

# NUTRITION SCREENING: TO IDENTIFY RISK OF MALNUTRITION

The role of the clinical dietitian is to assess, diagnose and treat diet and nutrition problems in individuals and at the public health level (British Dietetic Association [BDA], 2008). Nutritional assessment is therefore one of the most vital and basic skills a dietitian must possess.

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Dietitians conduct nutritional assessments on patients with a variety of diseases or conditions, but one of the most prominent and significant of these is malnutrition. Malnutrition greatly affects an individual's nutritional status and health, and there are a large majority of individuals in the UK, both in the hospital and community setting, who are affected by it. It is therefore impossible, both practically and in terms of cost-effectiveness, for dietitians to carry out detailed nutritional assessments on all of these people. An alternative strategy is needed, which will allow quick and easy identification and treatment of these individuals. One effective strategy is nutrition screening.

## What is nutrition screening?

Nutrition screening is a powerful way of identifying malnourished individuals in need of nutritional support. It can consist of a tool or test which identifies an at-risk individual, followed by an agreed plan of action on how to treat and monitor that individual's progress. Nutrition screening should be used as a precursor

to a nutritional assessment, which is a more detailed evaluation of an individual's nutritional status typically carried out by a dietitian.

It is a procedure which needs to be quick and simple to enable healthcare professionals to complete it on first contact with a patient. A plan can then be put into action to treat and monitor the individual.

**There are numerous causes of malnutrition which are often related to disease. The consequences of malnutrition have an enormous effect on a patient's health outcome, as well as on the cost to the NHS.**

It should be noted that nutrition screening is a multidisciplinary responsibility and should be carried out by all healthcare professionals, provided that they are given the appropriate training (Thomas and Bishop, 2007).

## What makes a good nutrition screening tool?

There are 71 identified nutritional screening/assessment tools used in clinical practice (Green and Watson, 2005). The criteria of a clear, concise and powerful screening tool are shown in *Table 1*.

A screening tool should be able to ascertain in an objective way:

- ▶▶ Chronic protein-energy status (such as body mass index [BMI])
- ▶▶ Recent changes in protein-energy status (such as weight loss or reduction in dietary intake)
- ▶▶ The likelihood of any future changes in protein-energy status, i.e. the likelihood of any loss of weight or reduction in dietary intake (Thomas and Bishop, 2007).

## Why is nutrition screening important?

Malnutrition is a global public health problem. Elia (2000) defined it as, 'a state of nutrition in which a deficiency or excess (imbalance) of energy, protein and other nutrients causes measurable adverse effects on tissue/body form, body function and clinical outcome'.

It is an under-recognised and under-treated problem in the UK. There are over three million people at risk of malnutrition, almost all of whom (93%) are people living in the community and the remainder are in hospital or care homes (Elia and Russell, 2008). Without some kind of nutrition screening programme, identifying and treating these individuals is extremely difficult.

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It can affect a person's physical and psychological health by:

- ▶▶ Impairing the immune function leading to an increased risk of infection and sepsis
- ▶▶ Delaying wound healing and increasing the risk of pressure ulcers
- ▶▶ Causing muscle wasting and weakness leading to a deterioration in respiratory function and an increased risk of chest infections, an impaired cardiac function resulting in cardiac failure, and reduced mobility
- ▶▶ Causing apathy and depression in the patient leading to loss of morale and a reduced will to recover
- ▶▶ Causing a general sense of weakness leading to a reduced appetite and ability to eat, exacerbating the current situation (Thomas and Bishop, 2007).

It is estimated that in 2007 in the UK the cost of malnutrition to the NHS was £13 billion (Elia and Russell, 2008). This cost is attributed to the above health consequences, which lead to an impaired clinical outcome in malnourished patients, i.e:

- ▶▶ Increased risk of mortality and complications during and after hospitalisation
- ▶▶ Longer hospital stays
- ▶▶ Increased need for health care after discharge to the community
- ▶▶ Increased risk of hospital

**Table 1**

**Criteria for a nutritional screening tool (Thomas and Bishop, 2007)**

Practical	<ul style="list-style-type: none"> <li>▶▶ It is quick and easy to complete and to understand</li> <li>▶▶ It has a range of alternative measures for when weight or height cannot be measured</li> </ul>
Universal	<ul style="list-style-type: none"> <li>▶▶ It can be used in all adults, of all ages (including the elderly), including the sick and healthy</li> <li>▶▶ It is applicable across different care settings (hospital, GP practice, nursing home, community)</li> <li>▶▶ It allows continuity of care</li> <li>▶▶ It can be used for public health purposes</li> </ul>
Reliable	<ul style="list-style-type: none"> <li>▶▶ It provides good reproducibility between users</li> <li>▶▶ It has good internal reliability</li> </ul>
Valid	<ul style="list-style-type: none"> <li>▶▶ It has face (extent to which the tool appears to measure what it is supposed to measure), content, internal, concurrent and predictive validity</li> </ul>
Evidence-based and peer-reviewed	
Linked to a care plan for treatment	<ul style="list-style-type: none"> <li>▶▶ It facilitates nursing and other staff to initiate appropriate monitoring or treatment and referral to the dietitian or nutrition support team</li> </ul>
Developed by a multidisciplinary group or used by all healthcare professionals	
Acceptable to patients and healthcare professionals	

admission and increased visits to the GP (Thomas and Bishop, 2007).

Malnutrition can be successfully treated through basic nutrition support initiatives implemented by healthcare professionals, or by in-depth dietary plans produced by dietitians. However, this cannot be achieved unless the individuals are first identified through nutrition screening.

### When should nutrition screening be undertaken?

The Guidelines for Nutrition Support in Adults, published by the National Institute for Health and Clinical Excellence (NICE) in 2006, makes recommendations

for nutrition screening in clinical practice. NICE recommends that:

- ▶▶ All hospital inpatients on admission and all outpatients at their first clinic appointment should be screened. Screening should then be repeated weekly for inpatients and when there is a clinical concern for outpatients
- ▶▶ People in care homes should be screened on admission and when there is clinical concern
- ▶▶ Nutrition screening should take place on initial registration at general practice surgeries and when there is clinical concern.

NICE recognises 'MUST' (Malnutrition Universal Screening Tool) as an example of an

appropriate nutrition screening tool (British Association for Parenteral and Enteral Nutrition [BAPEN], 2006). It is also endorsed by the British Dietetic Association, the Royal College of Nursing (RCN), and the Registered Nursing Homes Association. Numerous NHS trusts and primary care trusts in the UK also use MUST for nutrition screening. This is because it is an evidence-based tool which meets all of the criteria in *Table 1* (Thomas and Bishop, 2007).

### How does MUST work?

MUST was developed by the Malnutrition Advisory Group, which is a multidisciplinary group of BAPEN. This screening tool has a five-step process using a scoring system to identify adults at risk of malnutrition (*Figure 1*).

**Step 1** is to calculate a BMI score by measuring a person's height and weight (score 0–2).

**Step 2** assesses a weight loss score by measuring unplanned weight loss over the past 3–6 months (score 0–2).

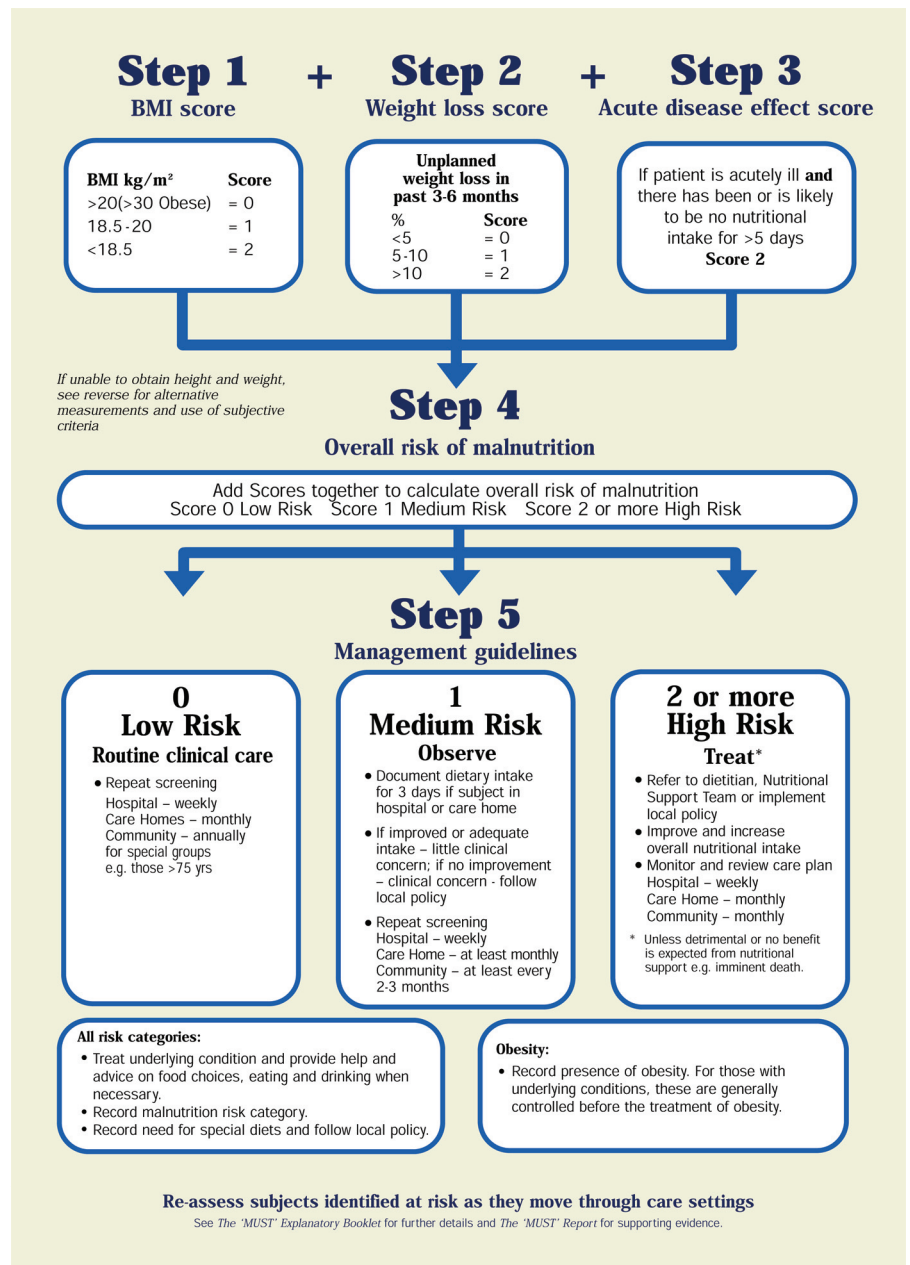
**Step 3** gives an acute disease effect score of 2 if the patient is acutely ill and there has been, or is unlikely to be no nutritional intake for more than five days.

**Step 4** involves adding the scores from steps 1–3 to give a total risk score for malnutrition.

**Step 5** involves putting into place a treatment plan according to the total score achieved (BAPEN, 2003).

### Audit and survey of MUST

In 2007 BAPEN carried out a



*Figure 1. MUST (Malnutrition Universal Screening Tool). Reproduced by kind permission of the British Association for Parenteral and Enteral Nutrition (BAPEN, 2006).*

nutrition screening survey and audit of adults on admission to hospitals, care homes and mental health units using MUST screening criteria. It is the largest screening survey undertaken in the UK and included 175 hospitals, 173 care homes and 22 mental health units. The aims of the survey were to establish and compare the prevalence of malnutrition in different care settings and different types

of institutions within these care settings using the same screening test, and to document the current screening practice within these institutions and identify any problems.

The survey found that on admission to hospitals, care homes and mental health units, the prevalence of 'malnutrition' was 28%, 30% and 19% respectively. This

highlights the importance of nutrition screening to identify malnourished patients in order that they can be treated appropriately. The survey also found that the percentage of the 175 hospitals, 173 care homes and 22 mental health units that had a nutrition screening policy was 89%, 82% and 46% respectively. Although hospitals had the highest percentage of nutrition screening policies in place, they did the least amount of weighing of patients on admission (BAPEN, 2007).

### What are the problems with nutrition screening?

A report published by BAPEN in February 2009, 'Combating Malnutrition — Recommendations for Action', states that although nutrition screening is recommended by the Department of Health (DoH), NICE and the National Patient Safety Agency (NPSA), staff in hospitals, care homes and primary care settings are failing to adequately screen patients for malnutrition. This obstructs the implementation of care for these patients. BAPEN identified a barrier to effective nutrition screening as a lack of appropriate and accurate equipment, such as weighing scales, to carry it out.

It calls for the DoH to take action by providing healthcare organisations with clear guidance on the correct measuring equipment needed to carry out accurate nutritional screening. It also recommends that the DoH promote the use of a single screening tool to ensure that consistent screening and monitoring of the patient is

undertaken throughout different care settings and areas of the UK. Due to the large number of different screening tools available for use in clinical practice, this is not currently happening (BAPEN, 2009). In addition, not all of these screening tools have been subjected to validity or reliability testing, putting into question their suitability as an accurate nutrition screening tool (Green and Watson, 2005).

### Conclusion

Overall, nutrition screening is a vital tool in the fight against malnutrition, which should be routinely used on patients in all care settings by all healthcare professionals with appropriate training and equipment. **WE**

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### Key points

- ▶ **Nutrition screening is a powerful way of identifying malnourished individuals in need of nutrition support.**
- ▶ **There are over three million people at risk of malnutrition, almost all of whom (93%) are people living in the community and the remainder are in hospital or care homes (Elia and Russell, 2008).**
- ▶ **The consequences of malnutrition have an enormous effect on a patient's health outcome, as well as on the cost to the NHS.**

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