

# Evaluating the Malnutrition Universal Screening Tool as a holistic client assessment and Critically appraising the evidence relating to meeting the essential nutritional needs of a patient

Louise Robertson

## Case Study

Mr Allen was a 59 year old patient who presented on a rehabilitation ward at a community hospital in the South West of England. The 6 months leading up to his admittance into hospital had been very difficult for him. He had lost his wife to breast cancer 6 months previous and had no other family. Following this he had sold the home they had lived together in and bought a canal boat where he intended to live. A few weeks after Mr Allen had moved onto his canal boat he found that he was experiencing unbearable pain in his right thigh. Mr Allen's GP sent him for an x-ray where they found a fracture in his right femur. Only upon having surgery to pin the fracture was it discovered that Mr Allen in fact had osteosarcoma in his right femur. Mr Allen stayed on the ward throughout his chemotherapy treatment and while he recovered from surgery. Upon admittance onto the ward Mr Allen was assessed using the Malnutrition Universal Screening Tool (MUST) (BAPEN, 2003) and then each week proceeding this. The MUST was used in this way for every patient admitted to the ward. Mr Allen's circumstances surrounding his admission and his diagnosis cancer resulted in him being an excellent candidate for this paper.

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## Abstract

This paper is an evaluation of a rehabilitation inpatient ward's nutritional assessment using the Malnutrition Universal Screening Tool (MUST) (BAPEN 2003), and a critical appraisal of the evidence relating to meeting nutritional needs of an individual patient. Whilst acknowledging that the use of the MUST forms part of the initial and continuing assessment carried out by the ward during a patient's stay, this paper will focus on the nursing assessment using the MUST. This paper will begin by addressing the nursing process and the nature of holistic nursing. It will then look at the MUST in terms of a tool to be used in these contexts of health and healthcare. Then, go on to appraise the evidence related to the MUST, nutrition and the holistic care approach. The paper will end by discussing the use of the MUST in terms of holistic care provided to Mr Allen and the future direction of the tool.

## Introduction

The nursing process has four components, Assessment, Planning, Implementation and Evaluation. Aggleton and Chalmers (2000) describe it as a tool that has four stages. In the assessment stage both nurse and patient work together to establish the needs and desires of the patient. In the planning stage steps are identified to meet the needs. These steps then require implementation in the third stage and then finally evaluation, where the planning and implementation is reviewed and assessed. In the paper I am going to focus on the Assessment and Planning elements of the Nursing Process. This will allow exploration of how, and why, assessment is vital to providing high quality and personalised nursing care and the implications of this in planning care to meet an essential care need.

The definition of a need is a necessity or urgent requirement (OED, 2014). To identify a need of a patient it is important to identify what they are in urgent requirement of. Maslow, in the Hierarchy of Needs Model (1943) identifies human needs through five stages that are required to achieve self-actualisation or

fulfilment; physiological, safety, love/belonging, esteem then self actualisation. He presents these stages in a pyramid with Physiological fulfilment being the base and foundation to further fulfilment. Nourishment from food is an element of physiological need that must be met. Roper et al (2000) identifies eating and drinking as an Activity of Daily Living; one of twelve Activities that are deemed essential to daily life and in providing holistic nursing care.

Both models state that it is not enough for just one aspect such as nutrition to be fulfilled but the importance of this element has led to the focus of this paper. Hundreds of years prior to both Maslow and Roper health and nutrition have always had a strong link. Hippocrates emphasised the importance of a balanced diet when he moved away from divine notions of health, "let food be thy medicine; and let thy medicine be food" (Ustun and Jakob,2005)

## Methodology

Throughout Mr Allen's stay as an inpatient his MUST score remained at the Medium risk level. This meant that his

care planning involved a constant level of observation of his nutritional intake through daily food and fluid charts, and weekly reassessment using the MUST. Malnutrition is a common problem amongst cancer patients, affecting up to 85% of patients and is 'characterised by loss of lean body mass, muscle wasting, and impaired immune, physical and mental function' (Argiles, 2005). This weight loss is not associated solely with lack of intake of nutrition as it can also be caused by a variety of mechanisms involving the tumour, the patient's biological response to the tumour, and the undergoing of anticancer therapies (Meyenfeldt, 2005). Mr Allen was receiving chemotherapy treatment once a week which he left the ward for and attended the local General Hospital. This was complimented by a regime of drugs to be taken between therapies and involved frequent blood tests for monitoring. These elements were not directly assessed by the MUST but rather used to evidence it's findings.

### Critical review of the literature

The Malnutrition Universal Screening Tool (MUST) (BAPEN, 2003) aims to assess and contribute to implementing a plan based on a patient's nutritional need.

The World Health Organisation (WHO) defines health as a complete state of wellbeing, not merely the absence of disease (WHO, 1948). Another definition comes from Bircher who defines health as a dynamic state of well-being which satisfies the demands of the individual's life (Bircher, 2005). Both of these definitions look beyond a sole physical condition that is impacting ones health. Ustun and Jakob argue that The WHO's definition of health is unacceptable, 'including the word "complete" in the definition makes it highly unlikely that anyone would be healthy for a reasonable period of time' (Ustun and Jakob, 2005). The WHO's definition suggests health is something that can either be fully or not at all achieved. Birchan's definition suggests a more fluid approach to health involving potential and an individual's ability to live a life they are happy in and capable of achieving. This latter ideal is of great importance when considering the holistic role of the nurse. In order to be able to nurse a patient in a holistic way it is important to understand the basis and the current use of the term in relation to

health care. The Nursing and Midwifery Council (NMC) define holism in terms of considering the whole person; physical, social, economic, psychological, spiritual and all other relevant factors (NMC 2010). Holism was a term coined in 1926 by Jan Smuts. He described holism as "The tendency in nature to form wholes that are greater than the sum of the parts through creative evolution.". His definition did not offer a great deal of instruction in terms of how this would influence nursing practice. This did not come until F Hoffman, then separately Menninger, in 1960 used the term 'holistic medicine' and defined it as '... holistic medicine that integrates knowledge of the body, the mind, and the environment ...' (Menninger, 1960). The British Holistic Medical Society (BHMS) was established in 1983 by medical professionals; their aim being to define and maintain a holistic health care system in which to treat patients and train future professionals. The BHMS, not exclusively, define Holistic medicine in a similar way to the NMC but with the addition of 'self-care: developing resistance' (BHMs, 1983). This shares the responsibility of holistic care between the patient and the nurse, further strengthening the importance of the involvement of every aspect of the patient. By these definitions it has been shown that not only does nursing care need to be personalised and holistic to the patient so does their ideal of healthy.

The nurse is required to look beyond the physical condition or conditions that are presented by the patient and look at them as a whole person with a past and a future beyond the here and now. This extends to where the patients wants to be with their health and what 'satisfies' [their] demands of life' (Bircher, 2005). To enable this to be possible, the NHS utilise a number of different assessment tools, across health authorities, to enable a structured and encompassing approach to holistic assessment and care planning. The MUST is just one of these tools, but has a specific aim with regards to nutrition.

The cost of malnutrition to the NHS is estimated to run into billions of pounds a year (Malnutrition Task Force, 2014). A strong financial case is put forward for prompt change to occur. The National Institute for Health and Care Excellence (NICE) identify malnutrition as the sixth largest source for NHS savings (NICE,

2013); with effective screening and intervention having the potential to save an estimated £71,800 per 100,000 people (NICE, 2012). Totalling an estimated saving for the NHS of £13million per year (NICE, 2006). This identifies the importance of the nursing role to not only assess and plan care for the patient in a holistic manner but also to have an awareness of how doing so effectively can save the NHS from huge, and unnecessary, costs.

The Malnutrition Universal Screening Tool was launched in 2003 and developed by the Malnutrition Advisory Group. It is the most commonly used screening tool in the UK (BAPEN, 2013). The British Association for Parenteral and Enteral Nutrition (BAPEN) define malnutrition as 'a state of nutrition in which a deficiency or excess (or imbalance) of energy, protein and other nutrients causes measurable adverse effects on tissue / body form (body shape, size and composition) and function and clinical outcome' (BAPEN, 2013). The MUST uses five steps to assess a patient's risk of malnutrition, looking at height and weight resulting in Body Mass Index (BMI) score, unplanned weight loss, acute disease effect, overall risk and management guidelines (Appendix 1). From this point a care plan can be developed to address identified risks, low, medium or high, using the frameworks that the tool provides. The tool, and local policy (Southern Health, 2009), states that the patient should be assessed within 24hours of admission using MUST. Then reassessed on a weekly basis, or when there is further clinical concern, whilst they remain an inpatient. This policy was followed with regards to Mr Allen. Local policy states in their guidelines that the MUST is to be used with 'the aim of preventing avoidable malnutrition and dehydration among patients admitted to the Community Hospital inpatient wards' (Southern Health 2.2, 2009). This aim is to be achieved through employees and patient collaboration. 'Healthcare professionals should use their clinical judgement and consult with patients when applying the strategies set out within this guideline' (Southern Health 3.2, 2009) and 'Patients and carers should be involved in shared decision-making about the management of nutrition' (Southern Health 3.4, 2009). A process of assessment and reassessment that is required to be led by the primary nurse (Southern Health 7.5, 2009). The advocacy of clinical

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judgement opens up the possibility of variances between clinicians, particularly where a patient's score may place them in a borderline position. If the patient scores in the medium risk category then the recommended action is to 'observe' and document the patient's dietary intake for 3 days. If this is deemed to be adequate then the patient is rescreened and is of 'little concern'. If intake is inadequate then there is reason for clinical concern and the following of local policy is advocated (BAPEN, 2012). The tool does not outline what is to be categorised as adequate or inadequate.

This falls into what Thompson et al define as the 'Real world potential for evidence-based decisions in nursing'. Nurses are 'being cast in the role of active decision makers in healthcare' (Thompson et al, 2004). In order to make such decision it is important for the nurse to have an understanding of the research surrounding the tool being used, in this case the MUST. The 'MUST Report' (BAPEN) 2012 outlined ten key points based on the validity and reliability of the MUST (Appendix 2). In summary the report put forward that the MUST is easy to use, reliable and, with cautious interpretation, can be applied to all adult patients. It 'promotes multidisciplinary care and responsibility, with consequent improvements in clinical outcome'. (Malnutrition Advisory Group, 2012). The report concludes that the tool works best if deployed in a healthcare system that prioritises nutrition strategies. Implying the need for a health care authority that provides policy and training in this area; allowing the primary nurse to make informed and suitable judgements with regards to the use of the MUST. The validity of the MUST is also supported by Stratton et al (2004) who found that it had 'good to excellent' validity in relation to another malnutrition tool; the Nutrition Risk Score. In a later study, Stratton et al (2006) found that the MUST had significant predictive validity of hospitalised patients' clinical outcomes. Allowing nursing care to be planned in direct correlation to the patient's needs both specific and holistic. Gibson et al (2012) concluded that, with particular reference to patients who were acutely ill, the tool lacked 'sensitivity' that could result in some patients being misclassified. It's use was still recommended but with the caution that the holistic approach to the patient be in the forefront.

## Interpretation of findings

Upon being assessed using the MUST Mr Allen scored a 1 and was deemed to be in the Medium risk category for the management guidelines. His height and weight gave him a BMI of 30, which put him just into the obese category of the table (Appendix 3). Of the three initial stages of the MUST, Mr Allen only scored on the second stage where he stated he had had between 5-10% body weight loss in recent months. It is common for cancer patients to experience at least a 10% loss of body weight in a six month period (Nutritional Cancer Institute, 2014). Although when monitored, as part of the management guidelines for the tool, Mr Allen was eating but his weight was decreasing. This did not cause his score on the MUST to change though. His BMI was not low enough to score on the first stage of the tool and increase risk level. His reduction into a healthier BMI bracket is clinically seen as a positive contributor to recovery and overall health (NHS, 2013). In terms of looking at Mr Allen from a holistic point of view it was necessary to ascertain what it was causing this weight loss. Beyond his clinical presentations he had a considerable likelihood of psychological needs following the recent death of his wife to cancer and his current diagnosis of and treatment for cancer. The MUST, as highlighted by Gibson et al (2012) previously, lacked sensitivity to this aspect of Mr Allen's life and required a holistic approach to direct care planning to best suit him. Treatment like Mr Allen's for osteosarcoma requires the patient to remain in hospital for the process, but trips home in between are advocated for respite (Cancer Research UK, 2013). Mr Allen was not able to take advantage of this due to his home now being a canal boat, which was impossible for him to gain access to following the recent surgery required on his leg. This was important to factor in to Mr Allen's care planning as the ward was going to be his home for the duration of the treatment and needed to provide the dual role of treatment and respite. This required a knowledge of what Mr Allen enjoyed doing in his spare time prior to admission. Studies have shown that psychosocial factors such as hobbies and the continuation of the patient's daily habits can influence the duration of survival in surgically treated patients (Tominaga et al, 1998). A longitudinal study into the

restriction of routine activities due to illness found that individuals in the 30-64 age bracket found this more distressing than those aged 65-90 (Williamson and Schultz, 1995). The study suggests this is due to the 65-90 age group having lower expectations of functional status and more experience with illness and disability. Mr Allen described himself as always having been healthy, never been an inpatient in hospital before and being quite active and outgoing. This put him at quite a high risk of experiencing a level of distress, outlined by Williamson and Schultz, at the current restriction of his activities. Depression is also found to be one of the most prevalent psychological side-effects of cancer and undergoing chemotherapy (Boer-Dennert et al, 1997). The rate of depression in cancer patients is estimated to be four times that of the general population but rates vary from 3-58% according to the assessment method used (Snyderman 2009). An understanding of this is vital in nurses as they play an ever increasing role in the primary care of long term health conditions such as cancer (Wynn, 2009). Mr Allen's wife had passed away due to cancer earlier in the year and she was his only family, this meant that working with family to plan his care was not possible. The nursing assessment stage established that Mr Allen was a regular member of bridge club. Mr Allen expressed that the ability to still see his friends and play bridge was of great importance to him. It was possible to arrange the group to meet on the ward and this cheered him up not only attending the meeting but knowing he had something each week to look forward to. At the bridge meeting the members all brought along food to eat as they played. This gave Mr Allen an opportunity to eat something different and was recorded on to his food chart as part of his monitoring required by the MUST guidelines. After a period of three weeks it became apparent on the food charts that at these meetings Mr Allen would consume a higher amount of food over the period of an hour than at other times of the week. This supports research carried out by Wright et al (2006) who used a control group of patients eating alone at their bedside and a group of patients that ate communally. They found that the communal eating group ate an average of 489 calories at a lunch sitting, opposed to 360 calories at the same meal in the control group that ate alone. A

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critique of this study is that it did not explore the emotional state of the patients involved in relation to being hospitalised, changes in diet or social habits when admitted into hospital (Vijayakumaran et al, 2014). As the positive effect of group eating was apparent in Mr Allen it was decided amongst the nursing team that it was important for the bridge meetings to continue in order to continue his nutritional variety and increase and to support improved mood. Cancer Research UK (2013) list fatigue, nausea, vomiting, risk of infection and hair loss as common physical affects of chemotherapy. A study by M de Boer-Dennert et al (1997), asked 197 patients to rank in order of perceived severity the physical side-effects they experienced during chemotherapy. The top five reported side effects were feeling sick, being sick, itching at the injection site, shaking all over and a change in the way things tasted. Mr Allen reported that although he often felt tired his nausea was well managed by the antiemetics prescribed by the doctor. He did experience a change in taste that sometimes put him off food as he didn't want to risk feeling sick at an unexpected flavour; including things he used to love to eat. The kitchen at the hospital was very flexible which enabled Mr Allen to have a wider choice of food options beyond the menus that were sent up to the ward. The changeable nature of Mr Allen's appetite meant the nursing and catering team needed to be aware of the requirement for short notice meal or snack requests. This was managed very effectively and a number of favourite items, such as yoghurts, were kept in the ward kitchen should Mr Allen feel hungry. Following the MUST's management guidelines in line with Mr Allen's risk level the nursing team were able to monitor not only the amount Mr Allen was eating but also to identify trends of what was being eaten to aid him in deciding what he might like to eat or promote a balanced diet where possible. Mr Allen's overall care, including his nutritional intake, was not only managed by the nursing team but by a

range of clinical disciplines. Part of his care plan involved working with the physiotherapists. The role of the physiotherapist is to provide general and specific principles in the rehabilitation of the cancer patient (Fulton, 1994). The physiotherapist team provided support to Mr Allen in mobilising post surgery. Due to his leg surgery the team worked with Mr Allen in order to mobilise in a way that was safe and manageable for him as he recovered. His increased mobility also aided in his psychological and nutritional wellbeing. It enabled him to move from his bed space to attend his bridge group and also sit out in the hospital gardens for some time away from the ward; using a wheel chair when necessary. The nursing team were then able to incorporate this into Mr Allen's every day care by encouraging mobility and independence. Physical activity had a positive impact of his appetite also, as Mr Allen would feel hungrier after having done some physical activity. This independence gave Mr Allen a choice over where he wanted to eat his daily meals. The ward doctor frequently reviewed Mr Allen's antiemetic and pain medication to maintain a therapeutic level. This in turn meant he felt like eating more often as he wasn't feeling sick or uncomfortable. As well as working with the ward teams, Mr Allen was referred to the Clinical Nurse Specialist team under Macmillan. This provided him with a 1:1 specialist nurse who aided him in further understanding his condition, provided someone to talk to and from which to gain specialist advice and began the process with social services of support with housing. As Mr Allen's only property was a river boat, that he could no longer access, he was left in the situation of technically being homeless following his treatment. Mr Allen's age (59) meant he wasn't eligible for older people's respite provision and this wasn't something he felt he would be happy in due to his age. This particular aspect of care planning was very important to Mr Allen and something he was quite worried about. Providing him with support meant that not only were

his physical residential needs being planned for but it reduced the level of worry regarding housing; meaning that he could focus on his recovery. The nurse has an important role in planning within the multidisciplinary team as they have the most contact time with the patient, although at times that role can be blurred and overlap with other disciplines (Costello, 1994). From being part of Mr Allen's care planning it has become apparent to me that this overlapping of roles is a vital part of providing holistic patient care (Savage and Scott, 2005). It enables the nurse to have a broader view of what is happening to the patient from both a clinical and personal perspective; in turn enabling a more holistic approach.

## Conclusion

The MUST provided a clinical picture of Mr Allen's nutritional status and the role of the nurse was that of looking for reasons and then strategies that were relevant. The nurse is never working alone in the challenge of improving nutritional care; it demands good interdisciplinary cooperation and good team working (Savage and Scott, 2005).

Alongside a multidisciplinary approach the knowledge of the nurse proves vital. In this case being able to identify the need of nutrition using the MUST had to be complimented with an understanding of physical and psychological factors that could be causing that need. With Mr Allen these factors were, not exclusively, his reactions to cancer, chemotherapy treatment, loss of his home and concerns for the future. To holistically care for a patient the use of a tool, such as MUST, needs to be a framework from which to work; signposting a need not suggesting a solution. Each patient's contributing factors to their need is going to be different even if the need is the same. The nurse must be aware of this in order to carry out a holistic assessment, to result in individualised and person-centred planning and treatment for the patient.



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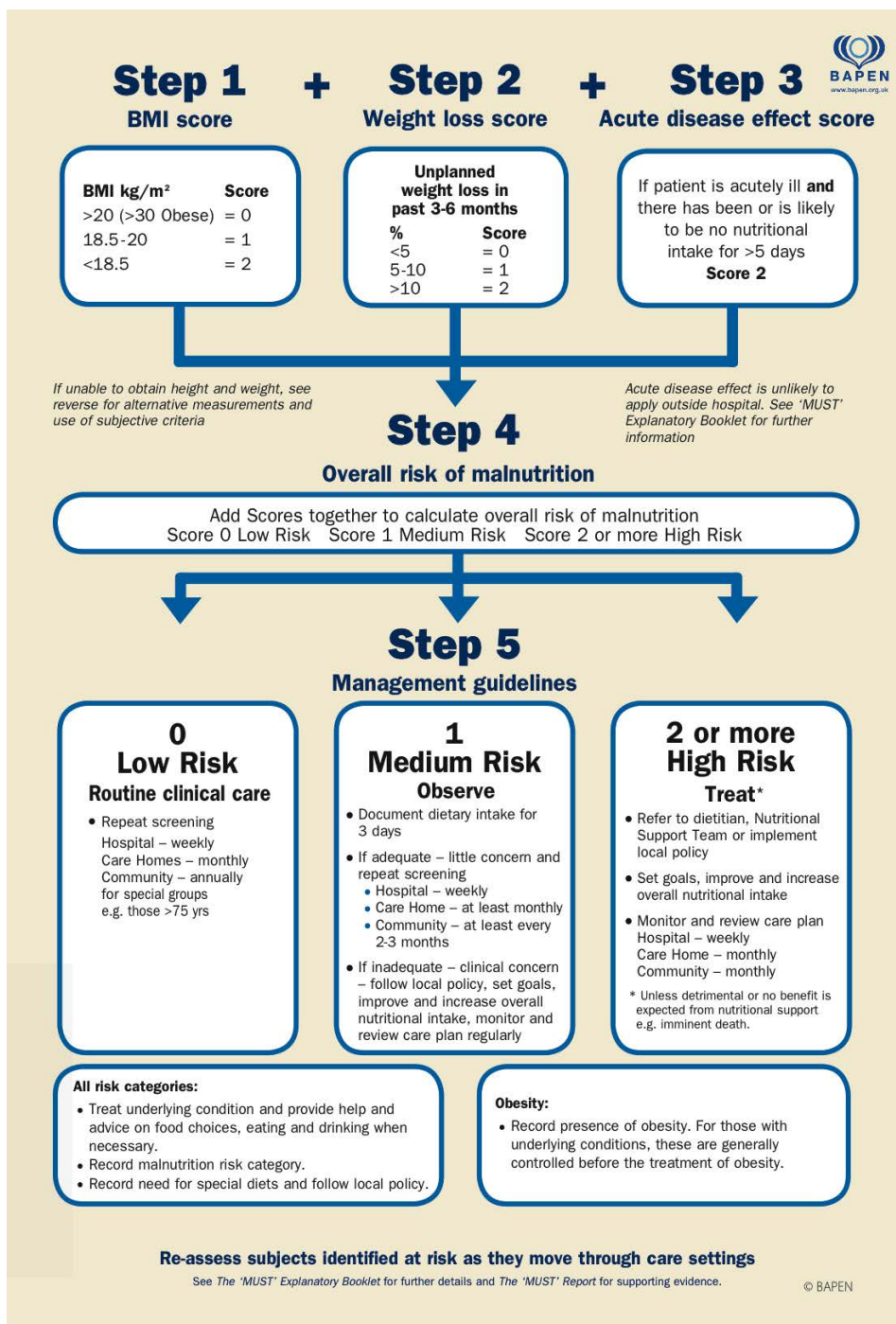
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Appendix I





## THE 'MUST' REPORT

Nutritional screening of adults:  
A multidisciplinary responsibility

### 10 KEY POINTS

1. Malnutrition, used here to mean under-nutrition, affects at least 2 million people in the UK, detrimentally affecting their health, wellbeing, and ability to work.
2. Malnutrition is under-recognised and under-treated. It leads to disease, delays recovery, increases visits to GP and increases the frequency and length of hospital stay.
3. Nutritional care would improve with adoption of a screening tool which could detect malnutrition and guide action in all care settings.
4. 'MUST' can detect over-nutrition (overweight and obesity) as well as under-nutrition and is linked to a flexible care plan, which varies according to healthcare setting, patient group, and local resources.
5. Such a tool has been developed by the Malnutrition Advisory Group (MAG) of BAPEN. It is called the 'Malnutrition Universal Screening Tool' ('MUST') to indicate that it can be applied to all types of adult patients in all care settings.
6. 'MUST' is valid, reliable, and easy to use, and, with cautious interpretation, can be applied to all adult patients, even those who cannot have their weight or height measured, who have fluid disturbances, amputations, plaster casts, or who are pregnant and lactating.
7. 'MUST' has been made user friendly through extensive field testing by a wide range of professionals in different health care settings.
8. 'MUST' promotes multidisciplinary care and responsibility, with consequent improvements in clinical outcome.
9. 'MUST' could be appropriately used to implement the nutritional screening that is recommended or required by key initiatives in the UK, such as the National Framework for Older people, Essence of Care, Care Homes for Older People (Care Standards Act), and Food, Fluid and Nutritional Care in Hospitals (Scotland).
10. 'MUST' would be most effective if deployed in a healthcare system that prioritised nutrition strategies, training, and implementation.



## Step 1 – BMI score (& BMI)



		Height (feet and inches)																											
		4'9½	4'10½	4'11	5'0	5'0½	5'1½	5'2	5'3	5'4	5'4½	5'5½	5'6	5'7	5'7½	5'8½	5'9½	5'10	5'11	5'11½	6'0½	6'1	6'2	6'3	6'3½	6'4½			
100	47	46	44	43	42	41	40	39	38	37	36	35	35	34	33	32	32	31	30	30	29	28	28	27	27	27	15	10	
99	46	45	44	43	42	41	40	39	38	37	36	35	34	33	33	32	31	31	30	29	29	28	27	27	26	26	15	8	
98	46	45	44	42	41	40	39	38	37	36	36	35	34	33	32	32	31	30	30	29	28	28	27	27	26	26	15	6	
97	46	44	43	42	41	40	39	38	37	36	35	34	34	33	32	31	31	30	29	29	28	27	27	26	26	26	15	4	
96	45	44	43	42	40	39	38	37	36	35	35	34	33	32	32	31	30	30	29	28	28	27	27	26	26	26	15	2	
95	45	43	42	41	40	39	38	37	36	35	34	34	33	32	31	31	30	29	29	28	27	27	26	26	25	25	14	13	
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43	20	20																											