

An Evidenced-Based Demand Management Toolkit for Dietetic Services

**Framework for
Effective &
Efficient
Dietetic
Services**

**STROKE
FEEDS Version 3.0**



**Queensland
Government**



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Queensland Health would like to acknowledge the contributions to the FEEDS Toolkit from Allied Health Professions Office Queensland (AHPOQ) and members of the Dietitians Nutritionist Strategic Coalition (DNSC) network. The DNSC membership includes Queensland Health Nutrition & Dietetic Directors and Heads of Department, Mater Health Services Nutrition & Dietetics Department, Non-Government Organisations, Private and University Sectors.

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Introduction to Evidence Areas

The following Evidence Areas have been compiled by dietitians across Health and Hospital Services (HHS) from within Queensland Health in 2015 and updated in 2017. Details of each chapter update can be found in appendix one (1). These pages represent a combination of up to date evidence and expert clinician opinion in order to inform priorities for dietitians working in clinical settings. The toolkit was endorsed by members of the FEEDS Implementation Steering Group (see appendix two(2)) in March 2017.

It is widely acknowledged that demand on Queensland dietetics services is increasing; collaboration across sectors and innovative thinking are essential in order for clinical dietetics to match increasing demand. Whilst these challenges are by no means new, the impact of a changing workforce through the recent restructuring of public health nutrition services, and the continued uncertainty around the provision of some services, has applied considerable pressure to the existent clinical dietetics workforce. Allied Health Professions Office Queensland (AHPOQ) is committed to expanding the scope of practice for allied health professionals. The Ministerial Taskforce on Expanded Scope recognises if allied health professionals, dietetics included, work to full scope and utilises allied health support staff, then this paves the way for expanding the scope of practice and adding high value services to meet Key Performance Indicators of HHS's across the state.

Given this current climate, it is imperative that local dietetics services are able to determine clinical priorities and align these with the broader priorities of their local health services, the state and the federal governments. This toolkit cannot displace local guidelines or prioritisation procedures due to the differences that exist between services in their size and complexity. It should be utilised to inform the development and review of these documents in order to ensure that dietetics services provided across the state are evidence-based, safe, equitable and provide a high value to the HHS. It should be used as a tool to assess your local service, and/or models of care against the evidence to enable a realignment of resources from low value priority areas (disinvestment), to high value priority areas. (reinvestment). For additional evidence-based recommendations, dietitians are encouraged to consult practice-based evidence in nutrition at www.pennutrition.com

This toolkit is broken up into areas that represent clinical dietitians' core business, listed out in alphabetical order. The intent is that it contains useful information for dietitians working across the continuum of care; however, some evidence areas may have a larger focus on interventions designed for the acute care setting than others. It is recommended that FEEDS be used in conjunction with a Dietitian and/or the Dietitian Nutritionist Strategic Coalition (DNSC) in determining opportunities, resource advocacy, and service delivery for the nutritional management of clinical conditions, across all areas of practice. This should not be limited to the areas included in this version of the FEEDS Toolkit.

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To enable quick referencing, evidence areas have been sub-divided – where relevant – with use of blue rows to communicate evidence that relates to a particular condition or intervention type; paediatrics is identifiable through use of a pink row. Within each evidence area, common interventions requiring the attention of a dietitian have been prioritised in accordance with a three tranche scale; where high priorities have a red banner, medium priorities have an orange banner, and low priorities have a green banner. Some interventions require an organisational approach; these are distinguished with use of a purple banner. Given the differences that are likely to exist between services and their available resources, a timeframe for response to referral has not been included.

Below is an example of how the evidence areas are set-up:

<i>Why – reason for dietetic intervention</i>	<i>How</i>	<i>Who</i>	<i>Where</i>	<i>Frequency for intervention</i>	<i>Comments/ Evidence</i>
Description of Condition or Intervention Type					
HIGH PRIORITY <i>The “Why” section describes the requirement for dietitian involvement. At times this may describe other activities that impact on clinical dietetics, but do not directly require a dietitian to initiate or complete the activity (e.g. malnutrition screening)</i>	<i>Describes how the intervention should be conducted</i> <i>In some areas, this may also specify instructions or considerations for intervention</i>	<i>Nominates individuals responsible for completing interventions</i>	<i>Describes the setting in which interventions can safely occur</i>	<i>Determines how often the intervention should be conducted</i>	<i>References that should be consulted for further information or support in delivering intervention.</i>
MEDIUM PRIORITY	<i>E.g. Individual patient consults</i>	<i>E.g. Dietitian</i>	<i>E.g. Throughout continuum of care e.g. home, hospital, subacute</i>	<i>E.g. As clinically indicated</i>	
LOW PRIORITY					
HIGH PRIORITY AT AN ORGANISATIONAL LEVEL					
Paediatrics					
The paediatric elements within each chapter have not been categorised in priority level. Instead, please refer to the prioritisation guideline (appendix three(3))					

List of Abbreviations

AHA

Allied Health Assistant

APD

Accredited Practising Dietitian

BGL

Blood Glucose Level

BMI

Body Mass Index

BMR

Basal Metabolic Rate

CDE

Credentialed Diabetes Educator

CHO

Carbohydrate

CKD

Chronic Kidney Disease

CVD

Cardiovascular Disease

EN / EEN

Enteral Nutrition / Exclusive Enteral Nutrition

HPHE

High Protein, High Energy (Diet)

IDNT

International Dietetics & Nutrition Terminology

MDT

Multidisciplinary Team

MJ / kJ

Mega-Joule / kilo-Joule

MNT

Medical Nutrition Therapy

MST

Malnutrition Screening Tool

NGT

Nasogastric Tube

NRV

Nutrient Reference Values

PERT

Pancreatic Enzyme Replacement Therapy

PG-SGA

Patient-Generated Subjective Global Assessment

PICU

Paediatric Intensive Care Unit

PN / TPN

Parenteral Nutrition / Total Parenteral Nutrition

Pt

Patient

QOL

Quality of Life

SGA

Subjective Global Assessment

T1DM

Type 1 Diabetes Mellitus

T2DM

Type 2 Diabetes Mellitus

Document Revision History

Version No.	Created/Modified by	Date	Content/Amendments details	Approved by
FEEDS Toolkit				
3.0	Rhiannon Barnes Anna Edwards	03/04/2020	External review and template editing to FEEDS Version 3.0	Rhiannon Barnes
2.0	Rhiannon Barnes Emily Molyneux Melinda Booker	05/07/2016	Reformatting the FEEDS Toolkit into separate evidence areas using Queensland Health approved font in preparation for publishing to NEMO	FEEDS Implementation Steering Group
2.0	Rhiannon Barnes	21/06/2017	Rebranding of the FEEDS Toolkit to the 'purple' watercolour template	FEEDS Implementation Steering Group
2.0	Rhiannon Barnes	07/06/2017	Development and inclusion of Creative Commons section on page 2 of the FEEDS Toolkit	FEEDS Implementation Steering Group
2.0	Rhiannon Barnes	15/03/2017	Changed evidence area title from Cardiology to Cardiovascular Disease to align with Nutrition Education Materials Online terminology Changed evidence area title from Oncology to Cancer Services to align with Nutrition Education Materials Online terminology Updated chapter areas based on feedback from FEEDS Implementation Steering Group Members	Jan Hill Teresa Brown FEEDS Implementation Steering Group
2.0	Rhiannon Barnes	21/02/2017	Updates to contributors across all FEEDS chapter areas Updates to content across most evidence areas# Update to 'Introduction Evidence Areas'	FEEDS Implementation Steering Group
2.0	Rhiannon Barnes	22/02/2017	Added new FEEDS Sub-Acute Evidence Area developed by Jillian Ross, Zoe Walsh and the Metro North Dietetic CISS team	FEEDS Implementation Steering Group
2.0	Rhiannon Barnes	22/02/2017	Updates to the 'Introduction Evidence Areas' to include a statement on directing dietitians to PEN for additional evidence areas	FEEDS Implementation Steering Group
Diabetes				
1.1	Lindsey Johnson	06/05/2015	Updates to contributors and modifications to include accepted terminologies	Jacqueline Cotungo
Malnutrition				
0.1	Lindsey Johnson	03/03/2015	<i>Malnutrition in the Frail Elderly</i> revised and changed to <i>Malnutrition</i> with some associated content changes	Jan Hill
Oncology				
0.1	Lindsey Johnson	04/03/2015	Amendment to listed references	Melina de Corte

Renal				
0.1	Lindsey Johnson	06/03/2015	Formatting updated and minor content changes to <i>Renal</i>	Kylie Boyce & Simone McCoy
Respiratory Disease				
0.1	Lindsey Johnson	04/03/2015	Phrasing within <i>Respiratory Disease</i> changed in order to improve accuracy	Jenna Stonestreet

the details on content changes/additions between FEEDS Toolkit version 1.2 and version 2.0 can be found in appendix 1 with names of the evidence area review team members

Evidence Area: Stroke

V1.0 Contributors: Samantha Robertson, Rainbow Lai, Clare Archer, Lauren Roberts, Maddison King, Margot Leeson-Smith, Grace Carson, Juliette Mahero, Kate Moroney

The role of the Dietitian within the acute stroke setting will vary depending on the size and type of the unit. Stroke is one of the most prevalent acute neurological diseases and one of the world's leading causes of mortality and physical disability in adults (1, 2). The dietitian is an essential member of the multidisciplinary team and contributes to individual nutrition assessment as well as referral pathways and feeding protocols as required.

Malnutrition is common after stroke with studies revealing its prevalence in an acute stroke setting ranging from 6-62% (3). Malnutrition in stroke is associated with increased morbidity, mortality, hospital costs and length of stay and leads to poorer longer-term outcomes (4-11). Decline in nutritional status post stroke is multifactorial, with deficits such as hemiplegia, dysphagia, cognitive changes and mood disorders negatively impacting nutritional intake in an acute stroke setting. The most common risk factors for malnutrition post stroke have shown to be pre-morbid malnutrition, prior stroke, diabetes mellitus, tube feeding and decreased level of consciousness (12).

Lifestyle related risk factors for stroke include obesity, diabetes, poor diet, lack of exercise, hypertension, alcohol and cigarette smoking (13). Risk factors for stroke may need to be addressed with nutrition intervention and education moving into the rehabilitation phase. The Dietitian should work together with the multidisciplinary team to improve and/or maintain nutrition status to assist the patient to meet rehabilitation or functional goals. The dietitian's role also encompasses handover and referral to sub-acute settings, rehabilitation or community dietetic services for ongoing nutritional care post discharge if warranted. Case conferences and handover should be attended where possible to facilitate communication between nursing, allied health and medical staff on nutrition related issues. Other Dietitian roles will be as per other speciality areas, including education and research.

Why – reason for dietetic intervention	How	Who	Where	Frequency for intervention	Comments/ Evidence
MALNUTRITION					
<p>Malnutrition Screening Malnutrition is associated with poorer outcomes. The dietitian should be involved in creating hospital systems and processes for appropriate and timely malnutrition screening of acute stroke patients, inclusive of dietitian referral pathways.</p> <p>The dietitian should be involved in training of staff completing the screening, and in the auditing of screening processes. Clinical judgement should be encouraged to ensure patients perceived at risk are then referred appropriately e.g. dysphagia post stroke, poor cognition, or low levels of alertness.</p>	<ul style="list-style-type: none"> - MST - NRS 2002 - MUST <p>AHPOQ Clinical Task Instructions (CTIs) are available for the training of individuals in performing an MST</p>	<p>Facility dependent and can include:</p> <ul style="list-style-type: none"> - Nursing staff - Trained AHAs including NAs/DAs - Administration staff - Medical Officer - Patient/carers 	<p>Emergency departments Admission to hospital or an acute stroke unit</p>	<p>On admission to hospital (within 48hrs) and weekly thereafter</p>	<p>See corresponding references: (4-6, 8-12, 14-21)</p> <p>Additional resources: Stroke Foundation Clinical Guidelines: Nutrition and Hydration</p> <p>AHPOQ MST CTI</p>
<p>Nutrition Assessment All patients screened as being at risk of malnutrition should have a thorough nutrition assessment. Special consideration should be given to acute stroke patients suffering from dysphagia and/or impaired cognition.</p> <p>A nutrition assessment should be conducted on all stroke patients receiving enteral feeding. Routine Oral Nutrition Supplementation (ONS) is not recommended for acute stroke patients without dysphagia and who are adequately nourished on admission. ONS is recommended in those identified to be malnourished or at risk.</p>	<p>Assessment tools validated in the acute stroke population include the:</p> <ul style="list-style-type: none"> -SGA -PG-SGA 	<ul style="list-style-type: none"> - Dietitian - Medical Officer (Whenever possible, a nutrition specialist should develop and monitor this plan) 	<p>Acute hospital ward or sub-acute</p>	<p>On initial assessment and repeated as required (depending on patient clinical condition). More frequent follow up if high risk of decline in nutritional status e.g. increased LOS, dysphagia.</p>	

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	<i>Why – reason for dietetic intervention</i>	<i>How</i>	<i>Who</i>	<i>Where</i>	<i>Frequency for intervention</i>	<i>Comments/ Evidence</i>
ENTERAL FEEDING						
	<p>Acute stroke patients unable to consume adequate nutrition and/or fluids orally should be considered for early EN via a NGT. The decision to proceed with early EN should be made within the first three days of admission in collaboration with the patient, family (or substitute decision maker) and MDT.</p> <p>Gastrostomy feeding should be considered for stroke patients who (i) need but are unable to tolerate an NGT, (ii) are unable to swallow adequate amounts of food and fluid orally after 4 weeks, and (iii) are at high risk of long-term malnutrition.</p> <p>Stroke patients mechanically ventilated for >48hrs may receive a gastrostomy at an early stage (within 7 days).</p>	<p>For patients who do not recover a functional swallow, NGT feeding is the preferred method of feeding in the acute period.</p> <p>There is no preference regarding continuous feeding vs. intermittent bolus feeding.</p> <p>All patients receiving EN via a NGT should be considered for the additional use of a nasal bridle if the NGT needs frequent replacement.</p>	<ul style="list-style-type: none"> - Dietitian - Medical Officer (Whenever possible, a nutrition specialist should develop and monitor this plan) 	<p>Acute hospital ward or sub-acute</p>	<p>Daily in the acute setting; 2-3 times per week in stable hospital patients; weekly-monthly in long term care</p> <p>Re-assessment of nutritional status should be conducted as clinically indicated.</p>	<p>See corresponding references: (4, 22-27)</p> <p>See corresponding reference: (28)</p>
DYSPHAGIA						
	<p>A formalised screening for dysphagia should be performed in all stroke patients as early as possible and before oral intake is initiated. Texture modified diets and thickened liquids may lead to patients having a reduced oral intake.</p>	<p>An evidenced based tool should be used for dysphagia screening. Speech</p>	<ul style="list-style-type: none"> - Speech Pathologist - Nursing staff - Medical Officer - Dietitian 	<p>Inpatient unit, sub-acute setting, rehabilitation</p>	<p>Nutrition assessment and monitoring should be repeated at regular intervals at</p>	<p>Stroke Foundation Clinical Guidelines: Dysphagia</p>

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Why – reason for dietetic intervention	How	Who	Where	Frequency for intervention	Comments/ Evidence
<p>Stroke patients who receive texture modified diets or thickened fluids should be referred to the dietitian for nutrition assessment and monitoring.</p> <p>Supplemental fluids should be considered for patients with inadequate fluid intake.</p>	<p>pathology, medical and nursing involvement is fundamental.</p> <p>Dietitians should assess adequacy of food and fluid intake. Food charts, fluid balance charts and biochemical analyses can be used.</p>	<ul style="list-style-type: none"> - Trained AHAs - Nursing Staff - Medical Officer 		<p>least for as long as texture modification and/or thickened fluids are required due to the increased risk of malnutrition and dehydration</p>	<p>See corresponding reference: (21)</p>
STROKE RISK FACTORS					
<p>Associations have been shown between dietary factors and an increased risk of stroke. Lifestyle modifications may reduce the risk of secondary stroke. Referral to a Dietitian for individual dietary advice is recommended for all stroke survivors.</p>	<p>All people with stroke or TIA (except those receiving palliative care) should be assessed and informed of their risk factors for recurrent stroke and strategies to modify identified risk factors.</p>	<ul style="list-style-type: none"> - Dietitian - Nurse - Medical Officer - Allied Health Professional - GPs with primary care-based practitioner support - Diabetes Educator 	<p>This should occur post-stroke and ideally prior to discharge from hospital or rehabilitation.</p> <p>Longer-term management may occur in an outpatient setting post-discharge.</p>	<p>Once only or as clinically indicated. Consider carer involvement</p>	<p>Stroke Foundation Clinical Guidelines: Lifestyle Modification</p> <p>Stroke Foundation Resources</p> <p>NHMRC Clinical practice guidelines: management overweight and obesity</p>

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<i>Why – reason for dietetic intervention</i>	<i>How</i>	<i>Who</i>	<i>Where</i>	<i>Frequency for intervention</i>	<i>Comments/ Evidence</i>
<p>Obesity Overweight and obesity has been associated with an increased risk of ischaemic stroke. Morbid obesity is associated with increased post-stroke mortality in middle to older aged adults.</p>	<p>Dietary requirements should be managed according to the Australian Dietary Guidelines via individual or group education. Overweight or obese stroke/TIA patients should be offered advice to aid weight loss as outlined in national clinical practice guidelines.</p>				<p>NHMRC Australian Dietary Guidelines (2013)</p> <p>See corresponding references: (29-32) National Heart Foundation of Australia: Guideline for the diagnosis and management of hypertension in adults.</p> <p>See corresponding references: (33-36)</p>
<p>Hypertension and Dyslipidaemia Dietary modification and other lifestyle changes may improve blood pressure and cholesterol levels among individuals with cardiovascular risk factors, either alone or in conjunction with pharmacological therapies. Blood pressure has been identified as a significant modifiable stroke risk factor. Reduction in sodium intake can assist in reducing blood pressure.</p>	<p>Salt intake <6g/day is recommended for primary prevention and <4g/day for secondary prevention. Refer to Stroke Foundation guidelines for recommendations on pharmacological management.</p>				<p>Diabetes Australia Best Practice Guidelines</p> <p>Australia's Physical Activity & Sedentary Behaviour Guidelines for Adults. (18-64 years)</p>

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	Why – reason for dietetic intervention	How	Who	Where	Frequency for intervention	Comments/ Evidence
	<p>Diabetes Following stroke, diabetes and glucose intolerance have been identified as independent risk factors for subsequent strokes. Dietary factors play an important role in achieving optimal glycaemic control.</p>	<p>Patients with glucose intolerance or diabetes should be managed in line with Diabetes Australia Best Practice Guidelines. See Diabetes FEEDS chapter for more information.</p>				<p>Physical Activity Recommendations for Older Australians (65 years and older) NHMRC Australian Guidelines to Reduce Health Risks from Drinking Alcohol (2009)</p>
	<p>Physical Activity It is suggested that physical activity may assist in the prevention and management of stroke and cardiovascular diseases, making it an important factor in lifestyle modification post-stroke.</p>	<p>People with stroke or TIA should be advised and supported to undertake appropriate, regular physical activity as outlined in the national physical activity guidelines.</p>				
	<p>Alcohol Excessive alcohol intake has been identified as a risk factor for stroke, therefore reduction in alcohol intake is recommended as a strategy to reduce secondary stroke risk. A low alcohol intake (within national guidelines) may have protective effects on stroke risk.</p>	<p>People with stroke or TIA should avoid excessive alcohol consumption (>2 std drinks day) as per national guidelines.</p>				

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<i>Why – reason for dietetic intervention</i>	<i>How</i>	<i>Who</i>	<i>Where</i>	<i>Frequency for intervention</i>	<i>Comments/ Evidence</i>
REHABILITATION					
<p>Continued nutritional support throughout rehabilitation is recommended and may include ongoing screening, assessment and intervention.</p> <p>Dietitians can be involved in the process of goal setting involving stroke survivors and their families/carers throughout the process.</p>	<p>Use of validated screening and assessment tools.</p> <p>Goals for recovery should be client-centred, clearly communicated and documented.</p>	<p>Dietitian in collaboration with Allied Health Professionals</p>	<p>Rehabilitation or sub-acute setting</p>	<p>Malnutrition screening should occur weekly.</p> <p>Re-assessment of nutrition status as clinically indicated.</p>	<p>See Subacute FEEDS Chapter</p> <p>Stroke Foundation Clinical Guidelines</p> <p>See corresponding references: (37-40)</p>
PAEDIATRICS					
<p>Nutrition screening and/or assessment for young stroke patients is recommended to ensure adequacy of oral intake and prevention of malnutrition. EN is recommended for the management of severe dysphagia.</p> <p>Due to the lack of evidence, recommendations are based on the clinical expertise and judgement.</p>	<p>Paediatric nutrition screening, coding and assessment</p> <p>Food Service provision</p>	<p>Dietitian in collaboration with Nursing Staff and Medical Officer</p>	<p>Across the continuum of care</p>	<p>On admission as indicated</p>	<p>Paediatric Nutrition Screening Tool</p> <p>The Subacute Rehabilitation of Childhood Stroke Clinical Guidelines</p>

REFERENCES

1. Australian Institute of Health and Welfare. Australia's Health 2016 [Available from: <https://www.aihw.gov.au/reports/australias-health/australias-health-2016/contents/chapter-3-leading-causes-of-ill-health>].
2. Australian Bureau of Statistics. Australia's leading causes of death, 2017 2017 [Available from: <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/3303.0~2017~Main%20Features~Australia's%20leading%20causes%20of%20death,%202017~2>].
3. Foley NC, Salter KL, Robertson J, Teasell RW, Woodbury MG. Which reported estimate of the prevalence of malnutrition after stroke is valid? *Stroke*. 2009;40(3):e66-74.
4. Poor nutritional status on admission predicts poor outcomes after stroke: observational data from the FOOD trial. *Stroke*. 2003;34(6):1450-6.
5. Davis JP, Wong AA, Schluter PJ, Henderson RD, O'Sullivan JD, Read SJ. Impact of premorbid undernutrition on outcome in stroke patients. *Stroke*. 2004;35(8):1930-4.
6. Gomes F, Emery PW, Weekes CE. Risk of malnutrition is an independent predictor of mortality, length of hospital stay, and hospitalization costs in stroke patients. *J Stroke Cerebrovasc Dis*. 2016;25(4):799-806.
7. Paquereau J, Allart E, Romon M, Rousseaux M. The long-term nutritional status in stroke patients and its predictive factors. *J Stroke Cerebrovasc Dis*. 2014;23(6):1628-33.
8. Yoo SH, Kim JS, Kwon SU, Yun SC, Koh JY, Kang DW. Undernutrition as a predictor of poor clinical outcomes in acute ischemic stroke patients. *Arch Neurol*. 2008;65(1):39-43.
9. Bouziana SD, Tziomalos K. Malnutrition in patients with acute stroke. *J Nutr Metab*. 2011;2011:167898.
10. Corrigan ML, Escuro AA, Celestin J, Kirby DF. Nutrition in the stroke patient. *Nutr Clin Pract*. 2011;26(3):242-52.
11. Martineau J, Bauer JD, Isenring E, Cohen S. Malnutrition determined by the patient-generated subjective global assessment is associated with poor outcomes in acute stroke patients. *Clin Nutr*. 2005;24(6):1073-7.
12. Chen N, Li Y, Fang J, Lu Q, He L. Risk factors for malnutrition in stroke patients: A meta-analysis. *Clin Nutr*. 2019;38(1):127-35.
13. Stroke Foundation. Prevent Stroke 2019 [Available from: <https://strokefoundation.org.au/About-Stroke/Prevent-Stroke>].
14. Weekes E, Elia M. Resting energy expenditure and body composition following cerebro-vascular accident. *Clin Nutr*. 1992;11(1):18-22.
15. Detsky AS, McLaughlin JR, Baker JP, Johnston N, Whittaker S, Mendelson RA, et al. What is subjective global assessment of nutritional status? *JPEN J Parenter Enteral Nutr*. 1987;11(1):8-13.
16. Ha L, Hauge T, Spenning AB, Iversen PO. Individual, nutritional support prevents undernutrition, increases muscle strength and improves QoL among elderly at nutritional risk hospitalized for acute stroke: a randomized, controlled trial. *Clin Nutr*. 2010;29(5):567-73.
17. D'Uva C, Martin C. Protein energy supplementation of usual hospital diet did not improve outcomes in inpatients with recent stroke. *Evid Based Nurs*. 2005;8(4):116.
18. Rabadi MH, Coar PL, Lukin M, Lesser M, Blass JP. Intensive nutritional supplements can improve outcomes in stroke rehabilitation. *Neurology*. 2008;71(23):1856-61.
19. Gariballa SE, Parker SG, Taub N, Castleden CM. A randomized, controlled, a single-blind trial of nutritional supplementation after acute stroke. *JPEN J Parenter Enteral Nutr*. 1998;22(5):315-9.

20. Aquilani R, Scocchi M, Iadarola P, Franciscone P, Verri M, Boschi F, et al. Protein supplementation may enhance the spontaneous recovery of neurological alterations in patients with ischaemic stroke. *Clin Rehabil.* 2008;22(12):1042-50.
21. Burgos R, Breton I, Cereda E, Desport JC, Dziewas R, Genton L, et al. ESPEN guideline clinical nutrition in neurology. *Clin Nutr.* 2018;37(1):354-96.
22. Beavan JR, Conroy S, Leonardi-Bee J, Bowling T, Gaynor C, Gladman J, et al. Is looped nasogastric tube feeding more effective than conventional nasogastric tube feeding for dysphagia in acute stroke? *Trials.* 2007;8:19-.
23. Dietitians Association of Australia. Enteral nutrition manual for adults in health care facilities 2018 [Available from: <https://daa.asn.au/wp-content/uploads/2018/06/Enteral-nutrition-manual-june-2018-website.pdf>].
24. Dennis MS, Lewis SC, Warlow C. Effect of timing and method of enteral tube feeding for dysphagic stroke patients (FOOD): a multicentre randomised controlled trial. *Lancet (London, England).* 2005;365(9461):764-72.
25. Geeganage C, Beavan J, Ellender S, Bath PM. Interventions for dysphagia and nutritional support in acute and subacute stroke. *Cochrane Database Syst Rev.* 2012;10:Cd000323.
26. Gomes F, Hookway C, Weekes CE. Royal College of Physicians Intercollegiate Stroke Working Party evidence-based guidelines for the nutritional support of patients who have had a stroke. *J Hum Nutr Diet.* 2014;27(2):107-21.
27. Zheng T, Zhu X, Liang H, Huang H, Yang J, Wang S. Impact of early enteral nutrition on short term prognosis after acute stroke. *J Clin Neurosci.* 2015;22(9):1473-6.
28. Wirth R, Smoliner C, Jager M, Warnecke T, Leischker AH, Dziewas R. Guideline clinical nutrition in patients with stroke. *Experimental & translational stroke medicine.* 2013;5(1):14.
29. He FJ, Nowson CA, MacGregor GA. Fruit and vegetable consumption and stroke: meta-analysis of cohort studies. *Lancet (London, England).* 2006;367(9507):320-6.
30. Strazzullo P, D'Elia L, Cairella G, Garbagnati F, Cappuccio FP, Scalfi L. Excess body weight and incidence of stroke: meta-analysis of prospective studies with 2 million participants. *Stroke.* 2010;41(5):e418-26.
31. He FJ, Li J, Macgregor GA. Effect of longer term modest salt reduction on blood pressure: Cochrane systematic review and meta-analysis of randomised trials. *BMJ (Clinical research ed).* 2013;346:f1325.
32. Ettehad D, Emdin CA, Kiran A, Anderson SG, Callender T, Emberson J, et al. Blood pressure lowering for prevention of cardiovascular disease and death: a systematic review and meta-analysis. *Lancet (London, England).* 2016;387(10022):957-67.
33. Graudal NA, Hubeck-Graudal T, Jurgens G. Effects of low sodium diet versus high sodium diet on blood pressure, renin, aldosterone, catecholamines, cholesterol, and triglyceride. *The Cochrane database of systematic reviews.* 2011(11):Cd004022.
34. Vermeer SE, Sandee W, Algra A, Koudstaal PJ, Kappelle LJ, Dippel DW. Impaired glucose tolerance increases stroke risk in nondiabetic patients with transient ischemic attack or minor ischemic stroke. *Stroke.* 2006;37(6):1413-7.
35. Ronksley PE, Brien SE, Turner BJ, Mukamal KJ, Ghali WA. Association of alcohol consumption with selected cardiovascular disease outcomes: a systematic review and meta-analysis. *BMJ (Clinical research ed).* 2011;342:d671.
36. Reynolds K, Lewis B, Nolen JD, Kinney GL, Sathya B, He J. Alcohol consumption and risk of stroke: a meta-analysis. *Jama.* 2003;289(5):579-88.
37. Westergren A, Karlsson S, Andersson P, Ohlsson O, Hallberg IR. Eating difficulties, need for assisted eating, nutritional status and pressure ulcers in patients admitted for stroke rehabilitation. *J Clin Nurs.* 2001;10(2):257-69.
38. M. Finestone H, Greene-Finestone L. The Role of Nutrition and Diet in Stroke Rehabilitation. *Topics in Stroke Rehabilitation.* 1999;6:46-66.



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39. Finestone HM, Greene-Finestone LS, Wilson ES, Teasell RW. Malnutrition in stroke patients on the rehabilitation service and at follow-up: prevalence and predictors. *Arch Phys Med Rehabil.* 1995;76(4):310-6.
40. Nip WF, Perry L, McLaren S, Mackenzie A. Dietary intake, nutritional status and rehabilitation outcomes of stroke patients in hospital. *J Hum Nutr Diet.* 2011;24(5):460-9.

Appendix One: Summary of Edits

Changes to the FEEDS chapter as per the <i>adult</i> review teams	Changes to the FEEDS chapter as per the <i>paediatric</i> review teams
Nil	Nil

Appendix Two

Members of the FEEDS Implementation Steering Group

- Chair:* **Jan Hill**, Director Nutrition & Dietetics, Princess Alexandra Hospital, Metro South Hospital & Health Service
- Secretary & Project Officer:* **Rhiannon Barnes**, Statewide Program Manager Clinical Education & Training, Nutrition & Dietetics, Royal Brisbane & Women's Hospital, Metro North Hospital & Health Service
- Members:*
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 - Alan Spencer**, Director Nutrition & Dietetics Gold Coast University Hospital, Gold Coast Hospital & Health Service
 - Annabel Biven**, Senior Dietitian, Ipswich Hospital, West Moreton Hospital & Health Service
 - Cristal Newman**, Senior Dietitian, Roma Hospital, South West Hospital & Health Service
 - Kate Rose**, Senior Dietitian, Longreach Hospital, Central West Hospital & Health Service
 - Katie Barwick**, Senior Dietitian, Lady Cilento Children's Hospital, Children's Health Queensland Hospital & Health Service
 - Liza-Jane McBride**, Team Leader, Allied Health Professions' Office Queensland
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 - Dr Merrilyn Banks**, Director Nutrition & Dietetics, Royal Brisbane & Women's Hospital, Metro North Hospital & Health Service
 - Mia Hemingbrough**, Director Nutrition & Dietetics Central Queensland Hospital & Health Service
 - Dr Rachel Stoney**, Director Nutrition & Dietetics, Redland Hospital & Wynnum Health Service, Metro South Hospital & Health Service
 - Rosemary Sander**, Professional Lead Nutrition & Dietetics, Sunshine Coast Hospital & Health Service
 - Sally Courtice**, Director Nutrition & Dietetics, QEII Hospital, Metro South Hospital & Health Service
 - Zoe Walsh**, Team Leader, Community Indigenous & Subacute Services, Metro North Hospital & Health Service

Appendix Three

Prioritisation Guidelines for Nutrition Management of Paediatric Patients



Prioritisation
Guidelines