

Nutrition Competency Framework (NCF) December 2014

Competency Number	Nutrition Competency (knowledge- or skill-based)	Student Learning Outcomes/Objectives (SLOs)	Examples of subject matter to address SLOs	Examples of SLOs that could be incorporated into existing topics in medical courses
K1 SCIENCES	Demonstrate understanding of the <u>basic sciences</u> in relation to nutrition	1. Describe the functions of essential nutrients, and the basis for the biochemical demand for energy and nutrients	<ul style="list-style-type: none"> Macronutrient and micronutrient requirements and their biochemical functions (e.g. energy, protein, carbohydrate, fat, iron, calcium, vitamin D, zinc) Energy balance, storage and utilisation of macro and micronutrients within the body 	<ul style="list-style-type: none"> Identify key macronutrients and micronutrients, understand their biochemical functions and describe individual requirements for different population groups Describe fuel metabolism and homeostasis of carbohydrates, fats and protein; explain the impacts on biochemical demand and contributors to energy intake and energy expenditure in the body across the life course
		2. Describe the integrative normal processes of appetite, eating, intestinal function, digestion, absorption and nutrient utilisation and common disorders that affect them	<ul style="list-style-type: none"> Gastrointestinal tract structure and function; digestive and absorptive processes Hormonal control of hunger and satiety Common disorders which may affect the processes of eating, digestion, absorption and requirements for essential nutrients 	<ul style="list-style-type: none"> Describe gastrointestinal tract structure and function; describe the process of digestion and identify major sites where absorption of nutrients occurs Describe the mechanisms of hunger and satiety control Describe how different disease processes impact nutritional status
		3. Differentiate the energy and nutrient requirements across the lifespan for normal growth, structure and function	<ul style="list-style-type: none"> Nutritional requirements across the lifespan including infancy, childhood, adolescence, adulthood, pregnancy, lactation and later life Impact of lifestage on biochemical demand and contributors to energy intake and energy expenditure in the body across the life course Anthropometric standards and reference ranges for individuals/groups Clinical/biochemical standards and reference ranges for individuals/groups 	<ul style="list-style-type: none"> Differentiate the nutritional requirements across the lifespan including infancy through to end of life and pregnancy and lactation Identify appropriate strategies to address nutrition requirements of clients at different life stages and in different settings (e.g. acute care, rehabilitation, nursing home, community) Source and identify the most appropriate anthropometric standards and reference ranges for individuals/groups Recognise and identify clinical/biochemical standards and reference ranges



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K2 PREVENTION	Demonstrate knowledge of the interactive role of nutrition in health and the prevention of disease	1. Recognise the common nutrition-related causes of mortality and morbidity in the population	<ul style="list-style-type: none"> Diabetes, cardiovascular disease (including hypertension), cancer, osteoporosis, macro and micronutrient deficiencies (e.g. Vitamin D, iron, folate) 	<ul style="list-style-type: none"> Identify the most common causes of morbidity and mortality that have dietary links e.g. diabetes, obesity, CVD (including hypertension), cancer, osteoporosis, nutrient deficiencies (e.g. Vitamin D, iron, folate)
		2. Describe how nutrition affects health and risk factors for disease	<ul style="list-style-type: none"> Cardiovascular disease: impact of dietary patterns (fruit and vegetables, saturated and trans fat, sodium, energy excess, omega 3 fatty acids) Osteoporosis: impact of dietary calcium, Vitamin D, protein Cancer: impact of dietary patterns (e.g. fruit and vegetables, dietary sodium, excess energy, alcohol, nitrates) Malnutrition: impact of inadequate nutrition Type 2 diabetes: impact of excess energy 	<ul style="list-style-type: none"> Describe the nutrition-related risk factors for various diseases and predictors of mortality Describe which dietary factors may impact on cardiovascular disease, including those that affect lipids, hypertension and weight Describe the impact of a low-calcium intake on osteoporosis Describe the dietary patterns that may impact on cancer development Describe the impact of malnutrition and failure to thrive on health Identify the impact of obesity on those at risk of type 2 diabetes
		3. Describe how disease can affect nutritional status	<ul style="list-style-type: none"> Impact on physiological and psychological functions and nutrient requirements for a range of different conditions such as: <ul style="list-style-type: none"> Gastrointestinal disease (coeliac disease, Crohn's Disease) Respiratory disease Eating disorders Dementia 	<ul style="list-style-type: none"> Describe the reasons for altered nutrient requirements in inflammatory bowel disease and coeliac disease Describe the possible reasons for increases in the risk of malnutrition in respiratory disease Identify what body composition changes can occur in long-term eating disorder patients Describe the nutritional effects that dementia may have on patients in aged care



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K3 TREATMENT	Demonstrate knowledge of evidence-based dietary strategies for prevention and <u>treatment of disease</u>	1. Recognise the role of nutrition in treatment of disease	<ul style="list-style-type: none"> • Food Intolerance and allergy • Cardiovascular disease • Diabetes • Polycystic ovarian syndrome • Coeliac disease • Inflammatory bowel disease • Renal disease • Cancer • Malnutrition • Burns • Wound healing • Pulmonary disorders 	<ul style="list-style-type: none"> • Outline the major medical conditions where dietary management is of particular importance
		2. Describe the dietary management strategies for relevant medical conditions and diseases	<ul style="list-style-type: none"> • Food allergy: eliminate problematic food components • Cardiovascular disease: reduce trans and saturated fats, increase poly and monounsaturated fats, increase omega 3 fatty acids, reduce dietary sodium, increase dietary potassium, reduce obesity, increase dietary fibre, reduce alcohol intake • Overweight/obesity including polycystic ovarian syndrome: different approaches to induce negative energy balance • Type 2 diabetes: different approaches to optimise blood glucose control • Coeliac disease: eliminate dietary sources of gluten • Inflammatory bowel disease: ensure adequate energy, protein, fluid, electrolytes • Malnutrition: optimise intake of relevant macro and micronutrients • Burns and wound healing: optimise dietary protein, energy, fluid, micronutrients • Pulmonary disorders: optimise nutritional status 	<ul style="list-style-type: none"> • Describe the dietary management strategies in treating food allergy • Describe the dietary management strategies in treating cardiovascular disease • Describe the dietary management strategies in treating polycystic ovarian syndrome • Describe the dietary management strategies in treating type 2 diabetes • Describe the dietary management strategies in treating coeliac disease • Describe the dietary management strategies in treating inflammatory bowel disease • Describe the dietary management strategies in treating malnutrition • Describe the dietary management strategies in treating burns • Describe the dietary management strategies in treating pulmonary disorders
		3. Demonstrate an appreciation of nutrient/drug interactions	<ul style="list-style-type: none"> • Common drugs (e.g. warfarin and dietary Vitamin K; insulin and risk of hypoglycaemia weight gain; monoamine oxidase (MAO) inhibitors and dietary tyramine) 	<ul style="list-style-type: none"> • Describe drugs/treatments used that may affect nutritional status and dietary requirements



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K4 FOOD	Demonstrate awareness of food sources of nutrients, food habits and the cultural and social importance of food	1. List the food sources of major nutrients	<ul style="list-style-type: none"> Food sources of nutrients and where they are found in the current food supply 	<ul style="list-style-type: none"> Identify food sources of the major macro and micronutrients
		2. Describe how the social determinants of health influence food consumption patterns and the consequences of this	<ul style="list-style-type: none"> Impact of availability of healthy food (distance to shops, location of fast food outlets, transportation) on dietary intake Nutritional risk factors contributing to food insecurity (individual, household, community and state/federal levels) 	<ul style="list-style-type: none"> Identify community groups vulnerable to food insecurity Identify factors contributing to food insecurity at an individual, household, government level
		3. Appreciate the social and cultural importance of food	<ul style="list-style-type: none"> The impact of different ethnic and religious groups on the dietary intakes of specific individuals and populations 	<ul style="list-style-type: none"> Describe how social and cultural interactions impact the dietary intakes of individuals and populations
S1 RISK	Demonstrate skills in the identification of nutritional risk, nutritional deficits and excesses	1. Assess nutrition risk factors pertaining to over- and undernutrition	<ul style="list-style-type: none"> Skills in assessment of intake of individually-relevant dietary factors related to nutritional risk (e.g. recent weight changes, regularity of eating, intake of fruits and vegetables, take-away foods) Anthropometry – height, weight, weight history, Body Mass Index (BMI), waist circumference, use of growth charts Awareness of validated nutritional assessment tools and procedures (e.g. Malnutrition Universal Screening Tool, Mini Nutrition Assessment) 	<ul style="list-style-type: none"> Demonstrate skills in identification of clients who may need further assistance in managing their diet Demonstrate the use of anthropometric measures such as BMI, waist circumference and use of growth charts
		2. Integrate nutrition in the medical history and physical examination	<ul style="list-style-type: none"> Assessment of weight changes, regularity of eating, appetite, living arrangements, shopping and cooking habits, thirst, pallor, energy levels, level of physical activity, use of complementary/alternative medicines 	<ul style="list-style-type: none"> Demonstrate awareness of the importance of nutrition-related factors in the medical and physical assessment
		3. Interpret and integrate findings from the nutritional assessment to define nutritional problems	<ul style="list-style-type: none"> Markers indicating dietary concern: <ul style="list-style-type: none"> Anthropometrical Biochemical tests used as nutrition markers Investigations 	<ul style="list-style-type: none"> Display incorporation of nutrition-related findings into assessment and management plan where appropriate; develop plans for clients and appropriate referrals to other agencies/services



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S2 CRITICAL	Demonstrate ability to interpret nutrition evidence in a critical and scientific manner and apply appropriately in clinical practice	1. Locate and critically appraise literature on nutrition related to prevention and treatment of disease	<ul style="list-style-type: none"> Utilise current scientific evidence and incorporate this into the nutrition management of patients 	<ul style="list-style-type: none"> Displays the use of current evidence based information in the management of clients with nutrition related issues
		2. Apply an evidence-based approach in the delivery of appropriate nutrition management in clinical practice	<ul style="list-style-type: none"> Evidence-based nutrition guidelines (e.g. NHMRC Nutrient Reference Intakes, Dietary Guidelines, Guide to Healthy Eating) World Health Organization (WHO) guidelines Royal Australian College of General Practitioners: General Practice Management of Type 2 diabetes NEDC Eating Disorders: A Professional Resource for General Practitioners Evidence-based resources produced by Dietitians Association of Australia, Diabetes Australia, Baker IDI, National Heart Foundation, Cancer Council 	<ul style="list-style-type: none"> Demonstrate use of relevant evidence-based nutrition resources and apply them in patient management



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S3 APPLICATION	Demonstrate ability to apply basic dietary strategies for prevention and treatment of medical conditions, disease and trauma, with recognition that many nutritional issues require specialist management by a dietitian	1. Prioritise nutritional management strategies	<ul style="list-style-type: none"> Determining when one nutritional issue needs more immediate attention than another (e.g. elderly client with type 2 diabetes and cancer; adolescent with insulin-dependent diabetes and anorexia; overweight intellectually disabled client) 	<ul style="list-style-type: none"> Demonstrate skills in the identification of nutritional risk, nutritional deficits and excesses Demonstrate prioritisation of nutritional issues, depending on the broader profile/life circumstances of the patient
		2. Explain nutritional risk factors for common diseases to patients and their families	<ul style="list-style-type: none"> Dietary risk factors: <ul style="list-style-type: none"> Low fibre intake related to constipation, diverticular disease Aflavotoxins and cancer Low calcium intake and osteoporosis Weight gain and inactivity and type 2 diabetes High saturated fat intake and cardiovascular disease Sodium and cardiovascular disease Sweetened drinks and weight gain Dietary risk factors that alter depending on the setting (e.g. more money spent on fast food in low socioeconomic areas, less fruit and vegetables available in remote areas, less sunlight and lower Vitamin D levels in nursing homes, malnutrition in acute care settings) 	<ul style="list-style-type: none"> Demonstrate the ability to communicate common risk factors that could be modified to prevent/treat disease Demonstrate the ability to apply different management strategies for clients in a range of settings
		3. Provide basic evidence-based advice on nutrition to patients	<ul style="list-style-type: none"> Type 2 diabetes: weight loss/maintenance CVD: reduce saturated fat/increase MUFA and PUFA Failure to thrive: increased energy using supplements (with specialist input from a dietitian) Coeliac disease: strict gluten avoidance (with specialist input from a dietitian) Malnourished elderly patients: increased eating frequency, energy dense foods (with dietitian input) 	<ul style="list-style-type: none"> Demonstrate the ability to provide basic evidence-based nutrition advice to patients with common diseases such as type 2 diabetes, CVD, malnutrition
		4. Where appropriate integrate nutrition goals into care plans, including referral to other professionals as required, particularly dietitians	<ul style="list-style-type: none"> Combining nutrition-related goals into medical management Availability of services that can provide nutrition-related services 	<ul style="list-style-type: none"> Demonstrate the ability to recognise in what situations referral to a dietitian is appropriate



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S4 ETHICS	Demonstrate the ability to apply principles of ethics related to nutritional management	1. Apply ethical and legal requirements to the decision-making process concerning nutrition	<ul style="list-style-type: none"> Withholding or withdrawing of nutrition or hydration support Nutrition-related medicolegal advice, for example in eating disorders Respecting patients' and relatives' choices in decisions related to provision of nutrition via oral, enteral or parenteral routes 	<ul style="list-style-type: none"> Demonstrate the ability to recognise the nutrition-related ethical issues that may be involved in end of life situations
S5 TEAM	Demonstrate ability to work effectively in a team with other health professionals to deliver optimal nutrition care	1. Recognise the limitations of one's own knowledge and skills and refer or consult with another health practitioner as appropriate	<ul style="list-style-type: none"> Communication with other multidisciplinary team members and planning for management (e.g. in coeliac disease, type 1 diabetes) 	<ul style="list-style-type: none"> Demonstrate ability to engage respectfully and effectively with multidisciplinary team members Demonstrate skills in locating and utilising services of community-based organisations and NGOs that promote health and nutrition (e.g. the Red Cross, Meals on Wheels, community health centres)
		2. Understand, respect, incorporate and support the roles of other health professionals in nutritional management of patients	<ul style="list-style-type: none"> Formulating a referral to an allied health professional, including relevant assessment and diagnostic information 	<ul style="list-style-type: none"> Demonstrate the importance of using a multidisciplinary team approach to nutritional assessment and management of individuals and groups Demonstrate the importance of communication via referral including relevant assessment and diagnostic information

