Malnutrition

What is malnutrition?

Malnutrition is characterised by a deficiency of energy, protein, vitamins, minerals or other micronutrients that cause measurable adverse effects on the body [1, 2]. These effects can include the altering of [1]:

- body form (such as body shape, size, or composition)
- body function (such as the ability to move, or to think clearly)
- clinical outcomes (the body’s capacity to recover fully from disease)

Within the context of this manual we will mainly be referring to malnutrition caused from a lack of protein and/or energy.

Malnutrition has a World Health Organisation Code (ICD-10) that provides a definition for diagnosis. This is measured in terms of weight loss, expressed in standard deviations from the mean of the relevant reference population. The ICD-10 Code has been separated into subgroups, or types of malnutrition that include Kwashiorkor (malnutrition with associated oedema), Marasmas (malnutrition without associated oedema) and an intermediate of these two ‘Marasmic Kwashiorkor’. The ICD-10 Code also includes classifications for the severity of malnutrition into severe, moderate and mild forms, plus a classification for physical retardation as a result of malnutrition [3, 4]. The full diagnosis of malnutrition can be made by an Accredited Practising Dietitian or by a doctor [3, 5].

What is the prevalence of malnutrition?

The exact prevalence of malnutrition within any group in the community is difficult to identify [6, 7]. There are figures available internationally and within Australia providing estimates of malnutrition rates for different subgroups of the population. There is wide variation in these figures caused by the different testing methods and criteria used in the studies. Some of the factors that contribute to the variability of results include [6, 8]:

- differing techniques or standards used to define malnutrition.
- testing on population groups with differing demographics such as age, socioeconomic status, disease and location.

Currently reports show the best estimate of malnutrition with the community home care settings in Australia is around 5-11% [9, 10, 11, 12]. This is the equivalent of the HACC eligible...
community within Tasmania. However, more research is needed in Australia to fully understand the prevalence of malnutrition, particularly in the community home care settings [6].

Malnutrition rates in other settings within Australia are estimated at:
- 10 - 60% in the acute care settings [12, 13],
- 6 - 49% in the rehabilitation settings [14],
- 50% or more in residential aged care settings [12, 14].

**What causes malnutrition?**

Older people may be more vulnerable to malnutrition [2, 7, 15, 16]. Malnutrition in most developed countries is a result of a person’s inability to meet their nutritional needs due to one or more of the following factors [6]:

- **Decreased food intake**
- **Increased nutritional requirements**
- **An inability to absorb or use the foods being provided.**

Frequently it is a combination of these factors that contribute to malnutrition in the elderly.

**Decreased food intake**

Elderly people are susceptible to a number of environmental pressures that can cause a decrease in their food intake including [6, 17, 18]:

- **Environmental and Clinical Factors such as:** reduced ability to access food, poverty, isolation, loneliness, inflexibility, poor quality or culturally inappropriate catering systems for people in care;
- **Physical Factors such as:** reduced ability to prepare foods, reduced ability to self-feed, difficulty with chewing or swallowing, reduced sense of taste and/or smell, disability;
- **Psychological Factors such as:** dementia, depression, poor environment for eating, self-neglect, poor appetite, anxiety, bereavement.

**Increased nutrition requirements**

Whilst the older person’s total energy requirements may decrease with declining levels of muscle mass, their requirements for nutrients remain similar and in some cases higher than those for younger adults. The body’s reduced ability to absorb, manufacture or utilise some nutrients with age is the cause of an increase in requirements with ageing [17, 19, 20, 21]. As a result, older people need to be diligent in their food choices in order to eat foods that will meet their nutrient requirements whilst often consuming less total energy than they would have when younger. This can be difficult if the individual has a poor knowledge of the food groups and their individual requirements for each group [17, 19].

Diseases and associated treatments can impact on an individual’s nutrition requirements. Infections, burns, trauma, surgery and some drug therapies all increase nutrient requirements [17, 19]. Additionally, the use of medications can impair nutrient absorption. Polypharmacy (the use of multiple medications) is a known risk factor for malnutrition either by causing nutrient malabsorption or increased losses [22, 20, 23].

It is important to recognise that malnutrition is frequently caused by more than one factor. It is often a result of an interaction of many issues for a person. Living conditions and socioeconomic
circumstances play a role as well as clinical/medical issues [24, 25, 26].

Why is malnutrition a problem?

Malnutrition is a major international and Australian health problem, which frequently goes unrecognised and therefore, untreated. It is both a cause and consequence of ill health across many patient groups and health care settings [2, 3, 6, 7].

International studies show malnutrition increases health care costs by an estimated 60% for mean daily expenses, to over 309% when treatment costs such as medications and tests are included [27]. Within Australia there is limited research into the cost of malnutrition. In 2005 Lipski stated that ‘for every dollar spent on better nutrition for the elderly, $5 is saved in health care costs’. It is difficult to estimate the cost of malnutrition, because many cases go undetected.

Poor nutritional status (that leads to clinical malnutrition) in itself increases premature morbidity and mortality in the elderly and increases the cost of health care for the community. The individual suffering from poor nutritional status is more likely to suffer any of the following reductions in quality of life [6, 10, 11, 28]:

- Increased incident of falls and fractures
- Requirement for more assistance
- Requirement for more complex support and care
- Increased complications such as infections, pressure sores, skin ulcers and/or dental problems
- Greater frequency of, and longer stays in hospital
- Less ability to live independently due to depression, apathy or dementia
- Higher likelihood of illness and infection
- Higher death rates from some diseases, especially cancers
- Impaired ability to maintain body temperature
- Depression and self-neglect
- Possible confusion
- Mood and behaviour shifts and changes of attitude, including a decline in mental health
- Less interest in food, leading to social isolation
- Decreased quality of life and life expectancy
- Decreased response to and/or tolerance of treatment

All of these factors contribute towards increased health care costs [7, 15, 27].

Lack of societal recognition of malnutrition, and inadequacy of health care worker training in this area, are contributing factors to its poor recognition. Malnutrition is currently under-recognised and under-treated and therefore, screening is essential [2].

How to identify malnutrition?

**Carry out malnutrition risk screening**

Malnutrition risk screening helps to identify people with features commonly associated with nutritional problems that may require more thorough nutritional assessment [29].

This general advice was accurate at the time of publication (April 2015).
Malnutrition risk screening is done by asking an individual a set of easily administered, validated questions that have been statistically proven to identify malnutrition risk. Answers are usually scored against a standard in order to quantify the risk or likelihood of malnutrition [9]. Malnutrition screening tools have been developed for different subgroups of the population and should only be used in those groups and settings in which they have been proven to be valid [30]. Malnutrition risk screening tools are not able to provide a definitive diagnosis of malnutrition as this needs to be done by an Accredited Practising Dietitian, who can take other health factors into account [3]. Malnutrition risk screening tools can however, provide with reasonable accuracy, an indication of those who are likely to be at risk of malnutrition [9].

Australia has Evidence Based Practice Guidelines for the Nutritional Management of Malnutrition, produced by the Dietitians Association of Australia (DAA) in June 2009 [3]. Within this document there is reference to the need to use validated screening tools and the document identifies a number of tools that have been validated within various settings, including the acute care, rehabilitation, residential aged care and community settings [3]. Tools recommended for the community setting all require some form of physical measurement [30]. Whilst this can be carried out by some groups who may have access to well calibrated equipment such as scales and height measures and have the training to use them, many HACC and other aged care services do not have these tools at hand [9].

Public Health Services in Tasmania recommends the Malnutrition Screening Tool (MST) developed by Ferguson et al. [31]. This tool is validated for use within the acute sector [31]. Its lack of recommendation for use within the community sector by the DAA Best Practice Guidelines is a result of lack of studies of its use within the community, rather than any evidence against its validity [3]. This tool has been adapted by Queensland Health for use by their HACC services and is one of the few tools available that does not require complex body measurements, or the use of expensive equipment [9, 30].

The MST (contained in this manual) is an easy to administer, two question screening tool which provides a scaled answer that helps identify malnutrition risk, and can be used to indicate the level of intervention and follow up required. Ideally with training this can be administered by staff working in the aged care sector, including those running day respite centres, home support staff, community nursing and allied health staff [9].

**Malnutrition score 0 – 1**

This score indicates a low likelihood of malnutrition. A person with this score needs no further intervention. Repeat malnutrition risk screening in 6-12 months’ time, or earlier if their circumstances change or you suspect they are experiencing nutrition issues (for example, if you notice they have lost weight or have a reduced appetite).

**Malnutrition score 2**

This score indicates a moderate risk of malnutrition, either from eating poorly or having a significant or unknown amount of recent weight loss. The contributing factors of this should be investigated and addressed in order to halt its progress. This can be done by working through the ‘Nutrition Risk Identification Questions’, contained in this manual.

In some instances, no cause will be found for a score of 2 when working through the ‘Nutrition
Risk Identification Questions’. This may be the case if the client has replied that they are unsure whether they have recently lost weight. In this instance, no action is necessary apart from rescreening in 6-12 months’ time, or earlier if indicated (for example, their circumstances change, if you notice they have lost weight or have a reduced appetite). People’s ability to make changes will vary, so it’s important to monitor your clients and provide appropriate support when they need it.

Refer to the ‘How to support clients at risk of malnutrition’ section for further information.

**Malnutrition score 3 – 5**

This score indicates a person may be at high risk of malnutrition, as they have had a significant recent weight loss and are likely to also be eating poorly. The contributing factors of this must be investigated and addressed in order to halt its progress. This can be done using the ‘Nutrition Risk Identification Questions’ (see ‘Malnutrition score 2’ above for further explanation).

Refer to the ‘How to support clients at risk of malnutrition’ section for further information.

Because of its impact on the individual and society, it is important that health care workers learn about the prevalence of malnutrition, learn to screen for it in a manner that allows early identification, and learn to assist in its management and how to make appropriate referrals, for intervention.

**How to support clients at risk of malnutrition?**

Malnutrition can be multifactorial in its causes. Poor food intake can be as a result of issues that are clinical, environmental, physical or psychological. When contributing factors have been identified by going through the ‘Nutrition Risk Identification Questions’ with the client, it is then possible to explore strategies that will help deal with any identified issue/s. This can often be done by support of the individual, engaging the family, or where needed, gaining support from relevant allied health professionals or community services.

**Examples of this would be linking clients to a speech pathologist for swallowing difficulties, or to an ‘Eating with Friends’ group if eating alone is an issue. As these solutions are specific to an individual and the community they live in, it is expected that the service supporting the client will be able to assist them to explore suitable options.**

If a client scores a 3-5 on the MST, they will need to be supported to start a high protein, high energy diet, in order to reverse the increased risk of malnutrition. Clients with an MST score of 3-5 will also need support from their GP or an Accredited Practising Dietitian. Nutrition departments in the three major hospitals in Tasmania will take referrals from a health professional or HACC service that has assessed a client as being at high malnutrition risk using the MST. Refer to the ‘resources’ section of this manual for the relevant contact details and referral form.

If a client is identified as being at a high risk (score 3-5) of malnutrition, the following strategies may help:

- Follow a high protein high energy diet to maximise nutrition

This general advice was accurate at the time of publication (April 2015).
• Eat more at the time of day when clients are most hungry, for example if their appetite is better in the morning, then eat more then

• Include a protein rich food at every meal and snack, such as lean red meat, chicken, fish, eggs, tofu, nuts and seeds and nut/seed pastes (such as peanut butter), legumes, milk, yoghurt or cheese

• Enjoy ‘favourite’ foods to get more in

• Have drinks between meals so clients don’t fill up on fluid at meal times

• Fluids may be easier to manage than solid food

• Make fluids count by choosing those rich in protein and energy like soups, milk drinks and fruit juice

• If large meals are overwhelming, have smaller but more frequent meals and aim for three small meals and snacks per day

Refer to the ‘Nourishing Food Ideas’ section for more tips and ideas.

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References


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