



NEMO

# Malnutrition

## The skeleton in the hospital closet



This is a consensus document from Dietitian/ Nutritionists from the Nutrition Education Materials Online, "NEMO", team.

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Revised: December 2017

Due for Review: December 2019

# What is malnutrition?

- Malnutrition is a state in which a deficiency of nutrients such as energy, protein, vitamins and minerals causes measurable adverse effects on body composition, function or clinical outcome<sup>1</sup>.
- Malnutrition is both a cause and a consequence of ill health<sup>1</sup>.
- Not limited to “third world countries” – it is common in Australian hospitals and in some community groups<sup>1</sup>.

<sup>1</sup> National Institute for Health and Clinical Excellence (NICE). Nutrition support in adults: oral nutrition support, enteral tube feeding and parenteral nutrition (clinical guideline 32). London National Institute for Health and Clinical Excellence (NICE): 2006.

# Malnutrition in public hospitals

- In Queensland (2002-2003), the prevalence of malnutrition in public hospitals was 30-40%<sup>1</sup>
  - Approximately 20% of these patients were severely malnourished<sup>1</sup>.
- Other Australian studies have found similar rates of malnutrition in acute hospitals at between 30 – 50%<sup>2</sup>
- Studies show that the prevalence of malnutrition increases as the length of stay increases<sup>(cited in 1)</sup>.
- Approximately 50% of nursing home residents are malnourished<sup>3</sup>.

<sup>1</sup> Banks M, Ash S, Bauer J, Gaskill D. Prevalence of malnutrition in adults in Queensland public hospitals and residential aged care facilities. *Nutrition & Dietetics*. 2007. 64:172-178.

<sup>2</sup> Agarwal E, Ferfuson M, Banks M, Bauer J et al. Nutritional status and dietary intake of acute care patients: results from the Australasian Care Day Survey 2010. *Clinical Nutrition* 2012. 31: 41-7.

<sup>3</sup> Gaskill D, Black L, Isenring E, Hassall S, Sanders F, Bauer J. Malnutrition prevalence and nutrition issues in residential aged care facilities. *Australasian Journal of Ageing*. 2008. 4:189-194.

# Effects of malnutrition

- Increases infection rate
- Increases risk of complications – pressure injuries (at least doubled)<sup>1</sup>, sepsis, declining mental health
- Decreases response and/or tolerance to treatment
- Decreases quality of life
- Decreases life expectancy
- Negatively effects treatment outcomes

## **ALL EQUAL INCREASED HEALTH CARE COSTS**

Increased use of medication, increased length of stay due to complications, readmissions, etc.<sup>2</sup>

1 Banks M, Bauer J, Graves N, Ash S. Malnutrition and pressure ulcer risk in adults in Australian Health care facilities. Nutrition 2007. 27: 896-901.

2 Correia MI, Waitzberg DL. The impact of malnutrition on morbidity, mortality, length of hospital stay and costs evaluated through a multivariate model analysis. Clinical Nutrition 2003. 22(3): 235-239.

# Malnutrition results from....

## ***Decreased intake***

- Poor appetite
- Needing assistance with meals
- Lack of access to food
- Dysphagia
- Alcohol dependence
- Depression

## ***Increased requirements***

- Infection
- Post-surgical
- Wound healing
- Pressure injury
- Cancer
- Trauma

## ***Malabsorption/nutrient losses***

- GI diseases
- Bowel resection
- Wounds/drains

# Associated factors that may lead to malnutrition

## *Physiological*

- Disease
- Dysphagia
- Delirium and dementia
- Medication – smell, taste, diarrhoea
- Surgery (e.g. NBM)
- Losses – vomiting; skin losses e.g. burns; fistula losses; peritoneal losses e.g. ascites tap

## *Social*

- Financial constraints
- Lack of support
- Lack of food access
- Alcohol
- Drugs

## *Psychological*

- Depression
- Long hospital admissions

# Signs/symptoms of malnutrition

- Loss of appetite
- Decreased food intake
- Unintentional weight loss
- Loss of lean body mass
- Loss of fat stores

*Malnutrition can also occur in overweight or obese people – not just those with an obviously wasted appearance.*

# Pressure injuries

- Patients with malnutrition are twice as likely to develop a pressure injury compared to well-nourished patients<sup>1</sup>.
- Patients with infections often have poor appetites, resulting in lower nutritional intake.
- Patients with pressure injuries and wounds have higher protein and energy needs in order to promote wound healing<sup>2</sup>.
- Refer to the dietitian as early as possible for nutritional intervention.

<sup>1</sup> Banks M, Bauer J, Graves N, Ash S. Malnutrition and pressure ulcer risk in adults in Australian health care facilities. 2010. Nutrition. 26:896-901

<sup>2</sup> Practice-Based Evidence in Nutrition. Wound Care – Pressure Ulcers Evidence Summary 2017. [www.pennutrition.com](http://www.pennutrition.com)



# How to screen for malnutrition?

- All staff can screen (e.g. medical staff, nursing staff, dietetic assistants, therapy assistants, and foodservice staff) using a nutritional screening tool called the **Malnutrition Screening Tool (MST)**.
- MST is usually found on the Waterlow tool.
- Dietitians use this tool to assist with prioritising patients.

## Malnutrition Screening Tool

(Ferguson, Capra, Bauer, Banks 1999)

Have you lost weight recently without trying?	No	0	
	Unsure	2	
	If yes, how much weight have you lost? (kilograms)	1.0 - 5.0	1
		6.0 - 10.0	2
		11.0 - 15.0	3
		>15.0	4
Unsure		2	
Have you been eating poorly because of a decreased appetite?	No	0	
	Yes	1	
<b>Total Score</b>			

If score 2 or more – at risk of malnutrition

# How is malnutrition assessed?

- Dietitians use nutrition assessment tools, e.g.
  - Subjective Global Assessment (SGA)
  - Patient-Generated Subjective Global Assessment (PG-SGA)
  - Mini Nutritional Assessment (MNA)

# How is malnutrition assessed?

- These nutrition assessment tools explore:
  - Weight changes/loss
  - Dietary intake changes
  - Nutrition impact symptoms
  - Physical assessment
- To make a complete nutritional diagnosis, the assessment is completed using a tool **PLUS** other information collected e.g. dietary habits, biochemistry, clinical condition/disease

# What can we all do?<sup>1</sup>

- Screen patients using a validated screening tool
  - On admission
  - Weekly throughout hospital stay
- Refer patients to a dietitian who:
  - Have an MST score of >2
  - Have a high Waterlow score
  - Have pressure injuries or wounds
  - Have experienced unintentional weight loss
  - Are eating poorly at meal times
- Encourage and provide assistance to patients at meal times
- Encourage patients with prescribed supplements and extras
- Advise the dietitian if patients are not eating well at meals or drinking supplements
- Weigh patients on admission, and at least weekly.

<sup>1</sup> Watterson C. et al. Evidence based practice guidelines for nutritional management of malnutrition in adult patients across the continuum of care. 2009. Nutrition & Dietetics. 66: S1-34.

# Improving nutrition via meals

- Encourage patients to...
  - Drink nutritious drinks (e.g. nutritional supplements, milk, juice) before non-nutritious drinks (e.g. tea, coffee or water)
  - Eat meat and dairy desserts before vegetables
  - Eat small meals frequently

# Improving nutrition via meals

- Identify and address possible reasons for poor intake
  - Nausea
  - Poor appetite
  - Problems chewing or swallowing
  - Dislike of menu choices
  - Pain
  - Anxiety, depression

# Improving nutrition via meals

- Make eating easier by setting the patient up for meals
  - Consider proximity of table to patient.
  - Is your patient sitting in their chair?
  - Do they need assistance opening packaging?
- Discuss with the patient the importance of good nutrition.
- Use “HPHE in Hospital” guide on NEMO to assist patients with improving food intake.

# Improving nutrition via meals

## Safe feeding tips for staff and families

- Wash hands.
- Seat patient upright.
- Reduce distractions – close the curtain if needed.
- Cut into small pieces.
- Offer protein/dessert first.
- Alternate mouthfuls of food and drink.
- Encourage independence - help the patient hold cup/cutlery
- Model and cue the patient e.g. “open mouth” “chew” or “swallow”
- Check patient has swallowed before offering more.
- **Keep it positive!**

*If concerned with intake:*

Please call Dietitian

*If concerned with swallowing:*

Please call Speech Pathologist

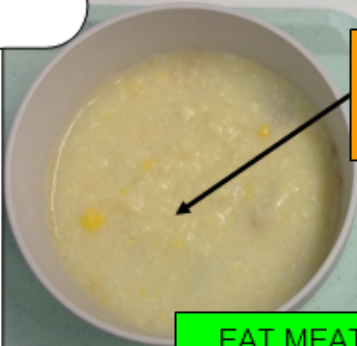
**DRINK TEA  
AND WATER  
LAST**



**DRINK  
JUICE,  
CORDIAL,  
MILK 2ND**



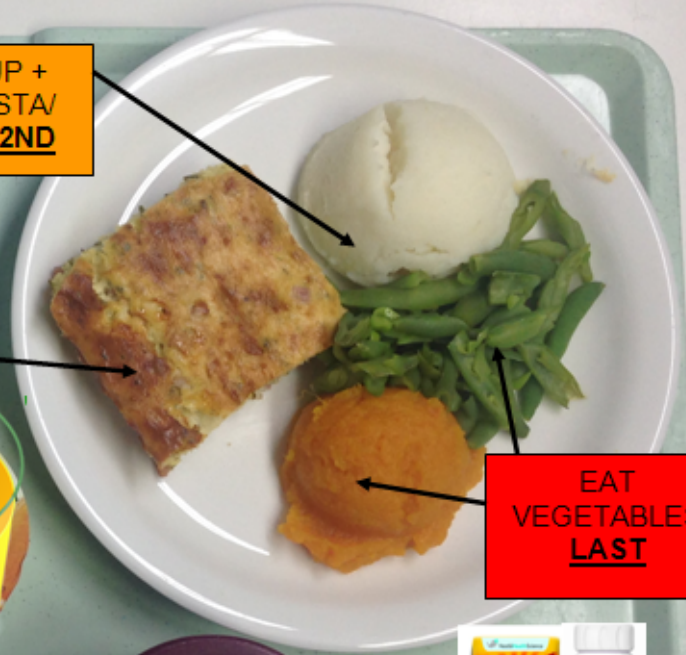
**EAT SOUP +  
RICE/ PASTA/  
POTATO 2ND**



**EAT MEAT/  
PROTEIN +  
DESSERT 1ST**



**EAT  
VEGETABLES  
LAST**



**IF AVAILABLE, SIP ON  
SUPPLEMENTS  
BETWEEN  
MOUTHFULS  
(ESPECIALLY IF  
UNABLE TO EAT ALL  
YOUR PROTEIN)**





# Sample HPHE meal plan

## Standard Meal

Provides 8400kJ and 55g protein

<b>Breakfast</b>	Rice bubbles (+ 2 sugar) + low fat milk White bread with margarine + vegemite Apple juice + tea with 2 sugars
<b>Morning Tea</b>	Instant coffee (+ 2 sugar) + 2 sweet biscuits
<b>Lunch</b>	Carrot soup Garden salad (no meat) Slice of white bread + margarine Apple Juice Banana
<b>Afternoon Tea</b>	Instant coffee (+ 2 sugar) + 2 sweet biscuits
<b>Dinner</b>	Spaghetti bolognaise Pumpkin + beans Fruit salad Orange Juice
<b>Supper</b>	Tea(+ 2 sugar) + 2 sweet biscuits

## High Protein; High Energy Meal

Provides 14000kJ and 105g protein

Breakfast	Porridge (+2 sugar) + full cream milk + cream White bread with margarine + jam Apple Juice + Tea (+ 2 sugar)
Morning Tea	Iced coffee + cheese and crackers
Lunch	High protein soup Quiche or meat + salad Slice of white bread + margarine Banana + custard Flavoured milk
Afternoon Tea	Flavoured milk + yoghurt + fruit
Dinner	Spaghetti bolognaise Pumpkin + beans Dairy dessert / pudding Orange Juice
Supper	Milk milo + fruit cake

# High protein, high energy food/ extras\*

- Flavoured milk (250mL) (950kJ, 9g protein)
- Cheese (20g) and 3 crackers (500kJ, 6g protein)
- Yoghurt (200g) (800kJ, 8g protein)
- Custard (150g) (560kJ, 5g protein)
- Enriched milk (full cream milk + milk powder)
- Commercial nutritional supplements,
  - e.g., Sustagen, Resource Plus, Ensure, Novasource

\*Refer to High Protein High Energy resources on NEMO for more information.

# Take home messages

- Weigh patients on admission, and at least weekly
- Screen and re-screen your patients (e.g. using MST)
- Ensure your patient is set up to eat
- Encourage and provide assistance to patients at meal times when required
- Encourage patients with prescribed supplements and extras
- Advise the dietitian if patients are not eating well at meals or drinking supplements



**Any questions?**