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Notes:
Managing undernutrition in the elderly

Prevention is better than cure

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Abstract

Undernutrition in the elderly can be associated with adverse medical consequences, contributing to frailty, morbidity, hospitalisation and mortality. Early identification and management of people at risk of undernutrition is important because it is difficult to reverse the adverse effects of undernutrition, weight loss and muscle mass loss, once established. Screening for undernutrition in general practice helps focus time and resources on people at greatest risk. This article provides guidelines for screening for undernutrition in general practice, and suggests strategies to address undernutrition in older patients.
Introduction

Undernutrition is common among elderly Australians living in the community,\textsuperscript{1-3} with an estimated 10–44\% of older people being at risk.\textsuperscript{2-4} Acute illness in such individuals can trigger severe clinical consequences, with recovery likely to be difficult and delayed given the lack of nutritional reserve. Yet undernutrition often remains unrecognised and undermanaged. The potential consequences of undernutrition and risk factors contributing to its development have been reviewed elsewhere (summarised in Figure 1).\textsuperscript{1,5-7} This quick reference guide focuses on:

- introducing screening for undernutrition into general practice
- interventions to prevent undernutrition for patients in your practice

Prevention and early intervention is key because it is difficult to reverse the effects of undernutrition and weight loss.\textsuperscript{8,9} Ageing is associated with significant impairment in the regulation of food intake, which means older people are less likely to want to eat and more likely to feel full, and do not automatically compensate with increased intake following periods of decrease in energy intake (e.g. following acute illness).\textsuperscript{10} Moreover, weight loss in the elderly is associated with loss of muscle mass. If weight is regained, there is a disproportionate regain of fat rather than lean body mass (i.e. often there is a net loss of muscle mass).\textsuperscript{11,12} The ensuing sarcopenia is associated with a risk of adverse outcomes such as physical disability, reduced mobility, institutionalisation, poor quality of life and even death.\textsuperscript{13}

If an older patient presents with any of the many contributing factors for undernutrition or clinical consequences associated with undernutrition (Figure 1), it is important to consider how undernutrition might affect their clinical outcome and to intervene with appropriate management.
Figure 1: Contributing factors and health outcomes associated with undernutrition\textsuperscript{1,3,5,7,14}
Definitions

**Malnutrition**: A deficiency or excess (or imbalance) of energy, protein and other nutrients which causes measurable adverse effects on tissue/body form (shape, size, composition), function and clinical outcome. Can encompass both overnutrition and undernutrition, but often used to refer to undernutrition only.²

**Undernutrition**: A clinical syndrome characterised by weight loss associated with significant depletion of fat stores and muscle mass. Also known as protein-energy undernutrition (PEU).³

**Frailty**: Age-related cumulative declines across multiple physiologic systems, with impaired homeostatic reserves and reduced capability to withstand stress, resulting in increased vulnerability to adverse health outcomes such as falls, hospitalisation, institutionalisation, and mortality.¹³

**Sarcopenia**: Progressive and generalised loss of skeletal muscle mass and strength, with a risk of adverse outcomes such as physical disability, frailty, poor quality of life and death.¹³
Identifying undernutrition in the elderly

Who is at risk?

All elderly people are at potential risk of undernutrition. Obese as well as underweight elderly people can experience unintentional weight loss due to undernutrition (masked undernutrition); the risks associated with rapid loss of muscle mass remain in both groups of patients.$^{1,15}$

It is not possible to identify undernourished patients simply by their physical appearance, body mass index (BMI) or weight at a single time point, therefore systematic screening within general practice is a useful means of identifying those most at risk.
Incorporating screening into general practice

Screening for undernutrition among elderly patients in general practice should be incorporated into routine practice wherever possible, to help focus time and resources on intervention for those at greatest risk. A systematic approach is best, such as:

- Weigh elderly patients at every visit (or twice a year if patient is seen frequently), with any recorded weight loss triggering nutritional screening. (In the elderly, weight loss over time is a better indicator of undernutrition than BMI.)
- For patients aged ≥75 years, incorporate a simple nutritional status screening tool into the 75+ annual health assessment conducted by GPs or practice nurses (see ‘Screening tools’)

Opportunities for screening are listed in Table 1.

Table 1: Opportunities for undernutrition screening among elderly patients in general practice

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>MBS Item Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunistic presentations, especially those associated with contributing factors</td>
<td>Standard consultation MBS item numbers (e.g. 23)</td>
</tr>
<tr>
<td>75+ annual health assessment (community)</td>
<td>MBS Item 701, 703, 705 or 707 (Practice nurse time contribution added to GP consultation time to determine MBS item number)</td>
</tr>
</tbody>
</table>
Screening tools

Validated nutritional screening tools provide an easy and reliable way to identify clinical characteristics associated with undernutrition. A more comprehensive nutrition assessment can be considered (e.g. by an Accredited Practicing Dietitian) for people identified as malnourished/high risk or with complex nutritional needs. Two screening tools that can be easily incorporated into Australian general practice are described in Table 2, with suggested interventions outlined in Table 3.

Table 2: Screening tools for undernutrition

<table>
<thead>
<tr>
<th>Screening tool</th>
<th>Available from</th>
<th>Criteria assessed</th>
<th>Outcome categories</th>
<th>Validation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mini Nutritional Assessment Short Form (MNA®-SF)</td>
<td><a href="http://www.mna-elderly.com*18">www.mna-elderly.com*18</a></td>
<td>• Weight loss†</td>
<td>Malnourished • At risk of malnutrition • Normal nutritional status</td>
<td>Validated in international studies for the early detection of undernutrition and frailty in community-dwelling individuals aged ≥65 years.16,19–23</td>
</tr>
<tr>
<td>Malnutrition Screening Tool (MST)</td>
<td><a href="http://www.health.qld.gov.au/nutrition/resources/hphe_mst_pstr.pdf24">www.health.qld.gov.au/nutrition/resources/hphe_mst_pstr.pdf24</a></td>
<td>• Weight loss‡</td>
<td>High risk • Medium risk • Low risk</td>
<td>Developed and validated for acute hospital, oncology and residential care patients.25–27</td>
</tr>
</tbody>
</table>

*The MNA is downloadable in various formats from this website.
† Scored according to weight loss of 1–3 kg or >3 kg over the last 3 months.
‡ Scored according to weight loss of 1–5 kg, 6–10 kg, 11–15 kg or >15 kg over the last 6 months.
<table>
<thead>
<tr>
<th>Category</th>
<th>Action</th>
</tr>
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</table>
| Malnourished                  | • Commence nutritional intervention  
|                               |   o Oral nutritional supplementation (400–600 kcal/d)  
|                               |   o Diet enhancement (e.g. see Table 6)  
|                               | • Monitor weight closely  
|                               | • Carry out further in-depth nutritional assessment (refer to Accredited Practicing Dietitian)                                                                                                       |
| At risk of malnutrition      | **With weight loss:**  
|                               |   • Commence nutritional intervention  
|                               |   o Diet enhancement (e.g. see Table 6)  
|                               |   o Oral nutritional supplementation (400 kcal/d)  
|                               | • Monitor weight closely  
|                               | • Carry out further in-depth nutritional assessment  
|                               | **No weight loss:**  
|                               |   • Monitor weight closely  
|                               |   • Rescreen every 3 months                                                                                                                  |
Management strategies for undernutrition

A variety of common contributing factors can lead to an increased risk of undernutrition in the elderly. Addressing this risk early and in the community allows for improved nutritional health – giving older people the nutritional reserves that can be counted on during periods of acute illness. The challenge for GPs is to identify contributing factors for undernutrition and address them effectively.

- Many contributing factors require attention from medical practitioners and can be addressed in general practice. This gives GPs and practice nurses an opportunity to intervene before undernutrition becomes established.
- Some contributing factors benefit from a multidisciplinary approach involving dietitians, dentists, pharmacists, psychologists, other allied health professionals, and community services.
- For some elderly patients, specialist advice from geriatricians may also be of benefit. i.e. when geriatric syndromes are present and there is a recent decline in function.

Key factors to address, and management strategies to consider, are reviewed below. It is important to address all of these factors concurrently: addressing social factors without managing contributing medical factors and visa versa may not be fully effective.

For patients with a chronic medical condition requiring a GP management plan (GPMP) or team care arrangement (TCA), the Enhanced Primary Care program allows Medicare rebates for up to five visits to an allied health care professional per year. This could include an Accredited Practicing Dietitian or occupational therapist.

1. Identify ‘red flag’ conditions

If a patient presents with undernutrition, the first objective in general practice is to assess for any potentially life-threatening or serious medical conditions (‘red flags’) that may have led to unintentional weight loss, such as cancer or cardiac, hepatic or renal failure.

2. Manage chronic or reversible medical conditions

Once ‘red flags’ have been eliminated, many other chronic or reversible medical conditions or medications that contribute to undernutrition can be addressed within general practice (Table 4). It is also important to review patient attitudes towards
weight; elderly patients may be confused by media hype on obesity and incorrectly regard weight loss as beneficial.

If geriatric syndromes (e.g. falls, dementia, polypharmacy) or functional decline (e.g. reduced mobility or ability to perform activities of daily living) are identified, manage appropriately or consider referral to a geriatrician.
Table 4: Management of medical conditions that may contribute to undernutrition

- Screen for dementia, anxiety and depression (depression is one of the commonest causes of undernutrition in the elderly); manage appropriately
- Review polypharmacy and long-term medications that may influence appetite or nutrition (e.g. those causing side effects such as nausea, constipation, anorexia); switch to an alternative medication or eliminate if possible
- Review dietary restrictions – refer to an Accredited Practicing Dietitian for specific advice and support as required
- Identify and manage dyspepsia, nausea or constipation
- Review oral health and encourage regular reviews with the dentist
- Optimise management of chronic conditions that may affect nutrition, such as
  - dysphagia
  - gastrointestinal diseases causing malabsorption or maldigestion
  - infection or inflammation
  - pain
  - hypermetabolism (e.g. hyperthyroidism)

Address social and functional issues

Low socioeconomic status, limited functional ability and social isolation are often major driving factors for undernutrition in the community.\(^2\)

- Financial constraints will impact access to basic necessities such as nutritious food.
- Living or eating alone often results in older people eating less and increases their risk of undernutrition.\(^1\)
- Consider patients’ ability to shop for and prepare food, and awareness of healthy eating

Management of these issues requires an individualised approach for each patient. Where possible, enlist the help of family and friends; some potential interventions are listed in Table 5.
Table 5: Social and functional interventions for undernutrition in the elderly\textsuperscript{34,35}

- Community care services
  - Centre-based day care
  - Domestic assistance
  - Home-delivered meals e.g. Meals on Wheels or similar
  - Extended Aged Care at Home (EACH), Community Aged Care Packages (CACP) and Home and Community Care services (HACC)
- Allied health care
  - Consider referral e.g. occupational therapist, dietitian
- Home visit (with nutritional prompts)
  - Family and friends
  - Community nurse
  - Service providers
  - General practitioner or practice nurse
- Case management and/or care coordination/planning
- Dietary and social support
  - Accredited Practicing Dietitian
  - Cooking lessons
  - Men’s sheds
- Suggest ways to encourage social interactions during mealtimes, e.g. get family and friends involved at meal-times, community meals programs

**Recommend nutritional support**

Nutritional therapy is an important component in the management of undernourished patients, and should be provided alongside medical and social/functional interventions.

- Dietary requirements change in elderly people; in particular, protein requirements for older people are approximately 25% higher than for younger adults (based on the limited data available, the recommended dietary intake for people aged ≥70 years is 81 g per day for men and 57 g for women, or approximately 1 g protein per kg body weight).\textsuperscript{36} Refer to Table 6 for tips on increasing protein in the diet.
- Referral to an experienced Accredited Practicing Dietitian should be considered for patients with complex needs.

Nutritional advice should be tailored to the individual; some general recommendations are given in Table 6.
Table 6: Nutritional support and advice for the elderly at risk of undernutrition

- Liberalise the patient’s diet (review dietary restrictions)
- Encourage use of flavour enhancers
- Recommend frequent small meals and snacks
  - Cheese and crackers
  - Scrambled, poached or boiled eggs
  - Baked beans
  - Fortified soups
  - Milk-based puddings and drinks
  - Sandwiches with high-protein fillings (e.g. cheese, tuna, ham, chicken)
- Ensure ready availability of nourishing snacks (e.g. nuts, yoghurt, cheese and crackers)
- Ensure food texture suits chewing and swallowing ability
- Suggest ways to increase protein and energy intake by fortifying foods
  - Incorporate milk, butter or cheese in foods such as soups, sandwiches or mashed potato
  - Add milk-based sauces (e.g. custard, cheese sauce) to fruit and vegetables
  - Add powdered nutritional supplements to foods such as soups, cereals, custard, mashed potato
- Consider high-energy/protein nutritional supplements (nutritional drinks are a convenient and effective way to meet requirements when appetite and/or mood are low. They allow an individual to remain well-nourished whilst the causal factors can be addressed.)
- Ensure sufficient fluid intake
- Where a specific nutrient deficiency has been identified, use of a micronutrient supplement may be indicated (e.g. iron, folate, vitamin D)
- Refer to an Accredited Practicing Dietitian

Exercise

While not an intervention for undernutrition, resistance training is essential to maximise muscle mass and strength in the elderly. Physical activity provides an opportunity for linking into social activities as well, which can improve general well-being and contribute to better energy intake. Physical activity and mobility should be encouraged in addition to an adequate high-protein diet.41
Reinforcement and monitoring

It can be difficult for elderly patients to change eating habits, particularly when eating is not triggered by hunger. Regular follow-up and reinforcement of nutritional messages is needed. This may include:

- providing written advice (e.g. sticky notes to place around the kitchen, or a doctor’s prescription of dietary advice)
- involving family members
- telephone prompting/reminders.

It is important to follow up nutritional intervention with regular monitoring, such as:

- a review of multidisciplinary team management
- monitoring patients’ weight at each visit
- noting changes in food intake.

As weight gain is achieved, meal plans and dietary supplements should be reviewed. It is important to remember that weight is also influenced by fluid, so some patients, such as those with cardiac failure, will need their weight assessed in the context of fluid retention.

Intentional weight loss in the elderly

Elderly people who are underweight are at greater risk of mortality than those who are overweight, and the optimal BMI range for older people is suggested to be about 22–27 kg/m². Intentional weight loss is considered inappropriate unless excess weight is associated with functional problems. If a weight loss program is considered necessary, attention to adequate protein and micronutrient intake, as well as exercise, is required to preserve muscle mass. Close monitoring of the weight loss program is important to ensure preservation of muscle mass.
Summary

Undernutrition can present a significant clinical and public health problem among older Australians living in the community. Patients with undernutrition are at increased risk of morbidity, hospitalisation and mortality therefore early detection and intervention is important. Identifying patients at risk via screening is the first step to providing effective intervention followed by appropriate management strategies that are implemented once undernutrition or the risk of undernutrition has been identified. Assessment and treatment of nutritional risk should be part of routine care for the elderly, just as assessment and management of cardiovascular risk factors are standard practice in adults. General practice is an ideal setting to identify and manage patients at risk of undernutrition.

Key points

- Early identification of patients who are at risk of undernutrition is important
- Monitor weight and incorporate nutritional screening of elderly patients into routine clinical practice.
- Many of the contributing factors for undernutrition in the elderly are amenable to medical intervention by general practitioners

If patient is at risk of undernutrition:

- Review food intake, including ability to shop/cook and ability to chew/swallow, as well as access to social and functional intervention
- Provide simple dietary advice, such as small meals, nutritious snacks, protein with every meal/snack
- Consider services such as home help, Meals on Wheels or similar
- Monitor and follow up

Additional measures if patient has undernutrition or has lost weight:

- Review for ‘red flag’ conditions
- Manage reversible causes of undernutrition
- Suggest oral nutritional supplements (high energy/protein)
- Refer to an Accredited Practicing Dietitian for full nutritional review
- For a subset of patients, consider referral to a geriatrician

Total word count (not including figures/tables/highlight boxes): 1200
References


