

Malnutrition in the Elderly: A Multifactorial Failure to Thrive

By Carol Evans, RNP, MS, MA

Poor nutritional status and malnutrition in the elderly population are important areas of concern. Malnutrition and unintentional weight loss contribute to progressive decline in health, reduced physical and cognitive functional status, increased utilization of health care services, premature institutionalization, and increased mortality. Nonetheless, many health care practitioners inadequately address the multifactorial issues that contribute to nutritional risk and to malnutrition. A common assumption is that nutritional deficiencies are an inevitable consequence of aging and disease and that intervention for these deficiencies are only minimally effective. Nutritional assessment and treatment should be a routine part of care for all elderly persons, whether in the outpatient setting, acute care hospital, or long-term institutional care setting.

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A conventional, disease-specific perspective may not always lead clinicians to the underlying cause of malnutrition and weight loss. For example, an 85-year-old woman with a three-month history of intermittent abdominal pain, nausea, diarrhea, and gradual weight loss, had been living independently in a mobile home park. Her daughter, who lived nearby, brought the woman home for some meals and prepared leftovers and meals for her to warm in the conventional or microwave oven when she was alone. The initial medical examination showed no underlying cause for the weight loss and abdominal symptoms. The patient was given medication for the abdominal discomfort and was encouraged to add over-the-counter nutritional supplements to her daily diet, yet the patient's condition continued to decline. A referral to the Kaiser Permanente (KP) case management program for the frail elderly led to a home visit—and to a revelation about the abdominal symptoms: The case manager discovered that the elderly woman's refrigerator was noisy and had been disturbing her sleep. The woman had attempted to address this prob-

lem by unplugging the refrigerator each evening at 8 pm when she prepared for bed. When informed of this situation, the family replaced the refrigerator, and the abdominal symptoms and weight loss subsided.

Although only 1% of older adults who are independent and healthy are malnourished, the Health and Nutrition Examination Survey (HANES) data indicated that 16% of community-dwelling Americans older than 65 years consumed fewer than 1000 calories per day—a statistic that would place these persons at high risk for undernutrition.^{1,2} The nutritional risk increases in the community-dwelling elderly who are sick, poor, homebound, and have limited access to medical care. Malnutrition can become a major concern. The incidence of malnutrition ranges from 12% to 50% among the hospitalized elderly population and from 23% to 60% among institutionalized older adults.^{1,3} When not directly attributable to underlying disease, weight loss in the institutionalized elderly is most commonly due to depression, use of anorexigenic drugs, and dependency on staff for feeding.

Malnutrition is often due to one or more of the following factors: inadequate food intake; food choices that lead to dietary deficiencies; and illness that causes increased nutrient requirements, increased nutrient loss, poor nutrient absorption, or a combination of these factors.⁴ Nutritional inadequacy in the elderly can be the result of one or more factors—physiologic, pathologic, sociologic, and psychologic (Table 1). The difficulty for the clinician is in identifying the underlying factors contributing to the problem and how to intervene effectively.

A physiologic decline in food intake has been seen in people as they age regardless of chronic illness and disease. Physiologic changes that decrease food intake—often referred to as the *anorexia of aging*—involve alterations in neurotransmitters and hormones that affect the central feeding drive and the peripheral satiation system.^{2,5,6} Loss of lean body mass and the



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Table 1. Factors influencing nutritional inadequacy in the elderly population^{5,10}

Physiologic	Pathologic	Sociologic	Psychologic
Decreased taste	Dentition	Ability to shop for food	Depression
Decreased smell	Dysphagia, swallowing problems	Ability to prepare food	Anxiety
Dysregulation of satiation	Diseases (cancer, CHF, COPD, diabetes, ESRD, thyroid)	Financial status low socioeconomic	Loneliness
Delayed gastric emptying	Medications (diuretic, antihypertensive, dopamine agonist, antidepressant, antibiotic, antihistamine)	Impaired activities of daily living skills	Emotionally stressful life events
Decreased gastric acid	Alcoholism	Lack of interactions with others at mealtime	Grief
Decreased lean body mass	Dementia		Dysphoria

CHF = congestive heart failure; COPD = chronic obstructive pulmonary disease; ESRD = end-stage renal disease.

decreased basal metabolic rate observed in persons of advanced age also may influence appetite and food intake. Sensory decline in both olfaction and taste decreases the enjoyment of food, leads to decreased dietary variety, and promotes increased dietary use of salt and sugar to compensate for these declines.⁵

Underlying pathology and medical treatment can directly cause anorexia and malnutrition. Disorders of the gastrointestinal system—ranging from problems with dentition and swallowing to dyspepsia, esophageal reflux, constipation, and diarrhea—are related to poor intake and malabsorption of nutrients. Many diseases (eg, thyroid, cardiovascular, and pulmonary disease) often lead to unintentional weight loss through increased metabolic demand and decreased appetite and caloric intake.⁷ Chronic illnesses such as diabetes, hypertension, congestive heart failure, and coronary artery disease are treated with dietary restrictions and with medication that affects food intake. Because sugar, salt, and fat contribute to the taste of food, dietary restrictions may make food unpalatable. Drugs affect nutritional status through side effects (eg, anorexia, nausea, and altered taste perception) and through alteration of nutrient absorption, metabolism, and excretion.⁸

Socioeconomic status and functional ability are often major indicators of nutritional status. The cost of housing and medical expenses (most notably, medication) often competes with the money needed for food. When financial concerns are present, meals are often skipped and food that is purchased may not provide a nutritionally adequate diet. Declines in functional status both physical and cognitive, affect a person's ability to shop for food and to prepare meals. Loss of instrumental skills related to activities of daily living (eg, shopping, transportation, meal preparation, house-

keeping, taking medications, managing finances, using the telephone) leads to dependence on others. Nutritional problems are further compromised by inadequate social support networks and by resultant social isolation, which commonly leads to apathy about food and therefore decreased intake.

Late life can be a time of multiple losses. The older person has experienced change and loss through retirement, disability and death of friends and family as well as change in financial, social, and physical health status. These changes may lead to depression, a well-known cause of anorexia and weight loss. Even transient depressed mood (as with bereavement) can cause clinically significant weight loss. Depression is often unrecognized in older persons, many of whom are seen for distinctly somatic complaints. Malnutrition may be a presenting symptom of depression in the elderly.

Assessment of nutritional status and weight loss should start with questioning the patient about any history of weight loss during the past three months and past year and about the the patient's perceived nutritional problems. Including a family member or caregiver is helpful for obtaining an accurate history. A thorough general assessment should consider the following:

- Severity of nutritional compromise and rate of weight decline;
- Patient's living situation (living independently, alone, in an assisted living facility, or in a skilled nursing facility);
- Functional status, specifically including mobility, ability to shop and prepare meals, ability to feed self;
- Mental and psychologic status, including depression and any decline in memory or cognition;
- Dietary assessment: intake of food and fluids in the past day; availability of food and types of food

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consumed; methods used for meal preparation; and identity of person or persons preparing the patient's meals;

- Medical and surgical history, including gastrointestinal, cardiac, respiratory, and renal disease, recurrent infection, and psychiatric illness;
- Current use of medication.^{6,9}

The physical examination should be narrowly focused on information obtained in the medical history and must assess the patient's current weight and body mass index (BMI); oral cavity, especially the dentition and ability to swallow; and gastrointestinal as well as respiratory systems.

Diagnosis of a specific problem focuses intervention on treatment of the underlying cause. Often, however, a team approach is needed to address problems of nutrition and weight loss. Nurses, dietitians, a speech therapist, an occupational therapist, and social services staff can contribute important components to the treatment of malnutrition. Terri Franklin, a registered dietitian for outpatient services at the KP Walnut Creek Medical Center, states that she can help improve nutrition and stabilize weight loss for failure-to-thrive patients who are referred to her. Terri believes that dietitians are somewhat underutilized in the outpatient setting, but she does receive a substantial number of referrals for frail elderly patients. She states that certain clinicians regularly send e-consults to the dietitians but that other physicians never issue such referrals.

Susan Feledy, RN, case manager for the Complex Chronic Conditions Case Management Program at the KP Redwood City Medical Center, encourages referrals when the patient clearly has medical, psychologic, and social issues that need to be addressed. The ability of case managers to meet with the patient and family and to make a home visit if indicated can often make a big difference in improving the health of a frail elderly person. Determination of appropriate referrals is often based on the patient's cognitive status and whether the patient can understand and implement recommendations of each specialist. Social services should be included if the patient has financial concerns or questions regarding independent living.

Interventions appropriate for addressing nutritional deficiencies may include one or more of the following actions:

- Remove or substantially modify dietary restrictions (ie, liberalize the patient's diet);

- Encourage use of flavor enhancers and frequent small meals;
- Offer liquid nutritional supplements for use between (not with) meals;
- Improve protein intake by adding meat, peanut butter, or protein powder;
- Treat depression with antidepressants that do not aggravate nutritional problems;
- Remove or replace medications that have anorexia-producing side effects;
- Evaluate swallowing as well as functional ability to manage eating;
- Obtain a social services assessment of living situation of community-dwelling adults.⁶

The hospital and skilled nursing facility settings present additional factors that influence nutrition. The nursing staff of these facilities can assess the ability of a hospitalized patient or nursing facility resident to chew and swallow foods of various consistencies, to feed himself or herself, and to perform the necessary tasks of eating.⁶ Interventions in the institutional setting include the following actions:

- Ensure that patients are equipped with all necessary sensory aids (glasses, dentures, hearing aids).
- Ensure that the patient is seated upright at 90°, preferably out of bed and in a chair.
- Ensure that patients residing in a long-term care facility eat in the dining room.
- Ensure that food and utensils are removed from wrapped or closed containers and are positioned within the patient's reach.
- Remove or minimize unpleasant sights, sounds, and smells.
- Allow for a slower pace of eating; do not remove the patient's tray too soon.
- Consider ethnic food preferences and permit families to bring specific foods.
- If the patient must be fed, allow adequate time for chewing, swallowing, and clearing throat before offering another bite. Rapport between patient and feeder is critical.
- Demented patients may need to be reminded to chew and swallow and may benefit from availability of "finger foods."
- Encourage the family to be present at mealtime and to assist in the feeding.¹⁰

Several medications have been used to stimulate appetite, but they should not be considered firstline treatment. Megestrol acetate, dronabinol, and oxandrolone have been used to treat cachexia and anorexia in patients with AIDS and cancer. Limited studies have pro-

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duced mixed evidence regarding the long-term effectiveness of these agents in the geriatric population.¹¹ As a nurse practitioner working in long-term care facilities, I often address the issue of weight loss that continues after nutritional support measures have failed; in this situation, three primary options are evaluated on the basis of discussions with the patient and family: 1) palliative care measures, 2) appetite-stimulating medication, or 3) enteral feeding. (A group of KP nurse practitioners working in community skilled nursing facilities in Northern California are currently conducting a research study to determine the effectiveness of megestrol acetate on weight loss in custodial nursing home residents who have not responded to nutritional supplementation.) No drug has received US Food and Drug Administration approval for treating anorexia in the geriatric population.

Conclusions

The elderly population is affected by many causes of malnutrition, which can be reversed if it is addressed early. Management of malnutrition in the elderly population requires a multidisciplinary approach that treats pathology and uses both social and dietary forms of intervention. Nutritional deficiencies are more common among hospitalized patients and nursing home residents. If intervention elicits only minimal response, the clinician must confer with the patient and family regarding end-of-life choices, including nutritional intervention. Unintended weight

loss and malnutrition that do not respond to intervention are often important clinical indicators of worsening health status. ❖

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Opportunities

Problems are only opportunities in work clothes.

— Henry Kaiser, 1882-1967, American industrialist

This "Moment in History" quote collected by Steve Gilford, KP Historian