>\$8,997.20</b>

**Preliminary results:**

**Patient:** A 65+ year old female diagnosed with malignant glioblastoma. Received an initial treatment (surgical resection and radiation or chemotherapy). A patient is reporting lack of appetite following chemotherapy treatments, loss of weight (the number of pounds was not-reported), general fatigue and lack of energy.

***Methods:***

**Protocol #1:** We introduced a concept of “langhana” and “brahmana” in relation to diet, breath, and physical asanas. We also discussed antioxidants and their effect on the body and health. The intent is to bring attention to healthy food choices during therapy, specifically foods full of nutrients and how they help with symptoms caused by chemo and radiation therapy. A recipe was included in the protocol for the patient to try at home.

**Protocol #2:** We introduced the concept of mindfulness, being on autopilot, and asked to compare the default mode with a mindful state. We presented a “Raising meditation” and offered more healthy and colorful recipes to try at home.

**Protocol #3:** We discussed the sense of taste and smell, and how to improve the flavor of food by adding texture, changing the temperature of food, and adding spices to make the experience more enjoyable. Offered another delicious recipe full of antioxidants and with high-protein content.

**Observations:** The patient expressed interest in recipes and trying something new. Since she is an early riser, breakfast is an important meal for her. She also had a “big” experience with a raising meditation which gave her an idea of how to be in a present moment during meal and enjoy the food.

Unfortunately, due to a new diagnosis of a second aggressive glioblastoma, we were not able to continue our program.



**Conclusion:**

Numerous publications discuss the benefits of various mindful interventions such as MBSR and CBT on the quality of life in cancer patients. At this time only a few studies explore the benefits of the mindful eating intervention program in breast cancer survivors, and one group of researchers hypothesized that this intervention may be beneficial for patients recovering from head and neck cancer.

The Yoga Therapy Intervention Program may help patients with brain cancer undergoing chemotherapy or radiation treatments who often suffer from anxiety, depression, nausea, and significant weight loss. We can examine how concepts of mindfulness could be integrated with healthy eating and dietary recommendations. Moreover, a synergistic collaboration between yoga therapists and other Allied Medical professionals such as dietitians and physical therapists can be explored further when building a treatment program for patients with various types of cancer undergoing chemotherapy.

**Clinician Bio:**

Masha (Mariya) Power, MS, MBA, E-RYT® 500, YACEP®, has over 15 years of experience in nutrition education. She is a trained dietitian and holds a Master's Degree in Nutrition and Food Science from the University of Vermont, and an MBA from the New England College of Business and Finance. Masha conducted clinical trials at the Diabetes Research Center in Burlington, Vermont. During her studies, she focused on Complementary Alternative Medicine (CAM) and preventive effects of cinnamon extract in pre-diabetes. Masha taught nutrition at the University of Vermont and Champlain College. She is a published author (Current Diabetes Reports, 2011) and a Cultural Competency speaker at the University of Vermont College of

Medicine. As part of her wellness journey, Masha became a Certified Integrative Health Coach through Duke Integrative Medicine Institute, and a Certified Yoga Teacher (RTY-500). Since 2012, Masha has been teaching a variety of styles of Yoga and offers Mindful Eating and Yin Yoga workshops at local studios and the YMCA, primarily focusing on the therapeutic benefits of yoga practice.

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