

UNC CANCER NETWORK
 CANCER TREATMENT IN NORTH CAROLINA
NORTH CAROLINA COMMUNITY COLLEGE
 ONCOLOGY LECTURES

March 18, 2020

Live Lecture

**Welcome to the
 UNC Cancer Network's online event.**

Sound Checks **Start Time**



We will use Poll Everywhere for Q&A. More information at: pollev.com/unccn

For any technical difficulties: (919) 445-1000 unccn@unc.edu

While waiting, check out our upcoming lectures: unccn.org/events

Contact UNCCN

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POLL EVERYWHERE

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- 1 Text UNCCN to 22333
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<p>Live Lectures unccn.org</p> <hr/> <p>Self-Paced, Online Courses learn.unccn.org</p> <hr/> <p>MediaSite Library unccn.org/mediasite</p> <hr/> <p>YouTube Channel unccn.org/youtube</p> <hr/> <p>VuMedi Channel unccn.org/vumedi</p>	<p>Patient Centered Care 2nd Wednesday – 12 pm – 1 pm</p> <p>Research to Practice 4th Wednesday – 12 pm – 1 pm</p> <hr/> <p>Any day and time that's convenient for you</p> <hr/> <p>Any day and time that's convenient for you</p> <hr/> <p>Any day and time that's convenient for you</p> <hr/> <p>Any day and time that's convenient for you</p>
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NO CE Credits Available

For a complete listing and details on coming events visit:
www.unccn.org/events

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EVALUATION SURVEY

The screenshot shows a survey form titled "UNC Cancer Network North Carolina Community College Evaluation". It includes a logo at the top, a request for feedback, a question about the college/university, a question about the health sciences program, a Likert scale for program helpfulness, and a question about technical issues.

Your feedback is greatly appreciated!

Please visit:

unccn.org/eval

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UNC CANCER NETWORK
CANCER TREATMENT IN NORTH CAROLINA
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ONCOLOGY LECTURES

Oncology Nutrition



Jennifer Spring,
RD, CSO, LDN

A grid of 18 empty square boxes for a progress indicator, with the 5th, 6th, 7th, 8th, and 9th boxes filled with a brown circle.

6

When poll is active, respond at PollEv.com/unccn
Text **UNCCN** to **22333** once to join

UNC CANCER NETWORK

A dietitian can help oncology patients with more than just discussing which vegetables and fruits to eat.

True


False

Total Results: 0

Answers to this poll are anonymous

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OUR PRESENTER



Jennifer Spring,
RD, CSO, LDN

Jennifer Spring currently serves as an oncology dietitian in the Outpatient Oncology Nutrition Program at the NC Cancer Hospital in Chapel Hill, North Carolina.

In this role, Jennifer works with patients to develop individualized eating plans to meet specific needs or concerns related to cancer prevention, treatment, and recovery.

Jennifer is a 2016 UNC Oncology Excellence Award recipient.

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Nutrition in Cancer Patients Makes a Difference

Presented by
Jennifer Spring, RD, LDN, Oncology Dietitian

UNC
HEALTH.

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Learning Objectives

- Explain cancer-related anorexia and the significance of unintentional weight loss
- Describe the evidence for specific nutritional interventions for patients experiencing anorexia and unintentional weight loss
- Identify proper assessment tools for identifying indicators of malnutrition risk and appropriate nutritional interventions

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Unintended weight loss and anorexia in patients with cancer are associated with decreased performance status, reduced response and tolerance to treatment, decreased survival, and reduced quality of life.

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Anorexia Defined

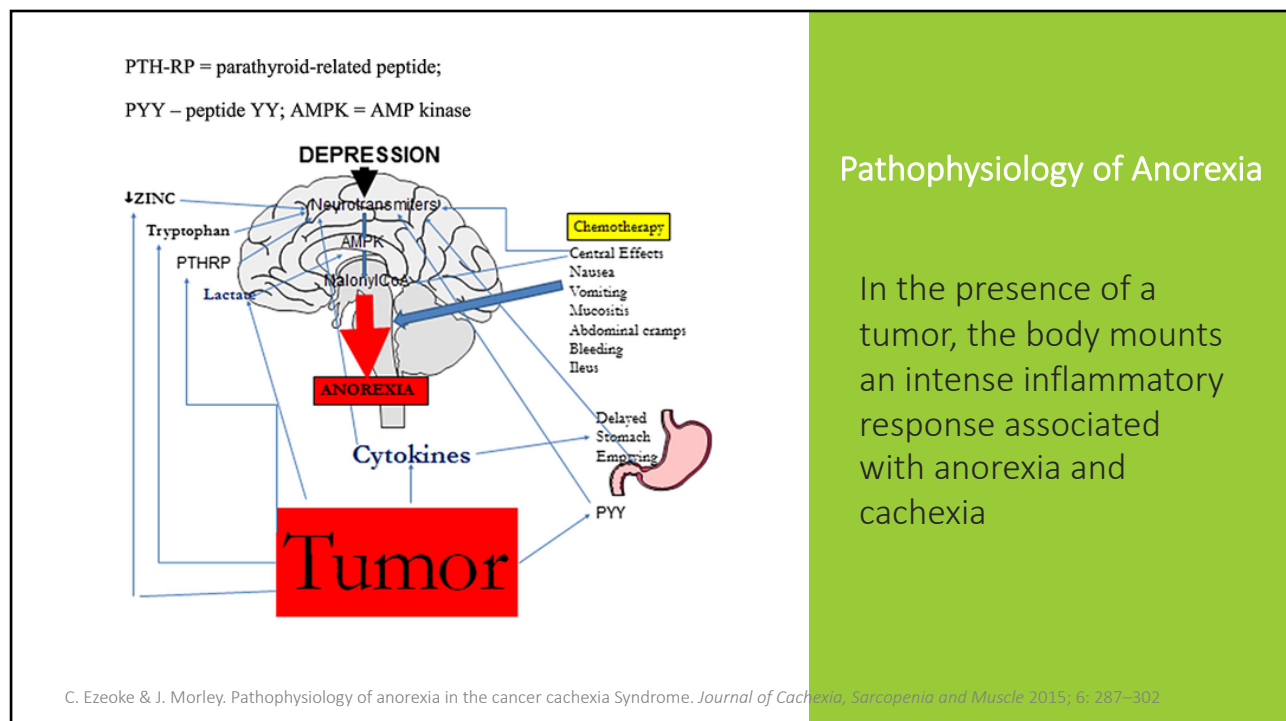
“Loss of appetite and inability to eat”

“A lack or loss of appetite for food (as a medical condition)”

“Loss of appetite, especially as a result of disease”

Anorexia ≠ Cachexia

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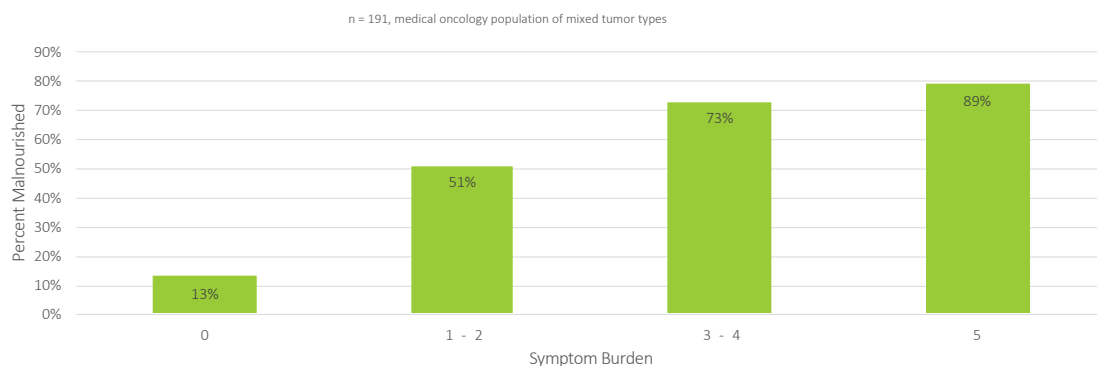
Causes of Anorexia in Individuals with Cancer

- Nausea and vomiting
- Early satiety
- Taste alterations/sensitivity to food smells
- Dry mouth
- Constipation/ Diarrhea
- Mucositis/stomatitis
- Intestinal obstruction
- Dysphagia
- Anxiety
- Depression
- Stress (many sources)
- Fatigue
- Medications

M. Muscaritoli et al. Prevalence of malnutrition in patients at first medical oncology visit: the PreMiO study. *Oncotarget*. 2017 Oct 3; 8(45): 79884–79896

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Symptom Burden a Predictor of Nutritional Risk



Isenring E, et al. *Nutr Cancer*. 2010;62(2):220-228

Adapted from *Nutrition in Cancer Patients: It Does Make a Difference* by Alicia Gilmore, MS, RD, CSO, LD, CNSC Suzanne Dixon, MPH, MS, RD

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Managing the Challenges of Anorexia



Oncology Dietitian's Role

- Be creative
- Rely on patience, persistence and repetition
- Be advocate
- Involve family/caregivers

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Calorie and Protein Needs for Individuals with Cancer

Calories

25-30 kcals/ kg/day

*if resting energy expenditure (REE) and/or total energy expenditure can't be measured directly

*Direct calorimetry, indirect calorimetry, and prediction equations attempt to mirror actual expenditures and account for changes in metabolic state

*Predictive equations are dependent on individual's status—*healthy, acutely ill, critically ill, or obese*

Protein

0.8 g/kg/day for healthy individuals

1.2 to 2 g/kg/day for catabolic individuals

1.5 g/kg/day for those who are metabolically stressed

For cancer patients in general, 1.0 to 1.5 g/kg/day of actual weight

(1.2 to 1.5 g/kg/day serves as a target range to maintain or restore lean body mass)

Nutrition Therapy for Adults Receiving Radiation Treatment By Julie Lansford, MPH, RDN, CSO, LDN <https://www.todaysdietitian.com/newarchives/0519p44.shtml>

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Cachexia Defined

Sarcopenia = Severe muscle depletion

“The presence of significant weight loss or *sarcopenia* in the absence of simple starvation.

“A progressive wasting syndrome characterized by weakness and a marked and progressive loss of body weight, fat, and muscle. Tumor-related factors prevent maintenance of fat and muscle”

- Weight loss >5% over the past 6 months; or
- Body mass index <20 and degree of weight loss >2%; or
- Sarcopenia and any degree of weight loss >2%

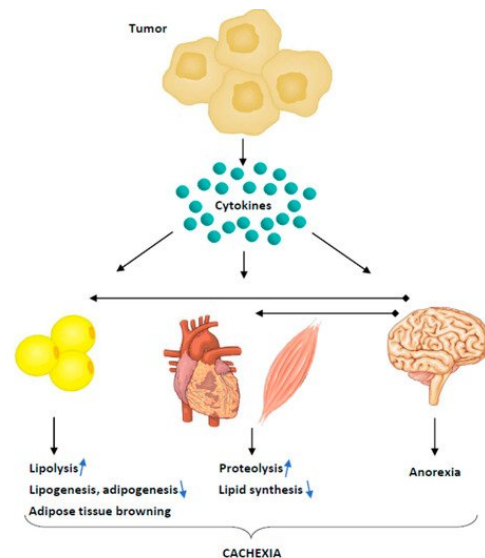
Cachexia ≠ Anorexia

https://www.cancer.gov/about-cancer/treatment/side-effects/appetite-loss/nutrition-hp-pdq#_30

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Physiology of Cachexia

- Deranged metabolic state, with abnormal hormonal environment
- Typically occurs in conjunction with anorexia, but not always
- Pathophysiology hinders nutritional repletion
- Protein and calories alone will not improve nutritional status

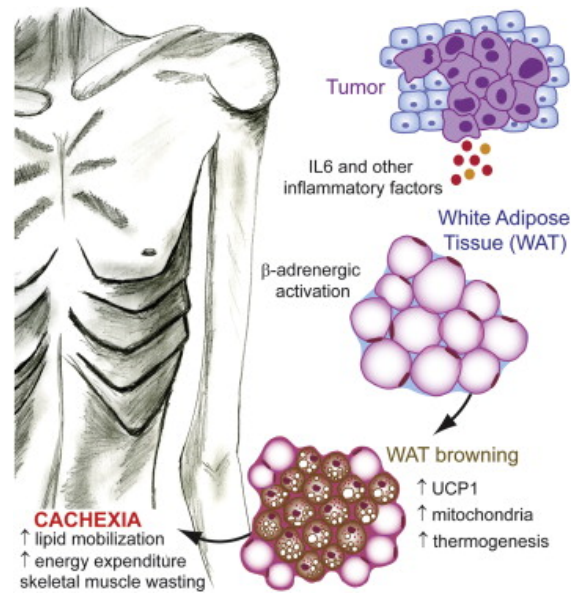


A. Duval et al. mTOR and Tumor Cachexia. Int. J. Mol. Sci. 2018, 19, 2225; doi:10.3390/ijms19082225

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Hallmarks of Cachexia

- Insulin resistance
- Hyperglucagonemia
- Hyperglycemia
- Hyperlipidemia
- Failure to utilize glucose and free fatty acids for energy
 ↑ metabolism due to white fat to brown fat conversion
- Lean body mass becomes primary energy source



Fearon KCH, et al. Cancer Cachexia: Mediators, Signaling, and Metabolic Pathways. Cell Metab 2012; 16(2): 153-166

Petruzzelli M, et al. A switch from white to brown fat increases energy expenditure in cancer-associated cachexia. Cell Metab. 2014;20(3):433-47.

Adapted from *Nutrition in Cancer Patients: It Does Make a Difference* by Alicia Gilmore, MS, RD, CSD, LD, CNSC Suzanne Dixon, MPH, MS, RD

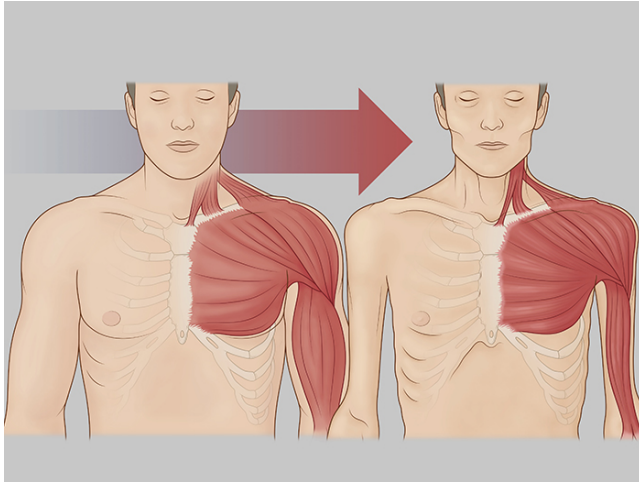
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POLL

True/ False

Anorexia is defined as a loss of appetite and inability to eat. The term is interchangeable with cachexia.

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Sarcopenia

Anorexia and cachexia, can lead to progressive loss of skeletal muscle mass (with or without loss of fat mass) and worsen impairment of function.

C. Ezeoke & J. Morley. Pathophysiology of anorexia in the cancer cachexia Syndrome. *Journal of Cachexia, Sarcopenia and Muscle* 2015; 6: 287–302

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Lean Body Mass (LMB)

LBM = Everything but fat

LBM used for energy depletes skeletal and smooth muscle, organs, skin and mucous membranes, red and white blood cells, connective tissue, platelets and plasma, and more

Outcome = ↑ Morbidity



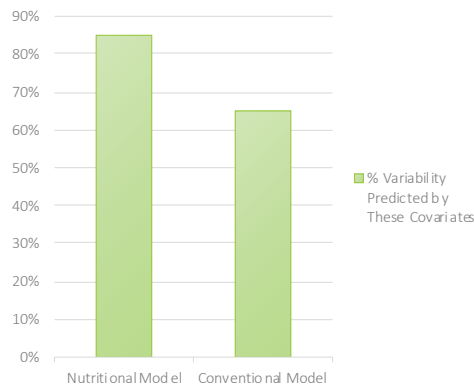
Bosy-Westphal A, Müller MJ. Identification of skeletal muscle mass depletion across age and BMI groups in health and disease -There is need for a unified definition. *Int J Obes* 39, 379–386(2015)

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Lean Body Mass Depletion: Predictor of Survival

Two prognostic models of survival in lung & GI patients (n=1,473)

- Conventional covariates: tumor type, stage, age, performance
- Nutrition covariates: BMI, weight loss, muscle index/attenuation



- Overweight & obese patients had similar LBM as patients categorized as cachectic
- Regardless of baseline BMI, weight & muscle loss = ↓ survival

Martin L, et al. Cancer cachexia in the age of obesity: skeletal muscle depletion is a powerful prognostic factor, independent of body mass index. *J Clin Oncol.* 2013;31(12):1539-47.

Adapted from *Nutrition in Cancer Patients: It Does Make a Difference* by Alicia Gilmore, MS, RD, CSO, LD, CNSC Suzanne Dixon, MPH, MS, RD

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Reality of Unintentional Weight Loss

- Well-designed study of 17 head and neck patients in active, concurrent therapy protocol
- DEXA, Indirect Calorimetry, Physical Performance Assessment, Fasting Blood Measures, Serial 24-Hour Dietary Recalls

Over 9 Week Follow Up Through Treatment:

- ✓ *Weight loss began immediately*
- ✓ *Average total loss of 6.8 kg (15 lbs) ~ 1.7 lbs per week*
- ✓ *LBM accounted for 71% of loss*

Silver HJ, et al. Changes in body mass, energy balance, physical function, and inflammatory state in patients with locally advanced head and neck cancer treated with concurrent chemoradiation after low-dose induction chemotherapy. *Head Neck.* 2007;29(10):893-900

Unintentional Weight Loss

Induced by combination of calorie deficit and underlying inflammatory response, and the switch from LBM and fat for energy to predominantly fat **does not occur**



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Dietary Interventions

On-going Coaching, Encouragement, Advocate

- Taste /Smell
- Presentation
- Atmosphere
- Meal preparation
- Fractional intake- meal frequency and snacks
- Family dynamics
- Honor patient’s preferences
- Nutritional supplements
- Enteral nutrition

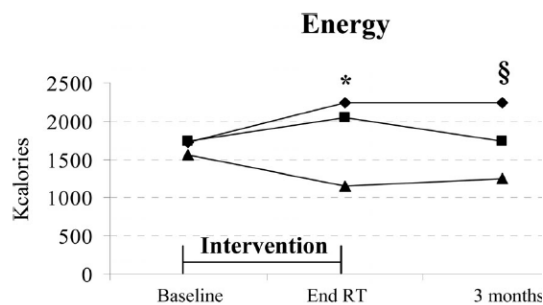


A. Tuca et al. / Critical Reviews in Oncology/Hematology 88 (2013) 625–636

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Nutrition Intervention

Nutritional counseling (diamonds) can increase intakes and improve outcomes better than protein supplements (squares) or no intervention (triangles).

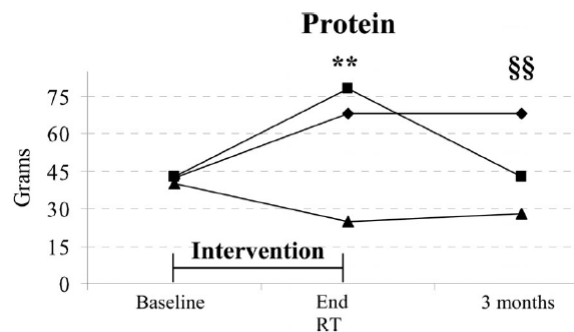


Ravasco et al. *Head and Neck* 27:659-668, 2005.
 Ravasco et al. *J Clin Oncol* 23:1431-1438, 2005.

28

Nutrition Intervention

Nutritional counseling (diamonds) can increase intakes and improve outcomes better than protein supplements (squares) or no intervention (triangles).



Ravasco et al. *Head and Neck* 27:659-668, 2005.
Ravasco et al. *J Clin Oncol* 23:1431-1438, 2005.

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Non-Dietary Interventions

First address contributory factors: anxiety, depression, family and spiritual distress, malabsorption, pain, oral complications, constipation, insomnia, correctable hormonal factors (thyroid, hypogonadism, adrenal insufficiency, etc), lack of support/help

- Progestational agents and corticosteroids
- Cannabinoids – medical cannabis appears more effective than pharmaceuticals; consult knowledgeable resource
- Prokinetic agents and Proton pump inhibitors
- Non-steroidal anti-inflammatory agents
- Nutrients – omega-3s, amino acids, zinc, vitamins (IV and oral)
- Exercise – almost always underutilized

A. Tuca et al. / *Critical Reviews in Oncology/Hematology* 88 (2013) 625–636

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POLL

Dietary interventions for anorexia and cachexia that help put a brake on unintentional weight loss include:

- A. Eating Small frequent meals and snacks
- B. Managing taste changes
- C. Use of nutritional supplements
- D. All of the above

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Validated Screening Tools

Patient Generated Subjective Global Assessment (PG-SGA)

Malnutrition Screening Tool (MST)

Malnutrition Screening Tool for Cancer Patients (MSTC)

Malnutrition Universal Screening Tool (MUST)

- Valid
- Specific
- Quick and easy to use

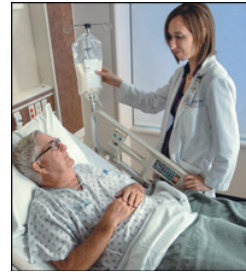
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Screening for Malnutrition Risk

Screening Tool	Items Evaluated	Populations Validated	Components
PG-SGA	7	Inpatient and Outpatient	Conducted by patient and RN Includes diagnosis and physical exam
MST	2	Inpatient and Outpatient	Weight loss How much weight loss Is patient is eating less d/t poor appetite
MSTC	4	Inpatient	Change in intake Weight loss Body mass index Eastern Cooperative Oncology Group (ECOG) performance measure
MUST	4	Inpatient	BMI Unintentional weight loss Acute disease effect Potential for no oral intake Presence of obesity is noted

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Nutrition Matters



- Loss of just 5% of baseline weight can shorten survival
- Intervening early allows repletion when metabolic changes are not working against you
- Allowing patients to lose nutritional reserves early leads to death from malnutrition before death from disease process
 - *It is estimated that the deaths of 10-20% of patients with cancer can be attributed to malnutrition rather than to the malignancy itself.*
- Consider Days/Weeks/Months For Nutritional Approach

J. Arends et al. (2017) ESPEN expert group recommendations for action against cancer related malnutrition. *Clin. Nutr.* 36, 1187-1196

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Screening and early nutrition intervention are vital components of patient care

Weight loss and malnutrition at diagnosis

Treatment and Disease Progression Exacerbate Malnutrition

Further Progression Can Lead to Cachexia

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POLL

True/ False

The Malnutrition Screening Tool (MST) has been shown to be a valid and reliable for identifying malnutrition risk in adult oncology patients in the ambulatory/outpatient

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THANK YOU!

University Cancer Research Fund

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UNC CANCER NETWORK

UNC Cancer Network Telehealth Team

Tim Poe, Director
Mary King, Operational Coordinator
Veneranda Obure, A/V Support Engineer
Jon Powell, PhD, Continuing Education Specialist

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THANK YOU FOR PARTICIPATING!

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EVALUATION SURVEY

The screenshot shows a survey form with the following content:

UNC Cancer Network
 North Carolina Community College Evaluation

Please respond to the items below to provide a brief evaluation of the lecture content. Your feedback is important to us and will be used to make improvements to future programs.

At which community college or university did you watch this lecture?

What Health Sciences Program are you in?

Please consider the following statements and check the box that best applies:

	Please choose one.			
	Strongly Disagree	Disagree	Agree	Strongly Agree
I found this program to be helpful.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The content was easy for my students to understand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The time and location worked well for me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Did you have any technical issues that interfered with viewing the lecture?
 Yes
 No

Your feedback is greatly appreciated!

Please visit:

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UPCOMING LIVE LECTURES



2020-2021 Lecture Series
Presenters TBD

- Caring for Patients with Genitourinary Cancers
- Palliative Care and Hospice for the Cancer Patient
- Caring for Patients with Gynecologic Cancers Nutrition
- Caring for the patient with Hematologic Cancers

For a complete listing and details on coming events visit:
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SELF-PACED, ONLINE COURSES



Caring for the Patient with Breast Cancer

- Amy DePue, BSN RN OCN CBCN
- Betsy Blanton, BSN RN OCN
- Lea McDonnell, BSN RN
- Emily Riddle, BSN RN
- Betsy Wehe, Betsy Wehe, BSN RN OCN

Caring for the Patient with a GI Cancer

Julienne S. Harris, RN, MSN, FNP-C

Today's lecture will be available in April 2020 as a **FREE**, Self-Paced, Online Course

For a complete listing and details on coming events visit:
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