The Elderly: Nutritional Needs, Challenges, Screening, and Solutions

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Medical Affairs
Nestlé HealthCare Nutrition, Inc.

Program Objectives

• Describe how the nutritional needs of the elderly are different from other adult populations
• Identify several nutritional challenges facing the elderly and the related healthcare risks
• Describe the importance of nutritional screening and intervention with individuals at risk
• List at least two nutrition intervention solutions for the elderly
80% Growth in 65+ US Population 2010-2030

Number of Millions of Persons 65+ (1900 – 2030)

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>3.1</td>
</tr>
<tr>
<td>1920</td>
<td>4.9</td>
</tr>
<tr>
<td>1940</td>
<td>9.0</td>
</tr>
<tr>
<td>1960</td>
<td>16.6</td>
</tr>
<tr>
<td>1980</td>
<td>25.5</td>
</tr>
<tr>
<td>2000</td>
<td>31.2</td>
</tr>
<tr>
<td>2010</td>
<td>35.0</td>
</tr>
<tr>
<td>2020</td>
<td>40.2</td>
</tr>
<tr>
<td>2030</td>
<td>54.8</td>
</tr>
<tr>
<td></td>
<td>72.1</td>
</tr>
</tbody>
</table>


Nutrition: A Key Component of Successful Aging and Quality of Life

Quality of Life

- Family, Caregivers, Community
- Social Interactions, Spirituality, Religion
- Independence, Living Arrangements
- Physical, Mental, Emotional Functioning
- Health Status, Disease Management
- Nutritional Well-Being

### Nutritional Needs of Healthy Adults: Estimated Energy Requirements Decline With Age

<table>
<thead>
<tr>
<th>Gender</th>
<th>Calories/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>2,080</td>
</tr>
<tr>
<td>30 yrs</td>
<td>2,080</td>
</tr>
<tr>
<td>40 yrs</td>
<td>1,980</td>
</tr>
<tr>
<td>50 yrs</td>
<td>1,880</td>
</tr>
<tr>
<td>60 yrs</td>
<td>1,780</td>
</tr>
<tr>
<td>70 yrs</td>
<td>1,680</td>
</tr>
<tr>
<td>80 yrs</td>
<td>1,580</td>
</tr>
<tr>
<td>Females</td>
<td>1,762</td>
</tr>
<tr>
<td>30 yrs</td>
<td>1,762</td>
</tr>
<tr>
<td>40 yrs</td>
<td>1,662</td>
</tr>
<tr>
<td>50 yrs</td>
<td>1,562</td>
</tr>
<tr>
<td>60 yrs</td>
<td>1,462</td>
</tr>
<tr>
<td>70 yrs</td>
<td>1,362</td>
</tr>
<tr>
<td>80 yrs</td>
<td>1,262</td>
</tr>
</tbody>
</table>

*For each year above 30, subtract 7 calories/day for women and 10 calories/day for men. Estimated calorie requirements based on height and weight (BMI), and physical activity level (sedentary, low active, active, very active).


### Nutritional Needs of Healthy Adults: Macronutrient Distribution to Meet Energy Needs

A balance of protein, carbohydrate and fat is needed, even as calorie (energy) requirements decline with age

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>% of Total Calories</th>
<th>Average % Total Calories (70+ female)*</th>
<th>70 yrs 1482 Calories/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein</td>
<td>10-35%</td>
<td>15%</td>
<td>224 Cals (56g)</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>45-65%</td>
<td>52%</td>
<td>772 Cals (193g)</td>
</tr>
<tr>
<td>Fat</td>
<td>20-35%</td>
<td>33%</td>
<td>486 Cals (54g)</td>
</tr>
</tbody>
</table>


Current Protein Recommendation May Not Be Adequate for Elderly

- **Current RDA for Protein**:
  - Established for healthy men and women ≥19 yrs
  - 0.8g protein/kg/day
  - 46g/day (female)
  - 56g/day (male)

- **Increased Protein Suggested for Elderly**:
  - To help maintain metabolic, physical and functional status
  - 1.0 – 1.5g protein/kg/day
  - 58g – 86g/day (female)
  - 70g – 105g/day (male)

- **Mean Protein Consumption Age 70+**:
  - 57g/day (female)
  - 73g/day (male)

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### Nutritional Needs of Healthy Adults: A Look at Total Water and Fiber Requirements

<table>
<thead>
<tr>
<th>Adequate Intake DRI (Dietary Reference Intakes)</th>
<th>19-50 years</th>
<th>51-70 years</th>
<th>71+ years</th>
<th>70+ years mean consumption*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Water</strong> (liters/day)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>male</td>
<td>3.7L</td>
<td>3.7L</td>
<td>3.7L</td>
<td>NA</td>
</tr>
<tr>
<td>female</td>
<td>2.7L</td>
<td>2.7L</td>
<td>2.7L</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Total Fiber</strong> (grams/day)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>male</td>
<td>38g</td>
<td>↓ 30g</td>
<td>↓ 30g</td>
<td>17.0g</td>
</tr>
<tr>
<td>female</td>
<td>25g</td>
<td>↓ 21g</td>
<td>↓ 21g</td>
<td>14.3g</td>
</tr>
</tbody>
</table>

*Total water includes all water contained in food, beverages, and drinking water

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### Nutritional Needs of Healthy Adults: Some Micronutrient Requirements Change with Age

<table>
<thead>
<tr>
<th>Minerals (mg/day)</th>
<th>19-50 years</th>
<th>51-70 years</th>
<th>71+ years</th>
<th>70+ years mean consumption*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron female</td>
<td>18 mg</td>
<td>8 mg</td>
<td>↓ 8 mg</td>
<td>12.6 mg</td>
</tr>
<tr>
<td></td>
<td>8 mg</td>
<td></td>
<td>8 mg</td>
<td>15.6 mg</td>
</tr>
<tr>
<td>Sodium female</td>
<td>1500 mg</td>
<td>↓ 1300 mg</td>
<td>↓ 1200 mg</td>
<td>2364 mg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3012 mg</td>
</tr>
<tr>
<td>Calcium female</td>
<td>1000 mg</td>
<td>↑ 1200 mg</td>
<td>↑ 1200 mg</td>
<td>743 mg</td>
</tr>
<tr>
<td></td>
<td>1000 mg</td>
<td></td>
<td></td>
<td>837 mg</td>
</tr>
<tr>
<td>Vitamins (IU/day)</td>
<td>Vitamin D</td>
<td>female</td>
<td>male</td>
<td>male</td>
</tr>
<tr>
<td></td>
<td>600 IU</td>
<td>600 IU</td>
<td>600 IU</td>
<td>800 IU</td>
</tr>
</tbody>
</table>


### Vitamin D Requirement for Healthy Adults Increased: 2011 Report by the Institute of Medicine

<table>
<thead>
<tr>
<th>VITAMIN D (IU / day)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dietary Reference Intake (DRI)</strong> (Established by Institute of Medicine (Meets the needs of 97-98% of the healthy population))</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Former* (1997)</td>
</tr>
<tr>
<td>NEW** (2011)</td>
</tr>
</tbody>
</table>


**IOM. Dietary Reference Intakes for Calcium and Vitamin D. 2011.
Vitamin D: The Sunshine Vitamin

Why is Vitamin D such an issue in the elderly?

- Insufficient sun exposure
  - Live in northern latitudes
  - Long winters
  - Protecting skin from sun
  - Darker skin tone
  - Institutionalized or limited time outdoors
- Age related ↓ in capacity of the skin to produce Vitamin D
- Insufficient intake

Associations

- Key role in bone health – strong evidence
- Other health outcomes – mixed evidence

IOM. Dietary Reference Intakes for Calcium and Vitamin D. 2011.

Efficacy of Supplemental Vitamin D for Fall Prevention
Age 65+ yrs Depends on Dose & Achieved 25(OH)D Level

DOSE
Higher Vitamin D dose (700–1000 IU/day) reduced fall risk by 19%
(RR 0.81; 95% CI, 0.71-0.92)

LEVEL
Achieved 25(OH)D level ≥60 nmol/L (24 ng/mL) resulted in 23% fall reduction
(RR 0.77; 95% CI, 0.65-0.90)

Reduction of Falls and Fractures Seen in Older Adults 65+ yrs with Supplemental Vitamin D

**FALLS**

-19%

**NON-VERTEBRAL FRACTURES**

-20%

**HIP FRACTURES**

-18%

Vitamin D

700-1000 IU/day

n=1,921 (7 trials)

(RR 0.81; 95% CI, 0.71-0.92)

Vitamin D

482-770 IU/day

n=33,265 (9 trials)

(RR 0.80; 95% CI, 0.72-0.89)

Vitamin D

482-770 IU/day

n=31,872 (5 trials)

(RR 0.82; 95% CI, 0.69-0.97)

*Reduction significant in both community dwelling individuals (29%) and institutionalized individuals (15%).


Limited Vitamin D Sources to Achieve 800 IU/day

- Sun Exposure
- Food
  - Fatty Fish: salmon, tuna, sardines
  - Fortified Foods:
    - oral nutritional supplements
    - milk, orange juice, yogurt
    - cereals
- Supplements
  - Calcium & Vitamin D supplements
  - Standard Vitamin & Mineral supplements
  - Stand alone Vitamin D supplements (liquid and pill forms)
Vitamin D Food Sources to Achieve 800 IU/day

<table>
<thead>
<tr>
<th>Food</th>
<th>Serving</th>
<th>Vitamin D (IU)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salmon, canned</td>
<td>3 oz</td>
<td>465</td>
</tr>
<tr>
<td>Light Tuna, canned in oil</td>
<td>3 oz</td>
<td>229</td>
</tr>
<tr>
<td>Sardines, canned in oil</td>
<td>3 oz</td>
<td>164</td>
</tr>
<tr>
<td>Light Tuna, canned in water</td>
<td>3 oz</td>
<td>154</td>
</tr>
<tr>
<td>Fortified Milk, whole</td>
<td>1 cup</td>
<td>124</td>
</tr>
<tr>
<td>Fortified Milk, non-fat</td>
<td>1 cup</td>
<td>115</td>
</tr>
<tr>
<td>Fortified Cereal</td>
<td>1 cup</td>
<td>40</td>
</tr>
<tr>
<td>Oral Nutrition Supplements</td>
<td>8 fl oz</td>
<td>80 - 240</td>
</tr>
</tbody>
</table>


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Nutrient Intakes and Gaps Age 70+ yrs

Mean Consumption vs. Dietary Reference Intake (DRI) Ages 70+ yrs

Energy: Males 58%, Females 58%, Mean 58%, DRI 89%
Vitamin A: Males 11%, Females 15%, Mean 13%, DRI 78%
Vitamin D: Males 19%, Females 25%, Mean 21%, DRI 78%
Vitamin E: Males 41%, Females 47%, Mean 44%, DRI 61%
Vitamin K: Males 81%, Females 81%, Mean 81%, DRI 106%
Vitamin C: Males 61%, Females 59%, Mean 60%, DRI 103%
Choline: Males 62%, Females 62%, Mean 62%, DRI 70%
Calcium: Males 70%, Females 71%, Mean 70%, DRI 73%
Magnesium: Males 67%, Females 67%, Mean 67%, DRI 73%
Potassium: Males 58%, Females 58%, Mean 58%, DRI 89%


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Effects of Aging on Nutrition

<table>
<thead>
<tr>
<th>Changes</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensory impairment</td>
<td></td>
</tr>
<tr>
<td>– Decreased sense of taste</td>
<td>➔ Reduced Appetite</td>
</tr>
<tr>
<td>– Decreased sense of smell</td>
<td>➔ Reduced Appetite</td>
</tr>
<tr>
<td>– Loss of vision and hearing</td>
<td>➔ Decreased ability to purchase and prepare food</td>
</tr>
<tr>
<td>– Oral health / dental problems</td>
<td>➔ Difficulty chewing, inflammation, poor quality diet</td>
</tr>
<tr>
<td>Altered energy need</td>
<td>➔ Diet lacking in essential nutrients</td>
</tr>
<tr>
<td>Decreased physical activity</td>
<td>➔ Progressive depletion of LBW and loss of appetite</td>
</tr>
<tr>
<td>Muscle loss (sarcopenia)</td>
<td>➔ Decreased functional ability, assistance needed with ADLs</td>
</tr>
<tr>
<td>Psychosocial (isolation)</td>
<td>➔ Decreased Appetite</td>
</tr>
<tr>
<td>Environmental (financial)</td>
<td>➔ Limited access to food, poor diet</td>
</tr>
</tbody>
</table>

Cumulative Effect ➔ Progressive Undernutrition


Prevalence of Malnutrition in the Elderly

<table>
<thead>
<tr>
<th></th>
<th>Malnourished</th>
<th>At Risk</th>
<th>Normally Nourished</th>
<th>n=4274</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing Home</td>
<td>14%</td>
<td>53%</td>
<td>33%</td>
<td>n=1586</td>
</tr>
<tr>
<td>Hospitalized</td>
<td>39%</td>
<td>47%</td>
<td>14%</td>
<td>n=1384</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>50%</td>
<td>41%</td>
<td>9%</td>
<td>n=340</td>
</tr>
<tr>
<td>Community</td>
<td>6%</td>
<td>32%</td>
<td>62%</td>
<td>n=964</td>
</tr>
</tbody>
</table>

Kaiser MJ et al. ‘World wide data on malnutrition in the elderly according to the Mini Nutritional Assessment® Insights from an international pooled database. Presented at 31st ESPEN Congress on Clinical Nutrition and Metabolism 2009.’
Inadequate Nutrition is Common in the Elderly

• 1 of 4 older adults are malnourished\(^1\)
• 2 of 4 older adults are at-risk for malnutrition\(^1\)
• Unintentional weight loss in the elderly could interfere with physical abilities and is associated with increased health risks\(^2\)-\(^5\)

Possible Causes of Unintentional Weight Loss: The Meals on Wheels Mnemonic Guide

<table>
<thead>
<tr>
<th>M</th>
<th>Medications</th>
<th>W</th>
<th>Wandering and Other Dementia Related Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Emotional Problems</td>
<td>H</td>
<td>Hyperthyroidism, Hypothyroidism</td>
</tr>
<tr>
<td>A</td>
<td>Anorexia Nervosa</td>
<td>E</td>
<td>Enteric Problems (malabsorption)</td>
</tr>
<tr>
<td>L</td>
<td>Late-life Paranoia</td>
<td>E</td>
<td>Eating Problems (inability to feed self)</td>
</tr>
<tr>
<td>S</td>
<td>Swallowing Problems</td>
<td>L</td>
<td>Low Salt, Low Cholesterol Diets</td>
</tr>
<tr>
<td>O</td>
<td>Oral Factors (cavities, poorly fitting dentures)</td>
<td>S</td>
<td>Shopping, Social Problems</td>
</tr>
<tr>
<td>N</td>
<td>No Money</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Potential Consequences of Malnutrition

- Impaired immune response
- Reduced muscle strength and fatigue
- Inactivity
- Impaired temperature regulation
- Impaired wound healing
- Impaired ability to regulate fluid and electrolytes
- Impaired psycho-social function


Timely Routine Nutritional Screening Can Help Identify and Track Nutritional Risk

Identification of patients at risk of malnutrition → Appropriate nutritional intervention → ↑ Intake of energy, protein & other nutrients → ↑ Improved anthropometric indicators → ↑ Improved disease outcomes - reduced complications → ↓ Decreased health care utilization and costs
Ideal Nutritional Screening Tool

- Valid
- Reliable
- Accurate
- Clearly Defined Thresholds
- Relevant to Outcomes
- Inexpensive
- Acceptable to Clients
- Easy and Quick to Administer

Examples of Nutrition Screening Tools

- Subjective Global Assessment (SGA)
- DETERMINE Checklist
- Malnutrition Screening Tool (MST)
- Malnutrition Universal Screening Tool (MUST)
- Geriatric Nutrition Risk Index
- Nutritional Risk Screening Tool (NRS 2002)
- Mini Nutritional Assessment (MNA®) Tool
The MNA® Tool was specifically developed to identify the elderly who are malnourished or at risk of malnutrition, so intervention can be started early.

MNA® Screening Form is a validated nutrition screening tool designed for adults 65+ yrs.

**MNA® History**

- Developed in 1990
- Validated for ages 65+ yrs
- Simple, reliable, non-invasive
- Validated across care settings
- Supported by >450 publications

**Drawbacks to Old MNA®-SF**

- Time consuming
- Height/weight not always available
- Did not identify malnourished without full MNA®
Calf Circumference: Acceptable and Validated Alternative to BMI in the Elderly

- In some settings, obtaining weight and height measures may be cumbersome or impossible (bed-bound persons or amputees)
- Calf circumference (CC) is an easy and quick alternative
- CC correlates with muscle loss in elderly

CC in centimeters (MNA® score)
- CC < 31 cm = 0
- CC ≥ 31 cm = 3
New Self MNA®: Adapted For Self Completion by Older Adults (ages 65+) or Their Caregivers

- Self Mini Nutritional Assessment that determines a nutrition screening score
- Results to be shared and discussed with a Healthcare Professional

MNA® Resources and Tools for Clinicians: www.mna-elderly.com

- MNA® Forms (found in >20 languages)
- MNA® User Guides
- MNA® Video
- MNA® Screening Process
- MNA® FAQs
- MNA® Literature Database
- Interpreting the MNA® Score
Recommendations for Nutrition Monitoring and Intervention Based on MNA® Score

- Normally Nourished: 12 – 14
- At Risk of Malnutrition: 0 – 11
- Malnourished: 0 – 7

**RESCREEN**
- After acute event or illness
- Once per year in community-dwelling elderly
- Every 3 months in institutionalized patients

**MONITOR**
- Close weight monitoring
- Rescreen every 3 months

**INTERVENE**
- Nutrition intervention
  - Diet enhancement
  - Oral nutritional supplementation (450 kcal/day)
- Close weight monitoring
- Further in-depth nutrition assessment


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Nutrition Intervention: Often Implemented Too Late

Malnutrition and Disease – A Downward Spiral towards dependence

- Medical event: Fracture, infection, illness
- Declining nutritional status and weight loss
- Immobility, muscle weakness, risk of falls, and fractures
- Prolonged recovery, increased complications
- Loss of IADLs/ADLs, increased dependency
- Institutionalization
- Increased nutrient needs, decreased appetite and intake

Pneumonia, flu and other infections
Recovery from surgery
Hip fracture, rehabilitation due to injury
Muscle weakness due to illness or immobilization

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Nutrition Solutions to Support Nutritional Needs of the Elderly and Quality of Life

Quality of Life

Strong Nutritional Foundation

Adequate Energy – Adequate Nutrients

Strong Nutritional Foundation
Nutrition Solutions to Support Nutritional Needs of the Elderly and Quality of Life

Quality of Life

Adequate Hydration – Adequate Fiber
Adequate Energy – Adequate Nutrients
Strong Nutritional Foundation

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Nutrition Solutions to Support Nutritional Needs of the Elderly and Quality of Life

Quality of Life

- Disease – Chronic Illness Related Needs
- Easy to Chew – Easy to Swallow
- Adequate Hydration – Adequate Fiber
- Adequate Energy – Adequate Nutrients
- Strong Nutritional Foundation

Nutrition Solutions to Support Nutritional Needs of the Elderly and Quality of Life

Quality of Life

- Higher Protein, Higher Calories
- Disease – Chronic Illness Related Needs
- Easy to Chew – Easy to Swallow
- Adequate Hydration – Adequate Fiber
- Adequate Energy – Adequate Nutrients
- Strong Nutritional Foundation

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Oral Nutritional Supplements (ONS) Can Help Meet Energy and Nutrient Requirements in Older Adults

### Mean Consumption vs. Dietary Reference Intake (DRI) Ages 70+ yrs

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Males 70+ yrs Mean nutrient consumption vs. DRI (70+ yrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>101%</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>89%</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>78%</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>47%</td>
</tr>
<tr>
<td>Vitamin K</td>
<td>81%</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>162%</td>
</tr>
<tr>
<td>Choline</td>
<td>69%</td>
</tr>
<tr>
<td>Calcium</td>
<td>90%</td>
</tr>
<tr>
<td>Magnesium</td>
<td>67%</td>
</tr>
<tr>
<td>Potassium</td>
<td>100%</td>
</tr>
</tbody>
</table>


ONS Can Help Meet Higher Protein Requirements for Older Adults

<table>
<thead>
<tr>
<th>Protein g/day</th>
<th>Elderly may need more</th>
<th>AVG intake female 70+ yrs</th>
<th>AVG intake female 70+ yrs PLUS 8 fl oz High Protein ONS drink</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 - &gt;70 yrs</td>
<td>46</td>
<td>72</td>
<td>57</td>
</tr>
<tr>
<td>(female)</td>
<td>(0.8g protein/kg/day)</td>
<td>(1.5g protein/kg/day)</td>
<td></td>
</tr>
<tr>
<td>70+ yrs</td>
<td>1.5g protein/kg/day</td>
<td>70+ yrs PLUS 8 fl oz High Protein ONS drink</td>
<td></td>
</tr>
</tbody>
</table>

**Higher Protein Intake Seen with ONS Consumption in At-Risk Malnourished Patients Age 75+ yrs**

Significantly Greater Total Protein Intake seen with ONS in At-Risk Malnourished Patients (75+ yrs) Discharged from Hospital (60 day follow up)

- RCT, 80 patients, 75+ yrs
- Hospitalized w/acute condition
- MNA* screen within 72 hrs
- At-risk for malnutrition
- Control vs. ONS 2x/day
- 250 Cals/10.5g protein/serving
- Similar LOS ~20 days
- 84% discharged home
- 60 day follow up

![Graph showing protein intake comparison between control and supplemented groups.]

69.4g

* p<0.01


---

**Higher Energy Intake Seen with ONS Consumption in At-Risk Malnourished Patients Age 75+ yrs**

Significantly Greater Total Calorie Intake seen with ONS in At-Risk Malnourished Patients (75+ yrs) Discharged from Hospital (60 day follow up)

![Graph showing calorie intake comparison between control and supplemented groups.]

1899

* p<0.01

Prevention of Weight Loss Also Achieved with ONS

Significant Reduction in Fall Incidents Seen in Malnourished Adults 65+ yrs who Consumed ONS + Vitamin D/Calcium Supplement

Lower incidence of falls seen at 3 months in malnourished patients (65-84 yrs) supplemented with high protein ONS and vitamin D/calcium supplement for 3 months

• RCT, 210 patients, 65+ yrs
• Newly admitted to acute care hospital
• Malnourished
• Control vs. ONS 2x/day + supplement (vitamin D [400 IU] calcium [500 mg])
• ONS provided 600 total Calories, 24g of protein, 176 IU vitamin D, 364 mg calcium
• 3 month ONS intervention with RD telephone counseling every other week
• 3 month follow up

Percentage of older people with fall incidents at 3 months was significantly lower in patients randomly assigned to receive high protein ONS and vitamin D/calcium supplement compared with those in the placebo group (23% vs. 10% p=0.02) representing a 56% reduction. Risk of fall incidents in the 3 month follow up period was significantly lower in the ONS group than placebo after adjustment for other clinical risk factors (HR=0.41; 95% CI, 0.19-0.86 p=0.02).

Reduction in Days of Hospitalization Seen in Malnourished Adults 65+ yrs who Consumed ONS

Meta-analysis by Milne (2009) showed a reduction in complications in older people treated with ONS compared to routine care (24 trials, n=6225, RR=0.86; 95% CI, 0.75-0.99 p=0.029) and in a sub-group analysis of patients with hip fracture (6 trials, n=298, RR=0.60; 95% CI, 0.40-0.91 p=0.016).

Significant Reduction in Hospital Readmissions of Acutely ill Age 65+ yrs Seen with ONS Consumption

Lower hospital non-elective readmissions seen at 6 months in patients (65-92 yrs) supplemented with ONS for 6 weeks

- RCT, 445 patients, 65+ yrs
- Hospitalized w/acute illness
- Comparable nutritional status
- Control vs. ONS 2x/day
- ONS provided 995 total Cals +100% DRI vitamins & minerals
- 6 week ONS intervention
- LOS similar (10.1 vs. 9.4 days)
- 6 month follow up

Proportion of acutely ill older people readmitted to hospital at 6 months was significantly lower in patients randomly assigned to receive ONS (29%) compared with those in the placebo group (40%) (p=0.02) representing a 28% reduction. Risk of non-elective readmission in the 6 month follow up period was significantly lower in the ONS group than placebo after adjustment for other clinical risk factors (HR=0.68; 95% CI, 0.49-0.94).


The Elderly: Nutritional Needs, Challenges, Screening, and Solutions

Summary

- The nutritional needs of the elderly are different from other adult populations
- Physical and psycho-social changes associated with aging can effect nutritional health
- Malnutrition in older adults is a common problem
- The cornerstone of managing malnutrition is screening and early detection to help facilitate prompt intervention
- Appropriate nutrition solutions can help support the nutritional needs of the elderly, and ultimately the quality of life

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Questions?
Thank You!

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