

# Hospital Meals: Nursing and Nutrition

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At the completion of this article, you will be able to:

- Discuss the importance of nutrition in care of patients
- Indicate the importance of physical assessment patients in hospital regarding their nutritional status
- Apply appropriate principles to assist patients meet their nutritional needs at meal times.

The image of the eighteenth century child Oliver Twist, in the Charles Dickens' novel by the same name asking for more food was not a pleasant one, but can our patients ask for more? The effects of illness, the greater requirement for nutritional intake and the inability for many of our patients to communicate their needs,

## "The risk of malnutrition increases the longer a patient stays in hospital"

means that for some of our patients they may in fact require more food. The malnourished patient is not something we as nurses like to see, but sadly, around the world there have been many studies that show up to half of our patients are suffering from malnutrition whilst in hospital; furthermore "audits of hospital patients have revealed 30-50 percent of patients with objective signs of malnutrition" (Grimble and Peake 2000:142). "It was concluded that malnutrition ... is an independent risk factor impacting on higher complications and increased mortality, length of hospital stay and costs" (Isabel et.al. 2003:235). The consumption of food is not as simple as delivering a meal tray from the kitchen, food has a major role to play in a person's life as it provides the nutrients necessary to go about their activities of daily living as well as playing an important psychosocial and cultural role.

### Patients need nutrition

Recent studies have indicated an unacceptably high prevalence of malnutrition in hospital patients and inadequacies in the diets offered to patients (Fettes and Murray 2003:374). The risk of malnutrition increases the longer a patient stays in hospital, in the United Kingdom one study showed that up the 'two thirds' of patients discharged had lost an average of five percent of their body weight (McWhirter and Pennington 1994). Malnutrition can be described as the unintentional loss of weight, for example; 10%

of body weight is lost over less than six months and if 20% it can be considered severe malnutrition (Mallett and Bailey 1996:382)

A malnourished patient costs time and money, it is a significant issue that nurses can assist to redress. The British Association for Parenteral and Enteral Nutrition (1994) advocates for a multidisciplinary approach involving, doctors, nurses, dietitians, clinical pharmacists and the hospital-catering department. All team members should be involved in the patient's nutritional care to ensure a coordinated and thorough approach to the management of nutritional needs of the patient. In the United States, "Hospital costs in malnourished patients were increased up to 308.9%" (Isabel et.al. 2003:235). Simple measures such as snacks and increasing the nutritional intake for patients can have significant impact on the length of stay and complications of hospitalisation (Gall et.al. 1998 and Keele et.al. 1997).

Internationally the Joint Commission for Accreditation of Healthcare Organisations has identified a number of standards that all hospitals around the world should comply with when it comes to managing the nutritional requirements of patients through their subsidiary, Joint Commission International (JCI). These include:

- Identifying nutritional status of patients in assessments, both initial and subsequent frequent assessments
- Nutritional assessments are documented and follow up actions taken when indicated
- Appropriate, safe food is made regularly available to patients
- Education about food and nutritional guidance for patients and their families  
(Joint Commission 2002:44, 66-67, 92)

Nutrition covers the body processes for the use of "food for energy, maintenance, and growth" (Allison 1997:239). Throughout a person's life the nutritional requirement varies. There is a decrease in nutritional needs with decreased activity and age, likewise an increase in needs with periods of growth (infancy and adolescence) as well as times of stress, disease or trauma. Illness, sepsis, surgery and inflammation all influence weight loss, as the body requires more amino acids as part of the healing process (Grimble

and Peake 2000:142). Sufficient nutrition is dependant on a whole range of factors including; the type of food (figure1), the body's ability to ingest, digest and absorb food, excrete waste through to the quantity and quality of food consumed.



Figure 1. The food pyramid has often been used as the 'normal healthy diet' but remains controversial with research both supporting and contraindicating its continued use

Many factors influence a person's pattern of

normal eating. They include:

- Food availability
- Economic status
- Influences from family members, peer group and the media
- Beliefs, values and cultural heritage
- Food fashion (such as the latest 'Hollywood crash diet' or 'Dr Atkins' etc...)
- Social and emotional aspects of consuming a meal
- Physical (such as allergies, dentures, difficulties swallowing or chewing etc...)
- Psychological (such as depression or anxiety) (Allison 1997:240)

### The Nursing History and Nutritional Assessment

It is important that a nutritional assessment is completed as part of the 'nursing history' or 'nursing physical assessment' performed on admission and repeated regularly or with any significant change in patient's condition. A registered nurse shall screen all patients' nutritional status within 24 - 48 hours of admission to ward area (NMPDU 2002:3).

Assessing a patient's nutritional status includes such things as:

- Weight loss, is the patient underweight or unintentionally lost weight over the last three months
- Height and Weight or Body Mass Index (BMI), One simple tool available to nurses when assessing the patient is the Body Mass Index (BMI) as it provides useful indication of a patient's chronic protein-energy status. BMI is; weight in kilograms divided by height in metres squared {w/h<sup>2</sup>}. Adults are considered to be underweight when they have a BMI <20 kg/m<sup>2</sup>.
- Ability to eat/absorb food for example a patient who is unable to take food orally, is swallowing

impairment, or unable to swallow (complete dysphagia). Any vomiting and / or diarrhoea, or malabsorption

- Appetite does the patient have a poor or nil appetite nil or virtually nil. Is the patient fasting?
- Stress Factors Any stress factors such as major surgery, chronic illness, severe infection, sepsis, cancer, burns >15%, multiple injuries
- Medical condition does the patient have underlying medical conditions effecting nutrition such as, diabetes or cardiac failure
- Mental condition impacting on patient care i.e.: comatose, confused, depressed, uncooperative, eating disorder, psychosis. As well as physical signs observed indicating poor nutrition, there may be psychological behaviours such as irritability, lethargy, apathy, or the inability to concentrate.
- General appearance of a patient is an important tool in overall assessment of the patient. Looking for physical characteristics as part of the general appearance of a patient will give a significant insight into their nutritional status (See Table 1).

	Appearance in Normal	Signs of Malnutrition
General Hair	<ul style="list-style-type: none"> <li>● Healthy weight range</li> <li>● Smooth</li> <li>● Glossy</li> </ul>	<ul style="list-style-type: none"> <li>● Underweight</li> <li>● Dull</li> <li>● Dry</li> <li>● Brittle</li> </ul>
Nails	<ul style="list-style-type: none"> <li>● Firm</li> <li>● Nail bed pink</li> </ul>	<ul style="list-style-type: none"> <li>● Brittle</li> <li>● Ridged</li> <li>● Pale nail bed</li> </ul>
Skin	<ul style="list-style-type: none"> <li>● Healthy colour</li> <li>● Good turgor</li> </ul>	<ul style="list-style-type: none"> <li>● Unhealthy colour</li> <li>● Poor turgor</li> <li>● Dry or scaly</li> <li>● Idiopathic Bruising</li> </ul>
Mouth	<ul style="list-style-type: none"> <li>● Firm gums</li> <li>● Reddish-pink mucous membranes</li> </ul>	<ul style="list-style-type: none"> <li>● Soft gums</li> <li>● Bleeding</li> <li>● Pale mucous membranes</li> <li>● Swollen or smooth tongue</li> </ul>
Eyes	<ul style="list-style-type: none"> <li>● Bright and clear</li> <li>● Reddish-pink mucous membranes</li> <li>● No discharge</li> </ul>	<ul style="list-style-type: none"> <li>● Dull</li> <li>● Pale mucous membranes</li> <li>● Purulent discharge</li> </ul>
Muscles	<ul style="list-style-type: none"> <li>● Firm</li> <li>● Good tone</li> </ul>	<ul style="list-style-type: none"> <li>● Wasted</li> <li>● Lack of tone</li> </ul>
Limbs	<ul style="list-style-type: none"> <li>● Straight</li> </ul>	<ul style="list-style-type: none"> <li>● Bowed arms or legs</li> </ul>

It is possible that these symptoms plus the physical characteristics in Table 1; may be related to other conditions apart from malnutrition and should always be discussed with the multidisciplinary team.

Assessments by other clinicians in the team may include; skin fold thickness (using callipers to measure subcutaneous fat at four sites; triceps, biceps, sub-

scapular and supra-iliac) and Investigations (plasma proteins, haemoglobin, serum vitamin/ mineral levels and lymphocyte count). Indeed the determination of the prealbumin level can assist as an objective cost-effective method of assessing severity of illness in patients who are critically ill or have a chronic disease. "Prealbumin is the earliest laboratory indicator of nutritional status and has emerged as the preferred marker for malnutrition because it correlates with patient outcomes in a wide variety of clinical conditions" (Beck and Rosenthal 2002:1575).

### How much does a patient need?

Energy is required by the body for all chemical and physical activities, the actual amount is dependant on a number of factors; age, gender, climate, body build, physical activity, height and weight. When we speak of the energy value of food, we can use two specific terms, depending which Continent you or your patient are from, calories or joules. A joule is the Standard International unit (SI) of energy and heat. One joule is equal to the amount of work performed when one kilogram of mass is moved one meter by the force of one Newton. Joules are very small units so sometimes we call them kilojoules (kJ), which is 1000 joules. A calorie is equal to 4.184 joules. An example of the energy value of three major nutrients are; 1 gram of protein produces approximately 17kJ, 1 gram of carbohydrates produces approximately 17kJ and 1 gram of fat produces approximately 38kJ (Allison 1997:241).

Calculation of the energy requirement for a patient is part of the multidisciplinary teams response to care. This is especially important when the nurse has identified signs of poor nutritional intake or malnutrition through a nursing history or physical assessment. As a general guide for energy and fluid requirement of a patient, see Table 2.

<b>Table 2. Guideline for the estimation of patient's daily requirement</b>			
	Normal	Intermediate (eg: moderate infection, postoperative, cancer)	Severely hypermetabolic (eg: multiple trauma, severe infection, burns)
Energy per kilogram of body weight	125kJ	145-170kJ	170-250kJ
Protein per kilogram of body weight	1g	1.3-2g	2-3g
Fluid per kilogram of body weight	30-35ml	30-35ml	30-35ml (plus an additional 500 to 700mls for every degree Celsius rise in temperature for pyrexia)

As a nurse, you should be able to use the guide to identify an issue that requires intervention by the multidisciplinary team. Examples of how to use the

guide (table 2):

Mr Abdulla is a 173cm (5'8") patient who weighed 70kg on admission and has a temperature of 39.5C for the last twenty-four hours. The nurse caring for this patient notices that according to his fluid balance and the nursing notes from this morning, he has drunk less than a litre of fluid and was reluctant to eat any of his lunch. Mr Abdulla would need to consume approximately four litres of fluid and over 12,000kJ (or 2,800 calories) per day. Involvement of the multidisciplinary team is crucial for this patient to assist in his nutritional and fluid intake and prevent complications of hospitalisation.

Miss Vicky is fasting awaiting surgery, as a nurse you notice that the order is for 'N/S KVO', clearly this patient will require fluid and carbohydrates via the intravenous route so contacting the multidisciplinary team members to review the patient's fluid and nutritional/energy requirement prior to surgery is clearly indicated.

### Meals and Nursing Practice

Every facility has its own system for delivering of meals and the nurse should ensure that their patients and their immediate environment are prepared in readiness for meal times. "Nurses manage the provision of food and drink as a vital part of the care of patients in their clinical area" (NMPDU 2002:2).

Some key aspects related to proving patients with meals:

- Nursing care should be planned to ensure that there are no unpleasant sights, sounds, smells, treatments being performed during meal times, as these could interfere with appetite
- Toilet and hygiene needs are attended to prior to meals
- Ambulant patients may be assisted to a table and non-ambulant patients should be placed in a comfortable position with tables cleared ready to receive the meal tray
- When meal trays arrive the nurse should ensure the meal is adequate and all necessary equipment is provided; a cup to drink from, a fork the patient can use etc...
- During meal times the nurse should assist as required; with opening packets, placing food within reach, assistance with feeding etc...
- If a patient cannot eat, what other alternative arrangements have been provided for them; Intravenous therapy, Enteral feeding, TPN etc...
- The nurse should observe the patient's intake and if inadequate to meet the nutritional needs involve the multidisciplinary team
- Attend hygiene needs of the patient at the completion of the meal (Allison 1997:246)

## Conclusion

During hospital meal times, nurses play a vital role in meeting the nutritional needs of patients. All multidisciplinary team members should be involved in the patient's nutritional care thus ensuring a coordinated and thorough approach to the management of their nutritional needs. There have many studies conducted around the world that show that "30-50 percent of patients (have) objective signs of malnutrition" (Grimble and Peake 2000:142). A malnourished patient costs time and money, it is a significant issue that nurses can assist to redress.

Nurses should be able to assess a patient's nutritional status by obtaining information about their appetite,

preferences, level of activity, height and weight, as well as observing their general appearance. Identifying nutritional status of patients in assessments, both initial and subsequent frequent assessments.

**"A malnourished patient costs time and money, it is a significant issue that nurses can assist to redress."**

All assessments made regarding the patient should be documented and follow up actions taken when indicated. It is important that nurses ensure appropriate, safe food is made available to our patients and suitable education is given to the patient and their family.

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