Nutrition Standards
for adult inpatients in WA hospitals
1. Introduction

The *WA Nutrition Standards for Hospital Food Service* is a revision to the *Nutrition Specifications for Hospital Food Service 2005*. The purpose of the Standards is to guide food producers (both in-house and external) and to assist menu design, planning and assessment. The aim is to ensure all patients of WA public hospitals are able to meet their nutrition requirements over their stay.
1.1 expected outcomes

It is expected that each public hospital in WA will offer:

- A menu that meets this Standard
- A food service that meets the nutritional needs of the patient population
- A menu format and level of choice appropriate for the patient profile.

1.2 standards development

To facilitate the ultimate development of national hospital menu standards, the Standards have been developed with consideration to policy documents of other states, namely:

- Nutritional Standards for adult inpatients in NSW hospitals 2011
- Nutrition Standards for Menu Items in Victorian Hospitals and Residential Aged Care Facilities 2009
- Queensland Health Food Services Nutritional Specifications for Meal Components 2009
- The draft menu and nutritional standards for adult in-patients in South Australian acute care hospitals 2009.

Material from the Nutritional Standards for adult inpatients in NSW hospitals 2011 and the Nutrition Standards for Menu Items in Victorian Hospitals and Residential Aged Care Facilities 2009 has been used to form the basis of these Standards.

1.3 who these standards are for

These Standards are designed to be appropriate for most acute adult inpatients, including the nutritionally well and the nutritionally at risk.

High nutritional needs patients may be able to meet requirements from the standard menu via large serves and/or additional choices at meal times where these options are available. For those with poor appetites, the provision of fortified dishes, supplements and nutrient dense snacks may be indicated.

Texture modified diets are included in this document.

These Standards are not applicable to:

1. Special nutritional needs patients (those requiring therapeutic diets). These patients may have different nutrient goals and/or may require different food choices to those outlined in these Standards. Therapeutic diets are to be addressed in a separate document.
2. Paediatric patients. Paediatric diets are to be addressed in a separate document.
3. Long stay patients requiring weight loss. The nutrient goals set for energy and fat in these Standards may be higher than those suitable for long stay patients requiring weight loss or weight maintenance following weight loss, and may need to be adjusted accordingly.
Nutritional Standards Compliance by Rural and Remote WA Hospitals

Whilst all WA hospital facilities must make every effort to comply with the WA Nutrition Standards, it is recognised that smaller cook fresh hospitals (specifically rural and remote hospital sites) may be unable to meet specific components of the standards, most notably the Minimum Menu Choice Standard. In such instances, where the site can provide adequate justification for inability to comply with the standard, a modified menu design may be utilised. These modified menus must however still adhere to the overarching principles and nutritional goals described in the standard.

1.4 overarching principles

1. WA Health has a duty of care to ensure inpatients have access to safe, appropriate and adequate food and fluids.
2. Hospital menus will offer food choices that are appealing and which patients will enjoy.
3. Menu design will be based on the needs of the local hospital population, taking into account social, cultural, and religious needs.
4. Menu design and choices offered will allow patients to consume the recommended number of serves from each of the Core Food Groups².
5. The *Nutrient Reference Values for Australia and New Zealand*³ will be the basis for developing menu standards. Menus should enable all patients to meet their Recommended Dietary Intakes (RDI) targets.
6. Hospital meal services will enable access to additional food options for patients with high nutritional needs.
7. Patient nutrition requirements should be provided from food where possible while the use of oral supplements is reserved for clear clinical indications.
8. A variety of food will be offered to patients.
9. The Standards will be reviewed on a regular basis.
2. Nutrient goals

The nutrient goals are based on the RDI or Adequate Intake (AI) for a 76kg male aged 51-70 years, except for dietary iron which has been set higher to account for the needs of females in certain age groups.

Table 1 sets out targets for specific nutrients that need to be provided by the standard menu and strategies to meet the targets. Menus should be capable of meeting the nutrient goals as follows:

- Energy and protein on a daily basis
- Vitamins and minerals averaged on a weekly basis.

The set energy goal is based on 120kJ/kg bodyweight, the upper end of the range recommended for non ambulatory or sedentary, non hypermetabolic adults\(^4\). The rationale for set nutrient goals for the other nutrients is described in the *Nutritional Standards for adult inpatients in NSW hospitals 2011*\(^5\).
## Table 1 – Nutrient goals

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Goal</th>
<th>Notes/Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>9 120 kJ/day</td>
<td>Provide a choice of energy dense menu items.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suggestions for high energy needs patients include:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Larger or additional meal serves</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Nourishing snacks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Fortified menu items</td>
</tr>
<tr>
<td>Protein</td>
<td>90 g/day</td>
<td>Suggestions for high protein needs patients are as per high energy needs patients.</td>
</tr>
<tr>
<td>Fat</td>
<td>Menus should not be</td>
<td>Use monounsaturated and polyunsaturated fats in food</td>
</tr>
<tr>
<td></td>
<td>routinely low in fat</td>
<td>preparation where appropriate.</td>
</tr>
<tr>
<td></td>
<td>Not more than 10% energy</td>
<td>Provide monounsaturated and polyunsaturated spreads.</td>
</tr>
<tr>
<td></td>
<td>from trans and saturated</td>
<td></td>
</tr>
<tr>
<td>Fibre</td>
<td>30 g/day</td>
<td>At least 50% of cold breakfast cereals offered are to provide &gt;3g fibre per serve.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provide wholemeal and wholegrain breads.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provide a minimum of 5 serves of vegetables and 2 serves of fruit daily.</td>
</tr>
<tr>
<td>Fluid</td>
<td>2.1 – 2.6 litres/day</td>
<td>Water to be available at bedside for all clinically suitable patients.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Offer a selection of beverages at meals and mid meals.</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>45 mg/day</td>
<td>Include sources of Vitamin C daily.</td>
</tr>
<tr>
<td>Folate</td>
<td>400 ug/day</td>
<td>Bread to be available at each meal.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provide a minimum of 5 serves of vegetables and 2 serves of fruit daily.</td>
</tr>
<tr>
<td>Calcium</td>
<td>1000 mg/day</td>
<td>Provide milk based desserts and milk beverages.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Women over 50 years of age and men over 70 years of age require 1300 mg/day.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provide high calcium snacks to these groups.</td>
</tr>
<tr>
<td>Iron</td>
<td>11 mg/day</td>
<td>Offer red meat in at least one hot main per day.</td>
</tr>
<tr>
<td>Zinc</td>
<td>14 mg/day</td>
<td>Providing sufficient energy and iron will assist in providing adequate zinc.</td>
</tr>
<tr>
<td>Sodium</td>
<td>Upper Intake Limit 2300 mg/</td>
<td>Allow inclusion of some high salt, nutrient dense foods (eg. cheese, ham).</td>
</tr>
</tbody>
</table>
3. Minimum menu choice standard

The Minimum Choice Menu Standard specifies the minimum number of choices and serve sizes for each food to be provided at meals and mid meals. The Standard ensures patients are provided with the recommended number of serves from each of the Core Food Groups, and consistency in the food provided by facilities across the state. Menu patterns are not specified, allowing facilities to plan menus that best suit their patients’ needs.

Certain meal components are categorised into ‘Bands.’ See Section 4 for Band definitions.
<table>
<thead>
<tr>
<th>Menu Item</th>
<th>Minimum Number of Choices</th>
<th>Minimum Serve Size</th>
<th>Menu Design Comments</th>
<th>Nutritional Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit</td>
<td>2/day</td>
<td>120g</td>
<td>Provide at least 5 types of fresh fruit per 5 days</td>
<td>Canned in natural fruit juice or water</td>
</tr>
<tr>
<td>Fruit Fresh or Canned or stewed</td>
<td></td>
<td></td>
<td>Provide at least 5 types of stewed/tinned fruit per 5 days</td>
<td>Stewed without added sugar</td>
</tr>
<tr>
<td>Fruit</td>
<td></td>
<td></td>
<td>Provide prunes daily</td>
<td></td>
</tr>
<tr>
<td>Fruit</td>
<td></td>
<td></td>
<td>Include seasonal fruit where possible</td>
<td></td>
</tr>
<tr>
<td>Fruit</td>
<td></td>
<td></td>
<td>Offer fresh fruit diced and sliced as well as whole</td>
<td></td>
</tr>
<tr>
<td>Fruit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Juice</td>
<td>1/day</td>
<td>100mL</td>
<td>At least two varieties</td>
<td>100% juice</td>
</tr>
<tr>
<td>Juice</td>
<td></td>
<td></td>
<td>At least 20mg Vit C/100mL</td>
<td></td>
</tr>
<tr>
<td>Cereal - hot</td>
<td>1/breakfast meal</td>
<td>180g cooked weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cereal - cold</td>
<td>4/breakfast meal</td>
<td>Portion packs</td>
<td>All cold cereals to have less than 30g sugars/100g</td>
<td></td>
</tr>
<tr>
<td>Cereal - cold</td>
<td></td>
<td>Or 30g</td>
<td>At least 50% of cold cereals offered to have more than 3g total fibre/serve</td>
<td></td>
</tr>
<tr>
<td>Milk added to cereal</td>
<td>1/breakfast meal</td>
<td>80mL added to hot cereal 150mL for cold cereal</td>
<td>Reduced fat (2%) Skim milk soy milk on request</td>
<td></td>
</tr>
<tr>
<td>Yoghurt</td>
<td>1/breakfast meal</td>
<td>100g at breakfast &gt; 120g -200g where offered as a dessert</td>
<td>Low fat varieties site specific</td>
<td></td>
</tr>
<tr>
<td>Cooked Breakfast</td>
<td>Served ‘as required’ (site specific) when ordered by a dietitian</td>
<td>Examples: Lean bacon 30g + 1 egg 50g 2 beef croquettes 110g + savoury sauce 20g 1 fish patty 90g 1 scrambled egg 110g or 1 omelette 110g or 1 egg cake 110g or 1 boiled/ poached egg 50g Baked beans 130g Spaghetti 130g Creamed sweet corn 130g Sauté mushrooms 70g Grilled tomato 130g</td>
<td>Frequency and combination determined at site Spaghetti and other low protein items can be included for variety, not more frequently than once per 7 days</td>
<td></td>
</tr>
<tr>
<td>Menu Item</td>
<td>Minimum Number of Choices</td>
<td>Minimum Serve Size</td>
<td>Menu Design Comments</td>
<td>Nutritional Standards</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------</td>
<td>--------------------</td>
<td>----------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Bread</td>
<td>Offered at each main meal</td>
<td>1 slice 1 roll (30g)</td>
<td>High fibre white, wholemeal and wholegrain/multigrain to be available.</td>
<td></td>
</tr>
<tr>
<td>Toast/bread or Bread roll</td>
<td>Patients to be able to select up to 2 slices bread or 2 x 30g rolls per meal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Margarine</td>
<td>1/main meal</td>
<td>1 portion (10g) per 2 slices of bread</td>
<td>Provide polyunsaturated or monounsaturated spreads. Butter may be offered as an option (site specific). Consider patient’s therapeutic needs.</td>
<td></td>
</tr>
<tr>
<td>Cold beverage</td>
<td>1/midmeal</td>
<td>150mL</td>
<td>Reduced fat (2%). Skim milk. Soy milk on request.</td>
<td></td>
</tr>
<tr>
<td>Hot beverages</td>
<td>Offered at least 4 times per day at meals or midmeals</td>
<td>150mL 30mL milk for hot beverage</td>
<td>Tea and Coffee. Decaffeinated and hot chocolate beverages may also be offered.</td>
<td></td>
</tr>
<tr>
<td>Sugar and Non Nutritive Sweeteners</td>
<td>1 of each/meal where hot beverage is served</td>
<td>Portion control packs</td>
<td>Frequency of Band 1 and Band 2 items site specific. See Band definitions.</td>
<td></td>
</tr>
<tr>
<td>Soup</td>
<td>Site specific</td>
<td>180mL</td>
<td>See Band definitions. Use unsaturated fats in preparation. Where popular non-compliant main meal items are included as determined by site dietitian: -less than 20% of main items to have more than 15g fat per serve - less than 10% of main menu items to have more than 575mg sodium per serve.</td>
<td></td>
</tr>
<tr>
<td>Hot Main and Hot Main Vegetarian</td>
<td>Offer on at least two meal occasions per day. On each occasion, offer at least two choices. At least one hot dish per meal must meet the standard for Band 1 or Band 2 Mains. N.B The same hot meal choice can only be offered once in the same week.</td>
<td></td>
<td>At least one main dish per day must be red meat. A variety of meats to be provided for consecutive days. Where hospitals determine their population needs a vegetarian option at each meal, at least one per day should be from Band 1 Mains Vegetarian. See Band definitions.</td>
<td></td>
</tr>
<tr>
<td>Menu Item</td>
<td>Minimum Number of Choices</td>
<td>Minimum Serve Size</td>
<td>Menu Design Comments</td>
<td>Nutritional Standards</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------</td>
<td>--------------------</td>
<td>----------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Potato, rice, pasta</td>
<td>Two varieties at each meal offering hot main choices</td>
<td>100g cooked weight</td>
<td>Potato, rice or pasta may not be required as a side where they are included as part of the main dish</td>
<td>Cook without added salt. Use unsaturated fat in recipes</td>
</tr>
<tr>
<td>Vegetables</td>
<td>2 varieties at each meal offering hot main choices</td>
<td>75g per variety</td>
<td>At least 1 red/orange and 1 green vegetable per hot main meal Band 3 Side salads may be offered as an alternative</td>
<td>See Band definitions Cook without added salt. Use unsaturated fat in recipes</td>
</tr>
<tr>
<td>Sandwich</td>
<td>One Band 1 sandwich offered at least twice per day</td>
<td>Minimum of 5 different vegetables with minimum total weight of 150g plus protein and carbohydrate sources as specified in Band definitions</td>
<td>Choice of white and wholemeal, wholegrain or multigrain bread to be available</td>
<td>See Appendix 1 for Band definitions Polyunsaturated or monounsaturated margarine to be used</td>
</tr>
<tr>
<td>Main Salad</td>
<td>At least once per day</td>
<td>Offer only Band 1 or Band 2 salads as main meals.</td>
<td>See Band definitions</td>
<td></td>
</tr>
<tr>
<td>Desserts</td>
<td>Offer desserts twice per day, including one Band 1 option per day</td>
<td></td>
<td>See Band definitions Use unsaturated fats in preparation where appropriate</td>
<td></td>
</tr>
<tr>
<td>Snacks</td>
<td>3/day</td>
<td>Examples: 3 crackers + 20g cheese 100g custard 100g yoghurt 30-60g scone/fruit loaf 30-80g cake/muffin 2 plain sweet biscuits 120g fresh fruit ½ round sandwiches</td>
<td>High calcium snacks are required to meet calcium requirements of females over 50 years of age and males over 70 years of age Nourishing snacks served as required when ordered by a dietitian Nourishing snacks lists are site specific</td>
<td></td>
</tr>
</tbody>
</table>
4. Band definitions

The Bands are based on a concept developed by the *Nutrition Standards for Menu Items in Victorian Hospitals and Residential Aged Care Facilities 2009*. The Bands define nutritional profiles and/or portion sizes for each of the following menu categories:

- Soups
- Hot Mains
- Hot Mains – Vegetarian
- Salads
- Sandwiches
- Desserts

Note that the examples provided are based on a specific recipe and depending on the recipe a particular item can have a different Band allocation. Facilities need to assess their recipes to determine Band compliance.

N.B - A 10% variance in portion size and nutrient content is deemed acceptable.
## Nutrition Standards for adult inpatients in WA hospitals

### Soups

<table>
<thead>
<tr>
<th>Band</th>
<th>Description</th>
<th>Portion size</th>
<th>Energy kJ</th>
<th>Protein g</th>
<th>Fat g</th>
<th>Sodium mmol (mg)</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Higher protein content</td>
<td>180mL</td>
<td>Min 360</td>
<td>Min 5</td>
<td>Range 2-9</td>
<td>Max 27(621)</td>
<td>Minestrone, Pea &amp; ham</td>
</tr>
<tr>
<td>2</td>
<td>Lower protein content</td>
<td>180mL</td>
<td>Min 180</td>
<td>Min 2</td>
<td>Range 0-9</td>
<td>Max 27(621)</td>
<td>Vegetable noodle</td>
</tr>
</tbody>
</table>

### Hot Mains

<table>
<thead>
<tr>
<th>Band</th>
<th>Description</th>
<th>Portion size</th>
<th>Energy kJ</th>
<th>Protein g</th>
<th>Fat g</th>
<th>Sodium mmol (mg)</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Predominately single ingredient</td>
<td>Edible meat component 100g cooked weight</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Max 10</td>
<td>Max 7(161)</td>
<td>Roast beef, grilled fish</td>
</tr>
<tr>
<td>2</td>
<td>Wet dish with high meat content</td>
<td>Edible meat component 100g cooked weight Total cooked weight of the dish 150g minimum</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Max 15</td>
<td>Max 20(460)</td>
<td>Chicken &amp; potato curry, beef stroganoff</td>
</tr>
<tr>
<td>3</td>
<td>Even mix of meat and vegetables</td>
<td>Total cooked weight of the dish 150g minimum</td>
<td>Min 700</td>
<td>Min 10</td>
<td>Max 15</td>
<td>Max 25(575)</td>
<td>Chicken stir fry, beef lasagne</td>
</tr>
</tbody>
</table>

Hot Mains specifications do not include accompaniments; vegetables, starches, or sauce/gravies.

Sauce/ gravy accompaniments are to be a minimum of 40mL per serve.

Dishes featuring corned beef, turkey, ham or cheese may not meet sodium criteria but may be included as a non compliant item at a frequency determined by the site dietitian.

Popular high fat dishes may not meet fat criteria but may be included as a non compliant item at a frequency determined by the site dietitian.

Meats to be fat trimmed, skinless, and free from bones where possible.

N.B The same hot meal choice cannot be offered again in the same week.
### Hot Mains - Vegetarian

<table>
<thead>
<tr>
<th>Band</th>
<th>Description</th>
<th>Portion size</th>
<th>Energy (kJ)</th>
<th>Protein (g)</th>
<th>Fat (g)</th>
<th>Sodium mmol (mg)</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Higher protein content</td>
<td>Min 160g total cooked weight</td>
<td>Min 700</td>
<td>Min 15</td>
<td>Range 5 - 25</td>
<td>Max 25(575)</td>
<td>Baked omelette</td>
</tr>
<tr>
<td>2</td>
<td>Lower protein content</td>
<td>Min 160g total cooked weight</td>
<td>Min 700</td>
<td>Min 8</td>
<td>Range 5 - 25</td>
<td>Max 25(575)</td>
<td>Spinach lasagne</td>
</tr>
</tbody>
</table>

Specifications do not include accompaniments; vegetables, starches, or sauces.
Sauce accompaniments are to be a minimum of 40mL per serve.
Dishes featuring cheese may not meet sodium criteria but may be included as a non compliant item at a frequency determined by the site dietitian.

### Salads

<table>
<thead>
<tr>
<th>Band</th>
<th>Description</th>
<th>Portion size</th>
<th>Energy (kJ)</th>
<th>Protein (g)</th>
<th>Fat (g)</th>
<th>CHO (g)</th>
<th>Sodium mmol (mg)</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Main salad with meat</td>
<td>100g lean meat or fish PLUS</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Max 30</td>
<td>15-30</td>
<td>Not specified</td>
<td>Chicken &amp; chickpea salad</td>
</tr>
<tr>
<td></td>
<td></td>
<td>150g salad vegetables PLUS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>potato, rice, pasta, legumes, lentils or couscous</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Main salad with egg or cheese</td>
<td>90g egg OR 40g cheese PLUS</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Max 30</td>
<td>15-30</td>
<td>Not specified</td>
<td>Egg &amp; potato salad</td>
</tr>
<tr>
<td></td>
<td></td>
<td>150g salad vegetables PLUS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>potato, rice, pasta, legumes, lentils or couscous</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Side salad</td>
<td>At least 5 vegetables/fruit with a minimum of 150g total weight</td>
<td>Min 100</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Garden salad</td>
</tr>
</tbody>
</table>

Nutrition analysis includes both portion control pack salad dressings and salad dressings used in composite salads.
Salad component must be comprised of at least 5 vegetables.
# Sandwiches

<table>
<thead>
<tr>
<th>Band</th>
<th>Description</th>
<th>Portion size</th>
<th>Energy (kJ)</th>
<th>Protein (g)</th>
<th>Fat (g)</th>
<th>Sodium (mmol)</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Significant nutrient value</td>
<td>1 round 50g lean meat or fish OR 21g cheese OR 45g egg OR 40g legumes PLUS 40g salad vegetables PLUS minimum 2 slices bread</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Tuna &amp; salad sandwich</td>
</tr>
<tr>
<td>2</td>
<td>Minimal protein value Included for a snack or light meal</td>
<td>½ round (snack) 1 round (meal)</td>
<td>At least 500kJ</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Salad sandwich</td>
</tr>
</tbody>
</table>

# Desserts

<table>
<thead>
<tr>
<th>Band</th>
<th>Description</th>
<th>Portion size</th>
<th>Energy (kJ)</th>
<th>Protein (g)</th>
<th>Fat (g)</th>
<th>Calcium (mg)</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High protein, high calcium</td>
<td>90 - 120g</td>
<td>Min 500</td>
<td>Min 4</td>
<td>Not specified</td>
<td>Min 100</td>
<td>Cheesecake, crème caramel</td>
</tr>
<tr>
<td>2</td>
<td>High protein</td>
<td>90 - 120g</td>
<td>Min 800</td>
<td>Min 4</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Bread &amp; butter pudding</td>
</tr>
<tr>
<td>3</td>
<td>Varying nutrient value</td>
<td>Min 80g Mousses, whips and ice cream min 50g</td>
<td>Min 300</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Ice cream, fruit based desserts</td>
</tr>
</tbody>
</table>

Portion size and nutrient specifications refer to desserts without custards and sauces. Custards and sauces are additional dessert components and should be at least 60 mL.

# Vegetables/Starches

<table>
<thead>
<tr>
<th>Portion Size</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potato/rice/pasta</td>
<td>Potato OR rice OR pasta, 100g cooked weight per meal. Cook without added salt. Use unsaturated fat in recipes.</td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td>2 vegetables, 150g total cooked weight per meal (exclusive of vegetables in the main dish). Cook without added salt. Use unsaturated fat in recipes.</td>
<td></td>
</tr>
</tbody>
</table>
5. Test menus

To assess the ability of the Standards to produce a menu that meets the selected nutrient targets, a nutrition analysis was conducted on a sample seven day menu. Analysis was conducted with FoodWorks Version 6.0.2562 utilising the AusNut 2007 database. Table 2 presents the results for two of the seven days (Test Day 1 and Test Day 2), as well as the average for the seven days. A description of the foods included in Test Days 1 and 2 are presented in Figure 1.

The menu analysed did not meet the zinc target of 14 mg/day (average of the week = 13.1 mg Zinc). This supports the relevance of the meat weight specifications and in particular, the specification for red meat mains to be offered at least once per day. The calcium target is challenging to meet, supporting the specification for providing Band 1 desserts at least once per day and yoghurt at breakfast. The use of dairy foods as snacks is another means of meeting the calcium target and is a necessity for meeting the higher requirements of women aged over 50 and men aged over 70 (1300 mg/day). The target for sodium is also challenging and warrants the use of salt alternatives in food preparation.
Table 2 – Nutrition analysis results

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Nutrient Goal</th>
<th>Test Day 1</th>
<th>Test Day 2</th>
<th>Test week av.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy kJ</td>
<td>9 120</td>
<td>9 242</td>
<td>9 417</td>
<td>9 441</td>
</tr>
<tr>
<td>Protein g</td>
<td>90</td>
<td>97</td>
<td>102</td>
<td>103</td>
</tr>
<tr>
<td>Saturated fat %E</td>
<td>&lt;10</td>
<td>9.6</td>
<td>10.0</td>
<td>9.8</td>
</tr>
<tr>
<td>Fibre g</td>
<td>30</td>
<td>37</td>
<td>47</td>
<td>41</td>
</tr>
<tr>
<td>Vitamin C mg</td>
<td>45</td>
<td>112</td>
<td>176</td>
<td>164</td>
</tr>
<tr>
<td>Folate ug / DFE</td>
<td>400</td>
<td>681</td>
<td>787</td>
<td>917</td>
</tr>
<tr>
<td>Calcium mg</td>
<td>1000</td>
<td>1311</td>
<td>1172</td>
<td>1087</td>
</tr>
<tr>
<td>Iron mg</td>
<td>11</td>
<td>11.6</td>
<td>15.1</td>
<td>13.7</td>
</tr>
<tr>
<td>Zinc mg</td>
<td>14</td>
<td>13.6</td>
<td>15.0</td>
<td>13.1</td>
</tr>
<tr>
<td>Sodium mg</td>
<td>&lt;2 300</td>
<td>2 336</td>
<td>2 244</td>
<td>2 277</td>
</tr>
</tbody>
</table>

Figure 1 – Test days 1 and 2

<table>
<thead>
<tr>
<th></th>
<th>Test Day 1</th>
<th>Test Day 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breakfast</strong></td>
<td>100mL orange juice 180g porridge 5 stewed prunes 2 slices wholemeal bread 1 portion margarine 1 portion jam 150mL coffee + 30mL milk + 1 portion sugar</td>
<td>100mL orange juice 2 Weetbix 150mL reduced fat milk 100g fruit yoghurt 120g tinned fruit salad 2 slices wholemeal bread 1 portion margarine 1 portion jam 150mL coffee + 30mL milk + 1 portion sugar</td>
</tr>
<tr>
<td><strong>Lunch</strong></td>
<td>180mL mushroom soup Roast beef &amp; salad sandwich (2 slices white bread, 50g roast beef, 40g salad) 120g apple crumble 60mL custard</td>
<td>180mL potato &amp; leek soup 120g vegetarian pizza 75g broccoli 75g pumpkin 120g banana brulee</td>
</tr>
<tr>
<td><strong>Dinner</strong></td>
<td>150g salmon patties 100g baked potato 150g mixed vegetables 1 slice wholemeal bread 1 portion margarine 1 apple 120g dessert style yoghurt</td>
<td>110g veal leg steak, crumbed 40mL pepper sauce 100g mashed potato 150g mixed vegetables 2 slice wholemeal bread 1 portion margarine 1 pear 50g ice cream</td>
</tr>
<tr>
<td><strong>Snacks</strong></td>
<td>2 cups tea (150mL tea + 30mL milk + 1 portion sugar) 3 plain crackers + 20g cheese 2 plain sweet biscuits 60g scone</td>
<td>2 cups tea (150mL tea + 30mL milk + 1 portion sugar) 1 small banana ½ round sandwich 2 plain sweet biscuits</td>
</tr>
</tbody>
</table>
6. Texture modified diets
6.1 definitions

Texture A – Soft

Food in this category may be naturally soft (e.g. ripe banana) or may be cooked or cut to alter its texture.

Characteristics: Soft food can be chewed but not necessarily bitten. Minimal cutting required - easily broken up with a fork. Food should be moist or served with a sauce or gravy to increase moisture content (NB: Sauces and gravies should be served at the required thickness level). Target particle size for adults is 1.5 x 1.5cm.

Texture B – Minced and moist

Food in this category is soft and moist and should easily form into a ball.

Characteristics: Individual uses tongue rather than teeth to break the small lumps in this texture. Food is soft and moist and should easily form into a ball. Food should be easily mashed with a fork. May be presented as a thick puree with no obvious lumps in it. Lumps are soft and rounded (no hard or sharp lumps). Target particle size for adults is 0.5cm.

Texture C – Smooth pureed

Food in this category is smooth and lump free. It is similar to the consistency of commercial pudding. At times, smooth pureed food may have a grainy quality, but should not contain lumps.

Characteristics: Smooth and lump free but may have a grainy quality. Moist and cohesive enough to hold its shape on a spoon (i.e. when placed side by side on a plate these consistencies would maintain their position without ‘bleeding’ into one another. Food could be moulded, layered or piped.

Facilities should consult a speech pathologist to determine the suitability of menu items.

Refer to Dietitians Association of Australia and The Speech Pathology Association of Australia Ltd. Texture-modified foods and thickened fluids as used for individuals with dysphagia: Australian standardised labels and definitions. Nutrition & Dietetics 2007; 64 Suppl 2:s53-76 for more information including allowed and prohibited foods for each diet category.
6.2 smooth pureed menu item specifications

Patients often prescribed a puree diet may be more likely to have pre-existing medical conditions resulting in fatigue when eating, reduced appetite, and a higher risk of not meeting their nutritional requirements. In view of this, specific serve size and nutrition specifications for puree diets have been developed to address these factors.

It is recommended that ingredients such as skim milk powder, butter or margarine, and nutrition supplements (eg. Glucose polymer) be added to puree meal components to ensure they meet the nutrition specifications. Sauces and gravies should also be nutritionally fortified and offered with main meals to ensure appropriate consistency. As a means of ensuring the nutritional requirements of patients requiring a puree diet are achieved, it is essential that three puree snacks be offered per day between meals. In some circumstances nutritional supplementation may also be required between meals to meet those patients with higher nutritional needs. N.B - A 10% variance in portion size and nutrient content is deemed acceptable.

### Smooth Puree Item Specifications

<table>
<thead>
<tr>
<th>Menu category</th>
<th>Portion size</th>
<th>Energy (kJ)</th>
<th>Protein (g)</th>
<th>Fat (g)</th>
<th>Calcium (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot breakfast</td>
<td>Total weight minimum 100g</td>
<td>Min 800</td>
<td>Min 15</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Soup</td>
<td>Total weight minimum 180mL</td>
<td>Min 600</td>
<td>Min 5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hot Mains</td>
<td>Meat weight minimum 70g</td>
<td>Min 700</td>
<td>Min 15</td>
<td>Min 2</td>
<td>-</td>
</tr>
<tr>
<td>Mash Potato</td>
<td>Potato weight minimum 80g</td>
<td>Min 500</td>
<td>Min 4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Vegetables</td>
<td>Vegetable weight minimum 40g</td>
<td>Min 100</td>
<td>Min 3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Gravy</td>
<td>Minimum volume 100ml</td>
<td>Min 250</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Fruit</td>
<td>Fruit weight minimum 90g</td>
<td>Min 350</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Desserts</td>
<td>Total weight 90-120g</td>
<td>Min 800</td>
<td>Min 4</td>
<td>-</td>
<td>100mg</td>
</tr>
<tr>
<td></td>
<td>Mousse minimum 70g</td>
<td>Min 600</td>
<td>Min 5</td>
<td>-</td>
<td>100mg</td>
</tr>
</tbody>
</table>
Table 1 - Test Diet

<table>
<thead>
<tr>
<th>Meal</th>
<th>Menu</th>
<th>Energy (kJ)</th>
<th>Protein (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakfast</td>
<td>100g Pureed Scrambled Eggs</td>
<td>800</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>90g Pureed Fruit</td>
<td>350</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>100ml Vanilla Yoghurt</td>
<td>436</td>
<td>4.2</td>
</tr>
<tr>
<td>Lunch</td>
<td>180ml Vegetable Soup</td>
<td>600</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>60g of Pureed Chicken</td>
<td>700</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>40g of Pureed Carrots</td>
<td>100</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>40g of Pureed Beans</td>
<td>100</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>100g of Pureed Potato</td>
<td>500</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>125ml of Gravy (1 small Jug)</td>
<td>300</td>
<td>0</td>
</tr>
<tr>
<td>Dinner</td>
<td>60g of Pureed Beef</td>
<td>700</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>40g of Pureed Broccoli</td>
<td>100</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>40g of Pureed Pumpkin</td>
<td>100</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>100g of Pureed Potato</td>
<td>500</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>125ml of Gravy (1 small Jug)</td>
<td>300</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>100g of Lemon Cheesecake</td>
<td>800</td>
<td>4</td>
</tr>
<tr>
<td>Snacks</td>
<td>90g Pureed Fruit (MT)</td>
<td>380</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>100ml of Custard (AT)</td>
<td>400</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>200ml of Vanilla Yoghurt (Supper)</td>
<td>872</td>
<td>8.4</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>8008kJ/day</td>
<td>88.7g/day</td>
</tr>
</tbody>
</table>
Acknowledgements

Use of material from the Nutritional Standards for adult inpatients in NSW hospitals 2011 and the Nutrition Standards for Menu Items in Victorian Hospitals and Residential Aged Care Facilities 2009 is gratefully acknowledged.

The WA DoH commissioned two Dietitian Project Officers to prepare the 2012 WA Nutrition Standards for Hospital Food Service. Members of the WA Nutrition Standards Reference Group provided ongoing guidance and comments on drafts of the Standards.

Written comments were also received from a formal consultation process with Dietitian representatives from various metropolitan public and private hospitals in Perth and the WA Country Health Service.

For further information about the WA Nutrition Standards contact Robert.malekin@health.wa.gov.au

References