



## Complete Summary

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### GUIDELINE TITLE

Nutritional management in long-term care: development of a clinical guideline.

### BIBLIOGRAPHIC SOURCE(S)

Thomas DR, Ashmen W, Morley JE, Evans WJ. Nutritional management in long-term care: development of a clinical guideline. Council for Nutritional Strategies in Long-Term Care. J Gerontol A Biol Sci Med Sci 2000 Dec;55(12):M725-34.

[PubMed](#)

### GUIDELINE STATUS

This is the current release of the guideline.

According to the guideline developer, this guideline is still considered to be current as of 2005, based on a review of literature published since the original guideline publication.

## COMPLETE SUMMARY CONTENT

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## SCOPE

### DISEASE/CONDITION(S)

Involuntary weight loss resulting from malnutrition

### GUIDELINE CATEGORY

Diagnosis  
Management

### CLINICAL SPECIALTY

Geriatrics  
Internal Medicine  
Nursing  
Nutrition

### **INTENDED USERS**

Advanced Practice Nurses  
Dietitians  
Nurses  
Pharmacists  
Physician Assistants  
Physicians

### **GUIDELINE OBJECTIVE(S)**

- To improve the management of malnutrition in long-term care settings
- To clarify information necessary to develop a care plan and to inform the physician about the resident's condition
- To focus on differential diagnosis

### **TARGET POPULATION**

Long-term care residents suffering from involuntary weight loss

### **INTERVENTIONS AND PRACTICES CONSIDERED**

1. Weekly weight monitoring program
2. Checking quality indicator conditions, including fecal impactions, infection (urinary tract infection [UTI], upper respiratory infection [URI], pneumonia, gastrointestinal [GI]), tube feeding, decline in activities of daily living (ADLs), pressure ulcer
3. Checking hydration status
4. Evaluation of biochemical parameters, such as serum albumin, cholesterol, hemoglobin, transferrin
5. Evaluation of food and environmental factors
6. Nursing Nutritional Checklist
7. Interventions including family assistance with feeding, evaluation of food preferences, identification of favorite foods, nutritional supplementation, enteral or parenteral feeding, and hospitalization
8. "Meals on Wheels" mnemonic
9. Geriatric Depression Scale
10. Discontinuation of all drugs causing or aggravating anorexia
11. Orexigenic drugs for appetite stimulation
12. Advanced directives and palliative care

### **MAJOR OUTCOMES CONSIDERED**

- Mortality rate associated with malnutrition

- Effect of various medical conditions such as depression, pressure ulcers, cardiac disease, infections, pulmonary disease, alcoholism, and others on weight loss
- Risk associated with undernutrition

## **METHODOLOGY**

### **METHODS USED TO COLLECT/SELECT EVIDENCE**

Searches of Electronic Databases

### **DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE**

A comprehensive literature search was conducted through the National Library of Medicine's Medline Database using key Medical Subject Heading (MeSH) terms, such as anorexia, weight loss, appetite, protein-energy malnutrition, nutritional status, aged, and aging.

### **NUMBER OF SOURCE DOCUMENTS**

Not stated

### **METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE**

Expert Consensus (Delphi Method)

### **RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE**

Not applicable

### **METHODS USED TO ANALYZE THE EVIDENCE**

Systematic Review

### **DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE**

Not stated

### **METHODS USED TO FORMULATE THE RECOMMENDATIONS**

Expert Consensus (Delphi)

### **DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS**

An expert panel of interdisciplinary thought leaders representing academia and the medical community joined together to form the Council for Nutritional Clinical Strategies in Long-Term Care. The Council convened a summit meeting in May

1998 to review the current state of the science in nutrition management, to identify major issues surrounding prevention and treatment of malnutrition in the elderly population, and to identify evidence-based recommendations for the management of malnutrition in long-term care.

The Council reviewed existing literature to formulate protocol-driven recommendations to serve as a clinical guide for the management of malnutrition in the long-term care setting. Where evidence existed, it served as the basis for specific recommendations. In the absence of evidence, a modified Delphi approach was used to obtain consensus. The Council conducted a series of regional consensus meetings and a closed Internet discussion forum to gain input from academic thought leaders. This input refined recommendations that were published in March 1999 as a monograph from the Council for Nutritional Clinical Strategies in Long-Term Care, entitled *Anorexia in the Elderly*. The monograph presented the recommendations graphically in a parallel algorithmic approach. The algorithms were formally introduced at a satellite symposium during the annual meeting of the American Medical Directors Association on March 5, 1999.

Subsequent to their publication and introduction, in July 1999, representatives from the American Dietetic Association (ADA) met with the Council to discuss the algorithms in light of the introduction of the ADA's Health Care Financing Administration-mandated risk assessment tool. Pursuant to that meeting, the algorithms were revised to include key quality indicators related to malnutrition and dehydration, minimum data set indicators, and additional food/environmental considerations. In addition, a subcommittee was formed to develop the Nursing Nutritional Checklist for use in care planning aligned with the revised algorithms. This checklist received consensus approval by the Council in October 1999 and was introduced at a satellite symposium during the annual meeting of the American Society of Consultant Pharmacists on November 10, 1999. A series of regional meetings were conducted to present the revised algorithms and nursing checklist and to address questions related to their use within long-term care.

## **RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS**

Not applicable

## **COST ANALYSIS**

A formal cost analysis was not performed and published cost analyses were not reviewed.

## **METHOD OF GUIDELINE VALIDATION**

External Peer Review

## **DESCRIPTION OF METHOD OF GUIDELINE VALIDATION**

In order to gain support of the algorithms from a respected peer association and establish a research initiative where lack of evidence exists, the Council met with an independent peer-review committee selected by The Gerontological Society of

America in February 2000. Based on input from that meeting, the algorithms were retitled *Clinical Guide to Prevent and Manage Malnutrition in Long-Term Care*.

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

The Clinical Guide is divided into two parts, one designed for nursing staff, dietary staff, and dietitians and a second designed for physicians, pharmacists, and dietitians. The Clinical Guide for nursing staff, dietary staff, and dietitians and the Nursing Nutritional Checklist are designed to clarify information necessary to develop a care plan and to inform the physician about the resident's condition. The Clinical Guide for physicians, pharmacists, and dietitians focuses on differential diagnosis.

#### **The Clinical Guide for Nursing, Dietary, and Dietitian Staff**

##### *Clinical Triggers*

Both clinical guidelines were originally triggered by three factors. These parameters were derived from the Omnibus Budget Reconciliation Act of 1987 (OBRA 1987) guidelines: (a) involuntary weight loss of greater than 5% in 30 days or 10% in 180 days; (b) leaving more than 25% of food in the past 7 days or two-thirds of meals based on a 2,000 kcal diet; or (c) a body mass index (BMI, calculated as weight divided by height squared) of equal to or less than 19.

Age- and gender-adjusted BMI below the 10th decile has been used to define undernutrition (less than 19 in men and less than 19.4 in women). In hospitalized adults with serious illness, excess mortality within 6 months (risk ratio 1.23,  $p$  less than .001) has been demonstrated when the BMI is less than 20. The increase in mortality is linear—the lower the BMI, the greater the risk. Increased risk of death has been shown to begin at a BMI less than 23.5 in men and less than 22.0 in women. The Clinical Guidelines revised the BMI at 21, however, because a body mass index of less than 21 has been shown to be associated with increased mortality and may result in earlier intervention.

##### *Advanced Directives*

Whenever a resident has a weight loss problem, it is essential that they or their proxy have a full discussion of their health care wishes with a health care professional. A discussion of the treatment goals and the resident's ongoing quality of life should be initiated at this point. The decision that they make should be documented and guide how aggressively the algorithm is utilized.

##### *Medical Conditions*

Medical conditions that may be associated with anorexia, such as decreased food intake, or increased metabolic requirements should be assessed. Increased metabolic requirements may be precipitated by fever, infection, or the presence of chronic skin wounds. Anorexia may be associated with illness, drugs, dementia, or mood disorders. Decreased food intake may result from dysphagia, chewing

problems, nausea, vomiting, diarrhea, pain, or fecal impaction. Treatment of these conditions may restore appetite and body weight.

### *Hydration*

Fluid intake and hydration status may affect body weight. An assessment of hydration status may account for weight loss due to low fluid intake. Dehydration may be difficult to detect by clinical signs alone and require the use of biochemical parameters. The recommended amount of fluid consumed by nursing home residents is confusing. Amounts range from 1 mL/kcal, 30 mL/kg body weight, or the sum of 100 mL fluid per kg for the first 10 kg actual body weight, 50 mL fluid per kg for the next 10 kg actual body weight, and 15 mL fluid per kg for the remaining kilograms actual body weight. Direct observations of institutionalized adults indicate a total fluid intake, including fluids derived from meals, of  $1,783 \pm 545$  mL. When compared to the standard of 1 mL/kcal and 30 mL/kg, recommended intakes were low, primarily due to low body weight or low caloric intake. The calculated value provides at least 1,500 mL daily, even for residents with low weight. A general recommendation suggests that residents should ingest 1,500 to 2,000 mL of fluid per day, though a recent study and accompanying editorial have suggested that community-dwelling adults consume about 1,000 mL per day.

### *Laboratory Parameters*

Evaluation of available biochemical parameters associated with malnutrition should be considered at this point. Suggested biochemical parameters include serum albumin, cholesterol, hemoglobin, and serum transferrin. While these parameters may be abnormal in several conditions unassociated with malnutrition, they are useful as guides to intervention. Abnormalities in laboratory parameters should be treated.

### *Environmental Factors*

Food and environmental conditions that may affect intake should be considered in a continuing evaluation. Unpalatability due to overly restricted diets may cause decreased intake. Consideration of food preferences, food consistency, food temperature, and snacks should be included. Provision of pleasant, well-lighted, unhurried mealtimes in a social environment may increase intake. Dependency in eating is associated with increased mortality. Residents needing feeding assistance require a restorative feeding program. Recognition of feeding problems and proper feeding techniques may improve weight loss in nursing homes. Dysphagia and swallowing disorders, with or without recurrent aspiration, require swallowing interventions, alteration of food consistency, or consideration of enteral or parenteral feeding.

### *Nursing Nutritional Checklist*

The Nursing Nutritional Checklist (refer to Figure 2 in the original guideline document) is designed as a supplement to the Clinical Guide to focus the comprehensive nutritional evaluation and introduce suggestions for implementing a plan of care. Notification of the results of the initial assessment to the attending physician, based on the Nursing Nutritional Checklist, should occur at this point.

This checklist can be used as a communication tool to the attending physician and other members of the interdisciplinary team and may be faxed, mailed, or made available to the attending physician during nursing home visits.

### *Interventions*

Continued interventions by the facility staff should occur. Early interventions include family involvement, with visits or assistance with feeding at mealtimes, exploration of alternate food sources, evaluation of food preferences, and identification of favorite foods. Increased nutrient intake may be achieved by use of calorie-dense foods. Exercise may increase dietary intake. Nutritional supplementation can increase dietary intake and produce weight gain. Nutritional supplementation must be given between meals in order not to substitute for calorie intake at meals.

### *Failure to Improve*

Failure to improve nutritional status with these measures requires consideration of enteral or parenteral feeding and hospitalization for more complete evaluation. The resident's wishes and advanced directives may lead to decision for palliative care.

## **The Clinical Guide for Physicians, Pharmacists, and Dietitians**

The Clinical Guide for physicians, pharmacists, and dietitians focuses on differential diagnosis. Intervention at this point should include weekly weight assessments and a differential diagnostic approach. A mnemonic, MEALS ON WHEELS, is useful in considering the potential treatable causes of malnutrition. Laboratory data should be reviewed and treated as appropriate. Medical conditions reported on the Nursing Nutrition Checklist should be reviewed, including fecal impaction, infection, and decline in activities of daily living associated with feeding dependency, pressure ulcer, or tube feedings.

### *Depression and Mood Disorders*

Delirium due to acute illness and/or pain may be a reversible cause of decreased dietary intake. Reversal of delirium may result in resumption of appetite.

Depression is a major cause of weight loss in long-term care settings, accounting for up to 36% of residents who lose weight. An evaluation for depression, using the Geriatric Depression Scale for example, should be obtained for residents with anorexia.

### *Drugs*

Drugs have been found to be a cause of weight loss in long-term care residents. In consultation with the pharmacist, all drugs potentially aggravating anorexia should be discontinued. Drugs that stimulate appetite (orexigenic drugs) should be considered to reverse resistant anorexia. One study found that megestrol acetate increased weight in nursing home residents.

### *Irreversible Causes*

Certain causes of malnutrition may be irreversible. Palliative care, including orexigenic drugs, enteral or parenteral feeding, consistent with the resident's wishes, should be considered.

### **CLINICAL ALGORITHM(S)**

Two algorithms are provided in the original guideline document:

- Clinical Guide to Prevent and Manage Malnutrition in Long-Term Care for nursing staff, dietary staff, and dietitians
- Clinical Guide to Prevent and Manage Malnutrition in Long-Term Care for physicians, pharmacists, and dietitians

## **EVIDENCE SUPPORTING THE RECOMMENDATIONS**

### **TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS**

The Clinical Guide to Prevent and Manage Malnutrition in Long-Term Care is based on a best-evidence approach to the management of nutritional problems in long-term care.

## **BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS**

### **POTENTIAL BENEFITS**

- Appropriate comprehensive resident evaluation
- Appropriate care plan for long-term care residents
- Appropriate differential diagnosis and management of malnutrition

### **POTENTIAL HARMS**

Not stated

## **QUALIFYING STATEMENTS**

### **QUALIFYING STATEMENTS**

- While the Clinical Guide to Prevent and Manage Malnutrition in Long-Term Care is presented in a linear fashion, many of the considerations can be done simultaneously and the order varied dependent on the individual resident's needs.
- The Clinical Guide is a tool to assist in compliance. It is not an endorsement of the Health Care Financing Administration (HCFA) mandated criteria.
- It should be noted that because malnutrition in long-term care is multifactorial, any treatment that is initiated should be monitored for efficacy, and nursing interventions should proceed simultaneously with medical interventions.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

### IMPLEMENTATION TOOLS

Clinical Algorithm  
Foreign Language Translations  
Patient Resources  
Quick Reference Guides/Physician Guides

For information about [availability](#), see the "Availability of Companion Documents" and "Patient Resources" fields below.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

End of Life Care  
Getting Better

### IOM DOMAIN

Effectiveness  
Patient-centeredness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

Thomas DR, Ashmen W, Morley JE, Evans WJ. Nutritional management in long-term care: development of a clinical guideline. Council for Nutritional Strategies in Long-Term Care. J Gerontol A Biol Sci Med Sci 2000 Dec;55(12):M725-34.

[PubMed](#)

### ADAPTATION

Not applicable: The guideline was not adapted from another source.

### DATE RELEASED

2000 Dec (reviewed 2005)

### GUIDELINE DEVELOPER(S)

Council for Nutritional Clinical Strategies in Long-Term Care - Medical Specialty Society

#### **GUIDELINE DEVELOPER COMMENT**

Representatives from the American Dietetic Association were instrumental in its development, and a special committee of the Gerontological Society of America (GSA) served as critical reviewers and provided input and modifications of the final Guidelines.

#### **SOURCE(S) OF FUNDING**

Council for Nutritional Clinical Strategies in Long-Term Care

#### **GUIDELINE COMMITTEE**

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## **FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST**

Not stated

## **GUIDELINE STATUS**

This is the current release of the guideline.

According to the guideline developer, this guideline is still considered to be current as of 2005, based on a review of literature published since the original guideline publication.

## **GUIDELINE AVAILABILITY**

Electronic copies: Available from The Journals of Gerontology Web site:

- [HTML Format](#)
- [Portable Document Format \(PDF\)](#)

Print copies: Available from David R. Thomas, Division of Geriatric Medicine, Saint Louis University School of Medicine, 1402 S. Grand Boulevard, M238, St. Louis, MO 63104 E-mail: [thomasdr@slu.edu](mailto:thomasdr@slu.edu).

## **AVAILABILITY OF COMPANION DOCUMENTS**

The following are available:

- Clinical guide to prevent and manage malnutrition in long-term care. For nursing staff and dietary staff and dietitians (evaluate, document and treat). Newton Square (PA): Programs in Medicine; 2000.
- Clinical guide to prevent and manage malnutrition in long-term care. For physicians, pharmacists, and dietitians (evaluate, document and treat). Newton Square (PA): Programs in Medicine; 2000.

Electronic copies: Available from the [Council for Nutritional Strategies in Long-Term Care Web site](#)

The following is also available:

- New admission nutrition questionnaire. Newton Square (PA): Programs in Medicine; 2001.

Electronic copies: Available from the [Council for Nutritional Strategies in Long-Term Care Web site](#).

Electronic copies are also available in Spanish from the [Council for Nutritional Strategies in Long-Term Care Web site](#).

## **PATIENT RESOURCES**

The following is available:

- Weight loss in the long-term care resident. Family fact sheet. Newton Square (PA): Programs in Medicine; 2001.

Electronic copies: Available from the [Council for Nutritional Strategies in Long-Term Care Web site](#).

Electronic copies are also available in Spanish from the [Council for Nutritional Strategies in Long-Term Care Web site](#).

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

## **NGC STATUS**

This NGC summary was completed by ECRI on November 16, 2004. The information was verified by the guideline developer on November 18, 2004.

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