

Nutrition Considerations in the Treatment of Head and Neck Cancer

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Learning Objectives

Discuss nutrition-impact symptoms associated with head and neck cancer and its treatments and how to manage these symptoms

Identify when enteral nutrition is indicated

Discuss how to improve home enteral management for this patient population and others

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Head and Neck (H&N) Cancer

- Include malignant tumors that arise from the following:
 - Oral cavity
 - Lips
 - Pharynx: Nasopharyngeal, oropharyngeal, hypopharyngeal
 - Larynx
 - Nose
 - Paranasal sinuses
 - Salivary glands

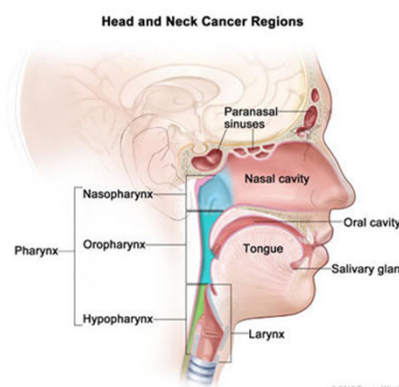


Figure 1. Terese Winslow. Head and Neck Cancer Regions. NCI

Source: Head and neck cancers - NCI. National Cancer Institute . May 25, 2021. Accessed July 12, 2026.
<https://www.cancer.gov/types/head-and-neck/head-neck-fact-sheet>.

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Risk Factors

- Alcohol and tobacco use
- Human papillomavirus
- Betel nut/Betel Quid/Paan/Areca Nut
- Occupational Exposure
- Radiation Exposure
- Epstein Barr virus
- Ancestry



Figure 2. Stock image of Betel Nuts. McKinney RSA.

Source: Head and neck cancers - NCI. National Cancer Institute . May 25, 2021. Accessed July 12, 2026.
<https://www.cancer.gov/types/head-and-neck/head-neck-fact-sheet>.



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Symptoms of H&N Cancers

- | | |
|---|--|
| • Sore throat without improvement or healing | • Nose bleeds or unusual nasal discharge |
| • Dysphagia | • Difficulty breathing |
| • Odynophagia | • Double vision |
| • Hoarseness/voice changes | • Numbness or weakness in H&N region |
| • Swelling of the throat that does not heal | • Jaw pain |
| • Red or white patches in the oral cavity | • Blood in saliva or phlegm |
| • Lump, bump or mass in H&N area with or without pain | • Loose teeth or ill-fitting dentures |
| • Foul mouth odor | • Unexplained weight loss |
| • Nasal obstruction or persistent nasal congestion | • Fatigue |
| | • Ear pain or infection |

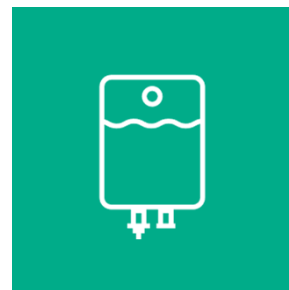
Source: Head and neck cancers - NCI. National Cancer Institute . May 25, 2021. Accessed July 12, 2026.
<https://www.cancer.gov/types/head-and-neck/head-neck-fact-sheet>.



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Treatment

- Surgical Resection
- Radiation therapy
- Chemotherapy
- Concurrent chemoradiation
- Targeted therapy
- Immunotherapy



Source: Head and neck cancers - NCI. National Cancer Institute . May 25, 2021. Accessed July 12, 2026.
<https://www.cancer.gov/types/head-and-neck/head-neck-fact-sheet>.

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Surgery

- Goal is to completely remove the cancer that you can see and feel
- Dysphagia can occur depending on degree and site of resection
- Side effects include swelling, pain, and/or structural deformities (loss of teeth, hemiglossectomy, soft palate fistulas, pharyngocutaneous fistula or tracheostomy)
- These complications can lead to malnutrition if not addressed

Source: Voss, A., & Williams, V. (Eds.). (2021). Oncology Nutrition for Clinical Practice, Second Edition.
 Academy of Nutrition and Dietetics.

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Diet Modifications Post-Op

- Diet Modifications
 - Depending on the surgery patients may leave the hospital with an NG tube or have a PEG placed
 - *Potential for total EN dependence*
 - Soft and moist, easy to chew and swallow foods
 - Use of oral nutrition supplements
 - Dysphagia diet alterations and/or thickened liquids
 - PN: If non-functioning GI tract or chyle fistula (if output >500 mL/day)

Source: Gillaspie, Erin A, and John E Heffner. "Chyllothorax: Management Due to Nontraumatic Etiologies." *Chyllothorax: Management Due to Traumatic Etiologies (Surgical and Non Surgical)*, UpToDate, 22 May 2026, www.uptodate.com/contents/management-of-chyllothorax.



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Radiation Therapy

- Effects are cumulative
- Generally patients receive 30-35 fractions
 - 5 days/week for 6-7 weeks
- Nutrition-impact symptoms tend to develop around week 3
- Nutrition-impact symptoms tend to peak at end of treatment and continue at potentially same severity for ~2 weeks post-radiation
- Outpatient oncology RDs recommended to see patients once weekly while undergoing radiation or chemoradiation treatment
- Prophylactic gastrostomy are more likely indicated in patients with oropharyngeal cancer

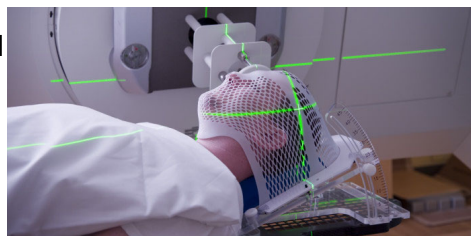


Figure 3. Istock. Researchers explored a combination of PARP inhibitors and radiation to kill cancer cells.

Source: Kiss N, Findlay M, Frowen J, Lewis WE, Mills J, Singh AK et al. Guidelines for nutrition in adults with head and neck cancer: The American Society for Parenteral and Enteral Nutrition - Kiss - 2026. *Journal of Parenteral Science and Technology*. March 3, 2026. Accessed July 12, 2026. <https://aspenjournals.onlinelibrary.wiley.com/doi/10.1002/jpen.70067>.
 Romesser PB, Romanyshyn JC, Schupak KD, Setton J, Riaz N, Wolden SL, Gelblum DY, Sherman EJ, Kraus D, Lee NY. Percutaneous endoscopic gastrostomy in oropharyngeal cancer patients treated with intensity-modulated radiotherapy with concurrent chemotherapy. *Cancer*. 2012 Dec 15;118(24):6072-8. doi: 10.1002/ncr.27633. Epub 2012 Jun 15. PMID: 22707358; PMCID: PMC4969004.



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Late Nutrition-Impact Symptoms from XRT

- Dryness, atrophy or ulceration of mucosa
- Fibrosis of salivary glands and/or xerostomia
- Osteoradionecrosis
- Trismus
- Ongoing dysgeusia/hypogeusia or smell alterations

Source: Voss, A., & Williams, V. (Eds.). (2021). *Oncology Nutrition for Clinical Practice*, Second Edition. Academy of Nutrition and Dietetics.



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Systemic Therapy

- Chemotherapy, immunotherapy, and targeted therapy
- Can be used in
 - Combination with radiation
 - Neoadjuvant treatment before surgery or radiation
 - After surgery to reduce risk of recurrence or treat positive margins
 - Cancers that are too metastatic for surgery
- Commonly used at VCU Massey:
 - Cisplatin + radiation
 - Carboplatin + radiation
 - 5FU with carboplatin or cisplatin
 - Pembrolizumab, cetuximab

Source: Voss, A., & Williams, V. (Eds.). (2021). *Oncology Nutrition for Clinical Practice*, Second Edition. Academy of Nutrition and Dietetics.



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Common Side Effects from Systemic Therapy

- Nausea and vomiting
- Constipation and Diarrhea
- Taste and smell changes
- Mucositis
- Anorexia/Appetite loss
- Unintentional weight loss

Source: Voss, A., & Williams, V. (Eds.). (2021). *Oncology Nutrition for Clinical Practice*, Second Edition. Academy of Nutrition and Dietetics.



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Modality	Nutrition-Impact Symptoms	
Radiation therapy	Dysgeusia, ageusia Xerostomia Mucositis Odynophagia, dysphagia Osteoradionecrosis	Thrush Thick oral secretions Nausea Anorexia Anosmia
Chemotherapy	Nausea Vomiting Diarrhea Constipation	Dysgeusia, ageusia Mucositis Hyperglycemia Hypoglycemia Anorexia
Concurrent chemoradiation	Same symptoms as those cited above + increased metabolic needs, particularly with high dose cisplatin use	
Immunotherapy	Diarrhea Nausea Mucositis	Anorexia Hyperglycemia
Surgery	Dysphagia Odynophagia Xerostomia Dysgeusia, ageusia Thick oral secretions	Trismus Anosmia Nasal regurgitation Jaw pain, painful chewing

Source: Voss, A., & Williams, V. (Eds.). (2021). *Oncology Nutrition for Clinical Practice*, Second Edition. Academy of Nutrition and Dietetics.



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Nutrition Recommendations



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Calorie and Protein Recommendations

Medical Condition	Estimated Energy Needs (kcal/kg)
Head/Neck on active treatment	30+
Cancer, repletion, weight gain	30-35
Cancer, hypermetabolic, stressed	35
Cancer, inactive, non-stressed	25-30
Medical Condition	Estimated Protein Needs (g/kg)
Adult with cancer	1.0-1.5
Adult with cancer cachexia	1.5-2.5
Head/Neck on active treatment	1.2-1.5

*What about
estimating needs in
obese population?*

Energy: Actual or Ideal Body Weight
Protein: ABW + Clinical Judgement

Source: Voss, A., & Williams, V. (Eds.). (2021). *Oncology Nutrition for Clinical Practice*, Second Edition. Academy of Nutrition and Dietetics.
Kiss N, Findlay M, Frowen J, Lewis WE, Mills J, Singh AK et al. Guidelines for nutrition in adults with head and neck cancer: The American Society for Parenteral and Enteral Nutrition - Kiss - 2026 - Journal of Parenteral and Enteral Nutrition - Wiley Online Library. ASPEN Journals. March 3, 2026. Accessed July 12, 2026.
<https://aspenjournals.onlinelibrary.wiley.com/doi/10.1002/jpen.70067>



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Diet Recommendations Pre and Post-Op

- ERAS protocol
 - Pre-Op education and nutrition assessment
 - Consume at least 1.2 g/kg protein
 - Pre-Op fasting should be minimized
 - Carbohydrate loading using clear beverages 2 hours before surgery
 - If oral diet is not feasible, initiate enteral nutrition through NG or PEG tube by 24 hours after the end of surgery
- No specific recommendations for calories or protein per ESPEN/ERAS
 - Use of immunonutrition is still up for debate

Source: Dort JC, Farwell G, Findlay M, Huber G, Kerr P, Shea-Budgell MA. Optimal perioperative care in major head and neck cancer surgery with free flap reconstruction: A consensus review and recommendations from the Enhanced Recovery After Surgery Society | Oncology | jama otolaryngology-Head & Neck Surgery | Jama Network. JAMA Otolaryngology-Head & Neck Surgery. October 13, 2016. Accessed July 12, 2026. <https://jamanetwork.com/journals/jamaotolaryngology/article-abstract/2565537>.
 Weimann A, Bezmarevic M, Braga M, Correia MITD, Funk-Debleds P, Gianotti L et al. Espen Guideline Espen guideline on Clinical Nutrition in surgery – update 2025. Elsevier. August 12, 2025. Accessed July 12, 2026. <https://www.espen.org/files/ESPEN-Guidelines/ESPEN-guideline-on-clinical-nutrition-in-surgery-Update-2025.pdf>.



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SH1

Calorie and Protein Recommendations Post-Op

Calories	Protein
25-30 kcal/kg	1.5 g/kg
*adjust for malnutrition status	

Other studies have suggested protein at 2.0 g/kg/day or higher should be provided post-op to improve nitrogen balance.

Or even increasing protein to 1.5-2.5 g/kg/day and supplementing with oral or enteral feedings post-op given the malnourished/sarcopenic state of some H&N cancer patients. Some authors have suggested increasing to 40-45 kcal/kg to replete nutrition after surgery.

Source: Ardilio S. Calculating nutrition needs for a patient with head and neck cancer. Clin J Oncol Nurs. 2011;15(5):457-459. doi: 10.1188/11.CJON.457-459.
 Weimann A, Braga M, Carli F et al ESPEN guideline: Clinical nutrition in surgery Clinical Nutrition, 2017; 36, 623-650



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Slide 18

SH1 Let's re-check this to make sure it is right based on evidence based care

Samantha Haswell, 2026-07-10T18:53:25.695

BM1 0 I tried finding specific recs on ESPEN, ERAS, we could explain that this is guidelines used at VCU? Im not sure what references are used for the comments below.

Bethany McClellan, 2026-07-12T20:09:32.905

SH1 1 I know I need to go back through tomorrow morning for the references. Of course I just put references at the end for the rad-Onc ppt so this whole source at bottom of the slide thing will be annoying if they make us stick to it.

Samantha Haswell, 2026-07-12T22:18:51.552

BM1

Calculating Fluid Needs

- ASPEN Core Curriculum
 - 30-40 mL/kg for fluid balance
 - Weight based formula is discouraged in pts with cardiac or renal disease due to potential for fluid overload
 - Sometimes 35 mL/kg if renal toxic chemo and the patient is showing signs of dehydration/kidney damage on 30 mL/kg
- Energy Based
 - 1 mL/kcal

Source: Chan, Lingtak-Neander, and Venessa J. Kumpf. *ASPEN Adult Nutrition Support Core Curriculum*. American Society for Parenteral and Enteral Nutrition, 2025.



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Other Nutrition Considerations

- Cisplatin is nephrotoxic as is carboplatin but to a lesser degree
 - Patients who have significant renal impairment may receive cetuximab in place of platinum chemotherapy
 - Cisplatin and carboplatin chemotherapy can result in hypomagnesemia and hypokalemia
- H&N patients VCU Massey generally receive infusions twice weekly while undergoing chemoradiation
 - Potassium, magnesium, and fluid repletions

Source: Voss, A., & Williams, V. (Eds.). (2021). *Oncology Nutrition for Clinical Practice*, Second Edition. Academy of Nutrition and Dietetics.



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Slide 19

BM1 Double check with new CORE curriculum, likely still the same.
Bethany McClellan, 2026-07-12T20:34:40.682

Special Purpose Nutrients

- Arginine has some evidence of benefit for decreased fistula development and length of stay in adults with head and neck cancer
- Glutamine has been shown to reduce the severity of oral mucositis and potential to reduce other treatment toxicities and hospitalization, and improve treatment completion
 - IV glutamine is controversial and not recommended at this time
- Omega-3 fatty acids has inconsistent evidence of benefit, but no evidence of significant harm
- Combined special purpose nutrient formulas (immunonutrition) use has inconsistent evidence for benefit but no evidence of significant harms

Source: Kiss N, Findlay M, Frowen J, Lewis WE, Mills J, Singh AK et al. Guidelines for nutrition in adults with head and neck cancer: The American Society for Parenteral and Enteral Nutrition - Kiss - 2026 - Journal of Parenteral and Enteral Nutrition - Wiley Online Library. ASPEN Journals. March 3, 2026. Accessed July 12, 2026. <https://aspenjournals.onlinelibrary.wiley.com/doi/10.1002/jpen.70067>



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Symptom Management



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Anorexia/Poor Appetite/Early Satiety

- Small, frequent meals/snacks with calorically dense foods and fluids
- Eat in pleasant surroundings
- Eat by the clock rather than hunger cues (Q2-3H)
- Eating as part of treatment
- Engage in light physical activity to stimulate appetite
- Evaluate for constipation or depression that may affect appetite
- Evaluate for meds that may affect appetite/gastric emptying
- Liquids between meals rather than with meals if early satiety

Source: Voss, A., & Williams, V. (Eds.). (2021). *Oncology Nutrition for Clinical Practice*, Second Edition. Academy of Nutrition and Dietetics.



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Anorexia/Poor Appetite/Early Satiety Pharmacological Interventions

- Periactin
 - *Antihistamine that stimulates appetite*
- Corticosteroids
 - *Dexamethasone*
 - *Can also decrease chemotherapy related nausea*
 - *Methylprednisolone*
- Progesterone Agents
 - *Megestrol acetate*
- Prokinetic agents
 - *Metoclopramide*
- Psychiatric
 - *Mirtazapine*
 - *Olanzapine*

Source: Voss, A., & Williams, V. (Eds.). (2021). *Oncology Nutrition for Clinical Practice*, Second Edition. Academy of Nutrition and Dietetics.



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Constipation

- Educate patient on adequate hydration, fiber intake, and PO intake on bowel movement regularity
- Aim for 64 oz daily and slow increase to 25-35 g/day fiber (if appropriate)
- Encourage hot beverages, hot cereal, or high fiber food to stimulate bowels
- Encourage light physical activity to improve BM regularity
- Encourage patient to contact MD if no BM for >2 days

Source: Voss, A., & Williams, V. (Eds.). (2021). *Oncology Nutrition for Clinical Practice*, Second Edition. Academy of Nutrition and Dietetics.



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Constipation Pharmacological Interventions

- Bulking agents
 - *Bran, flaxseed, Methylcellulose, Calcium polycarbophil*
- Stool surfactants
 - *Docusate sodium*
 - *Mineral oil*
- Osmotic laxatives
 - *Polyethylene glycol*
 - *Lactulose*
 - *Liquid magnesium hydroxide*
- Stimulant laxatives
 - *Bisacodyl*
 - *Senna/sennosides*

Source: Voss, A., & Williams, V. (Eds.). (2021). *Oncology Nutrition for Clinical Practice*, Second Edition. Academy of Nutrition and Dietetics.



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Dysphagia

SLP consult as needed especially if concerns for aspiration PNA

Good posture to help prevent aspiration

Avoid distractions while eating

Double swallows to ensure food clears

Soft and moist, easy to chew and swallow foods

Thickened liquids per SLP

Avoid use of straws that place food in back of mouth

Source: Voss, A., & Williams, V. (Eds.). (2021). Oncology Nutrition for Clinical Practice, Second Edition. Academy of Nutrition and Dietetics.



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Oral Candidiasis

- Can occur as a result of chemotherapy or oral radiation
- Encourage good oral hygiene
- Choose soft textured, low acid foods
- Avoid sugar and yeast-derived foods
- Pharmacological intervention
 - Nystatin mouth rinse
 - Fluconazole

Source: Voss, A., & Williams, V. (Eds.). (2021). Oncology Nutrition for Clinical Practice, Second Edition. Academy of Nutrition and Dietetics.



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Mucositis

Choose foods lower in acidity

Avoid chili and spicy foods

Soft and moist, easy to chew and swallow foods

Serve foods cool or at room temperature

Smoothies with low acid fruit and yogurt, milk, or silken tofu

Avoid alcohol and alcohol based oral care

Avoid carbonated beverages

Good oral care

Honey dissolved in 1 cup warm water

Source: Voss, A., & Williams, V. (Eds.). (2021). *Oncology Nutrition for Clinical Practice*, Second Edition. Academy of Nutrition and Dietetics.



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Mucositis Pharmacological Interventions

- Anesthetic gels with lidocaine
- Baking soda, salt, water mixture
- Viscous lidocaine swish and spit
- Coating agent (Aluminum Hydroxide and Magnesium Hydroxide Suspension)
- Glutamine rinse 5g 3x/day
 - *Not used at VCUHS but some studies have indicated improvement in symptoms if started early with head and neck XRT treatment*

Source: Voss, A., & Williams, V. (Eds.). (2021). *Oncology Nutrition for Clinical Practice*, Second Edition. Academy of Nutrition and Dietetics.



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Taste & Smell Changes

- In setting of concurrent mucositis and/or odynophagia
 - Patients generally cannot tolerate usual recommendations
 - *Cannot tolerate tart or acidic flavors/fruit/condiments, spicy foods, mints*
 - Can recommend bamboo or plastic silverware for metallic taste
- Bothersome smells
 - Avoid cooking areas during meal preparation
 - Eat cold or room temperature foods (smoothies, cold sandwiches, cheese and crackers, yogurt)
 - Use cup with straw and lid to limit smell exposure
 - Limit microwave use as it can spread food odors
- **Salt water and baking soda rinse**
 - $\frac{3}{4}$ tsp salt, 1 tsp baking soda in 4 cups water
 - Gargle 1 cup, 3-4x/day

Source: Voss, A., & Williams, V. (Eds.). (2021). Oncology Nutrition for Clinical Practice, Second Edition. Academy of Nutrition and Dietetics.



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Xerostomia/Thick Saliva

Small, frequent meals

Alternate bites of food with sips of liquid

Add broth, gravies, and sauces to meats and dunk dry foods in liquids

Aim for 8-10 cups of liquid daily

Swish and spit with club soda or carbonated water (as able)

Humidifier at home to moisten air

Good oral hygiene

Suck on hard candies, frozen grapes, melon balls

Avoid alcohol and caffeine – exacerbates dry mouth

Baking soda-salt water rinse

Source: Voss, A., & Williams, V. (Eds.). (2021). Oncology Nutrition for Clinical Practice, Second Edition. Academy of Nutrition and Dietetics.



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Enteral Nutrition in the Home Setting



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When Nutrition Support is Appropriate

- Case by case basis
- Nutrition support may be appropriate if mechanical barriers to PO intake are present and wherein quality of life suffers
 - Example: cause of death from malnutrition rather than head and neck cancer
- If a patient is on hospice, this should be a decision between the care team and patient/family depending on patient's desire
 - Usually new feeding tube placements will not occur but may continue EN via existing PEG if appropriate

Source: Chan, Lingtak-Neander, and Venessa J. Kumpf. *ASPEN Adult Nutrition Support Core Curriculum*. American Society for Parenteral and Enteral Nutrition, 2025.



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When Nutrition Support is Appropriate

- At our cancer center, we generally place PEG tubes before surgery or radiation/chemoradiation when dysphagia and/or odynophagia is already present and negatively affecting PO intake
 - Other cancer centers sometimes place prophylactic PEG tubes for all or most patients undergoing radiation
 - We will generally place PEG tubes during radiation when nutrition-impact symptoms result in severe malnutrition
 - *This is the preference of our radiation oncologist in the hopes of maintaining swallow integrity*



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ASPEN CORE Curriculum Guidelines

- Receiving active anticancer treatment who are malnourished and likely to be unable to ingest or absorb adequate nutrients for more than 7-14 days
- Dysphagia, esophageal obstruction, or gastric outlet obstruction
- Surgery is not a definitive indication for EN
- Perioperative nutrition support may be beneficial in patients who are moderately or severely malnourished if given 7-14 days preoperatively
- Nutrition support is not an appropriate **routine** addition to chemotherapy, radiation therapy, or cancer-related operations

Source: Chan, Lingtak-Neander, and Venessa J. Kumpf. *ASPEN Adult Nutrition Support Core Curriculum*. American Society for Parenteral and Enteral Nutrition, 2025.



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ASPEN Toolkit When and How to Implement Nutrition Support

BM1

- Nutrition counseling and oral nutrition supplements first
- Consider EN if oral intake <60% of estimated energy needs for 7+ days
- Prophylactic feeding tube if oral intake is expected to be <60-75% of goal and moderate/severe malnutrition is present
- PEG tube when nutrition support is anticipated >4 weeks
- With refractory nausea/vomiting, place an NJ versus J tube

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Source: Kiss N, Findlay M, Frowen J, Lewis WE, Mills J, Singh AK et al. Guidelines for nutrition in adults with head and neck cancer: The American Society for Parenteral and Enteral Nutrition - Kiss - 2026 - Journal of Parenteral and Enteral Nutrition - Wiley Online Library. ASPEN Journals. March 3, 2026. Accessed July 12, 2026. <https://aspenjournals.onlinelibrary.wiley.com/doi/10.1002/jpen.70067>



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EN and Oral Nutrition Supplements in the Outpatient Setting

Coverage

- Medicaid will usually cover oral nutrition supplements and enteral nutrition
 - *A formal order and certificate of medical necessity signed by the physician is needed*
- **Medicare** will usually cover enteral nutrition + supplies
 - *Will not cover oral nutrition supplements*
 - **Patient must EN reliant for a majority of their estimated nutrition needs**
- Private insurance: case by case basis

When in doubt, try submitting and contact the enteral supply company to see about coverage

Source: Parrish, C. R. (2013). Understanding Medicare Coverage for Home Enteral Nutrition: A Case-Based Approach. *Practical Gastroenterology*, XXXVII(No. 5), 10–24.



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Slide 37

BM1 let me know what you think of this slide, the toolkit was very pro blenderized formula, I left that out.. reference at bottom to look at toolkit

Bethany McClellan, 2026-07-12T23:09:02.156

Barriers to Home EN Compliance

Out of pocket cost

Access to running water

Lack of education of free water flush regimen

Homelessness

Literacy

Ability to self feed or caregiver support

Patient or caregiver must contact DME supplier to re-order every month

Pump malfunctions

Clogged feeding tubes

Other considerations

EN at Home

- No insurance coverage
 - Consider generic equivalents of enteral formulas sold at local grocery stores as tolerated
 - *For patients with very high calorie needs, it is sometimes cheaper to set them up to self-pay with the enteral supply company for 2 kcal/mL enteral formulas versus generic equivalents of formulas sold in the grocery store that may be 1.5 kcal/mL or less*

Homelessness/Lack of Permanent Address

- Involve the social work team to discuss options
- If unable to deliver supplies to a reliable address, identify if there is a clinic that the patient visits on a regular basis where they can have their supplies delivered for them to pick up

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Bolus Feeds in the Home Setting

- Recommend the total number of cartons per day rather than time based bolus feedings at home
 - Allows the patient to adjust feeds based on tolerance and to best fit lifestyle
 - Is based on individual tolerance and encourages patient autonomy
- Example of a recommended home regimen:
 - *5 cartons EN formula at 1 carton per feeding*

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Educating Patients on Flush Volumes

- Patients often discharge home without clear water flush recommendations or have difficulty understanding the recommendations provided
- Syringes used for bolus feeds and water flushes outpatient is 60 mL
 - Consider instructing patients on how many syringes before and after each feeding they need to stay hydrated
 - *For example: Administer 4 cartons 2.0 formula at 1 carton per feeding, flush with 150 mL (2.5 syringes) water before and after each feeding*
 - Alternatively instruct patients on overall water goal
- **Keep in mind that the enteral formula itself contains water, always consult the RD before providing water flush recommendations to avoid hyponatremia from over hydration**
- Remember to instruct patients on using room temperature water/formula via PEG



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Ability to self-feed or caregiver support

- Consider social support and patient ability to feed themselves
- Try to assess the patient's ability to administer a bolus feed prior to discharge
- If you suspect lack of hand mobility or other physical barriers, consider gravity bags if it is easier on the patient



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Pump Feedings in the Home Setting

- Avoid 24-hour feedings unless it is a necessity
 - If you cannot avoid feedings for <10-12 hours, consider requesting a feeding pump backpack from the DME company
- Avoid pump orders that require half cartons
- Focus on volume/number of cartons per day at set rate rather than timing in the home setting
 - Some patients dislike overnight feedings, reassure patients they can complete their feedings on/off throughout the day/night as long as they reach their EN goal
- Only recommend flushes based on waking hours



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Other Considerations for Home EN

- Better tolerance with syringe by gravity for bolus feeds and water flushes
 - Remove the plunger from the syringe then allow formula and/or water to flow into the tube
 - Prevents air from getting into the intestinal tract/stomach, sometimes improves tolerance
- Consider hx of acid reflux when suggesting concentrated formulas
 - 2 kcal/mL or higher enteral formulas tend to be high in fat and difficult for patients with acid reflux to tolerate long term
 - *Can consider more than 1 carton per feeding as tolerated for bolus patients who want to do less feedings*



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Liquid Medications & EN

- Liquid suspensions of medications often contain sugar alcohols that can be diarrheagenic
 - Keep this in mind before suggesting changes to enteral formula, especially if the patient was previously tolerating the formula

Medication Oral Suspension	Sugar Alcohols
Acetaminophen 160 mg/5 mL	Sorbitol
Acyclovir 200 mg/5 mL	Sorbitol
Amantadine hydrochloride 50 mg/5 mL	Sorbitol
Amoxicillin / clavulanate 200 mg/28.5 mg /5 mL	Mannitol
Diphenoxylate and Atropine 2.5 mg/0.025 mg /5 mL	Sorbitol, maltitol
Furosemide 10 mg/mL	Sorbitol
Gabapentin 250 mg/5 mL	Xylitol
Guaifenesin 100 mg/5 mL	Sorbitol
Lansoprazole 3 mg/mL	Mannitol
Levetiracetam 100 mg/mL	Maltitol
Metoclopramide 5 mg/5 mL	Sorbitol
Simethicone 20 mg/0.3 mL	Maltitol
Valproic acid 250 mg/5 mL	Sorbitol

Source: Parrish, Carol Rees. *Enteral Nutrition in the Adult Short Bowel Patient*. *Practical Gastroenterology*, Apr. 2021. University of Virginia School of Medicine. <https://med.virginia.edu/ginutrition/wp-content/uploads/sites/199/2021/04/EN-in-SBS-April-2021.pdf>. Accessed 13 July 2026.



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Refeeding Syndrome Precautions at Home

- If concern for refeeding, recommend admission for PEG placement
- When admission is not possible, we initiate feeds very slowly for those we deem at risk
- Start slowly
 - Day 1 only 60 mL per feeding
 - Day 2 only 120 mL per feeding
 - Day 3 only 180 mL per feeding
 - Day 4 goal 240 mL per feeding
- Monitor electrolytes more frequently (daily or every other day) than the typical twice weekly monitoring for chemoradiation H&N patients using comprehensive/basic metabolic panel, magnesium, and phosphorus labs
 - If significant drop in electrolytes beyond normal measures expected secondary to chemo, request admission to hospital

da Silva, Seres, D. S., Sabino, K., Adams, S. C., Berdahl, G. J., Citty, S. W., Cober, M. P., Evans, D. C., Greaves, J. R., Gura, K. M., Michalski, A., Plogsted, S., Sacks, G. S., Tucker, A. M., Worthington, P., Walker, R. N., & Ayers, P. (2020). ASPEN Consensus Recommendations for Refeeding Syndrome. *Nutrition in Clinical Practice*, 35(2), 178–195. <https://doi.org/10.1002/ncp.10474>



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Learning Assessment Question 1

- What homemade oral rinse recipe is used for mucositis?
- A. Green tea, honey, water
 - B. Baking soda, salt, water
 - C. Turmeric, clove, water
 - D. Baking soda, peppermint, water



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Learning Assessment Question 1

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Learning Assessment Question 2

- Which systemic treatment is known for causing nephrotoxicity in head and neck cancer patients?

- A. Cisplatin
- B. Pembrolizumab
- C. Cetuximab
- D. 5-FU (fluorouracil)



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Learning Assessment Question 2

- Which systemic treatment is known for causing nephrotoxicity in head and neck cancer patients?

- A. Cisplatin
- B. Pembrolizumab
- C. Cetuximab
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Learning Assessment Question 3

- What malignancy site often requires prophylactic gastrostomy placement?

- A. Nasopharynx
- B. Larynx
- C. Oropharynx
- D. Salivary gland

Learning Assessment Question 3

- What malignancy site often requires prophylactic gastrostomy placement?

- A. Nasopharynx
- B. Larynx
- C. **Oropharynx**
- D. Salivary gland

Questions?



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