Core Nutrition Concepts for Older Adults

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#ASCP50

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To enter the Q&A and polling questions for this activity, go to ascp.com/qa and click on the title of this activity, as seen below.
Speaker Information – Bio

- Amber M. Hutchison, PharmD, BCPS, BCGP
- Education/Training:
  - PharmD: Auburn University
  - PGY-1: Indian River Medical Center
  - East Alabama Medical Center Skilled Nursing Facility consultant
  - Associate Clinical Professor—Auburn University Harrison School of Pharmacy

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Speaker Information – Bio

- Sarah V. Cogle, PharmD, BCCCP
- Education/Training:
  - PharmD: Auburn University
  - PGY-1: East Alabama Medical Center
  - PGY-2 Critical Care: University of Tennessee Health Science Center/Regional One Health
  - Critical Care/Nutrition Support Clinical Pharmacist- East Alabama Medical Center
  - Assistant Clinical Professor—Auburn University Harrison School of Pharmacy

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Disclosures

• Amber M. Hutchison
  • Consultant for the Alabama Medicaid Pharmacy and Therapeutics Committee (2016-2018)

• Sarah V. Cogle
  • Fresenius Kabi- investigator and support for meeting attendance

Learning Objectives

• Appraise patient specific factors for nutrition in an older adult
• Interpret guidelines for nutrition initiation in an older adult
• Identify appropriate indications for enteral and parenteral nutrition in older adults
• Construct a plan for enteral or parenteral nutrition along with developing a monitoring strategy given a patient case
Nutrition in Older Adults

- Weight does not tell the whole story
- Nutritional needs change
- Patient-specific considerations are paramount
- Co-morbidities give a different lens to evaluate nutrition
- Interdisciplinary approach is helpful

Nutrition in PDPM

- Patient-Driven Payment Model (PDPM)—in effect October 1, 2019
  - Replaces the Resource Utilization Group, Version IV (RUG-IV)
- New case-mix classification system for skilled nursing facility patients into payment groups
  - Moves from therapy-driven payment to data-driven patient characteristics
  - Uses a non-therapy ancillary (NTA) score
- Higher NTA score indicates higher reimbursement
  - Based on ICD-10 codes
  - 50 conditions identified
  - HIV/AIDS—8 points (highest score)
  - Parenteral IV feeding—3 points
  - Feeding tube—1 point
  - Malnutrition code—1 point

CMS PDPM FAQ Document. Available from:
https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/SNFPPS/Downloads/PDPM_FAQ_Final.pdf
Aging Process and Nutrition

- Physical changes
  - Poor dentition
  - Dysphagia
- Sensory changes
  - Decreased sense of smell—food less appetizing
  - Decreased sense of taste—craving for saltier or sweeter foods
  - Changes in vision
    - Placemats or tablecloth in contrasting color from tableware
    - Ensure dining room is lit appropriately

- Social considerations
  - Living alone may decrease socialization of eating
  - Fixed income

- Medication use
  - Adverse effects
    - Nausea
    - Anorexia-inducing
    - Xerostomia
  - Food-related administration issues
Issues Related to Nutrition Status in the Older Adult

• Sarcopenia
• Frailty
• Dementia
• Screening
• Nutrient requirements
• Nutrition interventions

Sarcopenia

• Age-related decline in skeletal muscle mass, strength, and function
  • Usually begins in 5th decade of life
• Increases risk of immobility, falls, fractures, cognitive impairment, and institutionalization
• Sarcopenic obesity—presenting with sarcopenia and a high percentage of body fat
• Identification is difficult
  • No validated tools
  • CT scans hold some promise
• Treatment:
  • Exercise
  • 1g protein per kg body weight daily intake—adequate intake is key instead of additional supplementation

Frailty

- Loss of muscle mass and strength
- Diagnosed by 3 or more of the following being present:
  - Unintentional weight loss—10 pounds in the past year
  - Self-reported exhaustion
  - Weakness—measured by grip strength
  - Slow walking speed
  - Low physical activity


Frailty

- Nutrition plays some role in frailty
  - Early identification of nutrition-related problems may help manage frailty
- Nutrition interventions have not been supported in the literature to improve outcomes
- Individual nutrients may impact the treatment of frailty
  - Low energy intake
  - Protein
  - Vitamins C, D, and E and folate deficiencies

Dementia

• Caused by primary neurodegenerative diseases
• Consists of a decline in cognition
• Advanced stages leads to dysphagia
  • One of the largest patient populations to use enteral nutrition
  • Use is controversial- benefits unclear
• Nutrient deficiencies have been associated with dementia—B12, B6, folate, and omega fatty acids
  • Lacking evidence

Guidelines for Nutrition Support

• American Society for Parenteral and Enteral Nutrition
  • www.nutritioncare.org
• European Society for Clinical Nutrition and Metabolism
  • www.espen.org
• Helpful guidelines to evaluate, order, and manage nutrition
• No specific guidelines geared toward older adults
  • Recommendations and best-practices are published within overall guidelines
  • Patient-based therapy will become even more important with increasing age of population
Nutrition Screening

• Defined by ASPEN as “a process to identify an individual who is malnourished or who is at risk for malnutrition to determine if a detailed nutrition assessment is indicated”

• May be completed by any member of the interdisciplinary health care team

• Timing:
  • Acute care—within 24 hours per the Joint Commission
  • LTC, rehabilitation, and extended care—within 14 days
    • Usually completed within 3-5 days
  • Ambulatory, community-dwelling—no standard

Nutrition Screening Tools

Grade I Evidence
• Nutritional Risk Screening 2002 (NRS-2002)

Grade II Evidence
• Simple Two-Part Tool
• Malnutrition Screening Tool
• Mini Nutritional Assessment—Short Form (MNA-SF)
• Malnutrition Universal Screening Tool (MUST)
CMS Mandated Nutrition Screening—RAI

- Resident Assessment Instrument
  - Mandated by CMS for LTCs
  - Minimum Data Set (MDS) plus the Care Area Assessment (CAA)
  - Assesses various parts of the patient’s care including food intake and other activities of daily living

Considerations for Nutrition Interventions

- Assess diet and intake
- Individualize diet
  - Food choices
    - Consider patient’s food preferences
    - Adjust food consistency for ease of eating
  - Meal time interventions
    - Socialization
    - Eating assistance
    - Adaptive feeding aids

Considerations for Nutrition Interventions

• If intake does not improve, consider:
  • Medication-related problems
    • Xerostomia
    • Nausea
    • Appetite suppression
    • Other issues causing poor intake
  • Nutrition support
    • Oral supplements
    • Enteral or parenteral nutrition

• Always consider patient goals
  • End of life considerations of eating for comfort versus active treatment

OTC Nutrition Products

• Protein supplementation
  • Liquid protein products—LiquaCel®
    • Available in multiple flavors
    • Dilute with water—patients can use this liquid to take their medications
    • Each 1 ounce serving contains 16g protein
    • Approximately $1 per serving
  • Frozen dessert—Magic Cup®
    • Frozen like ice cream, pudding consistency when melting
    • 290 calories and 9g protein per cup
    • Approximately $3 per serving
OTC Nutrition Products

- Protein supplementation
  - Meal replacements—Boost®, Ensure®, etc.
    - Creamy milk base, clear base, diabetic options
    - Multiple flavors
    - Price widely varies based on brand, etc.

<table>
<thead>
<tr>
<th>Product</th>
<th>Kcal per serving</th>
<th>Protein per serving</th>
<th>Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boost® Original</td>
<td>240</td>
<td>10g</td>
<td>Milky</td>
</tr>
<tr>
<td>Boost® High Protein</td>
<td>240</td>
<td>20g</td>
<td>Milky</td>
</tr>
<tr>
<td>Ensure® Original</td>
<td>220</td>
<td>9g</td>
<td>Milky</td>
</tr>
<tr>
<td>Ensure® Clear</td>
<td>180</td>
<td>8g</td>
<td>Clear</td>
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</tbody>
</table>

Nutrient Requirements for Healthy Older Adults

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Daily Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>• 30 mL/kg/day (≥1500mL)</td>
</tr>
<tr>
<td></td>
<td>• 1 mL/kcal/day</td>
</tr>
<tr>
<td></td>
<td>• 100 mL for the first 10 kg of actual weight + 50 mL for the next 10 kg of actual</td>
</tr>
<tr>
<td></td>
<td>weight + 25 mL per kg actual weight thereafter</td>
</tr>
<tr>
<td>Caloric</td>
<td>25-30 kcal/kg for weight maintenance</td>
</tr>
<tr>
<td></td>
<td>Mifflin-St. Jeor predictive equations</td>
</tr>
<tr>
<td>Protein</td>
<td>1.0-1.2 g/kg/day</td>
</tr>
<tr>
<td>Fiber</td>
<td>25-35 g</td>
</tr>
</tbody>
</table>
Nutrient Requirements in Healthy Older Adults

**Fluid:**
- Various formulas exist:
  - 30 mL/kg/day
  - 1 mL/kcal
  - 100 mL for the first 10 kg of actual weight + 50 mL for the next 10 kg of actual weight + 25 mL per kg actual weight thereafter
- Older patients very susceptible to dehydration—most will require at least 1500 mL/day
  - Lower amounts may be appropriate in patients more susceptible to volume overload (CHF, ESRD)

Nutrient Requirements in Healthy Older Adults

**Energy**
- Requirements generally lower than younger patients
- Must consider patient specific factors
  - Activity level, muscle mass, clinical status, comorbidities
- 25 – 30 kcal/kg/day for most patients
  - Lower or higher amounts may be appropriate in certain populations
- Predictive equations may also be used
  - Mifflin- St. Jeor equation with stress factors
Nutrient Requirements in Healthy Older Adults

• Protein
  • Increased protein required to overcome anabolic resistance seen with increasing age
  • 1 – 1.2 g/kg/day
    • Higher amounts may be considered if multiple comorbidities or acute illness (max 2.5 g/kg/day)

Medication Considerations

• Medications can contribute to poor nutrient intake
• Review chart for medications that
  • Increase or decrease appetite
  • Cause weight gain or loss
  • Alter taste or smell
  • Cause nausea, vomiting, or diarrhea
  • Affect saliva secretion
  • Cause sedation
• Adjust medications as able to decrease adverse effects

Medication Considerations

• Appetite Stimulants- limited evidence, not first line therapy
  • Megestrol acetate
    • Frequently used
    • Little evidence to support use- minimal weight gain
    • Can increase risk of thrombosis and death
  • Mirtazapine- antidepressant
    • Some evidence to support increased appetite- role is unclear
    • Can exacerbate or cause SIADH or hyponatremia


Oral Supplements

• Appropriate initial option for patients unable to meet nutritional needs with diet alone
• Can also be considered in those at risk for malnutrition
• Phillipson, et al (2013)- evaluation of inpatient database
  • Oral supplementation associated with decreased hospital length of stay, costs, and 30-day readmissions
• Malafarina, et al (2013)- systematic review of 17 trials
  • Nutritional supplementation improved muscle mass

Enteral Nutrition (EN)

- Decision to initiate should be made with interdisciplinary team, patient, patient’s family and/or legal representative
- Can be considered for use in older adults who are unable to meet nutritional requirements via oral intake alone
- Percutaneous endoscopic gastrostomy (PEG) access preferred over nasogastric (NG) access
  - Percutaneous endoscopic jejunostomy (PEJ) tubes can be considered in select patients
    - Increased risk of aspiration, severe gastroparesis, upper GI obstruction

EN: Short Term Indications

- Post-surgery
- Acute critical illness and inability to meet nutritional needs through oral intake
EN: Long Term Indications

• Dysphagia due to
  • Cerebrovascular accident (CVA)
  • Parkinson’s disease
  • Alcoholism
  • Gastrointestinal tract injury/failure
• Head and neck cancers
• Neuromuscular dystrophy

Enteral Nutrition

• Can improve nutritional status and quality of life
• Lack of benefit observed in patients with
  • Cachexia
  • Anorexia
  • Aspiration
  • Cancer with poor prognosis
• Use in dementia is controversial
  • Not shown to decrease mortality or assist with healing pressure ulcers
  • Increases incidence of aspiration pneumonia
  • Reasonable to consider if a specific and limited goal is present
EN: Administration Methods

• Continuous
  • Preferred for EN initiation, acutely ill or unstable patients
  • More consistent delivery but limits patient freedom

• Intermittent
  • Mimics meal and snack patterns
  • Increases patient mobility

• Bolus
  • Preferred in assisted living/residential communities
  • Cheaper - no pump needed
  • Increases patient mobility

EN Complications

• Aspiration
• Feeding intolerances
  • Nausea, vomiting, abdominal distention
  • Constipation
  • Diarrhea
• Electrolyte abnormalities
  • Refeeding syndrome
• Hypoglycemia
  • Often due to interruptions in continuous EN
• Hyperglycemia
Medication Administration via Enteral Access Devices

- Ensure medications can be crushed before administering via enteral access device
  - Extended and/or time released products cannot be crushed
  - Consult ISMP Do Not Crush List, medication package inserts
- Do not add medications directly to enteral feedings
- Avoid mixing multiple medications together intended for administration through feeding tubes
- Administer each medication separately
- Flush tube with 15-30 mL water before and after medication administration
- Only hold EN when separation is indicated
  - Review MAR for drug-nutrient interactions
- Use ONLY oral/enteral syringes

Parenteral Nutrition (PN)

- Indicated only in patients unable to meet nutritional needs via oral or enteral routes
- Not recommended for use for end-stage or terminal conditions
  - Advanced dementia
  - Persistent vegetative state
- Peripheral administration not preferred
  - Difficult to meet nutritional targets due to limitations of formulations
  - Increased risk of phlebitis in older patients
- More costly than oral supplements or EN
- Must weigh risks vs. benefits

PN Complications

- Line infections
- Electrolyte abnormalities
  - Refeeding syndrome
- Hyperglycemia
- Hypertriglyceridemia
- Azotemia
- PN-associated liver disease
- Metabolic bone disease
- *Older patients may be more susceptible to metabolic complications

Nutrition Support Monitoring

- Specific monitoring plan determined by route of nutrition support therapy
- Weight
- Laboratory values
  - Electrolytes, BUN/Scr, blood glucose, LFTs
  - S/s of edema, dehydration
- Abdominal distention
- Constipation, diarrhea
- Patient report of GI symptoms
- Frequent re-evaluation of nutrition plan may be warranted
Conclusion

- Older adults are susceptible to malnutrition through a variety of factors
- Dietary options should be individualized whenever possible to encourage oral intake
- Nutrition support therapy can be considered in appropriate patients
- Oral supplements have been shown to be beneficial in variety of patients
- Risks and benefits of more invasive nutrition therapies, such as EN and PN, should be weighed when determining a nutrition regimen

Poll: The minimum required fluid volume for a healthy older adult is

To access the polling questions, go to this link: ascp.com/qa and select the “Core Nutrition Concepts for Older Adults” activity, as seen below.
Self-Assessment Question 1

The minimum required fluid volume for a healthy older adult is

A. 1000 mL  
B. 1500 mL  
C. 2000 mL  
D. 2500 mL

Poll: EN has been shown to be beneficial in which of the following conditions?

To access the polling questions, go to this link: ascp.com/qa and select the “Core Nutrition Concepts for Older Adults” activity, as seen below.
Self-Assessment Question 2

EN has been shown to be beneficial in which of the following conditions?

A. Gastrointestinal bleeding  
B. Anorexia  
C. Aspiration  
D. **Dysphagia after CVA**

Poll: Which of the following is the most appropriate initial option for a patient not meeting their recommended nutritional intake in a long-term care facility?

To access the polling questions, go to this link: [ascp.com/qa](http://ascp.com/qa) and select the “Core Nutrition Concepts for Older Adults” activity, as seen below.
Self-Assessment Question 3

Which of the following is the most appropriate initial option for a patient not meeting their recommended nutritional intake in a long-term care facility?

A. Initiate enteral nutrition  
B. Initiate parenteral nutrition  
C. **Individualize dining options**  
D. Initiate oral supplements

Patient Case

- Betty Smith—82 yo F
- **PMH:**  
  - Hypertension  
  - Hypothyroidism  
  - Osteoarthritis (R knee replaced 2011)  
  - Hiatal hernia  
  - Recently diagnosed dementia
- **Weight:** 145 pounds

- **Current Medications:**  
  - Captopril 12.5 mg PO TID  
  - Levothyroxine 75 mcg PO daily  
  - Donepezil 5mg PO daily  
  - Omeprazole 20mg PO daily  
  - Acetaminophen 500 mg PO QID prn osteoarthritis pain
Patient Case

- What would be Betty's general daily fluid requirement?
- Approximately, how many kcal does Betty need daily?
- In terms of protein intake, how many grams of protein should Betty consume daily?

Patient Case

- Betty presents to her PCP appointment. Betty lives at home alone after being widowed last year. Her family is as involved with her care as possible, however her closest child lives 90 minutes away. Her daughter is concerned about her weight and is at the appointment today.
- Her weight last month was 145 pounds and is 132 pounds today.
- What are some of the risk factors for Betty's weight loss?
- What are some recommendations that could be made for Betty?
Patient Case

• One year later, Betty has made the decision (with the support of her family), to move to an assisted living facility. Betty enjoys the amenities of the facility, however, her weight has continued to decrease and is down to 125 pounds.
  • What would be the next consideration for Betty?
  • After evaluating her intake, what are some options for Betty?

• Three years later, Betty is admitted to the hospital due to potential stroke.
• Betty has new onset atrial fibrillation and has had a severe stroke. After 5 days of inpatient treatment, Betty is preparing for discharge to a SNF for rehabilitation. She has had a PEG tube placed for feeding purposes.
  • What considerations should be taken into account for Betty's PEG tube?
  • What medication considerations should be taken into account for Betty's PEG tube?
References


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Social Q&A
To access Q&A, go to this link: ascp.cnf.io and select the “Core Nutrition Concepts for Older Adults” activity, as seen below.

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11:45am – 12:45pm

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