got weight loss?
get nutrition....

Treatment and Management

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Objectives

• Describe the impact of age related changes on nutritional needs
• Apply nutritional strategies in the treatment of unintentional weight loss
Guiding Principles

- Reduced Nutrient Reserves
- Reduced Response to Stress
Nutritional Care in Geriatrics

LOW and SLOW
LONGER
Impact of Changes of Aging on Nutrition

- Weight Trends - Calorie Needs
- Sarcopenia - Protein Needs
- Constipation - Fluid/Fiber Needs
- Dehydration - Fluid Needs
Normal Weight Trends in Aging

• Peak Weight at 75 years
• Gradual Weight Loss after age 75
Unintentional Weight Loss

- Weight loss >5% in 30 days or >10% in 180 days (6 mon)

- Decrease in functional ability

- Change in clothing fit
Energy: Rule of Thumb

• Energy needs are dependent on activity and physiologic stress levels

• 25-30 kcal/kg

• Basal Energy Equation X factor of 1-1.5
  – Harris Benedict Equation
  – Mifflin St-Jeor Equation (Currently recommended)
What Does It Mean?

- 1# = 3500 kcals
- 500 kcal deficit/day = 1#/week

- 70 kg man (154#)
- 5% in 30 days ~ 900 kcal/day
- 10% in 189 days ~ 300 kcal/day
Sarcopenia and Protein
Protein

• Higher protein intake required to maintain nitrogen balance
• Contributors to increased need:
  – Lower energy intake
  – Impaired insulin action
  – Decreased efficiency of protein utilization

Protein: Rule of Thumb

• 1.0-1.25 gm/kg/day
• Physical Exercise Against Resistance to Help Maintain Muscle Mass

Constipation

- Most common gastrointestinal complaint in the United States
- Problem becomes more prevalent with aging, especially with decreased oral intake
- Bowel motility decreases with aging
- Dietary fiber is primary treatment:
  - >25 grams per day
# Robertson’s Rule of 2’s

<table>
<thead>
<tr>
<th>Food Item</th>
<th>Amount</th>
<th>Dietary Fiber</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% Bran cereal or Miller’s Bran</td>
<td>1/2 cup or 2 Tablespoons</td>
<td>10-14 grams</td>
</tr>
<tr>
<td>Whole Wheat Bread</td>
<td>2 slices</td>
<td>4 grams</td>
</tr>
<tr>
<td>Fresh Fruit</td>
<td>2 pieces</td>
<td>4 grams</td>
</tr>
<tr>
<td>Vegetables</td>
<td>2 servings</td>
<td>4 grams</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>22-26 grams</strong></td>
</tr>
</tbody>
</table>
Dehydration: Causes

- ↓ thirst sensation with aging
- ↑ dependence on others to obtain fluid
- ↓ ability to concentrate urine
- ↑ incidence of incontinence ⇔ self-imposed fluid restriction
- ↑ use of medications contributing to dehydration
- ↑ losses: vomiting, diarrhea, fever
Dehydration

• Treat Cause
• Set Fluid Goal
• Goal: 30 mL/kg or 1 mL/Kcal
• Replace Additional Fluid Losses
• Drink Fluid At and Between Meals
• Use Foods Which Have Fluid Value
• Use Fluids Which Have Nutrient Value
# Fluid:Nutrient Comparison

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Free Water (mL)</th>
<th>Calories/Protein</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>240 mL (100%)</td>
<td>0/0</td>
</tr>
<tr>
<td>Juice (Apple)</td>
<td>210 mL (88%)</td>
<td>111/0</td>
</tr>
<tr>
<td>Whole Milk</td>
<td>214 mL (89%)</td>
<td>150/8</td>
</tr>
<tr>
<td>Instant Breakfast</td>
<td>217 mL (80%)</td>
<td>250/13</td>
</tr>
<tr>
<td>Fruit Beverage Supplement</td>
<td>191 mL (79%)</td>
<td>300/10</td>
</tr>
</tbody>
</table>
REMEMBER

• Avoid unnecessary dietary restrictions
• Encourage use of nutrient dense foods
• Use more frequent meals plus snacks and supplements
• Elderly eat more in morning
Calories - Strategies

Practical Suggestions

• Use foods that are well liked frequently
• Provide double portions of favorite food
• Add calories using sauces, gravies, toppings and fats
• Emphasize calorie containing liquids to meet fluid needs
What Does It Mean?

• 1# = 3500 kcals
• 500 kcal additional/day = 1#/week
• 500 kcals
  – 2 X 8oz oral supplements
  – 1 X 8oz oral supplements + ½ c ice cream
  – 2 X 8oz vanilla milkshakes
  – 2 X 8oz Instant Breakfast drinks
Protein - Strategies

Practical Suggestions

• Include at least one protein food at each of three meals daily
• Add nonfat dried milk solids to foods
• Add cheese, eggs, peanut butter and nuts (if dentition permits)
• Add commercial protein powders or supplements to foods
Oral Supplementation

• Cochrane Systematic Review
• Effectiveness of nutritional supplements in elderly at risk for malnutrition
• Review of 62 trials
  – 10,187 randomized patients
  – Maximum duration of intervention: 18 months

• Milne, AC, et al, Protein and energy supplementation in elderly people at risk from malnutrition. Cochrane Database of Systematic Reviews, 2009, Issue 2.
Oral Supplementation

• Significantly improved mortality in undernourished
• Small, consistent weight gain in 42 trials
• Reduced risk of complications in 24 trials
• No evidence of functional improvement
• No reduction in Length of Stay
Oral Supplementation

Practical Suggestions

• Product Acceptance
• Taste Fatigue
• Supplementation **not** Meal Replacement
Oral Supplements

- Carbohydrate Powder
  - Polycose (23 kcal/Tblsp)

- Protein Powder
  - Beneprotein (6 gm protein/packet)

- Carbohydrate & Protein
  - Benecalorie (330 kcal & 7 gm protein/1.5 oz)
  - ProMod (100 kcal & 10 gm protein/1 oz)
Oral Supplements

100 kcal/1 oz
10 gm protein

330 kcal/1.5 oz
7 gm protein

6 gm/pkt

23 kcal/Tbl
Vitamin/Mineral Supplements

• A daily multivitamin mineral supplement is recommended

• Geriatric Vitamins
  + Vitamin C, D, E
  + Vitamin $B_6$
  + Vitamin $B_{12}$
  - Iron
Progression of Nutrition Support

- Balanced Oral Diet
- Oral Diet Plus Oral Supplements
- Tube Feeding
- Parenteral Nutrition
- Combinations
Tube Feeding Benefits

- Reverse Anorexic Cycle
- Promote Nitrogen Balance
- Stimulate Appetite –
  - Selected Administration
    - Night Feeding
CAUTION
Indications for Use

WHEN To Use?
• Head & neck cancer
• Acute stroke with dysphagia (after 30 days)
• Neuromuscular dystrophy syndromes
• Gastric decompression

WHEN NOT To Use?
• Advanced dementia
• Advanced stages of cancer

• Plonk, WM, To PEG or Not to PEG. Practical Gastroenterology, July, 2005.
Review
References

• _______ Geriatrics Review Syllabus, 6th Ed, Chapter 24 & 25, 2006
• Milne, AC, et al, Protein and energy supplementation in elderly people at risk from malnutrition. Cochrane Database of Systematic Reviews, 2009, Issue 2.
• Plonk, WM, To PEG or Not to PEG. Practical Gastroenterology, July, 2005.
The End!