Causes, assessment and treatment of malnutrition in older people


Abstract
Malnutrition is a growing problem in the UK with as many as 14% of people aged over 65 at risk. It is of particular concern in care homes where more than one third of residents are undernourished. Weight loss is not the only symptom of malnourishment and nurses should examine any changes to a person’s health and well-being to identify causes. Regular monitoring of patients’ risk of malnutrition through use of screening assessments, such as the Malnutrition Universal Screening Tool, ensures undernourishment is identified early. As the population ages, it is more important than ever that the implications of malnutrition are recognised and addressed.

Keywords
care homes, dysphagia, malnutrition, nutrition, nutritional screening, older people

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Conflict of interest
The author works for Wiltshire Farm Foods, one of the founding partners of the Malnutrition Task Force

Malnutrition refers to a state of nutrition in which there is a deficiency or excess of energy, protein or other nutrients causing measurable adverse effects on the body and its functions (Elia 2003). It can occur when people do not get the correct amount of calories, protein and other nutrients from their diet. The condition can refer to overnutrition – getting more nutrients than needed – and undernutrition – getting fewer nutrients than needed. Overnutrition often results in obesity; undernutrition will cause weight loss. Throughout this article, and in the case of most older people, malnutrition refers to undernutrition (Wilson 2013).

A common misconception about malnutrition is that it is only a problem in developing nations, but it is important to recognise the problem is local as well as global. More than three million people in the UK – 4.6% of the population – are malnourished or at risk of malnutrition, and older people are especially at risk: more than one million of those affected are over 65 (British Association for Parenteral and Enteral Nutrition (BAPEN) 2016a).

Elia and Stratton (2005) argued that as much as 14% of the over-65 population is malnourished. In care homes, it is estimated that 36% of older residents and 24% of younger residents are undernourished (Elia 2015). The dangers cannot be overstated: malnutrition has serious implications for older people’s health.

In 2011, one in four adults admitted to hospitals and more than one in three adults admitted to care homes in the UK were at medium or high risk of malnutrition (Russell and Elia 2012). According to BAPEN (2016a), 93% of the UK’s malnourished population lives in the community. This can make recognising inadequacies in diet difficult, as healthcare professionals do not encounter all the people concerned.

Signs and symptoms
With regular interaction, it becomes easier to recognise signs of undernourishment (Box 1). Unintentional weight loss is often the most recognisable symptom of this type of malnutrition. For some people, weight loss is rapid and easily observed. For others, weight loss occurs slowly over many months. Carers should note how clothing and jewellery is fitting: loose wedding rings or sagging trousers may indicate a person is malnourished.

Other symptoms carers may observe in undernourished patients include dry skin and hair, and increased tiredness and irritability. Many symptoms, such as joint pain and poor night vision, can be dismissed easily by carers and older people as signs of ageing. There is also a common misconception that it is normal to lose weight as you age, which is not true (Malnutrition Task Force 2013). It is vital that nurses and healthcare providers examine any changes to a person’s physical and mental well-being to identify causes.
Malnutrition can be a cause and an effect of illness. It is sometimes the result of another medical condition, but can also be connected to other factors in a person’s life.

**Medical causes**

Schenker (2003) notes that illnesses are often associated with a decreased desire for food and decreased nutritional intake. Reduced appetite may be secondary to disease symptoms, such as nausea or abdominal pain. Diseases such as Crohn’s disease, undiagnosed coeliac disease or ulcerative colitis, which affect the body’s ability to absorb or digest certain foods, can also cause malnutrition as the individual may not be absorbing enough of the right nutrients (NHS Choices 2015b). Certain medications, from over-the-counter drugs, such as paracetamol, to prescribed drugs for depression, allergies, asthma and Parkinson’s disease can affect taste or smell, and ultimately reduce appetite (Hickson 2006).

Mental health conditions can also cause malnutrition—people may either not remember to eat or, if they are home residents, find communicating their needs difficult when it comes to eating. People with depression may be unable to look after themselves, or may lack the energy or desire to prepare meals (Iliaides 2012). Malnutrition can also be a side effect of dysphagia, which is itself a secondary condition. Dysphagia refers to swallowing difficulties—some patients may have problems swallowing foods or liquids of a certain thickness, while others cannot swallow at all. It is most commonly seen after stroke, but there are many other neurological, congenital and muscular causes, including Parkinson’s disease, multiple sclerosis and cancer of the mouth, throat or oesophagus. Dysphagia can also be caused by other conditions related to eating, such as poor appetite or changes in taste (NHS Choices 2015c).

Dysphagia can also contribute to malnutrition (Keller 2011). A study of recovering stroke patients found that those with dysphagia were also significantly more likely to be undernourished (Foley et al 2009). When people find swallowing difficult, they will naturally eat less. It is imperative that carers ensure people with dysphagia receive the necessary nutrients (Box 2).

**Lifestyle causes**

Malnutrition is not always related to illness. It can be a consequence of poor dietary intake and lifestyle. With 93% of the UK’s malnourished population living in the community, it is important to understand the reasons an older person might be at risk of malnutrition. Those who are frail may not feel

### BOX 1. Signs and symptoms of malnutrition

Physical and psychological symptoms of undernutrition include:

- Brittle nails
- Depression
- Dry hair
- Dry skin
- Increased irritability
- Lack of energy
- Poor concentration
- Sores around the mouth
- Unintentional weight loss

Worsening night vision, unexplained skin rashes and joint pain are signs of a lack of vitamins and minerals, which is also associated with malnutrition (NHS Choices 2015a)

### BOX 2. Nutrition for people with dysphagia

Problems with puréed food for people with dysphagia include:

- Water added to puréed food can dilute its nutritional content (Little 2013).
- Added water also increases portion size, which can make eating challenging for people with dysphagia who are less likely to be interested in food (Little 2013).
- Home-blended meals can be visually unappealing, which means they may not trigger salivation and make swallowing even more difficult (Keesman et al 2016).
- It is often difficult to blend meals to exactly the right texture (Royal College of Speech & Language Therapists 2014).

During puréeing, carers and nurses should consider fortifying meals or adding nutrient-dense foods, such as butter and cheese. Smaller, more frequent portions of puréed and reshaped meals can also help ensure people are getting the nutrients they need (Little 2013). Commercial services are available that can provide texture-modified ready meals that meet nutritional requirements, are a safe texture to swallow and are quick and easy to prepare.

### BOX 3. Lifestyle causes of malnutrition

While malnutrition can be caused solely by medical conditions such as dysphagia, gastrointestinal and neurological disorders, social and psychological causes should also be considered. These include isolation, poverty, lack of knowledge about food, difficulty shopping or cooking and bereavement. Additional risk factors for individuals in hospitals or care homes include:

- Needing more time to eat meals than may be given.
- Missing meals during medical tests.
- Limited provision for religious or other non-medically necessary dietary needs.

(Hickson 2006)
confident shopping: one study showed that 44% of people over the age of 70 could not carry a shopping bag weighing 5kg and so had difficulty getting groceries home (Ferry et al 2005). An empty refrigerator or a strict budget can also be an indication of malnutrition risk, as the person may be unable to afford an adequate amount of food. Distance from a grocery store can also play a role in causing malnutrition, as the person may be unable to get to the stores.

Social isolation can also lead to malnutrition (Box 3). Some people living alone do not like to cook only for themselves or may not know how to cook. Ferry et al (2005) found that 32% of older people never share meals with families or friends, which reveals the level of social isolation among some older people.

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
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<tbody>
<tr>
<td>BMI score</td>
<td>Weight loss score</td>
<td>Acute disease effect score</td>
</tr>
<tr>
<td>BMI kg/m²</td>
<td>%</td>
<td>If patient is acutely ill and there has been or is likely to be no nutritional intake for &gt;5 days</td>
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<tr>
<td>Score</td>
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<td>Score 2</td>
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<tr>
<td>&gt;20 (&gt;30 Obese)</td>
<td>&gt;5</td>
<td>0</td>
</tr>
<tr>
<td>18.5 - 20</td>
<td>5-10</td>
<td>1</td>
</tr>
<tr>
<td>&lt;18.5</td>
<td>&gt;10</td>
<td>2</td>
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If unable to obtain height and weight, see reverse for alternative measurements and use of subjective criteria.

**Step 4** Overall risk of malnutrition

Add Scores together to calculate overall risk of malnutrition

- Score 0 Low Risk
- Score 1 Medium Risk
- Score 2 or more High Risk

**Step 5** Management guidelines

0 Low Risk

- Routine clinical care
  - Repeat screening
  - Hospital – weekly
  - Care Homes – monthly
  - Community – annually for special groups e.g. those >75 yrs

1 Medium Risk

- Observe
  - Document dietary intake for 3 days
  - If adequate – little concern and repeat screening
  - Hospital – weekly
  - Care Home – at least monthly
  - Community – at least every 2-3 months
  - If inadequate – clinical concern
  - Follow local policy, set goals
  - Improve and increase overall nutritional intake
  - Monitor and review care plan regularly

2 or more High Risk

- Treat*
  - Refer to dietitian, Nutritional Support Team or implement local policy
  - Set goals, improve and increase overall nutritional intake
  - Monitor and review care plan
  - Hospital – weekly
  - Care Home – monthly
  - Community – monthly
  - * Unless detrimental or no benefit is expected from nutritional support e.g. imminent death.

All risk categories:

- Treat underlying condition and provide help and advice on food choices, eating and drinking when necessary
- Record malnutrition risk category
- Record need for special diets and follow local policy

**Re-assess subjects identified at risk as they move through care settings**

See the MUST Explanatory Booklet for further details and the MUST Report for supporting evidence.

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The Malnutrition Universal Screening Tool (MUST) is reproduced here with the kind permission of BAPEN (British Association for Parenteral and Enteral Nutrition). For further information on MUST see www.bapen.org.uk (British Association for Parenteral and Enteral Nutrition 2016b)
In some cases, people may try to eat well but fail to do so because of false perceived norms and changing dietary needs. The media regularly covers obesity and the risks of diets high in fat or sugar, but this advice is often intended for a different section of the population. Older people at risk of malnutrition should follow separate dietary advice. They may, in fact, need to increase calorie intake or have higher levels of fat in their diet (Malnutrition Pathway 2012).

These factors combined help to explain why malnutrition is so prevalent in the older population and, as a result, in care homes: at least 35% of recently admitted care home residents are at medium or high risk of malnutrition (Russell and Elia 2015).

Sometimes, the symptoms of malnutrition can tie into the cause. For example, tiredness is a symptom of malnutrition as well as a side effect of treatment for diseases such as cancer, and someone who is tired may be less inclined to cook meals, which contributes to continued malnutrition (Dummert 2015). It can be difficult to separate the cause from the effect, or from disease versus lifestyle factors, as they become linked in a vicious cycle (Dummert 2015).

Measuring malnutrition

There are several tools nurses and other healthcare providers can use to identify whether a patient is at risk of malnutrition. A body mass index (BMI) calculation is often performed to see if a person is underweight, healthy or overweight. BMI is a score calculated by dividing a person’s weight by the square of his or her height. A score in the range of 18.5-24.9 is considered healthy, while lower scores indicate the person is underweight and, according to the National Institute for Health and Care Excellence (2006), malnourished.

However, a BMI has significant limitations. The score is calculated from only the height and the weight. It does not distinguish between excess fat, muscle or bone mass, or take into account the distribution of fat through the body, which can be a further indication of health and risk of illnesses.

According to the US Department of Health and Human Services (2011), research suggests that other measures of body fat may be more accurate in judging the risk of body fat-related health problems. These include underwater weighing, dual energy X-ray absorption and skinfold thickness, all of which can be expensive, intrusive or technically demanding.

In 2003, BAPEN developed the Malnutrition Universal Screening Tool (MUST). The MUST relies on objective measurements of height, weight and – unlike other tools – weight loss. It was specifically designed to judge overall risk of malnutrition (BAPEN 2016b). The MUST also makes allowances for those who are bedridden or otherwise unable to stand, allowing nurses and carers to estimate overall risk of malnutrition (Figure 1).

BAPEN (2016b) suggests that the MUST has become the most commonly used screening tool in the UK. The Royal College of Nursing, the Registered Nursing Home Association and many other governmental and non-governmental organisations all support the use of this tool (BAPEN 2016b).

It is the most objective and simplest way healthcare professionals can estimate patients’ risk of malnutrition.

As well as monitoring for physical and psychological symptoms, nurses and carers should regularly screen patients as their condition may change. It is always best to watch for symptoms and unintentional weight loss to identify malnutrition early.

Implications of malnutrition

Malnutrition has several implications for an individual’s health (Box 4). It can make it more difficult for a person’s kidneys to regulate

<table>
<thead>
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<td>The implications of malnutrition cannot be overstated, particularly for older people. They include:</td>
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<tr>
<td>- A weakened immune system, making it more difficult to fight infections.</td>
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<td>- Difficulty absorbing medications.</td>
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<td>- Hindered wound healing, which can make it more difficult to recover from even minor accidents.</td>
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(NHS Choices 2009)
Given that more than one third of recently admitted care home residents are at risk of malnutrition, care homes need to prioritise the delivery of good nutrition (Russell and Elia 2015). As the population continues to age, the problem will get worse if undernourishment is not addressed. This is particularly relevant for care homes: research has shown that the cost of treating undernourished care home residents is twice that of a well-nourished resident (Meijers et al 2012). Reducing malnutrition can also reduce pressure on care home staff, as good nutrition can help increase independence, reduce falls and increase residents’ overall well-being.

Monitoring malnutrition in care homes requires a multidisciplinary approach that should include, at a minimum, nurses, GPs, the care home manager, caterer, a resident representative and allied health professionals, such as a dietitian or nurse (MTF 2013) (Box 5). Each discipline will bring a different perspective to the issue of malnutrition and how it can be addressed. This ensures a well-rounded approach to meeting nutritional needs.

At many care homes, GPs may come in to check on residents, but staff nurses must monitor residents’ health. Documentation of monthly weigh-ins and MUST scores will build a picture of the resident’s nutritional health over time to which nurses can refer (South Essex Partnership University NHS Foundation Trust 2014). If necessary, staff nurses can make referrals to a specialist practitioner, such as a dietitian, for further consideration of a resident’s nutritional health. Changes in a person’s ability to chew or swallow could be a sign of dysphagia, for which a speech and language therapist can provide guidance (NHS Choices 2015c).

References


Malnutrition is also challenging for older people living in the community. Because they do not have regular contact with healthcare professionals in the same way as people living in care homes, it is especially important to be vigilant about ensuring they have a healthy diet. Just as a multidisciplinary approach to reducing malnutrition is required in care homes, it is the ideal way to manage it in community settings. Primary care providers can check for malnutrition risk during routine health checks and home carers can watch for signs of weight loss (Malnutrition Pathway 2012).

Treatment and intervention
For those at risk of, or diagnosed with, malnutrition, there are a number of treatment and early intervention options. Social help such as assistance with grocery shopping or meal deliveries can be accessed through many voluntary organisations, private meals providers and local authorities. Doctors and nurses can recommend the best local providers. Healthcare professionals can also prescribe food supplements or other clinical interventions as needed.

Food and nutrition are not in isolation from other influences on a person’s health and well-being. When working to prevent malnutrition, maintaining people’s independence and preventing their isolation are as critical as ensuring they have access to food. Meal delivery services ensure people maintain a sense of autonomy and allows them to choose their menus each week. Where appropriate, patients should be encouraged to go for walks or strengthen relationships with friends and family so that they do not feel isolated.

People are at risk of malnutrition for different reasons, and it is imperative that nurses and carers adopt a personalised approach that takes into account lifestyle as well as health. Some people may benefit from smaller, more frequent meals and find it easier to snack throughout the day rather than following a traditional meal pattern.

Flexible mealtimes and availability of snacks ensure they are eating enough. Other people may need gentle prompts to remind them that it is okay to ‘break the rules’ and choose higher fat foods. To maintain interest in eating, a person with dysphagia requires food of the right texture that is visually appealing. Staff in care homes must take time to understand new residents’ food preferences. Culture, religion, and general likes and dislikes influence their choice of food and when they eat it.

Whether in the community or in a care home, older people should be at the heart of meal planning to help avoid malnutrition. Nurses and carers should aim to make each mealtime the highlight of the day, while still considering individual preferences. As more attention is paid to the eating habits and dietary needs of individuals, the number of undernourished people in care homes will be reduced.

Conclusion
Properly nourished people heal, and respond to medication more quickly, and place less pressure on health services. Closely monitoring people on a regular basis will ensure those at risk of malnutrition are identified early, and that their care plans can be adjusted. With the older population increasing in number, it is more important than ever that we focus on preventing malnutrition in older people.


South Essex Partnership University NHS Foundation Trust (2014) Nutritional Care Standards in your Locality. tinyurl.com/jwtt6pl (Last accessed: 10 February 2013)