



Background: Despite safety and quality standards and guidelines recommending routine intake monitoring in hospital, this is poorly completed due to the time and complexity of current process.

Aim: Develop a new method that can quickly and accurately identify inpatients with poor meal intake.

Method: Review of nutritional composition of current menu items identified common denominator for kJ and g protein content, which informed the tool (Figure 1). This was systematically applied to 90 meals (Figure 2) and compared to gold standard (weighed plate waste) using Spearman's correlations, percent exact agreement (PEA) and sensitivity and specificity to identify meal intake $\leq 1000\text{kJ}$ and $\leq 10\text{g}$ protein.

Results: The final tool accurately measured energy ($r=0.91$) and protein ($r=0.86$), and had good PEA (energy 59%, protein 44%), excellent sensitivity (100%) at detecting poor energy and protein intake, and good specificity (energy 80%, protein 76%).

Conclusion: This tool is used regularly in practice at RBWH, and the method can be adapted and applied in other settings (e.g. residential aged care).

We have developed and validated "Meal Intake Points"

It is a novel method to quickly and easily quantify inpatient dietary intake and identify those people in need of additional nutrition support.

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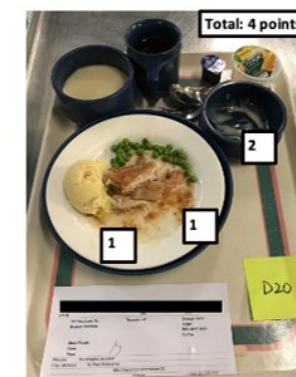


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BREAKFAST	
Savoury mince, omelette, chipolata	2
Baked beans, scrambled egg	1
Cereals, porridge	1
Bread (incl croissant)	1
SOUP	
HP soups	1
Clear fluids	0
MAIN COURSE - LUNCH/DINNER	
Hot protein (e.g. meat, vegetarian protein, Chef's special protein)	2
Note: double serve = 4, half serve = 1	
Pasta meal	2
Sandwiches	2
SALADS	
Salad - protein + starch	2
Salad - protein or starch only	1
Salad - vegetables only, side salad	0
VEGETABLES AND STARCH	
Rice	1
Cheesy veg (e.g. broccoli and cheese)	1
Moulded puree veg	1
Other starchy items (e.g. chips, gems, pasta)	1
Starchy veg (potato, sweet potato, corn)	1
Non-starchy veg (e.g. pumpkin, mixed)	0
BREAD AND CONDIMENTS	
Bread	1
Sugar, spreads, sauces	0
DESSERTS	
Non-PC HPHE desserts (e.g. crumbled apple and custard, cheesecake)	2
Thickened ice cream	2
PC dairy desserts (e.g. cream, mousse, rice pudding, yoghurt incl soy, ice cream)	1
Non-dairy desserts (e.g. jelly, all fruits)	0
FINGER FOODS AND EXTRAS	
Chef's special - pizza, burger	4
Chef's special - sushi roll	2
Hot protein main course items (e.g. dahl, crumb chicken, savoury mince, omelette)	2
Eggs (boiled, scrambled), baked beans	1
All finger foods (e.g. chips, fish bites)	1
Sugar, spreads, sauces	0
DRINKS AND SUPPLEMENTS	
All supplement tetrapaks, Breaka	2
Pro thick fluids	2
Creamy thick fluids	1
SAM (1x80mL serve)	1
Milk (incl soy milk), milo	1
Non-milk drinks incl thick fluids (e.g. juice, cordials, soft drink), tea, coffee	0
MIDMEALS	
Nuts, chips, choc bar, protein FX	2
Cakes, muesli bar, biscuits (Arnott's/cream)	1
PC dairy dessert	1
Jatz + cheese, Le Snak	1
Fruit, gumnut biscuit	0

Figure 1. Meal Intake Points

1 point = 500 kJ, 5g protein



Dietetic assistants assess plate waste, with points tallied for meal items consumed.
 ≤ 2 points = poor intake = trigger for nutrition intervention

Figure 2. Meal Intake Points in action