



Unintended Weight Loss

Incidence and Consequences of Unintended Weight Loss

Unintentional weight loss (UWL) as a threat to the health and well being of older adults has been well documented. Ryan et al documented the likelihood of death within a year as 4.6 times greater in individuals who experienced a weight loss of $\geq 5\%$ in one month (1) Murden and Ainslie reported a significant increase in mortality in nursing home residents with a 10% weight loss over a 6 month period. (2) UWL increases morbidity by contributing to weakness, fatigue, decline in ability to function independently, impaired immune status, malnutrition, muscle wasting, risk of pressure ulcers, poor wound healing, etc.

Regulatory agencies realize that poor nutritional status can have a dramatic impact on an individual's health and well being, and therefore on quality of life. Poor nutritional status may also reflect suboptimal quality of care in some cases. Regulatory guidelines and survey process are more focused on nutrition, dining, weight and health status than ever before. In nursing facility settings, unintended weight loss is monitored via the Center for Medicare & Medicaid Services (CMS) Minimum Data Set (MDS). According to data generated from the MDS, approximately 9% of US nursing home residents experience significant weight loss (defined as a loss of 5% or more of body weight in one month or 10% or more in 6 months). (3) According to the MDS Active Resident Information Report, for the first quarter of 2006, 35.8% of residents left 25% or more of their food at meal time while only 26% of residents were receiving a dietary supplement. (4)

The current F325 requires facilities maintain residents' nutritional status by implementing interventions to prevent decline when someone is at risk for significant weight loss. (5) A failure to intervene on significant weight loss or nutritional problems results in noncompliance with F325 which can lead to a survey deficiency. (5)

Factors That Influence Body Weight

There are many factors that can influence body weight. Several key factors include anorexia, sarcopenia, and cachexia. Some of these factors are linked to nutrition while some are indications of other underlying causes. During periods of stress or trauma, the body's inflammatory response may create a hypermetabolic state in which the body's need for calories and protein exceed the individual's ability to consume adequate nutrients. In addition, the body's organs may not be able to absorb or utilize nutrients properly due to aging, acute or chronic disease, or inflammation. Results of nutritional interventions are not always immediate. Nutritional deficits may take some time to correct, and some deficits may not be completely correctable. (6)

- **Anorexia** is a significant loss of appetite which may be induced by a variety of causes including use of certain medications, severe depression, cancer or cancer therapies, advanced dementia and chronic renal disease. Causes of anorexia in older adults include cancer, cardiac disease, changes in taste and smell, delayed

gastric emptying, dementia, depression, dysphagia, edentulism, pharmacological factors, and pulmonary disease. Treatments for anorexia vary, and depend on the cause, but can include treating depression and underlying diseases, altering medications or timing of dosages, treating GI disturbances, and use of enhanced foods or nutritional supplements. (7) The use of appetite stimulants is also an option if the above interventions fail. (8)

- **Sarcopenia** is age related loss of skeletal muscle mass and resulting weakness which can lead to decreased independence, impaired balance and falls.
- **Cachexia** is a wasting syndrome which causes unintentional weight loss of fat and muscle, leading to weakness, fatigue and other complications.
- **Hypermetabolism** can occur due to catabolic illness such as wounds, trauma, surgery, injury or infection. It is essentially a hormonal response to stress in which the body reacts to protect itself with an inflammatory response. This in turn increases the demand for additional energy and protein, causing the body to break down proteins and lean body tissue. This destructive sequence of events is also known as catabolism and it can lead to UWL and protein energy malnutrition (PEM). These metabolic alterations begin at the time of the injury or acute illness and continue until recovery or healing is complete. (9)

As the inflammatory response continues to stimulate an increase in the breakdown of lean body mass (LBM) protein, it also causes the mobilization of fatty acids, and promotes breakdown of glucose and proteins for energy. Production of energy becomes increasingly dependent on proteins. (10) A negative nitrogen balance occurs due to rapid loss of LBM, and muscle wasting is the ultimate result. Unfortunately, the rate of recovery of LBM is much slower during the recovery stage, than the rate of loss during the inflammatory stage. In these cases, all efforts must be made to provide a diet high in calories and protein to meet estimated nutrient needs.

Medical Nutrition Therapy

MNT should be provided for anyone who is at risk or who has already experienced UWL. The goal is to prevent the weight loss from occurring in the first place; or if weight loss has already occurred, to promote return to normal weight and restore optimal nutritional status if at all possible.

Adequate calories are essential. Various formulas for calculating caloric needs are available including Mifflin-St Jeor Equation, Ireton-Jones Equation and Harris Benedict Equation. Alternate calculations include:

- 25 calories/kilogram of body weight for individuals at normal weight
- 30-35 calories/kilogram of body weight for individuals who are underweight or have pressure ulcers
- 40 calories/kilogram of body weight for individuals who are very underweight, have multiple pressure ulcers or are severely clinically compromised (9,11,12-15)

For more information on calculating caloric needs for older adults, refer to the ADA Evidence Analysis Library at www.eatright.org.

Nutrition interventions can be as varied as needed to meet individual requirements, and may include:

- Dining interventions such as altering meal times, providing choices in dining partners, selective menu, altering food textures, small frequent meals, assistive feeding devices, assistance at meal time, etc.
- Food interventions such as fortified foods, calorie/protein boosters and/or special nutritional products.
- Nutritional supplements offered in between meals or as part of a “med pass” program. (5,13)
- Medications to stimulate appetite and/or help to promote weight gain of LBM.

In order to prevent negative clinical outcomes of unintentional weight loss (UWL), it is essential that systems are in place to assure that individuals at risk are identified in a timely manner, clinically assessed, and appropriate interventions are implemented and monitored for effectiveness.

Screening to Identify High Risk Residents

Screening tools to identify residents at risk for UWL may include:

- CMS Roster/matrix report generated from the MDS (identifies significant weight loss, enteral feedings, poor food intakes, etc.)
- Weight tracking tools (to identify weight change over time)
- Food intake records and meal rounds to identify residents with poor food intake, difficulty chewing/swallowing, eating independently, etc.
- Care plan meetings or nutrition at risk meetings to identify residents at risk of UWL or malnutrition
- Nutrition screening tools such as the DETERMINE Your Health Checklist or facility developed tools to identify at risk residents. (1)



Interdisciplinary Assessment

If the screening process determines that a resident is at risk of UWL, or has already had UWL, the interdisciplinary team and RD should complete a thorough assessment.

The nutritional assessment should include information from any discipline that has a role in:

- Identifying current physical condition, functional, psychosocial, and nutritional status; resident goals, objectives, and wishes; environmental and social factors associated with eating and food intake;
- Analyzing information obtained as part of the nutritional evaluation and drawing conclusions about the nature, category, causes, management, and prognosis of weight loss, impaired nutrition, or nutrition-related risks;
- Identifying and implementing general and cause-specific interventions; and
- Monitoring progress towards nutrition-related goals or identifying why the goals have not or cannot be attained. (2)

The nutritional assessment should focus on identifying risk factors that may contribute to UWL (i.e. cancer, renal disease, diabetes, depression, COPD, Parkinson’s disease,

Alzheimer's disease, malnutrition, infection, dehydration, constipation, diarrhea, BMI<21, dysphagia, chewing problems, mouth pain, taste changes, bedfast, dependent for eating, pressure ulcer, abnormal labs, medications) (2,3) and document any identifiable causes of UWL such as depression, chronic disease states, poor dentition, inability to obtain food or eat independently, treatments and medications that alter desire for food, anorexia, etc.

According to Thomas, Ireland & Gallager, "The most common problem in institutional setting is an improper therapeutic or mechanically altered diet." (4) Liberalized diets have been shown to enhance the quality of life of older adults living in nursing homes. Restrictive diets may inhibit food intake and reduce enjoyment of meals, leading to UWL. As appropriate, diets should be liberalized to promote improved appetite, weight and health. (5)

Factors for Nutritional Assessment

The assessment should include:

- **Evaluation of general physical appearance/condition and nutritional status** using observation techniques to assess appearance, level of consciousness, identification of malnutrition (hydration status, muscle/fat mass, pertinent recent history, weight loss or poor appetite) (2)
- **Anthropometrics** including height, weight, significant changes in weight, or insidious weight loss (UWL over time); A Body mass index (BMI) of less than 21 has been associated with increased mortality; a BMI less than 19 indicates severe underweight and possible undernutrition, sarcopenia or cachexia. (2,6)
- **Clinical factors** such as oral health, impaired ability to chew/swallow, impaired functional ability, medications/interactions, laboratory values, diagnostics, symptoms that affect appetite (altered taste, pain or breathlessness, etc). (2)
- **Nutritional needs** including estimated calorie, nutrient and fluid needs versus actual intake, and factors that may influence nutrition and weight status.
- **Route of nutrient intake** (oral, enteral, parenteral), special formulas or supplements, food allergies, intolerances, dislikes, preferences, eating patterns, preferred portion sizes.
- **Impaired nutritional intake or utilization** due to issues such as:
 - inability to self feed, lack of assistance, poor appetite, anorexia;
 - digestive problems;
 - conditions associated with UWL such as significant change in mood, behavior, or level of consciousness affecting food intake; presence of physical/medical factors contributing to UWL or risk of UWL such as cancer, medications, diuretics, or recent changes in edema; level of activity; and environmental factors affecting food intake or appetite;
 - fluid and electrolyte imbalances which may affect weight, hydration status, level of consciousness, or ability to consume adequate food and fluid;
 - hypermetabolic states that may be caused by factors such as pressure ulcers, chronic wounds, advanced COPD, pneumonia, infections, cancer, hepatic disease, fever, repetitive movement disorders;
 - neuromuscular disorders that affect ability to self feed or swallow;

- end of life when acceptable parameters of nutritional status are unable to be maintained (2,7,8)

Analysis of Information

The analysis of the information is used to develop a clear statement of the nutrition concern and provide the basis for resident specific interventions. Examples from CMS F325 draft, 3/31/06:

- “Food and fluid intake: Resident has poor oral intake, is not consuming specific food groups, and has increased nutritional needs due to specific clinical conditions, weight loss has been rapid over a few days, and review has identified that resident is taking medications that may affect appetite or cause lethargy.”
- “Specific clinical conditions: Resident is in a hypermetabolic state associated with an increased demand for energy and protein. The resident also has a neuromuscular disorder affecting the ability to eat or swallow, and has an altered level of cognition or consciousness that impairs attention and enjoyment of food.” (2)

“The analysis can yield conclusions including (but not limited to):

- 1) Approximate calorie and protein needs, based on actual or usual body weight
- 2) Whether any other clinically significant nutritional deficits exist
- 3) A target range for weight, based on the individual's overall condition, goals, prognosis, etc.
- 4) Whether weight stabilization or improvement can be anticipated
- 5) Whether altered nutritional status could be secondary to an underlying medical condition (e.g. possible fluid and electrolyte imbalance, medication-related anorexia, or an infection).” (2)

(For more information on nutrition diagnosis and the nutrition care process, refer to the American Dietetic Association’s publication, Nutrition Diagnosis: A Critical Step in the Nutrition Care Process., available at www.eatright.org/cps/rde/xchg/ada/hs.xsl/shop_1343_ENU_HTML.htm)

Care Plan



The care plan must be individualized, interdisciplinary, and based on the total resident assessment and identified risk factors. Goals should be measurable and interventions should be based on approaches for correcting problems, minimizing risks and facilitating nutrition support.

The care plan should reflect the resident’s goals and choices and should include resident specific interventions and a time frame for monitoring. It should be updated as the resident’s condition changes, and modified as needed based on the resident’s responses, outcomes and needs. (2) Monitoring may include monthly or weekly weights, assessment of mental and functional status, laboratory values, food and fluid intake, acceptance/consumption of nutritional supplements or fortified foods, healing progress of pressure ulcers/wounds, review of information in the quarterly MDS assessment, etc. The care plan must include appropriate information to clearly meet individual needs.

This process of screening to identify risk, interdisciplinary assessment, care planning and constant monitoring and adjusting interventions to improve the residents' responses, outcomes and needs will all help to resolve issues of UWL.

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References

1. Ryan C, Bryant E, Eleazer P, Rhodes A, Guest K. Unintentional weight loss in long-term care: predictor of mortality in the elderly. *South Med J*. 1995;88:721-724.http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7597475&dopt=Abstract. Accessed 9-9-06.
2. Murden RA, Ainslie NK. Recent weight loss is related to short-term mortality in nursing homes. *J Gen Intern Med*. 1994;9:648-650.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7853074&dopt=Abstract. Accessed 9-9-06.
3. CMS, Nursing Home Compare. This data is from October 1, 2005 through March 31, 2006.<http://www.medicare.gov/NHCompare/include/DataSection/Quality/QualityMeasuresResults.asp>. Accessed 9-9-06.
4. MDS Active Resident Information Report: First Quarter 2006. US Dept of Health and Human Services Centers for Medicare and Medicaid Services Web site. Available at: http://www4.cms.hhs.gov/apps/mds/res_start.asp. Accessed May 16, 2006.
5. State Operations Manual. Appendix PP: Guidance to Surveyors for Long-Term Care Facilities US Department of Health and Human Services. Centers for Medicare & Medicaid Services. Washington, DC: 1999, Revised 2006.
<http://www.cms.hhs.gov/Manuals/IOM/list.asp>. Accessed 9-9-06.
6. Center for Medicare & Medicaid Services, Department of Health and Human Services. State Operations Manual. F325 Nutritional Status: Interpretive Guidelines and Severity Guidance. Draft March 31, 2006.
7. Chapman KM. Loss of appetite: managing unwanted weight loss in the older patient. *Geriatrics*. 1994;49:54-59.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8125353&dopt=Abstract. Accessed 9-9-06.
8. Hays NP, Roberts SB. The anorexia of aging in humans. *Physiol Behav*. 2006 Jun 30;88(3):257-66.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=16769094&query_hl=4&itool=pubmed_docsum. Accessed 9-9-06.
9. Dorner B, Medical Nutrition Therapy for Pressure Ulcers, Becky Dorner & Associates, Inc., Akron, OH, 2005.

10. Cataldo CB, DeBruyne LK, Whitney EN, Nutrition and Diet Therapy: Principles and Practice, Wadsworth, a division of Thompson Learning, Inc., Belmont, CA, 2003.
11. Walker G, et al. Pocket Resource for Nutrition Assessment, Consultant Dietitians in Health Care Facilities, a dietetic practice group of the American Dietetic Association, Chicago, IL, 2004.
12. Mahan K and Escott-Stump S, Krause's Food, Nutrition, & Diet Therapy, Saunders, Philadelphia, PA, 2004.
13. Dorner B, Healthy Weights: Preventing and Treating Weight Loss, Becky Dorner & Associates, Inc., Akron, OH, 2004.
14. Manual of Clinical Dietetics, American Dietetic Association, Chicago, IL, 2000.
15. Niedert K and Dorner B, Nutrition Care of the Older Adult, American Dietetic Association, Chicago, IL, 2004.
16. State Operations Manual. Appendix PP: Guidance to Surveyors for Long-Term Care Facilities US Department of Health and Human Services. Centers for Medicare & Medicaid Services. Washington, DC: 1999, Revised 2006. <http://www.cms.hhs.gov/Manuals/IOM/list.asp>. Accessed 9-9-06.
17. Center for Medicare & Medicaid Services, Department of Health and Human Services. State Operations Manual. F325 Nutritional Status: Interpretive Guidelines and Severity Guidance. Draft March 31, 2006.
18. The Nutrition Screening Initiative. 1010 Wisconsin Avenue, NW, Suite 800, Washington, DC 2000. Available at www.eatright.org/ada/files/Checklist.pdf. Accessed June 13, 2006.
19. Thomas D, Ireland G, Gallagher A, Causes of Undernutrition. Appetite Problems in Nursing Home Residents: Prevention, Recognition, and Treatment Strategies. April 2004, Council for Nutritional Clinical Strategies in Long-Term Care.
20. Niedert K, Position of the American Dietetic Association: Liberalization of the diet prescription improves quality of life for older adults in long-term care. Journal of the American Dietetic Association, 105, 1955-1965.
21. Nutrition Care Manual Online, American Dietetic Association, www.eatright.org, Chicago, IL, 2005. Accessed 5-10-06.