Prevalence of Malnutrition
An estimated 25% of community-dwelling older adults experience malnutrition.2 About half this population has protein levels consistent with malnutrition when they are admitted to hospitals.3 Because inflammatory states also affect protein levels, these altered levels may not be attributed solely to malnutrition.3

Older adults who live in long-term care facilities are at high risk for malnutrition. The diseases and functional limitations that prompt admission to a facility help explain why 23% to 85% of long-term care residents meet the criteria for malnutrition or undernutrition.4,5 The lack of social supports is also an influential factor.

The presence of malnutrition among patients in a long-term care facility, along with that facility’s response to it, are a primary focus for Medicare insurers.6 If residents lose weight or have protein calorie malnutrition (as measured by serum albumin), the facility must document that the problem is being addressed or show clear evidence that it is disease-related and unavoidable.6 Without such proof, the institution could receive a citation state surveyors.

Consequences of Malnutrition
A patient who is malnourished or undernourished is likely to experience a progressive decline in health and increased mortality.2,4,5 When the body’s demand for protein exceeds the protein available, the body catabolizes muscle protein.7 This catabolism may include the respiratory muscles and can increase the risk for pneumonia.7

Malnutrition suppresses the immune response, delaying healing. This leads to a greater likelihood of infection and a longer time to recovery, which increases the risk for hospitalization or surgery. Older adults who are malnourished experience up to 20 times more complications in acute care. These issues translate into increased health care costs with longer hospital stays and more frequent readmissions.5,8 Institutionalization is often the end result.

The importance of nutrition to the health of older adults was the primary focus of an Institute of Medicine report published in 2000.9 “The Role of Nutrition in Maintaining Health in the Nation’s Elderly” led Congress to pass a Medicare benefit for medical nutrition therapy (MNT). It is available to older adults with renal disease (not on dialysis) or diabetes.

Physiologic Changes and Malnutrition
Age affects the entire gastrointestinal system. In the mouth, tooth enamel thins, increasing the risk of decay. This risk increases further with the wearing down of the surface of the tooth, often leading to pulp exposure. Bone loss occurs in oral structures, leading to loosened teeth. Fewer older adults become edentulous today, but dentures are not yet a thing of the past, and tooth loss is still common. Root canals and implants are costly and not covered by Medicare, so they may be out of the reach for many older adults.10

The oral mucosa thins with age and produces less saliva. This is compounded by medications commonly used by older adults, such as medications with anticholinergic properties. The number of taste buds on the tongue declines with age, and sense of taste is affected. The sense of smell may decrease or be absent. The combination of decreased taste and smell results in decreased flavor perception. Flavor is often referred to as the taste of food, but it is a result of smell and taste, as well as qualities of food that stimulate the pain fibers on the tongue (spiciness, temperature and texture).6,11 Loss of appetite is the leading cause of malnutrition.

Aging also leads to increased body fat and decreased lean muscle mass. The result is a decreased metabolic rate, which may result in less food intake. This is problematic because nutrient requirements do not drop. In fact, many nutrients should be increased with age. To meet these demands, food must be nutrient dense.

Among older adults, both medication and disease contribute to a decrease in hydrochloric acid production and a subsequent decline in the absorption of micronutrients. Although the size of the liver declines with age, it should not decline in function — and decreased serum albumin should not be considered a normal age-related change.4

Risk Factors
Age alone increases the risk for malnutrition. In spite of changes that occur in the gastrointestinal system with aging, the potential for adequate nutrition is clearly present. While the independent healthy older adult is at low risk for malnutrition, chronic diseases are common in this age group, and chronic disease and malnutrition are correlated. Cardiac insufficiency and pulmonary disease can result in decreased appetite. The effort required to breathe increases energy expenditure, with a concomitant increase in caloric requirement.

Diabetes and renal disease are eligible for MNT under Medicare.1 The incidence of dementia increases with age, and advanced dementia is another chronic disease linked to poor appetite and inability to feed — and eventually, to swallow.11 Functional limitations can span the spectrum from being limited in getting outside the home to being completely dependent in feeding.

Social isolation has been associated with malnutrition. Many older adults live in changing communities that at one time provided social support and connectedness, but now are unsafe. Social isolation and a sedentary lifestyle result in loneliness and may lead to depression due to social isolation and a forced sedentary lifestyle with reduced energy expenditure. Depression and sedentary lifestyle are linked to decreased appetite; the resulting decreased food intake is a key factor in malnutrition.2,6,11

Assessing Malnutrition
An initial screening for malnutrition should encompass measurement of weight and height and administration of a screening tool such as the Mini Nutritional Assessment (MNA).2 The history and physical examination should target areas known to be linked to malnutrition. Good observational skills add to the data, especially when patients present with obvious signs of weight loss, such as clothing that seems too large. Clinical judgment is crucial to identifying patients at risk for malnutrition or causes of the syndrome in patients who are already malnourished.7

The assessment of function is also crucial, since functional decline can contribute to malnutrition or result from it. The more robust the patient, the less likely he or she is malnourished. Laboratory measures can add to the picture, but they should be put into the context of the rest of the assessment.

Screening Tools
Numerous tools are available for nutritional screening and assessment, and 20 tools have been developed specifically for screening older adults.12 The MNA has good validity and reliability.12 It is available free on the Try This Web site www.hartfordign.org/resources/education/tryThis.html.

Table 1

<table>
<thead>
<tr>
<th>CLASSIFICATION</th>
<th>BMI (kg/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>&lt;18.5</td>
</tr>
<tr>
<td>Normal</td>
<td>18.5–24.9</td>
</tr>
<tr>
<td>Overweight</td>
<td>25.0–29.9</td>
</tr>
</tbody>
</table>

### Risk Factors

- Age alone increases the risk for malnutrition.

### Screening Tools

- The MNA has good validity and reliability.