Nutrition in the Elderly

Christa Byrd MA, RD
Clinical Dietitian
Beaumont Health System
Christa.Byrd@beaumont.edu
• Foodservice management
• Staff
  • Challenges
  • Training
• Clinical

Intro
Objectives

- Determining energy/protein needs in elderly
- Risk Factors
- Nutrition Intervention
- Nutrition Considerations
  - Vitamins, Minerals, Supplements, Enteral Feeding
Americans > 65 years old are:

- >12% of the population.
- account for > 40% of acute hospital bed days
- buy > 30% of all prescription drugs
- spend 30% of the > 600 billion dollar US health budget.
- will account for > 70 million Americans in 2030.

And in 2030, the ‘over 85’s’ are expected to experience the highest percentage increase of all.

<table>
<thead>
<tr>
<th>Condition/Status</th>
<th>Kcal/kg IBW or Actual Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance</td>
<td>25-30</td>
</tr>
<tr>
<td>Obesity</td>
<td></td>
</tr>
<tr>
<td>Pressure Ulcers</td>
<td></td>
</tr>
<tr>
<td>Weight Gain</td>
<td></td>
</tr>
<tr>
<td>Weight Loss</td>
<td></td>
</tr>
</tbody>
</table>

- Indirect Calorimetry

**Calorie Needs**
<table>
<thead>
<tr>
<th>Condition/Status</th>
<th>Protein grams/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young healthy adults</td>
<td>0.8 - 1.2 g/kg</td>
</tr>
<tr>
<td>Elderly</td>
<td></td>
</tr>
<tr>
<td>Kidney Disease</td>
<td></td>
</tr>
<tr>
<td>Hemodialysis</td>
<td></td>
</tr>
<tr>
<td>Liver failure</td>
<td></td>
</tr>
<tr>
<td>Pancreatitis</td>
<td></td>
</tr>
<tr>
<td>Decubitus Ulcers</td>
<td></td>
</tr>
</tbody>
</table>

Protein Needs
Assessed within 24-hour of admission

- Physician/Mid-Level Provider consults
- Infected wounds
- Closed head injury
- Multiple trauma
- Transplant
- Nephrology new onset disease
- Eating disorders
- Morbid obesity, s/p gastric bypass, lap band or gastric sleeve
Assessed within 72-hours of admission

- Nursing referrals
- Malnutrition Universal Screening Tool
  - BMI, unintended weight loss, loss of appetite > 3 months
- Admission diagnosis Acute Pancreatitis
Other criteria

• 5 days NPO/Clear liquid diet

Refeeding

• High risk patients are those who have a loss of $\geq 20\%$ total body weight
• Parenteral $>\text{Enteral} >\text{Oral}$
• Medical Nutrition Therapy
• Nutrition Screening

• Instruments for Nutrition Screening
• Strongly recommended for older adults with unintended weight loss.

• Individualized nutrition care by the RD results in improved outcomes related to
  • Increased energy
  • Protein and nutrient intakes
  • Improved nutritional status
  • Improved quality of life or weight gain
• Strong association between unintended weight loss and increased morbidity and mortality.

• Standardized screening tools are imperative

• Addressing and resolving underweight/undernutrition can decrease readmission
• Food, Fluid and Nutrient Intake should be assessed for older adults with unintended weight loss.
• Common conditions leading to decreased intake
  • Cognitive impairment
  • Older adults who are acutely/chronically ill/underweight
  • Dysphagia
• Assessing Food, Fluid and Nutrient intake
  • Quantitative methods
    • Nursing Intake/Output reports
    • % food eaten
    • Calorie counts
    • Individual plate waste
  • Qualitative methods
    • Interview
  • Multiple days of assessment
Nutritional Status

- Anthropometric measurements
  - Height, weight, weight change
- Biochemical data, medical tests and procedures
  - Guidance not Gospel
- Client history
  - Cognitive decline, depression, neurological disease, hydration status, presence of infection and pressure ulcers, recent hospitalization, admission to healthcare communities and female gender.
Mild Protein Calorie Malnutrition (PCM)

- 17.1 – 18.4 BMI
- 80 – 90% IBW
- 85 – 95% UBW
- Chronic Illness/Social-Environmental Circumstances
- Mild Depletion body Fat
- Mild Depletion Muscle Mass
- Mild Fluid accumulation
Acute Illness/Injury
- 1-2% weight loss in 1 week
- 5% weight loss in 1 month
- 7.5% weight loss in 3 months

Chronic Illness/Social-Environmental Circumstances
- 5% weight loss in 1 month
- 7.5% weight loss in 3 months
- 10% weight loss in 6 months
- 20% weight loss in 12 months

< 75% Energy Intake
- > 7 days (acute illness)
- >/= 1 month (chronic illness)
- >/= 3 months (social-environmental circumstances)
• **Acute Illness/Injury**
  • >2% weight loss in 1 week
  • >5% weight loss in 1 month
  • >7.5% weight loss in 3 months

• **Chronic Illness/Social-Environmental Circumstances**
  • >5% weight loss in 1 month
  • >7.5% weight loss in 3 months
  • >10% weight loss in 6 months
  • >20% weight loss in 12 months

**Severe PCM**
• Ensure that older adults are weighed upon initial visit, admission or readmission to obtain a baseline weight and then weekly thereafter, using standard procedures.
• Morbid Obesity – BMI for adults > 40.0
• Enteral Infusion – Tube Feeding
• Parenteral infusion – TPN/PPN
• Undefined Obesity – 125-199% IBW
• Underweight: < 19 BMI
  (for adults over age 20 years old)
According to current research, older adults with modified texture diets report an increased need for assistance with eating, dissatisfaction with foods and decreased enjoyment of eating, resulting in reduced food intake and weight loss.
Eating Assistance

- Poor nutrition status
- Decreased ability to eat independently
- Underweight/weight loss
- Cognitive impairment
- Decreased ADLs
- Frailty
Weight gain is associated with improvements in:

- Physical environment
- Atmosphere
- Meals
- Organization of nursing staff assistance
- Dining with others
• For older adults the RD should recommend liberalization of diets with exception of texture modification.
• Increased food beverage intake is associated with liberalized diets.
• Research has not demonstrated benefits of restricting sodium, cholesterol, fat and carbohydrate in older adults.
• Evaluation and treatment of depression for patients who are undernourished or at risk of under-nutrition when medical nutrition therapy interventions have not resulted in improved nutrient intake or stabilization of weight.
- Erythromycin
- Remeron
- Reglan
- Megace
- Marinol
Factors affecting appetite

- Status/condition (toxins running through body – renal)
- N/V
- Pain
- Depression
- Taste bud change
Considerations in Nutrition

- Calories
- Protein
- Fat
- Fiber
- Vitamins
- Minerals
• Importance – Decreased need in elderly, Weight, energy, strength
• Sources – Supplements, whole milk, nutrient dense meals
• Challenges – Lactose intolerance, restricted diets, fatigue with eating, diabetes

Calories
• **Importance** – Building blocks of all cells and tissue (bone, muscles, skin), skin integrity, wound healing

• **Sources** – milk, yogurt, cheese, eggs, meat, legumes, soy

• **Challenges** – prep, cost, poor dentition, portions
• **Importance** – stored energy source, neurological development, vitamin absorption, hormone production, satiety

• **Sources** – oils, meats, nuts/nut butters, butter, dressings

• **Challenges** – some elderly have avoided fat for so long due to health conditions, they are afraid of incorporating it when they need it.
• **Importance** – bowel health, nutrient absorption,

• **Sources** – Benefiber, prune juice, in supplements, fresh and dried fruits, vegetables, leafy greens

• **Challenges** – increasing too quickly can cause gas, bloating and cramps, hydration, diverticulitis or other GI issues
• Research suggests that in undernourished patients with pressure ulcers and wounds, vitamin and mineral deficiencies are common.

• Recommendations are to supplement with Vitamin C, Vitamin A, Zinc Sulfate and a daily multivitamin when deficiency is suspected.
• Commonly deficient in elderly:
  • Vitamin C - neurocognitive
  • Zinc – skin integrity
  • Vitamin D - cofactor
  • Vitamin E - antioxidant
  • Vitamin A - antioxidant
  • Folic acid – neuro/immune
  • Vitamin B₆ – neuro/immune
  • Vitamin B₁₂ - absorption
  • Thiamine - neuromuscular
  • Riboflavin – skin breakdown
  • Calcium – tissue repair
  • Selenium – inflammation

• Sources – variety of fresh or frozen foods
• Challenges – dentition, prep, perishability,

Vitamins and Minerals
Vitamin A
B Vitamins
Vitamin C
Vitamin E
Thiamine (B1)
Zinc
Interactive DRI for Healthcare Professionals

Use this tool to calculate daily nutrient recommendations for dietary planning based on the Dietary Reference Intakes (DRIs). These represent the most current scientific knowledge on nutrient needs, developed by the National Academy of Science’s Institute of Medicine. Individual requirements may be higher or lower than the DRIs.

Sex:  ○ Male  ○ Female  Select

Age:  [ ] yrs.  [ ] or for infants, months.

Meas. Units:  [ ] US (feet/inches/pounds)

Height:  [ ] feet  [ ] inches

Weight:  [ ] lbs.

Activity:  Select  What’s This?

For detailed nutrient descriptions and terminology, see the Interactive DRI Glossary.

Calculate

- Body Mass Index
- Daily Calorie Needs

Macronutrients

Check/Uncheck All Macronutrients

- Carbohydrate
- Saturated Fatty Acids
- Linoleic Acid
- Total Fiber
- Trans Fatty Acids
- Dietary Cholesterol
- Protein
- o-Linolenic Acid
- Total Water

• Home care
• Extended care
• Subacute Rehab
• Supplementing as necessary
  • Protein
  • Food/Beverage supplements
  • Vitamin and Mineral supplements
Indications for Supplements

- Fraility
- Infection
- Impaired wound healing
- Pressure ulcers
- Hip fracture
- Orthopedic surgery
- Depression
- Early to moderate depression
• Studies support medical food supplementation as a method to provide energy and nutrient intake, promote weight gain and maintain or improve nutritional status or prevent under-nutrition.
Indications for Enteral Nutrition

• Consideration for older adults who are undernourished or at risk of under-nutrition
• Clearly indicated in patients with severe dysphagia

Supported as:

• A method to provide energy and nutrient intake
• Promote weight gain
• Maintain or improve nutritional status
• Prevent under-nutrition
Contraindicated for:

- Terminally ill older adults with advanced disease states (terminal dementia)
- Clinical and Ethical criteria
• Designed to meet complete nutrient needs for a variety of conditions.
• Composed of carbohydrate, protein, fat, vitamins, minerals, electrolytes.
• Do not meet fluid needs for hydration.
- **Carbohydrates**
  - oligosaccharides or polysaccharides, such as corn syrup solids.
- **Protein**
  - milk or soy, such as sodium caseinates or soy protein isolate.
- **Fat**
  - variety of oils such as corn oil, canola oil, and soybean oil.
- **Fiber**
  - Tube feeding product is not adequate to meet fluid needs for hydration.
Enteral feeding methods
• Percutaneous endoscopic gastrostomy (PEG) tube preferred to nasogastric tubes
• Studies report PEG tube use is associated with fewer treatment failures and improved nutritional status.
• Should be initiated as soon as possible to improve nutrient intake in older adults at risk.
• Enteral nutrition can be initiated 3 hours after a PEG tube is placed and placement is confirmed.
• Discussing the possibility of a tube feeding early can improve initiation time.

Enteral Nutrition
- N/V/C/D
- Labs-electrolytes, blood glucose
- Abdominal exam
- Gastric residuals

Enteral nutrition monitoring
The HealthCARE Picture