

Sound Check
11:55

Start Time
12:00

Contact UNCLCN


Questions, Feedback, Technical Support:
Phone: (919) 445-1000
Email: unclcn@unc.edu
Website: unclcn.org

Poll Everywhere for Q&A **Upcoming Live Webinars** **Self-Paced, Online Courses**
pollev.com/unclcn learn.unclcn.org/live learn.unclcn.org/spoc

1

Poll Everywhere

Join by Web



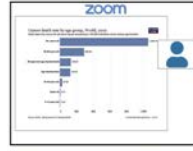
- 1 Go to PollEv.com
- 2 Enter UNCLCN
- 3 Respond to activity

2

To Claim CE Credits



Watch 53 Minutes



Zoom with Video to See the Slides

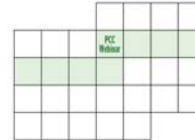
AND



Fill Out Evaluation



Claim Certificate



Claim in 7 Days

3

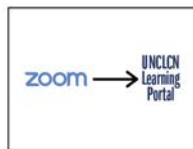
3

After the Webinar

Please wait for UNCLCN to end the Zoom video.



UNCLCN Ends Zoom



Zoom Sends Data to Learning Portal



Claiming CE Credit Is Open

4

4

UNCLCN Webinar Series

Live Webinars

Only at the Day and Time Indicated learn.unclcn.org

<p>PATIENT-CENTERED CARE</p> <p>2nd Wednesday Jan-Oct 1st Wednesday Nov-Dec</p> <p style="text-align: right;">12 pm - 1 pm</p>	<p style="text-align: center;">CME NCPD/CNE ACPE ASRT CTR</p>
<p>RESEARCH TO PRACTICE</p> <p>4th Wednesday Jan-Oct 3rd Wednesday Nov-Dec</p> <p style="text-align: right;">12 pm - 1 pm</p>	<p style="text-align: center;">CME NCPD/CNE ACPE ASRT CTR</p>

<p>ADVANCED PRACTICE PROVIDER</p> <p>1st Wednesday Mar, Apr, Jun, Sep, Oct, Dec</p> <p style="text-align: right;">12 pm - 1 pm</p>	<p style="text-align: center;">CME NCPD/CNE</p>
<p>SOUTHEASTERN AMERICAN INDIAN CANCER HEALTH EQUITY PARTNERSHIP</p> <p>1st Wednesday Feb, May, Nov</p> <p style="text-align: right;">12 pm - 1 pm</p>	<p style="text-align: center;">CME</p>

Self-Paced, Online Courses

Available any Day and Time learn.unclcn.org/spoc

5


5

Spread the Word!



Do you enjoy our webinars and feel others may benefit, too?
Help us spread the word!


Become a promoter:

Receive special emails to share within your organization!

 unclcn.org/promoter

Follow our social channels:

 facebook.com/unclcn
 unclinebergercancernetwork

 linkedin.com/in/unclcn

Send questions to unclcn@unc.edu or (919) 445-1000.

Thank you for spreading the word!

6

6

UNC Lineberger Cancer Network
PATIENT-CENTERED CARE
 Live Webinar


Denise Spector,
 PhD, MPH, MSN, ANP, FAIHM

**Food as Medicine:
 Healthy Eating and Cancer**

February 12

7

Our Presenter



Denise Spector,
 PhD, MPH, MSN, ANP, FAIHM

Denise Spector, PhD, MPH, MSN, ANP, FAIHM, is an oncology nurse practitioner and integrative health care provider. She has been an oncology nurse since 1985 and specialized in cancer pain and symptom management early in her career. During much of her academic studies in both public health and nursing, she focused on cancer prevention for individuals at high risk, such as those with a strong family history of cancer, and among cancer survivors through lifestyle modifications (e.g., increasing physical activity, improving diet, tobacco cessation, stress management, etc.), which has been her long-held passion.

In May 2022, Denise completed the Integrative Oncology Scholar's Program at the University of Michigan and in 2018 she completed a 2-year clinical interdisciplinary fellowship through the Academy of Integrative Health & Medicine with the goal to incorporate more evidence-based integrative strategies into clinical oncology practice. Her primary interests relate to the prevention of cancer and other chronic illnesses and the promotion of optimal wellness for cancer survivors through lifestyle behavior modifications (e.g., physical activity, nutrition, weight management, etc.) and mind-body medicine. In her free time, she seeks solace through long hikes in the woods (forest bathing), walks on the beach, yoga and meditation/relaxation breathing practices.

Currently Denise has a clinical faculty appointment with the Department of Family Medicine at the University of North Carolina in Chapel Hill and provides integrative medicine consultations to oncology patients through the Comprehensive Cancer Support Program (CCSP) at UNC Lineberger Comprehensive Cancer Center.

8

Our Presenter

9

9

Our Presenter

- 5.** Integrative health and medicine training has been one of the most enriching learning experiences in her professional career for Denise Spector, PhD, MPH, MSN, ANP, FAIHM

10

10

Our Presenter

5. Integrative health and medicine training has been one of the most enriching learning experiences in her professional career for Denise Spector, PhD, MPH, MSN, ANP, FAIHM
4. She loves teaching gentle yoga to cancer survivors and would like to do more of it in the future

11

11

Our Presenter

5. Integrative health and medicine training has been one of the most enriching learning experiences in her professional career for Denise Spector, PhD, MPH, MSN, ANP, FAIHM
4. She loves teaching gentle yoga to cancer survivors and would like to do more of it in the future
3. She had fun working through a foundations course on aromatherapy last year

12

12

Our Presenter

5. Integrative health and medicine training has been one of the most enriching learning experiences in her professional career for Denise Spector, PhD, MPH, MSN, ANP, FAIHM
4. She loves teaching gentle yoga to cancer survivors and would like to do more of it in the future
3. She had fun working through a foundations course on aromatherapy last year
2. Dr. Spector is currently thoroughly enjoying an herbal medicine certification course

13

13

Our Presenter

5. Integrative health and medicine training has been one of the most enriching learning experiences in her professional career for Denise Spector, PhD, MPH, MSN, ANP, FAIHM
4. She loves teaching gentle yoga to cancer survivors and would like to do more of it in the future
3. She had fun working through a foundations course on aromatherapy last year
2. Dr. Spector is currently thoroughly enjoying an herbal medicine certification course
1. She recently had an opportunity to write a book chapter on aromatherapy in cancer care for a new integrative oncology text to be published late 2025

14

14

Sample Poll Everywhere Question

Join by Web PollEv.com/uncnclcn Join by Text Send [uncnclcn](tel:252333) to 22333

Many individuals with cancer try dietary supplements to help treat their cancer and/or to reduce symptoms, but some dietary supplements including herbs may be harmful and interact negatively with conventional cancer treatments.

(A) True 0%

(B) False

Join by Web

- 1 Go to PollEv.com
- 2 Enter UNCLCN
- 3 Respond to activity

15

15

Continuing Education Credits

AMA PRA Category 1 Credit™

ACPE Pharmacist

ODS/CTR

NCPD/CNE

ACPE Pharmacy Tech

ASRT

Disclosures

ACCME:

This activity has been planned and implemented under the sole supervision of the Course Director, Stephanie Wheeler, PhD, MPH, in association with the UNC Office of Continuing Professional Development (CPD). The course director received research support from AstraZeneca (ended June 2023) and Pfizer Medical Foundation (ended December 2023). These financial relationships have been mitigated. CPD staff have no relevant financial relationships with ineligible companies as defined by the ACCME.

A potential conflict of interest occurs when an individual has an opportunity to affect educational content about health-care products or services of a commercial interest with which he/she has a financial relationship. The speakers and planners of this learning activity have not disclosed any relevant financial relationships with any commercial interests pertaining to this activity.

The presenter has no relevant financial relationships with ineligible companies as defined by the ACCME.

NCPD Activity #: 001-

1.0 Contact Hours Provided

Relevant Financial Relationship: No one with the ability to control content of this activity has a relevant financial relationship with an ineligible company, *except Joe Edwards, RPh, who is on speaker's bureau for The Insulin company.*

Criteria for Activity Completion: Criteria for successful completion to claim CE Certificate requires attendance at the NCPD activity, and submission of an evaluation within 30 days.

Approved Provider Statement: UNC Health is approved as a provider of nursing continuing professional development by the North Carolina Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation.

16

16

Many individuals with cancer try dietary supplements to help treat their cancer and/or to reduce symptoms, but some dietary supplements including herbs may be harmful and interact negatively with conventional cancer treatments.

(A) True 0%

(B) False 0%

Start the presentation to see live content. For screen share software, share the entire screen. Get help at pollev.com/app

17

FOOD AS MEDICINE

DENISE SPECTOR, PHD, MPH, ANP, FAIHM
INTEGRATIVE AND LIFESTYLE MEDICINE CLINICIAN
COMPREHENSIVE CANCER SUPPORT PROGRAM

18



LEARNING OBJECTIVES

- 1) DISCUSS THE SCIENCE BEHIND THE CONCEPT OF FOOD AS MEDICINE
- 2) DESCRIBE NUTRITION RECOMMENDATIONS FROM TWO LEADING NATIONAL CANCER ORGANIZATIONS
- 3) DISCUSS THE EVIDENCE FOR A PREDOMINANTLY PLANT-BASED, WHOLE FOODS DIET IN CANCER CARE
- 4) EXPLAIN THE ROLE OF DIETARY SUPPLEMENTS IN CANCER CARE

19

19



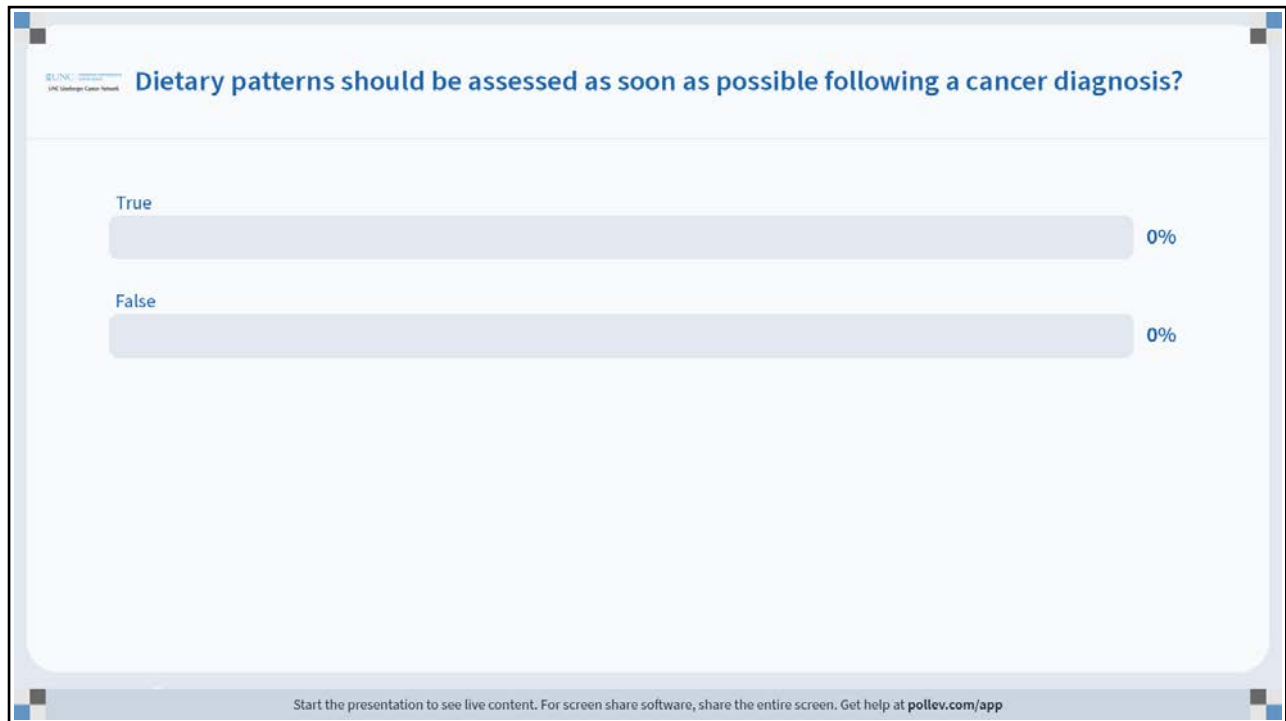
POLLING QUESTION

Dietary patterns should be assessed as soon as possible following a cancer diagnosis?

- A) True
- B) False

20

20



21

THE PROBLEM
IN THE US THERE IS
A HEALTH CRISIS
WITH THE
CONTINUED RISE IN
DIET-RELATED
CHRONIC ILLNESSES

22

22



THE IMPACT OF INDUSTRIALIZED FARMING IN THE US



23

Let food be thy medicine, and medicine be thy food.

-Hippocrates veganposters.com


HIPPOCRATES IS KNOWN AS THE FOUNDER OF MODERN MEDICINE AND WAS A VISIONARY WHEN IT CAME TO HEALTH AND WELLNESS

THROUGH OBSERVATION HE RECOGNIZED THAT WHEN INDIVIDUALS ATE MAINLY A FRESH, PLANT-BASED DIET, THEY HAD FEWER DISEASES.

24


24

WHAT IS MEANT BY
FOOD IS MEDICINE?



25

NUTRITION AND CANCER RISK



A predominantly plant-based diet has been associated with lower incidence rates of some cancers, such as breast, colorectal, and endometrial cancers.

- One study of a Mediterranean-style diet, high in fruits, vegetables, and whole grains, found a 40% reduction in the risk of postmenopausal ER negative breast cancer among women who adhered to a Med diet compared to those who did not (Van den Brandt, et al. 2017).
- A recent review on diet and cancer prevention highlighted the protective role of a Med diet/pescatarian diet with an abundance of fruits and vegetables for breast, lung and colorectal cancers (Torres et al., 2024).

26




Review

Cancer and Mediterranean Diet: A Review

Maria Chiara Mentella ^{1,*}, Franco Scaldaferrì ², Caterina Ricci ³, Antonio Gasbarrini ² and Giacinto Abele Donato Miggiano ¹

¹ UOC di Nutrizione Clinica, Area Medicina Interna, Gastroenterologia e Oncologia Medica, Dipartimento di Scienze Gastroenterologiche, Endocrino-Metaboliche e Nefro-Urologiche, Fondazione Policlinico Universitario A. Gemelli IRCCS, Università Cattolica del Sacro Cuore, 00168 Rome, Italy

² UOC di Medicina Interna e Gastroenterologia, Area Medicina Interna, Gastroenterologia e Oncologia Medica, Dipartimento di Scienze Gastroenterologiche, Endocrino-Metaboliche e Nefro-Urologiche, Fondazione Policlinico Universitario A. Gemelli IRCCS, Università Cattolica del Sacro Cuore, 00168 Rome, Italy

³ UOC di Ginecologia Oncologica, Area Salute della Donna, Dipartimento di Scienze della Salute della Donna, del Bambino e di Sanità Pubblica, Fondazione Policlinico Universitario A. Gemelli IRCCS, Università Cattolica del Sacro Cuore, 00168 Rome, Italy

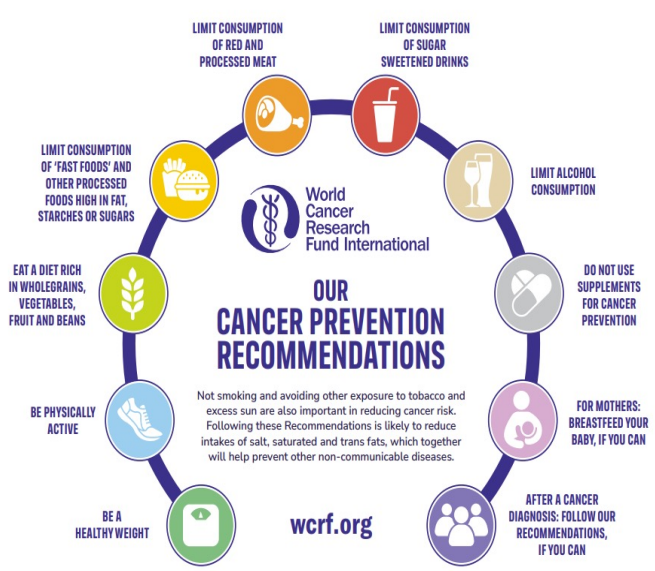
* Correspondence: mariachiara.mentella@policlinicogemelli.it; Tel.: +39-06-30154804

Received: 24 July 2019; Accepted: 29 August 2019; Published: 2 September 2019  check for updates

Abstract: The Mediterranean diet is considered one of the most worldwide healthy dietary patterns thanks to a combination of foods rich mainly in antioxidants and anti-inflammatory nutrients. Many studies have demonstrated a strong and inverse relationship between a high level of Mediterranean diet adherence and some chronic diseases (such as cardiovascular diseases, diabetes, etc.) and cancer. Given its protective effects in reducing oxidative and inflammatory processes of cells and avoiding DNA damages, cell proliferation, and their survival, angiogenesis, inflammations and metastasis, the Mediterranean diet is considered a powerful and manageable method to fight cancer incidence. The aim of this narrative review was to determine the magnitude of interaction between the Mediterranean diet and more widespread types of cancer so as to give a first and useful overview on this relationship identifying, with a nutritional approach, those nutrients of Mediterranean diet able to reduce cancer incidence.

27

GENERAL WORLD
CANCER RESEARCH
FUND/AICR CANCER
PREVENTION
RECOMMENDATIONS



OUR
CANCER PREVENTION
RECOMMENDATIONS

World Cancer Research Fund International

Not smoking and avoiding other exposure to tobacco and excess sun are also important in reducing cancer risk. Following these Recommendations is likely to reduce intakes of salt, saturated and trans fats, which together will help prevent other non-communicable diseases.

wcrf.org

28

28


ACS CANCER PREVENTION RECOMMENDATIONS FOR NUTRITION - 2020

Follow a healthy eating pattern at all ages

A healthy eating pattern includes:

- Foods that are high in nutrients in amounts that help you get to and stay at a healthy body weight
- Eating a variety of vegetables – dark green, red and orange, fiber-rich legumes (beans and peas) and others
- Fruits, especially whole fruits in a variety of colors
- Eating whole grains
- Limiting or avoiding red and processed meats, sugar sweetened beverages and highly processed foods and refined grain products
- It is best not to drink alcohol, but for those who choose to drink it should be no more than 1 drink/day for women or 2 drinks/day for men

[American Cancer Society Guideline for Diet and Physical Activity | American Cancer Society](#)



29

AICR/WCRF Dietary Recommendations

Focus of the New American Plate is on portion and proportion

Emphasis on plant-based foods:

- Covering at least 2/3 of your plate with plant foods such as whole grains, vegetables, fruit, beans/legumes. 1/3 of the plate can be filled with an animal-based protein (lean red meat, seafood, poultry and/or dairy)

Limit consumption of fast foods and other processed foods high in fat, starches and sugar


Limit consumption of red and processed meats (no more than 12-18 oz/week)

Limit consumption of sugar-sweetened drinks. Drink mostly water and unsweetened drinks

Avoid or limit alcohol, as even one small glass a day can increase the risk of some cancers

Maintain a healthy weight

Avoid supplements for cancer prevention




American Institute for Cancer Research. "AICR Cancer Prevention Recommendations as a Path to Diet Quality." Last modified March 10, 2023. <https://www.aicr.org/resources/blog/aicr-recommendations-as-a-path-to-diet-quality/>

30

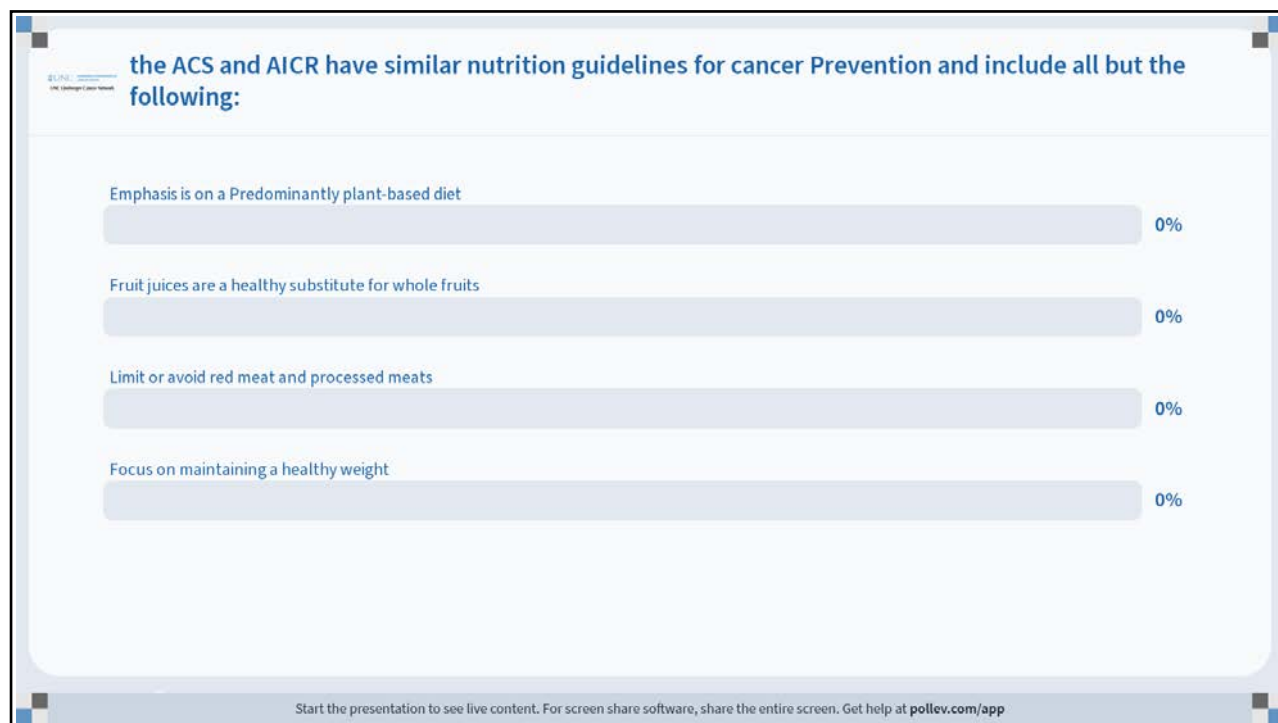
POLLING QUESTION:

THE ACS AND AICR HAVE SIMILAR NUTRITION GUIDELINES FOR CANCER PREVENTION AND INCLUDE ALL BUT THE FOLLOWING:

- 1) EMPHASIS IS ON A PREDOMINANTLY PLANT-BASED DIET**
- 2) FRUIT JUICES ARE A HEALTHY SUBSTITUTE FOR WHOLE FRUITS**
- 3) LIMIT OR AVOID RED MEAT AND PROCESSED MEATS**
- 4) FOCUS ON MAINTAINING A HEALTHY WEIGHT**



31



32

**American Cancer Society Nutrition and Physical Activity Guideline
for Cancer Survivors (2022)**

General recommendations for cancer survivors:

- Nutritional assessment and counseling should begin as soon as possible after diagnosis, with the goal of preventing or resolving nutrient deficiencies, preserving muscle mass, and managing side effects of treatments that may adversely affect nutritional status.
 - Physical activity assessment and counseling should begin as soon as possible after diagnosis, with the goal of helping patients prepare for treatments, tolerate and respond to treatments, and manage some cancer-related symptoms and treatment-related side effects.
- Recommendations to improve long-term health and increase the likelihood of survival:
- Avoid obesity and maintain or increase muscle mass through diet and physical activity.
 - Engage in regular physical activity, with consideration of type of cancer, patient health, treatment modalities, and symptoms and side effects.
 - Follow a healthy eating pattern that meets nutrient needs and is consistent with recommendations to prevent chronic disease.
 - Follow the general advice of the American Cancer Society *Guideline for Diet and Physical Activity for Cancer Prevention* to reduce risk of a new cancer.

33

**Summary of the National Comprehensive Cancer Network® (NCCN®) Guideline for Survivorship:
Nutrition and Weight Management**

- Assess dietary patterns for daily intake of fruits/vegetables, whole grains, red meats, processed foods, added sugars, including beverages, and dietary supplements.
- Encourage all survivors to eat a predominantly plant-based diet.
- Limit red meat to ≤ 18 ounces a week.
- Limit processed meats and other processed foods high in fats and sugars.
- Limit refined sugars to < 6 tsp for a 2000 calorie daily diet.
- Moderate soy food consumption (up to 3 servings/day) may be beneficial for promoting overall health.
- Avoid alcohol or drink sparingly.

For patients interested in further dietary recommendations consider the following:

- A referral to a registered dietician
- Refer to the USDA MyPlate (<https://www.myplate.gov>) for approximate food plate volumes (fruits & vegetables 50%; whole grains 30%; protein 20%)

Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Guideline Survivorship V.2.2024. © National Comprehensive Cancer Network, Inc. 2024. All rights reserved. Accessed [January 22, 2025]. To view the most recent and complete version of the guideline, go online to [NCCN.org](https://www.nccn.org)

"NCCN makes no warranties of any kind whatsoever regarding their content, use or application and disclaims any responsibility for their application or use in any way."

34

Polling Question

While the ACS and NCCN nutrition guidelines for cancer survivors are similar, the NCCN guidelines include specific information on refined sugar consumption. Which of the following is the true statement in the guideline:

- a) Refined sugars should be avoided except for on special occasions
- b) Consumption of refined sugars should be less than 4 tsp for a 2000-calorie daily diet
- c) Refined sugars should be limited to < 8 tsp for a 2000-calorie daily diet
- d) Limit refined sugars to < 6 tsp for a 2000-calorie daily diet

35

35

While the ACS and NCCN nutrition guidelines for cancer survivors are similar, the NCCN guidelines include specific information on refined sugar consumption. Which of the following is the true statement in the guideline:

Refined sugars should be avoided except for on special occasions	0%
Consumption of refined sugars should be less than 4 tsp for a 2000-calorie daily diet	0%
Refined sugars should be limited to < 8 tsp for a 2000-calorie daily diet	0%
Limit refined sugars to < 6 tsp for a 2000-calorie daily diet	0%

Start the presentation to see live content. For screen share software, share the entire screen. Get help at pollev.com/app

36

A COLLABORATIVE EFFORT - THE WORLD CANCER RESEARCH NETWORK IS COMPRISED OF THE AMERICAN INSTITUTE FOR CANCER RESEARCH AND THE WORLD CANCER RESEARCH FUND IN THE UK AND NETHERLANDS




Diet, nutrition, physical activity and body weight for people living with and beyond breast cancer and colorectal cancer

The latest evidence, our guidance for patients, carers and health professionals, and recommendations for future research




37

37



REVIEW OF THE EVIDENCE AND GUIDANCE FOR BREAST CANCER SURVIVORS

<p>Evidence</p> <ul style="list-style-type: none"> ➤ Individuals who eat more fiber have better outcomes. ➤ Limited evidence suggesting that those with increased soy food intake have better outcomes. No consistent evidence showing a link between soy food intake and increased risk. ➤ Limited evidence suggests that those with higher Vitamin D levels have better outcomes. No evidence indicating benefit of supplemental Vitamin D. 	<p>Guidance</p> <ul style="list-style-type: none"> ➤ Suggest increasing daily fiber intake. ➤ No need to stop intake of soy foods following a diagnosis. If not already consuming them, there is no guidance around adding them to the diet. ➤ No specific guidance about vitamin D intake. ➤ Aim to maintain body weight in a “healthy range”. <p>Reference: World Cancer Research Fund International (2024a)</p>
---	---

38

38


LIVING WITH AND BEYOND BREAST CANCER (HEALTH AND HEALTH-RELATED QUALITY OF LIFE OUTCOMES)					
2022	Post diagnosis diet, nutrition and physical activity for breast cancer survivors				
		DECREASES RISK		INCREASES RISK	
		EXPOSURE	OUTCOME	EXPOSURE	OUTCOME
STRONG EVIDENCE	CONVINCING				
	PROBABLE	Physical activity interventions	HR quality of life ¹	Body fatness ²	All mortality BC mortality 2nd BC
LIMITED EVIDENCE	LIMITED-SUGGESTIVE	Healthy dietary patterns ³	All mortality Non-cancer mortality	Body fatness ⁴	Recurrence Non-BC mortality CVD mortality
		Soy foods	All mortality BC mortality Recurrence		
		Dietary fibre	All mortality		
		Vitamin D status ⁵	All mortality BC mortality		
	Recreational physical activity	All mortality BC mortality			
	LIMITED-NO CONCLUSION	Post diagnosis BMI change or weight change Low-fat diet, predefined healthy dietary and lifestyle patterns (for breast cancer-specific mortality and cardiovascular disease death), data-driven dietary patterns, high-fat dietary pattern, alcoholic drinks, fruit and vegetables, cruciferous vegetables, dietary fibre (for breast cancer-specific mortality and recurrence), wholegrains, red and processed meats, fish, eggs, milk and dairy products, nutrients (fats, carbohydrate, animal protein, plant protein), supplements (multivitamins, antioxidants, vitamins, carotenoids), vitamin D (blood levels on recurrence)			
STRONG EVIDENCE	SUBSTANTIAL EFFECT ON RISK UNLIKELY				

WCRF Summary for Diet, Weight and Physical Activity for Breast Cancer

39

39

REVIEW OF THE EVIDENCE AND GUIDANCE FOR COLORECTAL CANCER SURVIVORS



Evidence

- Individuals who eat more wholegrains have better outcomes.
- Those consuming more coffee (caffeinated and decaffeinated) have better outcomes.
- Higher intake of sugary drinks, both carbonated and non-carbonated were associated with higher risk for mortality.

Guidance

- Suggest increasing daily wholegrain intake.
- Consider increasing coffee intake.
- Decrease sugary beverage intake.
- Follow as many of the WCRF/AICR cancer prevention guidelines as possible.

Reference: World Cancer Research Fund International (2024b)

b

40

LIVING WITH AND BEYOND COLORECTAL CANCER (HEALTH OUTCOMES)					
2024	Diet, nutrition and physical activity for colorectal cancer survivors				
		DECREASES RISK		INCREASES RISK	
		EXPOSURE	OUTCOME	EXPOSURE	OUTCOME
STRONG EVIDENCE	CONVINCING				
	PROBABLE				
	LIMITED-SUGGESTIVE	Healthy dietary patterns ¹	All mortality	Unhealthy dietary patterns ³	All mortality
LIMITED EVIDENCE	LIMITED-SUGGESTIVE	Wholegrains	All mortality	Sugary drinks	All mortality
		Coffee ²	All mortality		
		Recreational physical activity	All mortality Recurrence		
LIMITED EVIDENCE	LIMITED-NO CONCLUSION	Nuts and peanuts, red and processed meat, dairy products, artificially sweetened beverages, alcohol, dietary glycaemic index, dietary glycaemic load, dietary insulin load, dietary insulin index, marine omega-3 polyunsaturated fatty acids, circulating 25-hydroxyvitamin D, supplemental calcium, circulating folate and folic acid concentrations, dietary calcium			
		Recreational physical activity (for colorectal cancer mortality), total physical activity, level of recreational physical activity (by frequency, duration, intensity, volume), pre-to-post diagnosis and post-diagnosis physical activity change, sedentary behaviour ⁴			
STRONG EVIDENCE	SUBSTANTIAL EFFECT ON RISK UNLIKELY				

WCRF Summary for Diet, Weight and Physical Activity for Colorectal Cancer

41

41

Polling Question

A review of the evidence for diet, weight and physical activity for breast cancer survivors, indicates limited, yet suggestive evidence that the following are associated with a decreased risk of breast cancer specific mortality:

- a) Higher intake of soy foods, regular physical activity, and vitamin D status.
- b) Lower intake of soy foods, healthy dietary patterns, and higher fibre intake.
- c) Higher intake of soy foods, healthy dietary patterns, and weight change after diagnosis.
- d) Healthy dietary patterns, regular physical activity, and vitamin D status.

42

42

A review of the evidence for diet, weight and physical activity for breast cancer survivors, indicates limited, yet suggestive evidence that the following are associated with a decreased risk of breast cancer specific mortality:

Higher intake of soy foods, regular physical activity, and vitamin D status	0%
Lower intake of soy foods, healthy dietary patterns, and higher fibre intake	0%
Higher intake of soy foods, healthy dietary patterns, and weight change after diagnosis	0%
Healthy dietary patterns, regular physical activity, and vitamin D status	0%

Start the presentation to see live content. For screen share software, share the entire screen. Get help at pollev.com/app

43




MEDITERRANEAN DIET – SEEN MORE AS A PATTERN OF EATING

EMPHASIZES PLANT-BASED FOODS WITH PLENTY OF FRUITS, VEGETABLES, WHOLE GRAINS, BEANS, NUTS AND SEEDS, AS WELL AS HEALTHY FATS (MOSTLY EXTRA VIRGIN OLIVE OIL) AND LOW TO MODERATE CONSUMPTION OF DAIRY, EGGS, FISH AND POULTRY.

44

44



Mediterranean Diet Pyramid

- Less Often**
Meats and Sweets
- Weekly: Moderate Portions**
Poultry, Eggs, Cheese and Yogurt
- Often: at least Twice each Week**
Fish and Seafood
- Every Day: Base Each Meal Around these Foods**
Vegetables, Fruits, Whole Wheat Grains, Olive Oil, Beans, Nuts, Legumes and Seeds, Herbs and Spices
- Every Day**
Be Physically Active; Enjoy Meals with Others

In Moderation — Wine

Every Day — Water

© 2009 Oldways Preservation and Exchange Trust • www.oldwayspt.org

RESEARCH ON THE MEDITERRANEAN DIET AND CANCER SURVIVORS

Bonaccio et al. (2024) found that a Med diet was associated with lower all-cause and cardiovascular mortality among long-term cancer survivors.


In a study of breast cancer survivors by Castro-Espin, et al. (2023), low adherence to a med dietary pattern before breast cancer was associated with a 13% higher risk for all-cause mortality compared to those who followed medium adherence of a med diet. However, there was no clear association for BC-specific mortality.

Chen et al. (2023) conducted a systematic review and meta-analysis (n=11) addressing the role of the Med diet in breast cancer survivorship and found a 22% reduction in all-cause mortality with strong evidence for adherence to this diet. No associations were found for QOL.

A study by Di Maso et al. (2021) found that prostate cancer survivors with a higher adherence to a Med diet pre-diagnosis compared to those with low adherence, had a 26% improved overall survival rate. There was no association with PC specific survival.

45

45



FRUITS & VEGETABLES

- HIGHER INTAKE OF FRUITS AND VEGETABLES IS RELATED TO LOWER INFLAMMATION AS MEASURED BY C-REACTIVE PROTEIN (HELM ET AL., 2024).
- FRUITS & VEGETABLES ARE HIGH IN PHYTOCHEMICALS, SUCH AS POLYPHENOLS, ANTIOXIDANTS, FIBER, AND MANY MINERALS SUCH AS MAGNESIUM.
- IN PARTICULAR, BERRIES ARE RICH IN ANTIOXIDANTS SUCH AS VITAMIN C AND QUERCETIN, AS WELL AS BEING A GOOD SOURCE OF FIBER. THEY ALSO HAVE A LOW GLYCEMIC INDEX.
- GREEN LEAFY VEGETABLES ARE HIGH IN BETA-CAROTENE, VITAMIN C, B-VITAMINS, AND MINERALS SUCH AS CALCIUM, IRON AND ARE A GOOD FIBER SOURCE.
- CRUCIFEROUS VEGETABLES ARE RICH IN CAROTENOIDS, LUTEIN, ZEAXANTHIN, VITAMINS C, E, AND K; AS WELL AS FIBER AND MINERALS. GLUCOSINOLATES IN THESE VEGGIES HAVE DEMONSTRATED ANTI-CANCER EFFECTS (LI ET AL., 2022).

45

46



CULINARY MUSHROOMS

*“ELIXIR OF LIFE” AND
“FOOD OF THE GODS”*

- ❖ LOW IN CALORIES, CARBOHYDRATES, FAT AND SODIUM AND ARE A GOOD SOURCE OF PROTEIN AND FIBER.
- ❖ IMPORTANT NUTRIENTS INCLUDE SELENIUM, POTASSIUM, RIBOFLAVIN, NIACIN, AND VITAMIN D.
- ❖ THEY HAVE ANTIMICROBIAL, ANTIOXIDANT, ANTIDIABETIC, ANTICHOLESTEROLEMIC, ANTIALLERGIC, HEPATOPROTECTIVE, CARDIOPROTECTIVE, NEUROPROTECTIVE, IMMUNOMODULATING AND ANTICANCER ACTIVITIES (MWANGI ET AL., 2022).
- ❖ POLYSACCHARIDES, SUCH AS BETA-GLUCAN, HAVE ANTITUMOR AND IMMUNOSTIMULATING PROPERTIES AND HAVE BEEN USED IN CANCER HUMAN STUDIES MOSTLY IN ASIAN COUNTRIES.
- ❖ AGARICUS BISPORUS (BUTTON OR WHITE MUSHROOMS) ARE THE MOST CULTIVATED MUSHROOMS IN THE WORLD. INCLUDED ARE BABY BELLAS, PORTOBELLO, CRIMINI AND CHAMPIGNON.

47

47

CULINARY HERBS AND SPICES – SPICE IT UP!

- Many herbs and spices not only have anti-inflammatory and antioxidant properties, they also have demonstrated direct anticancer effects in lab studies (Kaefer & Milner, 2012).
- Onions, garlic, rosemary, basil, parsley, and saffron have been found to have chemoprotective properties in preclinical studies.
- In addition to antioxidant and anti-inflammatory properties, turmeric and ginger both have been found to inhibit cancer cell growth in cancer cell lines. Ginger is also known for its digestive support, such as reducing nausea.
- Even spices like allspice, cinnamon, cloves and cumin have demonstrated anticarcinogenic activity.



48

Food Myths and Cancer

Food Myth #1 – “Sugar Feeds Cancer”

There is no research indicating that sugar is directly linked to cancer. Every cell in our body utilizes glucose, including cancer cells, however that does not mean it causes cancer to spread. Excess sugar intake is known to lead to excess body weight & obesity which cause other health issues, such as hypertension, diabetes and metabolic syndrome and indirectly raises risk for some cancers. Simple carbohydrates or refined sugars, such as table sugar and syrups found in many processed foods and baked goods can raise glucose levels quickly, whereas complex carbs found in fruits and whole grains take longer to digest and absorb, which helps increase satiety and less overeating.

Food myth #2 – “Soy acts like estrogen in the body, raising the risk of cancer”

Studies have not found a link between eating soy foods and an increased risk for cancer, particularly breast cancer and prostate cancer. While isoflavones in soy foods have a similar chemical structure to estrogen, they function very differently in the body and may be protective by turning on genes that slow the growth of cancer cells.

49

49

Fad Diets and Cancer

Ketogenic Diet (KD) – the classic KD originated in 1923 for the treatment of epilepsy and is comprised of one part carbohydrate and protein to four parts of dietary fats. Various modified versions have been used to treat other illnesses, but all versions typically are low in carbohydrates (5-10% of calories), moderate in proteins (20-25%) and high in fats (65-80% of calories). It often includes fasting, proper hydration, and intake of electrolytes and other nutritional supplements. Carbohydrate deprivation leads to a metabolic shift from gluconeogenesis to ketogenesis, with ketone bodies becoming the main source of energy.

What does the research say?

A 2021 systematic review found that while patients lost weight, there was no conclusive evidence for anti-tumor activity or improvements in overall survival among cancer patients. Also, adherence to the diet was low and the side effect profile included nausea/vomiting, fatigue, constipation, diarrhea, hypoglycemia, hyperlipidemia, etc. (Romer et al., 2021).

50

50

Intermittent Fasting (IF) – there are three common types which are 1) alternate day fasting; 2) time-restricted fasting; and 3) 5:2 fasting [eating normally for 5 days, then fasting for 2 days]

- Some fasts only include water or other non-calorie beverages, while other protocols allow broth or up to 500 kcal/day
- Fasting induces ketogenesis and can aid in weight loss
- Results from studies in rodent models have been inconsistent
- While short-term RCTs in human studies (2-6 months) led to decreased fasting glucose, insulin, and leptin levels and increased adiponectin, longer studies (12 months) failed to show improvement of insulin sensitivity or on C-reactive protein levels
- Very small studies have been conducted in cancer populations, most in relation to chemotherapy.
- Some found reduced toxicity with fasting (96 hours) around the time of chemotherapy administration. However, adherence was low
- A fasting mimicking diet (FMD) study among 131 breast cancer patients receiving chemo found reduced DNA damage in T lymphocytes, but only 33% of women continued through all chemo cycles. No differences in grade 3 and 4 toxicities were found

Clifton et al. (2021)

51

51

Supplements

Most national cancer organizations do not support the use of dietary supplements. Exceptions such as in cases of known deficiencies.



In cases of nutritional deficiencies, can consider the use of high-quality vitamins and/or minerals (such as calcium) or a multi-vitamin.



Many herbs/supplements have potential drug/herb interactions with certain cancer treatments, it is safest to avoid them unless advised by a medical professional on their safe use.

Recommend patients look for products with the USP or NSF label, which are third party testing agencies for quality. Another good resource is Consumerlab.com

52

Dietary Supplement Considerations

- In patients with GI alterations and/or those using medications that may interfere with the absorption of vitamins and minerals (e.g., proton pump inhibitors, H2 blockers, beta blocker, diuretics, metformin, SSRIs, bisphosphonates, etc.)
- In older adults, the body’s ability to absorb **Vitamin B12** can decrease. Also, those on a vegan diet may not get sufficient B12 since it mostly comes from animal products.
- Many older adults, particularly post-menopausal women do not absorb and retain enough **calcium**.
- Many individuals are at risk for **vitamin D** deficiency, which like calcium is important for bone health. It also have an important role in immunity and in brain health.
- Some individuals do not like fatty fish and therefore are likely to be deficient in **Omega-3 fatty acids**, which are important for healthy brain function, etc.

53

CASE STUDY

LH – AGE 76 WITH LOCALIZED HIGH-RISK PROSTATE CANCER



- Dx date: 8/2023; received radiation therapy and ADT started, which he continues for a total of 3 years.
- Additional medical history includes, overweight, HTN, hyperlipidemia, prediabetes, and MASH with liver fibrosis. Weight was 207 pounds on 4/2024 when we met.
- Goals included improving energy, weight loss (195 pounds) through healthy eating and increased physical activity.
- Over 8 months he lost 20 pounds, increased exercise and stopped eating ice cream!!



54

54

RESOURCES

AMERICAN CANCER SOCIETY – DIET, PHYSICAL ACTIVITY, AND HEALTHY LIVING
[HTTPS://WWW.CANCER.ORG/CANCER/RISK-PREVENTION/DIET-PHYSICAL-ACTIVITY.HTML](https://www.cancer.org/cancer/risk-prevention/diet-physical-activity.html)

AMERICAN INSTITUTE FOR CANCER RESEARCH (AICR)
[HTTP://WWW.AICR.ORG](http://www.aicr.org)

MEMORIAL SLOAN KETTERING CANCER CENTER: HERBS & BOTANICALS
[HTTPS://WWW.MSKCC.ORG/CANCER-CARE/DIAGNOSIS-TREATMENT/SYMPTOM-MANAGEMENT/INTEGRATIVE-MEDICINE/HERBS](https://www.mskcc.org/cancer-care/diagnosis-treatment/symptom-management/integrative-medicine/herbs)

NATIONAL CENTER FOR COMPLEMENTARY AND INTEGRATIVE HEALTH
[HTTPS://WWW.NCCIH.NIH.GOV/](https://www.nccih.nih.gov/)

NATIONAL COMPREHENSIVE CANCER NETWORK – SURVIVORSHIP GUIDELINES ON NUTRITION AND WEIGHT MANAGEMENT
[HTTPS://WWW.NCCN.ORG/PROFESSIONALS/PHYSICIAN_GLS/PDF/SURVIVORSHIP.PDF](https://www.nccn.org/professionals/physician_gls/pdf/survivorship.pdf)

NATURAL MEDICINES DATABASE
[HTTPS://NATURALMEDICINES.THERAPEUTICRESEARCH.COM/](https://naturalmedicines.therapeuticresearch.com/)

OLDWAYS
[HTTPS://OLDWAYSPT.ORG/EXPLORE-HERITAGE-DIETS](https://oldwayspt.org/explore-heritage-diets)

WORLD CANCER RESEARCH FUND
[HTTPS://WWW.WCRF.ORG](https://www.wcrf.org)

MEDLINEPLUS HERBS AND SUPPLEMENTS
[HTTPS://MEDLINEPLUS.GOV/DRUGINFO/HERB_ALL.HTML](https://medlineplus.gov/druginfo/herb_all.html)

55

References

American Institute for Cancer Research. "AICR Cancer Prevention Recommendations as a Path to Diet Quality." Last modified March 10, 2023. <https://www.aicr.org/resources/blog/aicr-recommendations-as-a-path-to-diet-quality/>

Bonaccio, et al. (2024). Mediterranean diet is associated with lower all-cause and cardiovascular mortality among long-term cancer survivors. *JACC: CardioOncology*, 6, 602-604. <https://doi.org/10.1016/j.jacc.2024.05.012>

Castro-Espin, et. al. (2023). Association of mediterranean diet with survival after breast cancer diagnosis in women from nine European countries: Results from the EPIC cohort study. *BCM Medicine*, 21. doi: 10.1186/s12916-023-02934

Chen, et al. (2023). The role of the Mediterranean Diet in breast cancer survivorship: A systematic review and meta-analysis of observational studies and randomized clinical trials. *Nutrients*, 15, 2099. <https://doi.org/10.3390/nu15092099>

Clifton, et al. (2021). Intermittent fasting in the prevention and treatment of cancer. *CA: A cancer Journal for Clinicians*, 71, 527-546. doi: 10.3322/caac.21694

Di Maso, et al. (2021). Adherence to Mediterranean diet, physical activity and survival after prostate cancer diagnosis. *Nutrients*, 13, 243. <https://doi.org/10.3390/nu13010243>

Helm, et al. (2024). Longitudinal three-year associations of dietary fruit and vegetable intake with serum hs-C-reactive protein in adults with and without type 1 diabetes. *Nutrients*, 16, 2058. <https://doi.org/10.3390/nu16132058>

Kafer & Milner. (2011). Herbs and spices in cancer prevention and treatment. In IFF Benzie & S. Wachtel-Galor (Eds.), *Herbal medicine: Biomolecular and clinical aspects* (2nd ed). CRC Press. <https://www.ncbi.nlm.nih.gov/books/NBK92774/>

56

References continued

Li, et al. (2022). Cruciferous vegetable consumption and multiple health outcomes. An umbrella review of 41 systematic reviews and meta-analyses of 303 observational studies. *Food & Function*, 13, 4247. doi: 10.1039/d1fo03094a

Mwangi, et al. (2022). The antioxidant potential of different edible and medicinal mushrooms. *Biomedicine & Pharmacotherapy*, 147, 112621. <https://doi.org/10.1016/j.biopha.2022.112621>

Romer, et al. (2021). The use of ketogenic diets in cancer patients: A systematic review. *Clinical and Experimental Medicine*, 21, 501-536. <https://doi.org/10.1007/s10238-021-00710-2>

Torres, et al. (2024). Dietary guidelines for cancer prevention: An update to ACS international guidelines. *Nutrients*, 16, 2897. <https://doi.org/10.3390/nu16172897>

Van den Brandt, et al. (2017). Mediterranean diet adherence and risk of post menopausal breast cancer: results of a cohort study and meta-analysis. *International Journal of Cancer*, 140, 2220-2231.

World Cancer Research Fund International. (2024a). Diet, nutrition, physical activity and body weight for people living with and beyond breast cancer: The latest evidence, our guidance for patients, carers and health professionals, and recommendations for future research. <https://wcrf.org/diet-activity-and-cancer/global-cancer-update-programme/cancer-survivors/>

World Cancer Research Fund International. (2024b). Diet, nutrition, physical activity and body weight for people living with and colorectal cancer: The latest evidence, our guidance for patients, carers and health professionals, and recommendations for future research. <https://www.wcrf.org/diet-activity-and-cancer/global-cancer-update-programme/cancer-survivors/>

57

THANK YOU!

"CAME FROM A PLANT, EAT IT; WAS
MADE IN A PLANT, DON'T." –
MICHAEL POLLAN

Denise Spector

denise.spector@unchealth.unc.edu

[Integrative Medicine - UNC Lineberger](#)



58

UNC Lineberger Cancer Network **Questions/Comments?**


Nobody has responded yet.
Hang tight! Responses are coming in.

Start the presentation to see live content. For screen share software, share the entire screen. Get help at pollev.com/app

59

Thank You . . .

**University Cancer
Research Fund**

 **LINEBERGER COMPREHENSIVE
CANCER CENTER**

UNC Lineberger Cancer Network

The Telehealth Team

Tim Poe – Director

Veneranda Obure – Technology Support Specialist	Andrew Dodgson , DPT – Continuing Education Specialist
Jon Powell , PhD – Continuing Education Specialist	Patrick Muscarella – Technology Support Technician
Oliver Marth – Technology Support Technician	Barbara Walsh , DNP, MPH, MSN, RN – Nurse Planner

The song *Back Rhodes* written and performed by **Don Poe**

60

60






Upcoming Live Webinars learn.unclcn.org

	<p>RESEARCH TO PRACTICE </p> <p>Waldenstrom Macroglobulinemia: Diagnosis and Treatment Christopher Dittus, DO, MPH</p>	<p>February 26 12:00 PM</p>
	<p>ADVANCED PRACTICE PROVIDER </p> <p>Undiagnosed Cancer Clinic Jonathan Sorah, MD</p>	<p>March 5 12:00 PM</p>
	<p>PATIENT-CENTERED CARE </p> <p>Cancer Prevention: How Do We Make a Difference? Melissa Gilkey, PhD</p>	<p>March 12 12:00 PM</p>

61

61

Self-Paced, Online Courses learn.unclcn.org/spoc

	<p>ADVANCED PRACTICE PROVIDER </p> <p>The Expanding World of Cellular Therapy Brianne Buchanan, PA-C</p>	
	<p>RESEARCH TO PRACTICE </p> <p>Head and Neck Cancer Management in North Carolina Blake Sullivan, MD</p>	
	<p>PATIENT-CENTERED CARE </p> <p>Workplace Safety: Creating a Culture of Care and Respect Paul Perryman, MSN, MS, RN, NE-BC Catherine Capp, MSN, RN, NE-BC</p>	

62

62

We Thank You for Participating Today!

UNC Lineberger Cancer Network

Sign up for our monthly e-newsletter

Email: unclcn@unc.edu

Call: (919) 445-1000

Check us out at

unclcn.org and learn.unclcn.org

Look for us on these social media platforms



facebook.com/unclcn



unclinebergercancernetwork



linkedin.com/in/unclcn

63

63