



Nutrition in the Elderly

Christa Byrd MA, RD
Clinical Dietitian
Beaumont Health System
Christa.Byrd@beaumont.edu

- Foodservice management
- Staff
 - Challenges
 - Training
- Clinical

Intro

- Determining energy/protein needs in elderly
- Risk Factors
- Nutrition Intervention
- Nutrition Considerations
 - *Vitamins, Minerals, Supplements, Enteral Feeding*

Objectives

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.

The Merck Manual, 16th Edition, p. 2540.

The Growing Population

Condition/Status	Kcal/kg IBW or Actual Wt
Maintenance	25-30
Obesity	↓
Pressure Ulcers	↑
Weight Gain	↑
Weight Loss	↓

- Indirect Calorimetry

Calorie Needs

Condition/Status	Protein grams/kg
Young healthy adults	0.8 - 1.2 g/kg
Elderly	↑
Kidney Disease	↓
Hemodialysis	↑
Liver failure	↑
Pancreatitis	↑
Decubitus Ulcers	↑↑

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

Nutrition Risk Factors

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

Nutrition Risk Factors

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 > Enteral > Oral**

Nutrition Risk Factors

- Medical Nutrition Therapy
- Nutrition Screening
- Instruments for Nutrition Screening



Screening and Referral

- 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

Nutrition Screening

- 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**

Nutrition Assessment

- 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

Methodologies

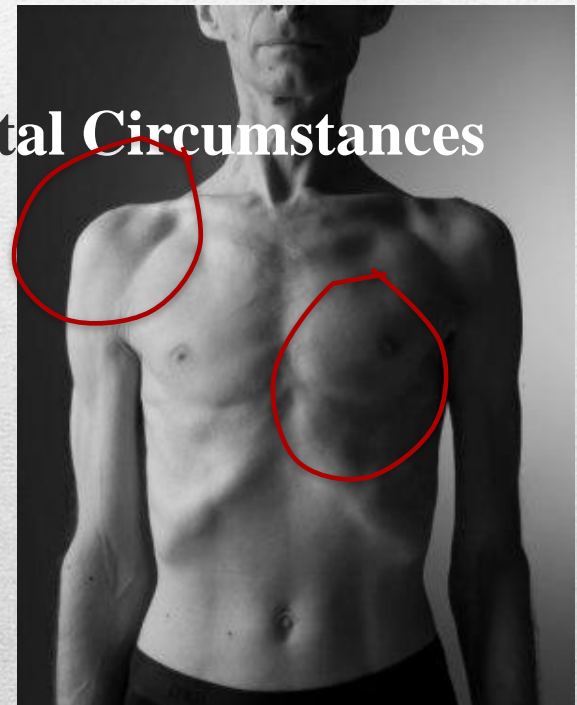


- Anthropometric measurements
 - Height, weight, weight change
- Biochemical data, medical tests and procedures
 - Guidance not Gospel
- Client history
 - Cognitive decline, depression, neurological disease, hydration status, presence of infection and pressure ulcers, recent hospitalization, admission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

Nutritional Status

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



Mild PCM

Acute Illness/Injury

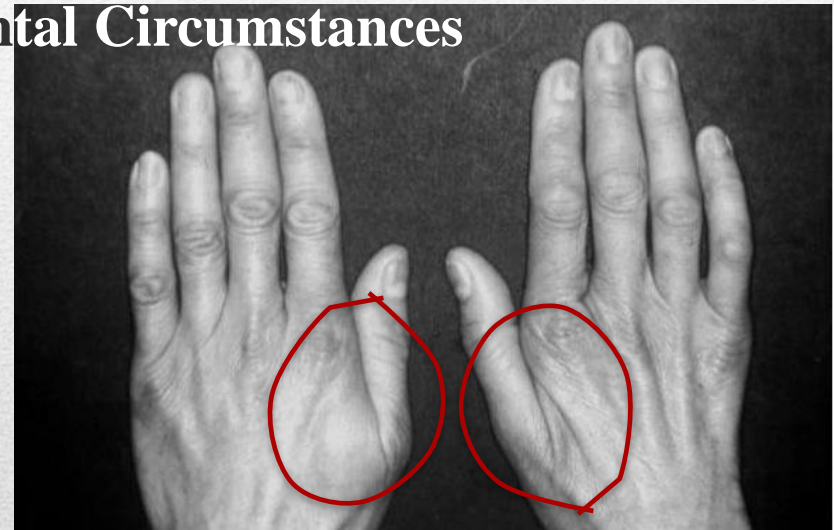
- 1-2% weight loss in 1 week
- 5% weight loss in 1 month
- 7.5% weight loss in 3 months

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

- > 7days (acute illness)
- >/= 1 month (chronic illness)
- >/= 3 months (social-environmental circumstances)



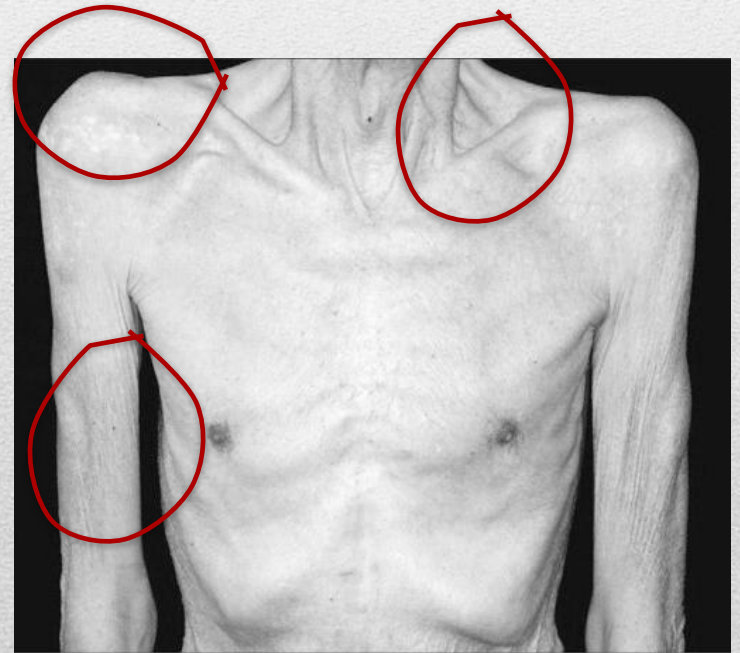
Moderate PCM

- **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.

Anthropometric Data

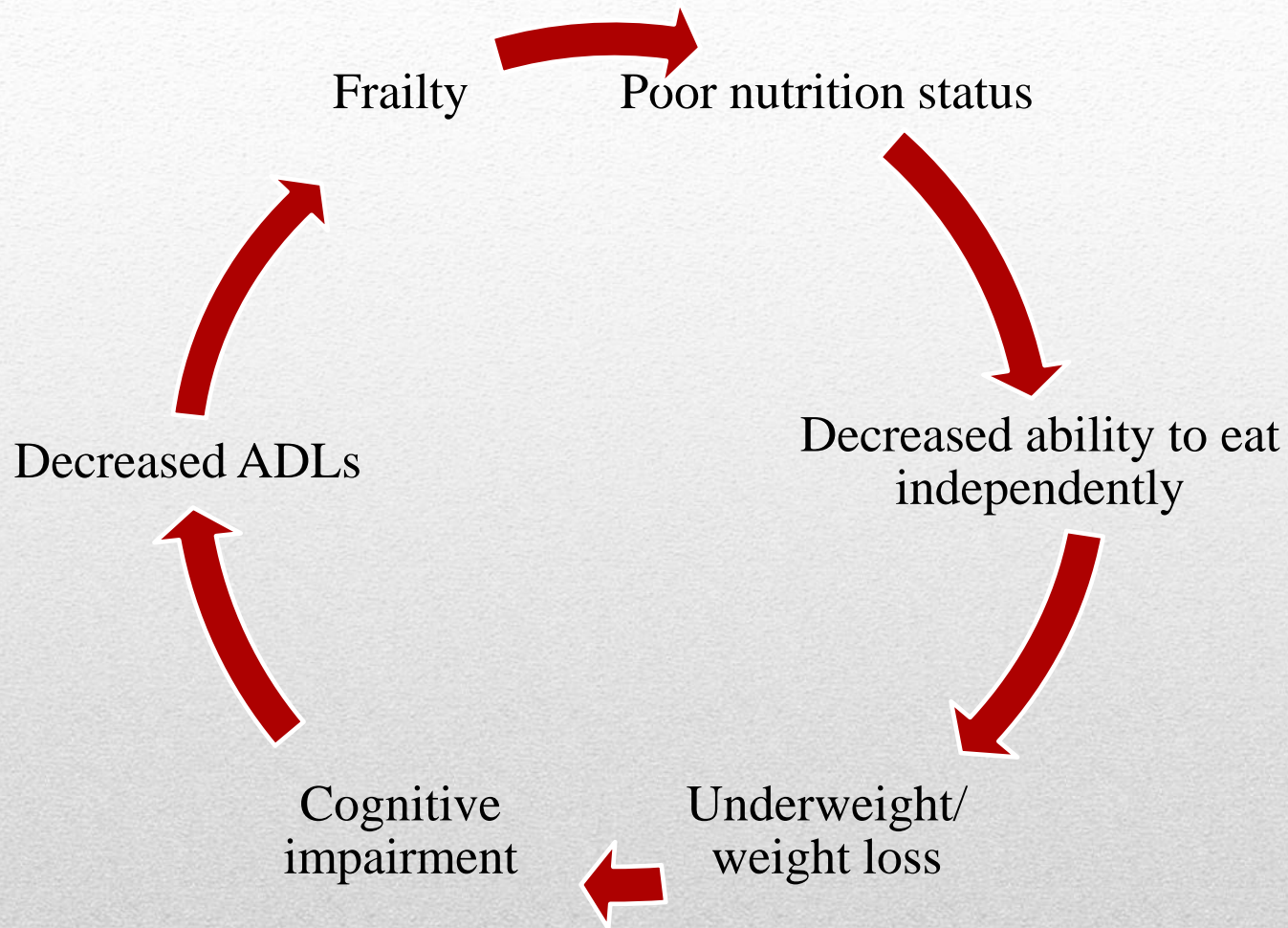
- Morbid Obesity – BMI for adults > 40.0
- Enteral Infusion – Tube Feeding
- Parenteral infusion – TPN/PPN
- Undefined Obesity – 125-199% IBW
- Underweight: < 19 BMI
(for adults over age 20 years old)



Single Criteria Risk

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.

Modified Texture



Eating Assistance

Weight gain is associated with improvements in:

- Physical environment
- Atmosphere
- Meals
- Organization of nursing staff assistance
- Dining with others



Social Aspect of Food

- 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.

Depression

- Erythromycin
- Remeron
- Reglan
- Megace
- Marinol



Appetite Stimulants

Factors affecting appetite

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

- Calories
- Protein
- Fat
- Fiber
- Vitamins
- Minerals

Nutrition Facts	
Serving Size	
Servings Per Container	4
Amount Per Serving	
Calories 220	Calories from Fat 110
Total Fat 12g	% Daily Value*
Saturated Fat 6g	18%
Trans Fat 0.5g	30%
Cholesterol 10mg	
Sodium 70mg	2%
Total Carbohydrates 25g	4%
Dietary Fiber 1g	8%
Sugars 20g	4%
Protein 3g	
Vitamin A 0%	• Vitamin C 8%
Calcium 2%	• Iron 4%

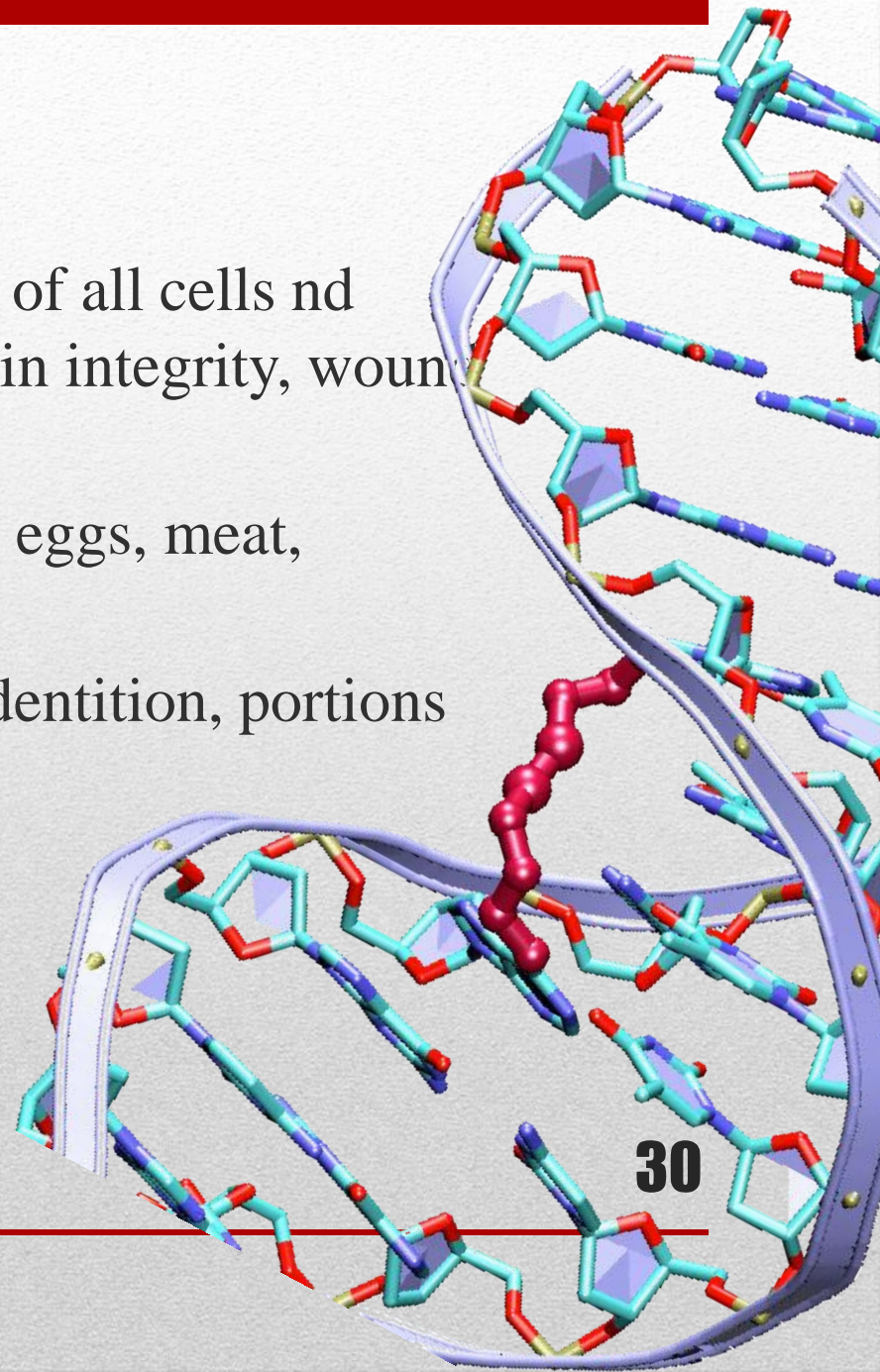
Considerations in Nutrition

- **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

Protein



- **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.



Fat

- **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

Fiber



- 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.

Vitamin/Mineral Supplements

- 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

Age: yrs. or for infants, months.

Meas. Units:

Height: feet inches

Weight: lbs.

Activity: [What's This?](#)

<http://www.nutrition.gov/smart-nutrition-101/dietary-reference-intakes-rdas>

For detailed nutrient descriptions and terminology, see the [Interactive DRI Glossary](#).

Calculate

- Body Mass Index Daily Calorie Needs

Macronutrients

Check/Uncheck All Macronutrients

- | | | |
|---------------------------------------|---|--|
| <input type="checkbox"/> Carbohydrate | <input type="checkbox"/> Saturated Fatty Acids | <input type="checkbox"/> Linoleic Acid |
| <input type="checkbox"/> Total Fiber | <input type="checkbox"/> <i>Trans</i> Fatty Acids | <input type="checkbox"/> Dietary Cholesterol |
| <input type="checkbox"/> Protein | <input type="checkbox"/> α -Linolenic Acid | <input type="checkbox"/> Total Water |

- Home care
- Extended care
- Subacute Rehab
- Supplementing as necessary
 - Protein
 - Food/Beverage supplements
 - Vitamin and Mineral supplements

Working with an RD

Indications for Supplements

- Frailty
- Infection
- Impaired wound healing
- Pressure ulcers
- Hip fracture
- Orthopedic surgery
- Depression
- Early to moderate depression

Supplements

- 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.

Supplements

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

Enteral Nutrition

Contraindicated for:

- Terminally ill older adults with advanced disease states (terminal dementia)
- Clinical and Ethical criteria

Enteral Nutrition

- 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.

Enteral formulas



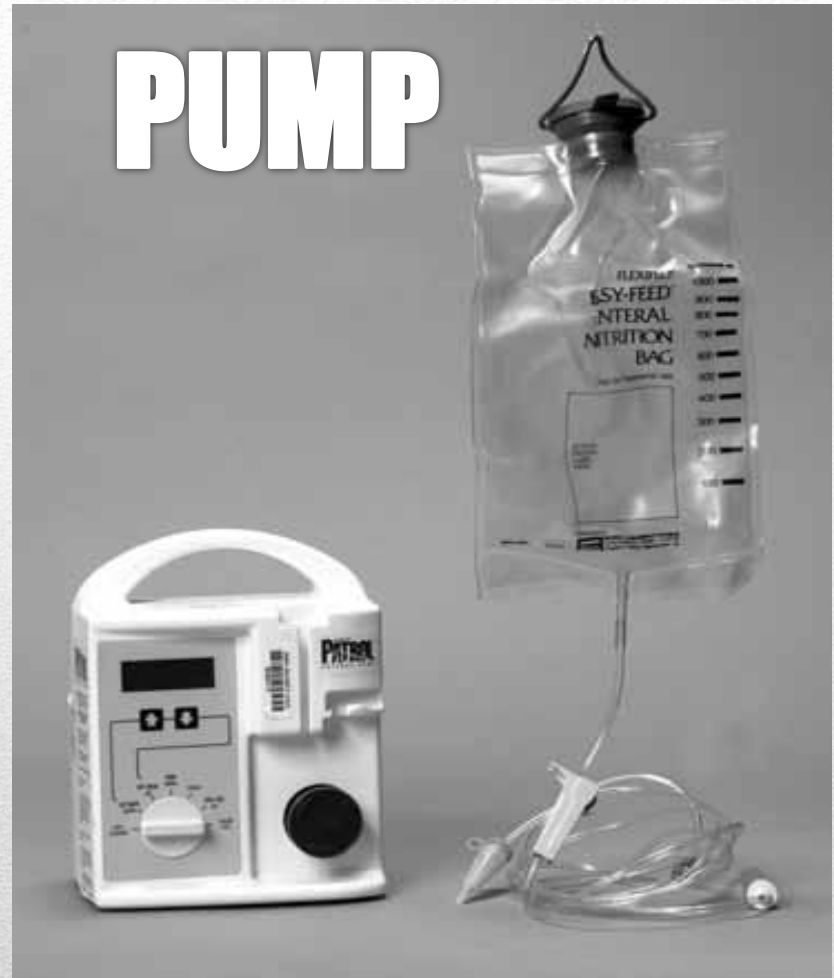
- **Carbohydrates**
 - oligosaccharides or polysaccharides, such as corn syrup solids.
- **Protein**
 - milk or soy, such as sodium caseinates or soy protein isolate.
- **Fat**
 - variety of oils such as corn oil, canola oil, and soybean oil.
- **Fiber**
- Tube feeding product is not adequate to meet **fluid** needs for hydration

TF composition

BOLUS



PUMP



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.

Enteral feeding route

- 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