Malnutrition

The skeleton in the hospital closet
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\(^1\).
- Malnutrition is both a cause and a consequence of ill health\(^1\).
- Not limited to “third world countries”–it is common in Australian hospitals and in some community groups\(^1\).

Malnutrition in public hospitals

• In Queensland (2002-2003), the prevalence of malnutrition in public hospitals was 30-40%\(^1\)
  – Approximately 20% of these patients were severely malnourished\(^1\).

• Other Australian studies have found similar rates of malnutrition in acute hospitals at between 30 – 50%\(^2\)

• Studies show that the prevalence of malnutrition increases as the length of stay increases\(^{\text{cited in } 1}\).

• Approximately 50% of nursing home residents are malnourished\(^3\).

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Effects of Malnutrition

- Increases infection rate
- Increases risk of complications – pressure injuries (at least doubled)\(^1\), 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.\(^2\)

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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

<table>
<thead>
<tr>
<th><strong>Physiological</strong></th>
<th><strong>Social</strong></th>
<th><strong>Psychological</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Disease</td>
<td>Financial constraints</td>
<td>Depression</td>
</tr>
<tr>
<td>Dysphagia</td>
<td>Lack of support</td>
<td>Long hospital admissions</td>
</tr>
<tr>
<td>Delirium and dementia</td>
<td>Lack of food access</td>
<td></td>
</tr>
<tr>
<td>Medication – smell, taste, diarrhoea</td>
<td>Alcohol</td>
<td></td>
</tr>
<tr>
<td>Surgery (e.g. NBM)</td>
<td>Drugs</td>
<td></td>
</tr>
<tr>
<td>Losses – vomiting; skin losses e.g. burns; fistula losses; peritoneal losses e.g. ascites tap</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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

• People with malnutrition are twice as likely to develop a pressure injury, than a well-nourished patient\(^1\)

• 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\(^2\).

• Refer to the Dietitian as early as possible for immediate nutritional intervention.

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How to screen for malnutrition?

- All staff can screen (e.g. nursing staff, dietetic assistant, therapy assistant, and Foodservice staff) using a nutritional screening tool call the Malnutrition Screening Tool (MST)

- 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 |
| If yes, how much weight have you lost? (kilograms) | Unsure | 2 |
| 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 |

Total Score

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 Nutrition 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?¹

- Screen patients using a validated screening tool
  - On admission
  - 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
- Weight patients on admission, and at least weekly.

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

• Identify and address possible reasons for poor intake
  ➢ Nausea, poor appetite, problems chewing or swallowing, dislike of menu choices, pain, anxiety, depression

• Make eating easier by setting the patient up for meals
• 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

Eat soup + rice/pasta/potato 2nd

Eat meat/protein + dessert 1st

If available, sip on supplements between mouthfuls (especially if unable to eat all your protein)

Eat vegetables last

Drink juice, cordial, milk 2nd

Revised: September 2015
Review: September 2017
## Sample HPHE Meal Plan

### Standard Meal

<table>
<thead>
<tr>
<th>Provides 8400kJ and 55g protein</th>
<th>High Protein; High Energy Meal Provides 14000kJ and 105g protein</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breakfast</strong></td>
<td><strong>Breakfast</strong></td>
</tr>
<tr>
<td>Rice bubbles (+ 2 sugar) + low fat milk</td>
<td><strong>Porridge (+2 sugar) + full cream milk + cream</strong></td>
</tr>
<tr>
<td>White bread with margarine + vegemite</td>
<td><strong>White bread with margarine + jam</strong></td>
</tr>
<tr>
<td>Apple Juice + Tea with 2 sugars</td>
<td><strong>Apple Juice + Tea (+ 2 sugar)</strong></td>
</tr>
<tr>
<td><strong>Morning Tea</strong></td>
<td><strong>Morning Tea</strong></td>
</tr>
<tr>
<td>Instant coffee (+ 2 sugar) + 2 sweet</td>
<td><strong>Iced coffee + cheese and crackers</strong></td>
</tr>
<tr>
<td>biscuits</td>
<td></td>
</tr>
<tr>
<td><strong>Lunch</strong></td>
<td><strong>Lunch</strong></td>
</tr>
<tr>
<td>Carrot soup</td>
<td><strong>High protein soup</strong></td>
</tr>
<tr>
<td>Garden salad (no meat)</td>
<td><strong>Quiche or meat + salad</strong></td>
</tr>
<tr>
<td>Slice of white bread + margarine</td>
<td><strong>Slice of white bread + margarine</strong></td>
</tr>
<tr>
<td>Apple Juice</td>
<td><strong>Banana + custard</strong></td>
</tr>
<tr>
<td>Banana</td>
<td><strong>Flavoured milk</strong></td>
</tr>
<tr>
<td><strong>Afternoon Tea</strong></td>
<td><strong>Afternoon Tea</strong></td>
</tr>
<tr>
<td>Instant coffee (+ 2 sugar) + 2 sweet</td>
<td><strong>Flavoured milk + yoghurt + fruit</strong></td>
</tr>
<tr>
<td>biscuits</td>
<td></td>
</tr>
<tr>
<td><strong>Dinner</strong></td>
<td><strong>Dinner</strong></td>
</tr>
<tr>
<td>Spaghetti bolognaise</td>
<td><strong>Spaghetti bolognaise</strong></td>
</tr>
<tr>
<td>Pumpkin + beans</td>
<td><strong>Pumpkin + beans</strong></td>
</tr>
<tr>
<td>Fruit salad</td>
<td><strong>Dairy dessert / pudding</strong></td>
</tr>
<tr>
<td>Orange Juice</td>
<td><strong>Orange Juice</strong></td>
</tr>
<tr>
<td><strong>Supper</strong></td>
<td><strong>Supper</strong></td>
</tr>
<tr>
<td>Tea (+ 2 sugar) + 2 sweet biscuits</td>
<td><strong>Milk milo + fruit cake</strong></td>
</tr>
</tbody>
</table>

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This is a consensus document from Dietitian/ Nutritionists from the Nutrition Education Materials Online, "NEMO", team.  
Revised: September 2015  
Review: September 2017
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, Novosource

*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
• 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?