Nutrition and End of Life Care

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Objectives

- Identify goals of nutrition therapy during cancer treatment.
- Discuss nutrition alterations caused by cancer.
- Define cancer cachexia and describe guidelines for management.
- Discuss artificial nutrition and hydration and review controversies of its use in end-of-life care.

Goals of Nutrition Therapy During Cancer Treatment

- Maintain weight and nutritional status in the well-nourished patient
- Prevent/manage nutrition impact symptoms
- Replete weight loss OR demonstrate weight maintenance

**As cancer progresses, our goals change to focus on comfort and quality of life

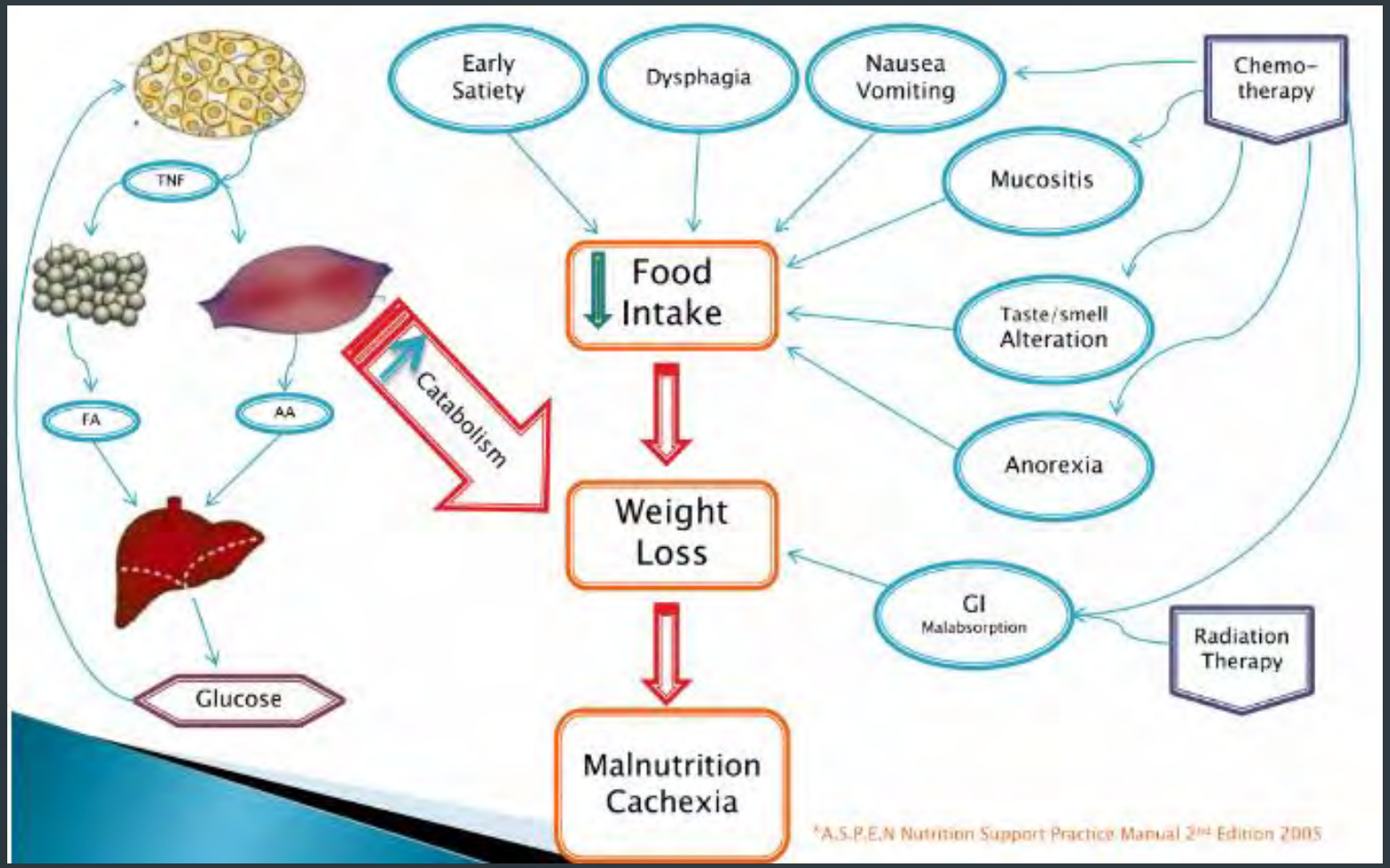
Why Care about Malnutrition?

Malnutrition is a well-recognized risk factor for poor treatment tolerance, increased length of stay and increased morbidity and mortality.

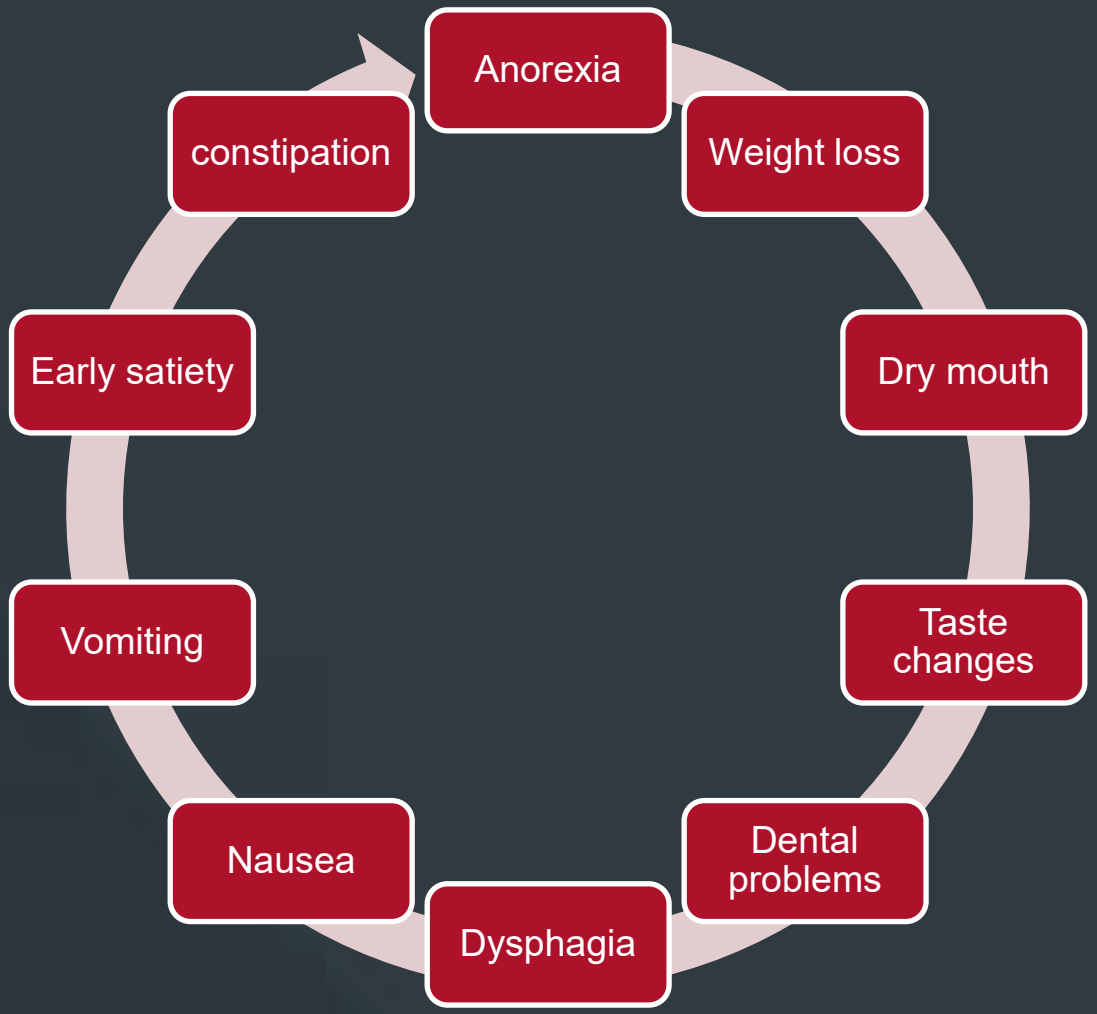
- Preserved immune function
- Improved wound healing
- Shorter recovery period compared to undernourished patients
- Increased tolerance to additional therapies/treatments
- Improved quality of life

Nutrition Alterations in Cancer

Nutrition Alterations in Cancer



Nutrition Impact Symptoms



Nutrition Interventions for NIS

Counseling

- Symptom management
- Education on energy and protein-dense foods
- Oral nutrition supplements (ONS)

Pharmacologic

- Prokinetics like Reglan, erythromycin
- Antiemetics, antidiarrheals
- Appetite stimulants

Nutrition support

- Enteral nutrition
- Parenteral nutrition

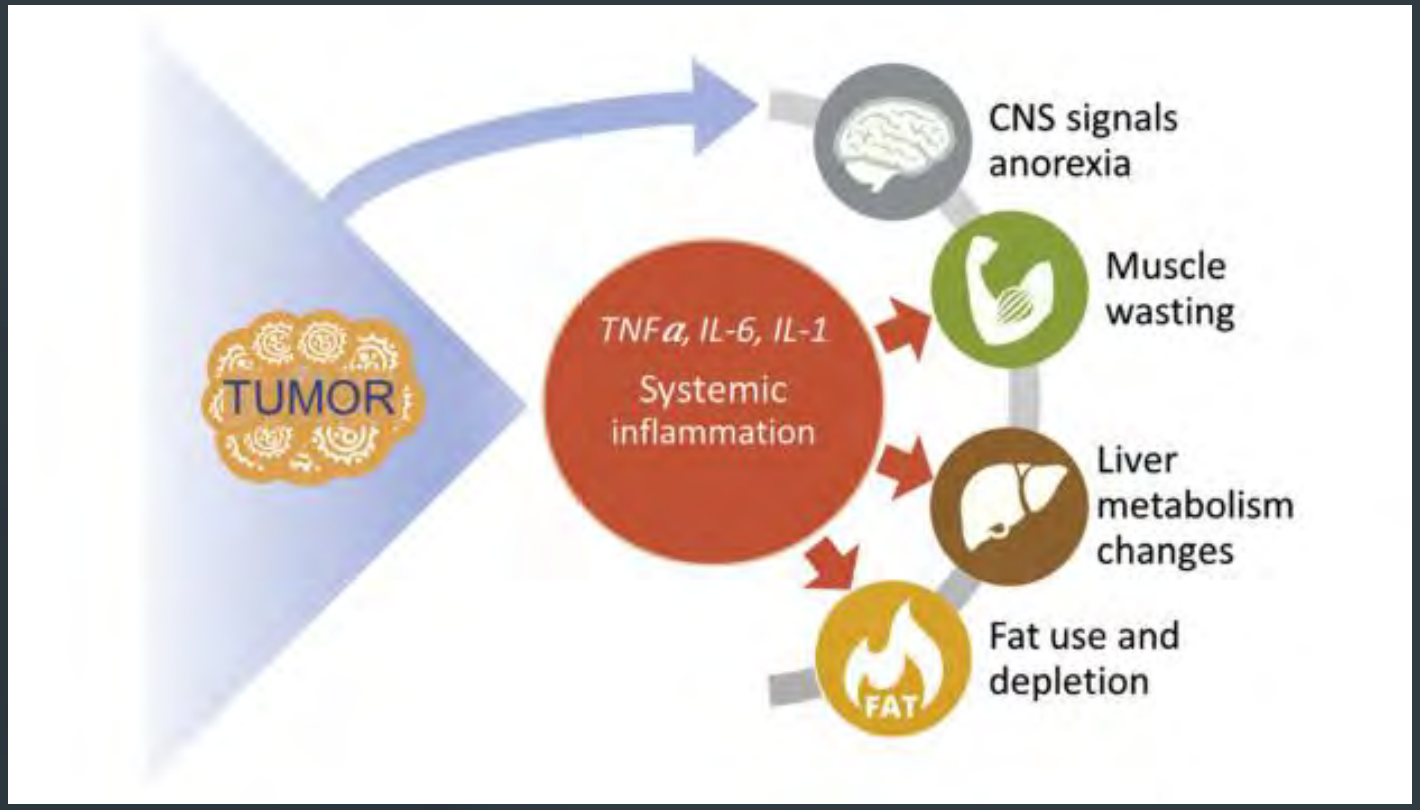
Figure 1. Approach to nutrition support in cancer patients.

Adapted with permission from Worthington P, et al. *JPEN J Parenter Enteral Nutr.* 2017;41(3):324-377. ©American Society for Parenteral and Enteral Nutrition.

GI, gastrointestinal; **NIS**, nutrition impact symptom; **ONS**, oral nutrition supplements

Worthington et al. *JPEN J Parenter Enteral Nutr.* 2017

Nutrition Alterations in Cancer



. Arends et al. Clinical Nutrition 2017

Cancer Cachexia

A multifactorial syndrome characterized by an ongoing loss of skeletal muscle mass (with or without loss of fat mass) that cannot be fully reversed by conventional nutritional support and leads to progressive functional impairment.

- Weight loss > 5% in 6 months
- BMI < 20 + weight loss
- Skeletal muscle loss (sarcopenia)

Fearon et al. Lancet Oncology 2011

Cancer Cachexia

Precachexia	Cachexia	Refractory Cachexia
Weight loss < 5%, anorexia, metabolic changes	Wt loss > 5%, BMI< 20 + wt loss OR sarcopenia with wt loss > 2%	Catabolic, no response to treatment, expected survival < 3 months
Nutrition counseling, fortified foods ONS	ONS, nutrition support (EN/PN)	Palliative nutrition as need to alleviate feelings of hunger and thirst

Arends et al. Clinical Nutrition 2017

Management of Cancer Cachexia: ASCO Guidelines

- Nutrition counseling (moderate in favor)
- Routine use of PN and EN is not recommended (moderate against)
- Short term trial of progesterone analogs or corticosteroids for appetite (moderate in favor)
- No current recommendations on exercise

Roeland et al. Journal of Clinical Oncology 20202

Artificial Nutrition and Hydration

Artificial Nutrition and Hydration

"Medical treatment" that allows a person to receive food and fluids when they are unable to take them by mouth.

- Require the patient to undergo a procedure
- Have known side effects and potential complications
- Beneficial as short-term treatment
  - Metastatic head and neck cancer
  - Small bowel obstruction
- Limited evidence to support the use and benefit of ANH at the end of life

Artificial Nutrition and Hydration

Burdens

- Routine blood draws
- Equipment issues
- Risks for infections: tube-site, catheter, aspiration pneumonia
- GI symptoms
- Fluid overload
- New insulin requirements

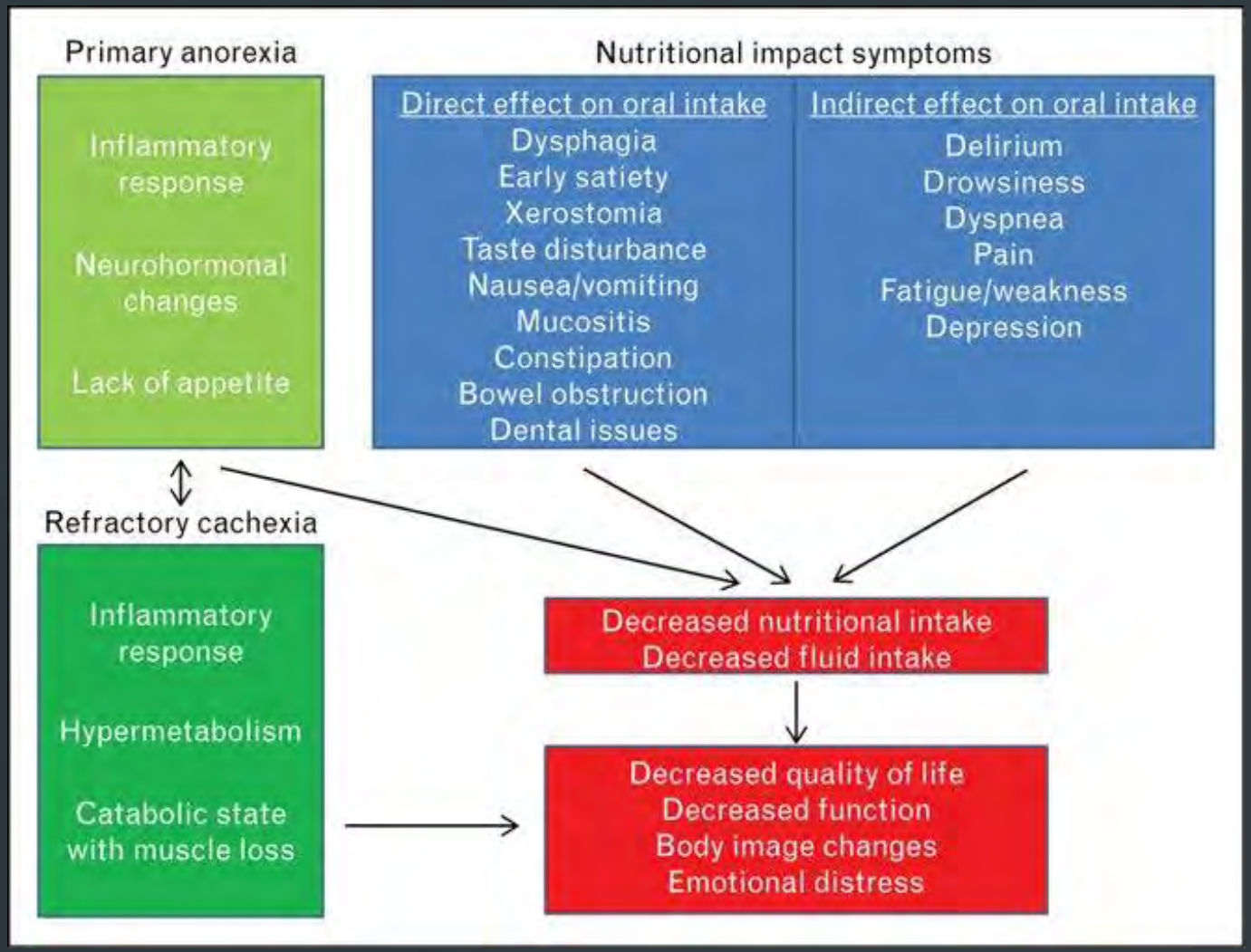
Benefits

- Nurturing the patient and family
- May help to reduce fatigue
- Possible improved sense of well-being
- Potential to replete weight loss

End of Life & Nutrition

- Factors to consider:
  - Functional decline and symptom burden can lead to decreased desire to eat and drink
  - Body changes and inability to eat/drink can cause distress in patient/families/caregivers
  - Focus should be on symptom control and quality of life

Intake & End of Life



Hui et al. Curr Opin Support Palliat Care. 2015

Artificial Hydration and End of Life

- Lack of well-defined studies on artificial hydration at end of life
  - Can be beneficial in early stages to prolong life, not as much towards end of life

- 2013 Randomized trial:
  - Concluded that hydration at 1 L per day did not improve symptoms, QOL or survival

- Risks of artificial hydration – edema, ascites, pleural effusions, infections
  - Rehydration Burden

Nutrition Support and End of Life

- Lack of research: Cochrane systematic review on artificial nutrition for palliative care patients identified no randomized controlled trials on this topic and only five prospective noncontrolled studies

- American Association of Hospice and Palliative Medicine does not recommend artificial nutrition and hydration at end of life
  - May vary based on faith, cultural traditions
  - Emphasis on communication

- Patients with the following have been shown to not have benefit:
  - Dementia
  - Terminally ill Cancer Cachexia & TPN or EN
    - Need more clinical trials

Nutrition Support and End of Life

- Questions to ask:
  - What are the views and preferences of the patient and loved ones?
  - What are the individualized goals of care?

- Consider the risks – intolerance, electrolyte abnormalities, refeeding syndrome, etc.

Prognosis-Based Decision Making Regarding Artificial Nutrition

Nutritional State	**Life expectancy: months or longer (active cancer treatments considered; pre-cachexia/ cachexia state)**	**Life expectancy: days to weeks (progressive cancer with no standard treatment options; refractory cachexia)**
Reduced oral intake and normal absorption	Continue with oral intake, consider nutritional supplements	Continue with oral intake, consider nutritional supplements
Significantly compromised oral intake (e.g. dysphagia, severe mucositis) and normal absorption	Consider enteral nutrition	Conservative measures Consider parenteral hydration Artificial nutrition not recommended
Significantly compromised absorption (e.g. bowel obstruction) or failure of enteral nutrition	Consider parenteral nutrition	Conservative measures Consider parenteral hydration Artificial nutrition not recommended

Hui et al. Curr Opin Support Palliat Care. 2015

Take Home Message

- Define goals of care and patient desires first
- Artificial Nutrition is not recommended at end of life
- Artificial Hydration is generally not recommended, but can be more on a case-by-case basis
- More research is needed, especially on symptom burden

Take Home Message

At end of life:

- Educate and counsel patient/family/caregivers on what is expected at end of life (eating, body changes, etc.)
- Allow patients to eat/drink small amounts as tolerated while balancing risk of complications, such as aspiration
- Alleviate symptoms

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