MNT Made Easy

For Health Care Communities

Becky Dorner & Associates

Medical Nutrition Therapy Made Easy

For Health Care Communities

Becky Dorner & Associates, Inc.
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Medical Nutrition Therapy Made Easy

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Acknowledgements

Author/Editor:

Becky Dorner, RDN, LD, FAND is widely-known as one of the nation's leading experts on nutrition, aging, and long-term care. She is an enthusiastic, innovative change leader who inspires people into action. Her career of over 30 years has been dedicated to advocating for excellence in nutrition care to optimize health for older adults. An experienced speaker and extensively published author, Becky is the Founder/President Nutrition Consulting Services, Inc., whose dedicated team of RDNs and NDTRs have served health care facilities since 1983; and Becky Dorner & Associates, Inc., which offers a broad library of resources and CEU programs.

Becky's mission to improve nutrition care for older adults has inspired her to present more than 550 programs for national, international and state professional meetings in 5 countries and 50 states; and to publish more than 270 manuals, CEU programs and practical articles for professional journals and newsletters. Her free email magazine keeps 35,000 health care professionals up to date on the latest news in the field.

An active leader since 1984, national leadership positions have included: Academy of Nutrition and Dietetics Board of Directors, Speaker-elect/Speaker/Past Speaker of the House of Delegates, Chair of the Council on Future Practice, Academy Research Committee, Evidence Analysis Library, Academy Delegate, Chair DHCC DPG, and Board of Directors National Pressure Ulcer Advisory Panel.

Honors include: Fellow of the Academy of Nutrition and Dietetics, Academy Award of Excellence in Business and Consultation, NE Outstanding Nutrition Entrepreneur, Academy Recognized Young Dietitian of the Year and DHCC Distinguished Member Award.

Contributing Editor:

Liz Friedrich, MPH, RD, CSG, LDN, FAND is a Registered Dietitian and president of Friedrich Nutrition Consulting in Salisbury, NC. The company provides a variety of nutrition consulting services with a focus on gerontological nutrition.

She has co-authored numerous articles in journals and magazines, including the Academy of Nutrition and Dietetics Position Paper titled *Individualized Nutrition Approaches for Older Adults in Health Care Communities* (2010) and *Enteral Nutrition for Older Adults in Nursing Facilities* (2011).

Liz is also the Associate Director of Nutrition411.com, a respected website for dietitians, and is an evidence analyst for the Academy of Nutrition and Dietetics' Evidence Analysis Library. In 2009 Liz became Board Certified as a Specialist in Gerontological Nutrition.

Liz has served as the Delegate for the Nutrition Entrepreneurs dietetic practice group to the Academy of Nutrition and Dietetics House of Delegates, and as a volunteer for the North Carolina Dietetic Association (NCDA) and the Nutrition Entrepreneurs Dietetic Practice Group (NE DPG) in many different board positions. She is the recipient of two North Carolina Dietetic Association awards, the Recognized Young Dietitian of the Year (1991) and the Member of the Year (2000).

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Thank you to the following professionals for their tireless effort in developing, revising and reviewing this and past editions:

Reviewers for Forms:

Marcy Cook, RDN, LD
Clinical Manager, Nutrition Consulting Services, Inc.
Spencer, OH

Kelly Murphy, RDN, LD
Director of Clinical Services, Nutrition Consulting Services, Inc.
Youngstown, OH

Leigh Sliwinski, RDN, LD
Clinical Manager, Nutrition Consulting Services, Inc.
Canton, OH

Registered Dietitian Nutritionists (RDNs) and Nutrition & Dietetics Technicians Registered (NDTRs) of Nutrition Consulting Services, Inc.

Past Contributor

Vicki Redovian, MA, RD, LD
Akron, OH

We hope that the individuals that you work with will benefit from the information in this publication.

In our constant effort to serve your needs and improve this manual, your comments are always appreciated. Please send them to info@beckydorner.com

Becky Dorner & Associates

Your Premier Senior Nutrition Resource

Medical Nutrition Therapy Made Easy

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Gathering Data Made Easy

Documentation Made Easy

MNT Assessment and the Nutrition Care Process Made Easy

Interventions for Common Nutrition Problems Made Easy

Note: The Policies and Procedures and Resources in this book have primarily been taken from the following Becky Dorner & Associates, Inc. publications and have been updated as needed:

- Diet and Nutrition Care Manual, 2014
- Policy & Procedure Manual, 2013

For more information on these complete publications, please visit our website at www.beckydorner.com .

Medical Nutrition Therapy Made Easy

Introduction

MNT Made Easy was designed to help the nutrition care professional provide the best care to individuals in health care communities. It provides tools to allow the nutrition care professional to use a systematic approach to the Nutrition Care Process of nutrition assessment, nutrition diagnosis, nutrition intervention, nutrition monitoring and evaluation, and provides tools for tracking high-risk patients.

MNT Made Easy includes seven chapters: Gathering Data, Documentation, MNT Assessment and the Nutrition Care Process, Nutrition Interventions for Common Problems, Communicating with Other Health Care Professionals, Miscellaneous Information, and Resources. The first six sections contain policies and procedures, resources, and forms to facilitate efficient and effective nutrition practice and documentation in the medical record. The information included represents the expected standard of practice for medical nutrition therapy (MNT) services and is based on industry-wide standards of practice.

In health care communities, the registered dietitian nutritionist (RDN) is ultimately responsible for the nutrition care provided to patients/residents. Support staff work under the supervision of the RDN. Support staff may include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team. The RDN may need to deviate from policy and procedure when warranted based on changes in practice standards, new evidence-based research or circumstances that warrant professional judgment.

Physician's orders must be followed according to state and federal law. The RDN may request recommended changes to physician orders as appropriate. MNT made easy provides tools for communicating with physicians and other health care providers when changes are recommended by the RDN.

Health care communities are reviewed and inspected by the state and federal government. The reader should be familiar with regulations that govern their state and facility and incorporate those regulations into MNT practice.

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Gathering Data Made Easy

Diet History

Policy:

Information will be gathered upon admission to inform the food service department of the individual's food preferences and diet history. Food preferences will be updated periodically as needed or upon reassessment.

Procedure:

1. Upon admission and periodically as needed, the food service manager or designee will interview the individual for the following information using the *Recording Food Preferences Form* (sample form on page 5):
   - Understanding and acceptance of the diet order
   - Food preferences, intolerances, allergies
   - Cultural and/or religious preferences
   - Location where meals are to be served
   - Preferred portion sizes for each meal
   - Select menu preference (if applicable)
   - Beverage preferences

2. When interviewing an individual for food preferences, the food service manager or designee will offer the names of foods as needed (some individuals may have a difficult time with open ended questions). The Food Preferences Sample Form on the following page provides a good guideline to follow.

3. A Food Preferences Form may be distributed to the family or significant other upon admission if the individual is unable to provide the information themselves

4. Each individual will be visited by the food service manager or designee for a personal interview to obtain food preferences within 48 to 72 hours of admission.

5. The information is kept on file in the food service department and used to assure that each individual's needs and desires for food are met.

6. If a select menu, buffet, or other programs are in place that provide food choices at each meal, individual choices at each meal or snack take precedence over food preferences on file.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

Recording Food Preferences

Policy:

Food preference notes may be kept on file, recorded on the meal identification (ID) card/ticket, or may be computerized.

Procedure:

For meal identification cards:

1. Note the food preferences on the individual's meal ID card/ticket.
2. Utilize the meal ID cards/tickets for production counts of food substitutions as appropriate.
3. File the meal ID cards/tickets by unit and room number.
4. Review the meal ID cards/tickets as needed each day and use for food production and meal service.
5. Update the meal ID cards/tickets on a daily or as needed basis.

By Computer:

Follow the general guidelines above and also:

1. Update computer files upon admission, readmission, or upon learning of new or changed information.
2. Follow directions according to the computer software manual.

Maintaining Records:
When possible, documentation of food preferences should be maintained on file for at least one year (paper or electronic as appropriate).

Food Preference Form and/or Meal Identification Card
Insert a sample of your food preference form and/or meal identification (ID) card here if applicable.

Note: If a select menu, buffet, or other programs are in place that provide food choices at each meal, individual choices at each meal or snack take precedence over food preferences on file.

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Sample Form: Food Preferences

Name _____ Admission Date_____

Diet Order _____ Food Allergies/Intolerances_____
Meal Location Room: B L D Dining Room: B L D Preferred Portions: Lg Avg Sm

Is food available from outside sources? Yes No Source:_____

Would you like a select menu? Yes No

Beverage Preference (Circle)

Breakfast	Juice	Milk	Coffee	Reg/Decaf	Hot Tea	Reg/Decaf	Water	Soda Pop	Iced Tea
Lunch	Juice	Milk	Coffee	Reg/Decaf	Hot Tea	Reg/Decaf	Water	Soda Pop	Iced Tea
Dinner	Juice	Milk	Coffee	Reg/Decaf	Hot Tea	Reg/Decaf	Water	Soda Pop	Iced Tea

Food Dislikes (Circle)

Meat/Substitutes	Vegetables	Fruits	Starches	Cereal
Bacon Beef Liver Beef Patty Cheese Chicken Chicken Liver Chili Cottage Cheese Eggs Enchiladas Fish Ground Beef Ham Lamb Luncheon Meat Nuts Pork Loin Pork Chop Roast Sausage Link Sausage Patty Shellfish Shrimp Soy Burgers Tofu Tuna Turkey	Beets Broccoli Brussels Sprouts Cabbage Carrots Corn Coleslaw Green Beans Green Peas Greens Lettuce Lima Beans Okra Onions Peas Sauerkraut Spinach Tomatoes Yellow Squash Wax Beans Zucchini	Apples Applesauce Apricots Bananas Cantaloupe Grapefruit Mango Oranges Papaya Peaches Pears Pineapple Plums Prunes Tangerines Watermelon	Baked Beans Black-eyed Peas French Fries Lima Beans Macaroni Mashed Potatoes Navy Beans Noodles Pancakes Pinto Beans Potatoes Rice Sweet Potatoes Tator Tots Waffles	Cream of Wheat Grits Malt-O-Meal Oatmeal Dry Cereal:
	Soups	**Juices**	**Bread**	**Milk/Dairy**
	Bean Beef Noodle/Veg. Broth Lentil Potato Split Pea Tomato Vegetable Cream Soups	Apple Cranberry Grape Grapefruit Orange Prune Tomato Vegetable	Bagels Biscuits Cornbread Crackers Coffee Cake Muffins Pancakes Pita Bread Raisin Bread Rolls Rye Bread Toast Tortillas Wheat Bread White Bread	1% 2% Skim Whole Buttermilk Chocolate Milk Kefir Rice Milk Soymilk Yogurt
		Spicy Foods		**Desserts**
		Chili Sauce Tacos Tomato Sauce		Cakes Cookies Fruit Crisp Gelatin Ice Cream Pudding Pie Sherbet

Special meal preferences or pattern if different from menu (including cultural/religious preferences):

Alternates for Food Dislikes

Policy:

Appropriate alternate foods will be prepared and substituted at each meal for food dislikes, allergies and/or intolerances

Procedure:

1. Individual food preferences, allergies and/or intolerances are obtained upon admission, and updated as needed.

2. The food service manager or designee is responsible for planning, ordering and scheduling the preparation of appropriate alternate foods to replace food dislikes, allergies or intolerances.

3. The food service manager is responsible for recording planned alternates on the menu extension sheets and for notifying the food service staff for production counts.

4. Menu alternates should be planned in advance and posted with the menu for each meal.

5. The food service staff is responsible for preparing and serving the alternates, and recording them as appropriate.

6. The food service staff will use the menu substitution lists as a guideline for appropriate, nutritionally balanced substitutions. Examples of appropriate alternates include:
   - Substituting another meat or protein food for disliked meat or protein food
   - Substituting another vegetable, fruit, or juice in place of disliked vegetable or fruit

7. If a majority of individuals dislike a certain food item as noted by plate waste studies, it should be removed from the regular menu.

Note: Plan carefully to avoid alternates that may be disliked by the majority of people and to avoid preparing the same foods for multiple meals in a row. Even if a select menu or buffet service is provided, other alternates may be necessary to accommodate allergies or those with multiple food dislikes.

Individuals Who Do Not Drink Milk

Policy:

Substitutions are made for individuals who do not drink milk (i.e. dislikes, allergies or intolerances) to assure provision of adequate calcium.

Procedure:

1. The facility staff and food service manager or designee are responsible for identifying individuals who do not like milk, are allergic to or intolerant to milk and/or milk products based on information provided by the individual or family or in the medical record.

2. The facility staff is responsible for advising the food service manager or designee when an individual refuses to drink milk or consume milk products.

3. The food service manager or designee is responsible for making the appropriate substitutions.

4. The food service manager or designee is responsible for making necessary changes on the meal identification card indicating what should be provided in place of milk and milk products. This is determined using guidance provided by the registered dietitian nutritionist (RDN) and/or the facility diet manual along with the individual's preferences. (Also see number 7 below.)

5. The food service manager or designee is responsible for informing the RDN so that this can be included on the individual's care plan.

6. This information should be communicated to nursing to share with the physician, so that a calcium supplement with vitamin D may be prescribed if needed.

7. Milk alternatives:
   These foods provide approximately the same amount of calcium as one cup of milk, which has 291 mg of calcium.
   - 1 cup yogurt
   - 1 1/2 ounces of cheese
   - 1 cup pudding
   - 1 3/4 cup ice cream
   - 2 cups cottage cheese
   - 8 to 9 ounces calcium-fortified juice
   - 8 ounces lactose free milk (lactose intolerance only, not appropriate for milk allergy or milk intolerance)
   - 8 ounces of soy milk, rice milk or almond milk (check individual label to assure calcium requirements are met)

   The calorie and protein levels of the above items are not equal and cannot be used for certain therapeutic diets. Those on therapeutic diets should be referred to the RDN or designee to assess the need for diet alterations, or for recommendations for protein, calcium and/or vitamin D supplementation.

Recording Percent of Meal Consumed

Policy:

Staff will document the percentage of each meal consumed for each individual on a daily basis. The registered dietitian nutritionist (RDN) or designee will provide the form to be used, and specify how the data is to be recorded. If appropriate, electronic meal intake recording should be completed using electronic forms on file. (See Food Intake Record/Total Meal Percentage Sample Form.)

Procedure:

The documentation of a total meal will be based on basic food groups: milk, meat, fruit and vegetables, and grains.

0% Consumption of **no** basic food items or bites only (but less than 25%).

25% Consumption of **1/4** of all items on the tray and/or all of one of the basic four items.

50% Consumption of **1/2** of all of the items on the tray and/or all of two of the basic four items.

75% Consumption of **3/4** of all of the items on the tray and/or all of three of the basic four items.

100% Consumption of **total tray** and all of the food basic groups.

Note: There are numerous systems for documenting food and fluid intake. This is just one example. An alternate system is provided on the next page.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

Alternate Meal Recording System

Policy:

Staff will utilize the food intake percentage system as designated by the registered dietitian nutritionist (RDN). The point system for recording meal intake percentages may be used as an alternative to the total meal intake percentage system previously described. (See Food Intake Record – Point System Sample Form.)

Procedure:

1. Staff will be trained to utilize the following food intake percentage system:

   Point System:
   Each food item served = 1 point
   ¾ of a food item = 1 point
   ½ of a food item = 0.5 points
   ¼ of a food item = 0 points

   Liquid Measurements:
   8 ounce Cup = 240 mL
   6 ounce Cup = 180 mL
   4 ounce Cup = 120 mL
   1 ounce Cup = 30 mL

   Example: Breakfast
   Juice, cereal, milk, bread butter, coffee = offers a total of 4 Points

   Consumes all 4 items = 100%.
   Consumes 2 of 4 items = 50%.

   Total points consumed X100. Divide by number of points for that meal.

   Example: 3 points consumed divided by 4 points provided = 75%

2. Intake percentage will be recorded directly on the form provided. (See Food Intake Record/Point System Sample Form.)

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

Sample Form: Food Intake Record/Total Meal Percentage

		Breakfast						Lunch						PM Snack						Dinner						H.S. Snack							
Rm	Name	0 %	25 %	50 %	75 %	100 %	Fluid in mLs	0 %	25 %	50 %	75 %	100 %	Fluid in mLs	0 %	25 %	50 %	75 %	100 %	Fluid in mLs	0 %	25 %	50 %	75 %	100 %	Fluid in mLs	0 %	25 %	50 %	75 %	100 %	Fluid in mLs	Total Fluid mLs	Comments

0%	- Refused
25%	- Poor
50%	- Fair
75%-100%	- Good

Comments can include meal replacement, preferences, etc.

A = Accepted
R = Refused

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Sample Form: Food Intake Record/Point System

		Breakfast	Fluids	Lunch	Fluids	2:00pm	Fluids	Dinner	Fluids	HS	Fluids
Rm	Name	Points	mLs	Points	mLs	Points	mLs	Points	mLs	Points	mLs

Date: _____

Sample Form: Food Intake Record

Insert a sample of your food intake record here if applicable.

Nutrient Intake Study

Policy:

Staff will conduct individual nutrient intake studies as deemed necessary by the registered dietitian nutritionist (RDN) or designee, the interdisciplinary team, or as ordered by the physician. Individuals identified to have a poor food/fluid intake or those at risk for development of unintended weight loss, undernutrition, dehydration, or pressure ulcers may be candidates for a nutrient intake study.

Procedure:

1. The RDN or designee provides the appropriate number of forms for the number of days the nutrient study is to be conducted (typically 3 to 7 days). The RDN or designee writes in the food items and amounts served in the appropriate column and provides the forms to the staff who will record the individual's intake.

2. Staff observes the individual's food/fluid intake at each meal, and checks the percentage of each food/fluid item consumed at each meal and snack.

3. If a **small** amount (1/4) of the food was eaten, record **25%**.
   If **half** of the food item (1/2) was eaten, record **50%**.
   If **almost all** (3/4) of the food item was eaten, record **75%**.
   If the **entire** (all) food item was eaten, record **100%**.
   If very little (none) of the food was consumed or if the food was **refused**, record **0**.

Sample:

Lunch

Food Item and Amount Served	Amount Eaten	Initials
3/4 c Macaroni and Cheese	50%	JM
2 oz Sausage Patty	75%	
1/2 c Stewed Tomatoes	100%	
1/1 Bread and Butter	25%	
1/2 c Milk	0	
2:00 Snack or Supplement		
1/2 c Pudding	100%	JM
1/2 c Milk	50%	

4. Staff submits the completed form to the RDN or designee for evaluation.

5. The RDN or designee estimates the number of calories and amount of protein (and fluids if appropriate) consumed, and documents in the medical record accordingly. Specific interventions will be determined based on the MNT assessment or re-assessment and the nutrient intake study.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

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Sample Form: Food Intake Study

Name: _____ Date: _____

	Amount Eaten							For Dietitian		
Food Item and Amount Served	**0**	**25%**	**50%**	**75%**	**100%**	**Fluids mLs**	**Initials**	**Calories**	**Protein**	**Fluids**
Breakfast:										
10:00 AM Snack or Supplement:										
Lunch:										
2:00 PM Snack or Supplement:										
Dinner:										
HS Snack or Supplement:										
Totals										

Instructions:

1. Food Service: Write in the menu items served and give the form to the appropriate nursing staff.
2. Nursing: Check the appropriate column for percentage eaten. Return the completed form to food service.
3. Food Service: Provide the completed form to registered dietitian nutritionist (RDN) or designee for estimation of calorie and protein intake.

Nutrition Screening for Referrals to the Registered Dietitian Nutritionist

Policy:

Facility staff will screen individuals for nutrition risk on admission, at regular intervals, or whenever a change in condition warrants, using a validated nutrition screening tool and approved process.

Procedure:

1. Staff will use a validated screening tool, such as the Mini Nutritional Assessment (MNA®), to determine the presence or risk for malnutrition or undernutrition. The screening process may also include additional criteria associated with other nutritional risk(s).

   Note: In the outpatient setting, the MNA-Self Assessment may be used. This form can be found at http://www.mna-elderly.com/.

2. The facility will designate responsibility for completing the nutrition screening form. The nutrition screen may be completed by nursing staff during initial assessment or by nutrition support staff during the initial visit to obtain food preferences and determine needs and concerns.

3. Facility staff will follow directions to complete the validated screening form upon admission quarterly, annually, after readmission following a hospital stay, and/or with any significant change in status health.

4. Staff will communicate the results of the nutrition screening process with the RD or designee. Staff will notify the registered dietitian nutritionist (RDN) or designee and provide information for individuals with:
   - Malnutrition as indicated by the screening tool (MNA® scores 7 or less)
   - Risk for malnutrition or (as indicated by MNA® screening score of 8-11)
   - Other criteria as determined by a facility's screening tools or protocols (see policy on referral to RDN)

   The facility RDN, nutrition support staff and/or nurse manager will initiate appropriate interventions, as necessary, for the individual resident/patient. The RDN or designee will complete a comprehensive nutrition assessment and determine appropriate nutrition interventions.

5. The RDN or designee will notify the physician in writing, when an individual's nutrition screening indicates malnutrition (MNA® score of 7 or less). The physician will review the information during the next scheduled visit.

Note: The MNA® is a validated tool to identify malnutrition, or undernutrition, in adults age 65 and older. The MNA® and the 2012 A.S.P.E.N./Academy of Nutrition and Dietetics consensus characteristics of adult malnutrition address many similar issues including inadequate intake and loss of weight, muscle mass, and functionality. The MNA®-SF also addresses psycho-social issues that increase malnutrition risk for older adults; it does not address inflammation.

Refer to the following pages for more information on the *MNA*® and *MNA*®*-Self Assessment Forms*. A *Sample Letter to the Physician*, *and Sample Malnutrition Report Form for the*

Physician which can help implement this system can be found in the chapter on *Communicating with Other Health Care Professionals Made Easy* (pages 163-164).

Note: Nutrition support staff work under the supervision of the registered dietitian nutritionist (RDN). Nutrition support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

Referrals to the Registered Dietitian Nutritionist

Policy:

Facility staff will refer high-risk individuals to the RDN for assessment and interventions as needed.

Procedure:

1. The nutrition support staff or director of nursing or designee will provide the RDN or designee with a list of the individuals no less than monthly including:
    - New or re-admissions to the facility
    - Physician-ordered nutrition consults
    - Malnutrition risk score on MNA® of 11 or less, or as determined by the specific nutrition screening tool
    - Others as determined by the facility may include but are not limited to:

        - Enteral/parenteral feedings
        - Significant weight changes (loss or gain)
        - Insidious weight loss (unplanned gradual weight loss)
        - Pressure ulcers and other wounds
        - Dehydration risk
        - Dialysis or renal diets
        - Fluid restriction
        - Terminal condition
        - Need for nutrition education
        - Poor food/fluid intake
        - Poorly controlled diabetes
        - Chewing, swallowing or gastrointestinal problems
        - Diet orders not available on the menu
        - Desire to refuse diet as ordered by physician

    (See *Referrals for RDN Sample Forms* on the following pages.)

2. Facility staff will use the referral form provided to notify the RDN or designee of any problems as they arise. If the problem is urgent, facility staff will notify the RDN or designee of the problem by phone or secure email or fax and provide supporting information as requested by the RDN.

3. Facility staff will leave the referral form at a pre-agreed upon location in the facility, or communicate this information using a secure means. Facility staff should complete the referral form weekly or more often if needed, and provide it to the RDN or designee.

Note: The Mini Nutrition Assessment® (MNA®) is a validated tool to identify malnutrition, or undernutrition, in adults age 65 and older. The MNA® and the 2012 A.S.P.E.N./Academy of Nutrition and Dietetics consensus characteristics of adult malnutrition address many similar issues including inadequate intake and loss of weight, muscle mass, and functionality. The MNA®-Self-Assessment Form (MNA®-SF) also addresses psycho-social issues that increase malnutrition risk for older adults; it does not address inflammation.

Refer to pages 21, 22, 163, 164) for information on the MNA® and MNA®-Self Assessment Forms, Sample Letter to the Physician, and Sample Malnutrition Report Form for the Physician which can help implement this system.

Note: Nutrition support staff work under the supervision of the registered dietitian nutritionist (RDN). Nutrition support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

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Sample Form 1: Referrals for the Registered Dietitian Nutritionist

Facility:_____ Date:_____

Referral Date	Completed	Room Number	Name	New/ Re-admit	Screened for Referral (MNA® Score of 11 or less)	Physician Ordered Consult	Enteral / Parenteral Feeding	Significant Weight Loss or Gain (or insidious loss)	Pressure Ulcer or Wound	Dehydration risk	Dialysis or Renal Diet	Terminal Condition	Annual Assessments	Needs Nutrition Education	Fluid Restriction	Desire to Refuse Physician-Ordred Diet	Other	Comments

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Sample Form 2: Referrals for the Registered Dietitian Nutritionist

Facility:_____ Date:_____

Room/Name		New/ Re-admit	MD Consult Order	Significant Weight Loss/Gain	Pressure Ulcer or Wound	Risk of or Resolving Dehydration	Terminal Condition	Enteral/ Parenteral Feeding	Needs Nutrition Education	Fluid Restriction	Desire to Refuse Diet	Other	Comments

Resource: Validated Nutrition Screening Forms

Nutrition Screening
A validated screening tool is recommended to generate RDN referrals in Assisted Living Facilities. The following are validated tools that you may choose to implement:

1. The Mini Nutrition Assessment Short Form (MNA-SF) available at www.mna-elderly.com

2. The Malnutrition Screening Tool (MST) available at http://static.abbottnutrition.com/cms-prod/abbottnutrition.com/img/Malnutrition%20Screening%20Tool_FINAL.pdf.

3. The Malnutrition Universal Screening Tool (MUST) available at http://www.bapen.org.uk/must_tool.htmL

Refer to appropriate health care professionals including the Registered Dietitian Nutritionist for any person that screens at risk or as having malnutrition or undernutrition.

Sample Form: Nutrition Screening

Mini Nutritional Assessment MNA®

Nestlé NutritionInstitute

Last name: First name:

Sex: Age: Weight, kg: Height, cm: Date:

Complete the screen by filling in the boxes with the appropriate numbers. Total the numbers for the final screening score.

Screening

A Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties?
0 = severe decrease in food intake
1 = moderate decrease in food intake
2 = no decrease in food intake ☐

B Weight loss during the last 3 months
0 = weight loss greater than 3 kg (6.6 lbs)
1 = does not know
2 = weight loss between 1 and 3 kg (2.2 and 6.6 lbs)
3 = no weight loss ☐

C Mobility
0 = bed or chair bound
1 = able to get out of bed / chair but does not go out
2 = goes out ☐

D Has suffered psychological stress or acute disease in the past 3 months?
0 = yes 2 = no ☐

E Neuropsychological problems
0 = severe dementia or depression
1 = mild dementia
2 = no psychological problems ☐

F1 Body Mass Index (BMI) (weight in kg) / (height in m^2)
0 = BMI less than 19
1 = BMI 19 to less than 21
2 = BMI 21 to less than 23
3 = BMI 23 or greater ☐

IF BMI IS NOT AVAILABLE, REPLACE QUESTION F1 WITH QUESTION F2.
DO NOT ANSWER QUESTION F2 IF QUESTION F1 IS ALREADY COMPLETED.

F2 Calf circumference (CC) in cm
0 = CC less than 31
3 = CC 31 or greater ☐

Screening score (max. 14 points)

12 - 14 points: Normal nutritional status
8 - 11 points: At risk of malnutrition
0 - 7 points: Malnourished ☐☐

References
1. Vellas B, Villars H, Abellan G, *et al.* Overview of the MNA®- Its History and Challenges. *J Nutr Health Aging.* 2006;**10**:456-465.
2. Rubenstein LZ, Harker JO, Salva A, Guigoz Y, Vellas B. Screening for Undernutrition in Geriatric Practice: Developing the Short-Form Mini Nutritional Assessment (MNA-SF). *J. Geront.* 2001; **56A**: M366-377
3. Guigoz Y. The Mini-Nutritional Assessment (MNA®) Review of the Literature - What does it tell us? *J Nutr Health Aging.* 2006; **10**:466-487.
4. Kaiser MJ, Bauer JM, Ramsch C, et al. Validation of the Mini Nutritional Assessment Short-Form (MNA®-SF): A practical tool for identification of nutritional status. *J Nutr Health Aging.* 2009; **13**:782-788.

For more information: www.mna-elderly.com

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Documentation Made Easy

Philosophy and Standards of Clinical Care

Policy:

Medical nutrition therapy (MNT) is defined and supported by well-known and current standards of practice. Current standards of practice are based on evidence-based research where available or upon expert consensus if evidence is not available. Standards of practice are found in current manuals, textbooks or publications that are accepted, adopted or promulgated by recognized professional organizations or national accrediting bodies such as the Academy of Nutrition and Dietetics.

Procedure:

Medical nutrition therapy (MNT) is provided based on current standards of practice, evidence based research and clinical outcome studies. The registered dietitian nutritionist (RDN) and designees will follow accepted standards of clinical practice which include:

1. Compliance with federal, state, local regulations and/or Joint Commission standards as applicable.

2. All MNT care is documented in the medical record in accordance with facility policy. Timely and periodic assessments of individuals' nutritional status and needs will be completed.

3. The RDN or designee will:
   - Assess the nutrition status of all referrals, and for any individuals who are identified "at risk".
   - Communicate to the health care team any information that impacts care.
   - Participate in quality assurance and performance improvement efforts related to MNT care.
   - Provide patient/resident education/guidance per physician order and/or as deemed appropriate by the RDN or designee including those being discharged.
   - Function as a nutrition educator and resource to individuals and their families, the medical and nursing staff, food service and other facility staff, students and community organizations as appropriate.
   - Provide input to assure compliance to standards in nutrition care.
   - Provide input to assure compliance to standards in food purchasing, food production, food safety and food service as appropriate.

4. The facility staff will take a systematic approach to optimize the individual's nutritional status. The RDN will:
   - Participate in the nutrition care process: nutrition assessment, nutrition diagnosis, nutrition intervention, nutrition monitoring and evaluation.
   - Identify and assess each individual's nutrition status and risk factors.
   - Evaluate and analyze the assessment information for nutrition diagnosis as appropriate.
   - Develop and consistently implement pertinent food and nutrition interventions.
   - Monitor and evaluate the effectiveness of nutrition interventions and revise them as necessary.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service

managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

Sample Form: Competency Evaluation can be found in this chapter (page 31).

Documenting in the Medical Record

Policy:

All information regarding medical nutrition care (MNT) will be documented in the individual's medical record utilizing an accepted form of documentation.

Procedure:

The registered dietitian nutritionist (RDN) or designee shall:

1. Document all pertinent information regarding medical nutrition therapy (MNT) in the medical record: screening information, assessments, progress notes and/or care plans.

2. Document each event as soon as possible after its occurrence.

3. Sign all entries with name and professional qualifications.

4. Date (and record the time, if appropriate) of the documentation.

5. Implement and utilize validated or proven nutrition screening tools and MNT assessment and reassessment forms. Progress notes may be used for intermittent documentation as needed. The care plan is based on the facility system, and follows state and federal regulations and Joint Commission Standards as applicable.

6. Follow the facility policy on correcting errors. The appropriate information will then be recorded for correction. (Example: One line is drawn through the incorrect statement. Above the line, the entry is initialed and dated. The correct information is documented, signed and dated.)

7. Follow facility policy for accessing and use of electronic medical records, if applicable.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

Medical Nutrition Therapy Documentation

Policy:

Documentation of medical nutrition therapy (MNT) for each individual is the responsibility of the registered dietitian nutritionist (RDN) with assistance as assigned to the nutrition support staff (i.e. nutrition associate, nutrition and dietetic technician registered or NDTR, and/or certified dietary manager or CDM), as appropriate within each professional's scope of practice and competency level. The facility will:

- Provide nutrition care and services to each individual, consistent with the individual's comprehensive assessment.
- Recognize, evaluate and address the needs of every individual, including but not limited to the individual at risk or already experiencing impaired nutrition.

All documentation will be in accordance with state and federal regulations.

Note: MNT documentation should use the Academy of Nutrition and Dietetics (The Academy) Nutrition Care Process of: 1) Nutrition Assessment, 2) Nutrition Diagnosis, 3) Nutrition Intervention, and 4) Nutrition Monitoring and Evaluation.

Many facilities and RDNs have implemented the Academy's Nutrition Care Process (NCP). The Academy encourages all RDNs and health care communities to use the NCP. For more information on the *Academy Nutrition Care Process*, visit http://www.eatrightpro.org/resources/practice/nutrition-care-process and page 44.

Procedure:

1. **Initial Assessment**
   The focus of the comprehensive medical nutrition therapy (MNT) assessment is to identify risk factors that may contribute to undernutrition, protein energy malnutrition, dehydration, unintended weight loss, pressure ulcers and other nutrition problems, as well as identifying other nutritional needs.

   For Medicare patients/residents, the initial MNT assessment for a new or re-admitted individual is generally initiated and/or completed within 5 days of admission. Re-assessments and/or progress notes are then completed at 14, 30, 60 and 90 days and a minimum of every quarter thereafter. For non-Medicare individuals, the initial MNT assessment may be completed within 14 days of admission and re-assessments or progress notes are completed a minimum of every quarter or more often as needed. (See pages 33-38 for *Resource: Comprehensive Medical Nutrition Therapy Assessment* and *Resource: Nutrition Assessment: Components of a Comprehensive Nutrition Assessment*.)

   Information for the MNT assessment will be gathered through interviews with individuals, family and staff, observations, and review of the medical record and other tools such as meal intake reporting and bowel and bladder reporting. The completed form is reviewed by the RDN and/or designee. The assessment form is filed in the medical record. A new or re-assessment is completed each time an individual is re-admitted, has a significant change in condition, and as deemed necessary by federal and state guidelines or the RDN or designee.

MNT re-assessments will be completed according to federal guidelines, at a minimum of quarterly, upon identification of significant change, or at a minimum of yearly intervals.

2. **Plan of Care**
   Each time an MNT assessment or re-assessment is completed, a care plan or care plan revision should be completed as appropriate.

   The care plan is based on the MNT assessment, the identified risk factors and nutritional needs. Problems, risk factors, or concerns are described along with nutrition interventions and goals for improvement. Care plans are to be completed within 7 days of completion of the assessment, and updated according to the facility's policy, state and federal guidelines, and as needed due to any significant changes (i.e. weight status, food intake, diet order, etc.). Specific and measurable goals should be stated to maintain or achieve optimal nutritional status. Goals and approaches (interventions) should be individualized and should be coordinated with the interdisciplinary team.

   Each time a care plan is updated a re-assessment or progress note should be completed or revised as appropriate.

3. **MNT Re-Assessments/Progress Notes**
   The MNT re-assessment/progress notes reflect progress made on care plan goals, so the RDN and /or designee must review the previous care plan to assess progress. If goals are not met for the problems on the care plan, the approach or goal should be changed. If not changed, then the reasons for little or no progress should be documented. Care plan approaches should be revised based on the individual's outcomes, needs and choices.

   Progress notes should include information from mealtime visitation, discussion with the individual and with the care givers, review of the medical record, evaluation of the care plan, weight status, food intake, physician order or condition changes, lab values, medication, etc. Progress notes should reflect progress made to meet care plan goals.

   Progress notes are completed according to facility policy and state and federal guidelines. When significant changes occur, notes should be updated. Significant changes can include but are not limited to changes in condition, diet order, food intake and weight. Generally progress notes are written a minimum of every 90 days; and with each significant change in status. Individuals with high-risk conditions will need to be reviewed more frequently.

   Each time a re-assessment or progress note is completed, the care plan should be updated.

Summary for Nursing Facilities:

- The initiation of the nutrition assessment is completed within 5 days of admission for Medicare patients/residents and within 14 days of admission for all residents.
- The Initial care plan is completed within 7 days after completion of the assessment.
- Progress notes and care plan updates are completed according to state and federal guidelines (generally a minimum of every 90 days and with any significant change).
- A re-assessment and care plan revision is completed each time an individual is re-admitted, quarterly, upon significant change in condition and as deemed necessary by the facility or the RDN.

Resource: Role Delineation (Division of Responsibility for Documentation)

Role delineation is dictated by the current Standards of Practice and Standards (SOP) of Professional Performance (SOPP) of the Academy of Nutrition and Dietetics (Academy) along with individual State Dietetic Licensing or Certification Boards, and to some extent, by the Academy Dietetic Practice Groups and the Association of Food and Nutrition Professionals (ANFP). This policy covers general guidelines. More detailed guidelines may need to be developed based on individual state laws (dietetic licensing or certification boards).

- **The Certified Dietary Manager (CDM) or trained Food Service Manager** may gather information for the food preferences and gather facts for the MNT assessment and/or progress notes. The initial food preferences and information gathering for the MNT assessment should be completed within 48 hours of admission. This includes food preferences, pertinent data such as food allergies or intolerances, chewing and swallowing abilities and other relevant information. The CDM or food service manager may write progress notes by stating factual information such as diet order, percent of food intake, as noted by nursing, height, weight, usual body weight, lab values, medications, etc. The CDM or food service manager's role is to collect the factual data for documentation, communicate pertinent information to the RDN or designee and the interdisciplinary team, and implement the physician's diet and supplement orders as applicable. The CDM or food service manager also communicates and implements the RDN or designee recommendations as appropriate.
- **The Nutrition and Dietetic Technician Registered (NDTR), Dietetic Technician Registered (DTR), Nutrition Associate, Licensed Dietitian (LD) and/or Registered Dietitian Nutritionist (RDN)** complete the MNT assessment and initial care plan, and revise all care plans when additional problems, approaches and goals are added. These nutrition professionals may also write progress notes as needed. The RDN guides nutritional care of each resident/patient and provides information and guidance for facility wide systems for nutrition care. As support staff, the NDTR and Nutrition Associate work under the supervision of the RDN. The Academy SOP/SOPP for RDNs and DTRs should be reviewed and implemented at the facility level.

Per state licensure laws, the licensed dietitian may delegate certain tasks to the support staff (including CDM). Review your state licensure laws and the scope of practice for each professional to assure appropriate delegation. This policy should be adjusted according to specific state regulations. Every state is different so review individual state laws to assure compliance. The RDN is ultimately responsible for the direction of nutrition care and should delegate tasks based on state and federal guidelines and the competency of the NDTR, DTR, Nutrition Associate or CDM

Summary:

- The CDM or trained food service manager gathers information to initiate assessments and progress notes.
- The RDN or designee assesses the nutritional status and completes the nutrition care process.

For more information on Role Delineation:

1. Individual State Dietetic Licensure or Certification Board.
2. Academy of Nutrition and Dietetics. Scope of Practice. http://www.eatrightpro.org/resources/practice/patient-care/scope-of-practice
3. Association of Food and Nutrition Professionals:
   a. CDM scope of practice: http://www.anfponline.org/Training/CDM_CFPP.shtmL

b. ANFP Practice Standard: Documenting in the Medical Record: http://www.anfponline.org/Resources/DMAResources/standard02.shtmL
c. CDM Nutrition Care Self-Assessment tool: http://www.anfponline.org/Extras/Self_Assessment_Tool.pdf

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Sample Form: Competency Evaluation

Name: _____ **Date:** _____

Job Title: _____

Skill	Competent Y	N	N/A	Comments
Current with Registration/Certification				
Stays current with professional standards of care through continuing education				
Knowledge and understanding of regulations				
Knowledge and understanding of facility process				
Clinical Area				
Able to assess residents				
Able to use the Nutrition Care Process to determine appropriate action				
Appropriate use of Assessment Tools				
Interprets data appropriately				
Communicates with IDT effectively				
Timely documentation				

Medical Nutrition Therapy Made Easy

Skill	Competent Y	N	N/A	Comments
Nutrient Intakes				
Evaluates				
Documentation				
Able to document				
Develops appropriate nutrition interventions and documents on Interdisciplinary Care Plan				
MDS				
Communicates and follows through on nutritional interventions				
Evaluates effectiveness and compliance of interventions				
Effectively completes Discharge Summary				

Comments: _____

Review Of Competency Evaluation**:** _____

_____ _____

Employee Signature Date Reviewer Signature Date

Form created by Suzanne Cryst, RDN, CSG, LD. Adapted and used with permission.

Comprehensive Medical Nutrition Therapy Assessment

Policy:

The RDN will complete a comprehensive medical nutrition therapy (MNT) assessment for each individual that is referred or identified for assessment. The purpose of nutrition assessment is to obtain, verify, and interpret data needed to identify nutrition-related problems, their causes, and significance. It is an ongoing, nonlinear and dynamic process that involves data collection and continual analysis of the individual's status compared to specified criteria (1).

Note: Skilled nursing facilities use the Minimum Data Set (MDS) Resident Assessment Instrument (RAI) for basic assessment (section K covers nutrition). The standard of care in skilled nursing facilities is to complete a comprehensive nutrition assessment in addition to the MDS. This policy refers to that comprehensive assessment.

Procedure:

1. An in-depth medical nutrition therapy (MNT) assessment will help identify the nature and causes of impaired nutrition and nutrition-related risks. The in-depth MNT assessment may use existing information from sources such as assessments from other disciplines, laboratory tests, patient/resident observations, and individual and family interviews. (See Resource: Nutrition Assessment: Components of a Comprehensive Nutrition Assessment on page 36).

2. The RDN gathers information for the comprehensive MNT assessment from information available in the facility, individual observations, and nutrition-focused physical assessment. A variety of health care professionals contribute information, including:
   - Nursing staff provides details about the individual's nutrition intake, daily routines, and food preferences, and vital signs.
   - Health care practitioners (e.g., physicians and nurse practitioners) determine medical diagnosis, identify causes of nutrition problems (i.e. anorexia and weight loss), and tailor interventions specific to each individual.
   - Therapy staff provide information about swallowing ability, ability to self-feed, and need for adaptive feeding equipment or positioning during meals.
   - Consultant pharmacists can help the staff identify medications that affect nutrition by altering taste or causing dry mouth, lethargy, nausea, or confusion.

3. The registered dietitian nutritionist (RDN) and/or designee identifies nutritional risk factors and nutrition diagnosis and recommends nutrition interventions based on each individual's medical condition, needs, desires, and goals. (See *Referrals to the Registered Dietitian Nutritionist* on page 17).

4. Interventions and goals are developed based on individual's preferences (e.g., willingness to participate in weight management interventions or desire for nutritional support at end-of-life), the anticipated course of an individual's overall condition and progression of a disease (e.g., end-stage, terminal, or other irreversible conditions affecting food intake, nutritional status, and weight goals), and by the individual's willingness and capacity to permit additional diagnostic testing, monitoring and treatment.

5. The facility uses laboratory tests as appropriate to help identify underlying causes of impaired nutrition or when the clinical assessment alone is not enough to define someone's nutritional status. Abnormal laboratory values may, but do not necessarily, imply that

treatable clinical problems exist or that interventions are needed. The facility confirms the likelihood of nutrition issues through additional clinical evaluation and evidence such as food intake, underlying medical condition, etc.

- Example: Serum albumin may help establish prognosis but is only sometimes helpful in identifying impaired nutrition or guiding interventions. Serum albumin may drop significantly during an acute illness for reasons unrelated to nutrition; therefore, albumin may not improve, or may fall further, despite consumption of adequate amounts of calories and protein. The decision to order laboratory tests, and the interpretation of subsequent results, is best done in light of an individual's overall condition and prognosis. Although laboratory tests such as albumin and pre-albumin may help in some cases in deciding to initiate nutritional interventions, there is no evidence that they are useful for the serial follow-up of undernourished individuals (2,3). Serum albumin and prealbumin appear to better reflect severity of the inflammatory response rather than poor nutritional status (4). They do not specifically indicate malnutrition and do not typically respond to feeding interventions when an acute inflammatory response is present (4).
- Before ordering laboratory tests it is appropriate for the health care practitioner to determine and indicate whether the tests would potentially change the individual's diagnosis, management, outcome or quality of life or otherwise add to what is already known.

Note: If laboratory tests were done prior to or after admission to the facility and the test results are abnormal, the physician or other licensed health care practitioner, in collaboration with the interdisciplinary team, reviews the information and determines whether to intervene or order additional diagnostic testing.

6. The facility conducts the nutrition analysis using the information from multiple sources. These include, but are not limited to, the RAI and additional nutritional assessments as indicated to determine an individual's nutritional status and develop an individualized care plan.

7. The facility develops the specification of the nutrition concern (Nutrition Diagnosis determined by the RDN) which is a clear statement that provides the basis for individual-specific interventions. For example:
   a. Inadequate oral food and fluid intake
      - Related to oral intake <50%
      - As evidenced by ≥ 5% unintended weight loss the past 30 days
   b. Increased energy needs
      - Related to energy needs greater than calculated needs
      - As evidenced by hyper-metabolic state associated with infection with fever
   c. Swallowing difficulty
      - Related to neuromuscular disorder affecting ability to eat and swallow
      - As evidenced by need for pureed diet

Note: The Academy of Nutrition and Dietetics encourages all RDNs to adopt the Nutrition Care Process of Nutrition Assessment, Nutrition Diagnosis, Nutrition Intervention and Nutrition Monitoring and Evaluation.

References for Comprehensive Medical Nutrition Therapy Assessment:

1. Academy of Nutrition and Dietetics. Nutrition Terminology Reference Manual (eNCPT): Dietetics Language for Nutrition Care. NCP Step 1: Nutrition Assessment. http://ncpt.webauthor.com/pubs/idnt-en/category-1. Accessed February 13, 2015.

2. Covinsky KE, Covinsky MH, Palmer RM, & Sehgal AR. (2002). Serum albumin concentration and clinical assessments of nutritional status in hospitalized older people: Different sides of different coins? Journal of the American Geriatrics Society, 50(4) 631-637).
3. Centers for Medicare & Medicaid Services. State Operations Manual, Guidance to Surveyors for Long Term Care Facilities, Appendix PP. http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_pp_guidelines_ltcf.pdf. Revision 133; 02/06/15.
4. White JV, Guenter P, Jensen G, Malone A, Schofield M. Academy of Nutrition and Dietetics Malnutrition Work Group, et al. Consensus statement of the Academy of Nutrition and Dietetics/American Society for Parenteral and Enteral Nutrition: Characteristics recommended for the identification and documentation of adult malnutrition (undernutrition). *J Acad Nutr Diet*. 2012;112(5):730–738.

Resource: Components of a Comprehensive Medical Nutrition Therapy Assessment

The in-depth medical nutrition therapy (MNT) assessment should include the following information (1):

1. **Food and Nutrition-Related History:**
   - Estimate of calorie, nutrient and fluid needs, and whether intake is adequate to meet those needs.
   - The route (oral, enteral or parenteral) of food and/or fluid intake.
     - Meal and snack patterns and preferred portions sizes
   - Food dislikes and preferences (including ethnic foods and form of foods such as finger foods).
   - Food and Fluid intake at meals and between meals
   - Participation in select menus, buffet-style dining, or open dining.
   - Ability to make food choices.
   - Use of fortified foods, oral nutrition supplements, or other supplements that might affect nutritional status such as high calorie medication passes or protein supplements

2. **Nutrition-Focused Physical Findings:** Refer to *Resource: Nutrition-Focused Physical Assessment* on page 69).
   Findings that may affect or reflect nutritional status:
   - Robust, thin, obese, or cachectic
   - Level of consciousness, responsiveness, affect
   - Oral health and dentition
   - Ability to use the hands and arms
   - Condition of hair, nails, and skin

3. **Anthropometric Measurements Including Height:**
   - Refer to *Policy and Procedure: Obtaining Accurate Heights* and *Resource: How to Obtain Accurate Heights* on pages 72-73.

   Weight:
   - Significant unintended changes in weight (loss or gain) or insidious weight loss. Refer to the following *Policies and Procedures and Resources*: *Accurate Weights*, *Resource: How to Obtain Accurate Weights, Adjusting Weights for Amputees, Significant Weight Changes, Tracking Weight Changes, Significant Weight Loss, Significant Weight Gain, Sample Forms* and *Charts, etc.*

4. **Biochemical Data, Medical Tests, and Procedures**
   - Lab data, such as electrolytes and glucose
   - Medical tests and procedures, such as gastric emptying time, resting metabolic rate, swallowing tests, etc.

5. **Client History**
   - Usual body weight, a history of reduced appetite or a history of progressive weight loss or gain prior to admission, medical conditions, and events such as recent surgery, which may have affected an individual's nutritional status and risks.

Additional information that might be useful to assessment of nutritional status include:

1. **Fluid Intake and Fluid Balance:**
   - Clinical manifestations of fluid and electrolyte imbalance, including abrupt weight changes, changes in food and fluid intake, or altered level of consciousness.
   - Laboratory tests (e.g., electrolytes, BUN, creatinine and serum osmolality) to that can identify, manage, and monitor fluid and electrolyte status.

2. **Altered Nutrient Intake, Absorption, and Utilization:**
   Poor intake, continuing or unabated hunger, or a change in the individual's usual intake that persists for multiple meals, may indicate an underlying problem or illness. Assess for possible causes such as:
   - Inability to consume meals provided (possibly due to the form or consistency of food/fluid, cognitive or functional decline, arthritis-related impaired movement, neuropathic pain, or insufficient assistance).
   - Insufficient availability of food and fluid (e.g., inadequate amount of food or fluid or inadequate tube feedings).
   - Environmental factors affecting food intake or appetite (e.g., comfort and level of disruption in the dining environment).
   - Adverse consequences related to medications.
   - Diseases and conditions such as cancer, diabetes mellitus, advanced or uncontrolled heart or lung disease, infection and fever, liver disease, hyperthyroidism, mood disorders, and repetitive movement disorders (e.g., wandering, pacing, or rocking).

3. **Medications** (2,3)
   - **Medications that affect fluid balance:**
     - Diuretics and other medications may cause weight loss that is not associated with nutritional issues, but can also cause fluid and electrolyte imbalance/dehydration that causes a loss of appetite and weight.
   - **Medications that affect nutrient utilization:**
     - Examples include liquid phenytoin taken with tube feedings or grapefruit juice taken with some antihyperlipidemics).
   - **Medications that affect nutrition status**
     - Almost every pharmaceutical class has medications that can affect nutritional status, directly or indirectly by causing or exacerbating anorexia, lethargy, confusion, nausea, constipation, impairing taste, or altering gastrointestinal function.
     - Inhaled or ingested medications can affect food intake by causing pharyngitis, dry mouth, esophagitis, or gastritis. To the extent possible, consideration of medication/nutrient interactions and adverse consequences should be individualized.

4. **Gastrointestinal (GI) Disorders:**
   - Various GI disorders such as pancreatitis, gastritis, motility disorders, small bowel dysfunction, gall bladder disease, and liver dysfunction may affect digestion or absorption of food.
   - Prolonged diarrhea or vomiting may increase nutritional requirements due to nutrient and fluid losses.
   - Constipation or fecal impaction may affect appetite and excretion.

5. **Hypermetabolic State related to Wounds or Medical Conditions:**
   Pressure ulcers and some other wounds and other medical conditions can affect nutritional requirements.
   - A hypermetabolic state results from an increased demand for energy and protein and may increase the risk of weight loss or undernutrition. Examples of causes include advanced chronic obstructive pulmonary disease (COPD), pneumonia and other infections, cancer, hyperthyroidism, and fever. Early identification of these factors, regardless of the presence of any associated weight changes, can help a facility choose appropriate interventions to minimize any subsequent complications.
   - Several medical problems that result in hypermetabolism can co-exist.

6. **Chewing Problems:**
   Conditions of the mouth, teeth, and gums can affect the individual's ability to chew foods. For example, oral pain, dry mouth, gingivitis, periodontal disease, ill-fitting dentures, and broken, decayed or missing teeth can impair oral intake.

7. Swallowing Problems
- Swallowing can be affected by a variety of conditions, including but not limited to stroke, pain, lethargy, confusion, dry mouth, and diseases of the oropharynx and esophagus.
- Swallowing ability may fluctuate from day to day or over time. In some individuals, aspiration pneumonia can complicate swallowing abnormalities.

8. **Functional Ability:**
   The ability to eat independently may be helped by addressing factors that impair function or by providing appropriate individual assistance, supervision, or assistive devices.
   - Conditions affecting functional ability to eat and drink include impaired upper extremity motor coordination and strength or reduced range of motion (any of which may be hampered by stroke, Parkinson's disease, multiple sclerosis, tardive dyskinesia, or other neuromuscular disorders or by sensory limitations (e.g., blindness).
   - Cognitive impairment may also affect an individual's ability to use a fork, or to eat, chew, and swallow effectively.

References Components of a Comprehensive Medical Nutrition Therapy Assessment:

1. Academy of Nutrition and Dietetics. Nutrition Terminology Reference Manual (eNCPT): Dietetics Language for Nutrition Care. NCP Step 1: Nutrition Assessment. http://ncpt.webauthor.com/pubs/idnt-en/category-1. Accessed February 13, 2015.
2. Centers for Medicare & Medicaid Services. State Operations Manual, Guidance to Surveyors for Long Term Care Facilities, Appendix PP. http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_pp_guidelines_ltcf.pdfhttp://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107_appendixtoc.pdf (scroll down to the Appendix PP link). Revision 13370, 1/7/112/06/15. Accessed February 13, 2015.
3. Bellows R, Moore L. Nutrient-Drug Interactions and Food. Colorado State University Extension. http://www.ext.colostate.edu/pubs/foodnut/09361.htmL. Updated August 8, 2014. Accessed February 13, 2015.

Comprehensive Care Plan

Policy:

The facility will develop a comprehensive care plan following the most current regulatory requirements available. As applicable, this includes a comprehensive nutrition care plan which is based on the comprehensive medical nutrition therapy (MNT) assessment. The care plan should build on patient/resident strengths and preferences, be oriented toward avoiding preventable declines in functioning, and reflect current standards of care in professional practice (1).

Procedure:

1. Based on information generated by the comprehensive assessment and any pertinent additional MNT assessment, the interdisciplinary team develops an individualized care plan with input from the resident/patient and/or representative.
    a. Care plan format should reflect facility protocols and should be resident-centered and or/resident directed ("I" care plans). Resident centered care plans involve the resident and multiple disciplines. "I" care plans are totally focused on the wants, needs, and desires of the resident and written from their perspective (2).

2. The care plan addresses, to the extent possible, identified causes of impaired nutrition status. The care plan reflects the individual's goals and choices, and identifies individual-specific interventions. It includes a time frame in which goals might be achieved and parameters for monitoring progress.

3. The care plan is updated as needed: e.g., as conditions change, goals are met, interventions are determined to be ineffective, or as specific treatable causes of nutrition-related problems (anorexia, impaired chewing, etc.) are identified.
    - If nutrition goals are not achieved, new or additional pertinent approaches are identified and implemented as indicated.
    - Pertinent documentation can help identify the basis (e.g., current individual status, comorbid conditions, prognosis, and individual choices) for nutrition-related goals and interventions.

4. Each individual or their representative should make informed choices about accepting or declining care and treatment.
    - The facility can help the individual exercise the right of choice effectively by discussing condition, treatment options (including related risks and benefits, and expected outcomes), personal preferences, and potential consequences of accepting or refusing treatment. If the individual declines specific interventions, the facility must address the individual's concerns and offer relevant alternatives.
    - The care plan reflects an individual's choices, either as offered by the individual directly or via a valid advance directive or based on a decision made by the individual's representative in accordance with state law.
        - The presence of care instructions such as an advance directive, or declining some interventions does not necessarily imply that other support and care was declined or is not pertinent.
        - When preferences are not specified beforehand, decisions related to the possible provision of supplemental or artificial nutrition should be made in conjunction with the individual or individual's representative in accordance with state law. This decision should take into account relevant considerations such

as the individual's condition, prognosis, and known values and choices. See *Resource: End of Life Nutrition and Hydration* on page 141).

5. Use a variety of interventions to meet the individuals' nutritional needs based on many factors including, but not limited to current food intake, the degree of nutritional impairment or risk, individual choices, the response to initial interventions, and the feasibility of addressing underlying conditions and causes.
   - Basic energy needs can generally be met by providing a diet that includes sufficient calories to stabilize current body weight. Adjustments may be necessary when factors exist such as food allergies/intolerances, the need for a therapeutic diet, or hypermetabolic states (e.g., fever, hyperthyroidism, acute wounds, or heart or lung disease). Energy needs should be met to avoid having the body use lean body mass for energy and wound repair.

6. Monitor outcomes and evaluate interventions after care plan implementation. Review the individual-specific factors identified as part of the latest comprehensive individual assessment and any supplemental MNT assessment.
   - Identify and report information about the individual's nutritional status and related issues such as level of consciousness and function. (Nursing assistants may be most familiar with the individual's habits and preferences, symptoms such as pain or discomfort, fluctuating appetite, and nausea or other gastrointestinal symptoms).
   - More intensive and frequent monitoring may be indicated for individuals with impaired or at-risk nutritional status than for those who are currently nutritionally stable. Monitoring includes, but is not limited to:
     - Observe for and recognize emergence of new risk factors (e.g., acute medical illness, pressure ulcers, or fever).
     - Evaluate consumption of between-meal snacks and oral nutritional supplements.
     - Review the continued relevance of any current nutritional interventions (e.g., therapeutic diets, tube feeding orders or oral nutritional supplements).

7. Evaluate the care plan to determine if current interventions are being followed and if they are effective in attaining identified nutrition and weight goals and modify the care plan as needed.
   - Subsequent adjustment of interventions will depend on progress, underlying causes and overall condition.
   - Modify nutrition-related goals as needed based on new information and responses to current interventions.
     - Modify the current care plan and add new or additional interventions as needed.
     - Explain any decision to continue current interventions when the individual's nutrition status continues to decline (e.g., the goal of care for someone with a terminal, advanced, or irreversible condition has changed to palliation).

References for Comprehensive Care Plan:

1. Centers for Medicare & Medicaid Services. State Operations Manual, Guidance to Surveyors for Long Term Care Facilities, Appendix PP. http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_pp_guidelines_ltcf.pdf (scroll down to the Appendix PP link). Revision 13370, 2/06/15. Accessed March 31, 2015.
2. Litchford M. *MDS 3.0 & Nutrition Care Plans*. St. Charles IL: Dietary Managers Association; 2011.

Resource: Care Planning and Body Weight (1)

Usual Body Weight

For many individuals (including overweight individuals), usual body weight (UBW) prior to illness, decline, or admission to a health care facility is the more relevant than ideal body weight (IBW).

- Basing interventions on IBW can be misleading, because IBW has not been definitively established for the frail elderly and those with chronic illnesses and disabilities.
- Many individuals are either above or below their IBW but are at their weight baseline over time. Those who are over or under their IBW do not automatically require nutrition interventions if their usual body weight over time has been stable.

Care Planning Weight Changes

Based on the MDS 3.0 (see *Sample Worksheet for MDS 3.0 Section K Swallowing/Nutritional Status* on page 59), nutrition issues trigger as areas of care - known as Care Area Assessments (CAAs). The care plan should address areas that trigger on the CAAs, but may also address areas that are identified to be nutrition concerns, such as insidious weight loss or observed changes in intake that have the potential to contribute to weight loss.

- The care plan should include nutrition interventions that address underlying risks and causes of unplanned weight loss (e.g., the need for eating assistance, reduction of medication side effects, and additional food that the individual will eat) or unplanned weight gain.
- Many risk factors and some causes of weight loss can be addressed, at least partially, while others may not be modifiable.
- Some interventions may not be indicated or appropriate, based on individual goals and prognosis.
- Weight stability, rather than weight gain, may sometimes be the most pertinent short-term or long-term objective for the nutritionally at-risk or compromised individual. After an acute illness or as part of an advanced or end-stage medical condition, the individual's weight and other nutrition parameters may not return to previous levels and may stabilize at a lower level, sometimes indefinitely.

Note: There should be a documented clinical basis for any conclusion that nutrition status or significant weight change are unlikely to stabilize or improve (e.g., physician's documentation as to why weight loss is medically unavoidable).

Factors to Consider When Developing a Care Plan for Weight Changes

Environmental Factors

Appetite is often enhanced by the appealing aroma, flavor, form, and appearance of food. Meal intake might be improved by providing a pleasant dining experience providing meals that are palatable, attractive and nutritious, and making sure that the environment where individuals eat is conducive to dining.

Anorexia

In some cases, anorexia can be treated. For example, the practitioner may consider adjusting or stopping medications that may have caused the individual to have dyspepsia or become lethargic, constipated, or confused, and reevaluate the individual to determine whether the effects of the medications are the reasons for the anorexia and subsequent weight loss.

- Where psychosis or a mood disorder such as depression has been identified as a cause of anorexia or weight change, treatment of the underlying disorder (based on an appropriate diagnostic evaluation) may improve appetite. However, other coexisting conditions or

factors instead of, or in addition to, depression, may cause or contribute to anorexia. In addition, the use of antidepressants is not generally considered to be an adequate substitute for appropriately investigating and addressing modifiable risk factors or other underlying causes of anorexia and weight loss.

Functional Factors

Each individual should be provided the necessary assistance to allow them to eat and drink adequately. An individual with functional impairment may need help with eating.

- Examples of interventions may include, but are not limited to: providing proper positioning for eating; participation in a restorative dining program; use of assistive devices/utensils; and prompt assistance (e.g., supervision, cueing, hand-over-hand) during every meal/snack where assistance is needed, ensuring that sensory devices such as eyeglasses, dentures, and hearing aids are in place; providing personal hygiene before and after meals, properly positioning the individual, providing eating assistance where needed, and providing the assistive devices/utensils identified in the assessment (2,3)

Chewing and Swallowing

- A comprehensive review should look beyond the symptoms to the underlying causes of chewing or swallowing problems. Pertinent interventions may help address the individual's eating, chewing, and swallowing problems and optimize comfort and enjoyment of meals.
  - Examples of such interventions may include providing proper positioning for eating; assuring dentures are clean and in place at mealtime; cutting, chopping, or pureeing food to the proper consistency; assuring proper oral care between meals; participation in a restorative eating program; use of assistive devices/utensils as ordered; and prompt assistance (e.g., supervision, cueing, hand-over-hand) during every meal/snack where assistance is needed.

- Treating medical conditions (e.g., gastroesophageal reflux disease and oral and dental problems) that can impair swallowing or cause coughing may improve a chewing or swallowing problem.
  - Examples of other relevant interventions include adjusting medications that cause dry mouth or coughing, and providing liquids to moisten the mouth of someone with impaired saliva production.

- Excessive modification of food and fluid consistency may unnecessarily decrease quality of life and impair nutritional status by affecting appetite and reducing intake. Many factors influence whether a swallowing abnormality eventually results in clinically significant complications such as aspiration pneumonia (4).

- Identification of a swallowing abnormality alone does not necessarily warrant dietary restrictions or food texture modifications. No interventions consistently prevent aspiration and no tests consistently predict who will develop aspiration pneumonia (5).
  - For example, tube feeding may be associated with aspiration, and is not necessarily a desirable alternative to allowing oral intake, even if some swallowing abnormalities are present (6).

- Decisions to downgrade or alter the consistency of diets must include the individual (or the individual's representative), consider ethical issues (such as the right to decline treatment), and be based on a careful review of the individual's overall condition, correctable underlying causes of the risk or problem, the benefits and risks of a more

liberalized diet, and the individual's preferences to accept risks in favor of a more liberalized food intake (7).

Medications

- When an individual is eating poorly or losing weight, the immediate need to stabilize weight and improve appetite may supersede long-term medical goals for which medications were previously ordered. It may be appropriate to change, stop, or reduce the doses of medications (e.g., antiepileptics, cholinesterase inhibitors, or iron supplements) that are associated either with anorexia or with symptoms such as lethargy or confusion that can cause or exacerbate weight loss.
- The medical practitioner in collaboration with the staff and the pharmacist should review and adjust medications as appropriate.

References for Care Planning and Body Weight:

1. Centers for Medicare & Medicaid Services. State Operations Manual, Guidance to Surveyors for Long Term Care Facilities, Appendix PP. http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107_appendixtoc.pdf (scroll down to the Appendix PP link). Revision 70, 2/6/15. Accessed March 31, 2015.
2. Dorner B. *Diet and Nutrition Care Manual: A Comprehensive Nutrition Care Guide*. Naples, FL: Becky Dorner & Associates, Inc., 2014.
3. Dorner B. *Making Mealtime Magic: with person centered dining*. Naples, FL: Becky Dorner & Associates, Inc., 2013.
4. Kikawada M, Iwamoto T, & Takasaki M. Aspiration and infection in the elderly. *Drugs Aging* 2005:,22 (2), 115-130.
5. Pioneer Network Food and Dining Clinical Practice Task Force. New Dining Practice Standards. 2011. http://www.pioneernetwork.net/Data/Documents/NewDiningPracticeStandards.pdf. Accessed March 11, 2015.
6. Thomas D. R. Hard to swallow: Management of dysphagia in nursing home residents. *Journal of the American Medical Directors Association. 2008: 9*: 455–457.
7. Campbell-Taylor I. Oropharyngeal dysphagia in long-term care: Misperceptions of treatment efficacy. *Journal of the American Medical Directors Association. 2008:, 9*:523–531.

Resource: The Nutrition Care Process (NCP)

The Nutrition Care Process is a systematic approach to providing high-quality nutrition care. It was published by the Academy of Nutrition and Dietetics as part of the Nutrition Care Model. Use of the NCP does not mean that all patients/clients get the same care; the process provides a framework for the RDN to individualize care, taking into account the patient/client's needs and values and using the best evidence available to make decisions (1).

In order to clearly document the impact on patient care, the Academy created a standardized language that captures the specifics of what the dietetics profession does. Using standardized language (known as nutrition care process terminology, or NCPT) gives the ability to explore and understand the links between nutrition problems, interventions used and associated outcomes (2). The NCP provides the framework for demonstrating how nutrition care improves outcomes by use of a consistent, systematic structure and method, common language, and an evidence-based approach (3).

MNT and the NCP
Food and nutrition professionals may question the difference between medical nutrition therapy (MNT) and the Nutrition Care Process. MNT is an evidence-based application of the Nutrition Care Process that typically results in the prevention, delay or management of diseases and/or conditions (4). The NCP allows the Registered Dietitian Nutritionist to use critical thinking skills, make decisions to address nutrition problems, and provide high quality nutrition care (3).

The NCP consists of four distinct, interrelated steps:

1. **Nutrition Assessment:** The RDN collects and documents information such as food or nutrition-related history; biochemical data, medical tests and procedures; anthropometric measurements, nutrition-focused physical findings and client history.
    a. Facility-approved forms or electronic formats should be used and filed in the medical record (3)
2. **Nutrition Diagnosis:** Data collected during the nutrition assessment guides the RDN in selection of the appropriate nutrition diagnosis (i.e., naming the specific nutrition related problem)
    a. The nutrition diagnosis is different than a medical diagnosis; it is the identification of a nutrition problem that can be resolved with nutrition interventions (3)
    b. Nutrition diagnosis is summarized as a PES statement (problem, etiology, signs/symptoms)
    c. Nutrition diagnosis may be related to 3 domains
        i. Intake (excessive or inadequate intake compared to requirements)
        ii. Clinical-medical or physical conditions that are outside of normal
        iii. Behavioral/environmental (knowledge, attitudes, beliefs, physical environment, access to food, food safety)
3. **Nutrition Intervention:** The RDN selects the nutrition intervention that will be directed to the root cause (or etiology) of the nutrition problem and aimed at alleviating the signs and symptoms of the diagnosis. There are 4 categories of nutrition interventions:
        i. Food and/or nutrient delivery
        ii. Nutrition education
        iii. Nutrition counseling
        iv. Coordination of nutrition care
4. **Nutrition Monitoring/Evaluation:** The final step of the process is monitoring and evaluation, which the RDN uses to determine if the individual has achieved, or is making progress toward, the planned goals.

a. Monitoring tools include changes in skin, labs, functional ability, weight, food and fluid intake, acceptance of thickened liquids, etc. (3)

The Academy NCP was designed to determine the problems, etiology, signs and symptoms that impact nutrition and hydration status. It does not take the place of any RDN's judgment when determining MNT.

The Nutrition Care Process can be implemented in any setting, including acute care, assisted living, group homes, long-term care, rehab, hospice, and others (3). The RDN is responsible for the NCP.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team. See *Sample Form: Competency Evaluation* on page 31.

More information on implementing the Nutrition Care Process is available at http://www.eatrightpro.org/resources/practice/nutrition-care-process/ncp-101. Tutorials are available to Academy members at http://www.andeal.org/ncp/.

Information on Standards of Practice and Standards of Professional Performance can be found at http://www.eatrightpro.org/resources/practice/patient-care/scope-of-practice.

References for The Nutrition Care Process:

1. Nutrition Care Process. Academy of Nutrition and Dietetics Web site. http://www.eatrightpro.org/resources/practice/nutrition-care-process. Accessed February 13, 2015.
2. Standardized Language. Academy of Nutrition and Dietetics Webs site. http://www.eatrightpro.org/resources/practice/nutrition-care-process/standardized-language. Accessed February 13, 2015.
3. Cryst, S. Implementation of the Nutrition Care Process in Extended Care. (Becky Dorner & Associates, Inc. webinar February 2015.)
4. Academy of Nutrition and Dietetics. Nutrition Terminology Reference Manual (eNCPT): Dietetics Language for Nutrition Care. http://ncpt.webauthor.com. Accessed February 13, 2015.

Resource: Sample PES Statements

Predictive Suboptimal Energy/Protein/Oral/Nutrient Intake

- Predictive suboptimal energy and protein intake *related to* chemotherapy treatments for breast cancer *as evidenced by* individual's report of decreased appetite and nausea.
- Predictive suboptimal nutrient intake related to end of life care *as evidenced by* diagnosis of end stage renal disease without dialysis treatment.
- Predictive suboptimal (oral) energy intake *related to* decreased ability to consume foods secondary to conditions associated with diagnosis of Arthritis *as evidenced by* individual's inability to feed self and refusal of assistance with meals.
- Predictive suboptimal (oral) nutrient intake *related to* poor acceptance of pureed diet with nectar thickened liquids *as evidenced by* observation of individual's refusal of food served and requests for regular food.
- Predictive suboptimal (intake of) nutrient intake *related to* conditions associated with dx of Alzheimer's disease *as evidenced by* a documented intake that is less than calculated needs without unintentional weight loss.
- Predictive suboptimal intake of nutrients *related to* recent nursing home placement and conditions associated with depression *as evidenced by* reports of decreased appetite and intake.
- Predictive suboptimal intake of nutrients *related to* increased energy needs *as evidenced by* conditions associated with progression of Parkinson's disease.

Energy Balance/Oral Intake/Nutrient

- Inadequate oral intake *related to* dementia as evidenced by consistent poor p.o. intake and weight loss.
- Inadequate oral (energy) intake *related to* difficulty swallowing *as evidenced by* observation of pocketing and spitting out foods during mealtimes and a weight loss of 6.7% in the past 30 days.
- Inadequate oral (energy) intake *related to* individual's lack of interest in food *as evidenced by* documented intake of refusal of 15 meals out of 21.
- Inadequate energy and protein intake *related to* significant amount of meals and supplements left uneaten *as evidenced by* documented intake of 30% of meals and supplements.
- Inadequate oral intake *related to* weakness and shortness of breath caused by conditions associated with COPD *as evidenced by* individual's inability to eat for more than 5 minutes.
- Inadequate energy and protein intake *related to* short attention span *as evidenced by* individual's inability to stay in dining room for a full meal.
- Inadequate oral intake *related to* comatose state and responsible party's decline of enteral feeding *as evidenced by* a continual weight loss of 10% in the past 30 days.

Unintentional Weight Loss

- Unintended weight loss *related to* inadequate oral intake and recent hospitalization as evidenced by significant weight loss of 5% x 30 days.
- Unintentional weight loss *related to* increased need for energy caused by constant wandering and pacing *as evidenced by* a weight loss of 5% in the past week.
- Unintentional weight loss *related to* prolonged hospitalization *as evidenced by* a weight loss of 12% in the past 90 days.

Increased Energy Expenditure

- Increased energy expenditure *related to* involuntary physical movements *as evidenced by* conditions associated with diagnosis of Huntington's Chorea and an unintentional weight loss of 6% in the past 30 days.
- Increased energy expenditure *related to* needs to promote weight gain *as evidenced by* underweight status and BMI of 16.

Increased Need for Energy/Protein/Calcium

- Increased need for energy and protein related to increased demands for healing as evidence by the presence of a Stage IV Pressure Ulcer.
- Increased need for calcium and vitamin D *related to* decreased intake of foods high in calcium and inability to sit up *as evidenced by* below normal lab results for calcium and vitamin D.

Increased Nutrient Needs

- Increased nutrient needs *related to* pressure ulcer *as evidenced by* increased metabolic stress and need for healing.

Disordered Eating Pattern

- Disordered eating pattern *related to* individual's obsessive desire to be thin and refusal to eat *as evidenced by* documented intake of only 1 meal out of 3.

Limited Food Acceptance

- Limited food acceptance *related to* conditions associated with diagnosis of Gluten and Lactose Intolerance *as evidenced by* reports complaints of abdominal pain and diarrhea with intake of foods containing wheat and dairy products.
- Limited food acceptance *related to* paranoid fear that food is poisoned *as evidenced by* individual's acceptance of only prepackaged foods.

Excessive Intake of Energy

- Excessive (intake of energy) energy intake *related to* increased appetite secondary to antipsychotic meds *as evidenced by* a documented intake that exceeds calculated needs and a weight gain of 10% in the past 90 days.
- Excessive (intake of energy) energy intake *related to* decreased ability to taste foods and loss of appetite awareness *as evidenced by* reports of lack of satiety and a weight gain of 5% in the past 7 days.

Self-Feeding Difficulty

- Self-feeding difficulty *related to* functional limitation of range of motion *as evidenced by* observation of individual's inability to reach mouth with utensils.
- Self-feeding difficulty *related to* limited vision *as evidenced by* observation of individual eating from only one side of plate.

Overweight/Obesity

- Overweight *related to* decreased energy needs secondary to conditions associated with quadriplegia *as evidenced by* a weight of >130% of DBW.
- Obesity *related to* lifelong history of excessive intake *as evidenced by* reports from family members.

Altered GI Function

- Altered GI function *related to* pain med side effect and recent surgery *as evidenced by* complaints of constipation.
- Altered GI Function *related to* gastric bypass surgery *as evidenced by* the individual's inability to eat more than 1 cup of food and reports of vomiting with excessive intake.

Underweight

- Underweight *related to* lifelong history of disordered eating pattern *as evidenced by* reports of family of individual's desire to be thin and diagnosis of Anorexia Nervosa.
- Underweight *related to* long term inadequate intake secondary to living alone *as evidenced by* a weight that is 70% of desirable body weight.

Alteration in Nutrition

- (Alteration in nutrition related lab) Altered nutrition related laboratory values *related to* conditions associated with CKD and excessive intake of protein, potassium and phosphorus *as evidenced by* elevated lab values for Creatinine, potassium and phosphorus.

Chewing/Swallowing Difficulty

- Chewing difficulty *related to* poor dentition *as evidenced by* individual complaints of difficulty chewing meat.
- Chewing difficulty *related to* multiple teeth abscesses *as evidenced by* reports of individual's inability to eat regular consistency foods.
- Chewing difficulty *related to* jaw pain and conditions associated with diagnosis of TMJ *as evidenced by* reports of individual's inability to open mouth.
- Swallowing difficulty *related to* conditions associated with recent CVA *as evidenced by* observations and reports of individual pocketing foods and foods spilling out of mouth.

Less Than Optimal Enteral Nutrition

- Inadequate enteral nutrition infusion *related to* current tube feeding volume *as evidenced by* estimated nutrition needs not met.
- Less than optimal enteral nutrition *related to* improvement in individual's cognitive status *as evidenced by* reduction of enteral feeding below calculated needs to allow for increased p.o. intake.
- Less than optimal enteral nutrition *related to* poor tolerance of feeding volume *as evidenced by* abdominal distention.

Altered Nutrition Related Lab Values

- Altered nutrition related lab values *related to* diagnosis of diabetes mellitus *as evidenced by* elevated blood glucose levels.

Medical Nutrition Therapy Made Easy

MNT Assessment and the Nutrition Care Process Made Easy

Introduction

The following Medical Nutrition Therapy (MNT) Forms and Resources are included in this publication:

- Medical Nutrition Therapy Abbreviations
- Medical Nutrition Therapy Assessment Form (for use in nursing facilities, assisted living facilities, and group homes)
- Medical Nutrition Therapy Notes (for use in nursing facilities and assisted living facilities)
- Worksheet for MDS 3.0 Section K Swallowing/Nutritional Status (for use in nursing facilities)
- Medical Nutrition Therapy Re-Assessment Form (for use in nursing facilities and assisted living facilities)
- MNT Re-Assessment Worksheet for MDS 3.0 Section K Swallowing/Nutritional Status (for use in nursing facilities)
- Medical Nutrition Therapy Care Plan (for use in nursing facilities)
- Medical Nutrition Therapy Care Plan for Hospice/Palliative Care
- Nutrition Care Process Assessment Form

The Academy of Nutrition and Dietetics (Academy) recommended standardized language for the Nutrition Care Process (NCP) is included in the following forms. The MNT Assessment form is used for comprehensive individual assessment on individuals who are newly admitted or re-admitted, and also for annual assessments.

The MNT forms in this publication take into consideration the way a professional would collect data from the medical record. The information for the first sections would generally be found in the first sections of the medical record from the face sheets, admission papers, and physician's orders. Nursing assessments upon admission include height and weight data, skin status, feeding ability and other pertinent information. Laboratory values often have a tabbed section in the medical record. It is helpful to review any history that is available from the hospital, other facilities, or other health care professionals. Medications are found on the physician's order sheets. Nursing notes may pinpoint any communication, physical, sensory changes or limitations.

Conditions, diagnosis, and risk factors for altered nutrition and hydration are found in the medical record, and by interviewing the individual, staff, and/or the individual's family members. The risk factors for consideration listed on the forms are not intended to be all-inclusive. They can be helpful in directing the RDN to identify which individuals are in need of MNT and MNT care planning. These factors may also help determine nutrient needs estimation.

MNT assessment is one piece of the comprehensive assessment. In nursing facilities and skilled nursing facilities, the MNT assessment, Care Assessment Areas (CAA), the Minimum Data Set 3.0 (MDS 3.0), the Care Plan, and nutritional recommendations are the main components of the comprehensive nutrition assessment. All areas related to the MDS 3.0 are denoted with a star symbol (*) in the instructions.

The following instructional guide will assist you in understanding the content of the form and provide a general guide for individual nutrition assessment.

Each section of the MNT Assessment form appears in the instructions with a brief explanation of how to complete it.

Please refer to the abbreviation key page as needed while following the instructions. You may also need to reference Academy eNCPT manual http://www.andeal.org/ncp/ (available by subscription at http://www.eatrightstore.org/, and your diet manual or other nutrition references in order to complete the MNT Assessment and Re-assessment.

Resource: Medical Nutrition Therapy Abbreviations

Academy = Academy of Nutrition and Dietetics
ADL = Activities of Daily Living
ADJ = Adjusted
AEB* = As Evidenced by
Alb = Albumin
ATB = Antibiotic
BMI = Body Mass Index
BS = Blood Sugar
BUN = Blood Urea Nitrogen
BW = Body Weight
C = Nutritional Counseling
CAA = Care Area Assessment
Ca++ = Calcium
CBW = Current Body Weight
CCHO = Consistent Carbohydrate
CDM = Certified Dietary Manager
CHF = Congestive Heart Failure
CHOL = Cholesterol
Cr = Creatinine
C/O = Complaint of
COPD = Chronic Obstructive Pulmonary Disease
CVA = Cerebral Vascular Accident
D/C = Discharge
DM = Diabetes Mellitus
DBW = Desirable Body Weight
DOB = Date of Birth
DR = Dining Room
DX = Diagnosis
E = Education
EOT = End of Therapy
FF = Free Fluids
G = Gram
GI = Gastro Intestinal
GLU = Glucose
Hct = Hemacrit
HgA1C = Hemoglobin A1C
HGB = Hemoglobin
H/H = Hemoglobin / Hematocrit
HIV = Human Immunodeficiency Virus
Ht = Height
HTN = Hypertension
IBW = Ideal Body Weight
IV = Intravenous
J = J tube or Jejunostomy tube
K+ = Potassium
Kcal = Kilocalorie
Kg = Kilogram
Mech Soft = Mechanical Soft
Meds = Medications
MDS = Minimum Data Set
mL = Milliliters
Mo = Month
MVI = Multi-Vitamin
Na = Sodium
NB* = Behavior Environmental (Knowledge & Beliefs)
NC* = Functional
NCP* = Nutrition Care Process
ND* = Food and/or Nutrient Delivery
NDTR = Nutrition & Dietetics Technicians Registered
NG = Nasogastric
NI* = Intake
N/V = Nausea/Vomiting
OMRA = Other Medicare Assessment Review
PEG = G Tube or Percutaneous Gastrostomy Tube
PES = Problems/Etiology/ Signs & Symptoms
PO = By Mouth
POC = Plan of Care
PPN = Peripheral Parenteral Nutrition
Pre-alb = Pre-albumin
PVD = Peripheral Vascular Disease
Q = Every
RC = Coordination of Nutrition Care
RDI = Recommended Daily Intakes
RDN = Registered Dietitian Nutritionist
Reg = Regular
RM = Room
SOB = Shortness of Breath
TF = Tube Feed
TG = Triglycerides
TPN = Total Parenteral Nutrition
S/S = Signs/Symptoms
UBW Usual Body Weight
URI = Upper Respiratory Infection
UTI = Urinary Tract Infection
WBC = White Blood Cell
WNL = Within Normal Limits
Wt = Weight
1 x a day = Once a day
2 x a day = Twice a day
3 x a day = Three Times a Day
4 x a day = Four Times a Day
↑ = Increased or Improved
↓ = Decreased or Poor
= Pounds
> = Greater Than
≥ = Greater Than or Equal to
< = Less Than
≤ = Less Than or Equal to

*__Note:__ Refer to the Academy NCPT manual for standardized language.

Resource: Medical Nutrition Therapy Assessment Instructions for Sample Form

Section I: Assessment Type and Individual Data

Name, Room/ID number, Physician, Gender, DOB, Age:
Fill in data and/or circle for the individual's name, room number and/or identification number, physician, gender (male or female), date of birth (DOB), and age.

Assessment Type:
Circle the type of assessment you are doing: Initial, quarterly, yearly, or significant change.

Section II: Nutrition Assessment (Problems/Etiology/Signs and Symptoms)

Note: A * indicates information that is also on the MDS 3.0.

***Height:**
Fill in the height in inches. (This information is needed for the MDS).

***Weight (pounds/kg):**
Fill in current weight. (This information is needed for the MDS).

UBW:
Review the medical record for usual body weight (UBW). If the information is not available in the medical record, ask the individual (or family member) what their usual adult body weight is. Fill it in here.

DBW:
Fill in Desirable body weight range as appropriate.

Adj. BW (Amputation):
If the individual has an amputation note the details here (right AKA, Left BKA, etc.). Adjust the desirable body weight (BW) for amputation as appropriate. Refer to your diet manual or other reference to determine how to calculate for amputation.

BMI:
Calculate the body mass index (BMI), (BMI = (Weight in Pounds / (Height in inches x Height in inches) x 703). BMI is one indication of nutrition status used in assessment. Indicate BMI status: <18.5 as underweight, 18.5–24.9 normal, 25-29.9 as overweight, $\underline{\geq}$30 as obese, and $\underline{\geq}$40 as extremely obese. A healthy BMI for adults is considered between >18.5 and 24.9. Individuals are considered unhealthy it they have a BMI of <18.5 or >24.9. **Please note:** The Academy's Nutrition Care Process Terminology defines underweight in persons more than 65 years of age as a BMI of <22. This BMI value is one indicator of malnutrition when forming a nutrition diagnosis for the older adult population.

***Weight Changes:**
Fill in the recent weight history using the weight in pounds. Include the date for each weight and then circle the "up" or "down" arrows if significant changes in weight have occurred. (This information is needed for the MDS). Circle "yes/no" for planned weight change programs, and note any necessary comments under Rationale.

***Diet Order:**
Fill in the blank to indicate the diet ordered by the physician.

Food Allergies/Intolerances:
Write in any food allergies or food intolerances that the individual has.

Location of Meals:
Circle if the individual eats in their room or in the dining room.

Restorative Dining Y / N:
Note whether or not the individual is in a restorative dining program by marking Yes or No. Provide detailed information as needed.

Adaptive Eating Device:
If the individual receives adaptive equipment at the meal such as a plate guard, built-up utensils, sip cup, scoop plate, etc., indicate them here. If the individual is in a restorative dining program, mark yes.

Oral Nutritional Supplements / Snacks:
Write in the type of oral nutrition supplement or snack and how much will be given. If fortified foods are given at the meal write in what they are (high calorie cereal, soup, ice cream), and if they are tolerated.

Fluid Restriction:
Indicate whether or not the individual is on a fluid restriction by noting Yes or No. If Yes, note the number of mLs of fluid per 24 hour period that is allowed.

Food/Fluid Intake
Note food/fluid intake here and whether overall intake is adequate to meet estimated needs. Make any necessary comments here.

***Alternate Feeding Orders:**
If the individual receives any nutrition or hydration in any way other than oral intake, note it here. (This information is needed for the MDS). Circle the type of feeding/fluid offered (PPN, TPN, IV or tube feeding), and fill in exactly what the physician has ordered.

For tube feedings write the order as given by the physician for the type and amount of tube feeding formula. (The calculations are needed to answer questions on the MDS.) Fill in the values for calories, protein, percent RDI that the formula provides. Fill in the amount of mL for fluid flushes as written in the physician orders, and calculate the total mL fluid in the tube feeding plus the mL in the flushes for the total mL of fluids in a 24 hour period. (Refer to your diet/nutrition care manual, enteral feeding or TPN manufacturer information or other references for information on how to complete these calculations if needed). Circle if the tube feeding is appropriate and tolerated, and whether or not changes are needed. Discuss any detail in the summary section of the form.

Advance Directives: Note pertinent information on advance directives (i.e. nutrition/hydration wishes).

Communication and Physical Limitations:
Note any communication problems by circling choices or adding notes as needed. Note pertinent physical limitations (such as upper limb immobility or vision problems that would make self-feeding difficult).

Medication Interactions / Data:
Note any medication groups that have the potential for food-medication interactions (antibiotics, cardiac medications, diuretics, laxatives, psychotropics). List any newly ordered medications, or other medications which may have an adverse effect on eating or nutritional status.

Labs:
Fill in the date and lab values from the most recent labs available for each lab listed. Refer to the abbreviation page for detailed explanation of abbreviated terms. Discuss the significance of abnormal laboratory values in the summary.

Other Pertinent Data:
Note any other pertinent tests here (i.e. barium swallow, other pertinent labs or test results)

Alteration in Nutrition and/or Hydration Status as Evidenced by:
This section helps you organize your thoughts for the nutrition diagnosis, nutrition prescription, nutrition intervention and care planning. Circle any disease or condition that pertains to the individual.

Notes: Dehydration/Risk may include diagnosis of dehydration, fever, diuretic, vomiting, diarrhea, dysphagia, enteral feeding, dependence on others for fluids, etc. Neurological/Muscular disease may include Parkinson's, Huntington's Chorea, Multiple Sclerosis, Muscular Dystrophy, etc. The Pressure Ulcer risk score is pulled from the Braden or Norton Scale and if risk is high it should be marked accordingly.

Data Gathered By:
If the data has been gathered by someone other than the RDN, they should sign and date here. The RDN completes the rest of the form. Follow the regulations and guidelines for role delineation based on your state dietetic licensure law and/or standards of professional practice from the Academy.

Section III: Summary

Nutrition Needs Estimation
Calculate the individual's estimated nutritional needs for calories, protein and fluids using the formulas provided. The weight of the individual in kilograms is used here. Current body weight is most often used for kcal, protein, and fluid needs. Use the Mifflin St. Jeor Equation or 25 for normal weight to estimate calorie needs for most individuals. Use a factor of 30 or 35 for those who need to gain weight and/or have pressure ulcers, wounds or other conditions that may require additional energy. For Protein factors, use 0.8 for healthy adults, 1.0 for older adults, and 1.25 or 1.5 for older adults with pressure ulcers or protein malnutrition. For fluid needs, choose either 1 mL per kcal consumed or a factor of 25, 30 or 35 based on individual needs. Circle which equation or factor you used for your calculations for Kcalories, protein and fluid needs. Refer to your diet and/or nutrition care manual for more detailed information on how to calculate nutritional needs and use clinical judgment when estimating needs

Summary
This area is for your summary statement.

Nutrition Diagnosis (PES Statement), Nutrition Prescription or Intervention, Nutrition Education, Nutrition Monitoring and Evaluation:
The Summary section includes the Nutrition Diagnosis Statement, which is also referred to as a PES Statement (Problems, Etiology, Signs and Symptoms), Nutrition Prescription or Intervention, Nutrition Education, and Nutrition Monitoring and Evaluation.

The **Nutrition Diagnosis** is based on the components of the assessment. Diagnostic terminology can be found in the Academy of Nutrition and Dietetics. Nutrition Terminology Reference Manual (eNCPT): Dietetics Language for Nutrition Care, available at http://ncpt.webauthor.com.

Include the **Nutrition Prescription** (for example, “diet to provide 1800-2200 calories and 80-100 grams of protein daily”), as well as any referrals needed to other disciplines (Speech-Language Pathologist, Social Services, Nurse Practitioner, etc.) and all MNT that will be implemented to improve or maintain nutritional status.

Indicate whether you are proceeding to the care plan and care assessment areas (CAAs) with a yes or no.

Indicate what you will **Monitor and Evaluate** (weight, labs, TF, etc.).

You can use the Medical Nutrition Therapy Notes page if you need additional room to write.

Sign and date the assessment form.

The assessment is now completed.

Sample Form: Medical Nutrition Therapy Assessment

Name_____ **Room/ID#/Residence**_____ **Physician**_____ **Gender M / F DOB** _____ **Age** ___

Assessment Type: Initial / Quarterly / Yearly / Significant Change:

Ht (inches) Actual / Estimated
Wt (#) (Date)

UBW (#) **DBW** (#)
Adj. BW (#)(Amputation)
↑ ↓ **WNL**

BMI _____

□	**<18.5**	**Underweight**
□	18.5-24.9	Normal Weight
□	25-29.9	Overweight
□	≥30	Obese
□	≥40	Extremely Obese

Weight Changes (Date)
Wt_____# ( ) ↑↓ 5% in 1 mo
Wt_____# ( ) ↑↓ 7.5% in 3 mo
Wt _____# ( ) ↑↓ 10% in 6 mo
Wt _____# ( ) ↑↓ 2-3% in 1 wk/↑↓ 20% in 12 mo)
Planned change? Y / N Comments:

Diet Order:
Food allergies / Intolerances:
Meals: Room / Dining Room / Independent / Tray set up / Supervision / Limited Assist / Total Dependence / **Restorative Dining** Y / N
Adaptive Eating Equipment:

Medical Food Supplement / Snacks
Fluid Restriction? Y / N
Food/Fluid Intake: **Meets estimated needs:** Y / N

Alternate Feeding Orders None / PPN/ TPN/ IV / Tube feeding (including flush orders) **Advanced Directives:**
_____mL Formula = _____ Kcals ____ g protein, ____% RDI (_____mL FF + _____ mL flush) = _____ Total mL Fluids
Appropriate Y / N **Tolerated** Y / N **Changes Needed** Y / N **Comments:**

Communication Alert / Confused / Unable to communicate **Physical Limitations:**

Medication Interactions (any that affect eating, GI status or nutritional status)
Antibiotics Cardiac Meds Diuretics Laxatives Nutrition Herbs/Supplements: Psychotropics New Meds / Other:

Labs (Date _____)
H/H _____ HbA1c _____ Glu _____ Na _____ K+ _____
Ca++ _____ Alb _____ Pre-alb _____ BUN _____ Cr _____

Other Pertinent Data (Date_____)

Alteration in Nutrition and/or Hydration Status as Evidenced by (Check/Circle all that apply)

- □ Abnormal Labs (Refer to data above)
- □ Altered Taste
- □ Alternate Feeding: TF / IV / TPN
- □ Altered Hydration: Dehydration / Edema / Overhydration / Fluid restriction
- □ Anemia
- □ Cancer / Chemo / Radiation
- □ Cardiovascular: CVD / CVA / TIA / CHF / HTN / PVD
- □ Dysphagia/ Chewing/Swallowing Problem
- □ Communication Difficulty:
- □ Cultural/Religious Food Issues
- □ Dementia/Cognitive Decline /Depression
- □ Diabetes
- □ Failure to Thrive
- □ ↑ ↓ Food / Fluid Intake
- □ Fracture:
- □ GI Issues:
- □ Hepatic (Liver) Disease
- □ Infection / Fever / Sepsis /URI/ UTI
- □ Kidney Disease / Dialysis
- □ Malnutrition / Undernutrition
- □ Mobility Issues:
- □ Neurological / Muscular Disease:
- □ Obesity
- □ Pain Affecting Eating
- □ Pressure Ulcer Risk Score_____
- □ Pressure Ulcers/Wounds / Wound VAC:
- □ Pulmonary Condition / COPD
- □ Self Feeding Difficulty
- □ Significant Weight Change: Loss / Gain
- □ Surgery (Recent):
- □ Terminal Status
- □ **Other:**

Data Gathered by: _____(Signature/Credentials) **Date:** _____

Nutritional Needs Estimation (Based on CBW)

Total Kcal Needs:	**Protein Needs** (g)**:**	**Fluid Needs** (mL)**:**
Mifflin St Jeor OR Kg Wt X 25 / 30 / 35 +500 cal to gain/ -500 cal to lose Based on CBW	Kg Wt X 0.8 / 1.0 / 1.25 /1.5 Based on CBW	Kg Wt X 25mL/ 30mL/ 35 mL / 1 mL/kcal Based on: CBW

Summary

Nutrition Diagnosis Statement (PES)	**Nutrition Prescription or Intervention**

Proceed to Plan of Care and/or CAAs: Yes / No

Nutrition Education, Monitoring (Weights/Labs/Skin/Diet/TF Tolerance), and Evaluation

Signature: _____ **Date:** _____

Medical Nutrition Therapy Made Easy

Sample Form: Nutrition Care Process (Page 2 MNT Assessment/Re-Assessment)

Name: _____ **Room/ID #:** _____ **Date:** _____

Nutrition Diagnosis (Problem):

□ Inadequate Oral Food/Beverage Intake (I)
□ Underweight (C)
□ Involuntary Weight Loss (C)
□ Overweight (C)
□ Increased Nutrient Needs (I)
□ Inadequate Protein Energy Intake
□ Excessive Intake - Oral- Enteral/Parenteral (I)
□ Inappropriate Infusion of EN/TPN (I)
□ Swallowing / Chewing Difficulty
□ Disordered Eating Pattern
□ Impaired Nutrient Utilization (C)
□ Food Safety

Etiology (Related to):

□ Food intolerances:
□ Changes in taste, appetite, preferences
□ Intake of meals or supplements
□ Inappropriate Intake of:
Medications: _____
Laxatives: _____
Other: _____
□ Excessive Physical Activity
□ Depression/Eating Disorder
□ Impaired Cognition
□ Conditions Leading to Excessive Fluid Weight Gain /Loss
□ Decreased Nutrient Needs
□ Intolerance of Enteral/Parental Nutrition

Signs/Symptoms:

□ Intake Less/Excess than Estimated Needs of: _____
□ Weight Loss/Gain of: _____
□ Pressure Ulcer:
Stage: _____ Location: _____
□ Presence Of Edema/Extent: _____
□ Elevated Lab(s): _____
□ Chewing / Swallowing Difficulties – Food / Fluids
□ Nausea/ Vomiting/ Constipation / Diarrhea
□ GI Pain During/After Eating
□ Diet Noncompliance
□ Not Ready to Accept Change/Poor Understanding of Health Condition/Dietary Needs

Nutrition Prescription:

Interventions:

□ Food: __ Least Restrictive Diet __ Fortified Food Plan / Snack:
□ Modify Consistency Food / Fluid
□ Medical Food Supplement: House / Diabetic / Protein Module
□ Recommend Vitamin/Mineral Supplement: MVI / Fe / Calcium:
□ Feeding Assistance – Adaptive Equipment / DR Placement / Limited Assist / Extensive Assist
□ Enteral / Parenteral Nutrition: Change Formula / Rate / Time / Flush:

Education:

□ Initial / Brief Nutrition Education with Resident / Family:
□ Provided Comprehensive Nutrition Education with Resident / Family.
□ Diet Information Left with Resident / Family:
□ Accepts / Rejects Instruction:

Coordination of Care:

□ Note/ Recommendation Left for Physician
□ Refer to or Note Left for: PT / OT / SLP / Psych / Social Services / Pharmacist / Renal Dietitian / Nurse Practitioner / Wound Nurse / Care Plan Team

Monitor (How Responding to Interventions):

□ Tolerating Diet
□ Tolerating Assistance
□ Accepting Meals / Snacks
□ Stable / Improved Weight / Skin / Labs

Evaluation (Expected outcomes met? If Not, Reassess and Revise):

□ Accepts and Follows Interventions and Recommendations
□ Declined to Follow Interventions and Recommendations
□ Poor Readiness to Change / Learn

Signature: _____ Date:_____

Form created by Suzanne Cryst, RDN, CSG, LD. Adapted and used with permission.

Resource: MDS 3.0, Care Area Assessment (CAA) and Care Plan

The next step is filling out the MDS 3.0 and CAA statements and generating or reviewing the plan of care. Generally, the RDN or nutrition and dietetics technician registered (NDTR) would fill in Section K of the MDS 3.0.

CAA statements are written to describe the risks you have found and whether or not you will be proceeding to care plan for specific problems areas.

Refer to the MDS 3.0 manual for detailed information on how to complete the MDS 3.0 and CAAs. This package includes an MDS 3.0 Section K worksheet in case you need to provide the information for the MDS nurse to input into the computer for the MDS 3.0.

See separate instructions later in this publication for filling in the care plan forms included in the packet.

Sample Worksheet for MDS 3.0 Section K Swallowing/Nutritional Status

Name _____ **Room** _____

Assessment Type
Initial / 5 day / 14 day / 30 day / 60 day / 90 day/Q____ Annual_____ / EOT _____ / Significant Change_____ / Discharge_____

K0100. Swallowing Disorder
Signs and symptoms of possible swallowing disorder
_____ A. Loss of liquids/solids from mouth when eating or drinking
_____ B. Holding food in mouth/cheeks or residual food in mouth after meals
_____ C. Coughing or choking during meals or when swallowing medications
_____ D. Complaints of difficulty or pain with swallowing
_____ Z. None of the above

K0200. Height and Weight- While measuring, if the number is 0.1 to 0.4 round down; 0.5 or greater round up
_____ A**. Height** (in inches) Record most recent height measure since the most recent admission/entry or reentry
_____ B. **Weigh**t (in pounds) Base weight on most recent measure in last 30 days

K0300. Weight Loss
_____ **Loss of 5% or more in the last 30 days or loss of 10% in last 6 months**
0. No or unknown
1. Yes, on physician prescribed weight-loss regimen
2. Yes, not on physician prescribed weight-loss regimen

K0310. Weight gain
_____ **Gain of 5% or more in last 30 days; or 10% or more in the last 6 months**
0. No
1. Yes, on a physician prescribed weight-gain regimen
2. Yes, not on a physician prescribed weight-gain regimen

K0510. Nutrition Approaches
Check all of the following nutrition approaches that were performed during the last 7 days

1. While Not a Resident
Performed **while not a resident** of this facility and within the last 7 days. Only check column 1 if resident entered (admission or reentry) IN THE LAST 7 DAYS. If resident last entered 7 or more days ago, leave column 1 blank.

2. While a Resident
Performed **while a resident** of this facility and within the last 7 days

	1. While NOT a Resident	**2. While a Resident**
	↓Check all that apply↓	
A. Parenteral/IV Feeding	☐	☐
B. Feeding tube – nasogastric or abdominal (PEG)	☐	☐
C. Mechanically altered diet – require change in texture of food or liquids (e.g., pureed food, thickened liquids)	☐	☐
D. Therapeutic diet (e.g., low salt, diabetic. Low cholesterol)	☐	☐
Z. None of the above	☐	☐

K0710. Percent Intake by Artificial Route – Complete K0710 only if Column 1 and/or column 2 are checked for K0510A and/or K0510B

1. While NOT a Resident
Performed while **not** a resident of this facility and within the last 7 days. Only enter a code in column 1 if resident entered (admission or reentry) **in the last 7 days.** If resident last entered 7 or more days ago, leave column 1 blank.

2. While a Resident
Performed while a resident of this facility and within the last 7 days

3. During Entire 7 Days
Performed during the entire last 7 days

	1. While NOT a Resident	**2. While a Resident**	**3. During Entire 7 Days**
	↓ Enter Codes ↓		
A. Proportion of total calories the resident received through parenteral or tube feeding **1. 25% or less** **2. 26-50%** **3. 51% or more**	☐	☐	☐
B. Average fluid intake per day by IV or tube feeding **1. 500 cc/day or less** **2. 501 cc/day or more**	☐	☐	☐

CAA Comments and Updates:
_____

Signature: _____ **Date:** _____

Resource: Medical Nutrition Therapy Care Plan

The Medical Nutrition Therapy (MNT) plan of care is developed using the initial MNT assessment. It was not intended to address all of the nutritional problems the individual may have. It can be used as a starting point in the care planning process to help address major nutritional concerns.

Many facilities have their own care plan forms or computerized programs that are used for the permanent individual care plan. This form can become part of the medical record, or it can be used for a temporary length of time until the facility care plan team implements the permanent care plan into their own care plan system.

To fill in the care plan forms, simply check the problem that is pertinent to the individual, fill in the blank areas under the goals/objectives column, and write in the appropriate responses as needed in the approach column. These forms incorporate the Academy Nutrition Care Process (NCP) Terminology.

Discontinue the temporary plan of care when the facility's team implements the permanent interdisciplinary plan of care.

Medical Nutrition Therapy Made Easy

Sample Form: Medical Nutrition Therapy Care Plan

Resident:_____ Room/ID#_____

Date	Problems/Etiology/Signs/ Symptoms	Goals (and Dates)	Nutrition Interventions
	□ At risk altered nutrition/ hydration status r/t:	□ Improve BMI to_____ □ No weight decline □ Improved lab values □ Gradual weight loss □ Will tolerate alternate feeding to meet nutrient needs	□ Provide diet and fluids per physician order □ Provide TF and flushes per order □ Monitor weight every month/week □ Monitor weight every month/week □ Monitor all labs as available □ Monitor PO food/fluid intake □ Oral nutritional supplement as ordered □ Monitor pressure ulcer/ wound healing progress □ Educate as needed □ Medications as ordered □ Monitor diet tolerance □ Monitor TF tolerance □ □ □
Intake (NI)	**Nutrition Diagnosis (NI/NB)**		**Nutrition Prescription (ND/E/RC)**
	Intake		**ND (Meals/snacks)**
Behavior/ Environ-mental	**Weight/Lifestyle/ Knowledge**		**E (Education)**
			C (Basis/approach)
Functional (NC)	**Swallowing/Chewing Deficit**		
			RC (Care coordination)

See Medical Nutrition Assessment/Re-Assessment and Progress Notes for Details

Signature:_____ Date:_____

Resource: Medical Nutrition Therapy Re-Assessment Instructions for Sample Form

The Medical Nutrition Therapy Re-Assessment form has many of the same components as the assessment form. It can be used for MNT Re-assessment or for readmission, quarterly progress note updates, significant changes, or as an annual review.

The abbreviations on the form are the same as on the assessment form. In order to complete this form, gather the information in the same way you did for the assessment form.

The top of this form is to be completed for height, UBW, BMI (and level of BMI: underweight, normal weight, overweight, obese or extremely obese), date of birth, age and gender.

Estimated Nutritional Needs:
The estimated nutritional needs are listed here and should be based on the most current information available. These can be updated as needed by crossing out the old calculations, writing in the new calculations and initialing and dating the changes.

Dining Needs:
Note whether there have been any changes to the dining location. Note whether the individual is in the restorative dining program, whether they use adaptive equipment, and list that equipment. Note whether the individual eats independently, needs tray set up, supervision, cues, assistance to eat, or is totally dependent for eating.

Date and Type of Re-Assessment:
Note the current date and circle whether the Re-assessment is for a readmission, MDS update, Quarter 1, 2, 3 or yearly, progress update or significant change.

New Medical Diagnosis:
Note any new medical diagnosis since the last review. Or note “None” if there are no changes.

Diet Prescription:
Note the Diet prescription by either circling or writing in the appropriate diet.

Oral Nutrition Supplements:
Note any Oral Nutrition Supplements that are provided and list the number of calories and grams of protein they provide.

TF/TPN/IV Changes:
Note any changes to physician orders for tube feedings, TPN or IVs. List the amount of calories, protein and/or fluid as appropriate provided by the feeding.

Food/Fluid Intake:
Is food/fluid intake adequate to meet the individual’s needs? Provide detail and comments here. Intake records for meals, snacks, and fluids should be reviewed prior to filling in this section.

Weights:
List current body weight in pounds and note the weights for the past month, 3 months and past 6 months. Note whether there has been a significant change in body weight (either weight loss or weight gain) in the time period indicated.

Lab Changes:
Note the date of the laboratory assessment and note any significant lab values to be evaluated by listing in the appropriate space. You may also wish to use an up or down arrow to indicate labs outside the normal range.

Changes in Care and Condition:
Note any Changes in Care/Condition which may have an impact on nutritional status. This may include medications, changes in ADLs, physical condition, diagnosis, or recent life events that may impact any of these areas.

Signature/Date:
If the data has been gathered by someone other than the RDN, they should sign and date here. The RDN completes the rest of the form. Follow the regulations and guidelines for role delineation based on your state dietetic licensure law and/or standards of professional practice from the Academy.

Summary Section:
The summary section includes the PES Statement, Nutrition Diagnosis (based on the components of the assessment), Nutrition Prescription/Intervention, whether or not to proceed to the care plan, Care Area Assessment (CAA) update, and Nutrition Monitoring (weights, labs, skin, diet, tube feeding tolerance). These sections should be filled in following the Academy Nutrition Care Process and the MDS 3.0 Resident Assessment Instrument (RAI) Instructions. Diagnostic terminology can be found in the eNutrition Care Plan Terminology manual that can be purchased on the Academy website at http://www.eatrightstore.org/.

Because these are follow up notes from the previous comprehensive Nutrition Assessment, you can choose to either continue your previous Nutrition Diagnosis and Nutrition Intervention, or change them to something new and simply note the new information. Include the Nutrition Prescription (for example, “diet to provide 1800-2200 calories and 80-100 grams of protein daily”), as well as any referrals needed to other disciplines (Speech, Social Service, Nurse Practitioner, etc.) and all MNT that will be implemented to improve or maintain nutritional status. Indicate whether you are proceeding to the care plan and care assessment areas (CAAs). Indicate what you will monitor (weight, labs, TF, etc.).

Signature
Sign and date the completed MNT Re-assessment form.

After completing this form, proceed to the plan of care for all updates and for review of the current care plan to be sure it is still valid.

MDS 3.0 and Care Plan
The next step is filling out the MDS 3.0 and generating or reviewing the plan of care. Generally, the RDN or nutrition and dietetic technician registered (NDTR) would fill in Section K of the MDS 3.0. Refer to the MDS 3.0 manual for detailed information on how to complete the MDS 3.0 and CAAs. This package includes an MDS 3.0 Section K worksheet in case you need to provide the information for the MDS nurse to input into the computer for the MDS 3.0.

See separate instructions later in this manual for filling in the care plan forms included in the packet.

Medical Nutrition Therapy Made Easy

Sample Form: Medical Nutrition Therapy Re-Assessment

Name: _____ Physician: _____ Room: _____

Height	UBW	BMI □ <18.5 Underweight □ 18.5-24.9 Normal Weight □ 25-29.9 Overweight □ ≥30 Obese □ ≥40 Extremely Obese	DOB	Age	M / F

Estimated Nutritional Needs (Based on CBW)

Total Kcals:	Protein (gms):	Fluids (mL):	Dining Needs Location changes:
Mifflin St Jeor OR Kg Wt X 25 / 30 /35 + 500 kcal to gain / - 500 kcal to lose Based on CBW	1.0 / 1.25 / 1.5	25 / 30 / 35 / 1 mL/kcal consumed	Independent / Tray set up / Supervision / Limited Assist/ Total Dependence /Adaptive Equipment: Restorative dining: Y / N Adaptive equipment:

Date _____ *Re-admit / MDS update, Q 1 / Q 2 / Q 3 / Y* *Progress Update / Significant Change*	**Date** _____ *Re-admit / MDS update, Q 1 / Q 2 / Q 3 / Y* *Progress Update / Significant Change*	**Date** _____ *Re-admit / MDS update, Q 1 / Q 2 / Q 3 / Y* *Progress Update / Significant Change*
New Medical Diagnosis	**New Medical Diagnosis**	**New Medical Diagnosis**
Diet Order	**Diet Order**	**Diet Order**
Oral Nutrition Supplements Calories Protein (gms)	**Oral Nutrition Supplements** Calories Protein (gms)	**Oral Nutrition Supplements** Calories: Protein (gms):
TF / TPN / IV Changes	**TF / TPN / IV Changes**	**TF / TPN / IV Changes**
Food/Fluid Intake Adequate to Meet Needs Y / N	**Food/Fluid Intake Adequate to Meet Needs** Y / N	**Food/Fluid Intake Adequate to Meet Needs** Y / N
Weights: CBW: _____# _____ # ( ) ↓ ↑ **5% past Mo** _____ # ( ) ↓ ↑ **7.5% past 3 Mo** _____ # ( ) ↓ ↑ **10% past 6 Mo**	**Weights:** CBW: _____# _____ # ( ) ↓ ↑ **5% past Mo** _____ # ( ) ↓ ↑ **7.5% past 3 Mo** _____ # ( ) ↓ ↑ **10% past 6 Mo**	**Weights:** CBW: _____# _____ # ( ) ↓ ↑ **5% past Mo** _____ # ( ) ↓ ↑ **7.5% past 3 Mo** _____ # ( ) ↓ ↑ **10% past 6 Mo**
Lab Changes Date:_____ H/H _____ HbA1c _____ BS _____ Na _____ K+ _____ Ca++ _____ Alb _____ Pre-alb _____ BUN _____ Cr _____	**Lab Changes** Date:_____ H/H _____ HbA1c _____ BS _____ Na _____ K+ _____ Ca++ _____ Alb _____ Pre-alb _____ BUN _____ Cr _____	**Lab Changes** Date:_____ H/H _____ HbA1c _____ BS _____ Na _____ K+ _____ Ca++ _____ Alb _____ Pre-alb _____ BUN _____ Cr _____
Changes in Care / Condition (Meds, ADLs, physical, diagnosis, etc.)	**Changes in Care / Condition** (Meds, ADLs, physical, diagnosis, etc.)	**Changes in Care / Condition** (Meds, ADLs, physical, diagnosis, etc.)
NUTRITION DIAGNOSIS STATEMENT □ Continue previous □ Change to:	**NUTRITION DIAGNOSIS STATEMENT** □ Continue previous □ Change to:	**NUTRITION DIAGNOSIS STATEMENT** □ Continue previous □ Change to:
NUTRITION PRESCRIPTION & INTERVENTION □ Continue previous □ Change to:	**NUTRITION PRESCRIPTION & INTERVENTION** □ Continue previous □ Change to:	**NUTRITION PRESCRIPTION & INTERVENTION** □ Continue previous □ Change to:
Care Plan □ Continue previous □ Update	**Care Plan** □ Continue previous □ Update	**Care Plan** □ Continue previous □ Update
NUTRITION MONITORING Weight / Labs / Skin / Diet / TF Tolerance	**NUTRITION MONITORING** Weight / Labs / Skin / Diet / TF Tolerance	**NUTRITION MONITORING** Weight / Labs / Skin / Diet / TF Tolerance
Signature	Signature	Signature

Sample Form: Medical Nutrition Therapy Notes

Medical Nutrition Therapy Made Easy

Sample Worksheet for MDS 3.0 Section K Swallowing/Nutritional Status

Name _____ **Room** _____

Assessment Type
Initial / 5 day / 14 day / 30 day / 60 day / 90 day/Q____ Annual_____ / EOT _____ / Significant Change_____ / Discharge_____

K0100. Swallowing Disorder
Signs and symptoms of possible swallowing disorder
_____ A. Loss of liquids/solids from mouth when eating or drinking
_____ B. Holding food in mouth/cheeks or residual food in mouth after meals
_____ C. Coughing or choking during meals or when swallowing medications
_____ D. Complaints of difficulty or pain with swallowing
_____ Z. None of the above

K0200. Height and Weight- While measuring, if the number is 0.1 to 0.4 round down; 0.5 or greater round up
_____ A**. Height** (in inches) Record most recent height measure since the most recent admission/entry or reentry
_____ B. **Weigh**t (in pounds) Base weight on most recent measure in last 30 days

K0300. Weight Loss
_____ **Loss of 5% or more in the last 30 days or loss of 10% in last 6 months**
3. No or unknown
4. Yes, on physician prescribed weight-loss regimen
5. Yes, not on physician prescribed weight-loss regimen

K0310. Weight gain
_____ **Gain of 5% or more in last 30 days; or 10% or more in the last 6 months**
3. No
4. Yes, on a physician prescribed weight-gain regimen
5. Yes, not on a physician prescribed weight-gain regimen

K0510. Nutrition Approaches
Check all of the following nutrition approaches that were performed during the last 7 days

3. While Not a Resident
Performed **while not a resident** of this facility and within the last 7 days. Only check column 1 if resident entered (admission or reentry) IN THE LAST 7 DAYS. If resident last entered 7 or more days ago, leave column 1 blank.

4. While a Resident
Performed **while a resident** of this facility and within the last 7 days

	1. While NOT a Resident	**2. While a Resident**
	↓Check all that apply↓	
E. Parenteral/IV Feeding	☐	☐
F. Feeding tube – nasogastric or abdominal (PEG)	☐	☐
G. Mechanically altered diet – require change in texture of food or liquids (e.g., pureed food, thickened liquids)	☐	☐
H. Therapeutic diet (e.g., low salt, diabetic. Low cholesterol)	☐	☐
AA. None of the above	☐	☐

K0710. Percent Intake by Artificial Route – Complete K0710 only if Column 1 and/or column 2 are checked for K0510A and/or K0510B

4. While NOT a Resident
Performed while **not** a resident of this facility and within the last 7 days. Only enter a code in column 1 if resident entered (admission or reentry) **in the last 7 days.** If resident last entered 7 or more days ago, leave column 1 blank.

5. While a Resident
Performed while a resident of this facility and within the last 7 days

6. During Entire 7 Days
Performed during the entire last 7 days

	1. While NOT a Resident	**2. While a Resident**	**3. During Entire 7 Days**
	↓ Enter Codes ↓		
C. Proportion of total calories the resident received through parenteral or tube feeding **4. 25% or less** **5. 26-50%** **6. 51% or more**	☐	☐	☐
D. Average fluid intake per day by IV or tube feeding **3. 500 cc/day or less** **4. 501 cc/day or more**	☐	☐	☐

CAA Comments and Updates:
_____

Signature: _____ **Date:** _____

Resource: Medical Nutrition Therapy Care Plan for Hospice/Palliative Care Instructions

The Medical Nutrition Therapy (MNT) plan of care is developed using the initial MNT assessment. It was not intended to address all of the nutritional problems the individual may have. It can be used as a starting point in the care planning process to help address major nutritional concerns.

Many facilities have their own care plan forms or computerized programs that are used for the permanent individual care plan. This form can become part of the medical record, or it can be used for a temporary length of time until the facility care plan team implements the permanent care plan into their own care plan system.

To fill in the care plan forms, simply check the problem that is pertinent to the individual, fill in the blank areas under the goals/objectives column, and write in the appropriate responses as needed in the approach column. These forms incorporate the Academy NCP Terminology.

Discontinue the temporary plan of care when the facility's team implements the permanent interdisciplinary plan of care.

Sample Form: Medical Nutrition Therapy Care Plan for Hospice/Palliative/Comfort Care

Name_____Room/ID#_____

Date	Problems/Etiology/Signs/ Symptoms	Goals (and Dates)	Nutrition Interventions
	□ Unable to meet nutritional needs □ Under-nutrition related □ terminal diagnosis □ failure to thrive □ no further interventions desired □ end of life wishes and desires	□ Maintain comfort and pleasure and honor wishes □ Safely maintain oral intake for pleasure for as long as possible	□ Provide diet and fluids per physician order □ Provide oral nutrition supplements per physician order □ Provide TF and Flush per order □ Honor all reasonable food desires and preferences
	Nutrition Quality of Life □ **Decreased related to diagnosis**		□ Adjust diet according to tolerance and desires □ Monitor food/fluid intake □ Encourage PO intake □ Oral nutrition supplement as ordered □ Assist at meals as needed □ Educate as needed □ Medications as ordered □ Monitor diet tolerance □ Monitor TF tolerance □ Follow comfort protocols □ Follow palliative protocols □ Follow hospice protocols
	Nutrition Diagnosis (NI/NB/NC)		**Nutrition Prescription (ND/E/C/RC)**
			Food/Nutrient Delivery (ND)
Intake (NI)	**Inadequate fluid intake**		
			Education
NI	**Malnutrition**		**Counseling**
NI	**Inadequate protein/energy intake**		**Coordination of Care**
Behavior/ Environ-mental NB)			
Function-al (NC)	**Underweight** **Unintended Weight Loss**		

Signature_____ Date_____

Resource: Nutrition Focused Physical Assessment

Introduction

Nutrition-focused physical assessment (NFPA) is an emerging area of nutrition and dietetics practice for RDNs and NDTRs. Although it is only one component of the nutrition assessment process, it can help identify causes of nutritional deficiency and characteristics of malnutrition. NFPA goes beyond the traditional measurement of height, weight, body fat, arm and calf circumference and is considered an adjunct to traditional nutrition assessment. The NFPA combines a physical examination, vital signs, and anthropometrics with patient/resident interviews and data from the medical record (1). It is an important tool in the identification of malnutrition using the new guidelines proposed by the Academy of Nutrition and Dietetics and the American Society for Enteral and Parenteral Nutrition.

The 2015 *Academy of Nutrition and Dietetics. Nutrition Terminology (eNCPT) Reference Manual* defines NFPA as: "findings from an evaluation of body systems, muscle and subcutaneous fat wasting, oral health, suck, swallow/breathe ability, appetite, and affect" (2).

Performing a Nutrition-Focused Physical Assessment

Nutrition-focused physical assessment is a hands-on assessment that uses four steps (1,3):

1. **Inspection:** A general observation that progresses to a more focused observation using the senses of sight, smell, and hearing. Most RDNs and NDTRs already perform a general observation of an individual's condition and this should include things like noticing an order that might indicate ketosis or alcohol use and observing visually for signs of undernutrition or wasting.
2. **Palpitation:** Touching the individual to feel the skin's temperature, and presence of edema, and touching the abdomen to assess for tenderness, and superficial masses.
3. **Percussion:** Assessment of body sounds to detect gas in the abdomen, fluid in the lungs, or other issues.
4. **Auscultation:** Use of the ear or a stethoscope to listen to heart and lung sounds, bowel sounds, and blood vessels.

The assessment uses a systems approach by evaluating the factors in the Table on the next page (1,3,4).

Traditionally physicians, nurse practitioners, physician's assistants, and nurses perform these assessments. However, RDNs can embrace a hands-on approach and incorporate physical assessment into their practices (3) and/or review findings of another health care professional (1). Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards (2). To successfully use the results of a NFPA, the practitioner must be able to interpret vital signs and physical findings and be familiar with how findings correlate with compromised nutritional status. Understanding these correlations is key to identifying and categorizing malnutrition. For more information, see *Malnutrition* on page 97.

Nutrition Focused Physical Assessment and Scope of Practice

In 2013 the Academy of Nutrition and Dietetics published a *Scope of Practice for the Registered Dietitian Nutritionist (RDN).* RDNs must practice under the state statutes (practice acts) that may (but not always) outline the types of activities they can perform. Each individual is responsible for understanding the legal requirements they operate under in the state in which they practice. The Academy's *Scope of Practice* indicates that individual RDNs "can only practice in areas in which they are qualified and have demonstrated competence to achieve

ethical, safe, and quality outcomes in the delivery of food and nutrition services" (5). This applies to all areas of nutrition and dietetics practice including the NFPA.

It is imperative for RDNs who plan to conduct NFPA develop their assessment skills and demonstrate competence using a framework outlined by an employer or qualified agency. Reference standards that are outlined in facility policies and procedures should be used (2). For example, a hospital or nursing facility may have competency guidelines for nurses and nursing assistants for taking vital signs, listening to bowel sounds, etc. An RDN could easily undergo facility training and demonstrate competency to perform these evaluations and interpret their results. RDNs that are learning the NFPA process should, with the agreement of their employer, shadow other professionals who perform assessments and participate in hands-on assessments as part of the training process.

Systems Approach to Evaluating Physical Factors for Nutrition Focused Physical Assessment (1-4)

Physical Appearance • Body size • Body type • Appearance of wasting or obesity • Level of consciousness • Paralysis or involuntary movement • Amputations or contractures • Affect • Condition of hair and nails	**Nerves and Cognition** • Ability to communicate • Cognitive status • Reflexes • Ability to feel pain in extremities • Gross and fine motor skills
Vital Signs • Blood pressure • Heart rate • Oxygen saturation/respiratory rate • Temperature	**Extremities, Muscles, and Bones** • Hand grip strength • Range of motion • Subcutaneous fat • Muscle mass • Edema • Ability to stand and walk
Skin • Skin turgor • Skin color • Presence of surgical wounds, pressure ulcers, stasis ulcers, or diabetic foot ulcers • Poor or delayed wound healing	**HEENT (Head, Eyes, Ears, Nose, and Throat)** • Ability to smell and taste • Loss of orbital (around the eye), buccal (around the cheeks), facial fat • Vision and hearing • Chewing or swallowing problems
Digestive System • Condition of teeth, presence of dentures and/or partials • Condition of oral cavity and tongue • Inflamed or bleeding gums • Bowel sounds • Abdominal pain	**The Cardiopulmonary System** • Ability to breathe • Breath sounds • Regular heart rhythm

References for Nutrition-Focused Physical Assessment:

1. Furhman MP. Nutrition-focused physical assessment. In Charney P, Malone AM, eds. *ADA Pocket Guide to Nutrition Assessment*, 2nd ed. Chicago I: American Dietetic Association, 2009; 40-61.

2. Academy of Nutrition and Dietetics. Nutrition Terminology Reference Manual (eNCPT): Dietetics Language for Nutrition Care. http://ncpt.webauthor.com. Accessed February 17, 2015.
3. Litchford MD. *Nutrition Focused Physical Assessment: Making Clinical Connections*. Greensboro NC; Case Software;2012.
4. Mahan LK, Escott-Stump S, Raymond JL. *Krause's Food and the Nutrition Care Process*, 13th ed. St louis MO: Elsevier Suanders; 2012;1075-1078.
5. Academy of Nutrition and Dietetics: Scope of Practice for the Registered Dietitian. *J Acad Nutr Diet*. 2013:Supl 2(1): S17-S28.

Obtaining Accurate Heights

Policy:

Each individual's height will be determined and documented upon admission to the facility. Height will be remeasured each year or upon a significant change such as double amputation.

Procedure:

1. Nursing will be responsible for the initial determination of each individual's height. This will be included in the initial nursing assessment and/or admission note. Subsequent measurements for height (yearly or upon significant change in height) will be documented on the appropriate designated form or tracked in the computer database.

2. Nursing will re-measure each individual's height yearly. Height will be documented on the individual assessment instrument (MDS for nursing facilities) and in the medical nutrition therapy (MNT) assessment.

3. Staff will follow acceptable procedure to obtain accurate heights.

See *Resource: How to Obtain Accurate Heights* next page.

Resource: How to Obtain Accurate Heights

To obtain an accurate height, the following methods may be used:

Standing Height
- Measure the individual without shoes, standing as erect as possible
- If using the measuring bar on the scale, it should be placed flat on the head
- Read the measurement on the bar and record immediately

If Using a Yardstick
- Have the individual stand against a wall, as erect as possible, without shoes
- Place the yardstick parallel to the floor, on top of the individual's head
- Mark the wall at the top of the individual's head, using the yardstick as a guide.
- Measure from the floor to the mark (where the top of the individual's head was)

How to Obtain a Reclining Height
- If unable to stand, lay individual as flat as possible on back with body and legs extended as straight as possible. Mark bed at top of the head and at the heel. Move the individual and using a tape measure, measure between the marks for the estimated height

Alternate Method (Arm Span Measurement)
- Arm span measurement is approximately the same as height
- The individual should lie flat, with 1 arm extended in a 90 degree angle to the torso
- With arm and hand extended straight out, use a tape measure to measure from the middle of the sternum to the tip of the middle finger
- Double this number for an approximate height in inches
- Document as approximate height

Unable to Obtain Accurate Height Measurements
For those who are unmeasurable, an estimate of height should be made.
- Ask the family what the individual's normal height was
- Document that the family provided the height and the reason it was not possible to obtain an accurate height on the individual

Obtaining Accurate Weights

Policy:

Each individual's weight will be obtained and documented upon admission to the facility.

Procedure:

Weights

1. Nursing will be responsible for the initial determination of each individual's weight. This will be included in the initial nursing assessment and/or admission note. Subsequent measurements for weight will be documented on the appropriate designated form or tracked in the computer database.

   Weight will be documented on the individual assessment instrument (MDS for nursing facilities), and in the medical nutrition therapy (MNT) assessment. Weight will be obtained weekly for 4 weeks after admission. Subsequent weights will be obtained monthly, unless physician's orders or an individual's condition warrants more frequent determinations.

2. The registered dietitian nutritionist (RDN) or designee will be responsible for determining the desirable weight range. This will be documented on the initial MNT assessment and reassessments.

3. Staff will follow acceptable procedure to obtain accurate weights.

See Resource: How to Obtain Accurate Weights next page.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

Resource: How to Obtain Accurate Weights

Follow these best practices:

- Balance the scale back to 0 before and after weighing each time
- If possible, scale should remain stationary and not be moved
- Weigh each individual at the same time each month,
- Record the weight immediately after weighing using the documentation system provided by the facility
- Individuals should be weighed at approximately the same time of day each time
- Individuals should be weighed in light clothing, without shoes, prior to breakfast, after voiding, and without catheter bag or with an empty catheter bag (if applicable)
- Prosthetic devices (including braces) should be removed prior to weighing or weigh the prosthetic device itself and subtract its weight from the individual's total weight
- Nursing must document presence of casts, appliances such as splints, etc.
- Scales should be calibrated on a regular schedule every 3 months

Standing Scale Weights

- Position the individual standing with feet in the center of the scale (must be able to stand without assistance)
- When the scale is balanced and has stopped its movement, record the weight
- If an individual is unable to stand still and balanced on the scale independently, a wheelchair, chair scale or bed scale should be used
- Balance the scale back to 0 before and after weighing each time

Chair Scale Weights

- Position the individual in the center of the chair, with back resting on the back of chair
- When the scale is balanced and has stopped its movement, record the weight
- Balance the scale back to 0 before and after weighing each time

Wheel Chair Scale Weights

- Be sure the chair is free of extra weight (i.e. side bags, catheter bags, cushions or other items)
- Roll the wheel chair onto the wheel chair scale platform. Center the wheel chair on the scale
- Weigh the wheel chair and record the total weight of the wheel chair and the individual
- Remove the individual from the wheel chair. Weigh the wheel chair by itself
- Carefully subtract the weight of the wheel chair and record the individual's actual weight
- Balance the scale back to 0 before and after weighing each time

Bed Scale Weights

- Follow manufacturer's directions for proper operation of bed scales and lift scales
- Use the bed scale or lift scale sling to lift the individual for weighing
- The individual should be positioned comfortably in the scale sling
- Raise the sling slowly until it is fully suspended and still
- Read and record weight immediately
- Lower the person back onto the bed slowly and gently
- Balance the scale back to 0 before and after weighing each time

Obtaining Measurements for Unweighable Individuals

- For individuals who are unable or unwilling to be weighed, measurements can be taken and tracked for changes
- Measure the abdomen, mid-arm, thigh and calf at least monthly, or more often if needed
- Measure abdominal girth at the widest point. Measure upper arm, calf and thigh at the
- midpoint
- Tape measure should be taut, but not tight. Measurement variations of >1/4" difference from the previous measurement should be re-measured for accuracy
- The registered dietitian nutritionist (RDN) or designee should review these measurements monthly and assess the need for changes in medical nutrition therapy

Adjusting Weights for Amputees

Policy:

To determine adjusted ideal body weight for those with amputations, the percentage of body weight indicated by the chart below is subtracted from the ideal body weight (IBW) range. (See Resource: Height/Weight Tables for Determining Body Weight Ranges.)

Average Weight Percentage of Body Segments	
Lower Arm and Hand	2.3%
Entire Arm and Hand	5.0%
Lower Leg and Foot	5.9%
Entire Leg	16%

Procedure:

1. Using the Height/Weight Tables for Determining Body Weight Ranges to determine the individual's normal IBW for height, locate the percentage weight of the amputated limb and calculate the number of estimated pounds for that limb.

2. Subtract the estimated weight of the limb from the IBW range for an estimated normal IBW after amputation.

   Example:

   Male with below knee amputation (5.9%) – height 5'7"
   - Ideal Body Weight (mean Range) – 148#

   - 148# x .059 (5.9%) = 8.73 pounds
   - Adjusted Ideal Body Weight = 139.27# - 8.55# = 136.45#

Reference: Krause's Food and The Nutrition Care Process, 13th ed. Mahan, LK, Escott-Stump, S, Raymond JL. Elsevier Saunders, St. Louis MO, 2012.

Obtaining Measurements for Unweighable Individuals

Policy:

Individuals who are unable to be weighed due to inability to stand, sit or inability to weigh on bed scales, will be measured at abdomen, mid-arm, thigh and calf. Measurements will be monitored for change.

Procedure:

1. Measure at least monthly or more often if needed.

2. Tape measure should be taut, but not tight.

3. Measurement variations of ≥1/4" difference from the previous measurement will be repeated for accuracy.

4. The registered dietitian nutritionist (RDN) or designee will review these measurements monthly and assess the need for changes in medical nutrition therapy (MNT).

5. Measure abdominal girth at the widest point. Measure upper arm, calf and thigh at the midpoint.

See *Sample Form: Measurement Tracking for Unweighable Individuals* for measurement record keeping on the next page.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

Sample Form: Measurement Tracking for Unweighable Individuals

Body Measurements

Date	Abdominal Girth (Widest Point)	Arm (Mid-Point) R	Arm (Mid-Point) LT	Mid-Thigh (Mid-Point) R	Mid-Thigh (Mid-Point) LT	Mid-Calf (Widest Point) R	Mid-Calf (Widest Point) LT

Measure abdominal girth at the widest point. Measure upper arm, calf and thigh at the midpoint.

Medical Nutrition Therapy Made Easy

Resource: Height/Weight Tables for Determining Body Weight Ranges

Adult Ideal Weight Ranges 51 + Years

Females: Height	Weight Range	Mean Weight
4'8"	81-99	90
4'9"	83.5-102	92.5
4'10"	85-105	95
4'11"	87.5-107	97.5
5'0"	90-110	100
5'1"	94-116	105
5'2"	99-121	110
5'3"	104-127	115
5'4"	108-132	120
5'5"	112-138	125
5'6"	117-143	130
5'7"	121-149	135
5'8"	126-154	140
5'9"	130-160	145
5'10"	135-165	150

Males: Height	Weight Range	Mean Weight
5'0"	95-117	106
5'1"	100-123	112
5'2"	106-130	118
5'3"	111-136	124
5'4"	117-143	130
5'5"	122-150	136
5'6"	127-156	142
5'7"	133-163	148
5'8"	139-169	154
5'9"	144-176	160
5'10"	149-183	166
5'11"	154-189	172
6'0"	160-196	178
6'1"	166-202	184
6'2"	171-209	190

This chart is based on the following formula:

Female:
100 pounds for the first five feet of height plus five pounds for each inch over five feet of height; minus 2½ pounds for every inch under five feet of height; plus or minus 10% to give the range.

Male:
106 pounds for the first five feet of height plus six pounds for each inch over five feet of height; minus 2½ pounds for every inch under five feet of height; plus or minus 10% to give the range.

Note: IBW can be used as a point of reference but is not usually as a goal weight for most older adults. For this population, usual body weight (UBW) is usually more pertinent than IBW.

Reference: Krause's Food and the Nutrition Care Process, 13th ed. Mahan LK, Escott-Stump S, and Raymond JL. Elsevier Saunders, St. Louis MO, 2012.

Body Mass Index

Policy:

All individuals will be assessed for indicators of nutrition status and decline using body mass index (as one of many factors). Body mass index (BMI) is a measure of body fat based on height and weight which applies to both men and women.

Procedure:

1. BMI will be utilized as an indicator of body fatness and/or ideal body weight. Higher BMI is associated with diabetes and cardiovascular disease. Data suggests that a higher BMI range may be protective in older adults and that the standards for ideal weight (BMI of 18.5 to 25) may be too restrictive in the elderly. A lower BMI may be considered detrimental to older adults due to association with declining nutrition status, potential pressure ulcers, infection and other complications. A BMI of 19 or less may indicate nutritional depletion, while a BMI of 30 or above indicates obesity.

NIH Classification of Overweight and Obesity by BMI*

	Obesity Class	BMI (kg/m^2)
Normal		18.5-24.9
Overweight		25.0-29.9
Obesity	I	30.0-34.9
	II	35.0-39.9
	III	>40

*This guideline specifically excludes pregnant woman. Source (adapted from): Preventing and Managing the Global Epidemic of Obesity. Report of the World Health Organization Consultation of Obesity. SHO. Geneva, June 1997.

2. The registered dietitian nutritionist (RDN) or designee will determine the BMI for individuals utilizing the following formula (or by utilizing the BMI charts on the following pages). In some instances, computer programs utilized by the RDN or designee will calculate the BMI automatically when weights and heights are recorded.

BMI = weight (kg)/height (meters squared)

Current weight in kilograms divided by the square of the height in meters

OR

BMI = weight (lbs)/height (inches squared) x 703

3. The RDN or designee will provide appropriate nutritional interventions for individuals with low or declining BMI or individuals with BMI over 30 as appropriate.

4. BMI is interpreted based on age, health history, usual body weight, and weight history.

Reference: Krauses's Food and The Nutrition Care Process, 13th ed. Mahan LK, Escott-Stump S, RaymmLond JL., Elsevier Saunders; St Louis MO, 2012.

Resource: Body Mass Index Tables

To use the table, find the appropriate height in the left-hand column labeled Height. Move across to a given weight. The number at the top of the column is the BMI at that height and weight. Pounds have been rounded off.

BMI	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Height (inches)	Body Weight (pounds)																
58	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167
59	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173
60	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179
61	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185
62	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191
63	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197
64	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204
65	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210
66	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216
67	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223
68	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230
69	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236
70	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243
71	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250
72	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258
73	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265
74	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272
75	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279
76	156	164	172	180	189	197	205	213	221	230	238	246	254	263	271	279	287

Source: National Heart, Lung, and Blood Institute. 2015. http://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmi_tbl.htm. Accessed March 23, 2015.

Resource: Body Mass Index Tables (continued)

To use the table, find the appropriate height in the left-hand column labeled Height. Move across to a given weight. The number at the top of the column is the BMI at that height and weight. Pounds have been rounded off.

BMI	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
Height (inches)	**Body Weight (pounds)**																		
58	172	177	181	186	191	196	201	205	210	215	220	224	229	234	239	244	248	253	258
59	178	183	188	193	198	203	208	212	217	222	227	232	237	242	247	252	257	262	267
60	184	189	194	199	204	209	215	220	225	230	235	240	245	250	255	261	266	271	276
61	190	195	201	206	211	217	222	227	232	238	243	248	254	259	264	269	275	280	285
62	196	202	207	213	218	224	229	235	240	246	251	256	262	267	273	278	284	289	295
63	203	208	214	220	225	231	237	242	248	254	259	265	270	278	282	287	293	299	304
64	209	215	221	227	232	238	244	250	256	262	267	273	279	285	291	296	302	308	314
65	216	222	228	234	240	246	252	258	264	270	276	282	288	294	300	306	312	318	324
66	223	229	235	241	247	253	260	266	272	278	284	291	297	303	309	315	322	328	334
67	230	236	242	249	255	261	268	274	280	287	293	299	306	312	319	325	331	338	344
68	236	243	249	256	262	269	276	282	289	295	302	308	315	322	328	335	341	348	354
69	243	250	257	263	270	277	284	291	297	304	311	318	324	331	338	345	351	358	365
70	250	257	264	271	278	285	292	299	306	313	320	327	334	341	348	355	362	369	376
71	257	265	272	279	286	293	301	308	315	322	329	338	343	351	358	365	372	379	386
72	265	272	279	287	294	302	309	316	324	331	338	346	353	361	368	375	383	390	397
73	272	280	288	295	302	310	318	325	333	340	348	355	363	371	378	386	393	401	408
74	280	287	295	303	311	319	326	334	342	350	358	365	373	381	389	396	404	412	420
75	287	295	303	311	319	327	335	343	351	359	367	375	383	391	399	407	415	423	431
76	295	304	312	320	328	336	344	353	361	369	377	385	394	402	410	418	426	435	443

Source: National Heart, Lung, and Blood Institute. 2015. http://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmi_tbl2.htm. Accessed March 23, 2015.

Resource: Significant Weight Change

Significant and severe weight change is defined as follows:

Time Interval	Significant Change	Severe Change
1 Week	1-2%	Greater than 1-2%
1 Month	5%	Greater than 5%
3 Months	7.5%	Greater than 7.5%
6 Months	10%	Greater than 10%

Weights should be monitored monthly for significant/severe change and documented accordingly. If the weight is in question, first ask appropriate staff to reweigh the individual to assure an accurate weight.

- For weight loss, follow the *Policy and Procedure: Significant Weight Loss* (page 108).
- For weight gain, follow the *Policy and Procedure: Significant Weight Gain* in this book (page 111).

To calculate significant weight change, use the following formula:

$$\frac{\text{Recent body weight} - \text{current body weight}}{\text{Recent body weight}} \times 100 = \text{percent weight change}$$

Example:
Weight January 1: 152 pounds
Weight February 1: 142.5 pounds

152 – 142.5 = 9.5
9.5 ÷ 152 = 0.0625
0.0625 x 100 = 6.25%

Most electronic weight tracking systems can automatically calculate weight loss over a period of time. Refer to users guide for information.

The following tables are provided to assist with calculation and assessment of significant/severe changes in weight.

Medical Nutrition Therapy Made Easy

Resource: Significant Weight Change Chart

Time Interval	Significant Change	Severe Change
1 Month	5%	Greater than 5%
3 Months	7.5%	Greater than 7.5%
6 Months	10%	Greater than 10%

Weight	5% ↓		5% ↑	7.5% ↓		7.5% ↑	10% ↓		10% ↑
70	66.50	-	73.50	64.75	-	75.25	63.00	-	77.00
71	67.45	-	74.55	65.68	-	76.33	63.90	-	78.10
72	68.40	-	75.60	66.60	-	77.40	64.80	-	79.20
73	69.35	-	76.65	67.53	-	78.48	65.70	-	80.30
74	70.30	-	77.70	68.45	-	79.55	66.60	-	81.40
75	71.25	-	78.75	69.38	-	80.63	67.50	-	82.50
76	72.20	-	79.80	70.30	-	81.70	68.40	-	83.60
77	73.15	-	80.85	71.23	-	82.78	69.30	-	84.70
78	74.10	-	81.90	72.15	-	83.85	70.20	-	85.80
79	75.05	-	82.95	73.08	-	84.93	71.10	-	86.90
80	76.00	-	84.00	74.00	-	86.00	72.00	-	88.00
81	76.95	-	85.05	74.93	-	87.08	72.90	-	89.10
82	77.90	-	86.10	75.85	-	88.15	73.80	-	90.20
83	78.85	-	87.15	76.78	-	89.23	74.70	-	91.30
84	79.80	-	88.20	77.70	-	90.30	75.60	-	92.40
85	80.75	-	89.25	78.63	-	91.38	76.50	-	93.50
86	81.70	-	90.30	79.55	-	92.45	77.40	-	94.60
87	82.65	-	91.35	80.48	-	93.53	78.30	-	95.70
88	83.60	-	92.40	81.40	-	94.60	79.20	-	96.80
89	84.55	-	93.45	82.33	-	95.68	80.10	-	97.90
90	85.50	-	94.50	83.25	-	96.75	81.00	-	99.00
91	86.45	-	95.55	84.18	-	97.83	81.90	-	100.10
92	87.40	-	96.60	85.10	-	98.90	82.80	-	101.20
93	88.35	-	97.65	86.03	-	99.98	83.70	-	102.30
94	89.30	-	98.70	86.95	-	101.50	84.60	-	103.40
95	90.25	-	99.75	87.88	-	102.13	85.50	-	104.50
96	91.20	-	100.80	88.80	-	103.20	86.40	-	105.60
97	92.15	-	101.85	89.73	-	104.28	87.30	-	106.70
98	93.10	-	102.90	90.65	-	105.35	88.20	-	107.80
99	94.05	-	103.95	91.53	-	106.43	89.10	-	108.90
100	95.00	-	105.00	92.50	-	107.50	90.00	-	110.00
101	95.95	-	106.05	93.43	-	108.58	90.90	-	111.10
102	96.90	-	107.10	94.35	-	109.65	91.80	-	112.20
103	97.85	-	108.15	95.28	-	110.73	92.70	-	113.30
104	98.80	-	109.20	96.20	-	111.80	93.60	-	114.40
105	99.75	-	110.25	97.13	-	112.88	94.50	-	115.50
106	100.70	-	111.30	98.05	-	113.95	95.40	-	116.60
107	101.65	-	112.35	98.98	-	115.03	96.30	-	117.70
108	102.60	-	113.40	99.90	-	116.10	97.20	-	118.80
109	103.55	-	114.45	100.83	-	117.18	98.10	-	119.90
110	104.50	-	115.50	101.75	-	118.25	99.00	-	121.00
111	105.45	-	116.55	102.68	-	119.33	99.90	-	122.10
112	106.40	-	117.60	103.60	-	120.40	100.80	-	123.20
113	107.35	-	118.65	104.53	-	121.48	101.70	-	124.30
114	108.30	-	119.70	105.45	-	122.55	102.60	-	125.40
115	109.25	-	120.75	106.38	-	123.63	103.50	-	126.50

Medical Nutrition Therapy Made Easy

Resource: Significant Weight Change Chart

Time Interval	Significant Change	Severe Change
1 Month	5%	Greater than 5%
3 Months	7.5%	Greater than 7.5%
6 Months	10%	Greater than 10%

Weight	5% ↓		5% ↑	7.5% ↓		7.5% ↑	10% ↓		10% ↑
116	110.20	-	121.80	107.30	-	124.70	104.40	-	127.60
117	111.15	-	122.85	108.23	-	125.78	105.30	-	128.70
118	112.10	-	123.90	109.15	-	126.85	106.20	-	129.80
119	113.05	-	124.95	110.08	-	127.93	107.10	-	130.90
120	114.00	-	126.00	111.00	-	129.00	108.00	-	132.00
121	114.95	-	127.05	111.93	-	130.08	108.90	-	133.10
122	115.90	-	128.10	112.85	-	131.15	109.80	-	134.20
123	116.85	-	129.15	113.78	-	132.23	110.70	-	135.30
124	117.80	-	130.20	114.70	-	133.30	111.60	-	136.40
125	118.75	-	131.25	115.63	-	134.38	112.50	-	137.50
126	119.70	-	132.30	116.55	-	135.45	113.40	-	138.60
127	120.65	-	133.35	117.48	-	136.53	114.30	-	139.70
128	121.60	-	134.40	118.40	-	137.60	115.20	-	140.80
129	122.55	-	135.45	119.33	-	138.68	116.10	-	141.90
130	123.35	-	136.50	120.25	-	139.75	117.00	-	143.00
131	124.45	-	137.55	121.18	-	140.83	117.90	-	144.10
132	125.40	-	138.60	122.10	-	141.90	118.80	-	145.20
133	126.35	-	139.65	123.03	-	142.98	119.70	-	146.30
134	127.30	-	140.70	123.95	-	144.05	120.60	-	147.40
135	128.25	-	141.75	124.88	-	145.13	121.50	-	148.50
136	129.20	-	142.80	125.80	-	146.20	122.40	-	149.60
137	130.15	-	143.85	126.73	-	147.28	123.30	-	150.70
138	131.10	-	144.90	127.65	-	148.35	124.20	-	151.80
139	132.02	-	145.95	128.58	-	149.43	125.10	-	152.90
140	133.00	-	147.00	129.50	-	150.50	126.00	-	154.00
141	133.95	-	148.05	130.43	-	151.58	126.90	-	155.10
142	134.90	-	149.10	131.35	-	152.68	127.80	-	156.20
143	135.85	-	150.15	132.28	-	153.73	128.70	-	157.30
144	136.80	-	152.25	133.20	-	154.80	129.60	-	158.40
145	137.75	-	153.30	134.13	-	155.80	130.50	-	159.50
146	138.70	-	154.35	135.05	-	156.95	131.40	-	160.60
147	139.65	-	155.40	135.98	-	158.03	132.30	-	161.70
148	140.60	-	156.45	136.90	-	159.10	133.20	-	162.80
149	141.55	-	157.50	137.83	-	160.18	134.10	-	163.90
150	142.50	-	158.55	138.75	-	161.25	135.00	-	165.00
151	143.45	-	159.60	139.68	-	162.33	135.90	-	166.10
152	144.40	-	160.65	140.60	-	163.40	136.80	-	167.20
153	145.35	-	161.70	141.53	-	164.48	137.70	-	168.30
154	146.30	-	162.75	142.45	-	165.55	138.60	-	169.40
155	147.25	-	163.80	143.38	-	166.63	139.50	-	170.50
156	148.20	-	164.85	144.30	-	167.70	140.40	-	171.60
157	149.15	-	165.90	145.23	-	168.78	141.30	-	172.70
158	150.10	-	168.00	146.15	-	169.85	142.20	-	173.80
159	151.05	-	166.95	147.08	-	170.93	143.10	-	174.90
160	152.00	-	169.05	148.00	-	172.00	144.00	-	176.00

Medical Nutrition Therapy Made Easy

Resource: Significant Weight Change Chart

Time Interval	Significant Change	Severe Change
1 Month	5%	Greater than 5%
3 Months	7.5%	Greater than 7.5%
6 Months	10%	Greater than 10%

Weight	5% ↓		5% ↑	7.5% ↓		7.5% ↑	10% ↓		10% ↑
161	152.95	-	169.05	148.93	-	173.08	144.90	-	177.10
162	153.90	-	170.10	149.85	-	174.15	145.80	-	178.20
163	154.85	-	171.15	150.78	-	175.23	146.70	-	179.30
164	155.80	-	172.20	151.70	-	176.30	147.60	-	180.40
165	156.75	-	173.25	152.63	-	177.38	148.50	-	181.50
166	157.70	-	174.30	153.55	-	178.45	149.40	-	182.60
167	158.65	-	175.35	154.48	-	179.53	150.30	-	183.70
168	159.60	-	176.40	155.40	-	180.60	151.20	-	184.80
169	160.55	-	177.45	156.33	-	181.68	152.10	-	185.90
170	161.50	-	178.50	157.25	-	182.75	153.00	-	187.00
171	162.45	-	179.55	158.18	-	183.83	153.90	-	188.10
172	163.40	-	180.60	159.10	-	184.90	154.80	-	189.20
173	164.35	-	181.65	160.03	-	185.98	155.70	-	190.30
174	165.30	-	182.70	160.95	-	187.05	156.60	-	191.40
175	166.25	-	183.75	161.88	-	188.13	157.50	-	192.50
176	167.20	-	184.80	162.80	-	189.20	158.40	-	193.60
177	168.15	-	185.85	163.73	-	190.28	159.30	-	194.70
178	169.10	-	186.90	164.65	-	191.35	160.20	-	195.80
179	170.05	-	187.95	165.58	-	192.43	161.10	-	196.90
180	171.00	-	189.00	166.50	-	193.50	162.00	-	198.00
181	171.95	-	190.05	167.43	-	194.58	162.90	-	199.10
182	172.90	-	191.10	168.35	-	195.65	163.80	-	200.20
183	173.85	-	192.15	169.28	-	196.73	164.70	-	201.30
184	174.80	-	193.20	170.20	-	197.80	165.60	-	202.40
185	175.75	-	194.25	171.13	-	198.88	166.50	-	203.50
186	176.70	-	195.30	172.05	-	199.95	167.40	-	204.60
187	177.65	-	196.35	172.98	-	201.03	168.30	-	205.70
188	178.60	-	197.40	173.90	-	202.10	169.20	-	206.80
189	179.55	-	198.45	174.83	-	203.18	170.10	-	207.90
190	180.50	-	199.50	175.75	-	204.25	171.00	-	209.00
191	181.45	-	200.55	176.68	-	205.33	171.90	-	210.10
192	182.40	-	201.60	177.60	-	206.40	172.80	-	211.20
193	183.35	-	202.65	178.53	-	207.48	173.70	-	212.30
194	184.30	-	203.70	179.45	-	208.55	174.60	-	213.40
195	185.25	-	204.75	180.38	-	209.63	175.50	-	214.50
196	186.20	-	205.80	181.30	-	210.70	176.40	-	215.60
197	187.15	-	206.85	182.23	-	211.78	177.30	-	216.70
198	188.10	-	207.90	183.15	-	212.85	178.20	-	217.80
199	189.05	-	208.95	184.08	-	213.93	179.10	-	218.90
200	190.00	-	210.00	185.00	-	215.00	180.00	-	220.00
201	190.95	-	211.05	185.93	-	216.08	180.90	-	221.10
202	191.90	-	212.10	186.85	-	217.15	181.80	-	222.20.
203	192.85	-	213.15	187.78	-	218.23	182.70	-	223.30
204	193.80	-	214.20	188.70	-	219.30	183.60	-	224.40
205	194.75	-	215.25	189.63	-	220.38	184.50	-	225.50

Resource: Significant Weight Change Chart

Time Interval	Significant Change	Severe Change
1 Month	5%	Greater than 5%
3 Months	7.5%	Greater than 7.5%
6 Months	10%	Greater than 10%

Weight	5% ↓		5% ↑	7.5% ↓		7.5% ↑	10% ↓		10% ↑
206	195.70	-	216.30	190.55	-	221.45	185.40	-	226.60
207	196.65	-	217.35	191.48	-	222.53	186.30	-	227.70
208	197.60	-	218.40	192.40	-	223.60	187.20	-	228.80
209	198.55	-	219.45	193.33	-	224.68	188.10	-	229.90
210	199.50	-	220.50	194.25	-	225.75	189.00	-	231.00
211	200.45	-	221.55	195.18	-	226.83.	189.90	-	232.10
212	201.40	-	222.60	196.10	-	227.90	190.80	-	233.20
213	202.35	-	223.65	197.03	-	228.98	191.70	-	234.30
214	203.30	-	224.70	197.95	-	230.05	192.60	-	235.40
215	204.25	-	225.75	198.88	-	231.13	193.50	-	236.50
216	205.20	-	226.80	199.80	-	232.20	194.40	-	237.60
217	206.15	-	227.85	200.73	-	233.28	195.30	-	238.70
218	207.10	-	228.90	201.65	-	234.35	196.20	-	239.80
219	208.05	-	229.95	202.58	-	235.43	197.10	-	240.90
220	209.00	-	231.00	203.50	-	236.50	198.00	-	242.00
221	209.95	-	232.05	204.43	-	237.58	198.90	-	243.10
222	210.90	-	233.10	205.35	-	238.65	199.80	-	244.20
223	211.85	-	234.15	206.28	-	239.73	200.70	-	245.30
224	212.80	-	235.20	207.20	-	240.80	201.60	-	246.40
225	213.75	-	236.25	208.13	-	241.88	202.50	-	247.50
226	214.70	-	237.30	209.05	-	242.95	203.40	-	248.60
227	215.65	-	238.35	209.98	-	244.03	204.30	-	249.70
228	216.60	-	239.40	210.90	-	245.10	205.20	-	250.80
229	217.55	-	240.45	211.83	-	246.18	206.10	-	251.90
230	218.50	-	241.50	212.75	-	247.25	207.00	-	253.00
231	219.45	-	242.55	213.68	-	248.33	207.90	-	254.10
232	220.40	-	243.60	214.60	-	249.40	208.80	-	255.20
233	221.35	-	244.65	215.53	-	250.48	209.70	-	256.30
234	222.30	-	245.70	216.45	-	251.55	210.60	-	257.40
235	223.25	-	246.75	217.38	-	252.63	211.50	-	258.50
236	224.20	-	247.80	218.30	-	253.70	212.40	-	259.60
237	225.15	-	248.85	219.23	-	254.78	213.30	-	260.70
238	226.10	-	249.90	220.15	-	255.85	214.20	-	261.80
239	227.05	-	250.95	221.08	-	256.93	215.10	-	262.90
240	228.00	-	252.00	222.00	-	258.00	216.00	-	264.00
241	228.95	-	253.05	222.93	-	259.08	216.90	-	265.10
242	229.90	-	254.10	223.85	-	260.15	217.80	-	266.20
243	230.85	-	255.15	224.78	-	261.23	218.70	-	267.30
244	231.80	-	256.20	225.70	-	262.30	219.60	-	268.40
245	232.75	-	257.25	226.63	-	263.38	220.50	-	269.50
246	233.70	-	258.30	227.55	-	264.45	221.40	-	270.60
247	234.65	-	259.35	228.48	-	265.53	222.30	-	271.70
248	235.60	-	260.40	229.40	-	266.60	223.20	-	272.80
249	236.55	-	261.45	230.33	-	267.68	224.10	-	273.90
250	237.50	-	262.50	231.25	-	268.75	225.00	-	275.00

Resource: Estimating Nutritional Needs

Mifflin-St. Jeor Equation (1-5)

The Mifflin-St. Jeor Equation has been used as a standard method for calculating Resting Energy Expenditure (REE).

Males	Females
REE = 10 x weight (Kg) + 6.25 x height (cm) – 5 x age (years) +5	REE = 10 x weight (Kg) + 6.25 x height (cm) – 5 x age (years) – 161
Example	**Example**
wt 70 kg, ht 178 cm, 45 years old REE = 700 + 1112 – 225 + 5 REE = 1592	Wt 55 kg, ht 163 cm, 45 years REE = 550 + 1019 – 225 – 161 REE = 1183

To determine Total Energy Expenditure (TEE), multiply REE by activity (see below for *Activity Factors*).

The charts on the following pages can make it quick and simple to do the above calculations. To use the charts:

1. Obtain weight, height and age of subject.
2. Look up the corresponding calorie numbers for weight, add the corresponding calorie number for height, subtract the corresponding number for age. Next, for males, add 5 and for females, subtract 161 for the estimated REE (Kcal/day).
3. To determine TEE, multiply REE by the activity factor using the factors in the chart below.

Activity Factors	
Confined to chair or bed	1.2
Out of bed	1.3
Seated with little activity	1.4 - 1.5
Seated w/movement, but little strenuous activity	1.6 - 1.7

References for Estimating Nutritional Needs:

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3. Winkler MR, Malone AM. Medical Nutrition Therapy for Metabolic Stress: Sepsis, Trauma, Burns, and Surgery. In Mahan LK, Escott-Stump S, Raymond JL. *Krause's Food and the Nutrition Care Process*, 13th ed. St. Louis MO: Elsevier Saunders; 2012;884-900.
4. Dorner B. Diet and Nutrition Care Manual: A Comprehensive Nutrition Care Guide. Naples FL: Becky Dorner & Associates; 2014.
5. Ireton-Jones CS. Intake: Energy. In Mahan LK, Escott-Stump S, Raymond JL. *Krause's Food and the Nutrition Care Process*, 13th ed. St. Louis MO: Elsevier Saunders; 2012;19-31.

Mifflin-St. Jeor Equation Chart

Males: REE (kcal/day) = 10 x Weight (kg) + 6.25 x Height (cm) – 5 x Age (yrs) + 5

Weight				Height				Age		
lbs	***kg-10x***	***lbs***	***Kg-10x***	***ft***	***in***	***in***	***cm-6.25x***	***yr-5x***	***yr-5x***	***yr-5x***
88.0	40-400	187.0	85-850	4’	7”	55	139.7-873	18-90	48-240	73-365
90.2	41-410	189.2	86-860		8	56	142.2-889	19-95	49-245	74-370
92.4	42-420	191.4	87-870		9	57	144.8-905	20-100	50-250	75-375
94.6	43-430	193.6	88-880		10	58	147.3-921	21-105	51-255	76-380
96.8	44-440	195.8	89-890		11	59	149.9-937	22-110	52-260	77-385
99.0	45-450	198.0	90-900	5’	0”	60	152.4-953	23-115	53-265	78-390
101.2	46-460	200.2	91-910		1	61	154.9-968	24-120	54-270	79-395
103.4	47-470	202.4	92-920		2	62	157.5-984	25-125	55-275	80-400
105.6	48-480	204.6	93-930		3	63	160.0-1000	26-130	56-280	81-405
107.8	49-490	206.8	94-940		4	64	162.6-1016	27-135	57-285	82-410
110.0	50-500	209.0	95-950	5’	5”	65	165.1-1032	28-140	58-290	83-415
112.2	51-510	211.2	96-960		6	66	167.6-1048	29-145	59-295	84-420
114.4	52-520	213.4	97-970		7	67	170.2-1064	30-150	60-300	85-425
116.6	53-530	215.6	98-980		8	68	172.7-1079	31-155	61-305	86-430
118.8	54-540	217.8	99-990		9	69	175.3-1096	32-160	62-310	87-435
121.0	55-550	220.0	100-1000	5’	10”	70	177.8-1111	33-165	63-315	88-440
123.2	56-560	222.2	101-1010		11	71	180.3-1127	34-170	64-320	89-445
125.4	57-570	224.4	102-1020	6’	0”	72	182.9-1143	35-175	65-325	90-450
127.6	58-580	226.6	103-1030		1	73	185.4-1159	36-180	66-330	91-455
129.8	59-590	228.8	104-1040		2	74	188.0-1175	37-185	67-335	92-460
132.0	60-600	231.0	105-1050	6’	3”	75	190.5-1191	38-190	68-340	93-465
134.2	61-610	233.2	106-1060		4	76	193.0-1206	39-195	69-345	94-470
136.4	62-620	235.4	107-1070		5	77	195.6-1223	40-200	70-350	95-475
138.6	63-630	237.6	108-1080		6	78	198.1-1238	41-205	71-355	96-480
140.8	64-640	239.8	109-1090		7	79	200.7-1254	42-210	72-360	97-485
143.0	65-650	242.0	110-1100	6’	8”	80	203.2-1270	43-215		
145.2	66-660	244.2	111-1110		9	81	205.7-1286	44-220		
147.4	67-670	246.4	112-1120		10	82	208.3-1302	45-225		
149.6	68-680	248.6	113-1130		11	83	210.8-1318	46-230		
151.8	69-690	250.8	114-1140	7’	0”	84	213.4-1334	47-235		
154.0	70-700	253.0	115-1150							
156.2	71-710	255.2	116-1160							
158.4	72-720	257.4	117-1170							
160.6	73-730	259.6	118-1180							
162.8	74-740	261.8	119-1190							
165.0	75-750	264.0	120-1200							
167.2	76-760	266.2	121-1210							
169.4	77-770	268.4	122-1220							
171.6	78-780	270.6	123-1230							
173.8	79-790	272.8	124-1240							
176.0	80-800	275.6	125-1250							
178.2	81-810	277.8	126-1260							
180.4	82-820	280.0	127-1270							
182.6	83-830	282.2	128-1280							
184.8	84-840	284.4	129-1290							

Abbreviation Key:
REE = Resting Energy Expenditure
lbs = pounds
kg = kilograms
kcal = kilocalories
cm = centimeters
yr = years

(**Source:** Dorner B. *Diet and Nutrition Care Manual: A Comprehensive Nutrition Care Guide*. Naples, FL: Becky Dorner & Associates, Inc., 2014.)

Mifflin-St. Jeor Equation Chart

Females: REE (kcal/day) = 10 x Weight (kg) + 6.25 x Height (cm) – 5 x Age (yrs) – 161

Weight				Height				Age		
lbs	***kg-10x***	***lbs***	***kg-10x***	***ft***	***in***	***in***	***cm-6.25x***	***yr-5x***	***yr-5x***	***yr-5x***
77.0	35-350	171.6	78-780	4’	0”	48	121.9-762	18-90	48-240	78-390
79.2	36-360	176.0	80-800		1	49	124.5-778	19-95	49-245	79-395
81.4	37-370	178.2	81-810		2	50	127.0-794	20-100	50-250	80-400
83.6	38-380	180.4	82-820		3	51	129.5-809	21-105	51-255	81-405
85.8	39-390	182.6	83-830		4	52	132.1-826	22-110	52-260	82-410
88.0	40-400	184.8	84-840	4’	5”	53	134.6-841	23-115	53-265	83-415
90.2	41-410	187.0	85-850		6	54	137.2-858	24-120	54-270	84-420
92.4	42-420	189.2	86-860		7	55	139.7-873	25-125	55-275	85-425
94.6	43-430	191.4	87-870		8	56	142.2-889	26-130	56-280	86-430
96.8	44-440	193.6	88-880		9	57	144.8-905	27-135	57-285	87-435
99.0	45-450	195.8	89-890	4’	10”	58	147.3-921	28-140	58-290	88-440
101.2	46-460	198.0	90-900		11	59	149.9-937	29-145	59-295	89-445
103.4	47-470	200.2	91-910	5’	0”	60	152.4-953	30-150	60-300	90-450
105.6	48-480	202.4	92-920		1	61	154.9-968	31-155	61-305	91-455
107.8	49-490	204.6	93-930		2	62	157.5-984	32-160	62-310	92-460
110.0	50-500	206.8	94-940	5’	3”	63	160.0-1000	33-165	63-315	93-465
112.2	51-510	209.0	95-950		4	64	162.6-1016	34-170	64-320	94-470
114.4	52-520	211.2	96-960		5	65	165.1-1032	35-175	65-325	95-475
116.6	53-530	213.4	97-970		6	66	167.6-1048	36-180	66-330	96-480
118.8	54-540	215.6	98-980		7	67	170.2-1064	37-185	67-335	97-485
121.0	55-550	217.8	99-990	5’	8”	68	172.7-1079	38-190	68-340	98-490
123.2	56-560	220.0	100-1000		9	69	175.3-1096	39-195	69-345	99-495
125.4	57-570	222.2	101-1010		10	70	177.8-1111	40-200	70-350	100-500
127.6	58-580	224.4	102-1020		11	71	180.3-1127	41-205	71-355	101-505
129.8	59-590	226.6	103-1030	6’	0”	72	182.9-1143	42-210	72-360	102-510
132.0	60-600	228.8	104-1040					43-215	73-365	
134.2	61-610	231.0	105-1050					44-220	74-370	
136.4	62-620	233.2	106-1060					45-225	75-375	
138.6	63-630	235.4	107-1070					46-230	76-380	
140.8	64-640	237.6	108-1080					47-235	77-385	
143.0	65-650	239.8	109-1090							
145.2	66-660	242.0	110-1100							
147.4	67-670	244.2	111-1110							
149.6	68-680	246.4	112-1120							
151.8	69-690	248.6	113-1130							
154.0	70-700	250.8	114-1140							
156.2	71-710	253.0	115-1150							
158.4	72-720	255.2	116-1160							
160.6	73-730	257.4	117-1170							
162.8	74-740	259.6	118-1180							
165.0	75-750	261.8	119-1190							
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(**Source:** Dorner B. *Diet and Nutrition Care Manual: A Comprehensive Nutrition Care Guide*. Naples, FL: Becky Dorner & Associates, Inc., 2014.)

Resource: Alternate Method of Calculating Caloric Needs

Kilocalorie Needs		
Weight Maintenance (1)	**Underweight** (1)	**Underweight and/or with Pressure Ulcers** (2)
F: 18-22 calories/kg body weight M: 20-24 calories/kg body weight	27-28 calories/kg body weight or higher for weight gain	30-35 calories/kg body weight If pressure ulcers are present, may need additional calories to regain lost weight

Nutrient Needs Failure to Thrive (FTT)
It is important to assure adequate calories and protein intake to decrease the loss of LBM and avoid PEM. The following are general recommendations for older adults with FTT (1-3).

Kcalories	Protein
• 25-35 cal/kg/day for normal weight adults • 30-35 kcal/kg/day for individuals under stress with pressure ulcers • 21-22 kcal/kg/day for obese, critically ill population • 28 kcal/kg/day for paraplegics • 23 kcal/kg/day for quadriplegics	• 1.0-1.2 gm/kg body weight non-stressed • 1.25-1.5 gm/kg body weight for pressure ulcers or stressed • 0.8 gm/kg for chronic renal failure (pre-dialysis)

References for Alternate Methods of Calculating Nutritional Needs:

1. Eckstein L, Adams K, eds. *Pocket Resource for Nutrition Assessment*. Chicago IL: Dietetics in Health Care Communities Dietetic Practice Group of the Academy of Nutrition and Dietetics, 2013.Academy of Nutrition and Dietetics Nutrition Care Manual. www.nutritioncaremanual.org. Accessed February 25, 2015.
2. National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure Ulcers; Clinical Practice Guideline. Emily Haesler (Ed.). Cambridge Media: Osborne Park, Western Australia; 2014.
3. Academy of Nutrition and Dietetics. Nutrition Care Manual. www.nutritioncaremanual.org. Accessed March 31, 2013.

Resource: Dietary Reference Intakes for Calcium and Vitamin D

Life Stage Group	**Calcium** (mg/day)		**Vitamin D** (IU/day)	
	Recommended Dietary Allowance	**Upper Level Intake**	**Recommended Dietary Allowance**	**Upper Level Intake**
Infants 0-6 months	*	1000	**	1000
Infants 6-12 months	*	1500	**	1500
1-3 years old	700	2500	600	2500
4-8 years old	1000	2500	600	3000
9-13 years old	1300	3000	600	4000
14-18 years old	1300	3000	600	4000
19-30 years old	1000	2500	600	4000
31-50 years old	1000	2500	600	4000
51-70 years old, males	1000	2000	600	4000
51-70 years old, females	1200	2000	600	4000
>70 years old	1200	2000	800	4000
14-18 years old, pregnant/lactating	1300	3000	600	4000
19-50 years old, pregnant/lactating	1000	2500	600	4000

*For infants, Adequate Intake is 200 mg/day for 0 to 6 months old and 260 mg for 6 to 12 months of age.
**For infants, Adequate Intake is 400 IU/day for 0 to 6 months old and 400 IU for 6 to 12 months of age.

Reference for Calcium and Vitamin D:
Institute of Medicine of the National Academies. Dietary Reference Intakes Calcium and Vitamin D. Washington DC: National Academies Press, 2011. http://books.nap.edu/openbook.php?record_id=13050. Accessed February 25, 2015.

Resource: Laboratory Tests Related to Anemia

Lab Test	Normal Values	Iron Deficiency (Microcytic)	Folate Deficiency (Macrocytic)	B_{12} Deficiency (Macrocytic)	Anemia of Chronic Disease
Hemoglobin (Hgb)	Female: 12-16 g/dL Male: 14-18 g/dL	↓	↓	↓	↓
Hematocrit (Hct)	Female: 37-47% Male: 42-52%	↓	↓	↓	↓
Mean corpuscular volume (MCV)	80-95 micrograms	↓	↑	Normal or increased	Normal
Mean corpuscular hemoglobin (MCH)	27-31 picograms	↓	↑	↑	Normal
Serum Iron (Fe)	Female: 60-160 µg/dL Male: 80-180 µg/dL	↓	↑	↑	↓
Total Iron Binding Capacity (TIBC)	250-460 µg/dL	↑	N/A	N/A	↓
Ferritin	Male: 12-300 ng/mL Female: 10-150 ng/mL	< 12 ng/mL	> 300 ng/mL	> 300 ng/mL	Normal or increased
Serum B_{12}	160-950 pg/mL	Normal	↓	↓	Normal
Folate	5-25 µg/dL	Normal	↓	↑	Normal or decreased

Reference:

Eckstein L, Adams K, eds. Pocket Resource for Nutrition Assessment, 2013 ed. Chicago IL: Dietetics in Health Care Communities DPG of the Academy of Nutrition and Dietetics. 2013:37-51.

Interventions for Common Nutrition Problems Made Easy

Nutrition at Risk Committee (or Wound/Weight Intervention and Nutrition Support Committee)

Policy:

Individuals at high risk of nutrition problems or in need of nutrition intervention will be discussed by the interdisciplinary team in the Nutrition at Risk (or wound/weight intervention and nutritional support – WINS committee) meeting.

Procedure:

1. The Nutrition at Risk (or WINS) committee may consist of the following interdisciplinary team (IDT) members: food service manager, nutrition and dietetic technician registered NDTR), registered dietitian nutritionist (RDN), director of nursing (DON), charge nurses, and/or restorative nursing as appropriate for the facility. On an as needed basis, the following may attend: nursing assistants, speech-language pathologist (SLP), occupational therapist, registered (OTR), social services, MDS coordinator, physician, pastor, and/or activities director.

2. The committee will meet weekly or as needed to address the needs of high-risk residents/patients.

3. The RDN or designee will provide the list of individuals to be discussed at the meeting to the appropriate committee members. The following residents/patients may be included in the Nutrition at Risk (or WINS) list:
    - New admissions/readmissions for 4 weeks or until the care team discontinues
    - Individuals with new tube feeding (first 4 weeks on tube feeding or new formula changes in the first 4 weeks)
    - Individuals transitioning from tube feeding to oral feeding with recent decreases in tube feeding orders to promote increased oral intake
    - Those with less than 50% food intake for 3 days (9 consecutive meals), until intake is stable
    - Those identified as being at risk or having malnutrition or undernutrition
    - Significant weight changes, or insidious weight loss, until stable
    - Pressure ulcers
    - Fluid imbalance (i.e. dehydration, overhydration)
    - Diagnosis of fecal Impaction
    - Total parenteral nutrition
    - Dialysis
    - Those receiving thickened liquids, or fluid restrictions

4. Each committee member will review the resident's/patient's medical record and complete a reassessment as appropriate. Each committee member will come to the meeting prepared with information to share with the IDT. The individual's medical record will be brought to the meeting.

5. Clinical documentation in the medical record will be completed according to the results of the interdisciplinary team's decisions.

Source: Adapted with permission from Nutrition Alliance, LLC.

Resource: Malnutrition

Introduction

Malnutrition is a broad term often used to describe patients who appear to have compromised nutritional status, poor intake, unintended weight loss, pressure ulcers, or cachexia. The Academy of Nutrition and Dietetics (Academy) Nutrition Care Process Terminology (NCPT) defines malnutrition as "inadequate intake of protein and/or energy over prolonged periods of time resulting in loss of fat stores and/or muscle stores, including starvation-related malnutrition, chronic disease or condition-related malnutrition and acute disease or injury-related malnutrition" (1). As the Academy definition of malnutrition indicates, in recent years the diagnosis of and understanding of malnutrition has changed and it is now recognized as a complex syndrome that may be caused by different disease states.

Consequences of Malnutrition

Malnutrition is associated with many adverse outcomes, including an increased risk of pressure ulcers and/or impaired wound healing, immune suppression, increased infection rate, loss of function, increasing risk of falls, longer length of hospital stay, higher hospital readmission rates, higher treatment costs, and increased mortality (2). Nutrition screening, assessment, and early nutrition intervention can reduce these complication rates (2).

Nutrition Screening

Many hospitals and some long-term care facilities use a brief screening tool to help identify those at risk for or those who have malnutrition. Nursing staff usually completes the nutrition screen with referrals made to a registered dietitian nutritionist (RDN) and/or nutrition and dietetic technician, registered (NDTR), as appropriate. There are several validated nutrition screening tools available, including the *Malnutrition Screening Tool (MST), Mini-Nutrition Assessment (MNI), Malnutrition Universal Screening Tool (MUST), Nutritional Risk Screening (NRS)* and *Short Nutritional Assessment Questionnaire (SNAQ).* Information on how to access these tools is found on page 21.

Diagnosing Malnutrition

In the past protein energy malnutrition (PEM), or an inadequate intake of both calories and protein, was diagnosed using serum albumin and/or prealbumin. PEM was classified as mild, moderate or severe based on a patient's serum protein levels. However, in the last decade the scientific understanding of hepatic proteins like albumin and prealbumin has evolved. It is now understood that serum albumin and prealbumin are negative acute-phase reactants that decrease in response to acute and/or chronic inflammatory disorders (3). Conditions that lead to this decrease include (but are not limited to) infection, trauma, surgery, burns, tissue damage, cancer, strenuous exercise, and childbirth (3). Serum albumin and prealbumin will rise when the underlying condition has resolved but not necessarily with increased protein intake (4). Given this new knowledge, experts agree that a low serum albumin and/or prealbumin may be an indicator of morbidity or mortality, but is not an indicator of nutritional status (5,6).

As the medical community began to understand the relationship of serum hepatic proteins to inflammation, the understanding of malnutrition began to change. As a result it has become clear that malnutrition is a complex syndrome that manifests in different ways and that diagnosing malnutrition based on serum albumin or prealbumin levels alone is no longer applicable. In an attempt to clarify the definition of malnutrition, an international consensus committee met and in 2010 proposed that malnutrition be categorized in three ways (7).

1. Starvation related malnutrition: chronic starvation without inflammation (for example, medical conditions like anorexia nervosa or economic conditions that result in lack of food intake)
2. Chronic disease related malnutrition: when chronic diseases or conditions that impose sustained inflammation of a mild to moderate degree are present, such as organ failure, pancreatic cancer, rheumatoid arthritis, or sarcopenic obesity
3. Acute disease or injury related malnutrition: when inflammation is acute rather than chronic, for example, major infection, burns, trauma, or closed head injury

In 2012 the Academy of Nutrition and Dietetics and the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) released a consensus statement on the identification and documentation of malnutrition. The authors support the three-pronged approach to identifying malnutrition mentioned above and then suggests six characteristics for diagnosing malnutrition. The characteristics are outlined below.

Proposed Clinical Characteristics Used To Categorize Malnutrition (6)

- **Energy intake:** monitor meal intake and compare with energy needs.
- **Interpretation of weight loss:** evaluate weight loss in light of clinical condition and assess weight changes over time.
- **Loss of body fat**, particularly subcutaneous fat.
- **Loss of muscle mass**, including wasting of the temples, clavicles, shoulders, scapula, thigh, or calf.
- **Fluid accumulation:** localized or generalized edema which often masks weight loss.
- **Reduced grip strength** as measured by a dynamometer.

The consensus statement proposes specific criteria within each of the 6 categories to further diagnose malnutrition as non-severe or severe. For more information, refer to the chart in the Academy and A.S.P.E.N. Consensus article which can be accessed at http://malnutrition.andjrnl.org/Content/articles/1-Consensus_Statement.pdf.

Nutrition-focused physical assessment (see page 69) is one key to identifying malnutrition because it helps identify loss of body fat or muscle mass, fluid accumulation and reduced grip strength.

Despite the changes in our understanding of malnutrition, some doctors, nurse practitioners, physician's assistants, nurses, and RDNs still order albumin levels to evaluate nutritional status. Currently ICD-9 codes for protein-energy malnutrition remain unchanged, although conversations are in progress to change them to incorporate the proposed new terminology for identifying malnutrition (6).

The malnutrition criteria proposed in 2012 are a work in progress. The characteristics used to define and categorize malnutrition may change over time. Acute and long-term care facilities are beginning to develop protocols for adopting the current criteria. RDNs and NDTRs can help educate staff in their facility about the changes in diagnosis of malnutrition, discourage use of serum hepatic proteins to identify malnutrition, and encourage facilities to adopt the new criteria.

Nutrition Interventions to Address Malnutrition

Potential Interventions to improve nutritional status will vary depending on the etiology of the malnutrition, comorbidities, goals, and plan of care. The benefits of nutrition intervention to improve clinical outcomes have been well-documented (2). Interventions can be broadly

organized into 4 categories: food and/or nutrient delivery, nutrition education, nutrition counseling, and coordination of nutrition care (2). Specific nutrition interventions might include (2,8,9).

- Additional food or snacks for those who are eating well.
- Individualizing a diet to remove restrictions that might be undesired or result in unpalatable food.
- Foods and beverages fortified with protein, calories, and other nutrients.
- Oral Nutritional Supplements (ONS) for those whose intake is not meeting their estimated needs.
- Modifications in food texture or beverage consistency in response to chewing or swallowing problems.
- Adaptive feeding equipment to facilitate self-feeding.
- Changes in dining environment to provide a more or less stimulating environment for a patient.
- Medication review and changes if appetite is affected by medications.
- Enteral feeding if indicated and desired.
- Nutrition counseling during stay at facility and prior to discharge.
- Referral to appropriate resources in the community at discharge.

Important Note: Until further research has been completed to validate the new diagnosis process for malnutrition, practitioners may choose to use validated nutrition screening tools to identify malnutrition or undernutrition (or risk of either).

References for Malnutrition:

1. Academy of Nutrition and Dietetics. Nutrition Terminology Reference Manual (eNCPT): Dietetics Language for Nutrition Care. http://ncpt.webauthor.com. Accessed February 17, 2015.
2. Tappenden KA, Quatrara B, Parkhurst ML, et al. Critical role of nutrition in improving quality of care; an interdisciplinary call to action to address adult hospital malnutrition. J Acd Nutr Diet. 2013;113:1219-1237.
3. Gabay K, Kushner I. Acute-phase proteins and other systemic responses to inflammation. *NEJM*. 1999:340(6):448-454.
4. Bahn L. Serum proteins as markers of nutrition: what are we treating? In Parrish CR, ed. Nutrition Issues in Gastroenterology, Series # 43. Practical Gastroenterology. 2006;46-64. http://www.medicine.virginia.edu/clinical/departments/medicine/divisions/digestive-health/clinical-care/nutrition-support-team/nutrition-articles/BanhArticle.pdf. Accessed February 17, 2015.
5. Collins N, Friedrich L. Changing the malnutrition paradigm. Ostomy Wound Management. 2013; 59(2): http://www.o-wm.com/article/nutrition-411-changing-malnutrition-paradigm. Accessed February 17, 2015.
6. White JV, Guenter P, Jensen G, et al. Consensus statement of the Academy of Nutrition and Dietetics /American Society for Parenteral and Enteral Nutrition: characteristics recommended for the identification and documentation of adult malnutrition (undernutrition). *J Acad Nutr Diet*. 2012;112(5):730-738.
7. Jensen GL, Mirtallo J, Compher C, Dhaliwal R, Forbes A, Grijalba RF, Hardy G, Kondrup J, Labadarios D, Nyulasi I, Castillo JC, Waitzberg D. Adult starvation and disease-related malnutrition: A proposal for etiology-based diagnosis in the clinical practice setting from the International Consensus Guideline Committee. *JPEN*. 2010;34(2):156-159.

8. Academy of Nutrition and Dietetics. Nutrition Care Manual. www.nutritioncaremanual.org. Accessed February 17, 2015.
9. Dorner B. Dysphagia Diet Solutions. Naples FL: Becky Dorner & Associates Inc.; 2008.

Tracking Weight Changes

Policy:

Weights will be documented for all individuals, for the purpose of assessing significant and insidious (slow) weight changes.

Procedure:

1. The facility is responsible for obtaining correct weights on a regular basis, and for keeping accurate records. This includes having adequate weight scales, bed scales, lift scales, and/or wheel chair scales as needed.

2. A copy of weight records will be forwarded to the appropriate professional each month: weight team leader, registered dietitian nutritionist (RDN) or designee, nursing supervisor, etc. The RDN or designee will review monthly weights and calculate significant change over one, three, and six months. Many electronic weight tracking programs will calculate weight changes over time and flag those that are significant, however they should be confirmed by a review by the RDN. A copy of all significant weight losses and gains will be given to the interdisciplinary care team for appropriate review and documentation.

3. Weight records should also be reviewed for insidious (slow) weight loss over a period of a few months. Weight loss that does not trigger as significant should be addressed by the care plan team because it may be an indicator of other changes in the individual's condition.

4. All individuals with significant weight changes will be reweighed to assure accuracy of the weight prior to reporting this to the staff, physician, or family.

5. The care team will review and document on all insidious and significant weight changes, with appropriate referrals to the physician and RDN or designee. The RDN or designee will review all significant weight losses, and assess for insidious weight loss. The RDN or designee will make referrals and take action as necessary (including follow up documentation).

6. The individual, family (or representative), physician and RDN or designee will be notified of any individual with an unplanned significant weight change of 5% in one month, 7.5% in three months, or 10% in six months.

7. Individuals with significant weight loss will be added to weekly weights for a minimum of 4 weeks or until weight stabilizes.

8. Individuals with insidious weight loss may be added to weekly weights at the discretion of the MD, RDN, or interdisciplinary team, particularly if medical condition has changed or meal intake has declined.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

Medical Nutrition Therapy Made Easy

Sample Form: Monthly Weight Record

Monthly Weight Record for _____ Year **Facility/Wing _____**

Room	Name	Ht	UBW	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Ht = Height UBW = Usual body weight

Medical Nutrition Therapy Made Easy

Sample Form: Individual Weight Chart

Name _____ Ht _____ UBW _____ Year _____

Time Interval	Significant Change	Severe Change
1 month	5%	Greater than 5%
3 months	7.5%	Greater than 7.5%
6 months	10%	Greater than 10%

Month/ Date	Wt	% Wt Change Past Month	% Wt Change Past 3 Months	% Wt Change Past 6 Months	Date Resident, Family, RD & Physician Notified	Comments
Jan						
Feb						
Mar						
April						
May						
June						
July						
Aug						
Sept						
Oct						
Nov						
Dec						

UBW = Usual body weight

Formula to determine weight loss:
Percentage Weight Change:
Previous Weight - Current Weight ÷ Previous Weight x 100

Circle % weight change if significant or severe.

Comments should reflect identified causes and/or interventions implemented for significant weight loss.

Medical Nutrition Therapy Made Easy

Sample Form: Weekly Weight Record

Room	Name	Previous Weight/Date	Date																

Sample Form: Significant Weight Changes

Facility_____ **Wing**_____ **Monthly / Quarterly / Six Month (*Circle)*** **Month/Year**_____

Room No.	Name	Previous Month Weight	Present Month Weight	↑ ↓ % Gain or Loss	Re-weigh Required	Re-weigh Weight/ Date	Notified			Comments
							MD	Family	RDN	

+ for significant weight gain of ≥ 5%
- for significant weight loss of ≤ 5%

Medical Nutrition Therapy Made Easy

Sample Form: Significant Weight Loss

Name: _____

Weight loss _____% loss in _____ months Clinically Unavoidable Yes No

Interventions attempted to address weight loss _____

_____

_____

Identified Concerns

_____ Poor food/fluid intake
_____ Advanced disease state: _____
_____ Increased nutritional / caloric needs associated with: _____
_____ Prolonged nausea, vomiting or diarrhea not relieved by treatment provided
_____ Radiation or Chemotherapy
_____ Other: _____

_____

Dietary Notes	Nursing Notes	SS Notes	Physician Notes

_____ _____
RDN Signature Date

_____ _____
RN Signature Date

_____ _____
SS Signature Date

_____ _____
Physician Signature Date

Immediate Temporary Interventions for Unplanned Significant Weight Loss

Policy:

Individuals with unplanned significant/severe weight loss will receive immediate nutrition interventions to prevent further weight loss, stabilize weight, and/or assist to regain weight as appropriate

Procedure:

1. Facility staff will request temporary nutrition interventions as appropriate for significant/severe weight loss. The individual should be interviewed for preference of intervention.

2. These temporary interventions may include:
   - Oral nutritional supplement one to three times a day, between meals or with medication passes.
   - Other interventions such as extra milk, pudding, yogurt, milkshakes, or extra portions as appropriate.

3. A dietary communication slip will be sent to the food service department to request this temporary intervention.

4. The food service staff will change the temporary intervention if it is not appropriate for the individual. For example, if the individual is lactose intolerant or has milk allergy and a milk-based supplement has been ordered, the food service manager has the authority to change this to an appropriate intervention based on information on regarding allergies, intolerances, and food and beverage dislikes.

5. The registered dietitian nutritionist (RDN) or designee will review all significant/severe weight losses monthly or more often as needed and assess nutritional status. At that time, the temporary intervention may be changed as needed. The RDN or designee will document the interventions and their nutritive value (portion, number of times per day ordered, and calories and protein they provide).

6. The RDN or designee will determine a monitoring system to evaluate the success of the interventions initiated (i.e. weekly weights, food/fluid intake studies, etc.).

Note: Support staff work under the supervision of the registered dietitian (R registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

Significant Weight Loss

Policy:

The goal of medical nutrition therapy (MNT) for significant weight loss is to identify underlying causes or factors contributing to the significant unplanned weight loss, and intervene as appropriate to resolve the problem and stabilize the weight.

Procedure:

Appropriate members of the interdisciplinary team will:

1. Identify individuals with significant/severe weight losses.

Significant Weight Loss	Severe Weight Loss
5% weight loss in 1 month	>5% weight loss in 1 month
7.5% weight loss in 3 months	>7.5% weight loss in 3 months
10% weight loss in 6 months	>10% weight loss in 6 months

- Re-weigh the individual to assure accurate weight.
- Interview direct care givers for information on recent changes.
- Review the individual's food intake records to estimate the average percentage of food/fluid intake in the past two to four weeks.
- Assess whether or not the weight loss was desirable or expected (such as in resolution of severe edema), and document accordingly.
- Assess for stress factors (flu, fever, edema, infections, etc.) or cognitive changes (dementia, depression, etc.) that may have contributed to the weight loss.
- Assess ability to eat independently, chewing/swallowing ability, tolerance/acceptance of diet, etc.
- Assess the individual's laboratory values when available and if appropriate.
- Assess for potential food-medication interactions.
- Review the care plan for pertinent information.
- Document estimated nutritional needs (calories, protein, and fluid) versus estimated food/fluid intake (utilizing food intake records).
- Assess for risk of undernutrition or protein-energy malnutrition. Identify potential causes. Document findings in the medical record.
- Interview the individual to identify possible causes and to determine appropriate nutrition interventions.
- Individualize nutrition approach to accommodate the least restrictive diet appropriate to maximize meal intake.
- Request/implement nutrition interventions based on the individual case. Document the additional nutritional value (calories, protein, fluids) these interventions will provide.
- Place the individual on weekly weights for one month and review these weights weekly.
- Monitor and evaluate to assess effectiveness of the intervention.

- Complete follow up documentation as needed.

2. Continued Weight Loss
    - Re-weigh to assure accurate weight.
    - Assess whether or not the weight loss was desirable (such as resolution of severe edema), and document accordingly.
    - Review meal and fluid intake documentation over the past 7-14 days. Observe intake directly if possible. A three day calorie count or plate waste study may also be considered.
    - Assess the individual's laboratory values when available and if appropriate.
    - Re-calculate estimated nutritional needs.
    - Compare nutritional needs to actual intake (calories, protein and fluids at minimum).
    - Note potential reasons why the initial nutrition intervention was not successful.
    - Interview the individual again for possible causes and appropriate interventions.
    - Provide individualized aggressive nutrition interventions, including but not limited to:
        - Assistance with eating as needed
        - Update and honor individual food preferences
        - Calorie boosters (i.e. extra margarine, mayonnaise or gravy on foods)
        - Protein boosters (i.e. whole milk, half and half or cream, pudding, ice cream, milk shakes)
        - Enhanced/fortified foods (high calorie/high protein)
        - Brightly colored napkins on tray to signify that this individual needs extra attention
        - High calorie/high protein supplements
    - Review Advance Directive regarding nutrition and hydration. Review prognosis, physician's notes, policy of facility for advanced directive for nutrition and hydration, and confer with social services and care plan team.
    - Speak with the individual (or family representative) about their wishes. Share pertinent information with appropriate care staff.
    - Document findings (in the care plan, assessment, or re-assessment) including the individual's/family's wishes if known, facility policy, and best practice guidelines.
    - If intake is not life sustaining, document nutritional needs versus current intake. Document that the physician may wish to consider an alternate route of feeding such as tube feeding or parenteral nutrition. Continue to encourage oral feeding.
    - If the individual is to be provided comfort care only, cater to food preferences as much as possible to keep the individual as comfortable as possible. Document attempts to provide new interventions on a frequent basis.

Note: Avoidable weight loss means that the individual did not maintain acceptable parameters of nutritional status and that the facility did not do one or more of the following:

- Evaluate the individual's clinical condition and nutritional risk factors.
- Define and implement interventions that are consistent with the individual's needs, goals and recognized standards of practice.
- Monitor and evaluate the impact of the interventions.
- Revise the intervention as appropriate.

Unavoidable weight loss means that the individual did not maintain acceptable parameters of nutritional status even though the facility had evaluated the individual's clinical condition and nutritional risk factors:

- Defined and implemented interventions that are consistent with resident needs, goals and recognized standards of practice.
- Monitored and evaluated the impact of the interventions.
- Revised the approaches as appropriate.

Insidious weight loss refers to a gradual, unintended, progressive weight loss over time.

Usual body weight is the individual's usual weight through adult life or a stable weight over time.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

Significant Weight Gain

Policy:

The goal of medical nutrition therapy (MNT) for significant weight gain is to stabilize the weight if possible, identify underlying causes or factors contributing to the significant unplanned weight gain, and intervene as appropriate to resolve the problem.

Procedure:

Appropriate members of the interdisciplinary team will:

1. Identify individuals with significant/severe weight gain.

Significant Weight Gain	Severe Weight Gain
5% weight gain in 1 month	>5% weight gain in 1 month
7.5% weight gain in 3 months	>7.5% weight gain in 3 months
10% weight gain in 6 months	>10% weight gain in 6 months

- Reweigh to assure accurate weight.
- Assess for recent weight loss and whether the individual is now regaining back to baseline weight.
- Consider food intake at activities, food kept in the individual's room, food brought into facility by family and friends, or food consumed when out of the facility.
- Assess for possible fluid imbalance.

Review for positive or negative outcome of the weight gain: Was this a desirable/planned weight gain? If it was desirable, document it as such. Are there negative outcomes associated with the weight gain? Does the resident enjoy food and get pleasure from eating? Is the resident aware of the weight gain and comfortable with it? If the weight was gain is not desired, proceed with the following.

- Review the medical record for food and fluid intake, changes in medications (especially steroids), renal status, laboratory values, weight history, recent changes in medical, physical or cognitive status, recent social events, etc.

- Interview the individual, family and staff for information on habits and weight history.

- Assess food intake records, use of supplements, and changes in food/fluid intake or supplements.

- Estimate calorie needs, taking into consideration activity level or recent changes in activity level.

- Assess for behaviors such as hoarding, binging, or stealing food.

- Consider scale accuracy and weighing technique. Has the scale been calibrated recently? Is there a pattern of weight gain in the facility that might indicate problems with the scale? Have there been any changes in the staff who normally obtain weights?

- Investigate weighing techniques: Was the individual weighed with a new prosthesis, brace, cast or other device, or a gel pad, wheel chair bag, or full catheter bag? Was the individual weighed at a different time of day, on a different scale, or in a different wheelchair?

- Assess for overhydration, dialysis (dry weight versus predialysis weight), exacerbation of heart failure (HF), impaired renal status, or ascites.

- Assess for recent administration of IV for rehydration or TPN/PPN for hydration or nutritional intervention.

- Provide individualized nutrition interventions as indicated:
  - Change in diet, (such as reduced sodium or fluid restriction if needed)
  - Decrease in supplements
  - Decrease in enteral feeding or fluids
  - Changes in medications

- Document all information and recommendations accordingly.

The RDN will make recommendations as appropriate based on the MNT assessment.

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Interventions for Unintended Weight Loss

Policy:

Individuals with unintended weight loss or insidious weight loss will be identified and monitored so that appropriate intervention can be implemented.

Procedure:

1. Individuals will be weighed upon admission or readmission, weekly for the first 4 weeks after admission, and at least monthly thereafter to help identify and document weight trends. Individuals may also be weighed weekly due to a significant change in condition, if food intake has declined and persisted (e.g., for more than a week), or there is other evidence of altered nutritional status or fluid and electrolyte imbalance. Factors that may impact weight and the significance of apparent weight changes include:
   - The individual's usual weight through adult life
   - Current medical condition
   - Calorie restricted diet or calorie-enhanced diet
   - Recent changes in food or fluid intake
   - Edema
   - Dehydration

In some cases, weight monitoring is not indicated (e.g., the individual is terminally ill and requests only comfort care).

2. Staff will follow a consistent approach to weighing and use an appropriately calibrated and functioning scale (e.g., wheelchair scale or bed scale). Since weight varies throughout the day, a consistent process and technique (e.g., weighing the individual wearing a similar type of clothing, at approximately the same time of the day, using the same scale, either consistently wearing or not wearing orthotics or prostheses, and verifying scale accuracy) can help make weight comparisons more reliable. (See *Policy and Resource on Obtaining Accurate Weights* on pages 74 and 75).

Note: The last weight obtained in the hospital may differ markedly from the initial weight upon admission to the facility, and is not to be used in lieu of actually weighing the individual.

Source: Centers for Medicare & Medicaid Services. State Operations Manual, Guidance to Surveyors for Long Term Care Facilities, Appendix PP http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_pp_guidelines_ltcf.pdf. Revision 133, 2/6/15. Accessed March 31, 2015.

Refer to Policies and Procedures and Resources on *Accurate Weights, How to Obtain Accurate Weights, Adjusting Weights for Amputees, Significant Weight Changes, Tracking Weight Changes, Significant Weight Loss and Significant Weight Gain, Sample Forms and Charts* in the chapter on *Interventions for Common Nutrition Problems Made Easy*.

Resource: Potential Interventions for Unintended Weight Loss

Individualized Diets

Research suggests that an individualized nutrition approach can enhance the quality of life and nutritional status of older adults in healthcare communities (1). It is often beneficial to minimize restrictions (liberalize the diet), consistent with an individual's condition, prognosis, and choices and assure food preferences are met before using oral nutrition supplements.

Dietary restrictions, therapeutic diets (e.g., low fat or sodium restricted), and mechanically altered diets may help in select situations. At other times, they may impair adequate nutrition and lead to further decline in nutritional status, especially in already undernourished or at-risk individuals. When an individual is not eating well or is losing weight, the interdisciplinary team may temporarily remove dietary restrictions and individualize the diet to improve food intake to try to stabilize their weight.

Sometimes, an individual or their representative decides to decline medically relevant dietary restrictions. In such circumstances, the individual, facility and practitioner collaborate to identify pertinent alternatives.

Food Fortification and Supplementation

Examples of interventions to improve nutrient intake include:

- Fortification of foods (e.g., adding protein, fat, and/or carbohydrate to foods such as hot cereal, mashed potatoes, casseroles, and desserts).
- Offering smaller, more frequent meals.
- Providing between-meal snacks or nourishments.
- Increasing the portion sizes of favorite foods and meals.
- Providing oral nutritional supplements.

Some research suggests that caloric intake may increase if nutritional supplements are consumed between meals, and may be less effective when given with meals; therefore, the use of nutritional supplements is generally recommended between meals instead of with meals (2).

Taking a nutritional supplement during medication administration may also increase caloric intake without reducing appetite at mealtime.

Use of Appetite Stimulants

To date, the evidence is limited about the benefits of appetite stimulants. While their use may be appropriate in specific circumstances, they are not a substitute for appropriate investigation and management of potentially modifiable risk factors and underlying causes of anorexia and weight loss (3).

Feeding Tubes

Tube feeding as an intervention for unintended weight loss present both risks and benefits, depending on an individual's underlying medical conditions and prognosis, and causes of weight loss. The decision to place a tube should be made carefully and should include a review of a patient's advance directives regarding tube feeding. The health care practitioner should be involved in reviewing whether all other interventions to address anorexia, weight loss, and eating or swallowing abnormalities have been attempted. Studies have shown that tube feeding does not extend life, prevent aspiration pneumonia, improve function or limit suffering in individuals with dementia (4).

Refer to additional information in this section related to enteral feeding.

Note: There are many other Policies and Procedures and Resources in this manual that can help to address unintended weight loss.

References for Potential Interventions for Unintended Weight Loss

1. American Dietetic Association. Position Paper of the American Dietetic Association: Individualized Nutrition Approaches for Older Adults in Health Care Communities. *J Am Diet Assoc*. 2010. 1549-1553.
2. Wilson M-M G, Purushothaman R, & Morley J E. Effect of liquid dietary supplements on energy intake in the elderly. *The American Journal of Clinical Nutrition*. 2002: 75(5): 944-947.
3. Thomas D.R. Guidelines for the use of orexigenic drugs in long-term care. *Nutrition in Clinical Practice*. 2006: 21(1) 82-87.
4. Sampson EL, Jones CB. Enteral tube feeding for older people with advanced dementia. *Cochrane Database Syst Rev*. 2009: CD007209. doi: 10.1002/14651858.CD007209.pub2.

Resource: Calorie Boosters/Fortified Foods

The following suggestions are intended for people who need to increase their calories in order to maintain or gain weight. These recommendations are not necessarily intended for people on low fat or carbohydrate controlled diets.

Margarine or Butter	Add to casseroles, hot cereals, vegetables, potatoes, rice and noodles, soups Spread on bread, sandwiches, toast, crackers, rolls, and muffins
Mayonnaise	Spread on bread, sandwiches, toast, crackers, rolls and muffins Use in egg, chicken, tuna or meat salad
Peanut Butter	Spread on bread, sandwiches, toast, crackers, rolls, muffins, apples, bananas
Sour Cream	Use on baked potatoes or as a dip
Half-and-half or Cream	Add to milk shakes, hot chocolate and other beverages; pour over cereals; use in cream soups and puddings
Other Calorie Dense Foods:	Casseroles with added cream Cheese *Corn Syrup Cream cheese Evaporated milk Fried foods Gravy *Hard Candy *Honey *Ice Cream floats and sundaes *Jam and jelly *Maple Syrup *Marshmallows Oils *Pudding Salad dressings Soups (made with whole milk or half-and-half) *Syrup Whipped cream
Commercially Prepared High Calorie/Protein Supplements	*Bars *Beverages Fortified or enhanced foods Juices *Milkshakes *Puddings
Meal Frequency	Offer three meals and two or more snacks each day

*These foods are high in simple sugars and must be counted into the day's total carbohydrate if on a carbohydrate controlled diet.

Note: There are commercial products available that allow for easy creation of enhanced foods. These products may be in the form of powders or liquids that mix into certain foods or beverages, thus boosting calories.

Source: Dorner, Becky, Diet and Nutrition Care Manual: A Comprehensive Nutrition Care Guide, Becky Dorner & Associates, Inc., Naples, FL. 2014.

High Calorie/High Protein Supplements

Policy:

Individuals needing supplemental nutrition, as determined through nutrition assessment, will be served a suitable high calorie/high protein supplement between meals or as part of a medication-pass supplement program. Commercial oral nutritional supplements or supplements prepared in-house by the facility may be used.

Procedure:

1. Amount of supplement and frequency (for example: 10 AM, 2 PM and/or HS) will be determined through nutrition assessment based on individual needs.

2. All supplemental nutrition will be ordered or approved by a physician.

3. The food service department will prepare supplements and deliver them to nursing staff at the appropriate time.

4. Nursing staff will supervise the delivery and consumption of all supplements and record appropriately in the medical record and/or the medication administration record.

5. Supplement acceptance will be documented in the meal intake reporting, progress notes, care plans and/or assessments as appropriate.

6. Individual acceptance of supplements will be monitored and adjustments will be made as needed.

Resource: Supplement Formulary

Insert your formulary here.

Sources for oral nutritional supplements:

- Abbott Nutrition, (800) 227-5767, www.abbottnutrition.com
- Hormel Health Labs, (800) 866-7757, www.hormelhealthlabs.com
- Lyons Magnus, (800) 634-2345, www.lyonsmagnus.com
- Nestle Clinical Nutrition, (800) 422-2752, www.nestleclinicalnutrition.com

Dehydration

Policy:

Individuals at risk for dehydration will be identified, assessed, and provided with sufficient fluid intake to maintain proper hydration and health.

Procedure:

Assure that each individual receives sufficient amounts of fluids based on individual need to prevent dehydration and maintain health.

1. Risk factors for dehydration will be identified through routine nursing assessment.

   Risk factors include:
   - Coma/decreased sensorium
   - Fluid loss and increased fluid needs (e.g. vomiting, diarrhea, fever, uncontrolled diabetes, medications, etc.)
   - Fluid restriction (physician's order required)
   - Functional impairments that make it difficult to drink, reach fluids, or communicate fluid needs (e.g. aphagia, dysphagia)
   - Dementia that causes an individual to forget to drink
   - Refusal of fluids

2. Clinical signs of possible insufficient fluid intake include: :
   - Dry skin and mucous membranes
   - Cracked lips, dry/coated tongue
   - Decreased skin turgor
   - Thirst and dry mouth
   - Concentrated urine
   - Dizziness upon sitting or standing
   - Confusion or change in mental status
   - Lethargy
   - Newly present constipation or fecal impaction
   - Abnormal laboratory values (hemoglobin and hematocrit, potassium, chloride, sodium, albumin, transferrin, BUN, or urine specific gravity)
   - Significant or severe weight loss
   - Elevated temperature (fever)
   - Headache
   - Flushed appearance
   - Functional decline (including increased risk for falls)

3. Assure that adequate fluids are provided.
   Fluid needs calculations are generally based on the following estimates:
   - Without renal or cardiac distress:
     30 mL/kg body weight (2.2 pounds = 1 kg) or 1 mL per calorie consumed.
   - Diagnosed with renal or cardiac distress:
     25 mL/kg body weight or as determined by physician (as in the case of fluid restriction).
   - Diagnosed with dehydration:
     35 mL/kg body weight
     When rehydrated, return to 30 mL/kg body weight.

4. Fluids include milk, juice, coffee, tea, water, milkshakes, popsicles, ice cream, sherbet, gelatin, and soups.
   - All individuals will have a water pitcher or container at bedside (excluding those on fluid restrictions).
   - For individuals with a physician's order for thickened liquids, fluids will be provided that are thickened to the consistency ordered.
   - Foods contain fluids which may also be included as part of the total daily fluid intake.

5. If fluids by mouth are not tolerated, an IV or enteral feeding tube may be recommended, and if placed, appropriate fluids will be provided through the IV or feeding tube. The registered dietitian nutritionist (RDN) or designee should assess IV or enteral feeding /flush orders, and reevaluate per facility policy and as needed.

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Resource: Additional Recommendations for Promoting Adequate Hydration

Solutions to Prevent/Treat Dehydration
1. Monitor for risk factors and symptoms. 2. If risk of dehydration is identified, monitor intake/output (I&Os) as per facility protocol. 3. Educate individual residents/patients, families and staff on the need to encourage fluids: • Provide access to fluids at all times (excluding those on fluid restrictions). This can include a water pitcher and cup at the bedside, a water bottle on the wheelchair, a travel mug, or offering beverages every few hours. • Encourage nursing assistants to offer and encourage fluids each time they turn individuals on turning schedules. **TAPS** stands for: **T**urn, **A**lign, **P**osition, **S**ips (offer sips of fluid). • Offer additional fluids during medication pass (4-8 ounces). 4. Provide assistance to drink as needed: • Offer fluid with every contact. • Provide assistance to drink fluids with and in between meals. 5. Set up a hydration station: Self-serve juice/beverage machine in common area. 6. Be sure those on thickened liquids receive adequate fluids as they may be at greater risk for dehydration. 7. Offer a variety of fluids: Any food that is fluid at room temperature is considered a fluid; carbonated beverages, coffees, teas, gelatin, ice cream, fruit ices, juice, milk, milkshakes, sherbet, soup or broth, water.

Fluids at the Bedside

Policy:

All individuals will be provided with a fresh supply of water at the bedside unless medically contraindicated. Those who are unable to request or independently consume drinking water will be offered fluids by the nursing staff at every medication administration, individual contact for care, scheduled snack passes, and other times throughout the day.

Procedure:

1. Staff will provide and fill water containers with fresh ice and water at least twice daily.

2. Staff will collect all containers (excluding disposable containers) for cleaning and sanitizing in the food service department on a daily basis. The food service staff will deliver the containers to the nursing department or notify the nursing department when the procedure has been completed.

3. Ideally, two complete sets of water and drinking containers of different colors will be available so that daily collection, cleaning and sanitizing can be verified. A procedure will be in place to ensure a regular cleaning schedule is followed.

4. If disposable water containers are used, they should be replaced daily.

Encourage Fluids Order

Policy:

When the physician orders “encourage fluid” this procedure below will be followed.

Procedure:

1. When the physician orders “encourage fluids”, this will refer to a minimum of 1500 to 2000 mL per 24 hours as determined by the individual’s nutritional assessment.

2. The individual is then placed on “Intake and Output” monitoring so an accurate record can be kept.

3. If the physician orders “encourage fluids” and the individual is not able to tolerate 1500 to 2,000 mL per 24 hours, the physician will be notified.

4. “Encourage fluids” can also be a nursing measure, and this policy should be followed by offering fluids at each nursing contact.

5. The food service department will provide a minimum of 1440 mL fluid on meal trays daily (16 ounces per meal). Nursing will provide the remaining fluids.
   - Water will be provided at the bedside.
   - Nursing will provide additional fluids at medication pass, HS, and other times throughout the day as needed.

Note: See *Resource: Distribution of Fluids for Fluid Restriction/Encourage Fluids Orders Sample* on page 125.

Fluids Restriction Order

Policy:

Fluid restrictions will be followed as per physician's orders and following the procedures below.

Procedure:

1. The amount of fluid allowed per 24 hour period will be specified in a written physician's order and sent to the dietary department in writing.

2. The food service department and the nursing department will determine how much fluid each will provide and at what times. See next page for *Resource: Distribution of Fluids for Fluid Restriction/Encourage Fluids Orders Sample*

3. The individual will be placed on "Intake and Output" monitoring so an accurate record can be kept.

4. No water will be provided at the bedside unless calculated into the daily total fluid restriction.

Resource: Distribution of Fluids for Fluid Restriction/Encourage Fluids Orders Sample

Fluid Restriction	Nursing Total	By Shift	Dietary Total	Breakfast	Lunch	Dinner
1000 mL	160 mL	80 mL 1st 80 mL 2nd 0 mL 3rd	840 mL	360 mL	240 mL	240 mL
1100 mL	260 mL	130 mL 1st 130 mL 2nd 0 mL 3rd	840 mL	360 mL	240 mL	240 mL
1200 mL	360 mL	120 mL 1st 120 mL 2nd 120 mL 3rd	840 mL	360 mL	240 mL	240 mL
1300 mL	460 mL	150 mL 1st 150 mL 2nd 160 mL 3rd	840 mL	360 mL	240 mL	240 mL
1400 mL	560 mL	190 mL 1st 190 mL 2nd 180 mL 3rd	840 mL	360 mL	240 mL	240 mL
1500 mL	660 mL	220 mL 1st 220 mL 2nd 220 mL 3rd	840 mL	360 mL	240 mL	240 mL
1600 mL	760 mL	260 mL 1st 260 mL 2nd 240 mL 3rd	840 mL	360 mL	240 mL	240 mL
1700 mL	860 mL	290 mL 1st 290 mL 2nd 280 mL 3rd	840 mL	360 mL	240 mL	240 mL
1800 mL	960 mL	320 mL 1st 320 mL 2nd 320 mL 3rd	840 mL	360 mL	240 mL	240 mL
1900 mL	1060 mL	360 mL 1st 360 mL 2nd 340 mL 3rd	840 mL	360 mL	240 mL	240 mL
2000 mL	1160 mL	390 mL 1st 390 mL 2nd 380 mL 3rd	840 mL	360 mL	240 mL	240 mL

Adapted with permission from Nutrition Alliance, LLC.

Pressure Ulcers

Policy:

Medical nutrition therapy (MNT) will be provided for those who are at risk of, or have a diagnosed pressure ulcer. The goal will be to promote healing and restore the individual to optimal nutritional status if at all possible. The RDN or designee should follow relevant and evidence-based guidelines on nutrition and hydration for individuals at risk or for those who have a pressure ulcer (1).

Procedure:

Nutrition Protocols for Individuals at High Risk of Pressure Ulcers or with Stage I, II, III, IV, Suspected Deep Tissue Injury or Unstageable Pressure Ulcers:

1. Upon admission or re-admission and as needed thereafter, the nursing staff will screen each individual for risk of skin breakdown using the tool assigned by the facility for predicting risk of pressure ulcers. The registered dietitian nutritionist (RDN) or designee will review the screening tool, the medical record and the pressure ulcer report to assess/reassess the individual's nutrition status.

2. The RDN or designee is a member of the wound care team and will receive referrals and/or a copy of the pressure ulcer/impaired skin integrity report from nursing. All individuals with stage I, II, III, IV, suspected deep tissue injury or unstageable pressure ulcers will be referred to the RDN or designee. The RDN or designee will review all stage III, IV and unstageable pressure ulcers and provide appropriate medical nutrition therapy (MNT).

3. The MNT assessment on these high risk individuals will include a review of the following factors (1,2):
    - Pre-admission illness, medical history and diagnosis
    - Usual body weight and significant weight change
    - Current food/fluid intake and adequacy of total intake
    - Ability to eat independently
    - Pertinent nutrition related laboratory values if available
    - Current nutrient intake versus estimated needs
    - History of pressure ulcers
    - Other factors impacting nutritional status (chewing/swallowing ability, food-medication interactions, GI problems, depression, etc.)
    - Signs/symptoms of dehydration (poor skin turgor, flushed dry skin, coated tongue, oliguria, irritability, confusion)
    - Interview with the individual, family, caregiver, and/or staff for food preferences and tolerances

4. Based on the individual's food intake and on visitation with the individual, nutrient needs will be calculated. Nutrients (calories, protein, fluids, etc.) will be increased as needed through additional food/fluid items on the tray, substitutions for foods not eaten and/or between meal supplements. Nutrition interventions may include:
    - Nutrient/intake study (if deemed appropriate).
    - Calories, protein, fluids to meet needs.

- Individualization/liberalization of diet restrictions. Encouragement of food/fluid intake. Assistance at mealtime (encourage, prompt, assist or provide adaptive eating devices).
- Fortified foods and/or oral nutrition supplements if needed.
- Adequate fluids for hydration.
- Multivitamin/mineral if intake is poor and nutritional deficiency is identified or suspected.
- If intake does not support nutritional needs (calories, protein, fluids, and other nutrients), the interdisciplinary healthcare team may wish to recommend nutrition support.

5. Nutrition interventions will be implemented using facility protocols. The RDN or designee will educate and counsel the individual and/or family as appropriate on nutritional needs related to the pressure ulcer.

6. A progress note will be written in the individual's chart indicating the plan of care and that the individual will be reviewed again within 1 to 4 weeks based on need.

7. The care plan will be changed to reflect interventions put in place to prevent pressure ulcers or to support wound healing.

8. The RDN or designee will review effectiveness of nutrition interventions and adjust interventions as needed (if the individual is not accepting or not tolerating the intervention, or if condition is improved).

   For those at risk:
   - If the skin remains intact, additional nutrition intervention may not be necessary depending on the individual's status. Review the individual's condition and determine if the additional foods/supplements need to continue. Adjust the care plan to reflect the individual's needs. Review again in 1 to 4 weeks, based on individual need.

   For those with pressure ulcers:
   - If the pressure ulcer has improved but is not completely healed, continue the care plan and review for additional interventions needed. Review again in 1 to 4 weeks, based on the individual's need.
   - If the pressure ulcer has not changed or has worsened, re-evaluate needs and acceptance of nutrition interventions. Consult with the physician and/or nursing concerning the individual's continual problem.
   - If the pressure ulcer is healed, additional nutritional intervention may not be necessary depending on the individual's status. Review the individual's condition and determine if the additional foods/supplements need to continue. Adjust the care plan to reflect the individual's needs.

9. The RDN or designee will continue to monitor high-risk individuals a minimum of every 1 to 3 months depending on status. (Monitoring will occur more often if significant weight loss develops or additional or worsening pressure ulcers occur.)

References:

1. National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure

Ulcers: Clinical Practice Guideline. Emily Haesler (Ed). Cambridge Media: Perth, Australia; 2014.
2. Dorner B. *Diet and Nutrition Care Manual: A Comprehensive Nutrition Care Guide*. Naples, FL: Becky Dorner & Associates, Inc., 2014.

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See *Calorie Boosters* on page 116 and *Protein Boosters* on page 132 for ideas on how to increase calories and protein.

Resource: Risk Factors for Pressure Ulcers

Risk Factors for Pressure Ulcer Development

As part of a comprehensive assessment, it is vital to identify risk factors for pressure ulcer development and assess pressure ulcer risk using a validated tool. *The Braden Scale: Predicting Pressure Ulcer Risk* includes a subscale for nutrition and can be helpful in determining not only pressure ulcer risk, but nutritional risk. The following risk factors should be evaluated during the screening and assessment process:

Risk Factors For Developing Pressure Ulcers (1,2)	
• Impaired/decreased mobility and decreased functional ability • Co-morbid conditions, such as end stage renal disease, thyroid disease or diabetes mellitus • Drugs such as steroids that may affect wound healing • Impaired diffuse or localized blood flow, for example, generalized atherosclerosis or lower extremity arterial insufficiency • Resident refusal of some aspects of care and treatment • Cognitive impairment	• Exposure of skin to urinary and fecal incontinence • Undernutrition, malnutrition, and hydration deficits • A healed ulcer (areas of healed Stage III or IV pressure ulcers are more likely to have recurrent breakdown) • Obesity (increases risk due to decreased mobility, increased incidence of diabetes, cardiovascular and pulmonary problems) • Other risk factors: diabetic neuropathy, frailty, cognitive impairment

Not all risk factors can be fully modified and some potentially modifiable risk factors (e.g., undernutrition) may not be corrected immediately, despite prompt intervention. It may be necessary to stabilize, when possible, the underlying causes (e.g., control blood sugars or ensure adequate food and fluid intake)

Note: Clinical signs and symptoms of undernutrition, protein energy malnutrition and dehydration may include:

- Pale skin
- Red, swollen lips
- Swollen and/or dry tongue with scarlet or magenta hue
- Poor skin turgor
- Cachexia
- Bilateral edema
- Muscle wasting
- Calf tenderness
- Reduced urinary output

Sources:

1. Centers for Medicare & Medicaid Services. State Operations Manual, Guidance to Surveyors for Long Term Care Facilities, Appendix PP http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_pp_guidelines_ltcf.pdf. Revision 133, 2/6/15. Accessed March 31, 2015.
2. Dorner B. *Diet and Nutrition Care Manual: A Comprehensive Nutrition Care Guide*. Naples, FL: Becky Dorner & Associates, Inc., 2014.

Resource: Nutritional Needs for Prevention and Treatment of Pressure Ulcers

Energy Intake:

1. Provide individualized energy intake based on underlying medical condition and level of activity.
2. Provide 30 to 35 kcalories/kg body weight for adults at risk of a pressure ulcer who are assessed as being at risk of malnutrition.
3. Provide 30 to 35 kcalories/kg body weight for adults with a pressure ulcer who are assessed as being at risk for malnutrition
4. Adjust energy intake based on weight change or level of obesity. Adults who are underweight or who have had significant unintended weight loss may need additional energy intake.
5. Revise and modify/liberalize dietary restrictions where limitations result in decreased food and fluid intake. These adjustments should be made in consultation with a medical professional and managed by a registered dietitian whenever possible.
6. Offer fortified foods and/or high calorie, high protein oral nutritional supplements between meals if nutritional requirements cannot be achieved by dietary intake.
7. Consider enteral or parenteral nutritional support when oral intake is inadequate. This must be consistent with the individual's goals.

Protein Intake

1. Provide adequate protein for positive nitrogen balance for adults assessed to be at risk of a pressure ulcer.
2. Offer 1.25 to 1.5 grams protein/kg body weight daily for adults at risk of a pressure ulcer who are assessed to be at risk of malnutrition when compatible with goals of care, and reassess as condition changes.
3. Provide adequate protein for positive nitrogen balance for adults with a pressure ulcer.
4. Offer 1.25 to 1.5 grams protein/kg body weight daily for adults with an existing pressure ulcer who are assessed to be at risk of malnutrition when compatible with goals of care, and reassess as condition changes.
5. Offer high calorie, high protein nutritional supplements in addition to the usual diet to adults with nutritional risk and pressure ulcer risk, if nutritional requirements cannot be achieved by dietary intake.
6. Assess renal function to ensure that high levels of protein are appropriate for the individual.
7. Supplement with high protein, arginine and micronutrients for adults with a pressure ulcer Category/Stage III or IV or multiple pressure ulcers when nutritional requirements cannot be met with traditional high calorie and protein supplements.

Hydration

1. Provide and enourage adequate daily fluid intake for hydration for an individual assessed to be at risk of or with a pressure ulcer. This must be consistent with the individual's comorbid conditions and goals (recommend 1 mL/kcalorie consumed, to be adjusted based on fluid loss).
2. Monitor individuals for signs and symptoms of dehydration including change in weight, skin turgor, urine output, elevated serum sodium, and/or calculated serum osmolality.
3. Provide additional fluid for individuals with dehydration, elevated temperature, vomiting, profuse sweating, diarrhea, or heavily exudating wounds.

Vitamins and Minerals

1. Provide/encourage individuals assessed to be at risk of pressure ulcers to consume a balanced diet that includes good sources of vitamins and minerals.
2. Provide/encourage an individual assessed to be at risk of a pressure ulcer to take vitamin and mineral supplements when dietary intake is poor or deficiencies are confirmed or suspected.
3. Provide/encourage an individual with a pressure ulcer to consume a balanced diet that includes good sources of vitamins and minerals.
4. Provide/encourage an individual with a pressure ulcer to take vitamin and mineral supplements when dietary intake is poor or deficiencies are confirmed or suspected.

Reference:

National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline. Emily Haesler (Ed). Cambridge Media: Perth, Australia; 2014.

Resource: Protein Boosters

The following suggestions are intended for people who have difficulty eating high protein foods. Here are a few suggestions for boosting protein intake.

Skim Milk Powder (for cooking use only)	Mix one cup of skim milk powder into one quart of whole milk and use in recipes for creamed soups, hot cocoa, cooked cereals, cooked custard or pudding, casseroles and mashed potatoes Skim milk powder can also be added to scrambled eggs, soups, casseroles, meat loaf or meat balls, cookies and muffins. Start by adding 1 tablespoon of skim milk powder per serving.
Milk or Half-and-Half	Use instead of water for soups, cereals and instant cocoa
Cheese or Cheese Sauce	Add grated or melted cheese to vegetables, casseroles, soups
Eggs (fully cooked only)	Plain or in mixed dishes
Peanut Butter	Use on bread, crackers, or celery, apples and bananas
Instant Breakfast Milk Shake	Combine and mix well; one packet instant breakfast mix, one-cup whole milk or half-and-half, ½ cup ice cream
Other High Protein Foods	Cottage cheese Yogurt Meat, fish, poultry

Caution: Do not use on dysphagia diets unless safely pureed into a pureed food item.

Note: There are commercial products that allow for easy creation of enhanced foods. These products may be in the form of powders or liquids that mix into certain foods or beverages, thus boosting protein.

Source: Dorner B. *Diet and Nutrition Care Manual: A Comprehensive Nutrition Care Guide*. Naples, FL: Becky Dorner & Associates, Inc., 2014.

Dysphagia

Policy:

Individuals experiencing swallowing difficulties will be evaluated to determine the cause and possible interventions for dysphagia.

Procedure:

1. Individuals showing warning signs of dysphagia will be screened using a validated tool such as the EAT 10: A Swallowing Screening Tool.
2. Individuals with swallowing difficulties will be referred to the speech language pathologist (SLP) as appropriate to further screen for possible causes and solutions. The SLP will make recommendations for further testing, diet consistency changes, fluid consistency changes, adaptive feeding equipment, or referral to physician after the evaluation.
3. The food service manager (FSM) will:
   - Follow written orders for diet and fluid consistency.
   - Provide adaptive feeding devices as ordered.
   - Educate staff and supervise preparation of altered consistency diets.
   - Communicate concerns with tolerance or acceptance of food and/or fluid consistencies.
4. The nursing staff will:
   - Assure appropriate communication of referrals and recommendations to the physician.
   - Assure appropriate diet order is obtained from the physician and communicated to the food service department.
   - Follow written physician orders.
   - Supervise individuals at meal time to assure orders are followed and suggested feeding techniques are being practiced.
   - Communicate concerns to the registered dietitian nutritionist (RDN) or designee, SLP and/or FSM as appropriate.
5. The SLP and/or RDN or designee will train staff to observe signs of dysphagia and will make appropriate referrals to other professionals as needed upon observation of the warning signs. (See Resource: *Dysphagia Warning Signs* on the next page.)
6. The RDN or designee will:
   - Follow physicians and SLP orders for diet modification.
   - Monitor tolerance and acceptance of ordered diet. Notify the appropriate discipline (nursing, social service, SLP) of swallowing problems they identify.
   - Evaluate the need for diet changes or alternate feeding methods and make appropriate recommendations and referrals.
   - Work closely with SLP and food service manager to ensure appropriate diet/alternate feeding are provided as ordered.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

Resource: Dysphagia Warning Signs

Warning signs of dysphagia include:

- Coughing frequently or a weak cough (before, during or after a swallow)
- Difficulty controlling liquids or solids in the mouth
- Extremely slow eater (more than 45 minutes per meal) which is not due to self-feeding difficulties
- Frequent throat clearing
- Complaining of fullness/tightness in the throat or chest
- Giving up or tiring out before the meal is eaten
- Needing to swallow 3 to 4 times with each bite of food
- Persistent low grade fever
- Pocketing food in the mouth
- Poor dentition, poor gum health, sores in the mouth or poor mouth care
- Prolonged oral preparatory phase (taking a long time to begin a swallow)
- Recurring or persistent pneumonia or repeated upper respiratory infections
- Refusing to eat and/or spitting food out
- Rocking the tongue back and forth (front to back)
- Sensation of food sticking in the throat or sternal area
- Unexplained loss of appetite, unintended weight loss or malnutrition
- Wet/gurgly voice

Source: Dorner B. *Diet and Nutrition Care Manual: A Comprehensive Nutrition Care Guide*. Naples, FL: Becky Dorner & Associates, Inc., 2014.

Resource: EAT 10 – Swallowing Screening Tool

EAT-10:
A Swallowing Screening Tool

Nestlé Nutrition Institute

LAST NAME | FIRST NAME | SEX | AGE | DATE

OBJECTIVE:

EAT-10 helps to measure swallowing difficulties.
It may be important for you to talk with your physician about treatment options for symptoms.

A. INSTRUCTIONS:

Answer each question by writing the number of points in the boxes.
To what extent do you experience the following problems?

1 My swallowing problem has caused me to lose weight.
0 = no problem
1
2
3
4 = severe problem

2 My swallowing problem interferes with my ability to go out for meals.
0 = no problem
1
2
3
4 = severe problem

3 Swallowing liquids takes extra effort.
0 = no problem
1
2
3
4 = severe problem

4 Swallowing solids takes extra effort.
0 = no problem
1
2
3
4 = severe problem

5 Swallowing pills takes extra effort.
0 = no problem
1
2
3
4 = severe problem

6 Swallowing is painful.
0 = no problem
1
2
3
4 = severe problem

7 The pleasure of eating is affected by my swallowing.
0 = no problem
1
2
3
4 = severe problem

8 When I swallow food sticks in my throat.
0 = no problem
1
2
3
4 = severe problem

9 I cough when I eat.
0 = no problem
1
2
3
4 = severe problem

10 Swallowing is stressful.
0 = no problem
1
2
3
4 = severe problem

B. SCORING:

Add up the number of points and write your total score in the boxes.
Total Score (max. 40 points)

C. WHAT TO DO NEXT:

If the EAT-10 score is 3 or higher, you may have problems swallowing efficiently and safely. We recommend discussing the EAT-10 results with a physician.

Reference: The validity and reliability of EAT-10 has been determined.
Belafsky PC, Mouadeb DA, Rees CJ, Pryor JC, Postma GN, Allen J, Leonard RJ. Validity and Reliability of the Eating Assessment Tool (EAT-10). Annals of Otology Rhinology & Laryngology 2008;117(12):919-924.

www.nestlenutrition-institute.org

Thickened Liquids

Policy:

All individuals requiring thickened liquids as recommended by the speech and language pathologist (SLP) and ordered by the physician will be served according to the physician's order.

Procedure:

1. The food service department will receive a written order for individuals requiring thickened liquids.

2. The food service manager will record the ordered consistency on the individual's meal identification (ID) card.

3. The food service department should receive a written order for any individuals requiring liquids in a thickened form. The following consistencies may be ordered based on individual needs*:
   - **Thin** – thin liquids such as those listed below or anything that will liquefy in the mouth within a few seconds (1-50 cp).
   - **Nectar-like** – nectar thick liquids such as those listed below or beverages thickened to nectar consistency (51-350 cp).
   - **Honey-like** – liquids that have been thickened to honey consistency (351-1750 cp).
   - **Spoon Thick** – liquids that have been thickened to a pudding consistency (>1750 cp).

*As defined by the National Dysphagia Diet Task Force (NDDTF).
cp = centipoise, a measurement of the thickness of a liquid.

Thin	Nectar-like	Honey-like	Spoon Thick
Broth, Bouillon Carbonated beverages Coffee or Tea Gelatin Ice or ice chips Ice cream, frozen yogurt, Fruit ices, sherbet Frozen fruit bars Juice Malts Milk Milkshakes Nutritional supplements - Unless specified by manufacturer Popsicles™ Soda Soups, thin broth Tomato juice Water Watermelon	Apricot nectar Eggnog, thick Peach nectar Pear nectar Commercially prepared nectar-like thickened products Commercial thickeners may be used to achieve nectar-like consistency	Commercially prepared honey-like thick products Commercial product needed to achieve desired consistency	Commercial product needed to achieve desired consistency

4. The SLP may request a variety of fluid consistencies based on the individual's condition and/or need. The SLP will notify and instruct the food service department of exceptions for thickened liquids. For example, individual receiving thickened liquids may be allowed thin liquids under specific conditions or under the care of the SLP.

5. The facility will determine whether nursing or food service will thicken the liquids or if pre-thickened products will be used.

6. Manufacturer's instructions will be followed when thickening fluids using commercial thickeners that require mixing in the facility.

7. The registered dietitian nutritionist (RDN) and/or nursing supervisor will monitor staff competency regarding thickening liquids as part of quality assurance.

References:

1. National Dysphagia: Standardization for Optimal Care National Dysphagia Diet Task Force. American Dietetic Association, 2002.
2. Dorner B. *Diet and Nutrition Care Manual: A Comprehensive Nutrition Care Guide*. Naples, FL: Becky Dorner & Associates, Inc., 2014.

Individuals on Unsupplemented Clear Liquids or NPO

Policy:

All individuals who are NPO (nothing per oral or nothing by mouth) or on an unsupplemented clear liquid diet for longer than three (3) days will be evaluated for nutrition risk by the registered dietitian nutritionist (RDN) or designee.

Procedure:

1. Nursing will monitor individuals on NPO or on an unsupplemented clear liquid diet on a daily basis and refer to the RDN or designee.

2. The RDN or designee will review the medical record of each individual who is NPO or on an unsupplemented clear liquid diet for longer than three (3) days, and assess the individual's nutritional status.

3. The RDN or designee will document assessment of nutrition status in the medical record. Document recommendations for addressing nutrition status, which may include:
   - An alternate feeding route (e.g. enteral or parenteral nutrition)
   - Progression of diet
   - Addition of nutrition supplements specifically for clear liquid diets

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), Nutrition Associates (four year degree in nutrition/dietetics), Certified Dietary Managers (CDM), Food Service Managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

End of Life Decisions

Policy:

The interdisciplinary team will work with each individual at the end of life to determine interventions that meet the goals of each person. End of life decisions made by individuals will be respected and carried out by facility and staff.

Procedure:

1. End of life nutrition care planning will be initiated only after the interdisciplinary team is confident that all other approaches, interventions, and considerations have been examined, implemented and exhausted.

2. The individual's medical record should contain the living will, the durable power of attorney (DPOA) for healthcare, and other advance directive documents that apply to an individual's end of life decisions. If those documents are not on file, the facility will take steps to obtain the information needed to implement end-of-life care. Information can be obtained through a conference with the individual and/or family or health care power of attorney. See *Sample Form: Request to Decline Life-prolonging Procedures.*

3. If the physician and patient/family make the determination for "comfort measures", facility staff will honor the written order and provide care accordingly.

4. The care plan will be updated to reflect end of life decisions. Palliative interventions as described in the care plan will be implemented and revised as necessary to reflect the individual's needs and goals. The care plan will direct daily care to maintain the comfort and highest quality of life possible for the individual.

Medical Nutrition Therapy Made Easy

Sample Form: Request to Decline Life-prolonging Procedures

On this _____day of _____, 20_____, I _____

(Resident/Surrogate/Guardian) for patient_____
request that the attending physician use the following guidelines for treatments and procedures:

You must indicate yes or no for each listed procedure. Yes = treatment/procedure will be done, No = treatment/procedure will not be done:

Transfer to an acute care hospital	____Yes	____No
Blood transfusion	____Yes	____No
Blood drawing for lab tests	____Yes	____No
Urine sample for lab tests	____Yes	____No
Xray, CT scans	____Yes	____No
Intravenous Fluids (IV's)	____Yes	____No
Naso Gastric (NG) feeding tube	____Yes	____No
Percutaneous endoscopic gastrostomy tube (PEG)	____Yes	____No
Thickened liquids	____Yes	____No
Antibiotic medications for infections	____Yes	____No
Administration of meds other than those needed for pain	____Yes	____No

Other_____

_____

I fully understand the impact and potential consequences of this refusal for procedures and treatments. I have been informed of all the benefits of treatments and procedures and also informed of the adverse effects that my happen by my refusal of these treatments. I understand that by refusing these listed treatments and procedures that death may occur. I understand that I may change any or all of these requests by notifying staff in writing and will be required to complete a new request form with any changes I desire.

_____ _____
Signature of resident, surrogate, legal guardian, or responsible party Date

_____ _____
Witness Date

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Resource: End of Life Decisions

End of Life Nutrition and Hydration

Individual choices and clinical indications affect decisions about the use of a feeding tube at the end-of-life. An individual at the end of life may have an advance directive addressing his or her treatment goals (or the individual's surrogate or representative, in accordance with state law, may have made a decision).

Decreased appetite and altered hydration are common at the end of life, and do not require interventions other than for comfort. Multiple organ system failure may impair the body's capacity to accept or digest food or to utilize nutrients. Thus, the inability to maintain acceptable parameters of nutrition status for someone who is at the end-of-life or in the terminal stages of an illness may be an expected outcome.

Care and services, including comfort measures, are provided based on the individual's choices and a pertinent medical nutrition therapy (MNT) assessment. The facility can help to support intake, to the extent desired and feasible, based on the information from the MNT assessment and on considering the individual's choices.

If approaches for end-of-life care are provided in accordance with the care plan and the individual's choices, then the failure to maintain acceptable parameters of nutritional status may be an expected outcome for individuals with terminal conditions.

Potential Benefits and Burdens of Artificial Nutrition and Hydration at the End of Life

Benefits	Burdens
May prolong life and provide time to cope with emotions, values, issues such as to: • Cope with the fear that death is near. • Provide emotional support to each other. • Get personal and financial affairs in order. • Allow time for a significant family event to occur. • Improve relationships between family members and/or family members and care staff. • May provide the family with the confidence that "everything is being done" for the dying individual. • May prevent perceived suffering due to fear of pain due to dehydration or starvation. • May allow time to recover from effects of other medical therapies. • May improve individual's overall sense of well- being and self-esteem. • Allows for oral food and fluid if the individual and/or family derives comfort from nourishment by mouth. • Fulfills moral belief that people should not	Possible pain and physical suffering due to: • Feeding tube insertion and usage. • IV, TPN or PPN line insertion and usage. • Complications of artificial feeding (i.e. nausea, distention, vomiting, diarrhea, aspiration/ pneumonia, excess stomal leakage, wound dehiscence with tube feedings, fluid overload, ascites, peripheral and/or pulmonary edema, thrombosis, possible lung puncture, sepsis with total parenteral nutrition). • Possible restriction of activities due to enteral feeding or infusion apparatus. • Possible need for restraints to keep tubes or lines from being pulled out. • Possible need for catheterization. • Possible need for suctioning due to increased nasogastric and/or pulmonary secretions. • Uncomfortable "death rattle" due to increased pharyngeal secretions (due to increased fluid intake). • Spiritual and/or moral conflict.

Benefits	Burdens
be allowed to starve or dehydrate, and that artificial nutrition and hydration are basic humane care and society's responsibility.	• Possible financial hardship for family. • Possible psychological distress (being kept alive beyond a time when life is meaningful; sadness of imposing hardships on family and friends).

Adapted from: *Nutrition Care of the Older Adult: A Handbook for Dietetics Professionals Working Throughout the Continuum of Care*, Niedert K and Dorner B, American Dietetic Association, Chicago, IL, 2004.

End of Life Symptoms that Affect Nutritional Care

Anorexia/Loss of Appetite	• May be a side effect of pain and pain medications • Offer favorite foods (or whatever sounds good to the resident at the time) • Offer nutrient dense foods/supplements • Try 6 small meals/snacks a day, or offer food every few hours • Monitor weight weekly if appropriate based on goals
Taste/Smell Alterations	• Offer anything that the individual desires • Try spicy/more flavorful foods if tolerated • Reassess medications if severe • Decreased sense of smell can decrease taste sensations • If sense of smell is heightened, and if it triggers nausea, encourage the individual to avoid food preparation areas
Dry Mouth	• Provide good oral care (frequent swabbing or brushing) • Offer sips of fluids frequently • Offer ice chips • Use Sorbet, lemon ice, or sherbet, or lemon drops with meals or in between meals
Sore Mouth	• Provide good oral care • If severe, refer to physician for treatment • Avoid acidic and spicy foods • Offer mild, bland flavored foods • Encourage fluids to maintain hydration • Offer soft, chopped or ground foods if needed to ease chewing and formation of bolus
Dysphagia	• Facilitate independent eating and safe swallowing with proper positioning, adaptive equipment, and appropriate food textures and fluid consistencies After Eating: • Remain upright for at least 30 minutes • Provide good oral hygiene to remove food debris • Keep head of bed elevated at least 6 inches or 30 degrees to help prevent aspiration
Weight Gain	• Assess medication side affects • Assess for fluid overload • Weigh weekly if needed or appropriate based on goals • Encourage a well-balanced diet
Weight Loss	• Common for those who experience nausea, vomiting, anorexia/loss of appetite, or extreme pain

Weight Loss (continued)	• Prevention of weight loss should be the focus, if appropriate based on individual goals • Provide appropriate pain control • Treat symptoms that affect appetite and food and fluid intake • Provide nutrition interventions if appropriate based on goals
Cramps, Heartburn, and Bloating	• Encourage individual to eat slowly and chew food well • Support a relaxed atmosphere at meals • Encourage small, frequent feedings; meal skipping may only contribute to the problem • Try liquids between meals • Try bland foods • Avoid high fat foods if they contribute to symptoms • Avoid spicy foods, chewing gum, too many sweets if they contribute to symptoms • Avoid gas-forming foods (apples, asparagus, beans, beer, bran, broccoli, Brussels sprouts, cabbage, carbonated beverages, cauliflower, and others based on individual tolerance) • Antacids may be needed to alleviate symptoms • Offer small meals and snacks • Encourage the individual to eat slowly and chew food thoroughly • Try “dry meals” with liquids given between meals (one hour before or after); offer cool, clear liquids, and encourage the clients to drink slowly • Do not force the individual to eat (it may cause a permanent dislike for the foods that are forced); • Encourage the individual to avoid favorite foods during bouts of nausea to avoid developing aversion to favorite foods • Encourage the individual to rest calmLy but to remain upright for 30 to 60 minutes after eating, with head of bed elevated • Be sure clothes are loose and comfortable • Encourage access to fresh air when possible • Avoid known food intolerances • Avoid fatty and fried foods, heavy sweets, spicy foods and foods with very strong odors if they contribute to symptoms • Offer whatever foods/fluids the individual suggests he/she can tolerate or desires • Encourage individual to avoid food preparation area away from the kitchen area, as smells of cooking food may increase the feeling of nausea • Avoid other unpleasant odors that could contribute to nausea • Provide medications with food or fluid as instructed to alleviate nausea as Encourage carbonated beverages and peppermint or spearmint flavored candy if they help alleviate nausea • Remove plate cover away from the individual and allow odors to dissipate prior to serving
Vomiting	• Vomiting may be caused by nausea related to chemotherapy, medication interactions or other GI problems • Refer to physician for medication to prevent the nausea that precedes vomiting • The **client** should remain NPO until severe vomiting passes

Vomiting (continued)	• Once vomiting is under control, try giving small sips of clear liquids and increase amount very gradually • When clear liquids are tolerated, advance to a full liquid diet • Begin with small sips and increase amounts as tolerance builds • Gradually advance to a regular diet The following foods may be more tolerable for individuals with nausea and vomiting: • Crackers, pretzels, toast, angel food cake, cream of wheat or rice • Soft, bland fruits or vegetables such as peaches, green beans • Broth or cream soups; ginger ale or lemon-lime soda, soft drinks (i.e. powdered drink mixes) • Sherbet, pudding, ice cream, popsicles, gelatin • Juices (other than citrus or sour juices), fruit drinks • Dairy products • Meat salad sandwiches • Desserts with fruits
Constipation	• Pain medications may result in constipation. Evaluate risk/benefit of medication changes • Offer high fiber foods such as fruit and vegetables with edible skins and seeds, whole grains (breads and cereals, brown rice and other grains), and bran cereals • Add lentils, split peas, navy, pinto or kidney beans in casseroles or soups • Offer and encourage plenty of fluids • Encourage activity. The physical therapist may be able to give some suggestions • Add bran to baked products. Bran flakes or raisin bran, or bran muffins for breakfast may be helpful. Sprinkle bran or bran cereal over puddings, fruits, salads, or add 2 to 6 tablespoons to most recipes • Prunes or prune juice are helpful to most people • Hot beverages may act as stimulants • Popcorn makes a great snack if the individual can tolerate it • Increase fiber intake gradually to avoid problems with tolerance
Diarrhea	• If diarrhea persists, it may lead to dehydration and contribute to malnutrition. Anti-diarrheal medications may be needed if severe or persistent • Encourage small, frequent feedings • If severe, request a clear liquid diet, give liquids at room temperature, and advance as tolerated • Avoid carbonated beverages, liquid with meals, high fiber foods, greasy foods, fatty or fried foods • Avoid raw fruits and vegetables • Avoid spicy foods • Encourage fluid between meals • Avoid very hot or very cold foods and beverages • Limit caffeine (coffee, tea, cola, chocolate, etc.) • Encourage bed rest • Offer salty foods or salt at the table to replace lost sodium • Offer foods high in potassium; bananas, potatoes, apricot nectar • Investigate potential food intolerances – especially lactose intolerance

Diarrhea (continued)	These foods may be better tolerated: • Starches: rice, noodles, cream of wheat or farina, white bread • Fruits and Vegetables: pureed cooked vegetables, applesauce, grape or apple juice, ripe bananas, canned or cooked fruit without skin • Protein Foods: yogurt, eggs (completely cooked and not fried), smooth peanut butter, chicken, turkey, tender lean beef, low-fat beef, cottage cheese
Dehydration	• If fluids by mouth are not tolerated, an IV or tube feeding may be recommended, and if put in place, appropriate fluids will be provided through the IV or tube. The dietetics professional should assess IV or tube feeding and flush recommendations, and monitor and reevaluate as needed
Fluid Overload	• If puffiness, bloating, shortness of breath (SOB), increased respirations, increased sections, or signs/symptoms of heart failure are observed, MD refer all for evaluation of fluid overload is recommended

Source: Dorner Becky, Enteral Feeding for Older Adults - Comprehensive Nutrition Assessment and Interventions. Naples, FL: Becky Dorner & Associates, Inc.; 2013.

Guidelines for Initiating Enteral Feeding

Policy:

The interdisciplinary team will evaluate each individual prior to recommending an enteral feeding tube. A variety of interventions should have been attempted before tube feeding is considered. Advance directive documents will be thoroughly reviewed as appropriate, and a conference with the individual, the family, or durable power of attorney (DPOA) for healthcare will take place before a decision regarding tube feeding is made.

Procedure:

1. The interdisciplinary team (IDT) will contact the physician and the registered dietitian nutritionist (RDN) or designee when an individual's food and fluid intake is severely impaired and/or nutritional status is declining.
2. The physician will complete an evaluation of the individual's condition.
3. The RDN or designee will complete a thorough medical nutrition therapy (MNT) assessment. If oral food/fluid intake cannot sustain healthy life, the RDN should recommend enteral feeding if it is consistent with the individual's goals.
4. The IDT team and/or ethics team will discuss options with the individual, family and/or DPOA as appropriate and provide information on the risks and benefits of enteral feeding and surgical tube placement. The care plan team will provide a thorough discussion on the process of tube insertion, feeding methods, risks versus benefits of tube feeding, effects on quality of life, etc.
5. If the individual/family/DPOA are in favor of enteral feeding, a meeting with the individual's physician will be suggested or the physician will be contacted regarding a request for enteral feeding orders.
6. Assessment criteria for enteral feeding include:
   - Decreased food/fluid intake for 3 or more consecutive days.
   - Swallowing difficulty with evaluation, testing and a diagnosis of dysphagia.
   - Individual is determined to be at risk of aspiration or choking and considered unsafe to consume food/fluid by mouth.
   - Significant unplanned weight loss that is not improved with other interventions.

Note: The decision regarding the type of feeding tube depends on the individual's medical status and the anticipated time that the enteral feeding will be required. Feeding tubes are classified as nasogastric (NG) (access to the gastrointestinal tract via the nose), gastro-enterostomy (G-tube or PEG tube) or Jejunoscopy (J-tube). In general, if the feeding tube is to be in place longer than 4 weeks, a G-tube is recommended.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

For additional information, refer to Becky Dorner & Associates, Inc. *Enteral Nutrition for Older Adults* found at http://www.beckydorner.com/products/242.

Basic Guidelines for Enteral Feeding

Policy:

Basic guidelines for enteral feeding will be followed by all staff delivering care to enterally fed individuals. Nursing staff is responsible for the routine daily care of individuals receiving enteral feeding.

Procedure:

1. Position the individual so that the head is elevated to 30 to 45 degrees at all times to reduce the risk of aspiration.

2. Check the tube placement regularly (every shift or more frequently as indicated).

3. Check for gastric residual (every shift or more frequently as indicated), and follow specific facility protocols and/or physician orders related to residuals. The following provides guidance:
    a. Residuals greater than 250 mL after a second GRV (gastric residual volume) test may indicate the need to consider a promotility agent.
    b. If the GRV is greater than 500 mL, the patient should be assessed for tolerance of the tube feeding. Assessment should include: physical assessment, assessment of glycemic control, assurance that there is minimal sedation, assessment of glycemic control, and consideration of a promotility agent if not already prescribed and.
    c. If GRV is >500 mL, hold the enteral feeding and reassess tolerance by using an established protocol that includes physical assessment, GI assessment, evaluation of glycemic control use of medications that cause sedation, and consideration of promotility agent use.

4. Monitor the individual's response to enteral feeding. Any signs of excessive nausea, vomiting, diarrhea, abdominal distention, gas warrant a referral to the registered dietitian nutritionist or designee.

5. Tube feeding should be delivered by nursing as ordered by the physician. If necessary, bolus feeding or an increase in mL per hour may be required to accommodate down times for bathing, therapies, or activities as needed to assure that the total ordered daily volume of enteral feeding is delivered. All changes in tube feeding should be accompanied by a physician's order.

6. The enteral formula should be administered at room temperature. Hang times for formulas are manufacturer specific. Be sure to discard formula according to the manufacturer's recommended times.

References for Basic Guidelines for Enteral Feeding:

1. Dorner, B, Posthauer ME, Friedrich EK, Robinson GE. Enteral Nutrition for Older Adults in Nursing Facilities. Nutr Clin Pract 2011 26: 261.
2. Boullata J, Carney LN, Guenter P. A.S.P.E.N. Enteral Nutrition Handbook. American Society for Parenteral and Enteral Nutrition. Silver Spring, MD. 2010. p256.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service

managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

For additional information, refer to Becky Dorner & Associates, Inc. Enteral Nutrition for Older Adults found at http://www.beckydorner.com/products/242.

Documentation of Enteral Feeding

Policy:

Nutrition documentation of enteral feedings should include specific information on the nutritional assessment and progress notes.

Procedure:

The registered dietitian nutritionist (RDN) or designee will document:

1. The reason for enteral feeding.

2. Problems/limitations as a result of enteral feeding.

3. Changes in condition (i.e., weight loss, abdominal distension, diarrhea).

4. Adequacy of feeding (calories, protein, total fluids, free fluids, type of feeding, frequency).

5. If applicable, attempts made to discontinue the enteral feedings and/or increase oral intake.

6. Estimated nutritional needs (calories, protein, fluids).

7. Enteral feeding order from physician including:
   - Feeding status (diet order if applicable, or NPO order)
   - Formula type (generic name such as isotonic, or standard or commercial name)
   - Administration (pump, bolus, intermittent)
   - Rate of delivery (mL per hour or per feeding if bolus)
   - Number of mL for flush, including amount of flush with medications

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

For additional information, refer to Becky Dorner & Associates, Inc. Enteral Nutrition for Older Adults found at http://www.beckydorner.com/products/242.

Enteral Feeding Assessment

Policy:

The initial medical nutrition therapy (MNT) assessment will include a calculation of the individual's energy, protein, and fluid requirements. A comparison will be made between the individual's requirements and the enteral formula provided. This procedure is also part of the monthly review of progress..

Procedure:

The registered dietitian nutritionist (RDN) or designee will perform an MNT assessment and/or reassessment that will include:

1. A review of the nurse's notes on administration of the formula.

2. A review of the medication/treatment record to note that the formula is being given as ordered. If not, the RDN should inform the nursing supervisor and/or DON.

3. A review of how nursing staff is administering the formula. The RDN or designee should visit the individual to check the enteral feeding flow rate, assess down times, assess to ensure the pump is functioning properly (if applicable), check input and output records, and medicine administration records (MAR) for amount of feeding administered. If there are discrepancies between what is ordered, what is documented, and what is actually being done, the RDN should inform the nursing supervisor and/or DON.

4. A review of the medical record for changes in enteral feeding orders, changes in tolerance (as evidenced by nausea, vomiting, diarrhea, constipation, abdominal distention, flatulence, or other discomfort), weight status, skin condition, laboratory values, edema, food-medication interactions, oral food/fluid intake if applicable, etc.

5. Calculation of the individual's energy, protein, and fluid requirements upon initiation of enteral feeding. Comparison of the individual's nutrient requirements and the physician-ordered enteral formula and flushes.

6. Ideally, the RDN or designee will assess and/or review the nutrition status of those receiving enteral nutrition support every month. If there are circumstances that make this impossible, no more than three months should elapse without a thorough assessment or review, and systems must be in place to assure referral to the RDN or designee as needed.

7. Nursing Communications:
   a. The RDN or designee will be informed by nursing of any changes that occur in the formula or route of administration.

   b. The nursing staff will communicate any concerns to the RDN or designee regarding changes in condition such as weight loss, diarrhea, nausea, vomiting, bloating, gas, and high residual levels.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service

managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

For additional information, refer to Becky Dorner & Associates, Inc. Enteral Nutrition for Older Adults found at http://www.beckydorner.com/products/242.

Resource: Complications of Enteral Feeding

Potential Complications of Enteral Feeding (1,2)
Individuals on enteral feedings may experience complications for any number of reasons. The following is a list of potential complications and some suggestions for resolving them.

Diarrhea

1. Assess the administration of the enteral formula.
   - Review safety guidelines for appropriate formula preparation and delivery.
   - Formula should be administered at room temperature.
   - Assess the volume of the bolus feedings, drip rate of the drip feedings, and the number of mL per hour for pump administration.
2. Assess handling techniques of the formula, tubing, addition of medications and fluids.
   - Is there a possibility of contamination? Could medications be the cause of the diarrhea (antibiotics, stool softeners, laxatives, mineral or electrolyte supplements, prokinetic agents, colchicines, magnesium based antacid, or other medications that may cause diarrhea)?
   - Dilute hypertonic medications before administering. Medications high in osmolality which may cause diarrhea include: multivitamin liquid, potassium chloride liquid, phenytoin sodium suspension, sodium phosphate, and theophylline solution. Medications containing sorbitol may also cause diarrhea (aluminum hydrozide, diphenoxylate with atropine, liquid acetaminophen, liquid theophyllin, quaifensin dextromethorpan). Consider changing sorbitol elixirs to tablets if possible.
   - If antibiotics have been used in the past 6 weeks, and the individual also has watery and frequent stools/diarrhea, fever and abdominal pain, refer to physician. Clostridium difficile (C.diff) may be the cause of the diarrhea. Assess for fever, potential of flu or other illness. Consider a stool sample to assess for C. diff toxin.
3. Review ingredients of the enteral feeding.
   - Assess for lactose intolerance.
   - Assess the need for gluten-free formula for individuals with Celiac disease.
   - Assess the possibility of fat intolerance.
   - Assess the need to change the fiber source or content of the feeding.
   - Assess the need for a semi-elemental or elemental formula.
4. If diarrhea is severe, consider the holding tube feeding for 12 hours, and instead providing only clear liquids.
   - Assess the osmolality of the feeding.
   - Consider a fiber containing formula to increase bulk of the stool. Consider additional soluble fiber (phyllium or banana flakes) (3).
5. If diarrhea continues and stool cultures are negative, request an antidiarrheal medication and refer to the physician (4).

Aspiration

1. Ensure correct placement of the feeding tube prior to initiating feedings. (**Note:** A large bore tube should be used the first 1 to 2 days, then replaced with a soft, small bore feeding tube.)
2. The head of the bed should be elevated to 30 to 45 degrees to avoid aspiration.
3. Use aggressive oral hygiene.
4. Consider continuous feeding regimens as opposed to bolus or intermittent feeding.

5. Minimize the use of narcotics.
6. Avoid stopping enteral nutrition because of a single elevated gastric residual volume (GRV). (**Note:** Use of at least a 60 mL syringe is recommended to assess GRV.)
   - If the GRV is greater than 250 mL after a second gastric residual check, consider a promotility agent (i.e. metoclopramide).
   - If the GRV is greater than 500 mL, hold the enteral feeding. Reassess tolerance by assessing physical status, GI systems and glycemic control. Minimize medications that cause sedation and consider the use of promotility agents if not already ordered.
   - If GRVs are consistently greater than 500 mL, consider placing the feeding tube below the ligament of Trietz.
7. Enteral tube placement should be checked if aspiration is suspected. Consider placing the tube below the pyloric sphincter if aspiration is a reoccurring problem (3-5).

Clogged Tubes

1. Flush the tube with a minimum of 20 to 30 mL of warm water (2) of fluid before and after the administration of formula or addition of medications, and anytime the feedings are held. Flush with warm water or solutions that contain pancreatic enzymes and sodium bicarbonate; consult the pharmacist for these and other options.
2. Use oral, liquid or injectable medications; avoid mixing medications with formula; dilute thick or sticky liquid medications with water; crush tablets to a fine powder and mix with water. Do not crush enteric-coated or sustained-release medications.
3. Avoid the use of juice, carbonated beverages, or sugary fluids to flush the tube.
4. Liquid medications may contain sorbitol, which may clog tubes (3,4).

Constipation

1. Assess the need for additional fluids.
2. Assess the need for a fiber containing formula.
3. Consult the physician about minimizing or replacing medications that cause constipation.
4. Consider the use of stool softeners, laxatives, suppositories, or enemas if necessary.
5. Encourage walking and other physical activities if appropriate (2).

Abdominal Distention

1. Assess the volume of formula administered within a short period of time. Decreasing the volume and/or increasing the period of time between feedings may be helpful.
2. Consider an enema and/or laxative if appropriate (2).

Nausea/Vomiting

1. Consider holding the feeding for 12 hours or until excessive vomiting passes.
2. Check residual and tube placement. Decrease formula delivery rate or use continuous feedings. Halt the feeding if GRV is excessive (≥ 500 mL), evaluate for obstruction, and/or consider medications to improve emptying rate.
3. Ensure that the formula is at room temperature, delivery rate is appropriate, and formula odor is not objectionable. Consider switching to a formula that is low in fat, low in fiber or elemental.
4. Assess the volume of feeding administered within a short period of time. Decreasing the volume may be helpful.

5. Consider anti-nauseate, anti-emetic, or anti-gas medication.
6. A change in formula may be necessary.
7. Refer to the physician if nausea/vomiting is persistent (4).

Contamination of Formula

1. Use sanitary techniques for mixing and administering formula.
2. Discard unused formula.
3. Closed systems are ideal for avoiding potential contamination. They can hang for up to 24 to 48 hours (see manufacturer's information for details).
4. Do not add liquids, medications or new formula to a bag that has been hanging for any period of time. All water flushes and medications should be given via syringe and not added to the enteral formula.
5. If open systems are used, formula should not hang more than 4 to 8 hours or according to the manufacturer's instructions. If enteral bags are filled by nursing staff, do not allow nursing to add new formula to old formula ("topping off" the bag). Always clean tops of cans before opening.
6. Clean poles and surrounding areas often (4,5).

Fluid and Electrolyte Imbalance

1. Monitor daily weights, intake and output records, serum electrolyte levels and clinical signs that indicate dehydration or over hydration; ensure that water intake and formula delivery rates are appropriate.
2. Use a formula with appropriate nutrient content, and ensure that nutrient intakes of malnourished individuals are not excessive.
3. Ensure that medication doses are appropriate.
4. See items under Diarrhea earlier in this section

References for Complications of Enteral Feedings

1. Dorner B. *Enteral Nutrition for Older Adults: Comprehensive Nutrition Intervention and Assessment*. Naples FL: Becky Dorner & Associates, Inc.; 2013.
2. Russell M. Complications of enteral feeding. In Charney P, Malone AM. *ADA Pocket Guide to Parenteral Nutrition*. Chicago IL: American Dietetic Association; 2007:170-197.
3. Volkert D et al. E.S.P.E.N Guidelines on Enteral Nutrition: Geriatrics. European Society for Clinical Nutrition and Metabolism. *J Clin Nutr*. 2006;25:330-360.
4. Bankhead R et al. AS.P.E.N Enteral nutrition practice recommendations. *JPEN*. 2009;33(2):122-167.
5. Bourgault AM, Ipe L, Weaver J, et al. Development of evidence-based guidelines and critical care nurses' knowledge of enteral feeding. *Crit Care Nurse*. 2007;27(4):17-22.

Transitioning to Oral Feeding from Enteral Feedings

Policy:

When an individual has the potential to be transitioned off of an enteral feeding, the following guidelines will be followed as indicated by the registered dietitian nutritionist (RDN), speech language pathologist (SLP), nursing supervisor and physician.

Procedure:

1. The RDN will work closely with the SLP to determine which individuals might be candidates for transition from an enteral feeding to a diet by mouth. The SLP will obtain orders for dysphagia/swallowing evaluation to determine rehabilitation potential for food/fluid by mouth.
2. The SLP will determine the individual's ability to tolerate a diet by mouth.
3. A physician's order will be obtained for the appropriate consistency of food and fluid as determined by the SLP. The SLP will work closely with the individual, and with the staff who is responsible for assisting the individual at meal time to assure proper positioning and eating/feeding techniques for safe swallowing.
4. A 3 to 5 day nutrient intake assessment of food/fluid intake records can be conducted to assess the adequacy of the individual's oral intake, or food intake records over several days should be reviewed to determine oral intake.
5. The RDN will continually reassess the individual's food and fluid intake by mouth, and make recommendations to balance the enteral feeding with the diet to assure adequacy of calories and nutrients. A nocturnal enteral feeding will be considered if it will be of benefit to the individual.
6. The individual will be weighed weekly for a minimum of one month, and then as determined appropriate by the RDN. Weights may be done more often if deemed necessary.
7. The RDN and SLP will determine when the individual no longer requires enteral feeding based on adequacy of oral diet, weight stabilization, and laboratory values, and request an order to discontinue enteral feeding.
8. The facility staff will intervene as appropriate for poor food/fluid intake, weight loss, or other negative reactions to the discontinuation of the enteral feeding, and refer to the RDN, SLP and physician as needed.
9. The SLP will intervene as appropriate for negative reactions or intolerance to the diet and fluids by mouth. The RDN and the SLP will work closely together to assure adequate consistency of diet texture and fluid thickness.
10. The nursing staff and physician will work closely with the RDN and the SLP to assure the best quality of care for the individual involved.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

For additional information, refer to Becky Dorner & Associates, Inc. Enteral Nutrition for Older Adults found at http://www.beckydorner.com/products/242.

Resource: Enteral Formulary

Insert your enteral formularies here.

Manufacturers:

- Abbott Nutrition, (800) 227-5767, www.abbottnutrition.com
- Nestle Clinical Nutrition, (800) 422-2752, www.nestleclinicalnutrition.com

Total or Peripheral Parenteral Nutrition

Policy:

Total or peripheral parenteral nutrition (TPN or PPN) will be offered and/or provided upon physician order to individuals who are unable to meet their nutrient needs via an oral or enteral route of administration. Parenteral nutrition therapy is appropriate when the GI tract is non-functional or unsafe for enteral nutrition, or when the bowel needs rest.

Procedure:

1. The registered dietitian nutritionist (RDN) will be notified that total or peripheral parenteral nutrition (TPN or PPN) is being considered for the individual. The RDN will fully assess the nutrition status of the individual within 24 hours of this notification. Conversely, the RDN may recommend TPN/PPN in appropriate cases.

2. The medical nutrition therapy (MNT) assessment will include a review of the individual's medical condition and the reason for parenteral nutrition support. Generally, the individual should have a non-functioning GI tract for TPN/PPN to be considered. A review of the individual's current laboratory values, weight status, and physical activity will be completed.

3. The RDN will calculate nutrition needs (calories, protein, fluids, nutrients) based on individual assessment using acceptable procedures.

4. The RDN will review the physician ordered prescription for parenteral nutrition and contact the pharmacist if necessary. A review of the amino acids per liter, electrolytes and minerals, vitamins, and lipid solutions will be completed by the RDN to assure adequacy. Recommendations for changes in the parenteral prescription will be made to the physician following the MNT assessment.

5. The RDN will monitor and evaluate individuals receiving TPN or PPN closely to assure the goals of nutrition support are met. Objective measures of nutrition status such as lab data, hydration status, and weight will be monitored. Subjective data such as wound healing, functional capacity, and the individual's own sense of well-being and strength will also be monitored.

6. The RDN will closely monitor the transitional phase of feeding from TPN/PPN to enteral or oral feeding for refeeding syndrome. TPN should not be stopped abruptly, gradual transitional feeding is preferred. Both clinical and biochemical indices will be monitored no less than weekly. Refeeding syndrome most often occurs in individuals who were severely malnourished prior to the initiation of parenteral support.

   Note: With refeeding, phosphate and magnesium move from the extracellular to the intracellular space often causing hypophosphatemia and hypomagnesemia. A rapid fall in serum potassium, glucose intolerance, thiamine depletion, edema, and cardiac arrhythmias may also occur. Individuals at risk for refeeding syndrome include the chronically malnourished, alcoholic, morbidly obese, catabolically stressed, and those on prolonged hydration therapy. Refeeding must progress slowly; tolerance must be monitored closely to assure that the transition progresses with minimal complications.

Refer to your Diet and Nutrition Care Manual for more details.

Source:
Dorner B. *Diet and Nutrition Care Manual: A Comprehensive Nutrition Care Guide*. Naples, FL: Becky Dorner & Associates, Inc., 2014.

References for Total or Peripheral Parenteral Nutrition:

1. Academy of Nutrition and Dietetics Nutrition Care Manual. www.nutritioncaremanual.org. Accessed February 23, 2015.
2. Dorner B. *Diet and Nutrition Care Manual: A Comprehensive Nutrition Care Guide*. Naples, FL: Becky Dorner & Associates, Inc., 2014.

Resource: Suggested Nutrition Monitoring for Adults Receiving Parenteral Nutrition (1,2)

Factor	Initial	Daily	Weekly
Body weight	√	√	√
Physical examination	√	√	√
Indirect calorimetry	As needed	As needed	As needed
Fluid balance	√	√	√
Sodium, potassium, chloride, carbon dioxide, calcium, phosphorus, magnesium, glucose, BUN/serum creatinine	√	√ Until stable, then 1 to 2 times/week	√
Liver function tests, prothrombin time	√		√
Prealbumin	As appropriate, based on clinical status		As appropriate, based on clinical status
Triglycerides (Initially and before each advancement of IV fat emulsions, then once a week. More often if septic)	√		√
Complete blood count	√	√ Until stable, then 1 to 2 times/week	√
Nitrogen balance			As needed once on a stable PN formula
CRP (C-Reactive Protein)	Consider in critically ill patients or in inflammatory response		Consider in critically ill patients or in inflammatory response

Summary of Macronutrient Requirements for PN (2,3)

Nutrient	Critically Ill	Stable Condition
Total kcalories (Kcal/kg)	25	25 to 30 Varies based on activity levels
Carbohydrates	≤4 mg dextrose/kg*/minute	≤7 mg dextrose/kg/minute
Protein, (gm/kg)	1.2 to 1.5	0.8 to 1.0
Lipids	Varies. Possibly limit to <1 g/kg	Varies. Possibly limit to 1 g/kg
Fluids (mL/kg)	Minimum amount needed to deliver adequate micronutrients	30 to 40 May vary based on insensible fluid losses (vomiting, diarrhea, profuse sweating, draining wounds, fever, etc.)

Recommended Daily Electrolyte Guidelines for PN (2,4)

Nutrient and Dosage Form	Standard Daily Requirement
Calcium in the form of calcium gluconate	10 to 15 mEq
Magnesium in the form of magnesium sulfate	8 to 20 mEq
Phosphorus in the form of sodium or potassium phosphate	20 to 40 mmol
Sodium in the form of sodium phosphate, sodium chloride or sodium acetate	1 to 2 mEq/kg
Potassium in the form of potassium phosphate, potassium chloride or potassium acetate	1 to 2 mEq/kg
Acetate in the form of sodium acetate or potassium acetate	As needed to maintain acid-base balance
Chloride in the form of sodium chloride or potassium chloride	As needed to maintain acid-base balance

References for Parenteral Nutrition:

1. Roberts S. Initiation, advancement, and acute complications. In Charney P, Malone A, eds. *ADA Pocket Guide to Parenteral Nutrition.* Chicago IL: American Dietetic Association; 2007:76-102.
2. Canada T, Crill C, Guenter P. *A.S.P.E.N. Parenteral Nutrition Handbook*. Silver Spring MD: A.S.P.E.N.; 2009.
3. Madsen H, Frankel EH. The hitchhiker's guide to parenteral nutrition. Management for adult patients. *Nutrition Issues in Gastroenterology*, Series # 40. Parrish CR, Ed.
4. Malone A. Parenteral nutrients and formulations. In Charney P, Malone A, eds. *ADA Pocket Guide to Parenteral Nutrition*. Chicago IL: American Dietetic Association; 2007: 52-75.

Medical Nutrition Therapy Made Easy

Communicating with Other Health Care Professionals Made Easy

Medical Nutrition Therapy Communications

Policy:

The registered dietitian nutritionist (RDN) or designee will communicate nutrition concerns to the medical staff.

Procedure:

1. The RDN or designee is an active member of the appropriate interdisciplinary (IDT) committees (i.e. care plan, nutrition at risk, wounds/pressure ulcers, weights, dining team etc.)
2. Under the direction of the RDN or designee, the nutrition support staff may communicate issues of concern to key personnel (RDN, physician, nursing staff, therapists, etc.) as appropriate.
   - If authorized, the nutrition support staff will follow through on any duties as appropriate.
   - The nutrition support staff will follow up on communications with the interdisciplinary team to ensure recommendations are considered.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

Medical Nutrition Therapy Made Easy

Sample: Letter to Physician Regarding Notification of Malnutrition

(Letterhead)

Date

Dear Doctor _____,

_____ (facility name) has adopted the Mini Nutritional Assessment - (MNA®) to screen for malnutrition in the elderly. The MNA® is a validated nutrition screening tool for older adults and identifies geriatric patients who may be malnourished or at risk of malnutrition. Staff will complete the nutrition screen within the first 14 days of admission, and quarterly thereafter. Additional screenings may be necessary, depending on the status of the patient.

Research has shown that a score of ***0-7 points*** on the MNA® is consistent with a diagnosis of malnutrition. For individuals who score ***0-7 points,*** the facility will complete and place a *Physician's Notification of Malnutrition* form in your mailbox for your review during your next facility visit. Should you choose to make a diagnosis of malnutrition, a low MNA® score is one way to diagnose malnutrition. If you confirm a diagnosis of malnutrition, the new diagnosis will be communicated to the appropriate personnel.

As always, we will provide the patient appropriate nutrition intervention based on the results of the screen and full nutritional assessment. We will also closely monitor their response to therapy.

Our goal is to provide each resident with the most appropriate nutritional care. The MNA® will help guide us in that direction.

If you have any questions, please feel free to contact me at _____.

Sincerely,

_____
Registered Dietitian Nutritionist
Insert Title and Contact Information

Note: Attach a copy of MNA® Form and MNA® Physician Communication Form.

Medical Nutrition Therapy Made Easy

Sample Form: MNA Physician Communication Mini Nutritional Assessment Report for Malnutrition

Room #	Name	Review Date	*MNA Score	Intervention(s)	Physician Initials

*Score of 0-7 indicates patient has triggered ‘Malnourished”

Medical Nutrition Therapy Recommendations

Policy:

Medical nutrition therapy (MNT) recommendations from the registered dietitian nutritionist (RDN) or designee will be implemented, or reason for non-implementation will be documented.

Procedure:

1. Any of the RDN's or designee's recommendations related to food will be given to the food service manager, who will follow through and implement them in the facility. (Informing staff, making necessary changes on the meal identification (ID) card/ticket, etc.). The food service manager will follow through on these recommendations in a timely manner.

2. Any recommendations that need nursing's attention or a physician's order will be forwarded in writing to the nursing staff (see *Sample Form: Nutrition Recommendations* on next page) When nursing addresses the recommendations, comments regarding follow through will be added to the form. Completed forms will be returned to the RDN or designee for documentation of actions taken, new orders and follow through. Referrals will be made back to the RDN or designee as needed.

3. Routine recommendations will be implemented in a timely manner. Recommendations that are urgent will be handled and physician's orders written in 72 hours or less.

4. The RDN or designee will follow up on returned routine recommendation sheets in a timely manner (within one to two weeks for nursing facilities). If there is an urgent recommendation, the RDN or designee may follow up in a shorter period of time. Urgent recommendations or concerns may be handled via phone, secure fax or secure email.

5. If the physician is not in agreement with recommendation, documentation will be written in the physician's progress notes, nurses notes, and/or nutrition progress notes.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), Nutrition Associates (four year degree in nutrition/dietetics), Certified Dietary Managers (CDM), Food Service Managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

Medical Nutrition Therapy Made Easy

Sample Form: Nutrition Recommendations

Facility: **Wing:**

Please complete and return to RDN or designee. Thank You!

Name_____ Room_____ New____ Re-admit____ Update___

Food Service	Nursing	Physician Please Consider
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
Comments:	**Comments:**	
Manager's Signature/Date:	Nursing Signature/Date:	

Name_____ Room_____ New____ Re-admit____ Update___

Food Service	Nursing	Physician Please Consider
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
Comments:	**Comments:**	
Manager's Signature/Date:	Nursing Signature/Date:	

Name_____ Room_____ New____ Re-admit____ Update___

Food Service	Nursing	Physician Please Consider
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
Comments:	**Comments:**	
Manager's Signature/Date:	Nursing Signature/Date:	

RDN Signature/Date:_____

Medical Nutrition Therapy Made Easy

Sample Form: Weight Change Notification and Recommendations

Resident/Patient Name _____ Date _____

Physician _____ Room ID_____

Significant Weight Change	Recommendations

Thank you,

(Signature/credentials) _____

Physician's Response Yes No

New Order _____

Physician Signature _____ Date _____

Signature of Nurse Accepting Order _____ Date _____

□ IDT Notified Yes No Date _____
Notes _____

□ Family Notified Yes No Date _____
Notes _____

□ RDN Notified Yes No Date _____
Notes _____

Additional Comments

_____

_____

_____

_____

Additional Policies and Resources to Enhance/Improve Care

Food-Medication Interactions

Policy:

Care will be taken to maintain nutrition status without altering the absorption, metabolism or excretion of medication used to improve or maintain health status.

Procedure:

1. The registered dietitian nutritionist (RDN) will review the prescribed drug regime of individuals as part of the assessment process to maintain best nutrition practice guidelines.

2. The RDN or designee will notify the appropriate discipline (i.e. nursing, physician, care plan team, social service) if adverse food medication interaction potential is present.

3. The RDN or designee will educate the individual on potential food-medication interactions as appropriate. (See *Education for Food-Medication Interactions* on the next page.)

4. The RDN or designee will document the potential food-medication interaction information in the medical record as appropriate.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

Education for Food-Medication Interactions

Policy:

Adequate discharge planning and education for individuals, and/or caregiver in the area of medications and potential nutrient interactions will be provided.

Procedure:

1. Pharmacy will be responsible for supplying all nursing units with medication lists and information cards on those medications with potential medication-nutrient interactions.

2. Individual guidelines on medication-nutrient interactions will be adhered to in administration of medications by the nursing staff. This information is supplied on the individual instructions provided by the pharmacy when dispensing the medications to the units.

3. The discharging nurse will be responsible for checking all home-going medications against those on the potential interactions list.

4. Upon discharge, each individual/caregiver will be supplied with written information pertaining to any medications. Verbal instruction will be given to the individual/caregiver responsible for administering the medications.

5. When further education on medication-nutrient interactions is required, the RN or physician will order a consultation by the registered dietitian nutritionist (RDN) or designee, or pharmacist.

6. The RDN or designee will be responsible for consulting with the individual or caregiver prior to the individual's discharge and appropriate documentation pertaining to the consultation entered into the individual record. Titles of written information, pamphlets, etc. pertaining to the medication-nutrient interaction provided to the individual/caregiver will be documented in the medical record.

7. The appropriate documentation pertaining to education on medication-nutrient interaction will be entered on the discharge instructions sheet by the discharging nurse.

Note: Support staff work under the supervision of the registered dietitian nutritionist (RDN). Support staff include nutrition and dietetic technicians registered (NDTR), nutrition associates (four year degree in nutrition/dietetics), certified dietary managers (CDM), food service managers, etc. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team.

Medical Record and Documentation Audit

Policy:

The registered dietitian nutritionist (RDN) or designee will conduct a documentation audit a minimum of once per quarter or more often as deemed necessary. Clinical documentation will be audited periodically for quality assurance/improvement purposes.

Procedure:

1. The auditor will pull all medical records and note:
   - Name
   - Room number
   - Date of nutrition assessment (NA)
   - Date of most recent plan of care (POC)
   - Date of most recent progress note (PN)

2. Audit medical record for timeliness of documentation, nutrition needs assessment, and appropriate nutrition interventions and/or follow through.
   - Initial nutritional assessments must be completed within 14 days of admission, and annually thereafter.
   - Initial plans of care must be completed within 7 days of completion of the initial nutritional assessment.
   - Progress notes and care plans require updating every three months and more often if problems arise.
   - Intermittent problems such include significant weight change, abnormal lab values, poor food intake, diet changes, etc. should have progress notes to reflect plan of care.

   In addition, the *Chart Audit* may assess the dates of documentation for timeliness and check the following to assure a consistent and accurate delivery of care:
   - Check the diet order in the documentation against the physician's order for accuracy.
   - Check the diet order in the documentation against the meal identification (ID) card/ticket and cardex.
   - Check the documented supplements/nourishments against the physician's order.
   - Check the documented supplements/nourishments against the lists in the kitchen (cardex or computer record).
   - Check the documented enteral/parenteral feeding against the physician's order.

3. Comment on any problems found while doing the audit, including:
   - Incorrect diet orders.
   - New problems or significant changes which may have occurred since the last update (significant weight changes, pressure ulcer, new enteral feeding, etc.).
   - Documentation dates that are out of compliance.

4. Report findings to the appropriate people (food service manager, nutrition support staff, administrator, or others).

5. Develop a plan of correction:
   - Update any documentation that is out of compliance Request updated physicians orders as needed to assure physicians orders for diets and supplements, information on file in dietary, and meal trays are all in agreement.

- Follow up to assure changes are made as requested.

6. Develop a running list of when yearly assessments and quarterly updates are due for each individual.

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Sample Form: Medical Record and Documentation Audit

Date _____ Completed by _____

Room	Name	NA Date	POC Date	PN Date	NCP Followed	Comments

NA = Nutritional Assessment
POC = Care plan
PN = Progress Notes
NCP = Nutrition Care Process

Resource: Audit to Assess Quality of Care Provided and to Prepare for Surveys

Individual Interviews to Determine Customer Satisfaction and Person-Centered Care
Interview the individual, individual's representative or family:

1. Are staff responsive to the individual's eating abilities and supportive of needs, including the provision of adaptive equipment and personal assistance with meals as indicated?
2. Are the individual's food and dining preferences addressed (e.g., is the person is offered substitutions or choices at meal times as appropriate and in accordance with his/her preferences)?
3. Are pertinent nutritional interventions, such as snacks, frequent meals, and calorie-dense foods, provided?
4. If the individual refused needed therapeutic approaches, were treatment options, related risks and benefits, expected outcomes and possible consequences discussed with the individual or individual's representative, and were pertinent alternatives or other interventions offered?

Interviews with Health Care Practitioners
Interview interdisciplinary team members on various shifts (e.g. nursing assistant, registered dietitian nutritionist, food service manager, charge nurse, social worker, occupational therapist, attending physician, medical director, etc.) to determine, how:

1. Food and fluid intake, and eating ability and weight (and changes to any of these) are monitored and reported.
2. Nutrition interventions, such as snacks, frequent meals, and calorie-dense foods, are provided to prevent or address impaired nutritional status (e.g., unplanned weight changes).
3. Nutrition-related goals in the care plan are established, implemented, and monitored periodically.
4. Care plans are modified when indicated to stabilize or improve nutritional status (e.g., reduction in medications, additional assistance with eating, therapeutic diet orders).
5. A health care practitioner is involved in evaluating and addressing underlying causes of nutritional risks and impairment (e.g., review of medications or underlying medical causes).

If the interventions defined, or the care provided, appear to be inconsistent with current standards of practice, interview one or more physicians or other licensed health care practitioners who can provide information about the individual's nutritional risks and needs. Examples include, but are not limited to:

1. The rationale for chosen interventions.
2. How staff evaluated the effectiveness of current interventions.
3. How staff managed the interventions.
4. How the interdisciplinary team decided to maintain or change interventions.
5. Rationale for decisions not to intervene to address identified needs.

If the interventions defined, or the care provided, appear to be inconsistent with recognized standards of practice, interview one or more health care practitioners as necessary (e.g., physician, hospice nurse, dietitian, charge nurse, director of nursing or medical director). Depending on the issue, ask:

1. How it was determined that chosen interventions were appropriate.
2. Why identified needs had no interventions.
3. How changes in condition that may justify additional or different interventions were addressed.
4. How staff evaluated the effectiveness of current interventions.

Record Review

Review the individual's medical record to determine how the facility:

1. Has evaluated and analyzed nutritional status.
2. Has identified individuals who are at nutritional risk.
3. Has investigated and identified causes of anorexia and impaired nutritional status.
4. Has identified and implemented relevant interventions to try to stabilize or improve nutritional status.
5. Has identified individuals' triggered Resident Assessment Instrument (RAI) for nutrition status.
6. Has evaluated the effectiveness of the interventions.
7. Has monitored and modified approaches as indicated.

Assessment and Monitoring

Review information including the RAI, diet and medication orders, activities of daily living worksheets, and nursing, dietitian, rehabilitation, and social service notes. Determine if the individual's weight and nutritional status were assessed in the context of his/her overall condition and prognosis, if nutritional requirements and risk factors were identified, and if causes of the individual's nutritional risks or impairment were sought.

1. Did the facility identify the individual's desirable weight range, and identify weight loss/gain?
2. Did the facility identify the significance of any weight changes, and what interventions were needed?

Where there have been significant changes in the individual's overall intake:

1. Were the reasons for the change identified and were appropriate interventions implemented?
2. Did the facility calculate nutritional needs (i.e., calories, protein and fluid requirements) and identify risk factors for malnutrition?
3. Did the facility meet those needs and if not, did they document why?
4. Did the individual's weight stabilize or improve as anticipated?
5. Was a need for a therapeutic diet identified and implemented, consistent with the current standards of practice?
6. Did the facility indicate the basis for dietary restrictions?
7. Were the reasons for dietary changes identified and appropriate interventions implemented?
8. Did the facility accommodate individual choice, individual food preferences, allergies, food intolerances, and fluid restrictions and was the individual encouraged to make choices?
9. Did the facility identify and address underlying medical and functional causes (e.g., oral cavity lesions, mouth pain, decayed teeth, poorly fitting dentures, refusal to wear dentures, gastroesophageal reflux, or dysphagia) of any chewing or swallowing difficulties to the extent possible?
10. Did the facility identify individuals requiring any type of assistance to eat and drink (e.g., assistive devices/utensils, cues, hand-over-hand, and extensive assistance), and provide such assistance?
11. Did the facility identify individuals receiving any medications that are known to cause clinically significant medication/nutrient interactions or that may affect appetite, and determine risk/benefit?
12. Did the facility identify and address to the extent possible medical illnesses and psychiatric disorders that may affect overall intake, nutrient utilization, and weight stability?
13. Did the facility review existing abnormal laboratory test results and either implement interventions, if appropriate, or provide a clinical justification for not intervening?
14. Was the individual's current nutritional status either at or improving towards goals established by the care team?

15. Were alternate interventions identified when nutritional status was not improving or was clinical justification provided as to why current interventions continued to be appropriate?

Care Plan

Review the comprehensive care plan to determine if the plan is based on the comprehensive assessment and additional pertinent nutritional assessment information. Did the facility:

1. Develop measurable objectives, approximate time frames, and specific interventions to try to maintain acceptable parameters of nutritional status, based on the individual's overall goals, choices, preferences, prognosis, conditions, assessed risks, and needs?

If care plan concerns, related to nutritional status are noted, interview staff responsible for care planning about the rationale for the current plan of care.

Care Plan Revision

Determine if the staff has evaluated the effectiveness of the care plan related to nutritional status and made revisions if necessary based upon the following:

1. Evaluation of nutrition-related outcomes.
2. Identification of changes in the individual's condition that require revised goals and care approaches.
3. Involvement of the individual or the individual's representative in reviewing and updating the individual's care plan.

Source: Centers for Medicare & Medicaid Services. State Operations Manual, Guidance to Surveyors for Long Term Care Facilities, Appendix PP. Rev 133, 02-06-15. http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_pp_guidelines_ltcf.pdf. Accessed March 31, 2015.

Resources

Scope of Practice/Role Delineation

- Academy of Nutrition and Dietetics. Scope of Practice. http://www.eatrightpro.org/resources/practice/patient-care/scope-of-practice
- Academy of Nutrition and Dietetics: Scope of Practice for the Registered Dietitian. *J Acad Nutr Diet*. 2013:Supl 2(1): S17-S28.
- Association of Food and Nutrition Professionals. CDM and CFPP Scope of Practice: http://www.anfponline.org/Training/CDM_CFPP.shtmL
- ANFP Practice Standard: Documenting in the Medical Record. http://www.anfponline.org/Resources/DMAResources/standard02.shtmL
- CDM/CFPP Nutrition Care Self-Assessment tool: http://www.anfponline.org/Extras/Self_Assessment_Tool.pdf

The Nutrition Care Process

- Academy of Nutrition and Dietetics. Nutrition Terminology Reference Manual (eNCPT): Dietetics Language for Nutrition Care. NCP Step 1: Nutrition Assessment. http://ncpt.webauthor.com/pubs/idnt-en/category-1.
- Academy of Nutrition and Dietetics. NCP 101. http://www.eatrightpro.org/resources/practice/nutrition-care-process/ncp-101. Tutorials are available to Academy members at http://www.andeal.org/ncp/.
- Academy of Nutrition and Dietetics. Nutrition Care Process Introduction and Tutorials. http://www.andeal.org/ncp/.
- Academy of Nutrition and Dietetics. Standardized Language. http://www.eatrightpro.org/resources/practice/nutrition-care-process/standardized-language.

Centers for Medicare and Medicaid Services

- Centers for Medicare & Medicaid Services. State Operations Manual, Guidance to Surveyors for Long Term Care Facilities, Appendix PP. http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_pp_guidelines_ltcf.pdf. Revision 133; 02/06/15.
- Centers for Medicare and Medicaid Services. MDS 3.0. http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/NursingHomeQualityInits/MDS30RAIManual.htmL

Books

- Chernoff R. Geriatric Nutrition: *The Health Professional's Handbook*, 4th ed. Burlington MA: Jones and Bartlett Publishing; 2014.
- Dorner B. *Enteral Nutrition for Older Adults: Comprehensive Nutrition Intervention and Assessment*. Naples FL: Becky Dorner & Associates, Inc.; 2013.
- Dorner B. *Diet and Nutrition Care Manual: A Comprehensive Nutrition Care Guide*. Naples, FL: Becky Dorner & Associates, 2014.
- Litchford M. *MDS 3.0 & Nutrition Care Plans*. St. Charles IL: Dietary Managers Association; 2011.
- Litchford M. *Nutrition Focused Physical Assessment: Making Clinical Connections*. Greensboro NC: Case Software; 2012.

Screening Tools

- Eat 10: A Swallowing Screening Tool. Nestle Nutrition Institute Web site. http://www.nestlenutrition-institute.org/Documents/test1.pdf
- Mini-Nutrition Assessment. Nestle Nutrition Institute Web site. http://www.mna-elderly.com/

Resources for Standards of Care in Health Care Communities

- Academy of Nutrition and Dietetics. Nutrition Care Manual. www.nutritioncaremanual.org. Accessed February 17, 2015.
- Academy of Nutrition and Dietetics Toolkits. http://www.eatrightstore.org/products/practitioner-tools/toolkits.
- American Dietetic Association. Position Paper of the American Dietetic Association: Individualized Nutrition Approaches for Older Adults in Health Care Communities. *J Am Diet Assoc*. 2010. 1549-1553.
- Eckstein L, Adams K, eds. *Pocket Resource for Nutrition Assessment*, *2013 edition*. Chicago IL: Dietetics in Health Care Communities Dietetic Practice Group of the Academy of Nutrition and Dietetics; 2013.
- National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline. Emily Haesler (Ed). Cambridge Media: Perth, Australia; 2014.
- Pioneer Network Food and Dining Clinical Practice Task Force. *New Dining Practice Standards*. 2011. http://www.pioneernetwork.net/Data/Documents/NewDiningPracticeStandards.pdf. Accessed March 11, 2015.
- White JV, Guenter P, Jensen G, et al. Consensus statement of the Academy of Nutrition and Dietetics /American Society for Parenteral and Enteral Nutrition: characteristics recommended for the identification and documentation of adult malnutrition (undernutrition). *J Acad Nutr Diet*. 2012;112(5):730-738.

MNT Made Easy for Health Care Communities
Continuing Professional Education

Instructions for Obtaining Continuing Professional Education
Becky Dorner & Associates is a Continuing Professional Education (CPE) Accredited Provider (NU004) with the Commission on Dietetic Registration (CDR). CDR Credentialed Practitioners will receive 18 Continuing Professional Education units (CPEUs) for completion of this activity/material.

Carefully read the contents of this program. Keep in mind the practical applications it has for you in your individual setting. The focus is to increase your knowledge and application of the subject matter. For multiple choice questions select the one best answer from the choices given. Compare your answers to the answer key provided in this program. If you have answered 80% or more of the questions correctly, you have successfully completed this course and are eligible to sign and date the certificate included at this end of the program. If you scored less than 80%, re-read the program and re-take the self-assessment questionnaire. You are also required to complete the case studies provided at the end of this program to obtain your continuing education.

For Registered Dietitians, Registered Dietitian Nutritionists, and Dietetic Technicians Registered: A certificate of completion is provided for your portfolio; please sign, date and place in your portfolio for your records after successfully completing the self-testing portion of this continuing education package. You do not need to submit this form to Becky Dorner & Associates, Inc. or to the Commission on Dietetic Registration (CDR).

Important for Certified Dietary Managers: Please obtain the subsequentUpon successfully completing the test, you will automatically be directed to the evaluation. Simply enter your email address and complete the evaluation. When finished, click “Submit Survey.” Click on either “print” or “download your certificate” to generate the CPE Certificate with all of the course information including your name.

For Registered Dietitians and Dietetic Technicians Registered: A certificate of completion is provided for your portfolio; please sign, date and place in your portfolio for your records after successfully completing the self-testing portion of this continuing professional education program. You do not need to submit this form to Becky Dorner & Associates, Inc. or to the Commission on Dietetic Registration (CDR).

Continuing Professional Education Expert Reviewers:
Pam Brummit
Suzanne Cryst
Brenda Richardson

Description
This program will assist participants to comply with CMS regulations and guidance, complete the MDS 3.0, incorporate Academy of Nutrition and Dietetics Nutrition Care Process into the documentation system, and stay current with standards of practice and competencies. Focused on implementing medical nutrition therapy (MNT) for health care communities, the program includes policies, procedures, and resources for everything from calculating nutritional needs to BMIs, significant weight changes, enteral feedings and TPNs; information on malnutrition, nutrition focused physical assessment, pressure ulcers, dehydration, fluid restrictions, dysphagia, end of life nutrition and hydration, nutrient intake studies, obtaining accurate heights/weights, adjusting for amputees, tracking weights, nutrition screening and referral to the RDN, nutrition assessment and care planning, MNT related recommendations, quality improvement resources, and much more. Sample forms are also included.

Course Objectives:
After completing this course, participants will be able to:
1. Understand how to implement medical nutrition therapy in health care communities.
2. Properly gather data, implement MNT documentation.
3. Complete the nutrition assessment process.
4. Identify appropriate nutrition interventions for common nutrition problems.
5. Communicate with other health care professionals.
6. Utilize the policies and procedures provided to improve or enhance nutrition care.

MNT Made Easy for Health Care Communities
Continuing Professional Education

Learning Needs Codes for the Commission on Dietetic Registration:
3000 Nutrition Assessment
5000 Medical Nutrition Therapy
5390 Care planning, documentation and evaluation
7100 Institution/regulatory policies and procedures, HCFA, OBRA, JCAHO, NCQA, OSHA, USDA

Other Possible Learning Needs Codes for the Commission on Dietetic Registration:
3030 Anthropometrics
3040 Food consumption, liquid balance
3050 Feeding, swallowing, dentition
5040 LTC, intermediate, assisted living
5050 Rehabilitation
5090 Adults
5100 Elderly
5380 Wound care
5410 Client protocols, clinical guidelines

Performance Quality Indicators
- 1.5.1 Stays current of, complies with and models national, state and local legislation, policies and standards.
- 9.3.5 Establishes new goals and a new plan of care when original or interim goals are met.
- 10.1.3 Works collaboratively with the interdisciplinary team (including NDTRs) to identify and implement valid and reliable nutrition screening to support access to care.
- 12.4.6 Applies and integrates the Nutrition Care Process to meet the complex needs of the target population.

Continuing Professional Education Question Assessment

1. In health care communities, the ____ is ultimately responsible for the nutrition are provided to patients/residents.
   a. The facility
   b. The interdisciplinary team
   c. The physician
   d. Registered dietitian nutritionist

2. The nutrition and dietetic technician registered and/or the certified dietary manager are considered ___ to the registered dietitian nutritionist.
   a. Second in line
   b. To report to
   c. Support staff
   d. Supervisory staff

3. The RDN may delegate certain tasks based on the scope of practice and competency level of each member of the nutrition team
   a. True
   b. False

4. Each resident/patient should be visited by the food service manager or designee withint 24 hours of admission to obtain food preferences.
   a. True
   b. False

5. Which of the following is an appropriate substitution to replace the calcium in 1 cup of milk?
   a. ½ cup pudding
   b. 1 oz. cheese
   c. 1 cup ice cream
   d. 2 cups cottage cheese

6. ___ is/are defined and supported by well-known and current standards of practice which are based on evidence based research or expert consensus if evidence is not available.
   a. Standards of care
   b. Medical nutrition therapy
   c. Grade B evidence
   d. Scope of practice

7. Which of the following is considered a validated nutrition screening tool for adults age 65 and older?
   a. The facility RD's screening tool
   b. The Nutrition Screening Assessment
   c. The Mini Nutrition Assessment
   d. Customized tool that is created by the IDT

8. Which of the following shows the best example of how to correct an error in documentation?
   a. Pull out the page and start over
   b. Make an "x" through the error and continue documenting
   c. Draw one line through the incorrect statement, initial and date and continue documenting
   d. Scribble out the error completely, initial and date and start over

9. When a Medicare resident is admitted to a nursing facility, the initial MNT assessment must be completed within ___ days of admission.
   a. 3
   b. 5
   c. 7
   d. 14

10. For non-Medicare residents, the initial nutritional assessment must be completed within ___ days of admission.
    a. 5
    b. 7
    c. 14
    d. 30

11. Generally speaking, the plans of care for residents are to be completed within:
    a. within 7 days
    b. within 7 days of completion of the assessment
    c. within 21 days
    d. within 21 days of completion of the assessment

12. A reassessment or progress note should be completed:
    a. Each time a plan of care is updated
    b. Every 14 days
    c. Anytime a nutrition goal changes
    d. None of the above

13. Progress notes should reflect which of the following?
    a. Family concerns
    b. Caregivers' review
    c. Intake records
    d. Progress made on care plan goals

14. Role delineation is dictated by ___, along with individual state dietetic licensing or certification boards and to some extent by the Academy DPGs and Association of Food and Nutrition Professionals.
    a. The facility's up to date policies and procedures developed by the registered dietitian nutritionist
    b. CMS federal regulations through the State Operations Manual and Surveyor Guidance
    c. State regulations including nursing home, assisted living, rest home and state licensure
    d. Current Standards of Practice and Standards of Professional Performance of the Academy of Nutrition and Dietetics

15. The purpose of the ____ is to obtain, verify, and interpret data needed to identify nutrition related problems, their causes, and significance.
    a. Nutrition care process
    b. Nutrition assessment
    c. Nutrition diagnosis
    d. PES statement

16. Serum albumin and pre-albumin do not specifically indicate malnutrition and do not typically respond to feeding interventions when an acute inflammatory response is present.
    a. True
    b. False

17. The following statement is an example of ____: "Increased energy needs related to energy needs greater than calculated needs as evidenced by hpermetabolic state associated with infection and fever".
    a. Nutrition assessment
    b. Nutrition intervention
    c. Nutrition diagnosis
    d. Nutrition monitoring/evaluation

18. The following may be included as part of the nutrition focused physical findings: Robust, thin, obese, or cachectic; level of consciousness, responsiveness, affect.
    a. True
    b. False

19. Causes of a hypermetabolic state may include:
    a. COPD, pneumonia and other infections, cancer, hyperthyroidism and fever
    b. Gluconeogensis, branched chain amino acid breakdown
    c. Protein breakdown, liver production of proteins
    d. Nitrogen loss, resting energy expenditure

20. The presence of care instructions such as an advance directive, or declining interventions implies that other support and care will also be declined.
    a. True
    b. False

21. For many individuals (including overweight individuals), usual body weight prior to illness, decline or admission to a health care facility is more relevant than ideal body weight (IBW).
    a. True
    b. False

22. Identification of a swallowing abnormality indicates the need for dietary restrictions or food texture modifications.
    a. True
    b. False

23. The Academy of Nutrition and Dietetics' nutrition care process consists of:
    a. Nutrition Screening, Nutrition Assessment, Nutrition Diagnosis, Nutrition Intervention, Nutrition Monitoring and Evaluation
    b. Nutrition Screening, Nutrition Assessment, Nutrition Intervention, Nutrition Monitoring and Evaluation
    c. Nutrition Assessment, Nutrition Diagnosis, Nutrition Intervention, Nutrition Monitoring and Evaluation
    d. Nutrition Assessment, Nutrition Evaluation, Nutrition Intervention, Nutrition Monitoring and Evaluation

24. When an individual is eating poorly or losing weight, it may be appropriate to change, stop, or reduce the doses of medications that are associated either with anorexia or with symptoms such as lethargy or confusion that can cause or exacerbate weight loss.
    a. True
    b. False

25. Auscultation is the assessment of body sounds to detect gas in the abdomen, fluid in the lungs, or other issues.
    a. True
    b. False

26. Which of the following is most true in relationship to an individual's height?
    a. Verbally reported heights are acceptable
    b. Historical height is acceptable
    c. Nursing should remeasure height each year
    d. Admission height is the only height required

27. Arm span measurement is approximately:
    a. One half of a person's height
    b. 75% of a person's height
    c. The same as a person's height
    d. Is not an appropriate use of measurement

28. Select the correct adjusted ideal body weight for a female, 5 foot 4 inches tall with an entire upper extremity (arm and hand) amputation.
    a. 110.2 pounds
    b. 111.2 pounds
    c. 112.2 pounds
    d. 113.2 pounds

29. Which of the following should be measured for unweighable patients?
    a. Abdomen, mid-arm, thigh, wrist
    b. Abdomen, mid-arm, thigh, calf
    c. Abdomen, mid-leg, calf
    d. Abdomen, mid-arm, calf, neck

30. When should measurements be repeated for accuracy?
    a. When they are more than or equal to 1 inch from the previous measurement
    b. When they are more than or equal to ½ inch from the previous measurement
    c. When they are more than or equal to ¼ inch from the previous measurement
    d. When they are more than or equal to ¾ inch from the previous measurement

31. Which of the following formulas would determine the body mass index?
    a. BMI = weight in pounds divided by height X 705
    b. BMI = weight in kilograms divided by height (inches squared) X 705
    c. BMI = weight in pounds divided by height (inches squared) X 705
    d. BMI = weight in pounds divided by height (inches squared)

32. Extreme obesity is Class III obesity and a BMI over 40.
    a. True
    b. False

33. The (2011) DRI for Vitamin D for people over 70 years of age is ___ IU per day.
    a. 400
    b. 600
    c. 800
    d. 1000

34. Which of the following most accurately describes the current categories of malnutrition?
    a. Marasmus, kwashiorkor, marasmus-kwashiorkor
    b. Cachexia, anorexia, protein energy malnutrition
    c. Starvation related, chronic disease related, acute disease or injury related
    d. Albumin level of less than 4.0, or prealbumin of less than 6.0

35. Clinical characteristics used to categorize malnutrition include: loss of body fat, loss of muscle mass, fluid accumulation, reduced grip strength.
    a. True
    b. False

36. When a person has a significant or severe unintended weight change, the facility needs to notify the___.
    a. Family and IDT including the physician and RDN/designee
    b. Physician and IDT including the RDN/designee
    c. Individual, family/representative, physician and RDN/designee
    d. Physician, family/representative, IDT and RDN/designee

37. Unavoidable weight loss means that the individual did not maintain acceptable parameters of nutritional status and that the facility did not do one or more of the following: evaluate the individual's clinical condition and nutritional risk factors; Define and implement interventions that are consistent with the individual's needs, goals and recognized standards of practice; Monitor and evaluate the impact of the interventions; and Revise the approaches as appropriate.
    a. True
    b. False

38. Which definition best describes "insidious weight loss"?
    a. Less than 5% weight loss in 1 month
    b. More than 7.5% in 3 months
    c. Gradual, unintended, progressive weight loss over time
    d. Usual weight through adult life or a stable weight over time

39. The current weight is 137 pounds. The prior weight 30 days ago was 148. This is a significant weight loss in the past 30 days.
    a. True
    b. False

40. The current weight is 190; the weight six months ago was 207. This is a significant weight loss for the last six months.
    a. True
    b. False

41. The symptoms of thirst, significant or severe weight loss, and cracked lips are clinical signs of what condition?
    a. Clostridium difficile
    b. Dehydration
    c. UTI
    d. MRSA

42. Which of the following statements are true?
    a. Patients without renal or cardiac distress need 30 mL fluid/kg body weight per day
    b. Patients with renal or cardiac distress need 20 mL fluid/kg body weight per day
    c. Patients diagnosed with dehydration need 50 mL fluid/kg body weight per day
    d. Patients without renal or cardiac distress need 25 mL fluid/kg body weight per day

43. When the physician orders “encourage fluids” this generally refers to:
    a. A minimum of 1200 - 1500 mL per 24 hours
    b. A minimum of 1500 - 2000 mL per 24 hours
    c. A minimum of 1800 mL – 2200 per 24 hours
    d. A minimum of 2200 – 2500 mL per 24 hours

44. The RDN or designee should only receive referrals of individuals with stage III, IV, and unstageable pressure ulcers.
    a. True
    b. False

45. Clinical conditions that are the primary factors for development of pressure ulcers include a healed ulcer, obesity, cognitive impairment and impaired mobility.
    a. True
    b. False

46. Undernutrition, malnutrition and hydration deficits are risk factors for pressure ulcer development.
    a. True
    b. False

47. Recommendations for calorie needs in individuals with pressure ulcers are:
    a. 25-30 kcalories per kg body weight per day
    b. 30-40 kcalories per kg body weight per day
    c. 30-35 kcalories per kg body weight per day
    d. 35-40 kcalories per kg body weight per day

48. For a person with a pressure ulcer, energy needs should be adjusted based on weight change or level of obesity.
    a. True
    b. False

49. Offer ____ grams of protein/kg body weight daily for adults at risk of pressure ulcers who are assessed to be at risk of malnutrition when compatible with goals of care, and reassess as condition changes.
    a. 0.8 to 1.0
    b. 1.0 to 1.5
    c. 1.25 to 1.5
    d. 2.0 to 2.5

50. Fluids should be provided to maintain hydration, and should be:
    a. Above normal for someone on an air fluidized bed
    b. Below normal for someone on an air fluidized bed
    c. 1 mL fluid per calorie consumed
    d. 33-35 mL per kg body weight

51. Provide additional fluid to individuals with dehydration, elevated temperature, vomiting, profuse sweating, diarrhea, or heavily draining wounds.
    a. True
    b. False

52. Provide/encourage an individual assessed to be at risk of a pressure ulcer to ___when dietary intake is poor or deficiencies are confirmed or suspected.
    a. Take vitamins A, C, D, E, copper, iron, and zinc
    b. Take vitamins A, C, and iron and zinc
    c. Take vitamin and mineral supplements
    d. Take at least 40 mg elemental zinc daily

53. Zinc supplementation should be provided for a person with pressure ulcers at a level of 220 mg zinc sulfate twice a day.
    a. True
    b. False

54. The RDN or designee should review the medical record of each individual who is NPO or on an unsupplemented clear liquid diet for longer than __ days, and assess the individual's nutritional status.
    a. 1
    b. 2
    c. 3
    d. 4

55. If approaches for end-of-life care are provided in accordance with the care plan and the individual's choices, then the failure to maintain acceptable parameters of nutritional status is not an expected outcome for individuals with terminal conditions.
    a. True
    b. False

56. In general, residuals of 250 mL or more after a second GRV test suggest
    a. That the tube feeding is not well tolerated
    b. That the tube feeding should be held for at least 1 hour
    c. That a promotility agent should be considered
    d. That less flushes are needed

57. Parenteral nutrition therapy is appropriate when:
    a. Esophageal varices is diagnosed
    b. The GI tract is functional
    c. The GI tract is non-functional
    d. The individual continually pulls out the NG tube

Case Studies
Please read through the information in each case study and then answer the test questions.

Case Study 1:
Mrs. Collins is a 93 year old female admitted October 7 to a SNF with diagnosis of diabetes, pneumonia, end stage Alzheimer's disease, and dysphagia. She is very confused and must be fed by staff. Mrs. Collins is a full code and her family is not realistic about her prognosis.

- 93 y/o Female, admitted 5/7 to SNF with diabetes, pneumonia; end stage Alzheimer's, dysphagia
- Height 5'0", Weight 124# upon admission
- Weight 118# (6/6)
- Stage IV pressure ulcer coccyx, slow to heal
- Adv directives: DNR, request no tube feeding
- Diet: Puree
- Intake 25-50%
- Medications: Namenda, Metformin, Levaquin (on admission), Colace, Ativan
- Laboratory Values: H/H 10.1/32.3, Glu 216, Alb 2.4, Na 139, K+ 4.9, BUN 23, Creat 1.9, Chol 170, HgbA1C 7.9

Questions for Case Study 1:

1. Mrs. Collins has experienced a significant weight loss of __% in the past 30 days.
    a. 2.5%
    b. 5%
    c. 7.5%
    d. 10%

2. Mrs. Collins' laboratory values indicate that she has protein energy malnutrition.
    a. True
    b. False

3. Mrs. Collins' laboratory values indicate that she may have:
    a. Iron deficiency anemia
    b. Folate deficiency
    c. Vitamin B12 deficiency
    d. Anemia of chronic disease

4. Estimated kcalories needs are ___ based on 30-35 kcals/kg body weight.
    a. 1071-1339 kcal
    b. 1339-1606
    c. 1607-1875 kcal
    d. 1875-2142 kcal

5. Estimated protein needs are __ grams based on 1.25-1.5 gm/kg body weight.
    a. 43-54
    b. 67-80
    c. 64-70
    d. 70-80

6. Estimated fluid needs are __ based on 1 mL/kcal.
    a. 1071-1339
    b. 1607-1875
    c. 1875-2142
    d. 2142 mL

7. Nutrition Diagnosis: Unintended weight loss of ___ in 30 days related to oral intake less than 75% of estimated nutrient needs as evidenced by food intake records.
    a. 2.5%
    b. 5.0%
    c. 7.5%
    d. 10%

8. PES Statement: Inadequate energy and protein intake related to significant amount of meals left uneaten as evidenced by documented intake of ___% of meals.
    a. 75%
    b. 50%
    c. 35%
    d. 20%

9. PES Statement: Increased need for energy and protein related to increased demands as evidenced by:
    a. Stage 4 pressure ulcer
    b. Unintended weight gain
    c. Adequate meal intake
    d. Iron deficiency anemia

10. Choose the most appropriate initial Nutrition Intervention for Mrs. Collins:
    a. Offer a mechanical soft diet
    b. Offer fortified foods twice daily at breakfast and dinner and 3 servings of milk/milk products each day
    c. Offer oral nutrition supplements on every meal tray
    d. Provide family with information on tube feeding options

11. Which of the following would be another appropriate Nutrition Intervention for Mrs. Collins?
    a. Limit snacking between meals
    b. Offer an oral nutritional supplement four times a day with meals and HS
    c. Add fortified ice cream to lunch and supper tray
    d. Provide a quiet atmosphere for dining

12. Which of the following would be another appropriate care plan intervention for Mrs. Collins?:
    a. Restrict carbohydrates to help control her blood sugar levels to promote wound healing
    b. Monitor blood sugars for increases related to additional food and supplements
    c. Monitor albumin and prealbumin to determine if nutrition interventions are working
    d. Encourage her to self-feed

13. Choose the most appropriate Nutrition Intervention for Mr. Collins from the options below:
    a. Recommend consumption of a well-balanced diet; assess need for iron supplementation.
    b. Recommend consumption of a well-balanced diet; assess need for vitamin B12 supplementation.
    c. Recommend multivitamin with minerals daily; assess need for vitamin B12 supplementation.
    d. Recommend multivitamin with minerals daily; assess need for folate supplementation.

14. Which statement is true regarding the tube feeding for Mrs. Collins? Because Mrs. Collins is a full code with poor nutritional status, _____.
    a. Tube feeding will prevent aspiration and resultant risk of pneumonia.
    b. The family may want to initiate tube feeding if other interventions have failed.
    c. Tube feeding will result in wound healing and weight gain for Mrs. Collins.
    d. There is no need for a palliative care consult for Mrs. Collins.

Case Study 2 (Mr. Hammond):
Mr. Jones was a 78 y/o male who was admitted to Rehabilitation Center on May 9 after a fall and resulting injuries including a fracture to the right distal radius (wrist), and multiple bruises and contusions. He is experiencing confusion, incontinence, pain due to wrist surgery (internal fixation with plate and screws) and is currently limiting his mobility because he is afraid he will fall again.

- Diagnosis: Fracture right distal radius, hypertension. History of MI 2004 with stent placement post MI.
- Height 5'10", Weight 160# upon admission
- Weight 148# on June 7
- Braden Scale indicates he is at high risk of developing a pressure ulcer
- Diet: Regular with no noted food dislikes, allergies; intolerance to milk. No difficulty chewing or swallowing.
- Intake 50%
- Cognitive function: Experiencing some confusion and dementia.
- Medications: Lisinopril, Plavix, Lipitor
- Laboratory Values: Low H/H 12.2/38.1, Glu 110, low Alb 2.8, Na 135, K+ 5.0, BUN 19, Creat 0.8; elevated MVC 102, MCH 42, and serum Fe 195.

Questions for Case Study 2:

1. Mr. Hammond has experienced a significant weight loss of __% in the past 30 days.
    a. 2.5%
    b. 5%
    c. 7.5%
    d. 10%

2. Mr. Hammond's laboratory values indicate that he has protein energy malnutrition.
    a. True
    b. False

3. Estimated kcalories needs are ___ based on 30-35 kcals/kg body weight.
    a. 1842-1985
    b. 1993-2043
    c. 2016-2352
    d. 2144-2492

4. Estimated protein needs are __ based on 1.25-1.5 gm/kg body weight.
    a. 72-81
    b. 79-94
    c. 84-101
    d. 93-117

5. Estimated fluid needs are __ based on 1 mL/kcal.
    a. 1842-1985
    b. 1993-2043
    c. 2016-2352
    d. 2470-2592

6. Nutrition Diagnosis: Unintended weight loss of ___ in 30 days related to oral intake less than 75% of estimated nutrient needs as evidenced by food intake records.
    a. 2.5%
    b. 5.0%
    c. 7.5%
    d. 10%

7. PES Statement: Inadequate energy and protein intake related to significant amount of meals left uneaten as evidenced by documented intake of ___% of meals.
    a. 75%
    b. 50%
    c. 35%
    d. 20%

8. PES Statement: Increased need for energy and protein related to increased demands as evidenced by:
    a. Stage 1 pressure ulcers.
    b. Stage 2 pressure ulcers.
    c. Food intake of less than 50%.
    d. High risk of developing pressure ulcers.

9. Choose the most appropriate initial Nutrition Intervention for Hammond:
    a. Offer a mechanical soft diet, encourage to eat
    b. Offer choices of foods at meal time, offer favorite foods, encourage to eat
    c. Provide feeding assistance at meal time
    d. Provide family with information on tube feeding options

10. Which of the following would be another appropriate Nutrition Intervention for Hammond:
    a. Offer an alternate diet of his choice
    b. Offer an oral nutritional supplement four times a day with meals and HS
    c. Offer fortified foods twice a day at breakfast and dinner, 3 servings of milk/milk products each day
    d. Provide a quiet atmosphere for dining

11. Which of the following would be another appropriate Nutrition Intervention for Hammond:
    a. Encourage fluids with meals and in between to total 1875 mL per day
    b. Encourage fluids with meals and in between to total 1990 mL per day
    c. Encourage fluids with meals and in between to total 2150 mL per day
    d. Encourage fluids with meals and in between to total 2500 mL per day
12. Choose the most appropriate Nutrition Intervention for Mr. Hammond from the options below:
    a. Recommend consumption of a well-balanced diet; assess need for iron supplementation.
    b. Recommend consumption of a well-balanced diet; assess need for vitamin B12 supplementation.
    c. Recommend multivitamin with minerals daily; assess need for vitamin D and calcium supplementation.
    d. Recommend multivitamin with minerals daily; assess need for folate supplementation.

Case Study 3 (Mrs. Jackson):
Mrs. Jackson is an 80 y/o female, admitted March 3 to SNF with severe confusion, dizziness.

- Diagnosis: electrolyte imbalance, dehydration, hypertension, hypothyroidism, Alzheimer's disease (moderate stage).
- Height 5'2", Weight 149# upon admission
- Weight 134# (April 3)
- Diet: Low fat/cholesterol, no added salt (many dislikes), does not eat red meat
- Intake only about 50%
- Cognitive function: oriented to person, confused to time and place
- Medications: Diovan, Synthroid, Aricept
- Laboratory Values: H/H 16.2/46.7, Na 151, Cl 109, K 6.1, BUN 46, Creat 1.8

Questions for Case Study 3

1. Mrs. Jackson has experienced a significant weight loss of __% in the past 30 days.
   a. 2.5%
   b. 5%
   c. 7.5%
   d. 10%

2. Mrs. Jackson's laboratory values indicate that she may have:
   a. Iron deficiency anemia
   b. Vitamin B12 deficiency
   c. Anemia of chronic disease
   d. Dehydration

3. Using the Mifflin-St. Jeor Equation, her estimated kcalories needs are approximately ___ kcal based on current weight of 134 pounds.
   a. 1033
   b. 1494
   c. 1652
   d. 1825

4. Estimated protein needs are __ grams based on 1.0 gm/kg body weight (at 134 pounds).
   a. 54
   b. 61
   c. 73
   d. 84

5. Estimated fluid needs are __ based on 1 mL/kcal.
   a. 1226-1532
   b. 1532-1838
   c. 1825-2129
   d. 2029-2367

6. Nutrition Diagnosis: Unintended weight loss of ___ in 30 days related to oral intake less than 75% of estimated nutrient needs and fluid needs as evidenced by food intake records and diagnosis of dehydration.
   a. 2.5%
   b. 5.0%
   c. 7.5%
   d. 10%

7. PES Statement: Inadequate energy, protein and fluid intake related to significant amount of meals left uneaten as evidenced by documented intake of ___% of meals.
   a. 75%
   b. 50%
   c. 35%
   d. 20%

8. Choose the most appropriate initial Nutrition Intervention for Mrs. Jackson:
   a. Offer a mechanical soft diet
   b. Individualize diet, providing a regular diet and respecting food preferences
   c. Continue low fat, low cholesterol, no added salt diet
   d. Provide family with information on tube feeding options

9. Which of the following would be another appropriate Nutrition Interventions for Mrs. Jackson?
   a. Limit snacking between meals
   b. Encourage her to eat red meat to increase iron intake
   c. Offer additional fluids at med pass, on meal trays and in between meals
   d. Provide a quiet atmosphere for dining

10. Which of the following would be another appropriate Nutrition Intervention for Mrs. Jackson?
    a. Recommend potassium supplementation
    b. Recommend discontinuation of Diovan
    c. Offer fortified foods of her preference each meal, 2 pm and HS snacks
    d. Offer extra meat at lunch and dinner to boost protein intake

11. Choose the most appropriate Nutrition Intervention for Mrs. Jackson from the options below:
    a. Recommend consumption of a well-balanced diet; assess need for vitamin D and calcium supplementation.
    b. Recommend consumption of a well-balanced diet moderate in sodium and with adequate fluids for hydration.
    c. Recommend multivitamin with minerals daily; assess need for vitamin B12 supplementation.
    d. Recommend multivitamin with minerals daily; assess need for folate supplementation.

Case Study 4: Facility Based Case Study

During their annual survey, Sunshine Valley Skilled Nursing Facility was cited for F-314: Pressure Sores: failure to prevent a pressure sore from forming in resident # 1, and F-325: Nutrition Assessment. The citation was based on a resident who had a pressure ulcer acquired in the facility that was determined to be avoidable. According to the survey report, Sunshine Valley did not adequately assess the resident for nutritional needs and did not implement preventative measures related to nutrition, despite her low Braden Scale score and multiple comorbities. Sunshine Valley does not employ a RDN full-time but has a consultant that visits the facility twice monthly.

During the survey, the RDN was asked to review the medical record. Among her findings were:

- An initial nutrition assessment was initiated by the CDM and completed by the RDN. The resident was considered high-risk for pressure ulcer formation based on the Braden Scale, which was kept in a notebook on the unit.
- The pressure ulcer started as a stage I that progressed over a period of 3 weeks to a stage III. The stage III ulcer was identified on the MDS as part of the routine 30-day assessment.
- The RDN was not notified of skin breakdown for resident # 1, so did not follow up with reassessment or interventions to address increased nutritional needs.
- The facility Nutrition-at Risk committee (consisting of the treatment nurse, MDS nurse, CDM, and DON) met and initiated wound treatments that including dressings and positioning devices. No nutrition interventions were ordered.
- The resident had a poor meal intake (25-50%). She had lost 3 pounds weekly in 4 weeks since her admission. The weight loss did not trigger as significant.

Questions for Facility Based Case Study 4

1. Based on the information available, a facility policy should be written to maintain a referral list of high-risk or nutritionally compromised residents for the RDN.
   a. True
   b. False

2. Due to HIPAA compliance, the facility should not provide a copy of their wound reporting completed by the treatment nurse for the RDN at each visit to facility.
   a. True
   b. False

3. The Braden Scale or Braden score should be filed in the medical record rather than in a notebook on the unit.
   a. True
   b. False

4. Based on the information available, the facility should implement nutrition wound care protocols or a Nutrition Intervention Program to assure nutrition interventions are started as soon as possible.
   a. True
   b. False
5. The RDN should only assess individuals with stage IV pressure ulcer to evaluate interventions, and change them as needed during his/her routine visits to the facility.
   a. True
   b. False

6. The RDN be sure he/she receives information on all patients with wounds in a facility in the future by reviewing the facility's written wound reporting, talking to the treatment nurse regarding patients with wounds, and reviewing the Nutrition at Risk Committee minutes at each visit to the facility.
   a. True
   b. False

7. What would be an appropriate initial intervention for the Nutrition at Risk committee to implement as soon as possible after a pressure ulcer is identified for any patient/resident?
   a. Double portions
   b. Fortified foods
   c. ONS TID with meals
   d. Liberalize diet to regular

8. Resident # 1 did not trigger for significant weight loss. Should the facility Nutrition at Risk committee have been concerned about her gradual weight loss?
   a. No, because the weight loss was not significant
   b. No, because small amounts of weight loss are not an indicator of malnutrition
   c. Yes, because her intake was poor and she had a pressure ulcer so the weight loss was important
   d. Yes, because she had just come from the hospital

9. As part of the Plan of Correction, the facility MD wants to begin running serum albumin levels on all residents with wounds before implementing nutrition interventions. Is this important to good nutrition care?
   a. Yes, because albumin is a good indicator of poor protein intake
   b. No, because albumin is not a good indicator of protein intake

10. The facility treatment nurse has decided to begin ordering vitamin C and zinc supplements x 60 days for each resident with a new pressure ulcer. Is this a valid recommendation?
    a. Yes, because resident # 1 had a poor meal intake
    b. Yes, because vitamin C and zinc have both been proven to promote wound healing.
    c. No, because 60 days is too long for a zinc supplement
    d. Yes, because vitamin C and zinc x 60 days have always been part of the facility wound care protocal

11. What information should the RDN include in an inservice to the Nutrition at Risk committee as part of the Plan of Correction?
    a. Only the RDN can implement nutrition interventions in patients with wounds
    b. The Nutrition at Risk committee can initiate nutrition interventions as per the facility Nutrition Intervention Program.
    c. The RDN will never change nutrition interventions once they are put in place.
    d. Every patient with wounds needs a nutrition supplement.

Answer Key

1. d
2. c
3. a
4. b
5. d
6. b
7. c
8. c
9. b
10. c
11. b
12. a
13. d
14. d
15. b
16. a
17. c
18. a
19. a
20. b
21. a
22. b
23. c
24. a
25. b
26. c
27. c
28. c
29. b
30. c
31. c
32. a
33. c
34. c
35. a
36. c
37. b
38. c
39. a
40. b
41. b
42. a
43. b
44. b
45. a
46. a
47. c
48. a
49. c
50. c
51. a
52. c
53. b
54. c
55. b
56. c
57. c

Case Study 1:

1. b
2. b
3. d
4. c
5. b
6. b
7. b
8. b
9. a
10. b
11. c
12. b
13. a
14. b

Case Study 2

1. c
2. b
3. c
4. c
5. c
6. c
7. b
8. d
9. b
10. c
11. c
12. c

Case Study 3:

1. d
2. d
3. c
4. b
5. c
6. d
7. b
8. b
9. c
10. c
11. b

Case Study 4:

1. a
2. b
3. a
4. a
5. b
6. a
7. b
8. c
9. b
10. c
11. b

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