

ACS Cancer Conference 2025

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Nutrition Matters: Enhancing Cancer Treatment Outcomes

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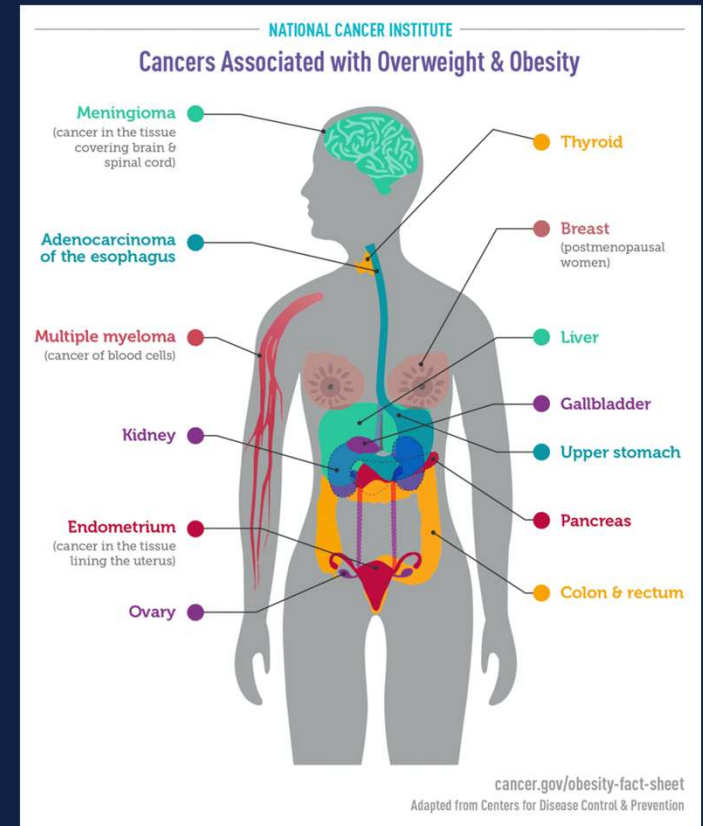
Disclosures

- I have nothing to disclose

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The American Lifestyle and Cancer

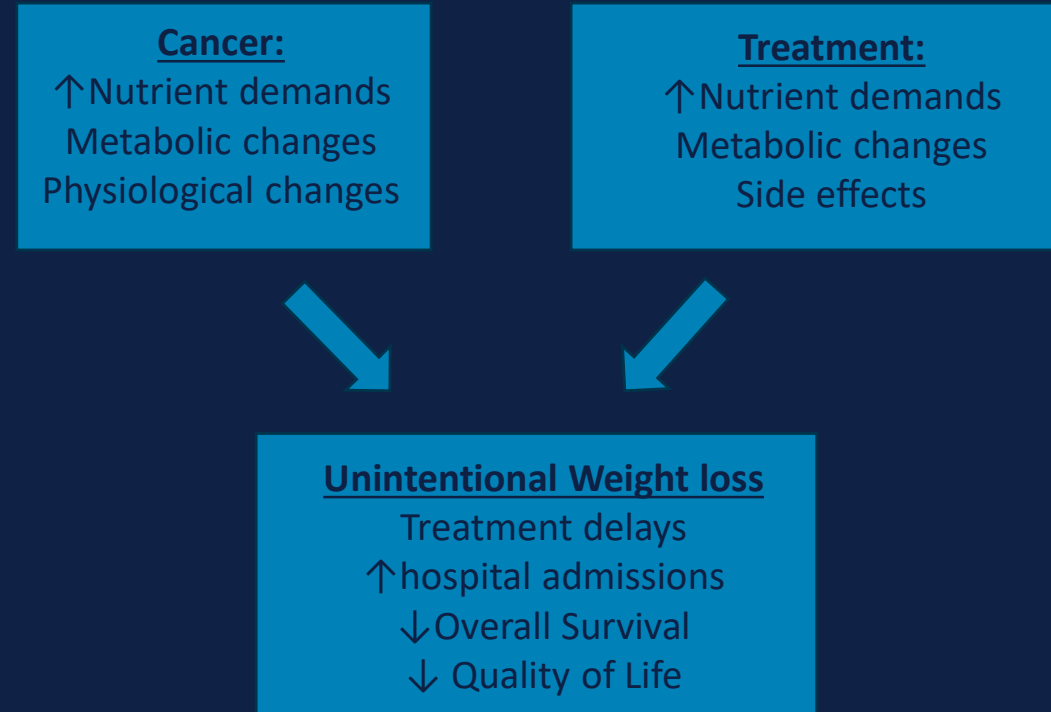
- 2 in 5 U.S. adults have obesity (BMI >30).
- Many adults with obesity have other serious chronic diseases, including diabetes, heart disease and **CANCER!**
- 18% of all cancers diagnosed in the US are related to body fatness, physical inactivity, alcohol consumption, and/or poor nutrition, and thus could be prevented.¹
 - Modifiable factors



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Weight stability despite BMI status

- Up to 80% of oncology patients present with weight loss at diagnosis.²
- Cancer treatment regimens can result in further weight loss.
 - Surgery
 - Chemotherapy/immunotherapy
 - Radiation

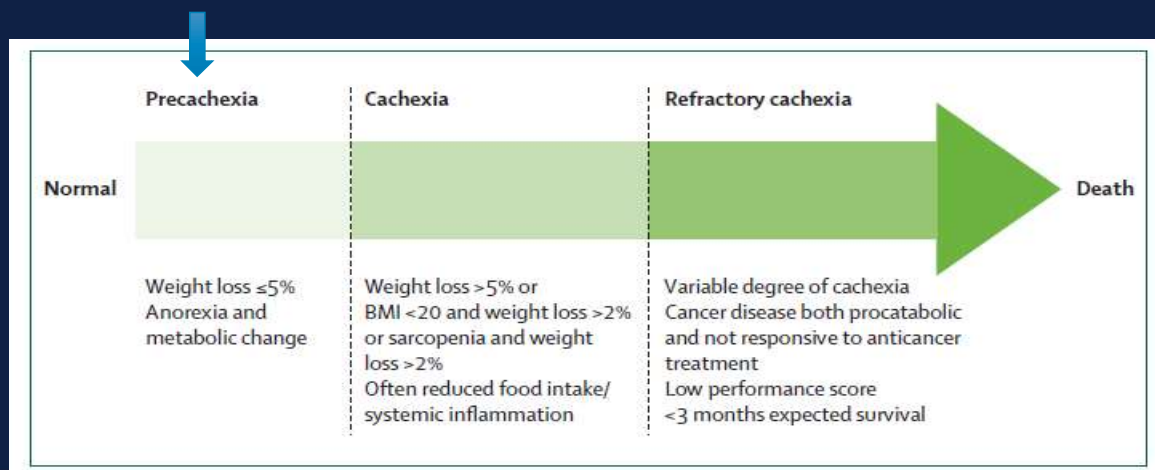


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Malnutrition & Cancer Cachexia

- Malnutrition incidence: 40-80%³
 - At diagnosis: 15–20%
 - up to 80–90% of patients with advanced-stage disease
- Cancer cachexia-an inflammatory driven complex disorder, includes skeletal muscle loss (with or without fat) and progressive functional impairment.²
 - 20% of cancer patient will die due to cancer cachexia.⁴

MALNUTRITION



Screening for Malnutrition

- 90% of cancer treatments are in outpatient centers, but malnutrition screening is lacking!⁸
 - Only 53% of cancer centers screen for malnutrition.
 - Only 35% use validated tools for malnutrition screening.
- Six screening tools are valid for malnutrition screening in oncology ambulatory settings.
 - **MST, PGSGA_SF**, MUST, Nutrition Risk Screening-2002, NUTRISCORE, and Mini Nutritional Assessment.⁸
 - Screening should occur before treatment and regularly during treatment depends on diagnosis

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MST and PGSGA

Nutrition Screening

Responsible Create Note Macro Manager

Nursing Nutrition Risk Screening

Have you lost weight without trying?
0=No taken 2/24/2025 0800 by Vaz, Kristi, RN

0=No 2=Unsure Yes

How much weight have you lost?
0=0-1 lb taken 2/24/2025 0800 by Vaz, Kristi, RN

0=0-1 lb 1=2-13 lb 2=14-23 lb 3=24-33 lb 4=34 lb or more Unsure

Have you been eating poorly because of a decreased appetite?
0=No taken 2/24/2025 0800 by Vaz, Kristi, RN

0=No 1=Yes

Total Score to Determine Malnutrition Risk
0 taken 2/24/2025 0800 by Vaz, Kristi, RN

Nutrition Intervention Needed
No (Score of 0-1) taken 2/24/2025 0800 by Vaz, Kristi, RN

No (Score of 0-1) Yes (Score of 2 or more)

Restore Close Cancel

Scored Patient-generated Subjective Global Assessment (PG-SGA)

History: Boxes 1 - 4 are designed to be completed by the patient. [Boxes 1-4 are referred to as the PG-SGA Short Form (SF)]

1. Weight (see worksheet 1)

In summary of my current and recent weight:

I currently weigh about _____ pounds
I am about _____ feet _____ inches tall

One month ago I weighed about _____ pounds
Six month ago I weighed about _____ pounds

During the past two weeks my weight has:

☐ Decreased ⁽¹⁾ ☐ Not changed ⁽⁰⁾ ☐ Increased ⁽⁰⁾

Box 1 ☐

2. Food intake: As compared to my normal intake, I would rate my food intake during the past month as

☐ Unchanged ⁽⁰⁾
☐ More than usual ⁽⁰⁾
☐ Less than usual ⁽¹⁾

I am now taking

☐ Normal food but less than normal amount ⁽¹⁾
☐ Little solid food ⁽²⁾
☐ Only liquids ⁽³⁾
☐ Only nutritional supplements ⁽³⁾
☐ Very little of anything ⁽⁴⁾
☐ Only tube feedings or only nutrition by vein ⁽⁰⁾

Box 2 ☐

3. Symptoms: I have had the following problems that have kept me from eating enough during the past two weeks (check all that apply)

☐ No problem eating ⁽⁰⁾
☐ No appetite, just did not feel like eating ⁽³⁾
☐ Nausea ⁽¹⁾
☐ Constipation ⁽¹⁾
☐ Mouth sores ⁽²⁾
☐ Things taste funny or have no taste ⁽¹⁾
☐ Problems swallowing ⁽²⁾
☐ Pain; where? ⁽³⁾ _____
☐ Other ⁽¹⁾ ** _____

☐ Vomiting ⁽³⁾
☐ Diarrhea ⁽³⁾
☐ Dry mouth ⁽¹⁾
☐ Smells bother me ⁽¹⁾
☐ Feel full quickly ⁽¹⁾
☐ Fatigue ⁽¹⁾

**Examples: Depression, money, or dental problems

Box 3 ☐

4. Activities and function:
Over the past month, I would generally rate my activity as:

☐ Normal with no limitations ⁽⁰⁾
☐ Not my normal self, but able to be up and about with fairly normal activities ⁽¹⁾
☐ Not feeling up to most things, but in bed or chair less than half the day ⁽²⁾
☐ Able to be little activity and spend most of the day in bed or chair ⁽³⁾
☐ Pretty much bed ridden, rarely out of bed ⁽³⁾

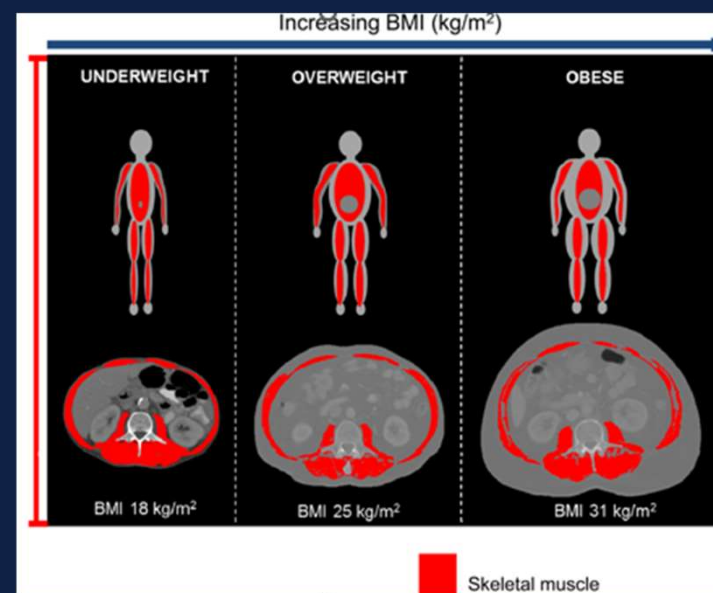
Box 4 ☐

MST >2 or PGSGA-SF >7/8 then refer to Dietitian

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Sarcopenia and Obesity

- Characterized by decreased muscle function, mass, and quality.
- Prevalence: 15-89%, depends on age and cancer type and stage.⁶
- Criteria:⁷
 - low hand-grip strength (HGS) + low skeletal muscle mass index (LSMI)
 - low HGS plus low skeletal muscle radiodensity (LSMD)
- Increases mortality and decreases quality of life.



Adapted from Prado et al.⁵

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Screening for Sarcopenia

- SARC-F Questionnaire:

- This is a simple and quick screening tool that assesses five components: strength, assistance with walking, rising from a chair, climbing stairs, and falls. Each component is scored from 0 to 2, with a total score of 4 or more indicating a need for further evaluation

Component	Question	Scoring (0-10 points)
Strength	How much difficulty do you have in lifting and carrying 10 pounds?	None=0 Score=1 A lot or unable=2
Assistance in walking	How much difficulty do you have walking across the room?	None=0 Score=1 A lot or uses aids, or unable=2
Rise from chair	How much difficulty do you have transferring from a chair or bed?	None=0 Score=1 A lot or unable without help =2
Climb stairs	How much difficulty do you have climbing a flight of 10 stairs?	None=0 Score=1 A lot or unable=2
Falls	How many times have you fallen in the last year?	None=0 1-3 falls = 1 4 or more falls = 2

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Dietitian assessment

Food and nutrition-related history

Anthropometric measurements

Biochemical data/medical tests and procedures

Nutrition-focused physical findings

Client history: personal, medical/health, family and social



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Dietitian interventions

- Goals of care
 - Discuss with patient and caregivers
 - Weight stability
 - Side effect management
- Exceptions: Overweight/obese breast cancer patients
 - Supporting intentional 1-2lb weight loss per week is considered safe with active monitoring by dietitian and approved by oncologist.⁹

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The benefits of a dietitian during cancer treatment¹⁰

- **Reduced Treatment Toxicities**
 - Proper nutrition can reduce the severity of treatment-related toxicities
- **Shorter Hospital Stays**
 - Fewer complications
- **Better Surgical Outcomes**
 - Improvement in recovery times and outcomes after surgery
- **Lower Mortality Rates**
 - Addressing malnutrition early can decrease mortality rates
- **Improved Physical Functioning**
 - Helps maintain muscle mass and strength and helps patients stay active and independent

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Barriers to Oncology Nutrition Care

- Standard 4.7: Oncology Nutrition Services¹¹
 - Oncology nutrition services are provided, on-site or by referral, by Registered Dietitian Nutritionists (RDN) with knowledge and skills to address nutrition and hydration requirements and recommendations throughout the continuum of cancer care, including prevention, diagnosis, treatment, survivorship, and palliative care.
- Barriers:
 - **Limited RDN services (1 RDN: 2308 patients with cancer)¹²**
 - **Lack of screening tools and implementation consensus**
 - Non-standardized patient referral protocols
 - Limited staff support and competing staff time constraints
 - **Reimbursement for nutrition services.**
 - **Many centers do not bill for nutrition services**
 - **The Centers for Medicare and Medicaid Services do not reimburse nutrition services for oncology patients.**

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Costs of Malnutrition vs. Costs of a Dietitian

- Malnutrition is expensive¹³
 - reduced tolerance and efficacy of treatment
 - increased risk for clinical and surgical complications
 - reduced quality of life
 - lower survival rates
 - longer hospital stays
 - increase in health care costs
 - Total costs: \$\$\$\$
- Dietitian staffing can be a cost-effective intervention.
 - A low risk intervention with significant cost-saving effects

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Final thoughts and next steps

Nutrition can be a powerful tool to educate our patients and other healthcare professionals to help reduced cancer incidence, morbidity mortality.

Goals:

- **Improve access to a dietitian.**
- **Early and frequent malnutrition screening.**
- **Advocating with policy makers for Medicare reimbursement for MNT for oncology nutrition.**
- **Collaborating with professional oncology organizations to identify research gaps in oncology nutrition.**

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Thank you!

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References

1. World Cancer Research Fund/American Institute for Cancer Research. Diet, Nutrition, Physical Activity, and Cancer: A Global Perspective. Continuous Update Project Expert Report 2018. Accessed at <https://www.wcrf.org/dietandcancer> on June 2, 2020.
2. Declan Walsh et al., Malnutrition in Cancer Care: Time to Address the Elephant in the Room. *JOP* **15**, 357-359(2019).DOI:[10.1200/JOP.19.00165](https://doi.org/10.1200/JOP.19.00165)
3. Fearon K, et al. Definition and classification of cancer cachexia: an international consensus. *Lancet Oncol*. 2011 May;12(5):489-95. doi: 10.1016/S1470-2045(10)70218-7. Epub 2011 Feb 4. PMID: 21296615.
4. Hariyanto T.I., et al. Cachexia in Cancer Patients: Systematic Literature Review. *Asian J. Oncol*. 2020;06:107–115. doi: 10.1055/s-0040-1713701
5. Prado CM, et al. Sarcopenia and cachexia in the era of obesity: clinical and nutritional impact. *Proceedings of the Nutrition Society*. 2016;75(2):188-198. doi:10.1017/S0029665115004279
6. Zhang, Feng-Min, et al. "Sarcopenia prevalence in patients with cancer and association with adverse prognosis: A nationwide survey on common cancers." *Nutrition* 114 (2023): 112107.
7. Cruz-Jentoft AJ, Bahat G, Bauer J, Boirie Y, Bruyère O, Cederholm T, et al: Sarcopenia: revised European consensus on definition and diagnosis. *Age Ageing* 2019; 48: pp. 16-31
8. Trujillo EB, Kadakia KC, Thomson C, et al. Malnutrition risk screening in adult oncology outpatients: an ASPEN systematic review and clinical recommendations. *J Parenter Enteral Nutr*. 2024; 48: 874-894.
9. Demark-Wahnefried W, Campbell KL, Hayes SC. Weight management and its role in breast cancer rehabilitation. *Cancer*. 2012 Apr 15;118(8 Suppl):2277-87. doi: 10.1002/cncr.27466. PMID: 22488702; PMCID: PMC3812811.
10. Reber E, Schönenberger KA, Vasiloglou MF, Stanga Z. Nutritional Risk Screening in Cancer Patients: The First Step Toward Better Clinical Outcome. *Front Nutr*. 2021 Apr 7;8:603936. doi: 10.3389/fnut.2021.603936. PMID: 33898493; PMCID: PMC8058175.
11. American College of Surgeons Commission on Cancer, Oncology Nutrition Services, Standard 4.7. Optimal Resources for Cancer Care 2020
12. Trujillo EB, Claghorn K, Dixon SW, et al. Inadequate nutrition coverage in outpatient cancer centers: results of a national survey. *J Oncol*. 2019; 2019:7462940.
13. Trujillo EB, Shapiro AC, Stephens N, Johnson SJ, Mills JB, Zimmerman AR, Spees CK. Monitoring Rates of Malnutrition Risk in Outpatient Cancer Centers Utilizing the Malnutrition Screening Tool Embedded into the Electronic Health Record. *J Acad Nutr Diet*. 2021 May;121(5):925-930. doi: 10.1016/j.jand.2020.11.007. Epub 2020 Dec 11. PMID: 33309592.

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