A systematic review and meta-analysis of prevalence of protein-energy malnutrition in the international community: A look at the influence of region, rurality, setting and gender (the macro study)

Crichton, Megan; Craven, Dana L.; Mackay, Hannah; Marx, Wolfgang; Marshall, Skye

Published in:
Nutrition and Dietetics

DOI:
10.1111/1747-0080.12426

Nutrition & Dietetics 2018; **75** (Suppl. 1): 9–67 DOI: 10.1111/1747-0080.12426

Oral papers in program order

Thursday 17 May 2018

Concurrent session – Clinical Nutrition

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COOKING AND FOOD SKILLS OF AUSTRALIAN ADULTS ARE ASSOCIATED WITH DIET QUALITY – A NATIONAL SURVEY

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Australians appear to be interested in cooking programs but anecdotally home cooking frequency has declined. Research suggests that being a proficient cook is associated with better diet quality, health and well-being. The aim of this national survey was to investigate relationships between dietary patterns, cooking and food skills. Adults were recruited from August 2016–2017 to complete an online survey using the validated cooking/food skills ability scale (14 items) to rate how good (1 = very poor; 7 = very good) they performed a range of skills (blending, stewing, roasting, baking, meal planning, preparing meals in advance, following recipes, shopping with a grocery list). Demographic data included age, sex, education and BMI. Diet quality was assessed using the Australian Recommended Food Score (ARFS), a brief validated index. In total 910 completed the survey (mean (SD) age 45.2 years (16.1), body mass index (BMI) 25.4 kg/m^2 (5.6), 81% female, 33% trade certificate or lower). Females and older adults reported greater cooking and food skills confidence compared to others. Overall diet quality was positively correlated with food skills ($r = 0.31$, $p < 0.001$) and cooking skills ($r = 0.22$, $p < 0.001$). While there was no correlation between cooking skills and BMI ($p > 0.05$), there was a negative correlation between food skills and BMI ($r = -0.13$, $p < 0.001$). Hierarchical regression analysis indicated variation in diet quality was explained ($F = 15.8$, $p < 0.001$) by food skills, creativity, age, sex, income and infrequent take-away food consumption. Interventions testing the impact of teaching cooking and food skills on improving dietary in Australian adults are warranted.

Funding source: Collins supported by NHMRC Senior Research Fellowship and Gladys M Brawn Senior Fellowship from The University of Newcastle, Faculty of Health & Medicine. Lavalle and Dean supported in part by The Food Safety Promotion Board (Grant No. 11/2013).

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IMPLEMENTATION OF THE 'HEALTHIER DRINKS AT HEALTHCARE FACILITIES' STRATEGY AT A MAJOR TERTIARY CHILDREN'S HOSPITAL – DID IT WORK?

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System wide approaches to address obesity are essential. A growing body of evidence supports the association between sugar-sweetened beverage consumption and weight gain. In May 2017, the Lady Cilento Children's Hospital (LCCH) implemented the 'Healthier Drinks at Healthcare Facilities' strategy, which increased the availability of healthy drink options, and limited unhealthy options. This pragmatic research project determined the impact of the implementation of this strategy. Retail outlet and vending machine bottled beverage sales data were collected for the 12 months prior, and for 2 months post-implementation of the strategy. Drinks were classified as red, amber or green according to pre-defined criteria. Post-implementation surveys included LCCH employees (n = 105) and visitors (n = 102) to the facility. Average monthly sales prior to implementation were 6,548 units for red (43% of total sales), 5,025 units for amber (32%) and 3,843 units for green (25%). Post-implementation, average monthly sales were 6,165 units for red (41%), 4,903 units for amber (32%) and 4,037 units for green (27%). There were no significant differences in the proportion of drinks sold in any category ($p > 0.05$), and no meaningful change in total drinks sales (15,416 units vs 15,104 units) from pre to post-implementation. The majority of employees (84%, n = 88) and 97% (n = 99) of visitors were supportive of the changes. Implementation of the 'Healthier Drinks at Healthcare Facilities' strategy while supported by employees and visitors, resulted in non-significant changes in consumer purchasing behaviours. Further modification of the beverage environment (e.g. removal of all red drinks) may be required to influence consumer purchasing.

Funding source: Preventive Health Branch, Department of Health, Queensland Health

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A DIETETIC CLINICAL EDUCATOR IMPROVES THE PLACEMENT EXPERIENCE FOR STUDENTS AND PRECEPTORS WITHIN A PROGRAMMATIC ASSESSMENT MODEL

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Demand for student placements in health profession education are increasing nationally and the burden on preceptors has been recognised. Implementing a clinical educator (CE) role increases the capacity for placements. However, the CE role has not been evaluated within the context of a programmatic approach to assessment, nor has the impact on placement experience for students and preceptors been explored. In 2016 one university implemented a dietetic CE position for clinical placements within a programmatic assessment model with the goal to provide support and improve the experience for preceptors and students. The aim of this study was to evaluate the impact of the CE position on the placement experience for key stakeholders. Students (n = 11), preceptors (n = 45) and dietetic management (n = 3) attended focus groups. Focus group data was pooled, then transcribed and analysed for themes using inductive coding. Five themes arose: CE administrative assistance reduced the logistical burden of student placements and improved time efficiency; the CE facilitates student competency-based assessment within a programmatic assessment model; the CE is uniquely positioned to provide support and enhance student confidence; the CE has an enhanced capacity to manage underperforming and challenging students; the CE position drives a cultural shift which supports a positive preceptor attitude toward student placements. This research demonstrates that implementing a CE position can improve the clinical placement experience within a programmatic assessment model for both students and preceptors by providing additional support and bringing a unique skill set, thus reducing preceptor burden.

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COMPARING IDDSI TO CURRENT CLINICALLY ACCEPTED TESTING METHODS

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The new International Dysphagia Diet Standardisation Initiative (IDDSI) has been endorsed by both Speech Pathology Australia and the Dietitians Association of Australia for introduction into Australia by May 1st 2019. IDDSI will replace the current Australian Standardised Terminology and Definitions for Texture Modified Food and Fluids published in 2007. Currently in Australia there are no validated testing methods to assess thickened fluids against the current Australian Standards, however, two commonly used tools in clinical practice include the Line Spread Test and Bostwick Consistometer. Accepted measures for these tests used in practice were applied to a range of commercially made thickened fluids and compared to the IDDSI flow test and IDDSI fork drip and spoon tilt test. A total of 144 samples were compared across a range of fluid types and thicknesses at both ambient and refrigerated temperatures. Only 40.3% of samples agreed across all 3 tests. The highest correlation was between the line spread test and Bostwick Consistometer at ambient temperatures (R=0.96) and the lowest correlation was between the Line Spread Test and IDDSI at refrigerated temperatures (R = -0.72). IDDSI passed a total of 114 samples compared to 76 using the Bostwick and 72 the Line Spread Test. This implies that the IDDSI flow test and fork drip and spoon tilt test allows a greater range of thicknesses than current tests used routinely in Australian clinical practice, raising the question – do the current IDDSI levels need to be narrowed or modified to more closely align with current accepted clinical thickness levels?

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THE NUTRITIONAL AND SPORTS SUPPLEMENT BEHAVIOURS OF SUB-ELITE ATHLETES

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Supplementation is prevalent among athletes, however little is known about supplementation patterns in sub-elite athletes. An online survey was distributed to sub-elite athletes (maximum national level) from 90 sports clubs in Western Australia to assess nutritional and sports supplement behaviours. 68.3% of the 120 responders (16 sports; mean ± SD age = 24.7 ± 11.7 years; male n = 81, female n = 38, undefined = 1) reported using supplements within the last 12 months. Sports drinks (39.6%), fish oil (22.3%), sports bars (20.1%) and meal replacement drinks (20.1%) were reported as the most commonly used supplements. These supplements were most commonly sourced from the supermarket (29.5%), chemist (24.5%) or direct from a supplier (19.4%). Supplements were mostly used to enhance recovery (33.1%), improve competition performance (30.9%) and energy (29.5%). Those that avoid supplements believe a healthy diet is sufficient (17.3%), they aren't needed (12.2%) and have negative side effects (9.4%). Only 13.7% of athletes had access to a dietitian. The coach, seeing other athletes sanctioned for unintentional doping and other athletes were found to be most influential on supplementation behaviours. Importantly, 38.4% of athletes were unsure or did not believe they were subject to anti-doping policies. Supplementation was widespread among the population studied, albeit slightly lower than previous studies on elite athletes. There is a need for improved education about supplements, anti-doping and expert referrals in this population and their support network.

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DEVELOPMENT AND PILOT OF A TOOL TO MEASURE THE IN-STORE FOOD ENVIRONMENT

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The 4Ps of marketing (Product, Price, Placement, Promotion) have long been utilised to influence consumer purchasing behaviours. Understanding in-store food and beverage marketing practices is essential to inform policies and interventions to support healthy eating. In Australia, monitoring of these practices is limited to state-specific surveys focused largely on Product and Price. We aimed to develop and pilot a tool to assess the use of all 4Ps, and test its feasibility and reliability in the remote community store setting. Stakeholder interviews (n = 44) and identified existing tools informed tool content, focusing on "best practices" within each of the 4Ps for seven food categories. The tool was piloted in nine remote Northern Territory community stores by a researcher with a public health nutritionist or store manager. Inter-rater reliability was determined using Cohen's kappa for: the overall tool, each food category, food category scoring scale and each of the 4Ps. There was considerable variation in IRR, with kappa ranging from -0.11 (no agreement) for the scoring scale to 0.94 (almost perfect) for Price and Dairy & Eggs. Post-pilot feedback from testers indicated

the tool was feasible and acceptable, however identified some limitations including subjectivity of the scoring scale and misinterpretation of terminology. There remains an unmet need for feasible, reliable instruments to monitor the in-store food environment. We have addressed limitations with the piloted tool and are developing it as a mobile app, which is anticipated to have improved feasibility and reliability and the potential for application beyond remote stores in the future.

Funding source: National Heart Foundation Future Leader Fellowship – 100085; NHMRC

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Concurrent session – Community Care and Older Adults

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THE DIRECTION OF THE RELATIONSHIP BETWEEN DIET AND DENTITION IN COMMUNITY DWELLING OLDER ADULTS: A SYSTEMATIC REVIEW

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Poor dentition is related to inadequate dietary intake of nutrients and food groups. The aim of this review is to describe the association between dietary intake of nutrients and food groups with dentition in older community dwelling older adults, and assess the direction of the relationship. A systematic search of databases MEDLINE, EMBASE, Global Health, CINAHL, Science Direct, Informit, and Cochrane Library was conducted from the earliest possible date, until April 2017. Search terms related to three main themes, 'dentition', 'dietary intake' and 'older adults'. Titles and abstracts, followed by full text were screened according to prespecified inclusion criteria. Risk of bias was assessed by the Scottish Intercollegiate Guidelines Network (SIGN) checklist, and Grading of Recommendations, Assessment and Evaluation (GRADE) was adapted to provide an evaluation across studies. Thirty-four studies were included after screening full texts, and were predominantly made up of cohort studies. Preliminary review of studies suggests wearing partial and full dentures is related to poorer intake of macronutrients, vitamins and minerals, and fruits and vegetables. Having higher numbers of functionally occluding pairs of teeth or natural teeth was also related to higher intakes of fruit and vegetables, various micronutrients and macronutrients, while lower numbers of natural teeth were related to higher intakes of saturated fat and added sugar. Very few studies explored how diet impacts dentition. These results show evidence of an association between dietary intake of nutrients and food groups with dentition, but limited evidence to assess the direction of that relationship. Registration number: CRD42017062193

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RELIABILITY OF NEW INDEX TOOL TO ASSESS ADHERENCE TO MEDITERRANEAN DIET AMONG PEOPLE WITH MILD COGNITIVE IMPAIRMENT

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Dementia is a leading cause of death and disability without treatment to prevent, slow or reverse its course. The Mediterranean diet (MeDi) is associated with reduced risk of dementia yet no tools have been specifically developed to assess adherence to MeDi among Australians or people with mild cognitive impairment (MCI). Our aim was to a) determine the reliability of a new index tool (MediCul) in this population and b) compare performance to a 14-item tool, previously validated and associated with cognitive outcomes in the PREDIMED trial. Participants were recruited from an existing MCI cohort and completed the 50-item MediCul on two occasions. MediCul is scored out of 100 and has questions embedded within it from the PREDIMED tool. Repeatability was assessed using a paired t-test and the Intraclass Correlation Coefficient (ICC). Scores from both tools were compared using linear regression. The participants (n=68, 65% female) had a mean (SD) age of 75.5 (6.6) years. Mean scores for MediCul at two timepoints were 54.3/100 and 54.7/100, respectively. These were not statistically different ($p = 0.51$) and they were significantly correlated using the ICC ($r = 0.927$, $p < 0.0001$). PREDIMED mean scores were 6.0/14 and 6.1/14 ($p = 0.409$), respectively. Preliminary analyses suggest there was a significant association between scores from the PREDIMED and MediCul tools ($\beta = 4.155$, $p < 0.0001$). MediCul has good reliability in an Australian population with MCI and compares favourably with an existing tool. The Australian population with MCI studied has low adherence to the MeDi, which may negatively impact their risk of further cognitive decline.

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THE EFFECT OF CURCUMIN SUPPLEMENTATION ON COGNITIVE FUNCTION IN OLDER ADULTS – A SYSTEMATIC REVIEW OF RANDOMISED CONTROLLED TRIALS

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Curcumin, a polyphenol present in turmeric, is credited with anti-inflammatory, antioxidant and chemoprotective properties with potential to exert neuroprotective effects. To assess the highest quality clinical evidence, a systematic review was conducted following PRISMA guidelines (2009) to identify randomised, double-blind, placebo-controlled clinical trials investigating the effects of curcumin supplementation on cognition in older adults. Five databases were searched (CINAHL, Cochrane Library, PubMed, SCOPUS, Web of Science) for articles published between 2000 and 2017. Four studies fulfilled inclusion criteria, with 226 participants aged 66–74 years in which curcumin dose varied from 0.4 g – 4 g versus placebo. Primary outcome measure was cognitive function assessed by validated screening

measures, with biochemical markers being considered as secondary outcomes. One study found improvement in the Montreal Cognitive Assessment score from 25.8 to 26.5 with 1.5 g / day curcumin over 52 weeks (time x treatment interaction, adjusting for age, sex, education & APOE4 genotype; $p = 0.02$). Another study reported a 17% improvement ($p = 0.04$) in serial three subtraction task responses after 4 weeks, compared with 3% in the placebo group, following adjustment for demographic variables. The final two studies, of 24 and 21 weeks in duration, observed no change in cognitive function. However, in the third study, the curcumin group had lower haematocrit ($p = 0.01$) and higher glucose levels ($p = 0.04$). Poor tolerability was present in three studies with 54 (23.9%) adverse events reported, with gastrointestinal symptoms the most common form (n = 30; 13.3%). Despite promising results, there is insufficient evidence to support recommendation of curcumin supplementation to improve cognition, particularly due to tolerability issues.

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SARCOPENIC OBESITY IS ASSOCIATED WITH THE METABOLIC SYNDROME AND INSULIN RESISTANCE OVER FIVE YEARS IN COMMUNITY-DWELLING OLDER MEN: THE CONCORD HEALTH AND AGEING IN MEN PROJECT

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Sarcopenia and obesity may independently contribute to risk of metabolic syndrome (MetS) and insulin resistance in older age, but it is unclear whether sarcopenic obesity has synergistic effects. We aimed to determine 5-year associations between sarcopenic obesity, MetS and insulin resistance in older men. 1,057 community-dwelling men aged ≥ 70 years that had measures of appendicular lean mass (ALM) and body fat percentage assessed by whole-body dual-energy X-ray absorptiometry (DXA), completed grip strength assessments, and had MetS measures at baseline. Sarcopenia was defined as low ALM relative to body mass index and/or low grip strength (Foundations for the National Institutes of Health definition). Obesity was defined as body fat percentage ≥ 30%. MetS components (waist circumference, systolic (SBP) and diastolic blood pressure (DBP), fasting glucose, triglycerides, and high-density lipoprotein [HDL] cholesterol) were assessed at baseline and 5 years later. Fasting insulin and Homeostasis Model Assessment of Insulin Resistance (HOMA-IR) were assessed at 5 years only. 341 men (32%) were sarcopenic obese and prevalence of MetS at baseline was 38%, with sarcopenic obese (odds ratio (OR), 95% CI: 5.1, 3.6–7.3) non-sarcopenic obese (5.2, 3.3–8.2) and sarcopenic non-obese (2.0, 1.3–3.0) demonstrating higher likelihood for MetS than non-sarcopenic non-obese men after multivariable adjustment. There were no differences in likelihood of incident MetS over 5 years but increasing body fat predicted incident MetS (1.2, 1.1–1.3 per kg) and deleterious changes in MetS components (DBP, glucose, HDL, triglycerides; all $P < 0.05$). Compared with non-sarcopenic non-obese men, estimated marginal means for HOMA-IR at 5 years were significantly higher in sarcopenic obese (1.1, 0.8–1.4 vs. 0.7, 0.4–1.0), but not other groups.

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THE BI-DIRECTIONAL RELATIONSHIP BETWEEN PERIODONTAL HEALTH AND THE DIETARY INTAKE OF OLDER ADULTS: A SYSTEMATIC LITERATURE REVIEW

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This systematic review aimed to describe the direction of the association between dietary intake and periodontal health in community-dwelling older adults, aged 60 years and over. Periodontal disease is a chronic inflammatory gum condition that is more prevalent in older populations. It has been previously associated with numerous risk factors, which include dietary intake. A comprehensive database search was conducted and all relevant studies had their titles and abstracts screened before secondary screening of the full papers took place. Included studies were written in English and were published up until April 2017. Quality assessment was performed and an overall assessment using the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) system was used and adapted. The search produced 682 records, and after duplicate removal, 584 publications underwent title and abstract screening. Eight papers met all inclusion criteria and were included in this review. Significant associations were found between fatty acids, vitamin C, vitamin E, beta-carotene, fibre, calcium, dairy, fruits and vegetables, and periodontal disease. Overall, this review found a relationship between dietary intake and periodontal disease, however this direction of association needs to be further explored. Registration Number: CRD42017065022.

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DOES PRESCRIBING SUPPLEMENTS ON THE INPATIENT MEDICATION CHART INCREASE CONSUMPTION AND REDUCE WASTAGE? THE MEDPASS PROGRAM: AN OBSERVATIONAL PILOT STUDY

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Hospital malnutrition is common, impacting one in four Alfred Health inpatients. Provision of oral nutrition supplements (ONS) delivered as single units with meals or snacks form part of standard treatment. A previous food and supplement wastage audit at Caulfield Hospital showed that 53% of ONS provided is not consumed, resulting in significant wastage and subsequent failure to treat malnutrition. The aim of this observational study was to determine and compare the consumption, wastage and cost of MedPass to standard ONS delivery methods. The MedPass program, involving ONS prescribed as small frequent doses on the inpatient medication chart and administered by nursing staff was implemented. Twenty-three malnourished inpatients were assigned to receive ONS via MedPass. ONS consumption was

quantified, including the contribution to estimated daily energy and protein requirements. This was compared to results from a previous audit that assessed standard ONS delivery methods. Of the ONS doses that were administered via MedPass, 94% were consumed. Overall wastage of ONS reduced from 53% using standard provision of ONS to 6% with the implementation of MedPass. This resulted in a saving of $2.43 per patient per day when providing ONS via MedPass compared to standard delivery methods. In addition, total energy (kJ) and protein (g) consumption via MedPass ONS increased by 72% and 85%, respectively. The MedPass program is a successful initiative to maximise consumption of ONS and reduce wastage and associated costs. Further research is required to assess the effectiveness of MedPass ONS in the treatment of malnutrition.

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Concurrent session – Health Care Delivery

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CONSULTATIONS INVOLVING OVERWEIGHT AND OBESITY: A CROSS-SECTIONAL ANALYSIS OF AUSTRALIAN GP REGISTRARS' CLINICAL PRACTICE

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Overweight and obesity constitute a major public health problem, but are under-managed clinically despite strong evidence of associated morbidity and mortality. General Practitioners' (GP) consultations offer an opportunity to identify and address patient overweight/obesity. This study aimed to establish the prevalence and associations of GP registrars' management of overweight/obesity using a cross-sectional analysis of data from the Registrar Clinical Encounters in Training (ReCEnT) study. ReCEnT is an ongoing, multicentre prospective cohort study of registrars' practice which documents 60 consecutive consultations of each registrar in each of three 6-month GP training terms. The outcome factor in this analysis was a problem/diagnosis of, or related to, overweight/obesity. 15 rounds of data collection were included (2010-2017). Only patients aged 18 years or older were included. Independent variables were related to registrar, patient, practice and consultation. 1659 trainees contributed data from 170,508 consultations and 278,937 problems/diagnoses, of which 1,644 involved overweight/obesity management, equating to 0.59% [95% CI: 0.56–0.62] of all problems managed. Overweight/obesity was managed in 0.96% [95% CI: 0.92–1.01] of all consultations. Significant associations of managing overweight/obesity included patient age 18–34 years (compared to ≥ 65 years), being an existing patient of the registrar, the problem being 'existing', making a referral, organising in-practice follow-up, not prescribing medications and not using sources of information/assistance. Of all referrals made for overweight/obesity related problems (371), 53% were to a dietitian/nutritionist. Our results suggest that registrars are more likely to identify overweight/obesity in existing patients, are generally managing overweight/obesity diagnoses appropriately and appear to have a level of confidence in managing obesity.

Funding source: Australian Commonwealth Department of Health

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WHAT DOES EFFECTIVENESS MEAN TO PRIVATE PRACTICE DIETITIANS? A QUALITATIVE EXPLORATION

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Private practice dietitians play a key role in the prevention and management of chronic disease. As the prevalence of chronic disease continues to rise, so does the number of dietitians working in private practice. However, evidence supporting the effectiveness of dietetic interventions in this setting is limited. The aim of this study was to explore private practice dietitians' perceptions of their effectiveness in providing nutrition care. Individual, semi-structured telephone interviews were conducted. Convenience, purposive and snowball sampling techniques were utilised to recruit participants. All interviews were audio-recorded and transcribed verbatim before undergoing inductive thematic analysis. Twenty interviews (n=17 female) were conducted with private practice dietitians from New South Wales (n=8), Queensland (n=8) and Victoria (n=4). The majority of participants worked part-time (n=15) and reported over half of referrals came through the Medicare Chronic Disease Management scheme. Three inter-related themes emerged: (1) defining effective practice: patients' perceptions, behaviours, outcomes and business productivity; (2) valuing effective practice: an integral component of dietetic care; and (3) achieving and monitoring effectiveness: challenges to overcome. Participants believe demonstrating effectiveness is important to the longevity and perceived value of the profession, however there was no unanimous definition of effectiveness. Dietitians determine effectiveness with a combination of subjective and objective measures, however barriers to implementing objective measures means that subjective measures are more commonly used in practice. This suggests that the objective measures often used in the literature to evaluate effectiveness of dietetic consultations may not capture the full depth of what it means to produce an effective consultation.

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SUCCESSFUL CHANGES TO PRACTICE FOLLOWING A DIETETIC LEAD SERVICE WIDE IMPLEMENTATION STRATEGY SUPPORTING HEALTH WEIGHT GAIN IN PREGNANCY

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Excess gestational weight gain (GWG) occurs in 30-60% of pregnancies and is an independent predictor of maternal and infant obesity. Research at our hospital identified gaps in the delivery of best practice to support healthy GWG. Multiple strategies were implemented including professional education, pregnancy weight gain charts and expectations of care. We aimed to evaluate the impact of these strategies on

GWG, advice given to women and their knowledge of healthy GWG. In 2016, 478 pregnant women were recruited. At their 36 weeks gestation appointment, they were weighed and received a self-administered questionnaire which assessed pre-pregnancy weight, knowledge of GWG recommendations, and advice they recalled being given about healthy GWG. Chi squared tests compared this 2016 cohort to the 2010 cohort involved in the New Beginnings Healthy Mothers and Babies Study in which identical recruitment and data collection measures were employed. A greater percentage of the 2016 cohort correctly reported GWG recommendations [53% vs. 34%; $p < 0.001$) and overall increases were seen in being 'encouraged to weigh themselves' (40% increase; $p < 0.001$), 'having their weight checked' (53% increase; $p<0.001$), 'being provided with advice about how much weight to gain' (43% increase; $p < 0.001$), and 'being offered advice about how to gain a healthy amount of weight' (32% increase; $p < 0.001$). Additionally, there was a reduction in the proportion of women with a pre-pregnancy Body Mass Index of 18.5–24.9 kg/m^2 gaining excess GWG (31% (2010) vs. 24% (2016) $p = 0.086$). Implementation of targeted strategies addressing delivery of best practice can result in practice changes that support healthy GWG.

Funding source: Advance Qld Women's Academic Fund – Maternity Leave

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INNOVATIVE IMPLEMENTATION OF A HEALTHY FOOD AND DRINK FRAMEWORK IN NSW HEALTH FACILITIES

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The 'Healthy Food and Drink in New South Wales (NSW) Health Facilities for Staff and Visitors Framework' was released in June 2017. The Framework and supporting toolkit set out best-practice guidelines and practical advice for NSW Health facilities tasked with local implementation. Targeting food outlets in NSW Health facilities, including cafés, cafeterias and vending machines, the NSW Government aims to increase the availability of healthy foods and reduce unhealthy options via the application of 12 Practices. Practice 1 is the removal of sugary drinks from NSW Health facilities by 31 December 2017. Practices 2-12 aim to increase the availability and promotion of healthy food choices by the end of 2018. To do this, an innovative implementation approach has been developed consisting of clear roles and responsibilities for the Ministry of Health and Local Health Districts. The Ministry of Health provides support via a Network of Practice, leads discussions with large food and drink suppliers, provides communication materials and establishes reporting procedures. Local implementation, facilitated via Local Health District (LHD) staff, engages directly with retailers and staff to generate support, undertakes audits of outlets using a mobile reporting tool, and includes the Framework in all tenders and new retail leases. NSW LHDs are on track to achieve Practice 1. Reflections on the key learnings and required changes to practice that arise from implementation support for Practice 1, and which will be used to inform the support model to implement Practices 2-12, are presented.

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ASSESSMENT AND REMEDIATION PRACTICES IN AUSTRALIAN DIETETICS COURSES

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Traditionally, students' competence to practice has been judged by professional supervisors during work placements, with 10% of students deemed not to reach this standard during the allocated timeframe. This research aims to measure the assessment and remediation practices within Australian accredited dietetics placement programs. In August 2016, the placement co-ordinators for such courses (n=15) were invited to participate in a pilot-tested purpose built 13-item mixed-methods web-based survey. Data were analysed descriptively, with responses to open-ended questions sorted into response category themes and counted. A response rate of 80% (12/15) was achieved, with 509 students enrolled in the final year of these programs (mean $\pm$ standard deviation = 42 $\pm$ 13). For most courses (9/12; 75%) competent performance was assessed within discrete placement units. In all instances academic staff made the final assessment of competence in consultation with worksite supervisors. Remediation practices included: additional placements of 2–4 weeks (7/12), re-enrolment within 2–12 months in placement units (8/12) or an exit pathway (7/12). Some universities reported moving towards a more programmatic approach that placed greater onus on the student to demonstrate competence. The implications for a 'failed' placement can be substantial, with some student's waiting 12 months to repeat a unit. The move towards a more holistic approach for the assessment and remediation of professional competence is appropriate given that workplace learning is non-linear, dynamic and context dependent.

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THE BIG ISSUE: WEIGHT MANAGEMENT FOR INTERDISCIPLINARY COLLABORATION BETWEEN DIETITIANS AND CHILD AND FAMILY HEALTH NURSES

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Obesity as a primary health care issue requires dietetic and nursing input. Child and family health nurses (CFHNs) are well-placed to identify paediatric overweight and obesity in the primary care setting, educate about healthy weight gain, and refer clients to dietitians for weight management. However, little is known about nurse-initiated referrals to dietitians for paediatric weight management. Understanding the knowledge, attitudes and behaviours of CFHNs around infant and child feeding, as well as their current referral practices, can guide the development of best practice care with families. A mixed methods study with CFHNs in two Local Health Districts in Sydney is being conducted. Quantitative survey data will be collected on: knowledge and use of current infant and children feeding guidelines, referral practices to dietitians, and opportunities and barriers to promoting healthy feeding and weight gain. Semi-structured interviews will be conducted to explore the role of CFHNs. This research will provide a description of CFHNs' current practices around identification of excess weight and dietitian referrals for paediatric weight management. Associations

between attitudes and behaviours on promoting healthy weight, use of guidelines on healthy eating, and duration of CFHN practice will be presented. Interview data will be thematically analysed to provide in-depth understanding of the barriers to weight management and the further support and training required by CFHNs. This research will identify opportunities for future interdisciplinary collaboration for paediatric weight management between CFHNs and dietitians, and support the role and self-efficacy of clinicians in identifying, addressing and preventing paediatric overweight and obesity.

Funding source: NSW Health

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Concurrent session – Indigenous Health

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KEY LEARNINGS FROM A SUGARY DRINKS SOCIAL MARKETING CAMPAIGN DEVELOPED WITH REMOTE CAPE YORK COMMUNITIES

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Aboriginal and Torres Strait Islander people living in remote areas experience a higher burden of disease than other Australians. Regular consumption of sugar sweetened beverages (SSBs) is a key dietary contributor to overweight and obesity, and is associated with conditions including dental decay and type 2 diabetes. SSBs are consumed at a higher rate by Aboriginal and Torres Strait Islander people. The aim of the 'Sugary Drinks Proper No Good – Drink More Water Youfla' social marketing campaign is to raise awareness of this issue among community members and decision-makers in Cape York. It is one part of the multi-strategy Healthy Communities Project, intended to drive community-led change to create supportive environments for healthy living. The campaign was initiated in response to a need identified by communities to highlight the link between SSBs and chronic disease. Grounded in principles of participatory action research, implementation involved engaging with communities to ensure appropriate key messages, tactics and channels. The end result is a two-tiered campaign which appeals to a national audience and is complemented by a series of localised campaign materials. Ongoing involvement of communities in shaping the campaign was found to be highly valuable and resulted in benefits additional to raising awareness. It gave community members and decision-makers a voice in the overarching project and invited them to be a part of the solution to tackle sugary drink consumption. Social marketing campaigns implemented in close collaboration with remote communities can be a useful enabler to encourage community-led action on nutrition issues.

Funding source: The Healthy Communities Project is proudly funded by the Queensland Government. The social marketing campaign is supported by funding from the Australian Government under the Primary Health Network (PHN) Program.

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ENHANCEMENTS TO THE GO4FUN PROGRAM FOR PRIORITY POPULATION GROUPS

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Go4Fun is a community weight management program for children aged 7–13 years and their families delivered at scale in New South Wales (NSW). Go4Fun has reached over 10,000 families across NSW. Enhancements have also been made to improve access and outcomes for priority population groups. Approximately 9% of families participating in the mainstream program identify as Aboriginal or Torres Strait Islander, these families are less likely to complete the program compared to non-Aboriginal families. With childhood overweight and obesity more prevalent in Aboriginal children compared to non-Aboriginal children (33% versus 22% in NSW), a culturally safe and appropriate program was developed. In 2017, more than 100 families have participated in Aboriginal Go4Fun with participating children achieving significant health benefits including: improvements to eating habits – 70% of participants reduced their intake of sweet snack foods and 55% of participants reduced their intake of sugary drinks. In addition, children achieve a reduction in Body Mass Index (0.4 kg/m^2) and waist circumference (0.7cm). Another priority group is families from rural and remote communities. A non-face-to-face delivery model has also been developed to facilitate access for families who may not be able to attend the standard program particularly those in remote and rural communities. The model delivers the content via an online platform and includes telephone coaching and an incentive reward system. We will present findings from our pilot of the non-face-to-face delivery model on the impact of the program on participating children's obesity-related health behaviours including healthy eating, physical activity, time spent on sedentary activities, and weight status.

Funding source: NSW Office of Preventive Health

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GOOD TUCKER ALL ROUND: A JOURNEY OF SUCCESS THROUGH ENGAGEMENT

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The Good Tucker All Round (GTAR) is a fruit and vegetable project aiming to increase access to affordable and nutritious food for Aboriginal people of the Dharawal land. The program model involves a collaboration of community and partners, including the Local Aboriginal community, Tharawal Aboriginal Corporation (TAC), South Western Sydney Local Health District (SWSLHD), and Reiby Juvenile Justice. Through collaboration this program addresses aspects of food insecurity, including social isolation, connectedness, financial stress, knowledge and skills, and physical access. Annually, the GTAR delivers an average of 2,684 boxes to the community, equivalent to over 33.5 tonnes of fruit and vegetables. Following the success of initial establishment funding, the GTAR program continues to operate in the absence of external funding. Evaluation of this project has demonstrated its effectiveness in achieving its outcomes, with significant increase in daily consumption of vegetables amongst participants. The program's success is underpinned by sustained strength-based approach to community engagement, which genuinely fostered the opportunity for the Aboriginal community to actively participate in decision making from the earliest stage of defining the problem to be solved, through to evaluation of outcomes. The GTAR program demonstrated the importance of approaching engagement with an understanding of the history, culture, social complexity in the local context and with a genuine sharing of

power in relationships that foster mutual trust. We identified key aspects of resourcing, governance and leadership which have contributed to the enduring success of the GTAR program and how they have been essential to the program's success.

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DIET DURING PREGNANCY IN A POPULATION OF INDIGENOUS AUSTRALIAN PREGNANT WOMEN IN THE GOMEROI GAAYNGGAL STUDY

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Diet composition in preconception and pregnancy period is of utmost importance and can influence foetal development and long-term health of children. Little is known about the adequacy of macro- and micronutrient intakes and overall diet quality of Indigenous Australian pregnant women. In this paper, we aim to address these gaps by assessing usual dietary intake and diet quality, measured using the Australian Recommended Food Score (ARFS), in the *Gomeroi gaaynggal* maternal-infant cohort study (n = 62). The Australian Eating Survey (AES) food frequency questionnaire (FFQ) was administered during the 3rd Trimester (≥ 27 weeks). Food group servings and nutrient intakes were compared to the Australian Guide to Health Eating (AGHE) and Australian Nutrient Reference Values (NRVs). Thirty-eight per cent, 33% and 31% met the recommended number of daily servings of fruits, dairy and meat/alternatives, respectively. Less than 5% met the recommended number of daily servings of bread/cereals. None of the women met all AGHE daily food group serving recommendations. The majority of the women (93%) exceeded the recommended intake of energy-dense, nutrient-poor foods and percentage energy from saturated fat was high (15%). The majority of the women had dietary intakes below the estimated average requirement (EAR) for iron (98%) and fibre (62%). Median ARFS was 28 points (Interquartile range: 21-36) (max 73). Indigenous Australian pregnant women do not appear to consume a wide variety of nutritious foods during pregnancy and are failing to meet the key nutrient recommendations for pregnancy. Therefore, strategies to support Indigenous pregnant women in optimising nutrient intakes are urgently needed.

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FOOD INSECURITY AMONG ABORIGINAL PEOPLE WITH DISABILITY: EXPERIENCES DESCRIBED BY ANANGU AND YARNANGU OF THE NGAANYATJARRA PITJANTJATJARA YANKUNYTJATJARA (NPY) LANDS

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Anangu and Yarnangu are the traditional owners of the Ngaanyatjarra Pitjantjatjara Yankunytjatjara (NPY) lands of the Australian central desert region. Data from the Australian Bureau of Statistics details 31% of Aboriginal and Torres Strait Islander people report living in food insecure households in remote areas, but there is limited in-depth information about food insecurity among Aboriginal people with a disability who live in remote areas. This project worked in partnership with the NPY Women's Council, Poche Northern Territory, the Centre for Remote Health, and the University of Sydney and is part of a study to investigate what constitutes a good life for community members with a disability. In-depth interviews and focus groups were held with community members and service providers. A total of 107 people were interviewed, 60 community members and 47 people from service provider organisations. Food insecurity was identified as a key theme by both groups. Difficulties reported included insufficient financial resources for food and special foods, such as enteral feeds; inadequate power and storage for food safety, especially for enteral feeds provided in larger volume packaging; poor quality and expensive fresh food in the local stores; inconsistent social support network which impacted on food consumed and food preparation; reduced ability to gather bush foods and reliance on others for bush foods. This work emphasises the food insecurity experiences of community members with disability, and highlights the need for services to listen and work with Anangu and Yarnangu to help people with disability to live a good life.

Funding source: Australian Research Council grant

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Concurrent session – Foods & Nutrients

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ASSOCIATION BETWEEN HAEM AND NON-HAEM IRON INTAKE AND SERUM FERRITIN IN HEALTHY YOUNG WOMEN

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Iron is an essential micronutrient for human health and inadequate intake may result in iron deficiency (ID) or iron deficiency anaemia (IDA). Currently there is limited information on haem iron (HI) and non-haem iron (NHI) content in foods in Australia, therefore this was calculated for analyses. This cross-sectional study analysed dietary intake (Food Frequency Questionnaire) and biochemical data collected in a cohort (n = 299) of young (18 – 35 years), healthy women to determine the association between the intake of different biologically available iron sources – HI and NHI on serum ferritin (SF). Dietary restraint was assessed using the Three Factor Eating Questionnaire and energy was adjusted for using the Residuals Method. Statistical analysis included independent samples t-tests and chi squared tests. Factors found to be significantly different between iron replete (IR) and ID/IDA participants were analysed using general linear modelling. HI was a stronger predictor of SF ($\beta = 0.128$, $p = 0.009$) than NHI ($\beta = 0.037$, $p = 0.028$). ID/IDA participants consumed significantly lower total energy than IR ($p = 0.003$). Higher levels of dietary restraint were correlated with significantly lower energy intake ($p = 0.001$). Higher education status was associated with SF, with more highly educated women being at lower risk of ID/IDA ($\beta = -0.292$, $p = 0.004$). The study demonstrates that adequate dietary energy and higher iron bioavailability support better iron status in young women.

Funding source: Meat and Live Stock Australia

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THE FREQUENCY OF FATTY ACID METABOLISM GENOTYPES IN NAFLD WITH ANTHRPOMETRIC AND BIOCHEMICAL DIFFERENCES IN RISK ALLELE CARRIERS

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Non-alcoholic fatty liver disease (NAFLD) is the most common liver disease globally, with prevalence rates in parallel with obesity and diabetes. NAFLD is considered the hepatic manifestation of metabolic syndrome. Fatty acid metabolism dysregulation is a key metabolic perturbation in NAFLD. Single nucleotide Polymorphisms (SNP's) in the fatty acid metabolism genes Peroxisome Proliferator-Activated Receptor-γ (PPARγ), Fatty Acid Binding Protein-2 (FABP2), Apolipoprotein E (APOE) and Peroxisome Proliferator-Activated Receptor-alpha (PPAR-alpha) contribute to increased fatty acid synthesis and may impact disease progression. This cross-sectional study aimed to determine the frequency of SNP's of FABP2, PPAR-γ, APOE and PPAR-alpha in patients with NAFLD and to determine if there were unfavourable metabolic profiles in risk allele carriers. Anthropometry, blood samples and buccal swabs were collected. NAFLD participants were genotyped for PPARγ, FABP2, APOE and PPAR-alpha SNP's by Fitgenes Limited. There were 27 participants (40% male, mean ± SD for age 53 ± 14.5 years, body mass index 32.5 ± 6.9 kg/m^2) included in this analysis. Risk allele frequency was 44.4% for rs1799883 FABP2, 18.5% for both rs1801282 PPARγ and rs4253778 PPAR-alpha and 28% for rs429358 APOE. Whilst there were no significant differences, unfavourable anthropometric trends were identified for the risk allele carriers of PPARγ, APOE and PPAR-alpha SNP's and liver function tests for APOE and FABP2 SNP's compared to non-risk allele carriers. These findings suggest that the presence of risk alleles in fatty acid metabolism genes may negatively influence anthropometric and liver function measures in individuals with NAFLD, however larger numbers are needed to confirm these findings.

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AN UPDATE ON THE OXIDATION OF FISH OIL SUPPLEMENTS IN AUSTRALIA

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Omega-3 long-chain polyunsaturated fatty acids have a demonstrated anti-inflammatory action. As such, fish oil supplements have become a popular way to consume omega-3 long-chain polyunsaturated fatty acids. However, fish oils oxidise readily, forming primary and secondary oxidation products, which may be harmful for humans, yet the effects are not fully characterised. Some recent studies have reported that fish oil supplements in Australasia are oxidised above acceptable international limits, however other studies in Australasia have reported low levels of oxidation. This study employed peroxide value determination and *p*-anisidine value determination to measure primary and secondary oxidation of fish oils in the Australian market. Of 26 supplements tested, 39% exceeded the limit for primary oxidation, 25% exceeded the limit for secondary oxidation and 33% exceeded the limit for total oxidation, according to international recommendations. Four specially marketed supplements were found to deliver significantly lower amounts of fish oil per capsule (165 mg vs 577 mg, p=0.007), yet cost significantly more on a per gram basis ($2.97 vs $0.39, p<0.000). However, there were no differences in any oxidative markers between regular supplements and the specially marketed products. Recommendations are made for industry to reduce levels of oxidation in fish oil supplements, and also for consumers to choose a minimally oxidised fish oil supplement.

Funding source: Australasian Research Institute

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MILK AS A BEVERAGE – SO IMPORTANT FOR CHILDREN'S NUTRIENT INTAKES, AND FLAVOURED MILK IS JUST AS NUTRITIOUS AS PLAIN, BUT OTHER MILKS, LIKE SMOOTHIES AND MILKSHAKES, NOT SO MUCH

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Dairy intake is low in Australian children, but milk is popular. The nutritional contribution of milk may depend on how it is consumed (food or beverage, plain or flavoured). We profiled milk consumption among Australian children. Day 1 data from the 2011 – 12 National Nutrition and Physical Activity Survey were analysed (n = 2,812, 2 – 18 years old). Children were classified as plain, flavoured, or other milk drinkers (smoothies, milkshakes), other milk non-drinkers (cereal, mash), or milk avoiders. Total daily milk, dairy, and nutrients were determined and adjusted for confounders. Milk consumption was popular (81%), but decreased with age. 63% of milk consumers were drinkers, 46% of drinkers had plain, 32% flavoured, and 21% other milk. Plain and flavoured milk drinkers had higher daily dairy (mean±standard deviation: 2.4 ± 0.1 and 2.3 ± 0.0 serves, respectively), milk (480 ± 11g and 445 ± 9g, respectively) and calcium intakes than other children. Other milk drinkers were most likely to exceed the World Health Organisation (WHO) free sugars target (72%), followed by flavoured milk drinkers (65%), other milk non-drinkers (62%), milk avoiders (58%) and plain milk drinkers (52%). Flavoured milk was least popular among 14 – 18 years (13%), but more than plain milk (11%). Among 14-18 years old, 10% met dairy recommendations, which was higher among flavoured (31%) and plain (24%) milk drinkers than other milk drinkers and non-drinkers (6%) and avoiders (0%). Drinkers of plain and flavoured milk, had the highest dairy intakes. While milk and dairy intake were lowest among 14 – 18 years old, flavoured milk beverages appeared effective at addressing this shortfall and those with lower free sugars, like fortified flavoured milks, could be encouraged.

Funding source: Nestle Australia

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MEASUREMENT OF RELATIVE ENERGY DEFICIENCY IN SPORT (RED-S) IN ELITE MALE ADOLESCENT ATHLETES

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Energy deficiency in adolescent athletes has been reported using energy availability calculations. More recently, the ratio of measured resting energy expenditure to predicted resting energy expenditure (REE/pREE < 0.09) has been used to explore relative energy deficiency in sport

(RED-S) in adult athletes, however has not been applied in adolescent athletes. The aim of this study was to assess the suitability of REE/pREE in elite male adolescent athletes. Measured REE was measured using indirect calorimetry (QUARK RMR unit) and predicted REE was calculated using the Harris-Benedict, Cunningham, Schofield and Mifflin St Jeor predictive equations. Energy status was calculated using REE/pREE with < 0.9 deemed as energy deficient. No athletes presented with a relative energy (REE/pREE = 1.04; IQR: 0.96:1.1). Schofield's equation was the closest predictor of measured REE (1,874 kcal (IQR: 1,515 kcal:1,989 kcal) vs. 1,965 kcal (IQR: 1,687 kcal:2,035 kcal). Harris-benedict, Cunningham and Mifflin St Jeor significantly underestimated measured REE at (mean ± SD) -1016 ± 1,045kJ, -1,249 ± 1045 kJ and -1,432 ± 1256 kJ, respectively (p = 0.001). The Schofield equation is the most suitable equation to identify RED-S using the ratio of REE/-pREE in male adolescent athletes. Further research is required to explore the necessity of pubertal stages in REE predictive equations in this group to ensure accurate identification of relative energy deficiency.

Funding source: Honours grant, University of the Sunshine Coast.

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DEVELOPING A METHOD TO MEASURE VITAMIN D IN COMPLEX PLANT AND ALGAL MATRICES: A PILOT STUDY OF AUSTRALIAN NATIVE PLANTS AND SEAWEED

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Food composition data on vitamin D content of Australian native foods are limited. The aim of this study was to develop a method to measure low levels of vitamin D and 25-hydroxyvitamin D (25(OH)D) in complex plant and algal matrices and to measure these metabolites in a selection of Australian native plants and Australian-grown seaweed. A total of 16 samples, including wattleseed, lemon myrtle, Tasmanian mountain pepper, wakame and kombu, were obtained from suppliers or producers and analysed for vitamin D2, vitamin D3, 25-hydroxyvitamin D2 (25(OH)D2) and 25-hydroxyvitamin D3 (25OH) D3) using liquid chromatography with triple quadrupole mass spectrometry (LC-QQQ). Wattleseed (leaves/raw seed) contained 0.04 and 0.03 g / 100 g of vitamin D2, respectively. Lemon myrtle leaves (fresh/dried) contained 0.03 and 0.24 g / 100 g of vitamin D2, respectively. Tasmanian pepper (fresh/dried leaves and fresh/dried berries) contained 0.01, 0.67, 0.01, 0.05 g / 100 g of vitamin D2, respectively. For wakame (fresh/dried), vitamin D and 25(OH)D were below the limits of detection. Fresh kombu contained 0.01 g / 100 g vitamin D3. The vitamin D and 25(OH)D content of other samples were also below the limit of detection. While the vitamin D content of Australian native plants and Australian-grown seaweed in the 16 samples tested so far is not nutritionally relevant to the Australian food supply, the novel method, LC-QQQ, is accurate and reliable for testing low levels of vitamin D and 25(OH)D in complex plant and algal matrices. LC-QQQ development for other food matrices will allow further investigation of the vitamin D content of Australian foods.

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Concurrent session – Nutrition Support

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THE REVISED ACUTE ADULT STROKE DIETETIC REFERRAL PATHWAY: DO PATIENTS REQUIRING DIETETIC INTERVENTION GET MISSED?

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Prior to June 2015, all adult patients diagnosed with a stroke were referred to dietetics and a full assessment provided within 48 hours. A modified stroke dietetic referral pathway was implemented recommending a full assessment only for patients with Malnutrition Screening Tool (MST) ≥ 2 and/or on a modified texture/fluid diet, with all patients receiving lifestyle modification education on discharge. Given the limited literature, we evaluated whether adult patients with confirmed stroke who had MST<2 on a full and thin diet (considered at lower nutritional risk (LNR)) required dietetic intervention at any point during their admission, and whether the revised pathway led to a reduction in time required to care for patients with stroke. Demographic, admission, anthropometric and clinical data was extracted from medical records for patients with confirmed stroke admitted at Logan hospital over 16 months. A LNR patient was considered to require dietetic intervention if weight and dietary textural changes occurred during admission and subsequent dietetic intervention was provided if required. Descriptive statistics were used to analyse data. Of 243 patients with stroke, n = 121 were LNR patients (mean ± SD: 65 ± 13 years, 43 (36%) female, 6 (1–84) days length of stay (LOS), 29.8 ± 6.5 kg/m^2). While n = 25 LNR patients were not able to be assessed due to incomplete chart entries, 86% (n = 82) of remaining LNR patients did not require dietetic intervention. LNR patients requiring dietetic intervention (n = 14 (14%) still received dietetic care through pre-existing referral pathways. Time savings from the new pathway was ~1 hour / week. Models of care revised in the absence of adequate literature can result in appropriate patient care while streamlining dietetic services.

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MALNUTRITION MANAGEMENT IN THE ACUTE CARE SETTING: A DESCRIPTION OF CURRENT PRACTICE IN SIX QUEENSLAND HOSPITALS

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With increasing throughput and decreasing lengths of stay in Australian hospitals, it is necessary to critically reflect on how malnutrition is managed in the acute care setting to ensure efficient and effective practice. This study aimed to describe the appropriateness of nutrition care provided to patients at risk of malnutrition in six public hospitals participating in the Systematised, Interdisciplinary Malnutrition Program impLementation and Evaluation (SIMPLE) project. Data were collected by a dietitian project officer in each site using a standardised data collection tool during cross-sectional audits conducted in May-June 2017. Nutrition risk was defined as Malnutrition Screening Tool (MST) score $\geq$ 2 or nominated high-risk clinical condition. Appropriateness of nutrition care under the domains of a) food and nutrient delivery (hospital diet, mid-meals, supplements, enteral/parenteral feeding); b) education; and

c) coordination of care (inpatient monitoring, post-discharge follow-up) were determined based on review of clinical documentation. Comparisons were made between sites using χ^2. Data were available for 440 patients (median age 72 years, length of stay (LOS) 3, 47% female). Forty-three percent of patients (n=191) were at nutrition risk. Of these, 70% received appropriate food and nutrient delivery, and less than half received appropriate nutrition education (44%) or nutrition care coordination (45%). There was significant variation in nutrition care between sites for education ($p = 0.018$) and care coordination ($p = 0.010$). Findings indicate that current nutrition care provided to patients in the acute care setting is suboptimal and highlights a need for change. An alternative systematised and interdisciplinary approach to inpatient malnutrition management is currently being trialled.

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TRANSITION FEEDING PROTOCOL IN THE NEUROSURGERY WARD: A PRE- AND POST-IMPLEMENTATION EVALUATION OF PATIENTS' NUTRITION OUTCOMES, DIETETIC EFFICIENCY AND NURSING STAFF'S KNOWLEDGE, ATTITUDES AND PRACTICES

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Neurosurgical patients usually upgrade from enteral nutrition (EN) to oral nutrition (ON) as they recover. These decisions involve multiple clinicians and can often result in inconsistent feeding practices. A transition feeding protocol (TFP) may provide a solution to standardise the process, allowing for appropriate and efficient transition feeding (TF). This study aimed to evaluate the impact of the TFP on work efficiency, nutrition outcomes and staff perceptions of nutrition care in a neurosurgery ward. A pre- and post-implementation study, along with a cross-sectional staff evaluation questionnaire was conducted. Data was collected for one-year pre and post TFP implementation. All patients who were upgraded from EN to ON pre (n = 55) and post (n=58) implementation were included. All nurses in the Neurosurgery ward were invited to complete a 25-item self-administered questionnaire. Post-implementation more patients received TF (combined EN and ON) with increased standardisation of feeding practices among clinicians (58% vs. 93%, $p < 0.001$). There was a non-statistically significant improvement in timely delivery of TF (1.3 vs 0.5 days; $p = 0.054$), and all patients consumed adequate oral intake 1-week post EN cessation (92% vs. 100%, $p = 0.103$). Occasions of service by dietitian reduced (2.1 vs. 1.7; $p = 0.099$). A 37% survey response rate from nursing staff (n = 15) was achieved. Post-implementation more nurses were found to be initiating TF ($p < 0.001$); the majority reporting an increase in knowledge and confidence in providing nutrition support. Implementing a TFP can optimise the transition from EN to ON by improving delivery of feeds and work efficiency of both nurses and dietitians.

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ACUTE MALNUTRITION CARE IN QUEENSLAND HOSPITALS: THE PATIENT PERSPECTIVE

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It is important to understand the delivery of nutrition care from the patient perspective in order to develop and implement patient-centred nutrition care systems. This study aimed to describe nutrition care from the perspective of patients in six public hospitals participating in the Systematised, Interdisciplinary Malnutrition Program impLementation and Evaluation (SIMPLE) project. In cross-sectional audits conducted in May-June 2017, participants identified at nutrition risk (Malnutrition Screening Tool score ≥ 2 or nominated high-risk clinical condition) were asked by dietitian project officers a) whether anyone had spoken to them about nutrition; b) were aware of their malnutrition risk; c) aware of ongoing nutrition plan during or after admission (responses: yes / no / unsure). Patients unable to answer these questions were excluded from analysis. Dietitian review was recorded from medical records. Data were available on 191 patients at nutrition risk (median age 76 years, length of stay 5 days, 51% female). Of patients seen by dietitian (55%, n = 104), 23% of respondents reported no/unsure when asked if anyone had spoken to them about nutrition, 57% reported not being aware of their malnutrition risk and 71% were not aware of their nutrition plan for hospital or on discharge. At risk patients not seen by the dietitian rarely reported staff speaking to them about nutrition (9%), being aware of their nutrition risk (20%) or being aware of their nutrition plan (2%). Patient perspectives highlight substantial gaps in nutrition care provided by dietitians and the multidisciplinary team. Alternative models supporting interdisciplinary, systematised approaches to engaging patients in malnutrition care should be considered.

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"JUST KNOW IT'S THERE, GOT INSTRUCTIONS TO DRINK IT AND THAT'S IT": PATIENT'S PERSPECTIVES OF ORAL NUTRITIONAL SUPPLEMENTS

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Oral nutritional supplements (ONS) are an effective nutritional intervention utilised by dietitians with patients who are malnourished or are at risk of malnutrition. The clinical and cost effectiveness of ONS is related to the patient's acceptance and motivation to consume the prescribed volume of ONS, therefore it is important to optimise ONS consumption. This study aimed to identify and explore the views and opinions of hospital patients receiving ONS, including factors influencing a patient's preferences and adherence to ONS. This exploratory, qualitative study utilised semi-structured, voice-recorded interviews with 11 patients over 65 years old, receiving ONS at Sutherland Hospital. Interviews were transcribed verbatim, and were independently thematically analysed by two researchers, using NVivo v 11 (QSR International) to identify key themes, topics and exemplar quotes. Data saturation was reached by the tenth interview. This study revealed that patients lacked a strong understanding of the benefits and purpose of ONS and that sensory aspects such as temperature and flavour

influenced ONS preference. Factors such as nourishment, assisting in swallowing pills, enjoyment and convenience were motivators to ONS consumption, while large volumes of ONS and poor appetites were barriers. This exploratory study contributed important insights into patient's views of ONS in a hospital setting, which have potential to inform how dietitians prescribe ONS, and how information regarding ONS is translated in the dietary counselling process to optimise patient's consumption of ONS in hospital settings.

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GUT FUNCTION IN ICU – WHAT IS 'NORMAL'?

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Gastrointestinal function is altered during illness and what is considered 'normal' for these patients can be abnormal to the rest of us. Factors such as medications, continuous enteral feeding and immobility all alter gut function but this fact is not clearly reflected in existing protocols. *Objectives:* To identify assumptions made in the literature, relating to what 'normal' gut function is and how it changes during illness, and to compare this to gut function data in a sample of patients. A modified systematic review method was used to identify 50 journal articles describing gut function during illness and/or protocols for practice in this area. Gut function parameters were recorded for 100 recent patients and compared with the literature findings. *Results:* Definitions of diarrhoea and constipation were fairly consistent throughout the literature but cut-offs for 'large' gastric aspirates varied widely. None of these were associated with poorer outcome in the audit. Constipation was associated with opioid use (p=0.009) and enteral feeding (p = 0.001); average first bowel motion was day 4.60 (SD 2.78) on enteral feeds and day 2.72 (1.67) on oral diets, (p=0.0001). Regardless of chosen cut-off volume, large gastric aspirates occurred in the majority of enterally-fed patients and were associated with bed angle < 30 degrees (p = 0.0002). Diarrhoea was associated with antibiotic use (p=0.047). Constipation and feeding intolerance (as defined by protocols) are common in hospital patients but are not necessarily associated with poorer outcomes. Guidelines and protocols should be viewed in the light of gut function changes during illness.

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Concurrent session – Nutrition in Chronic Disease

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IMPROVING NUTRITIONAL INTAKE AND CARE IN HOSPITAL: A TEN-YEAR JOURNEY OF QUALITY IMPROVEMENT AND RESEARCH IN PRACTICE

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Malnutrition remains a significant problem in Australian hospitals. This study describes the nutritional intake and care practices provided to inpatients (65+ years) over a ten-year period to a) evaluate mealtime assistance and foodservice improvements (introduced from 2009), and b) inform implementation of a new nutrition care pathway. Data were collected on medical wards of a large teaching hospital in 2007–08 (n = 129, mean ± SD 80 ± 8 years (y), 49% male), 2009 (n = 139, 80 ± 8 y, 45% male), 2013-14 (n = 52, 82 ± 8 y, 44% male) and 2017 (n = 66, 82 ± 8 y, 50% male). Similar eligibility criteria and data collection procedures were used at each time-point. Participants were each observed for a single day, with dietary intake visually estimated from plate waste for all meals and mid-meals, and nutrition care practices observed. ANOVA and χ^2 were used to compare groups. Mean ± SD for energy and protein intakes of participants had significantly increased over time (energy: 5073 ± 1850kJ, 5,403 ± 2,252 kJ, 5,989 ± 2614 kJ, 5,954 ± 2179 kJ, p = 0.014; protein: 48 ± 19 g, 50 ± 21 g, 57 ± 26g, 58 ± 24 g, p = 0.002). Over time, the proportion of patients with inadequate energy and protein intakes had also decreased (intake < resting energy expenditure: 59.7%, 53.2%, 44.2%, 34.8%, p < 0.001; intake < 1 g/kg protein: 85.3%, 75.5%, 73.1%, 63.6%, p = 0.007). Provision of high protein/energy (HPHE) diets and mealtime assistance had improved (HPHE: 20.2%, 56.1%, 84.6%, 89.4%, p < 0.001; assistance where required: 58.1%, 86.4%, 100%, 85.7%, p < 0.001). Gaps in current practice include supplements-as-medicine, nutrition education by dietetic assistants, and formal intake monitoring. This ten-year study highlights the importance of continuous quality improvement and systematised nutrition care strategies such as mealtime assistance and foodservice improvements to achieve improved intakes of older inpatients.

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A TELEHEALTH PROGRAM FOR DIETARY MANAGEMENT OF CKD: IS IT ACCEPTED BY PATIENTS?

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Chronic kidney disease (CKD) requires the modification of dietary behaviours, which can be difficult to self-manage without ongoing clinician support. Telehealth-delivered dietary interventions have shown to be effective for chronic disease management. Although these interventions offer the opportunity to provide ongoing support to CKD patients, their acceptability is unknown. This study explores the acceptability of participants undertaking the **E**valuation of i**N**dividualised **T**elehealth **I**ntensive **C**oaching to promote healthy **E**ating and lifestyle in people with stage III-IV **CKD** (ENTICE-CKD) trial. Participants whom had completed telehealth dietary coaching from the ENTICE-CKD were recruited to undertake semi-structured interviews with an independent researcher. Discussions were transcribed verbatim and analysed thematically. Twenty-one semi-structured interviews (mean 48 minutes) were conducted. Overall, participants had positive descriptions of their experiences with the ENTICE-CKD trial. Aspects of the discussions are described across four themes: 1) valuing relationships, 2) accepting regular telehealth, 3) gaining understanding and awareness of diet and lifestyle in CKD, and 4) navigating complexity. Across all themes, accountability was a consistent sub-theme, in which various participants felt accountable to their kidneys, wellbeing, dietary guidelines, health professionals, and family. Preventing progression of CKD without geographical limitations is of high priority, both to patients and the healthcare system. Current findings hold promise for the delivery of future effective telehealth-delivered interventions to CKD patients. This study provides guidance for clinicians planning and implementing telehealth programs in CKD.

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EVALUATING THE CONCURRENT VALIDITY OF BMI IN THE IDENTIFICATION OF MALNUTRITION IN OLDER HOSPITAL INPATIENTS

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Given changing trends in obesity and sarcopenia in the older population, the relevancy and applicability of currently applied body mass index (BMI) cut-off points may require re-evaluation. This paper aimed to determine the accuracy of BMI as a predictor of malnutrition in older hospital patients and evaluate the performance of commonly applied BMI cut-off points to predict malnutrition. A prospective, observational point prevalence audit was conducted in inpatients aged ≥ 65 years. Malnutrition was diagnosed using the Subjective Global Assessment (SGA). The receiver operation characteristic (ROC) curve analysed the discriminative power of BMI and identified an optimal BMI cut-off for malnutrition. Concurrent validity of commonly applied BMI cut-off points and their agreement with, was determined through sensitivity, specificity, positive and negative predictive values and kappa statistics. Of 1009 inpatients, 35.7% were malnourished using SGA criteria. BMI against SGA (malnutrition) had an accuracy of 0.802 when applying a ROC analysis and identified an optimal cut-off of < 26 kg/m^2 (80.8% sensitivity, 61.5% specificity) for predicting malnutrition. Current BMI cut-off points used in common nutrition screening tools (18.5 – 23 kg/m^2) did not meet 80% sensitivity and 60% specificity. Despite a lower sensitivity, a BMI cut-off of < 23 kg/m^2 had the highest agreement (κ = 0.458) with SGA diagnosed malnutrition. All commonly applied BMI cut-off points demonstrated limited concurrent validity despite BMI showing very good accuracy in predicting malnutrition amongst older inpatients. Revision of existing cut-off points in commonly applied malnutrition screening tools and diagnostic criteria is suggested to ensure these remain clinically useful in older, hospital inpatients.

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MALNUTRITION INDEPENDENTLY ASSOCIATED WITH SKIN TEARS IN HOSPITAL IN-PATIENT SETTING

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Skin tears cause pain, increased length of stay, costs, and reduced quality of life. Minimal research reports the association between skin tears and malnutrition using robust measures of nutritional status. This study aimed to articulate the relationship between malnutrition and skin tears in hospital inpatients. A yearly point prevalence of inpatients included in the Queensland Patient Safety Bedside Audit, malnutrition audits and skin tear audits conducted at The Prince Charles Hospital, Brisbane between 2010-2015. Patients were excluded if admitted to mental health wards or < 18 years. 2,197 inpatients were included with a median age of 71 years. The overall prevalence of skin tears was 8.1%. Malnutrition prevalence was 30.6%. Univariate analysis demonstrated associations between age (p = 0.00), body mass index (BMI) (p = 0.00), and malnutrition (p = 0.00), but not gender (p = 0.319). Binomial logistic regression analysis modelling demonstrated malnutrition diagnosed using the Subjective Global Assessment was independently associated with skin tear incidence (OR 1.63 (95% CI 1.13–2.36), and multiple skin tears (χ^2 = 37.162, df = 2, p = 0.000). BMI (p = 0.271) and gender (p = 0.319) were not independently associated with skin tears. This study demonstrated independent associations between malnutrition and skin tear prevalence, and multiple skin tears. It also demonstrated the limitations of BMI as a nutritional assessment measure.

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RELATIONSHIP BETWEEN DIETARY SOLUTE INTAKE AND SERUM COPEPTIN IN EARLY-STAGE AUTOSOMAL DOMINANT POLYCYSTIC KIDNEY DISEASE

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High dietary sodium and protein intakes are hypothesised to worsen the renal progression of autosomal dominant polycystic kidney disease (ADPKD), in part, by increasing systemic levels of vasopressin. The aim of this study was to determine the association between dietary sodium/protein intakes and serum copeptin (a marker of vasopressin) in ADPKD. Patients with ADPKD (18–65 years, eGFR ≥ 30 mL/min/1.73m^2) underwent a structured diet history interview to assess usual intake over the past 3 months. Twenty-four-hour urinary sodium and urea excretion were measured to validate the diet history-reported sodium and protein intakes, respectively. Serum copeptin was measured by a sandwich immunoassay (B.R.A.H.M.S). Twenty-nine participants [17 male; mean (SD) age 42 (12) years, body mass index 26 (5) kg/m^2] were analysed. The diet history was a valid method for estimating dietary protein, as reported intakes demonstrated a strong correlation with 24-h urine-derived estimates (r = 0.658; p < 0.001), and there was no evidence of systematic bias by the Bland-Altman method. Median(IQR) serum copeptin concentration was 4.09 (8.55) pmol/L. Multivariate analyses (adjusted for age, gender, 24-hour (24-h) urine volume and serum creatinine) revealed that higher serum copeptin was strongly associated with higher 24-h urine sodium (β = 0.695; p = 0.017), but not with diet history-reported sodium or protein intake, 24-h urine urea, urine osmolality or dietary solute intake. As 24-h urine sodium is the "gold standard" for dietary sodium intake, it can be hypothesised that high dietary sodium intake stimulates vasopressin release in ADPKD. This provides the rationale for future studies to determine the long-term effects of reducing dietary sodium intake on the renal progression of ADPKD.

Funding source: University of Sydney, Westmead Hospital Medical Research Foundation, Danone Nutricia

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RENAL HEALTHCARE PROFESSIONALS PERSPECTIVES ON THE NUTRITIONAL MANAGEMENT OF PEOPLE ON HAEMODIALYSIS

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Nutritional management in haemodialysis is complex, with patients requiring ongoing support to adopt appropriate dietary behaviours. Multidisciplinary teams play an important role in managing nutritional priorities, providing dietary counselling and developing patients' self-management skills. This study explored the perspectives of renal health professionals regarding nutritional management for people on haemodialysis. Semi-structured interviews were conducted with 42 renal health professionals (nephrologists, nephrology trainees, nurses and dietitians) from 21 haemodialysis units in Australia. Interviews were conducted until data saturation, and transcripts were thematically analysed. We identified six major themes: *responding to changing clinical status* (individualising strategies to patient needs, prioritising acute events, adapting guidelines), *integrating patient circumstances* (assimilating life priorities, access and affordability), *delineating specialty roles in collaborative structures* (shared and cohesive care, pivotal role of dietary expertise, facilitating access to nutritional care, perpetuating conflicting advice and patient confusion, devaluing nutritional specialty), *empowerment for behaviour change* (enabling comprehension of complexities, building autonomy and ownership, developing self-efficacy through engagement, tailoring self-management strategies), *initiating and sustaining motivation* (encountering motivational hurdles, empathy for confronting life changes, fostering non-judgmental relationships, emphasising symptomatic and tangible benefits, harnessing support networks), *and organisational and staffing barriers* (staffing shortfalls, readdressing system inefficiencies). Developing positive patient-clinician relationships, ensuring shared care across collaborative multidisciplinary teams and delivering consistent, individualised nutrition advice were seen as integral for developing and maintaining patient motivation to enable dietary self-management behaviours. Improving service delivery and developing and delivering targeted, multi-faceted self-management interventions may enhance current nutritional management of patients on haemodialysis.

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Concurrent session – Food Service

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PROTECTED MEALTIMES: RESULTS OF A CLINICAL TRIAL AND FUTURE DIRECTIONS

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Protected Mealtimes is a systems approach that aims to address the problem of malnutrition in hospitalised patients. Advocates hypothesise that its implementation through an increase in positive interruptions (including feeding assistance) and a reduction in interruptions that interrupt food intake (such as ward rounds and diagnostic procedures) may lead to improvements in nutritional intake. We aimed to measure the effect of implementing Protected Mealtimes on the energy and protein intake of patients. This powered, prospective trial utilised a stepped wedge cluster design and was undertaken across three hospital sites at one health network in Melbourne. A waiver of consent enabled all admitted patients, except those receiving end-of-life care or not receiving oral nutrition, to participate. Primary outcome measures were 24-hour energy and protein intake. In total 416 observations of daily food intake were obtained of 149 unique participants, 38 of whom crossed from control to intervention groups as the intervention was implemented. Energy intake was not significantly different between intervention [(mean ± SD) 6,479 ± 2,486 kJ/day] and control [6,532 ± 2,328 kJ/day] conditions (p = 0.88). Daily protein intake was not significantly different between intervention (68.6 ± 26.0 g/day) and control (67.0 ± 25.2) conditions (p = 0.86). Differences between estimated energy/protein requirements and estimated energy/protein intakes were also not different between groups. Variability of implementation fidelity with the planned intervention was recorded. The findings of this trial mirror the findings of other observational studies of Protected Mealtimes implementation. Strategies with a greater level of evidence for improving nutritional outcomes should instead be considered.

Funding source: NHMRC

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CHOICE AT POINT OF SERVICE IMPROVES CUSTOMER SATISFACTION AND REDUCES FOOD WASTE: A TRIAL PROGRAM AT THE ROYAL WOMEN'S HOSPITAL, MELBOURNE

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Choice at point of service (CPOS) allows meal selection at, or close to, the time of eating. CPOS systems have been shown to increase patient satisfaction, meal consumption and reduce waste in healthcare settings. The Royal Women's Hospital (RWH), Melbourne, has no onsite kitchen, and all food is sourced externally from a central production kitchen. There is a long lag time of at least 11 to 29 hours between menu collection and meal service delivery. With a high patient turnover rate on the post-natal wards, it was identified that up to 50% of meals did not reach the intended patient. *Aim:* To investigate the effectiveness of offering CPOS meal delivery to short-stay post-natal patients. A three-day CPOS trial was performed on a post-natal ward. Patients were offered a choice of four main meal options during lunch service, rather than pre-ordering from a menu. Patient satisfaction with the style of meal delivery, time of service, meal error rates and food waste were measured and compared to current practices. Patients overwhelmingly enjoyed the CPOS option and 72% of surveyed participants preferred CPOS to pre-ordered meals. Delivery times were not significantly affected and overall plate waste was slightly reduced when compared to industry standards. CPOS meal delivery is logistically possible in the post-natal wards at RWH. Its use facilitates patient choice, improves patient satisfaction, and reduces meal errors and wastage. The results of this trial could be used as the basis to improve food service at RWH.

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THE USE OF A MOBILE FOOD RECORD TO ESTIMATE FOOD PLATE WASTE IN A HOSPITAL SETTING COMPARED TO A WEIGHED METHOD

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Estimation of food plate waste in a hospital setting through the use of digital photography has proven to be reliable, however the use of a digital application (App) has not yet been tested in this setting. This study tested the reliability and validity of visual plate waste estimations utilising a mobile food record to record plate waste. Pre- and post-service images were taken of lunch and dinner main meals of hospitalised adults (n=45). Two raters estimated food plate waste from the images; one of the raters estimated on two occasions three days apart. Estimations were compared between and within raters and were also compared to the actual (weighed) plate waste. Intraclass correlation coefficients (ICC) for both inter- and intra-rater reliability were found to be high and statistically significant for total food plate waste and all meal components. However, the rater's estimations were significantly different from the actual plate waste for total food plate waste and all components except for starch (p = 0.122, 0.232 consecutively). Overall, estimations were over-estimated and a majority had a percent error greater than 30%, however it cannot be determined whether this is due to method of estimation or study design. Using the App to measure food plate waste in a hospital setting has a high degree of inter- and intra-rater reliability however future studies are required to test its validity and accuracy.

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IS ROOM SERVICE FOR PRIVATE PATIENTS ONLY? EVALUATION OF AUSTRALIA'S FIRST ROOM SERVICE IMPLEMENTATION IN A PUBLIC HOSPITAL

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To-date, room service (RS) has been a hospital food service model unique to the private sector. A study evaluating Australia's first RS model in Mater Private Hospital (MPH) acute adult facility demonstrated improved patient nutritional intake and satisfaction, and reduced plate waste and food costs. No studies in the public hospital setting have been published. Following the 2013 MPH RS implementation, the Mater Group implemented the first public setting RS in 2016. In a repeat pre-post study comparing RS with a traditional food service model (TM), the Mater Hospital Brisbane (acute public facility), demonstrated similar key outcomes. Comparison of patient nutritional intake between RS (n=103) and TM (n=84) showed significant increase in energy and protein intake with RS (6,379 kJ vs. 5,513 kJ; 74 g vs. 53 g) ($p < 0.05$), as well as energy and protein intake as a percentage of requirements (78% vs. 64% energy and 99% vs. 70% protein) ($p < 0.05$). Patient satisfaction using the Acute Care Hospital Food Service Patient Satisfaction questionnaire demonstrated improvement in patients' perceptions of RS, with 98% of patients scoring the service good to very good, compared to 75% for TM ($p < 0.04$). Plate waste decreased from 30% to 17% ($p < 0.001$). Total food costs decreased by 26% for the 10-month period post implementation. This research provides insight into the benefits achievable with RS in the public setting, further confirming that a patient-centred food service model can improve both clinical and financial outcomes in a budget constrained healthcare environment.

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WHY IS A SANDWICH SO IMPORTANT?

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A cook-fresh food service model is used at Peter MacCallum Cancer Centre (PMCC), allowing increased flexibility for a high-risk patient population. Following a review of this model, it was identified that sandwiches could be outsourced to increase efficiencies without disadvantaging the patients. The aim of this study was to evaluate the new sandwich service 6 months following implementation. A mixed-methods design was used. Semi-structured interviews were conducted with ambulatory patients and inpatients to establish patient's satisfaction and factors that influence this, and their perception of quality of the sandwich service. The current sandwich service was compared to the previous sandwich service with regards to nutritional content and cost, and benchmarked against other health services. Interviews were conducted with 55 patients in the inpatient and ambulatory settings. Of these patients, 55% were dissatisfied with the current sandwich service due to poor quality of the sandwiches, lack of variety and flexibility. Nutritional content analysis revealed 50% of sandwiches were non-compliant with guidelines and recipes, averaging only 70% of protein and 85% of energy content. Cost comparison found that returning to in-house made sandwiches would be more cost effective, and would be in-line with other health services who are able to offer increased variety and flexibility. The current sandwich service is not comparable to the previous service, resulting in disadvantaged and less satisfied patients. Improvements are required to ensure the sandwiches meet the needs of PMCC patients, thereby improving the patient experience and nutritional intake.

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EVALUATING THE USE OF FLAGSTAFF FINE FOODS AND COMPARING THEM TO THE NATIONAL MEAL GUIDELINES FOR HOME DELIVERED AND CENTRE BASED MEALS

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Older adults are vulnerable to malnutrition; not only in the hospital setting but also in the community. Flagstaff Fine Foods is a leading provider of frozen meals. This study aimed to determine the use, preferences and nutritional value of Flagstaff meals. A cross-sectional survey was distributed to 513 Flagstaff retail customers via mail out (n = 481), email (n=28) and over the counter (n = 4). Survey responses were analysed via descriptive statistics. An audit of 100 Flagstaff frozen meals accompanied the survey; consisting of 43 mains, 8 soups, 17 desserts, 10 pureed meals, and 22 mini meals. These were evaluated against the new Meals on Wheels National Meal Guidelines for Home-Delivered and Centre-Based Meals. The provision of energy and protein was compared against the guidelines for different meal types. 119 surveys (23% response) were returned and female Australians aged over 80 years appeared to be the most frequent users of the Flagstaff meals. Commonly purchased items included mains (83%), dessert (35%), mini meals (33%) and soups (19%). Reasons for purchase included convenience (70%), not cooking anymore (40%), health (34%) and price (32%). Most customers (90%) were satisfied with the meal options available from Flagstaff and felt there were sufficient meal choices to meet their dietary needs. The audit indicated that some changes are required to meet the new meal guidelines across the meal categories. Suggestions include fortification to enhance energy and protein content of some meals, altered sizes and accompaniments.

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Concurrent session – Innovations in Dietetics

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POSTPARTUM WOMEN'S PERSPECTIVES OF ENGAGING WITH A DIETITIAN AND EXERCISE PHYSIOLOGIST VIA VIDEO-CONSULTATIONS FOR WEIGHT MANAGEMENT: A QUALITATIVE EVALUATION

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Following childbirth women are encouraged to engage in a healthy lifestyle to limit postpartum weight retention. Innovative health care approaches are required to help postpartum women overcome barriers to accessing support to achieve these recommendations. Videoconferencing enables remote delivery of one-on-one health-care via real-time audio and video streaming, reducing the need for women to travel to in-person consultations. This study qualitatively reports on women's experiences engaging with a dietitian and exercise physiologist through video-consultations for tailored nutrition and exercise counselling to limit post-partum weight retention. Within a qualitative framework, semi-structured telephone interviews (13–36 minutes) were undertaken with twenty-one women (mean ± SD for body mass index: 28.1 ± 3.8 kg/m^2, age: 32.3 ± 3.0 years, parity: 1.6 ± 0.9 children) who had completed the 8-week *VITAL change for mums* intervention. Intervention participation included up to five video-consultations with a dietitian and exercise physiologist. Interviews were audio recorded and transcribed. Thematic data analysis was conducted by an independent researcher using NVIVO11. Themes relating to the video-consultation experience included feeling that they did not differ from in-person consultations, they were convenient, and length of time and flexible options were appropriate, however there was a desire for increased contact frequency. The dietitian and exercise physiologist were perceived to increase the participants' knowledge and confidence to improve health behaviours. The approach to setting realistic and tailored goals was well received. Individualised nutrition and exercise counselling from a dietitian and exercise physiologist provided via video-consultations is acceptable to postpartum women and offers a viable alternative to in-person care.

Funding source: VITAL change for mums was funded by Exercise & Sports Science Australia through the Tom Penrose Research and Community Services Award. The interviews were funded through Felicity Thomson's Butterfly Foundation Top-Up Scholarship through the Hunter Medical Research Institute. LV undertook this research as part of a requirement for the degree of PhD (Nutrition and Dietetics), The University of Newcastle, Australia. LV is supported by an Australian Postgraduate Award Scholarship and The Emlyn and Jennie Thomas Postgraduate Medical Research Scholarship through Hunter Medical Research Institute.

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DOES TRAINING IMPROVE THE IMAGE-BASED DIETARY ASSESSMENT ABILITY OF NUTRITION STUDENTS? A CLUSTER-RANDOMISED CONTROLLED TRIAL

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Image-based dietary assessment ability is necessary to accurately evaluate diets. This study investigated nutrition students' accuracy in estimating amorphous and discretionary food amounts from images and whether training enhances their image-based dietary assessment ability. Cluster randomised controlled trial of nutrition students. Participants (n = 56) completed online baseline and post-intervention questionnaires requiring gram, millilitre and household measure amounts to be estimated. After baseline questionnaires, the intervention group completed training designed to enhance familiarity with varying foods' amounts. Using cross-tabulation tests, the proportion of subjects who moved from having less than ± 25% error pre-training to greater than ± 25% post-training was subtracted from the proportion of subjects who moved from greater than ± 25% error to within ± 25% error to give net changes in estimation ability for each group for repeated food items/categories. At baseline, 21.4% of participants estimated amorphous foods within ±25% error. Across baseline estimates of all foods, only 28.2% of all estimates were within ± 25% of an item's actual amount. Cola was estimated the best (mean absolute percentage error = 26.2 ± 18.0%). Training did not affect average estimates of amorphous foods. In both groups, pasta estimations improved. Training appeared to improve the fries' estimation accuracy (fries category net change = 37.0%, $p = 0.006$; small fries net change = 29.6%, $p = 0.021$; large fries net change = 51.9%, $p = 0.001$). Nutrition students poorly estimated most foods. With the exception of fries, training did not enhance accuracy. Further research is needed to identify factors that may improve accuracy and may include training of students in estimating portion sizes from images and more food-based training overall.

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POTENTIAL FOR TECHNOLOGY IN THE WORKPLACE: INVESTIGATING THE PERCEPTIONS OF PRIMARY CARE DIETITIANS

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Medicare introduced the chronic disease management scheme in 2004 to improve preventative and coordinated care in Australia. Despite this, time and financial constraints under the chronic disease management scheme restrict dietitians' ability to provide effective care in the primary health care setting. While technology offers a potential to improve health care quality, safety, efficiency and cost-efficiency, there is limited understanding of how dietitians' use technology in practice. This study explored the perceptions of primary care dietitians about using technology in the workplace. Twenty Australian primary care dietitians were recruited for semi-structured telephone interviews. Interview questions aimed to gain an understanding of dietitians' perceptions about sharing patient outcomes through a national database, and the benefits, disadvantages, feasibility and barriers of using technology. Interviews were audio-recorded, transcribed verbatim and thematically analysed for emerging themes and sub-themes. Four distinct themes emerged from data analysis and included (i) improving efficiency of practice tasks,

(ii) experiencing barriers to using technology in practice, (iii) enhancing outcomes through education and monitoring, and (iv) sharing information with others. Overall, participants identified several advantages and disadvantaged with using technology, and expressed a willingness to share patient outcomes using a database. This study indicates that technology provides numerous benefits to dietitians and patients in primary health care. However, for technology to most effectively benefit dietitians, support is required to overcome barriers to better integrate technology into practice. Further development of patient management systems and standardised data collection systems is needed to support better usage by dietitians.

Funding source: This project was conducted as part of a Bachelor of Nutrition & Dietetics Honours Program. Honours Financial Support of $1000 was provided by Griffith University to cover project expenses. The authors have no conflict of interest to declare.

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IMPACT OF ELECTRONIC MEDICAL RECORDS ON NUTRITION CARE PRACTICES

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Electronic Medical Records (EMR) provide opportunities to standardise patient care. This study aimed to assess the impact of EMR on nutrition care practices in six hospitals participating in the Systematised, Interdisciplinary Malnutrition Program impLementation and Evaluation (SIMPLE) project (two EMR, four non-EMR sites). Data on Malnutrition Screening Tool (MST), weight and height documentation, and nutrition care practices (food and nutrient delivery, education, coordination of care) were collected in cross-sectional audits (May-June 2017). Nutrition risk was defined as MST score $\geq$ 2 or nominated high-risk clinical condition. EMR and non-EMR groups were compared using $\chi 2$. Data were available for 440 patients (EMR n = 162, non-EMR n = 278). Characteristics were similar between groups (including nutrition risk, EMR: 40.1%, non-EMR: 45.3%; p = 0.288); however, the EMR group was younger (median 69 vs. 74 years). EMR sites were more likely to document MST (92.6 versus 80.9%; p = 0.001), weight (87.7 versus 76.6%; p = 0.005) and height (84.0 versus 39.4%; $p <$ 0.001). Despite this, there was no significant difference in appropriate food and nutrient delivery for patients at nutrition risk (70.8 versus 69.8%; p = 0.894). Trends suggest that EMR sites may perform more poorly across nutrition education (35.4 versus 45.2%; p = 0.191), and coordination of care (35.4 vs. 48.4%; p = 0.086) domains. Data highlights that forcing functions embedded into EMR improve screening and anthropometry documentation. However, opportunities for EMRs to facilitate early, systematised, multidisciplinary approaches to malnutrition care remain unexploited. Such approaches are urgently needed to release time to allow dietitians to focus on high value, specialised nutrition intervention, education and care planning.

Funding source: Allied Health Professions Office of Queensland and The Australian Centre For Health Services Innovation (AusHSI)

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OPPORTUNITIES TO EXTEND SCOPE OF PRACTICE FOR AUSTRALIAN DIETITIANS

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The health sector has evolved substantially over the last 50 years, with creation of new roles for various health care professionals. Advanced and extended scope of practice pathways for Australian dietitians are limited, compared to those offered to dietitians registered in New Zealand and the United Kingdom. The aim of this research was to understand and explore current extended scope of practice roles by Australian dietitians with patients requiring pancreatic enzyme replacement therapy (PERT). An online survey and telephone interviews with dietitians working with patients on PERT investigated the range of advice given and the role they played in the care of these patients. Thematic analysis was undertaken via an inductive approach to better understand the contexts and reasoning around extended scope of practice. Study participants in the online survey (91.4%) described roles beyond traditional scope of practice with respect to patients on PERT, with support from a multidisciplinary team important in this practice. Nearly all respondents (97%) believed prescribing rights for dietitians for PERT would be beneficial. Telephone interviews revealed benefits may be increased time efficiency; improved quality of patient care; potential economic benefit to the health system; increased job satisfaction and enhanced inter-professional communication. A common opinion was that dietitians are adequately equipped, perhaps more so compared to medical staff, to administer medication where dosing is largely dependent upon diet. Further investigation into the logistical considerations, including training and support from medical officers around adapting allied health extended practice frameworks into the Australian context is needed.

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CAN LESSONS FROM THE AUSTRALIAN TREE NUT INDUSTRY HELP INCREASE THE CONSUMPTION OF OTHER HEALTHY PLANT FOODS?

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Eating a healthy handful of nuts is now common wisdom but it wasn't always the case. In 2002/03 Australians were only consuming 30,000 tonnes of tree nuts a year due to a fear of fat and weight gain. Yet after 13 years of an industry-government health education partnership, led by an Advanced Accredited Practising Dietitian, apparent Australian tree nut consumption has doubled to 60,000 tonnes sold in 2015/16, and the value of the industry tripling to $750 million. It is well known internationally that nut health promotion is a driver of nut sales. Nuts for Life, funded by the Australian Tree Nut Industry and Australian Government matched funds through Hort Innovation began in 2003 with these goals: educate the health benefits of regular tree nut consumption, dispel myths and ultimately increase tree nut sales by 5% per annum. Three-year strategic plans were developed, implemented and then evaluated to ensure the program remained viable and worthy of government funding. Program successes were due to activities across four areas of operation: food regulation and public health advocacy, health professional education, industry education and consumer PR. Annual measures of success included: ongoing voluntary funding of at least $400,000 a year, consumer and health professional market research, sales statistics, website and social media analytics, and number and quality of media articles. After 13 years, over 30 submissions, 60 conferences educating 99,400 health professionals, sampling 49,400 handfuls of nuts, distributing 306,000 resources, generating 5,900

media clips with 870 million opportunities to see eating a handful of nuts a day is the common wisdom.

Funding source: Nil for this conference, former employee of Nuts for Life

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Concurrent session – Mental Health

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A SYSTEMATIC ANALYSIS OF ONLINE FOOD ADDICTION HELP GROUPS

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Food addiction has a long history with an increased focus in the past decade. This has led to the establishment of numerous treatment options for addictive eating behaviours, yet evidence based treatment options are lacking. The objective was to evaluate the availability and content of treatment options, accessible online, for food addiction. A standardised web search and extraction was conducted by two independent reviewers using search engines to identify current treatment availability. Of 800 records retrieved, thirteen (1.6%) websites met the pre-defined inclusion criteria. All websites reported originating in the United States of America. The use of credentialed health professionals was reported by three websites, none of which involved dietetic input. The use of the 12 steps/12 traditions, common to alcohol addiction, was evident in 11 websites and nine websites described the use of food plans including non-evidence-based abstinence from foods such as sugar and wheat. Six websites stated obligatory peer support and 11 websites incorporated spirituality. Twelve websites described phone meetings as the main meeting modality with seven websites stating face-to-face delivery of meetings and four opting for online meetings. Newsletters (n = 5), closed social media groups (n = 5) and retreat programs (n=5) were popular forms of social support. This is the first review to analyse online treatment options for food addiction. It demonstrates a lack of both high quality, evidence-based treatment options, and credentialed health professional involvement. By reviewing current treatment availability, it can provide a guide towards the development of evidence-based treatment for addictive eating behaviours.

Funding source: Defence Industry Higher Degree Research Scholarship

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DIETARY LONG-CHAIN FATTY ACIDS AND COGNITIVE PERFORMACE IN OLDER AUSTRALIAN ADULTS

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The rapid increase in prevalence of age-related cognitive impairment is of global concern. Our aim was to examine associations between dietary long chain fatty acids and cognitive performance in older adults. Cross-sectional data from the Hunter Community Study, included a validated 145-item Food Frequency Questionnaire and validated cognitive performance measures (Audio Recorded Cognitive Screen (ARCS), Mini Mental State Examination (MMSE)). Participants included 2,750 older Australian adults (55–86 years) with plausible energy intake (> 4.5 but < 20.0 MJ/d). Linear regression models showed statistically significant associations between dietary intake of total n-6 fatty acids and improved cognitive performance measured by the ARCs (RC= 0.0043; p = 0.0004; R^2 = 0.0084). Quartiles of n-6 fatty acid intakes where the lowest quartile of n-6 fatty acid intake (179.8–1150.3 mg) and those in the highest quartile (2315.0-7449.4mg) had a total ARCs score 10.6 units greater (RC = 10.60466; p = 0.006; R^2 = 0.0081). Furthermore, when n-6 fatty acid intake was tested against each of the ARCs domains, statistically significant associations were observed for the Fluency (RC = 0.0011432; p = 0.007; R^2 = 0.0057), Visual (RC = 0.0009889; p = 0.034;R^2=0.0050), Language (RC = 0.0010651; p = 0.047;R^2 = 0.0068) and Attention (RC = 0.0011605; p =0.017; R^2 = 0.0099) domains, yet there was no association with Memory (RC = -0.000064; p = 0.889; R^2 = 0.0083). No statistically significant associations between any other fatty acids and ARCS, nor any fatty acids and MMSE were detected. A higher intake of total n-6 fatty acid, but no other types of fatty acids, was associated with better cognitive performance among a representative sample of older Australian adults.

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DIETARY INTAKE IN YOUNG PEOPLE EXPERIENCING FIRST EPISODE PSYCHOSIS, AT ULTRA-HIGH RISK FOR PSYCHOSIS, AND EXPERIENCING DEPRESSION OR ANXIETY

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Poor dietary intake is a key driver of poor cardiometabolic health in mental illness, but dietary intake assessments in young people are lacking. This cross-sectional study evaluated the dietary intake of young people; (i) experiencing first-episode psychosis (FEP), (ii) at Ultra-High Risk for psychosis (UHR), and (iii) experiencing anxiety and/or depression (AD). Young people meeting diagnostic criteria, aged 16–25 years were recruited from a community-based, youth mental health service. Dietary intake was assessed using the online Australian Eating Survey, a 120 item, semi-quantitative food frequency questionnaire. Average daily intakes of energy, core and discretionary foods, macronutrients and micronutrients were compared between the three samples, and against national dietary recommendations. Diet quality was assessed using the Australian Recommended Food Score. Kruskal-Wallis tests assessed differences between groups. 17 participants completed the assessment. Four were excluded for implausibility of dietary data. In the final sample of 13 participants (FEP = 5, ARMS = 2, AD = 6), mean age (SD) was 20.6 (± 2.1) years and 69% were male. Diet quality was poor across the three groups, lowest in the FEP group. On average, 40% (95% CI 29.8, 30.8) of daily energy intake was derived from discretionary foods. 77% of participants did not meet daily folate recommendations and 85% exceeded saturated fat recommendations.

Preliminary findings suggest young people in early illness have poor diet quality, highlighting a need for nutrition interventions early in the course of mental illness. Larger studies are required to confirm findings, and explore differences between diagnoses and stages of illness.

Funding source: Australian Eating Survey access provided by Dr. Tracy Burrows

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A CROSS-SECTIONAL STUDY OF NUTRITION KNOWLEDGE AND FOOD ADDICTION BEHAVIOURS IN YOUNG PEOPLE WITH MENTAL ILLNESS

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People experiencing mental illness report poor dietary patterns but the factors that drive this, such as nutrition knowledge and food addiction, are yet to be explored. This 3-arm cross-sectional study aimed to evaluate and compare nutrition knowledge and food addiction behaviours among young people who were: i) experiencing depression and/or anxiety (AD), ii) at ultra-high risk for psychosis (UHR), or iii) experiencing a first-episode of psychosis (FEP). Outcomes examined included anthropometric measures, the General Nutrition Knowledge Questionnaire Revised and the Yale Food Addiction Score 2.0. Seventeen participants (8 FEP, 6 AD, 3 UHR; mean ± SD age 20.8 ± 2.0 years) were recruited through a community-based, youth mental health service from September 2017 to October 2017. Weight, body mass index, waist circumference (WC) and systolic blood pressure (BP) were significantly higher for FEP participants than those with AD ($p \leq 0.05$). UHR participants had significantly higher WC and systolic BP than AD participants ($p \leq 0.05$). Participants demonstrated similar nutrition knowledge when compared to general population. High prevalence of food addiction (41%), which was two times higher than general population, was found among participants. The sample size was insufficient to detect between group differences for nutritional knowledge and food addiction scores. This is the first study to suggest food addiction behaviours could be a key factor contributing to poor dietary intake in young people experiencing mental illness. Further studies are required to confirm the relationship between addictive-like eating behaviours and mental illness in young people.

Funding source: Dr Tracy Burrows (University of Newcastle) for the access of Australian Eating Survey in the whole study project

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BMI, POSTNATAL DEPRESSION AND MODE OF INFANT FEEDING: A RETROSPECTIVE COHORT STUDY

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Obesity has been shown to complicate pregnancy and its related outcomes. There is evidence from epidemiological studies that overweight and obese women are less likely to breastfeed than normal weight women. This study examines maternal body mass index (BMI) and risk of postnatal depression in relation to infant feeding. A retrospective cohort study from 2008 to 2013 was undertaken in the Australian Capital Territory. BMI was available for 14,875 women categorised into groups according to: underweight (≤ 18 kg/m^2); normal weight (19 – 24 kg/m^2); overweight (25 – 29 kg/m^2); obese class I (30 – 34 kg/m^2); obese class II (35 – 39 kg/m^2) and obese class III (40+ kg/m^2). The association between BMI, postnatal depression (high-risk defined as Edinburgh scale score of ≥ 13 points) and mode of infant feeding was examined using logistic regression. Within this cohort, 751 (5.1%) women were underweight, 7431 (50.0%) had normal BMI, 3748 (25.1%) were overweight, 1598 (10.8%) were obese class I, 737 (5.0%) were obese class II and 592 (4.0%) were obese class III. In the adjusted models, overweight and obese women, at high-risk of postnatal depression, were less likely to exclusively breastfeed their infants with Adjusted Odds Ratio (AOR) [CI] as follows: Overweight 0.79 [0.70–0.89]; Class I Obesity 0.55 [0.48–0.64]; Class II Obesity 0.37 [0.31–0.44]; Class III Obesity 0.29 [0.24–0.36]. To the author's knowledge, this study is the first of its kind in Australia to demonstrate that overweight and obese women, who are also at high risk of postnatal depression, are less likely to exclusively breastfeed. Early support for these women is imperative.

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NUTRITIONAL ADEQUACY AND FOODSERVICE SATISFACTION OF ADULTS ADMITTED TO MENTAL HEALTH WARDS

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Half of Australians will experience mental illness. For those requiring hospitalisation, the foodservice system must promote adequate food intake and satisfaction. The high prevalence of chronic disease and long length of stay (15.7 days national average) make this challenging. This observational study aimed to determine whether the foodservice system supports nutritional adequacy and satisfaction of adults on mental health wards (n = 3) co-located within two acute hospitals. Participants were a convenience sample of patients. Energy (kJ/day) and protein (g/day) intake was derived from observation of plate waste using the validated one-quarter method, and the health network ready reckoner. Patient satisfaction was assessed using the validated Acute Care Hospital Foodservice Satisfaction Questionnaire and the Meal Assessment Tool. Participants (n = 78) had an average ± SD for age of 38.3 ± 11.9 years, and the majority were healthy weight (46.5% body mass index (BMI) 20-25 kg/m^2) or overweight / obese (40.8% BMI ≥ 25 kg/m^2). Nutritional intake was widely distributed from 1,400–20,359 kJ/day and 12–199g protein/day. Average intake of energy (7,925 ± 3,960 kJ) was below average requirements (8,554 ± 1,534 kJ/day), while average intake of protein (87.3 ± 40.1 g/day) exceeded average requirements (56 ± 11.4 g/day). The lowest mean

satisfaction score (scale 1–5, where 1 is highest satisfaction) was reported for food quality (2.2 ± 1.1), whilst staff (1.2 ± 0.6), service (1.6 ± 0.8) and physical environment (1.6 ± 0.9) rated more favourably. Vegetables were the meal component rated most poorly (> 40% patients reporting 'average' or 'poor'). 8–50% of participants completed their menu, ordering up to 48 hours in advance. Changes in the menu and foodservice system are needed to meet the expectations and nutritional needs of this vulnerable and unique population.

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Thursday 17 May 2018 – Afternoon Concurrent sessions

Concurrent session – Health Behaviours

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EFFECTIVENESS AND BEHAVIOURAL MECHANISMS OF SOCIAL MEDIA-BASED INTERVENTIONS PROMOTING POSITIVE NUTRITION BEHAVIOURS IN ADOLESCENTS: A SYSTEMATIC REVIEW

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Adolescents are thought to have one of the worst diets in the population. They are also one of the highest users of social media. The present review aimed to determine the effectiveness of social media-based interventions in promoting positive changes in nutrition behaviours amongst adolescents, and identify the behaviour change technique(s) that were used. Literature from MEDLINE, Embase, PsycINFO, Cinahl and Cochrane library were searched for eligible studies. Criteria included participants aged 13–18 years, use one or more social media platform(s), a comparison group, nutrition and diet-related behaviour outcome(s), and an experimental study design. Behaviour change techniques were identified using a validated behaviour change taxonomy. Quality and risk of bias assessments were also conducted. Seven eligible interventions were included, varying from internet-only programs to in-person programs with internet or website-based component(s). Studies used purpose-built discussion boards or chat rooms rather than using established social media interfaces (e.g. Facebook). Significant improvements were observed in fruit, vegetable and sweetened beverage intakes, but not for fast food, dietary fat and breakfast consumption. The most common behaviour change technique used was social support, followed by techniques related to role modelling and self-regulation. The current evidence base is equivocal with respect to changing dietary behaviours, as increasing intakes of desirable food groups were more successful than decreasing unfavourable food habits. Several behaviour-change techniques were observed in more successful interventions. Further research using higher quality and long-term studies using up-to-date social media platforms are indicated for more conclusive evidence.

Funding source: AR is supported by the Australian Postgraduate Award Scholarship from the Commonwealth Government of Australia. No other funding or grants were received for this research.

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A MEDITERRANEAN AND LOW FAT DIETARY INTERVENTION IN NON-ALCOHOLIC FATTY LIVER DISEASE PATIENTS; EXPLORING PARTICIPANT EXPERIENCE AND PERCEPTIONS ABOUT DIETARY CHANGE

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Non-alcoholic fatty liver disease (NAFLD) is the most prevalent liver disease in Western countries including Australia. In the absence of effective pharmacotherapy, lifestyle modifications including dietary intervention is the cornerstone of the management of NAFLD. An optimal dietary pattern is yet to be established and additional high-quality evidence is required. However, the efficacy of a Mediterranean Diet (MD) has been assessed in patients with NAFLD with consistent benefits reported from clinical trials. Given the potential challenges in applying a MD to an Australian multicultural population, this study aimed to explore how a MD and a low-fat diet (LFD) intervention were received by adults with NAFLD who participated in a multicentre clinical trial. Semi structured interviews were administered to 23 participants and thematic analysis was used to identify and summarise the key themes that emerged. Participants enjoyed taking part in both the MD and LFD interventions and perceived that they benefited from their involvement. There was a greater emphasis on enjoyment and intention to maintain dietary changes from the MD group. Novelty surrounding recommendations and foods, convenience and the use of food swapping were deemed key enablers to the successful implementation of the dietary interventions. Flavour and enjoyment of food were also fundamental components of the diets with regard to reported adherence and increased intention to maintain dietary change highlighting that recommended diets should be palatable. The MD was accepted by a multicultural NAFLD cohort and may be preferred to the LFD for its novelty, flavour and palatability.

Funding source: La Trobe Research Focus Area Game Changing Grant

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DOES A RELATIONSHIP BETWEEN THERAPEUTIC ALLIANCE AND WEIGHT LOSS OUTCOMES EXIST AND CAN IT BE APPLIED IN DIETETIC PRACTICE? A PILOT STUDY WITHIN A MULTIDISCIPLINARY WEIGHT LOSS TRIAL

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Patients requiring weight loss to support better health outcomes are increasingly represented in dietetic practitioners' caseloads. However, current interventions have limited effect in achieving long term weight change. Hence it is an imperative to explore other approaches to support effective behaviour change. Therapeutic Alliance (TA) has proven successful in achieving behavioural change within psychology and is arguably a useful approach to explore within dietetic practice. This study was to explore TA development in weight-loss therapy through examining a case study of behavioural therapy delivered through

multiple telephone health coaching within a weight loss intervention. This retrospective study was designed to explore TA over several time points throughout a four-session health coaching intervention for individuals engaging in weight loss using the modified WAI-O-S tool. This quantitative cross-sectional study utilised audio data from n=50 participants to derive WAI-O-S scores and reported weight loss. Statistical analysis utilised Pearson's and Spearman's correlations to explore the relationship between TA and weight loss outcomes. Early weight loss is significantly related to TA at session 1, 2 & 3; r = 0.32 (p = 0.015), r = 0.31 (p = 0.037) and r = 0.67 (p < 0.001), respectively. Furthermore, weight loss between baseline and 6 months, baseline and 9 months is also seen to have significant impact on TA at sessions 2 and 3; r = 0.37 (p = 0.016) and r = 0.47 (p = 0.010), and at session 3; r = 0.44 (p = 0.027). This research highlights a relationship between early weight loss and subsequent development of TA. Further modification of the WAI-O-S tool with larger populations is required to understand TA within the dietetic setting.

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DOES A PREFERENCE FOR SALTY OR SWEET FOODS IMPACT ON OVERALL ENERGY INTAKE OR WEIGHT STATUS?

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As "taste" is a primary driver of food choice, it would be useful to understand how the sensory properties of diets influence total dietary energy intake (EI) and weight status. A database of 720 frequently consumed foods, described by a trained sensory panel for basic tastes (sweetness and saltiness) and fatty-mouthfeel, was systematically applied to all foods consumed in the 2011-2013 Australian National Nutrition and Physical Activity Survey. Data from the face-to-face 24hr dietary recalls from children and adults (n = 12,153) were analysed and total nutrient and sensory properties of diets described. To understand the contribution of food groups to total nutrient and sensory intake, all foods and beverages were assigned to food groups consistent with the Australian Guide to Healthy Eating. There were positive significant correlations between the nutrient and sensory properties of reported diets. In adults, discretionary foods contribute 44% to total sugar intake compared to 35% of total sweetness; 32% to total sodium intake and 25% to total saltiness; and 33% to total fat intake and 23% to total fatty-mouthfeel. Normal weight adults derived a greater contribution of sweetness from core foods than overweight/obese adults. Regression models for adults, controlling for age, sex and body mass index, revealed that fatty-mouthfeel (β = 0.492), saltiness (β = 0.223) and sweetness (β = 0.189) were significant predictors of EI and explained 56% total variance (p < 0.01). Sensory properties of diet were poor predictors of weight status. Key findings suggest core foods can provide sensory stimulation, and that fatty-mouthfeel drives EI more than saltiness or sweetness.

Funding source: Australian Sugar Industry Alliance

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CLINICIAN'S VIEWS FOR MANAGING CHILDHOOD OBESITY IN THE PRIMARY, SECONDARY AND TERTIARY SETTING

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One quarter of school-aged children have overweight or obesity. Children with obesity present more frequently to medical services and have higher medical costs than their peers. The management of childhood obesity is a whole of health care priority. The aim of this study was to compare the perceptions of the assessment and management of children who are above their healthy weight range across all sectors of healthcare. Responses to a survey were received from 304 participants including medical, nursing and allied health working in the primary, secondary and tertiary level services within Sydney, Australia. Primary care clinicians were less frequently assessing tandem weight and heights and body mass index (BMI) than secondary and tertiary care clinicians. Secondary care clinicians were more likely to discuss the results of the BMI assessment, discuss the health implications of obesity, provide education to families, discuss diet, discuss exercise and discuss healthy lifestyles with the family compared with primary and tertiary care clinicians. Clinicians were more frequently referring children to dietitian services than free services provided by New South Wales Health, though less than 30% of clinicians frequently referred children to dietitian services. Barriers to the management of children with obesity are a lack of services and long waiting lists for available services. Further work is required to educate clinicians, especially those in the primary and tertiary care services about managing and treating children with obesity. This includes education on the role dietitians play in the management of children with obesity and readily available healthcare pathways for management.

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DEVELOPMENT OF TEXT MESSAGES TARGETING HEALTHY EATING IN CHILDREN WITHIN THE CONTEXT OF PARENTING PARTNERSHIPS

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Research has shown that children display improved behavioural outcomes when parents have stronger parenting partnerships; the relationship that parents share in childrearing. A lack of studies exploring children's dietary behaviours in the context of parenting partnerships warrants novel research in the area. Family interventions have shown success in engaging both parents (mothers and fathers) using mobile text messaging. This study aimed to develop text messages with a focus on healthy eating for children in the context of parenting partnerships. Message development involved a mixed method consultative process. Theoretical Domains Framework and Behaviour Change Wheel were applied in the development process. Messages were designed to complement other interventions, such as face-to-face consultations and telehealth. Messages were constructed to provide information about healthy eating, to prompt reflection, discussion, and action related to

dietary behaviours. The initial 97 messages were reviewed by 20 parents and 28 health experts (clinical dietitians or health researchers). Reviewers (mean age 39 years, 92% female, 33% parents of primary school children, 78% low to middle socioeconomic demographic) considered messages on clarity, usefulness, and relevance to parents of overweight children using a 5-point Likert scale. A final set of 47 messages were tailored through consultation. Text messages developed using this process were found to be comprehensible, useful, and relevant to parents of children for dietary changes. Future research could investigate the acceptability and the influence of these messages on parents in managing child dietary behaviours.

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CLINICAL RELEVANCE AND VALIDITY OF TOOLS TO ESTIMATE THE RISK OF INFANT, CHILDHOOD AND ADULTHOOD OBESITY: A SYSTEMATIC REVIEW

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Current primary care obesity screening practices focus exclusively on anthropometric measures and growth. There is little consideration for environmental and social risk factors in current screening efforts. A quick, user-friendly and accurate screening tool incorporating anthropometric and non-anthropometric variables to quantify the risk of future obesity may be a clinically useful preventive measure. No previous review has attempted to establish the availability or validity of such a tool.
The databases PubMed, EMBASE, CINAHL, Web of Science and PsycINFO were searched. Of the initial 4,490 articles identified, 12 articles detailing 12 tools were included. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were followed. Quality was assessed using the Academy of Nutrition and Dietetics Quality Criteria Checklist for Primary Research and the National Health and Medical Research Council (NHMRC) Levels of Evidence hierarchy. Only one study attempted to integrate their tool into a clinically usable format, achieving a high rating of clinical relevance. Two tools received a moderate rating and nine received a poor rating. The predictive ability of the majority of tools was moderate. No study comprehensively justified the inclusion of each tool variable. Only two tools offered the flexibility to be administered at multiple time points, increasing reach. No tools were tested for validity or usability within a clinical setting. No tool offered evidence-based intervention recommendations in support of each level of risk output. Currently, a clinically relevant, highly accurate and clinically validated tool does not exist. Further research is necessary to optimise a tool's predictive accuracy and clinical relevance within the target population before integration into clinical practice.

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USING DATA MINING METHODS TO PREDICT DROPOUT IN A 12-MONTH WEIGHT LOSS TRIAL

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Attrition in weight loss trials is often substantial and determining factors which predict attrition could be used to improve subject retention and study validity. This study aimed to explore factors predicting dropout during a 12-month weight loss trial. The HealthTrack study was a one-year lifestyle intervention trial where overweight subjects were randomised to receive usual care, interdisciplinary advice on diet and behaviour change, or interdisciplinary advice plus a supplement food (walnuts). Greater weight loss was observed in the Intervention group at 3 months and the Intervention and supplement group at 3 and 6 months when compared with the controls. Attrition at 12 months was high, 377 were randomised with 178 completing (withdrawal rate 39%). Data mining, using a decision tree, was performed to determine predictors of attrition. Variables included in the model were initial weight, percent weight loss at one month, steps per day, dietary intake at baseline, gender, age, treatment group, and the physical and mental scores of the SF-12 quality of life questionnaire. Percent weight loss was the primary predictor in the decision tree with those dropping out losing a mean of -1.0% (SD -2.4%) at one month compared with -1.6% (SD 2.6%) at one month ($p = 0.045$). Regardless of group randomisation, early weight loss is associated with attrition in weight loss trials. Strategies for improving retention in weight loss trials should focus on targeting those with little initial weight loss. These findings may translate to clinical practice where careful monitoring of early weight changes in weight loss interventions would be prudent.

Funding source: Calfornia Walnut Commission provided funding for the study

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Concurrent session – Education

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REVEALING THE RELATIONAL NATURE OF CLINICAL DECISION MAKING OF DIETITIANS IN THE ACUTE SETTING

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The practice of acute care clinical dietetics involves daily clinical decision making regarding patient care. The aim of this doctoral research was to uncover the nature of clinical decision making of dietitians in the acute setting. A qualitative design within the interpretative paradigm was used, specifically philosophical hermeneutics. Philosophical hermeneutics is concerned with the human experience but more specifically, the interpreted meaning of this experience. This study involved two recorded semi-structured interviews with ten acute care dietitians which were transcribed and interpreted using the principles of hermeneutics. A reference group was then used to provide rigour and further interpretation. The participants have revealed that this complex and dynamic process all occurs with high amounts of dependent engagement with other health professionals, particularly the medical practitioner. Dominant themes included the need for earning and maintaining respect, the role of power and autonomy when making decisions as well as knowing and engaging within the traditional medical hierarchy that is still prevalent in the hospital setting. Dietitians indicated they spend considerable time and energy on knowing how to optimally decide on whom, how and for what reason to engage with the medical team for the nutritional care of patients. Participants who expressed confidence in these relational skills indicated a strong professional identity and expanded scope of practice as an acute care dietitian. A deeper understanding of this phenomenon will provide insight into how decision making occurs and therefore potentially contribute to education, professional development and research activities which subsequently optimise patient care.

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EVALUATION OF A PLACEMENT PREPARATION PROGRAM FOR INTERNATIONAL DIETETICS STUDENTS

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International students (IS) are known to face communication and cultural challenges during professional placements. Efficacious strategies to support these students have not been identified. The aim of this research was to evaluate a placement preparation program (4 x 90-minute workshops) specifically designed to support IS (n = 15/38) enrolled in an Australian postgraduate Dietetics course in 2017. The program covered communication (interpersonal interactions, humour, colloquial language, accents and health terminology) and provided an orientation to the Australian food context. All first year IS participated in the program. Of these 6/8 students (who had subsequently completed a 6-week public health placement) participated in a personal interview with a researcher from the project team to explore their placement experiences. Ethics approval was obtained (UCHREC 16-74) for this study. Data was audio-recorded, transcribed verbatim, cross-checked for consistency and thematically analysed using a qualitative descriptive approach as described by Braun and Clark (2006). Four themes emerged from the data: (1) The program content was relevant to IS placement experiences but was not sufficiently practical; (2) The program favoured the clinical context; (3) Cultural difference was not seen as valuable; and (4) IS' placement experiences enable their development of communication and cultural capabilities. This research suggests a placement preparation program is warranted to support IS, however, a more holistic in-depth longitudinal authentic approach is preferred. More emphasis could also be placed on the potential enrichment of the workplace from increased cultural diversity. This study was funded by a University of Canberra research support grant.

Funding source: University of Canberra Research Support Grant

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EVALUATING ASSESSMENT PROCESSES AIMED AT EMPOWERING STUDENT DIETITIANS ON PROFESSIONAL PLACEMENT

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Assessment of dietetic competence during professional work placement is complex and challenging. Traditional assessment of professional skills can be authoritative, inconsistent between assessors, with low student engagement. This study evaluated and refined new assessment tools aimed at empowering students to participate in a reliable, defensible and authentic assessment of their professional skills during placement. An innovative design-based mixed methods approach was used to address the complexities in competency assessment and the involvement of stakeholder groups with power imbalances (e.g. supervisors and students). Iterative semi-structured interviews with university staff, supervisors and students allowed the identification of barriers to reliable and defensible student assessment along with suggestions for resolution. Surveys were used to validate and generalise results. Round 1 evaluation (June, 2017) indicated new assessment processes were time-intensive and remained authoritative. Conflicting perceptions of entry-level competence between assessors contributed to inconsistent assessments. In response, University staff refined assessment form structures to reduce time-to-complete by supervisors and students. Assessment terms such as "entry-level competence" were better defined to reduce confusion. Education sessions were provided to students and supervisors to clarify student-led processes and expectations to support consistency. Round 2 evaluation (September, 2017) showed that refinements were well received and assessment completion times halved. Students took more ownership of their assessment. Further developments include instructional resources with examples and education sessions incorporating practical workshops to guide supervisors and students in the application of the assessment forms. The final decision on student competence is made at the University to ensure consistent and defensible assessment across all placements.

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USE OF SIMULATION-BASED LEARNING EXPERIENCES IN DIETETIC EDUCATION AS PREPARATION FOR PLACEMENT: A SYSTEMATIC REVIEW

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Despite the acknowledged contribution of Simulation Based Learning Experiences (SBLE) to health professional education, their role in dietetics has not previously been synthesised. The aim of this systematic review was to identify and describe pre-placement SBLE within dietetics credentialing programs. Eight databases (MEDLINE, CINAHL, Web of Science, PsychINFO, ERIC, Scopus, EMBASE and PROQUEST Education) were searched up to 16 June 2017, according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, using diet* or nutrition* AND simulat* or standardi?ed patient* AND student*. All empirical study designs were included. Studies reporting SBLE on placement or using real patients were excluded. Studies were double extracted based on study aim, participants, learning and teaching evaluation measures and results, key messages, simulation design. A reporting appraisal was performed by two researchers using a purpose-designed tool to describe and evaluate each simulation. The search revealed 2130 unique abstracts with 79 full text articles reviewed. Twenty-four studies met inclusion criteria; 15 reporting patient simulations, five computer-based instruction and four video cases. A variety of SBLE designs were used: Objective Structured Clinical Examinations (six studies), outpatient settings (four studies), and ward simulations (two studies). Student cohorts went from second year to graduate level. The past decade shows a marked increase in publications; five in 2016 alone. Learning and teaching outcomes were measured in 22 studies, and 13 measurement tools were identified. Few studies included key quality reporting elements when describing the simulation. Further research addressing the role of SBLE and reporting quality of studies is required to justify inclusion in dietetics curricula.

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CAN A NOVEL APPROACH TO CLINICAL SUPERVISION FOR JUNIOR DIETITIANS IMPROVE DEPARTMENT CAPACITY AND FUNCTIONALITY?

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Clinical supervision is embedded within dietetic practice but hasn't included clear processes for assessing competency in speciality areas required for career progression, and limited evidence exists on its impact on department capacity and functionality. In 2013 a structured competency-based buddy program was developed with junior Dietitians 'buddied' with senior Dietitians responsible for clinical specialty areas for a partnership period of 6 months. The aim was to explore whether this program can improve department capacity and functionality. A mixed methods study design was employed using both in-depth group interviews to explore Dietitians experiences with the program in conjunction with a review of two assessment pieces: a pre-and post-self-rated confidence questionnaire using a series of aspects related to a clinical case; and a post program assessment of competence by a senior Dietitian. Seven junior Dietitians participated completing a total of 11 partnerships. The in-depth interview participants included junior Dietitians (six), senior Dietitians (seven) and senior operational Dietitians (three). The main themes from the in-depth group interviews were 'improved department functionality' and 'development of junior and senior dietetic staff'. Confidence scores increased in 81% of partnerships and competence was achieved in 91% of partnerships. A tendency between self-rated confidence and final assessment of competence was also found. This study suggests a structured competency-based buddy program can improve departmental capacity and functionality. Larger studies are required to confirm the applicability and adaptability of our results to other departments.

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USING SPEED DATING PRINCIPLES TO HELP IMPROVE A PEER-MENTORING PROGRAM FOR UNDERGRADUATE DIETETICS STUDENTS

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The 1to3 Peer Mentoring Program was introduced to the Bachelor of Nutrition & Dietetics at Griffith University in 2016 for year 3 students to mentor first year students. Peer pairs were allocated at random by an academic, however student feedback suggested the need for peer matching. The aim of this research was to develop and evaluate a matching process for the 1 to 3 program. 'Speed matching for mentoring', was developed in 2017. Matching was based on speed dating principles, where each mentee had 2.5 minutes to interview, then rank, each of 10 potential mentors. Five extra-curricular one-hour sessions were held to pair 47 mentors with 84 mentees. Academics provided briefings, suggested topics and facilitated the session. Academics used mentee preferences to match pairs. Purpose-developed paper-based student satisfaction surveys (7 items for mentees and 8 items for mentors with a mix of 5-point Likert scales and open-ended comments) were completed by students before leaving the matching sessions. Data were entered into Excel and imported to SPSS v22 for statistical analysis. A total of 120 students (74 mentees and 46 mentors) attended; 91.6% response rate). Attendees were highly satisfied with the session (mean (SD) 4.75 (0.47) mentors; 4.63 (0.68) mentees), however the majority of students (63% mentors; 68% mentees) would have liked more time per interview. Mentors commented on their inability to preference. Outcome evaluation of the 1to3 program is still to be conducted, but this impact evaluation is encouraging, demonstrating the importance of acting on student feedback for program improvement.

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EQUIPPING THE FUTURE NUTRITION WORKFORCE FOR A SUSTAINABLE FUTURE: AN ANALYSIS OF TERTIARY EDUCATION OPPORTUNITIES FOR AUSTRALIAN NUTRITION AND DIETETICS STUDENTS WHICH FOCUS ON THE ENVIRONMENT, FOOD SYSTEMS AND FOOD SUSTAINABILITY

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Industrialised food system practices have environmental consequences, which will be detrimental to health if our way of thinking and living is not transformed. The aim of this study is to identify how widely units/subjects about the environment, food systems and food sustainability are taught to nutrition and dietetics students in Australia, and to analyse the depth to which these units/subjects are taught and assessed. An online search identified Australian courses where graduates are eligible to become accredited dietitians or nutritionists. Courses were manually searched for units/subjects related to the environment, food systems and food sustainability. Learning outcomes and methods of assessment of these units/subjects were analysed for level of learning and assessment, using Bloom's revised taxonomy (BRT) for learning outcomes, and Miller's prism of clinical competence (MP) for assessment methods. Frequency tables were produced from these analyses. 130 eligible courses were identified. Of these, 8% (n = 9) of courses included units/subjects (n = 16) about the environment, food systems and food sustainability. 88% (n = 56) of learning outcomes were in the cognitive domain of BRT, with the highest frequency at level four 'analysing'. The psychomotor and affective domains had only level one learning outcomes. 56% (n = 9) of assessment methods were at the 'shows' level of MP. No assessments were in the 'does' level. Future teaching about the environment, food systems and food sustainability may need to prioritise higher level learning and assessment to effectively equip Australia's future nutrition workforce to contribute towards a sustainable food system.

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Concurrent session – Disability & Rehabilitation

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THE EFFECTIVENESS OF DIETETIC INTERVENTIONS IN IMPROVING THE NUTRITIONAL STATUS OF COMMONWEALTH HOME SUPPORT PROGRAM CLIENTS LIVING IN THE COMMUNITY

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Malnutrition affects up to 30% of older people living in the community. Dietetic home-based services may help prevent or reverse adverse consequences of malnutrition, affording older people greater independence. This study aimed to determine the effectiveness of a home-based dietetic intervention in improving the nutritional status and functionality of Commonwealth Home Support Program (CHSP) clients. This descriptive cohort study was conducted between February 2012 and December 2013. Seventy-four clients underwent baseline assessment and 3-month review. Baseline and review data included weight, Body Mass Index (BMI), total daily energy and protein intake, the Mini Nutritional Assessment (MNA) assessing malnutrition risk, and the Timed Up and Go (TUG) assessing functionality. The average weight and BMI at baseline and review improved from 61kg to 63kg ($t(71) = 2.5$, $p<0.05$), 23.6 kg/m^2 to 24.6 kg/m^2 ($t(72) = 2.5$, $p < 0.05$), respectively. Total daily energy and protein intake increased from 1,262 kcal to 1,582 kcal ($t(69) = 3.9$, $p < 0.01$), 51 g to 62 g ($p < 0.0001$) respectively. Serving sizes of all five food groups increased, with significant changes for dairy and meat/alternatives ($p < 0.05$). Average MNA total score improved from 20/30 to 24/30 ($p < 0.0001$), indicating the malnutrition risk category improved from "At Risk of Malnutrition" to "Normal Nutritional Status". TUG improved from 27 seconds to 22 seconds ($t(50) = 2.506$, $p < 0.05$). This study showed that home-based dietetic interventions can lead to improved nutritional status and functionality of CHSP clients. This study contributes to the limited literature evaluating dietetic interventions for malnutrition in the community setting, and assists with improving the quality of CHSP dietetic services.

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CAN A PHOTOGRAPH-BASED PHYSICAL EXAMINATION REPLACE AN IN-PERSON PHYSICAL EXAMINATION OF THE SCORED PATIENT-GENERATED SUBJECTIVE GLOBAL ASSESSMENT (PG-SGA)?

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Teleconsultations are emerging as a strategy to follow-up undernourished patients. However, no valid method to remotely perform physical examination, a critical component of assessing nutrition status, exists. This study conducts a preliminary assessment to determine if photograph examination can replace the in-person physical examination of the scored PG-SGA by exploring the agreement between the two methods. Adults aged ≥ 60 years, admitted to the General Medicine Unit of Flinders Medical Centre between March 2015 and March 2016 were eligible. The PG-SGA was conducted in-person in 192 participants in hospital of their post-discharge place of residence. Photographs of muscle and fat sites were also taken. A trained dietitian blinded to data collection later assessed de-identified photographs on a computer to form the photograph-based examination. To assess agreement between the two methods, percentage agreement, weighted kappa agreement, sensitivity and specificity were calculated. The photograph-based physical examination achieved a percentage agreement of 75.8% against the in-person assessment, a weight kappa agreement of 0.526 (95% CI: 0.416, 0.637, $p < 0.05$), sensitivity of 66.9% (95% CI: 57.8%, 75.0%) and specificity of 92.4% (95% Ci: 82.5%, 97.2%). A near acceptable percentage agreement, moderate weight kappa and fair sensitivity-specificity pair was achieved when trained dietitians conducted the photograph-based physical examination. Prior to field-testing with other personnel, methodological refinements could improve the agreement and accuracy of this method.

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ADHERENCE TO A MEDITERRANEAN DIET IS NOT ASSOCIATED WITH SARCOPENIC SYMPTOMOLOGY IN OVERWEIGHT AND OBESE OLDER ADULTS

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There is evidence to suggest that adherence to a Mediterranean Diet (MedDiet) is inversely associated with sarcopenic symptomology. This cross-sectional analysis examined the association between adherence to MedDiet and risk of sarcopenic symptomology in overweight and obese community-dwelling older adults. For confirmation of sarcopenia, low appendicular skeletal muscle (ASM: males, ≤ 7.25 kg/m^2; females, ≤ 5.5 kg/m^2) was accompanied with either low handgrip strength (males, ≤ 30kg; females, ≤ 20 kg) or low physical performance (Short Physical Performance Battery: ≤ 8; or gait speed: ≤ 0.8 m/sec). Adherence to a MedDiet was determined using the Mediterranean Diet Adherence Screener (MEDAS). Data is presented according to categories of adherence. Sixty-five overweight and obese older adults (mean ± SD: 68.7 ± 5.6 years; body mass index (BMI): 33.7 ± 4.8 kg/m^2) were included in the final analyses. Zero participants were identified as sarcopenic. No significant differences between level of adherence to a MedDiet and the proportion of participants presenting below diagnostic criterion cut-offs for markers of sarcopenia were observed (Physical performance: low adherence: 7.1%; high adherence: 13%; $P = 0.657$; Muscle strength: low adherence: 21.4%; high adherence: 13%; $P = 0.515$; Gait speed: low adherence: 31%; high adherence: 39%; $P = 0.587$). When adjusted for all variables, sarcopenic symptomology was not related to greater adherence to a MedDiet (Physical Performance: OR = 0.20; 95% CI: 0.01-3.1; $P = 0.234$; Muscle strength: OR = 1.81; 95% CI: 0.32-10.15; $P = 0.499$; Gait speed: OR = 0.58; 95% CI: 0.13-2.50; $P = 0.468$). Overall, sarcopenic symptomatology is not related to adherence to a MedDiet.

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PROTEIN INTAKE, FOOD SOURCES AND MEAL DISTRIBUTION AMONG OLDER AUSTRALIANS – SECONDARY ANALYSIS OF THE 2011/12 NATIONAL NUTRITION SURVEY

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Protein is a key nutrient essential for healthy ageing and the prevention of sarcopenia. A dietary pattern with higher protein intakes of 1.2 g/kg/day and 25–30 g of protein per meal are proposed strategies to protect against the development of sarcopenia. This study examined protein intakes, dietary sources and protein distribution by eating occasion among older Australians. Analyses included data from adults aged 65 years and over participating in the 2011/12 National Nutrition and Physical Activity Survey (n = 2,103) that included dietary intakes, demographic and anthropometric measures. Main meals were analysed as breakfast (including brunch), lunch, and dinner (including supper), while snacks included all other eating occasions. Participants reported a mean (SD) total protein intake of 79.4 (33.2) g/day and 1.0 (3.0) g/kg body weight/day. The timeline of daily protein intake shows the lowest intake at breakfast (mean 15 g), increasing at lunch (23.6 g) and the highest intake at dinner (36.7 g). All other snacks combined, contributed to 30 g protein. Dinner comprised the highest consumption of meat and alternatives; breakfast comprised the highest consumption of grains and dairy foods. The only meal that achieved the 25-30 g bolus amount of protein was at dinner. Re-distribution of protein from snacks to breakfast and lunch could promote a more even distribution of protein over all meals and may assist in the preservation of muscle mass. More tailored advice for older Australians is needed to meet the literature based recommended protein intake and distribution throughout the day.

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REVIEW AND REFLECTIONS OF DIETETICS SERVICES IN A COMMUNITY HEALTH SETTING FOR PEOPLE WITH A DEVELOPMENTAL DISABILITY LIVING IN GROUP HOMES

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Dietitians in community health settings are essential to providing comprehensive nutrition and dietetics care to populations that may otherwise experience barriers to accessing services, such as people living with developmental disability. With the establishment of National Disability Insurance Scheme (NDIS) dietitians and the health sector face questions about their service delivery. This presentation summarises the review undertaken after two years of providing nutrition and dietetics services for people with developmental disability living in group homes in the local government area of Darebin in northern Melbourne. Your Community Health dietitians worked in a multi-strategy approach that involved medical nutrition therapy for individual residents; experiential health promotion activities based on identified learning needs and staff capacity building relating to food and meal choices. The review involved surveys and interviews of group home managers, benchmarking with other local services, expert opinion and an audit of interventions. Outcomes included increased nutrition knowledge of staff and positive changes in residents' health and wellbeing. The built collaborative relationships with group home staff and residents were an essential element. Key barriers included lack of support, education and training for staff to follow existing nutrition guidelines leading a varied knowledge and skill base. The review identified that allocation of adequate time was key to effective change. This work highlights that providing nutritional care for clients with a developmental disability requires wide-ranging nutrition interventions from specialist clinical dietetics to tailored health promotion activities which can inform future funding models.

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WHEN 'HEALTHY' BECOMES IATROGENIC – RESTRICTIVE DIETS IN OLDER MALNOURISHED CARDIAC INPATIENTS: A CROSS-SECTIONAL STUDY

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Restrictive diets are commonly prescribed to cardiac patients for therapeutic and preventative reasons. However, these are often contraindicated for older malnourished patients. The present study aimed to describe self-reported dietary behaviours of malnourished older cardiac patients, and to identify sources of nutritional information accessed by these patients. Data on participants' dietary behaviour, duration and reasons for dietary practices, as well as source of nutrition advice were obtained during an initial individual dietetic consultation on the ward. Based on the reasons for the reported dietary practices and sources of nutrition information accessed, these diets were categorised into 'evidence-based' or 'non-evidence based' diets. Fifty-one malnourished patients were included in the study. Twenty-two (43%) reported at least one dietary restriction, 13 (26%) were on a high energy-high protein (HEHP) diet prior to hospital admission and 16 (31%) were on non-restrictive diets. Dietitians and medical specialists consistently provided evidence-based dietary interventions to patients, while most dietary recommendations provided by General Practitioners (GPs) might have previously been evidence-based but no longer clinically indicated. Self-sourced dietary information was routinely identified as incorrect. Despite the high prevalence of malnutrition among older patients, the results reveal that restrictive diets are common in this sample of older malnourished cardiac patients. Consequently, there is a need for dietitians to explore the dietary practices of older patients in other disease states. Furthermore, with the constantly evolving nutrition evidence base, regular monitoring of patients in the primary care setting should also ensure that they obtain accurate nutrition advice from credible sources.

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A SYSTEMATIC REVIEW AND META-ANALYSIS OF NUTRITION INTERVENTIONS FOR CHRONIC NON-CANCER PAIN

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This systematic review aimed to evaluate the impact of dietary interventions in participants experiencing chronic pain on self-reported pain severity, intensity and frequency. A systematic search of the literature

was carried out across eight electronic databases. Eligible studies had to include an adult population (≥ 18 years old) with chronic pain, a dietary intervention and measure of pain. Where available, data from studies using a visual analogue scale (VAS) to measure pain were pooled using meta-analysis to determine the overall effect of dietary interventions on pain outcomes. Fifty-seven studies were included, 19 were eligible for meta-analysis. Twenty studies were rated positive quality, 33 neutral and four negative using the Academy of Nutrition and Dietetics quality tool. Participants were predominately female, mean age ranged from 30.9 to 65.7 years and mean body mass index ranged from 18.3 kg/m^2 to 31.8 kg/m^2. Studies were categorised into groups: 1) Prescribed a specific diet (vegan, vegetarian or Mediterranean), with 9/12 reporting a significant reduction in self-reported pain, 2) Altered specific nutrient (total fat or fibre) with 2/5 studies reporting a significant reduction in pain, 3) Supplement interventions (omega-3, vitamins, other nutrient compounds), with 7/37 reporting a significant reduction in pain, 4) Fasting diets with 1/4 studies reporting a significant reduction in pain. Eligible studies were combined in a meta-analysis (n = 19). The weight mean difference was not significant, indicating no dietary prescription tested was better than another, although most reduced pain. This review highlights the need for high quality dietary interventions that include nutrition advice and support for people experiencing chronic pain.

Funding source: Australian Postgraduate Award and Rainbow Foundation Top-up Scholarships, Hunter Medical Research Institute

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FOOD SECURITY IN OLDER AUSTRALIANS: EXPLORATION OF OLDER AUSTRALIANS PERSPECTIVES ABOUT FOOD INSECURITY AS THEY AGE

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The aim of this study was to explore and understand the issues surrounding access to, and utilisation of, sufficient nutritious food for older Australian's, with a secondary aim of exploring older Australian's response to current measurement tools. Six focus groups were conducted with thirty-four older Australians aged 65 years and over (6 male, 28 female). An experienced moderator conducted each group using a semi-structured interview guide based on literature around food security for older adults and inclusive of stimuli material/prompts to encourage the group to deeply discuss issues around food access, availability, changes over time and how this could be assessed. Focus groups were recorded and transcribed verbatim for thematic analysis drawing upon grounded theory to identify major themes of discussion. Exemplary quotes were identified to authenticate findings. Participants spoke of multiple barriers to accessing and utilising food which were identified under four main themes; *loss of control, social support, financial awareness* and *affiliation with food security*. Current approaches to measuring food security were not well received. Food security was a meaningful term incorporating elements directly impacting older Australians. Future tools designed to measure food security status should consider changes to physical ability, effects of chronic conditions and injury, social connectedness and financial autonomy factors impacting food choice. Reliable, relevant and frequent food security measurement in Australia is warranted. These study findings will be useful to help construct a meaningful measurement tool.

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Concurrent session – Systematic Reviews

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A SYSTEMATIC REVIEW AND META-SYNTHESIS OF PATIENT PERSPECTIVES ON ENTERAL TUBE FEEDING DURING TREATMENT FOR HEAD AND NECK CANCER

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The presence of percutaneous endoscopic gastrostomy (PEG) tubes among patients with head and neck cancer (HNC) has been found to lessen overall weight loss and reduce hospitalisations and interruptions during treatment. Despite these benefits, tube feeding has also been suggested to negatively impact a person's quality of life thus there is no standard recommendation for the best method of nutrition support for this patient group. Furthermore, research regarding the patients' experiences with a PEG tube is scarce. Understanding the concerns and priorities attached to enteral tube feeding from the patient's perspective is essential to inform dietitian decision-making and counselling. Therefore, a systematic review and meta-ethnographic synthesis was conducted, according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to identify, appraise and synthesise the relevant qualitative literature on this topic. Electronic databases Web of Science, Scopus, CINHAL and Cochrane Library were searched yielding 48 results, of which six met the inclusion criteria. A thematic account of shared perspectives emerged under six key themes 1) decisions around the tube, 2) recognising the value of the tube, 3) challenges faced by patients, 4) adapting to life with the tube, 5) importance of support networks and 6) recommendations for future patients. While there was a dichotomy of responses among patients there was an overall agreement that the tube was deemed necessary for survival during treatment. These findings provide unique and valuable insight into an important aspect of dietetic care for patients with HNC and contribute to an area of research where there remains a paucity of knowledge.

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A SYSTEMATIC REVIEW AND META-ANALYSIS OF PREVALENCE OF PROTEIN-ENERGY MALNUTRITION IN THE INTERNATIONAL COMMUNITY: A LOOK AT THE INFLUENCE OF REGION, RURALITY, SETTING AND GENDER (THE MACRO STUDY)

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Protein-energy malnutrition is a major health concern in home-dwelling older adults, particularly in the context of population ageing. Therefore, a systematic review and meta-analysis was undertaken to examine the international prevalence of malnutrition in older adults living independently in the community; including examination of geographical region, rurality and gender. Six electronic databases were

searched until September 2016. Original research studies which used the Mini Nutritional Assessment (MNA), patient generated – subjective global assessment (PG-SGA) or SGA to determine nutrition status in community samples with a mean age of ≥ 65 years were included and critically appraised and pooled using meta-analysis. 112 studies from 38 countries (n = 69,498 total participants) were included. The global prevalence of malnutrition in the older community setting was 6.9% (95% CI: 5.6–8.3%), ranging from 0.8% (95% CI: 0.2–1.7%) in Northern Europe to 29.9% (95% CI: 0.0–80.3%) in South-East Asia. Of all settings, participants receiving homecare services had the highest prevalence at 13.2% (95% CI: 9.0–18.2). Malnutrition prevalence in rural communities (9.9%; 95% CI: 4.5–16.8%) was double that in urban communities (5.1%; 95% CI: 3.7–6.7%) and significantly higher among females than males (OR 1.50 [95% CI: 1.27–1.75]; $P < 0.00001$). The results of this review provide the best available strategic insight for global and national public health priorities for preventing malnutrition and associated poor health outcomes.

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NOT ALL FIBRES CREATED EQUAL: A SYSTEMATIC REVIEW AND META-ANALYSIS OF DIETARY FIBRE AND THE GASTROINTESTINAL MICROBIOTA

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Disturbances to the composition of the gastrointestinal microbiota have been linked with a number of chronic diseases, presenting a potential modifiable risk factor the development of these conditions. Dietary fibre can potentially modulate the composition of the gastrointestinal microbiota by selectively stimulating beneficial bacteria such as *Bifidobacterium* and *Lactobacillus* species. This systematic review and meta-analysis aimed to assess the effect of fibre on gastrointestinal microbiota composition. A structured search of MEDLINE, EMBASE, CINAHL and CENTRAL was conducted (up to October 2017) for randomised controlled trials evaluating the effect of dietary fibre intervention on the gastrointestinal microbiota in healthy adults. Meta-analyses were performed using random-effects model on pre-specified bacterial abundances including *Bifidobacterium* and *Lactobacillus* spp., comparing dietary fibre interventions with placebo and low fibre comparators. A total of 64 studies encompassing 2,099 participants were included. Dietary fibre intervention led to higher faecal abundances of *Bifidobacterium* [Standardised Mean Difference (SMD) 0.64 (95% CI: 0.42, 0.86), $P < 0.001$] and *Lactobacillus* spp. [SMD 0.22 (95% CI: 0.03, 0.41), $P = 0.02$] compared with placebo and low fibre comparators. Subgroup analysis revealed only dietary fibre interventions involving fibres defined as prebiotic led to significantly higher abundances of *Bifidobacterium* ($P < 0.001$) and *Lactobacillus* spp. ($P = 0.002$) compared with placebo and low fibre comparators, while interventions using general fibres (e.g. wheat bran) had no effect. Increased intake of prebiotic fibre selectively manipulates gastrointestinal microbiota composition, which may benefit host health by decreasing risk of developing chronic disease, although confirmation from longitudinal studies is required.

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DIETARY INTERVENTIONS FOR REDUCTION OF MUSCULOSKELETAL PAIN: A REVIEW

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Musculoskeletal pain is a challenging issue for both patients and clinicians. Although diet is typically not prioritised in traditional pain management, there is an abundance of non-evidence based dietary information claiming to achieve pain relief. Systematic reviews have shown weak evidence of diet improving rheumatoid arthritis and fibromyalgia symptoms however, no review has investigated the relationship between diet and idiopathic musculoskeletal pain. This review aimed to investigate associations between dietary interventions and musculoskeletal pain in individuals with, or without, diagnosed musculoskeletal conditions. A systematic review of published literature was performed across six databases in July 2017. Included studies were intervention trials involving adults aged 18 years and over who were not critically ill, investigating diet as a whole, and including musculoskeletal pain as an independent outcome. The American Dietetic Association Quality Criteria Checklist and Grade Definitions were used for study quality assessment and evidence grading, respectively. A total of 9,740 articles were identified, from which 21 articles were included in the review. Overall, there is limited evidence that dietary interventions have influence on pain. Vegan-type and hypoallergenic or elimination diets have fair evidence for potential pain reducing effects, while Mediterranean-type diets, fasting followed by vegan or lactovegetarian diets, and energy-restricted or low-fat diets are limited in evidence. Although vegan-type and hypoallergenic or elimination dietary interventions were shown to potentially produce clinically meaningful impacts, most interventions had a moderate-to-high risk of bias with uncertainty of nutritional adequacy and safety. Individuals with musculoskeletal pain should therefore follow the current Australian Dietary Guidelines.

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THE EFFECT OF NUT CONSUMPTION ON FLOW-MEDIATED DILATION AND MARKERS OF INFLAMMATION: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Chronic conditions such as type 2 diabetes and metabolic syndrome are associated with endothelial dysfunction and low-grade inflammation, which contribute to the development of cardiovascular disease (CVD). There is strong evidence that habitual nut consumption is associated with decreased risk of CVD, but clinical trials have reported inconsistent effects on markers of endothelial function and inflammation. The aim of this meta-analysis was to assess the evidence on the effect of nut consumption on endothelial function (using flow mediated dilation (FMD) as the marker), and inflammatory biomarkers. A systematic search of Medline, PubMed, CINAHL and Cochrane databases (to 13 January 2017) was conducted. Inclusion criteria were randomised controlled trials or prospective cohort designs conducted in adults; studies assessing the effect of tree nut or peanut consumption on FMD and the inflammatory biomarkers C-reactive protein, adiponectin, tumour necrosis factor-

alpha, interleukin-6, intercellular adhesion molecule-1, and vascular cell adhesion molecule-1. Random effects meta-analyses were conducted to assess the weighted mean differences (WMD) in change or final mean values for each outcome. Thirty-two studies were reviewed. Consumption of nuts resulted in significant improvements in FMD (WMD: 0.79 [0.35, 1.23]) but no significant changes in biomarkers of inflammation were found. The favourable effects of nut consumption on FMD may in part explain the effects on CVD risk. The lack of consistent evidence for effects of nut consumption on inflammation suggests further randomised controlled trials are required in this area.

Funding source: This study was funded by the International Nut and Dried Fruit Council. The funders approved the study design, but had no other role in the collection, management, analysis, and interpretation of the data, or preparation of the research for submission

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EFFECTS OF MEDIUM-CHAIN TRIGLYCERIDES ON CARDIOVASCULAR DISEASE RISK MARKERS: A SYSTEMATIC REVIEW

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Medium-chain triglycerides (MCT) are commonly extracted from palm and coconut oil. As a rapidly absorbed source of energy, MCT are purported to assist with weight management and appetite control. However, the potential risk of MCT supplementation relative to cardiovascular disease (CVD) risk markers is still under evaluation. Therefore, a systematic review was conducted following Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (2009) using four electronic databases (Scopus, PubMed, CINAHL, Cochrane) to identify randomised clinical trials with MCT. Primary outcome was blood lipid levels (cholesterol, triglycerides), while body composition, blood glucose and insulin were secondary outcomes. In total, nine trials fulfilled inclusion criteria, lasting 4–16 weeks and using doses between 9.9–40.0 g. The only double-blind, placebo-controlled trial reported lower mean ± SD for total cholesterol (5.72 ± 0.35 mmol/L to 3.89 ± 0.29 mmol/L) and triglycerides (1.35 ± 0.28mmol/L to 1.02 ± 0.31 mmol/L) (all, $p < 0.05$) with addition of 9.9 g MCT to a very low-calorie diet for 4 weeks. Of the remaining parallel studies, three observed improvements in blood lipids with MCT, while two had no effect. Three parallel studies reported improved body composition with MCT, two measured reductions in glucose, and two in insulin levels. In crossover trials, high oleic sunflower oil, and lauric acid, outperformed MCT over a range of lipid markers, while no differences were observed with corn oil. Due to considerable variety of the results across studies, there is insufficient evidence to suggest that MCT has an adverse or positive effect on CVD risk markers. While metabolic benefits may exist, well designed longer-term trials are required to determine effect of MCT on CVD risk markers.

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THE EFFECT OF PRE-, PRO- AND SYNBIOTIC SUPPLEMENTATION IN CHRONIC KIDNEY DISEASE: A SYSTEMATIC REVIEW

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Prebiotic, probiotic and synbiotic supplementation is emerging as a promising therapeutic strategy in the treatment of chronic kidney disease (CKD) and its associated cardiovascular burden. A structured search of Medline, CINAHL, EMBASE, Cochrane Central Register of Controlled Trials and the International Clinical Trials Register Search Portal was conducted for articles published since inception until July 2017. Included studies were randomised controlled trials investigating the effect of pre-, pro- and/or synbiotic supplementation (> 1 week) on uraemic toxins, microbiota profile, clinical and patient-centred outcomes in adults and children with CKD. Sixteen studies investigating 883 adults met the inclusion criteria; five investigated prebiotics, six probiotics and five synbiotics. Studies were small, each ranging from 18 to 80 participants. Intervention duration was relatively short, varying from 4 weeks to 6 months. The quality of the studies using Grading of Recommendations Assessment, Development and Evaluation (GRADE) ranged from moderate to very low. Significant reductions in uraemic toxins *p*-cresyl sulphate (PCS), indoxyl sulphate (IS) and trimethylamine N-oxide (TMAO) were demonstrated with prebiotic, probiotic and synbiotic therapy. Two synbiotic interventions explored change in microbiota, demonstrating significant increases in the abundance of *Bifidobacterium.* Gastrointestinal side-effects were reported in six of the 16 studies; no gastrointestinal side-effects were noted with probiotics (four studies), improvements were demonstrated with synbiotics (one study) while prebiotics were associated with an increase in flatulence (2 studies). In summary, there is a potential role for pre- pro- and/or synbiotics in CKD management, however further well-designed interventions are required to establish the most appropriate supplementation formulation and the influence on patient-level outcomes.

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THE ASSOCIATION OF INDUSTRY SPONSORSHIP WITH OUTCOMES OF STUDIES EXAMINING THE EFFECT OF BREAKFAST CONSUMPTION HABITS ON BODY WEIGHT: A SYSTEMATIC REVIEW

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Breakfast consumption is reported to be beneficial in weight management, but much of the evidence is from cross-sectional studies, implying only suggestive evidence, and food industry funds many of the studies. A Systematic review was conducted, searching seven databases from 1988- August 2017. Primary research studies that quantitatively

assessed the relationship between consumption of breakfast or breakfast cereal and weight outcomes were included. Cross-sectional studies, reviews and meta-analysis, commentaries, and studies that assessed the consumption of breakfast cereals at times other than the morning meal, were excluded. Sixteen randomised controlled trials met the inclusion criteria, eight were funded by food industry or trade associations, five by non-industry funders, three had no funding disclosure and five studies had no disclosure statement for author conflict of interest. All studies were published in nutrition journals. Industry-funded studies were more likely to have results (RR: 2.0 [95% CI 0.097 to 42.369]), and conclusions (RR: 1.25 [95% CI 0.149 to 10.462]) favourable to the study sponsor, but the difference was not statistically significant. There was an insufficient sample size to examine differences in effect sizes by sponsorship. There was no difference between risks of bias in industry vs. non-industry funded studies. While nutrition journals have reporting standards for disclosure of sponsorship and author conflict of interest, this review indicates that there is a lack of transparency in published nutrition research. More consistency of reporting of funding sources and conflicts of interest in nutrition journals will ensure the risk of bias from food industry influence can be adequately assessed.

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Concurrent session – Public Health – Young Adults (and Women)

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DETERMINANTS OF EATING BEHAVIOURS IN AUSTRALIAN UNIVERSITY STUDENTS

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It is important to understand university students' eating behaviours as adult eating patterns are forming during this particular life-stage, and it is an at-risk time for weight gain. This study aimed to identify groupings of eating behaviours in a sample of Australian university students, and to explore associations with socio-demographic, student, and health-related characteristics. All University of Newcastle students were invited to complete the online, cross-sectional survey in February 2016. Measures included: eating behaviours (e.g. fruit, vegetable, non-core food intakes), socio-demographics (e.g. age, living situation), student (e.g. international/domestic) and health-related (e.g. body mass index, mental health) characteristics. Factor analysis was conducted to identify groupings of eating behaviours, and linear regression models to explore associations between factors and all other measures. The survey was completed by 4,074 students (70.4% female; mean ± SD age 24.7 ± 8.5 years, 92.0% domestic). Five eating behaviour groupings were identified, characterised by higher consumption of the named foods/drinks; 1) energy-dense nutrient poor snack foods, 2) meat and takeaway foods, 3) fruit and vegetables, 4) sugary drinks, 5) breads and cereals. Fruit and vegetable factor score was higher among females than males ($\beta = 0.2589$, $p < 0.0005$), and Faculty of Health and Medicine students than all other Faculties ($p < 0.0005$). Sugary drinks factor score was higher among males than females ($\beta = 0.3456$, $p < 0.0005$), and international than domestic students ($\beta = 0.4118$, $p < 0.0005$). Groupings of eating behaviours identified indicate a clustering of healthy and unhealthy eating behaviours. Additionally, individual characteristics, e.g. male, were more often associated with unhealthy eating behaviours. Nutrition interventions in the university setting should consider individual characteristics and target higher risk sub-groups.

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EXAMINING YOUNG ADULTS' EXPOSURE TO FOOD AND BEVERAGE ADVERTISING USING WEARABLE CAMERAS

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Obesity is a major health issue that continues to rise, especially amongst young adults. Food advertising may be contributing to this increase. The purpose of this study is to quantify young adults' exposure to healthy and unhealthy food, beverage and alcohol advertising in a range of mediums using a novel method of continuous digital photography. A cross-sectional study was conducted on 40 young adults aged 18 to 30 years. Participants wore an automated wearable camera for three days that captured images of their surroundings every 30 seconds. Each image with an advertisement was coded with a setting, marketing medium and food product category. In the 114,279 images captured during the study period, 330 food and/or beverage advertisements were identified. The highest exposure to advertisements occurred at home, with $n = 148$, 44.8% of advertisements were found on digital media, such as a device or computer. Discretionary food and beverages were the predominantly advertised categories ($n = 169$, 51.2%), while soft drinks were the most commonly marketed discretionary product. The results indicate that young adults are being exposed to numerous discretionary food and beverage advertisements using a range of mediums without having to leave their homes. This is a significant public health issue since the overweight and obesity epidemic is rising. In the future, the Australian government need to place more regulatory actions to ban or restrict food and beverage advertising; shift advertising from discretionary to core foods or utilise new interventions to advocate for positive dietary behaviour directed at young adults.

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DIETARY NITRATE INTAKES WITHIN A REPRESENTATIVE SAMPLE OF AUSTRALIAN WOMEN

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Dietary nitrate can be metabolised in the body to produce Nitric Oxide (NO), which has a major role in maintaining vascular health. A recent meta-analysis found dietary nitrate (> 130 mg/d) can acutely reduce blood pressure and improve mediators shown to optimise vascular health. Currently, there is limited data available estimating population intakes of dietary nitrate or evidence that population intakes provide a physiological benefit. The nitrate contents of vegetables, fruits, meats, dairy, wholegrains and alcohol were applied to nitrate-containing food items in the Dietary Questionnaire for Epidemiological Studies V2 (DQESv2) Food Frequency Questionnaire (FFQ), collected in 2001 from 10,629 women aged 50–55 years, participating in the Australian Longitudinal Study on Women's Health (ALSWH). The average total nitrate intake was 64.5 mg/d (range 5.2–273.8 mg/d), indicating that

intakes are low relative to doses shown to be effective from randomised controlled trials (> 130 mg/d). Approximately 83% of nitrate intakes were contributed from vegetable sources, 7% from fruits, 6% from meats, and 3% from grains and cereals. Women on average consumed only 2.3 serves of vegetables per day. Despite this, the primary sources of nitrate included lettuce, spinach, beetroot, potatoes, celery, pumpkin and cabbage. Increased vegetable intakes should be promoted within Australian women to prevent risk of chronic diseases, however it is important to identify whether an increase in nitrate intake is protective for such diseases. Further investigation is required to clearly elucidate the long-term impact of dietary nitrate for the prevention of chronic diseases including hypertension, stroke and myocardial infarction.

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DIET QUALITY AND 10 YEARS OF HEALTHCARE COSTS BY BMI CATEGORIES: DATA FROM THE AUSTRALIAN LONGITUDINAL STUDY ON WOMEN'S HEALTH

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Better diets, as evaluated by diet quality indices, are associated with lower rates of morbidity and mortality. While governments and researchers alike recognise the burden that obesity incurs for increased healthcare spending, this is insufficient evidence for the role of diet quality on healthcare costs. Diet quality was assessed by the Australian Recommended Food Score (ARFS) for 6,328 women aged 50–55 years from the Australian Longitudinal Study on Women's Health (ALSWH). The ARFS was ranked by quintile, and ten-year cumulative data on healthcare costs from Medicare (Australia's Universal healthcare cover) were presented by body mass index category, using generalised linear modelling. Healthy weight women with the highest diet quality were found to make significantly fewer Medicare Claims ($P = 0.012$), compared with those with the lowest diet quality. In healthy weight and overweight women, the number of Medicare Claims and healthcare Charges were inversely associated with consuming a greater variety of vegetables. For every 1-point increase in the ARFS vegetable component score, healthy weight women made 1.9 fewer Claims to Medicare and were Charged $139 less, while overweight women made 2.3 fewer Claims and were Charged $176 less for healthcare over 10 years. Results support the need to prioritise improved diet quality to reduce healthcare Claims and overall costs in a population-based sample of Australian females. As the burden of overweight and obesity on the healthcare system and governments increase, strategies to improve diet quality may be of particular importance, however more research is required to further establish this relationship.

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KEY CHARACTERISTICS OF PUBLIC HEALTH INTERVENTIONS AIMED AT INCREASING WHOLE GRAIN INTAKE: A SYSTEMATIC LITERATURE REVIEW

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The health benefit of whole grains is well understood, yet very few countries, including Australia, include quantified recommendations for intake in their dietary guidelines and global consumption levels remain low. Only 30% of Australians are meeting whole grain intakes associated with reduced risk of chronic disease and around 30% of Australians consume no whole grains in a typical day. A systematic literature review of public health interventions aimed at increasing whole grain consumption was conducted. Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework, of 8,500 initial records only eight interventions with demonstrated reach (up to national populations) and effectiveness (8 to 27 g/day) of increasing whole grain consumption were eligible for synthesis. Interventions measuring changes in knowledge, acceptability or where whole grain food was provided without subsequent elective consumption were excluded. Characteristics of successful interventions included multiple stake-holder involvement, quantified intakes in dietary guidelines, manufacturer codes of practice, product reformulation, evidence-based educational resources, social media and community events with tasting and preparation opportunities. Empowerment of food service providers was also linked to success. While Australia has some elements in place such as a voluntary industry Code of Practice, if intakes are to increase significantly public policy revision is required. Incorporation of specified target intakes into dietary guidelines and inclusion of whole grains into systems such as the Health Star Rating may need to be considered. This will provide upstream support to ground level programs which are working to encourage people to choose whole grains more often.

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DO AUSTRALIAN TODDLERS CONSUME ENOUGH IRON? ANALYSIS OF IRON INTAKE FROM THE SMILE COHORT STUDY

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Toddlers are vulnerable to iron deficiency (ID), as toddlerhood is a period of rapid growth, and iron requirements are high. However, relatively little is known about the iron intakes of Australian children under 2 years of age. The aim of this cross-sectional analysis was to investigate iron intake and sources of iron in a cohort of South Australian toddlers participating in the SMILE cohort study, as well as identify determinants of iron intake. At approximately 12 months of age, dietary intake data were collected by a 24-hour recall and 2-day food record and analysed in FoodWorks. Complete data were available for 826 toddlers, of which 697 had plausible energy intakes. Descriptive statistics were used to identify iron intake and sources of iron, whilst logistic regression was used to identify associations between inadequate iron intake (< 4 mg [estimated average requirement – EAR]) and determinants (maternal age, education, country of birth, body mass index, socioeconomic position and parity; child gender, and primary milk feeding method at 12 months). Mean iron intake was 6.7 ± 3.3 mg per day, and 24.5% of toddlers had intakes below the EAR. Major sources of iron included infant and toddler formula and ready-to-eat breakfast cereals, whilst contribution from meat was low. One in four of the toddlers studied had iron intakes which put them at risk of ID. Toddlers whose primary source of 'milk' at 12 months was breast milk were more likely to have inadequate intakes than those fed formula. Further education and interventions to increase iron intake in early childhood are recommended.

Funding source: The Study of Mothers and Infants Life Events affecting oral health (SMILE) was funded by a NHMRC Project Grant (#1046219)

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USING THE COM-B FRAMEWORK TO DEVELOP A SOCIAL MEDIA INTERVENTION TO IMPROVE CALCIUM INTAKE IN YOUNG ADULTS: A QUALITATIVE STUDY USING FOCUS GROUPS

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Calcium intake has been associated with lowering risk of chronic diseases including stroke, heart disease and hypertension. Young adults have a higher requirement for calcium; however, intake remains suboptimal in more than 70% of young females and 40% of young males in Australia. Given that most of the peak bone mass is acquired by the age of 20, the low intakes are of concern. The aim of this study was to explore the enablers and barriers to consuming calcium-rich foods. Thirty-nine participants (10 males) were recruited over five focus groups (mean age 23 years, SD 2). All focus groups were transcribed and themes analysed using NVivo software. The findings were analysed using the COM-B framework. Capability was described as psychological (lack of knowledge on recommended serves, non-dairy sources, and long-term benefits other than bone health) and physical (lactose intolerance). Opportunity was split into physical (majority of respondents could access calcium-rich foods, with a few indicating price concerns); and social (Facebook was viewed as an acceptable platform to promote calcium intake). Motivation was reported as automatic (parental influence since childhood); and reflective (some respondents stated they would be inclined to increase their intake if they were more aware of the health consequences). Young adults suggested cooking videos as a relevant strategy to address knowledge gaps and to demonstrate how calcium-rich foods can be incorporated into their everyday diet. The gathered insights from this study will be used to develop a social media intervention addressing low calcium intakes in this population.

Funding source: No external funding was received

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Concurrent session – Oncology

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EFFECTS OF A LAXATION AND PROBIOTIC BOWEL PREPARATION REGIMEN: A RANDOMISED CONTROLLED TRIAL IN PATIENTS UNDERGOING PROSTATE RADIATION THERAPY

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Changes in dimensions of the rectum are known to affect the position of the prostate with implications for the accuracy of radiotherapy delivery. Current practice involves daily laxative use to empty the rectum for treatment. This study examined the effect of bulking and osmotic laxation regimens on reducing rectal gas in patients receiving radiotherapy for prostate cancer. A single blinded randomised controlled trial was conducted. Participants assigned to the intervention group (IG) were instructed to consume a bulking laxative and probiotic and the standard care group (SC) instructed to consume an osmotic laxative. Both groups followed a standard low gas diet. Rectal gas ratings were determined from cone-beam computed tomography (CBCT) scans. Dietary and laxative compliance, bowel habits, fibre and fluid intakes were determined from food diaries. Demographic characteristics were not significantly different between the two treatment arms. Participants were randomised into the IG (n = 8) and SC group (n = 9). Analysis of 433 CBCT scans indicate the odds of a higher rectal gas rating were significantly increased for the IG compared with the SC group (OR 3.2, 95% CI 1.77–5.78, $p < 0.001$). Average fibre intake was significantly higher in the IG ($p = 0.036$), but not a contributing factor to the higher rectal gas levels (OR 1.001, 95% CI 0.92–1.09). The osmotic laxative was more effective at achieving lower rectal gas levels than a bulking laxative with probiotic in this study. Larger studies are required to develop recommendations for bowel preparation during radiotherapy to the prostate.

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ALCOHOL CONSUMPTION, DRINKING PATTERNS AND CANCER INCIDENCE IN THE 45 AND UP STUDY

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The association of alcohol, and in particular pattern of drinking, with cancer incidence remains to be determined for a number of cancer types. We quantified these associations in the 45 and Up Study, a prospective cohort study in New South Wales (NSW). Cox proportional hazards were used to investigate associations between alcohol consumption and pattern of drinking with cancer incidence among 217,562 participants aged ≥ 45 years (2006-2009). New cases of cancer were ascertained from the NSW Cancer Registry to December 2010; median follow-up was 2.4 years. Heavy episodic drinking and low amount daily drinking patterns were compared to participants with neither of these patterns after adjusting for total alcohol consumption. Population attributable fractions, cumulative risks and numbers needed to prevent one cancer case were calculated. Significant trends of increasing hazard with increasing total alcohol consumption were found for cancers of the colorectum, colon, larynx and female breast, as well as mouth and pharynx, liver, and pancreas. Inverse associations were observed for thyroid cancer and non-Hodgkin lymphoma. Significantly increased hazard ratios were found for cancers of the mouth and pharynx, oesophagus, colon and kidney with heavy episodic drinking. The population attributable fractions obtained were similar to recently published estimates. It was estimated that 40 persons aged 45 years changing from consuming 21 drinks /week to 0 drinks /week would be needed to prevent one cancer case by age 75 years. This study reveals the effect of alcohol consumption and drinking pattern on cancer incidence in Australia.

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DOES A NEUTROPENIC DIET PREVENT ADVERSE OUTCOMES IN PATIENTS UNDERGOING CHEMOTHERAPY?

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A neutropenic diet (ND) is often used to prevent food-borne infections in patients with chemotherapy-induced neutropenia despite minimal evidence to support its use. This study aimed to compare clinical outcomes in patients who received either a ND or a liberalised diet

(LD) while undergoing chemotherapy. A retrospective audit of 152 patients admitted to Flinders Medical Centre from 2013 to 2017 was conducted. Patients were eligible if they were aged 18 years and above, received chemotherapy for the treatment of cancer and were neutropenic during admission. Demographic and clinical data were collected from medical records from the day of admission up to hospital discharge. 79 patients received ND while 73 patients received LD during their admission. The ND group had a higher proportion of patients with leukaemia (p = 0.005) and receiving high toxicity chemotherapy (p=0.004). Incidence of febrile neutropenia (p = 0.012), bacteraemia (p = 0.040), gram-negative bacterial infections (p = 0.024) and number of febrile days (p = 0.026) was higher in the ND group. There was no significant difference in weight change between groups (p = 0.882). Logistic regression showed ND was not independently associated with occurrence of febrile neutropenia (OR = 2.296, 95% CI: 0.981–5.375; p = 0.055) or infections (OR = 1.889, 95% CI: 0.991–3.598; p = 0.053). Sub-sample analysis of 20 pairs of patients matched on age, gender and diagnosis found no significant differences in clinical outcomes between groups. These results indicate that ND is unlikely to be beneficial in preventing adverse outcomes in chemotherapy patients. Further higher-level evidence is required to inform its use in institutions.

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INTERDISCIPLINARY PERCEPTIONS OF THE DIETITIAN'S ROLE IN DEHYDRATION MANAGEMENT FOR OUTPATIENTS WITH HEAD AND NECK CANCER: AN INTERNATIONAL COMPARISON

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Dehydration can result in hospitalisations and increased morbidity and mortality among outpatients with head and neck cancer (HNC). Current evidence-based practice nutrition guidelines do not emphasise dehydration management as a key dietetic role, despite the reported relationship between dietetic intervention and dehydration prevention. This study aimed to explore perceptions of staff from a range of disciplines on the dietitian's role for dehydration management of HNC outpatients. This international Grounded Theory study recruited staff who cared for HNC outpatients in 2 Australian and two United States cancer centres. Fieldwork was conducted over a one-month period at each cancer centre. Interviews in these settings were digitally recorded, transcribed verbatim and results were triangulated with field-notes. The study used inductive theoretical sampling and constant-comparison analysis methods. In total, 11 dietitians, 12 nurses, 16 radiation-oncologists and 6 speech-pathologists were interviewed and approximately 128 hours of clinical practice observation was completed. All staff recognised the important role of the dietitian in assessing dehydration. Six primary factors were identified that influenced whether dehydration management was considered a key dietetic role: dietetic autonomy; collaboration with nursing staff and doctors; interdisciplinary role clarity; professional experience; formal dehydration training; and scientific evidence. This study provided evidence that dietitians are an important member of HNC outpatient teams and that a focus on dehydration represents a potential area for scope of practice expansion. Future research should investigate the prevalence and diagnosis of dehydration in this clinical population, and explore enhanced dehydration education and training for dietitians working in this context.

Funding source: Australian Government Research Training Program Scholarship and the Illawarra Cancer Care Radiation Oncologist Staff-Specialist Trust Fund.

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THE MEANING OF FOOD AT THE END OF LIFE: THINK BIG: EXPANDING THE ROLE OF THE DIETITIAN IN PALLIATIVE CARE

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While life is not possible without food and nutrition, the role and meanings of food to terminal oncological palliative care patients and their carers has not yet been adequately reported. This study involved 19 hospitalised terminal oncology patients, 10 carers, seven medical officers, 14 nurses and four food service officers participating in phenomenologically informed focus groups or semi-structured interviews to determine the meaning of food at the end of life. The results of this study demonstrate that food was of high importance for all participant groups up to and including in the last week of life. The first meaning uncovered was that "food means life", here food held a primal meaning based on the rudimentary need for survival. Food was also used as a "demonstration of love" with food being a pathway that carers used to demonstrate their eternal affection for their loved one. The final meaning was that food was seen as a "social glue", bringing patients, carers, friends and relatives together to share a common experience. At the end of life, when patients are often no longer able to eat and drink significant quantities, the relationship between patients and carers is impacted as avenues for social interaction and demonstration of affection are compromised. This paper will discuss new, innovative and emerging roles of the dietitian in the palliative care team in view of the findings, where psychosocial needs require consideration alongside the commonly considered physiological ones.

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INVESTIGATION OF THE DIETARY RECOMMENDATIONS AND KEY NUTRITION RELATED SIDE EFFECTS FOR CHILDREN AND ADOLESCENCE WITH ALL BOTH DURING AND AFTER TREATMENT WITH THE DEVELOPMENT SPECIFIC DIETARY RESOURCES

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Acute lymphoblastic leukaemia (ALL) is the most common childhood cancer. Advances in treatment have resulted in a significant improvement in survival rates, now approximately 90% (Hunger *et al.*, 2012). These children may experience many treatment related side effects, during treatment and post treatment. There is growing evidence that ALL survivors are at risk of been overweight/obese and developing other chronic diseases. Patients undergoing cancer treatment have traditionally been given information around a high calorie diet which is aimed at those who need to gain weight. However, with this increasing body of evidence, these children are in need of diet specific resources that are targeted to their condition to assist and manage their side effects. A literature review was conducted using key MESH terms to identify the most prevalent side effects both during and post treatment and based on these results; resources using relevant and up to date guidelines were constructed. A total of 38 articles were found. The main nutrition related side effects during treatment were: dyslipidaemia, hyperglycaemia, pancreatitis and fatty liver. The main nutrition related side effects post treatments were: obesity, bone health, cardiovascular disease (CVD) and hypertension. Dyslipidaemia was the most prevalent side effect identified during treatment and obesity was the

most predominant side effect post treatment. Current oncology nutrition resources now are not relevant to this population and hence diet specific resources have been developed to manage and reduce the severity of the related side effects during and after treatment in ALL survivors.

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ACTIVATE – A NOVEL MULTIDISCIPLINARY APPROACH TO REDUCE CARDIOMETABOLIC RISK FACTORS OF PEOPLE WITH HIV IN A GROUP LIFESTYLE INTERVENTION

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As a result of advanced antiretroviral therapy, people living with human immunodeficiency virus (PLHIV) have longer life expectancies. However, PLHIV have an increased prevalence of chronic disease. An evaluation of a tailored group lifestyle intervention was conducted. ACTIVATE aimed to improve cardiometabolic risk factors of PLHIV within the South Eastern Sydney Local Health District. ACTIVATE consisted of forty-five non-gym group exercise sessions, fifteen self-management discussion groups, a cooking class and individualised dietetic interventions over 16 weeks, followed by a 3-month maintenance program. Anthropometric, biochemical, fitness, quality of life (QoL) and mental health data were collected at baseline, weeks 16 and 28. Twenty-five PLHIV enrolled, with 56% (n = 14) completing the program. Eleven with complete data (6 healthy weight, 5 overweight/obese) were included in data analysis. No significant differences were found for anthropometric and biochemical outcomes. Average weight and waist change in overweight/obese group was -3.95 kg (range: -0.8 to -11.4) and -4.75 (range: -11 to +0.5), at week 28. Unexpected findings were a 45% decrease in mean stress score (p = 0.054) and a 23% increase in QoL subscale (p = 0.046) at 16 weeks. ACTIVATE contributed many positive changes to the participants' health as well as providing opportunities to learn new skills and experience regular social interactions. While this study does not show significant improvement in biological outcome measures, it does show that a group lifestyle intervention including exercise and multidisciplinary support can significantly impact on QoL and psychological health, providing additional benefits to traditional diet and exercise alone.

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EFFICACY OF GINGER (ZINGIBER OFFICINALE) IN AMELIORATING CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING AND CHEMOTHERAPY-RELATED OUTCOMES: A SYSTEMATIC LITERATURE REVIEW UPDATE AND META-ANALYSIS

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Nausea affects upwards of 60% of chemotherapy patients. Ginger has long been used in traditional medicine for alleviating nausea and vomiting; however, its use as an adjuvant therapy in patients undergoing chemotherapy is under-researched. Therefore, a systematic literature review and meta-analysis was undertaken to evaluate the efficacy of ginger supplementation in the prevention and management of chemotherapy-induced nausea and vomiting. Five electronic databases were searched from database inception to October 2017. Intervention studies which administered ginger supplementation and a control (placebo or anti-emetic) to adults receiving chemotherapy were included, critically appraised using the Cochrane Risk of Bias tool, and pooled using meta-analysis. Seventeen papers were included. Ginger supplementation of any dose or duration had no effect on overall nausea incidence (OR: 0.80 [95% CI: 0.50–1.30] P = 0.37). There were trends towards improved nausea incidence for ginger supplementation of > 3-days (OR: 0.54 [95% CI: 0.23–1.23] P = 0.14; n = 5 studies; I^2 = 67%) and of doses > 1 g/day (OR: 0.56 [95% CI: 0.21–1.51] P = 0.25; n = 4 studies; I^2=67%). Ginger supplementation appeared to be more effective for acute nausea (OR:0.73 [95% CI: 0.50–1.06] P = 0.10; n = 4 studies; I^2 = 57%) than delayed nausea (OR:1.03 [95% I:0.76–1.39] P = 0.87; I^2 = 20%). Ginger administration for > 3-days significantly reduced overall vomiting incidence (OR: 0.58 [95% CI: 0.38–0.90] P = 0.01; n = 5 studies; I^2 = 74%) and delayed vomiting incidence (OR: 0.44 [95% CI: 0.25–0.78] P = 0.005; n = 3 studies; n = 239 participants; I^2 = 83%). Sensitivity analysis did not explain the substantial heterogeneity in the pooled outcomes. Ginger supplementation of > 1 g/day for > 3-days may improve chemotherapy-induced nausea and vomiting incidence; however, existing research remains inconsistent. Further research using strong designs, adequate sample sizes and standardized ginger products is warranted prior to routine clinical prescription.

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INNOVATION IN IMPLEMENTATION: A NEW MODEL OF NUTRITION CARE FOR PATIENTS WITH HEAD AND NECK CANCER IMPROVES OUTCOMES

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Malnutrition is prevalent in patients with head and neck cancer (HNC) impacting outcomes. Despite publication of nutrition care evidence-based guidelines (EBGs), evidence-practice gaps exist. This study aimed to implement and evaluate a patient-centred, best-practice dietetic model of care (MOC) through integration with the multidisciplinary team (MDT) and minimise the detrimental sequelae of malnutrition. A mixed methods, pre-post study design was used. Qualitative interviews with consumers (n = 11) and clinicians (n = 19) identified barriers and facilitators to change at individual, team and system levels. Medical record audit established baseline adherence to EBGs and clinical parameters prior to implementation in a prospective cohort. Focus groups with MDT provided feedback on the new MOC. Economic analysis determined system-level impact. Baseline clinical audit (n=98) and qualitative analysis revealed reactive nutrition care, lack of familiarity with EBGs and awareness of intensive nutrition care, and dietetic resource and infrastructure limitations. Post-implementation data (n=34)

demonstrated improved process, clinical and economic outcomes: pre-treatment dietitian assessment (20% to 97%, $p < 0.001$); use of validated nutrition assessment tool before (85% to 100%, $p = 0.018$), during (3% to 79%, $p < 0.001$) and after treatment (3% to 73%, $p < 0.001$). Patients receiving the new MOC were more likely to complete prescribed radiotherapy ($p = 0.041$) and systemic therapy (p=0.005). Differences in weight loss and body mass index were not significant. At a system-level, the new MOC avoided 3.92 unplanned admissions and related costs of $121,000 /annum. Focus groups confirmed clear support for continuing the new MOC. An evidence-based nutrition MOC can improve outcomes and may be transferrable to other clinical settings.

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Concurrent session – Medical Nutrition therapy

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NUTRITIONAL ADEQUACY AND DIET QUALITY OF PATIENTS WITH EOSINOPHILIC OESOPHAGITIS FOLLOWING A LOW CHEMICAL ELIMINATION DIET AND CHALLENGE PROTOCOL

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A shortcoming of any diet that involves exclusion of multiple foods is the risk of inadequate nutrient intake and potential nutritional deficiency. This study aimed to explore nutritional adequacy and dietary quality of patients with Eosinophilic Oesophagitis (EoE) at baseline, on a low chemical elimination diet and on their personalised diet (avoiding triggers identified through dietary challenges). Patients completed four-day weighed food records at baseline, on the elimination diet and on their personalised diet. Analysis (FoodWorks 8) allowed comparison of nutrient intake to Nutrient Reference Values (NRV). Diet quality was assessed using a validated dietary indices tool. Mann Whitney U tests compared nutrient intakes in individuals already restricting their diet and those not restricting at baseline. Dependent t-tests and Wilcoxon Signed rank tests examined differences in nutrient intake and diet quality scores before and on the elimination diet. At baseline, participants (n = 25) did not meet their fibre requirements. Patients already restricting their diets at baseline (n = 11) did not meet the NRV for calcium and had significantly lower calcium intake ($p = 0.018$). On the elimination diet, patients (n = 18) did not meet the NRV for Vitamin A, calcium or fibre (without supplements), however, total diet quality score increased ($p = 0.001$). Calcium intake was below the NRV on the personalised diet (without supplementation) similar to the Australian general population. Nutrition assessment, counselling and monitoring to identify dietary shortfalls and provide alternatives (including supplements) is essential to the dietary management of patients with EoE.

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HIDDEN IN PLAIN SIGHT: THE POTENTIAL COST OF UNRECOGNISED OBESITY PREVALENCE IN QUEENSLAND HOSPITALS

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While international data emphasises the cost of obesity on the broader healthcare sector, there is limited data to quantify the prevalence or cost of obesity within the acute care setting. This study aimed to identify the point prevalence of obesity amongst acute hospital inpatients and determine the proportion of these patients recognised as obese as part of the Australian Coding Standard for Additional Diagnoses (ARDRG). A cross-sectional study was undertaken in medical surgical and oncology wards of three tertiary Queensland hospitals (n = 1,327, 57% male, mean SD age 60.7 19.3 years). Patient weight and height were collected and body mass index (BMI) calculated, and subsequently matched with AR-DRG coding from health information management. Almost one-third of patients were obese (Class I BMI 30 -35 kg/m^2; n = 213, 16%; Class II BMI 35 - 40kg/m^2; n = 115, 9%, Class III BMI > 40 kg/m^2; n = 93, 7%), and almost another third were overweight (BMI 25 - 30 kg/m^2; n = 397, 30%), with the remainder of normal weight (BMI 18.5 - 25 kg/m^2; n = 426, 32%) or underweight (BMI < 18.5 kg/m^2; n = 83, 6%). There was no difference in proportions between the three sites. Only 18% (n = 228/1276) of obese patients (according to BMI) received an additional AR-DRG code for obesity, with substantial variation observed between sites. The prevalence of obesity (particularly Class III) in the acute setting was higher than rates seen in the general population. The criteria used to code obesity may need revision to ensure appropriate reimbursement for these patients. There is likely to be an increased cost incurred by these admissions, however this has not yet been quantified.

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THE EFFECT OF POOR PREOPERATIVE NUTRITIONAL STATUS ON POSTOPERATIVE OUTCOMES IN OESOPHAGECTOMY PATIENTS: A LITERATURE REVIEW

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Oesophageal cancer is the eighth most common cancer worldwide, with more than 1,300 people diagnosed in Australia alone each year. Surgical resection through oesophagectomy is the primary curative approach. Malnutrition is a common presenting symptom of oesophageal cancer, and is suggested to negatively impact postoperative outcomes. Body mass index (BMI) and weight loss are common measures of nutritional status and are widely used in current literature. This

review aimed to evaluate the effect of poor preoperative nutritional status, measured by preoperative BMI and weight loss, on postoperative outcomes in oesophaectomy patients. Electronic databases Medline, Scopus, Embase, Web of Science, CINAHL and Cochrane Library of Systematic Reviews were searched using defined search terms. Studies were included if they were published in English, involved adults who underwent oesophagectomy for treatment of oesophageal cancer and used either preoperative BMI or weight loss as indicators of nutritional status. From 4,275 studies retrieved, 22 cohort studies were included in the review. Outcomes investigated were postoperative complication rate, length of stay (LOS), long-term survival and mortality. Inconsistent results were reported for the relationship between BMI and weight loss and postoperative complication rate and long-term survival. Findings, however, identified preoperative BMI and weight loss as non-significant predictors of LOS and mortality. Due to inconsistent results and high risk of bias of included studies, firm conclusions could not be reached. Further research is required to understand the relationship between preoperative nutritional status and postoperative outcomes in oesophagectomy patients, through well-designed studies using more objective measures of nutritional status.

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EATING DISORDER MANAGEMENT IN A GENERAL HOSPITAL: A REVIEW OF STAFF'S KNOWLEDGE AND ATTITUDES

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Eating disorder (ED) patients are reputed as challenging to treat; evoking feelings of frustration, sadness and anxiety amongst clinical staff. These challenges may be heightened in non-mental health ward staff. This study aimed to assess the knowledge, confidence and perceptions of nurses and dietitians treating adult ED inpatients in non-mental health wards, and identify similarities and differences between the two professions. Eighty-one nurses and 21 dietitians completed a mixed methods questionnaire about their perceptions of working with this patient cohort. Categorical quantitative data were analysed using chi squared or fisher's exact tests. Qualitative data were thematically analysed using an inductive approach and independent parallel coding. Less than one third of nurses and dietitians felt confident speaking to ED patients. Only 27.2% of nurses and 47.6% of dietitians believed ED treatment was possible on a non-mental health ward. Dietitians were more likely than nurses to feel stressed (81% vs. 27.2% respectively, $p < 0.001$) and anxious (76.2% vs 27.2%, $p < 0.001$) in their role, despite feeling more supported (71.4% vs. 12.4%, $p < 0.001$). When asked to discuss specific challenges, five themes emerged; managing resistant behaviour, communication with the patients, the psychological aspects of the disorder, lack of staff experience and lack of time to monitor these patients on a general ward. These results add depth to the understanding of ED patient management and insight into the less researched perspectives of dietitians. Future training programs should be profession specific and target the knowledge and confidence of staff.

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A HIGHER ENERGY REFEEDING PROTOCOL DOES NOT INCREASE ADVERSE OUTCOMES IN ADULT PATIENTS WITH EATING DISORDERS

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Patients with eating disorders (EDs) are often considered a high-risk population to refeed. For refeeding syndrome (RFS) management, current recommendations advise using 'start low, go slow' refeeding methods (commencing at 4,000 kJ/day) in adult patients. In contrast, higher energy refeeding protocols (commencing at ≥ 6,000 kJ/day) are considered safe and effective in adolescent patients, resulting in faster weight gain and shorter lengths of stay. We aimed to compare the incidence of RFS and related outcomes in a low energy, orally refed group (LE) (4,000 kJ) of medically compromised, adult patients with EDs, with a similar group treated using a higher energy, nasogastric protocol (HE) (6,000 kJ). A retrospective pre-test – post-test study was used to examine differences in prevalence of electrolyte disturbances, hypoglycaemia, oedema, and RFS diagnoses, in patients admitted to hospital between 2010 and 2017. Patients were considered eligible provided they were medically admitted with a diagnosed ED. Chi-square, t-tests and ANOVAs were used to analyse findings. One hundred and nineteen eligible participants were identified (LE: n = 26, HE: n = 93). Descriptors were similar between groups (mean ± SD: 27 ± 9 years, 97% female, 84% with anorexia nervosa, $p > 0.05$). Participants refed using the LE protocol had higher incidence rates of hypoglycaemia (LE: 31% vs. HE: 8%, $p = 0.012$), with no differences in electrolyte disturbances (LE: 65% vs. HE: 35%, $p = 0.079$), oedema (LE: 8% vs. HE: 5%, $p = 0.722$) or diagnosed RFS (LE: 4% vs. HE: 1%, $p = 0.391$). A HE refeeding protocol appears safe to treat medically compromised, adult patients with EDs. Future research examining higher energy intakes initiating at 8,000 kJ/day, similar to those studied in adolescent patients, would be beneficial.

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CONSIDERATIONS FOR DESIGNING CARDIOPROTECTIVE LIFESTYLE INTERVENTIONS FOR LIVER TRANSPLANT RECIPIENTS

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Obesity and cardio-metabolic complications are common in liver transplant recipients (LTR) and Mediterranean diet (MedDIet) is proposed

as a protective dietary approach to lifestyle advice. The aim of this study is to characterise usual dietary pattern of LTR relative to MedDiet patterns and to identify key targets relevant for lifestyle intervention. The MedLIFE questionnaire, which captures diet (MedDiet score; MDS) and beneficial lifestyle factors (e.g. home food preparation, social interaction), was completed by LTR (>6months post-transplant). Predetermined intake cut offs of 13 key components of MedDiet such as high legumes, vegetables, olive oil, nuts and fish and low red meat were used to score responses as 1 (met requirements) or 0 (did not meet requirements) (score ranges 0 to 13; higher score indicates closer alignment with a traditional MedDiet). Enjoyment of food preparation was rated out of 10 (10 = highest level of enjoyment). 28 LTR (males 64%; mean age 50) completed the questionnaire. Mean MDS was 6 (range 4–9). Only 7% (2/28) LTR consumed adequate olive oil, 18% (5/28) adequate fish and 36% (10/28) adequate nut intake. 60% (17/28) LTR reported participating in evening meal preparation > 3 days per week with average enjoyment rating 5 out of 10. Of those preparing meals, 64% reported others assisting them < 3 days per week. Queensland LTR do not naturally follow a MedDiet pattern. Key components of MDS would be ideal targets to shift LTR to a cardio protective eating pattern. Strategies to increase social interaction and enjoyment around food preparation are needed.

Funding source: Princess Alexandra Hospital Research Foundation

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DIFFERENCES IN DIETARY PREFERENCES, PERSONALITY AND MENTAL HEALTH IN AUSTRALIAN ADULTS WITH AND WITHOUT FOOD ADDICTION

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Increased obesity rates, a changing food supply and the overconsumption of energy dense foods has led to an increase in research into addictive eating behaviours. This study investigates food addiction in a sample of Australian adults using the Yale Food Addiction Survey (YFAS) 2.0 determines and how it is associated with dietary intake, personality traits and mental health issues. Australian adults were invited to complete an online survey that collected information including: dietary intake, depression, anxiety, stress and personality dimensions including impulsivity, sensation seeking, hopelessness and anxiety sensitivity. A total of 1,344 individuals were recruited 75.7% female, mean ± SD: age 39.8 ± 13.1 years (range 18–91 years) and body mass index 27.7 ± 9.5. Food addiction was identified in 22.2% of participants using the YFAS 2.0 tool, which classified the severity of food addiction as "mild" in 0.7% of cases, "moderate" in 2.6% and "severe" in 18.9% of cases. Predictors of severe food addiction were female gender (odds ratio (OR) 3.65 95% CI 1.86–7.11) and higher levels of soft drink OR 1.36 (1.07–1.72), confectionary consumption and anxiety sensitivity 1.16 (1.07–1.26). Individuals with "severe" (OR 13.2, 5.8–29.8) or extremely severe depressive symptoms (OR 15.6, range 7.1–34.3) had the highest odds of having severe food addiction. The only variable that reduced the odds of having severe food addiction was vegetable intake. The current study highlights that addictive food behaviours are associated with a complex pattern of poor dietary choices and a clustering with mental health issues, particularly depression.

Funding source: University of Newcastle

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IS A TELEHEALTH-TO-HOME GROUP LIFESTYLE INTERVENTION FEASIBLE AND SAFE FOR LIVER TRANSPLANT SERVICES?

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Obesity and cardio-metabolic complications present challenges to post-transplant care. Innovative telehealth service can offer equity of access to specialist state-wide post-transplant care. The RCT (vs usual care) study aimed to assess feasibility of a 12 week cardio-protective lifestyle initiative for liver transplant recipients via telehealth-to-home and to identify technical and patient-related considerations when establishing a group based video telehealth service. Feasibility assessed by recruitment rate, percentage of video sessions completed, adequacy of technology, attrition and safety. Staggered intervention groups commenced September 2017 and complete by March 2018. Recruitment rate was 26% (n=35 of 131 eligible), age 21 – 70 years and 71% males, with 14% (n = 5) living in regional areas. Reasons for not participating included too busy, already eating/exercising well or too unwell. Attrition is currently 25% (9/36). Of the 150 sessions completed to date, 93.8% of patients rated confidence with home technology ≥ 8/10. Staff reported technology was adequate 84% of the time. Audio/visual drop outs (with spontaneous reconnection) were experienced 2 in every 10 sessions (20% participants affected). Completion of sessions is currently 84% for nutrition and 70% for exercise. Five participants (14%) required clearance by a transplant specialist to participate in exercise. Whilst ongoing safety screening was a significant clinical consideration, there have been no study-related adverse events. Group telehealth-to-home is a feasible option for equitable allied health care for a state-wide transplant service. Considerations include the need for technical support related to orientation to and adequacy of internet connections and clinical support for risk assessment of complex patients.

Funding source: Princess Alexandra Hospital Research Support Scheme

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THE COMPARATIVE VALIDITY OF THE 'MYFITNESSPAL' APP IN DIETARY ASSESSMENT

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Collection of dietary data for nutrition assessment is time-consuming. The most popular nutrition computer application (App), MyFitnessPal, could reduce burden in assessing diets as it automatically calculates energy and nutrient values from client entry of foods. This study aimed to determine the comparative validity of energy and macronutrient intake outputs from MyFitnessPal against 24-hour recalls. Participants naïve to MyFitnessPal recorded their intake across four consecutive days. During this period, two researcher-administered 24-hour recalls

were collected using the Automated Multiple-Pass Method. Differences in reported energy and macronutrient intakes between the two methods were analysed using paired t-tests, and agreement evaluated with Bland-Altman plots. Foods omitted from MyFitnessPal records and app usability responses were assessed descriptively. Compared to two-day 24-hour recalls, four-day MyFitnessPal records (n = 43) significantly underestimated macronutrient intake and mean energy intake by 1,863 kJ (SD = 2952 kJ, p = 0.0002). Bland-Altman plots revealed wide limits of agreement between methods, although without obvious bias. Overall, 19% of food items were omitted from MyFitnessPal, especially energy-dense, nutrient-poor foods. MyFitnessPal was rated easy to use by 35 of the 43 participants, however, only eight reported they would continue using it. Caution is indicated for standalone use of MyFitnessPal in dietary assessment. MyFitnessPal's primarily US-based database makes client matching of foods to the Australian food supply difficult. Furthermore, social desirability bias with dietary self-report and forgetting to record intake, particularly of snacks, are factors compromising the legitimacy of MyFitnessPal. Therefore, dietitians' expertise in assessing diets, verifying records and probing for omitted foods remains crucial, despite the popularity of nutrition apps.

Funding source: JC is a PhD student at The University of Sydney, funded by the Australian Government Research Training Program scholarship, but declares no personal or financial conflicts of interest. WB, MB and CYKN declare no conflicts of interest. MAF has developed food and nutrition-based Apps for research purposes. The authors have received no remuneration from the commercial app company and nor has that company been involved in this study.

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RANDOMISATION TO 6-MONTH MEDITERRANEAN DIET COMPARED WITH A LOW-FAT DIET LEADS TO IMPROVEMENT IN DIETARY INFLAMMATORY INDEX SCORES IN PATIENTS WITH CORONARY HEART DISEASE: THE AUSMED HEART TRIAL

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A higher Dietary Inflammatory Index (DII) score is associated with inflammation and incidence of coronary heart disease (CHD). It has not previously been demonstrated whether Mediterranean diet (MedDiet) intervention reduces DII scores. In this study, we assessed dietary data from a randomised controlled trial comparing 6-month MedDiet versus low-fat diet intervention, in Australian CHD patients. We aimed to determine the DII scores of the prescribed diets' model meal plans, and if dietary intervention led to lower DII scores. DII scores were calculated from 7-day food diaries analysed in FoodWorks 8. The MedDiet meal plan had a markedly lower DII score than the low-fat diet meal plan (-4.55 vs. -0.33, respectively). In 56 participants who completed the trial (84% male, mean ± SD age 62 ± 9 years), the MedDiet group significantly reduced DII scores at 6-months (n = 27; -0.40 ± 3.14 to -1.74±2.81, p = 0.008) and the low-fat diet group did not change (n = 29; -0.17 ± 2.27 to 0.05 ± 1.89, p = 0.65). Moreover, there was a significant post-intervention difference in DII score between groups (compared to MedDiet, low-fat increased by 1.65 DII points; p = 0.004, 95% CI 0.56, 2.82). For mean daily intake of nutrient/food parameters of the DII at 6-months, there was a significantly higher intake of total fat, monounsaturated and omega-6 polyunsaturated fatty acids, alcohol, vitamin E, flavones, flavonols and garlic in the MedDiet compared to low-fat diet group. These findings demonstrated that MedDiet intervention significantly reduced DII scores compared to low-fat diet intervention in high-risk CHD patients. This improvement in DII scores could lead to a reduced risk of cardiovascular complications.

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HIGHER PROTEIN INTAKES ARE ASSOCIATED WITH LOWER ENERGY INTAKES: EVIDENCE FROM THREE NATIONAL NUTRITION SURVEYS; 1983, 1995 AND 2012

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The protein leverage hypothesis proposes that as dietary protein is tightly regulated, if protein requirements have not been met, more food will be consumed to obtain sufficient protein, even if energy requirements are exceeded. As such, diets with lower protein-density may contribute to excess energy intake, weight gain and potentially the obesity epidemic. This analysis assessed dietary protein-density of Australians aged 25–64 years at three time-points and determined if higher protein-density is associated with lower energy intakes. Cross-sectional, national nutrition surveys from 1983, 1995 and 2011/12 (total n = 16,118) assessed diet with 24-hour recalls. Low-energy reporters (energy intake: basal metabolic rate ratio < 0.87) were excluded. Multiple regression was used to assess energy intake (kJ) with increasing protein-density (g/1000 kJ), adjusted for age, sex and survey. Protein contributed 17.2%, 16.6% and 17.9% of energy in 1983, 1995 and 2011/12 respectively (P < 0.001). The protein-density of the population was significantly different between each survey and decreased from 10.3 (g/1,000 kJ) in 1983 to 9.9 (g/1,000 kJ) in 1995 and increased to 10.7 (g/1,000 kJ) in 2012 (P < 0.001). Protein-density predicted energy intake and for each gram of protein per 1,000 kJ, energy intake decreased by 162 kJ (β = -162.03, P < 0.001). As such, protein-density may be important for preventing weight-gain. Dilution of protein intake may have contributed to increased obesity prevalence early in the obesity epidemic, however, these results imply that other mechanisms have been important in the obesity epidemic between the 1995 and 2012. Continued dietary surveillance is required to assist in confirming these results.

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THE IMPACT OF AN INDIVIDUALISED MEDITERRANEAN-STYLE DIETARY PATTERN ON CANCER-RELATED FATIGUE AND QUALITY OF LIFE IN MEN WITH PROSTATE CANCER TREATED WITH ANDROGEN DEPRIVATION THERAPY: A PILOT STUDY

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Androgen deprivation therapy (ADT) is an effective mainstream treatment for prostate cancer, however results in several treatment-related side effects. An individualised Mediterranean-style dietary pattern (MED-diet) offers a plausible mechanism to mitigate several ADT-related side effects, including cancer-related fatigue, quality of life and altered body mass and composition. Men receiving ADT for ≥3 months were randomly allocated (1:1) to usual care or MED-diet delivered fortnightly by an Accredited Practising Dietitian (APD). Fatigue [Functional Assessment of Cancer Therapy (FACT)-Fatigue scale (FACT-F)], quality of life [FACT-General (FACT-G)] and body composition (fat mass, lean mass and body mass) were measured at baseline and after 12 weeks. Twenty-three participants (mean ± SD 65.9 ± 7.8 years; body mass index: 29.6 ± 2.7 kg/m^2; ADT duration: 33.8 ± 35.6 months) completed this RCT pilot study. Linear mixed modelling revealed significantly greater improvements with the MED-diet in FACT-F [+5.8 (0.5, 11.0); p = 0.025], FACT-G [+9.2 (2.7, 15.8); p = 0.006] and total body weight [-2.9 (-4.7, -1.2) kg; p = 0.001] compared to usual care from baseline to 12 weeks. The Med-diet showed no differences in fat mass (-1.5 [-3.4, 0.2] kg; p = 0.096) and lean mass (-1.3 [-2.7, -0.0] kg; p = 0.060) compared to the usual care group at 12 weeks. Clinically meaningful improvements in FACT-F [+5.8 (0.5, 11.0); p = 0.025) and FACT-G [+7.4 (0.2, 14.5); p = 0.038), and significant reductions in fat mass [-1.7 (-3.3, -0.1) kg; p = 0.032], were seen only in the Med-diet from baseline to 12-weeks. The MED-diet appears to mitigate the ADT-related side effects of fatigue, quality of life and altered body mass compared to usual care.

Funding source: This study is funded by a Prostate Cancer Care Grant from Sanofi Aventis, through the Clinical Oncological Society of Australia.

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Concurrent session – Pecha Kucha papers

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WHAT IS HEALTHY EATING? A QUALITATIVE EXPLORATION INTO THE DRIVERS OF ADULT FOOD CHOICE

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How individuals perceive and define healthy eating is an important influencer of food choice and behaviour. The question 'what is healthy eating?' continues to be surrounded by confusion, considering the plethora of confounding nutrition messages available 24/7. These nutrition messages are often influenced by non-evidenced based information and fad diets. The aim of this research was to explore the interpretations and influencers of healthy food choice from the views and perspectives of adults with obesity (body mass index >30 kg/m^2). A total of 23 semi-structured face-to-face or telephone interviews were conducted from December 2016- February 2017. Interviews were audio-recorded, transcribed verbatim and thematically analysed using a latent approach. Four main themes emerged from the data: (1) Healthy food choices are important, but not a first priority; (2) Fad diets are part of the human experience; (3) Nutrition information is known, but not applied; and (4) Social media (Facebook, Instagram and Blogs) inspires and connects us to healthy eating information. Findings from this study indicate definitions and perceptions of 'what is a healthy food choice?' are largely influenced by conflicting definitions associated with various fad diets that individuals are exposed to. Considering that nutrition information is now more readily accessible on social media, further investigation into how fad diets frame healthy food choice messages on this platform are needed. By doing so, a lesson could be learnt for future dietitians to more successfully compete with fad diets when disseminating evidenced based healthy eating information to adults.

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STAFF ATTITUDES AND PRACTICES TO SUPPORT HEALTHY PREGNANCY WEIGHT GAIN FOLLOWING THE IMPLEMENTATION OF SERVICE-WIDE EDUCATION AND ROUTINE WEIGHT TRACKING

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Evidence suggests monitoring gestational weight gain (GWG) can reduce excess weight in pregnancy, and is recommended as part of routine antenatal care for all women in clinical practice guidelines. This study aimed to evaluate the implementation of routine weight monitoring using a pregnancy weight gain chart (PWGC), and assess staff attitudes and practices around its use; following service-wide training and education of antenatal healthcare workers at a quaternary teaching hospital in Queensland. A patient survey and PWGC audit was conducted of antenatal women at 36 weeks gestation, and a cross-sectional survey was disseminated to antenatal healthcare providers at the facility. Of the 291 patients surveyed, 68% reported being given a PWGC. Of the audited PWGCs (n = 258), 54% had less than three weights recorded, 36% had errors and 3% were unused. Of the 42 staff were surveyed (predominately midwives), all (100%) were aware of the PWGC, 63% reported they used it to track and monitor GWG regularly, and 26% identified it as the patients' responsibility only to complete the PWGC. Seventy-seven percent of staff reported they needed more training in counselling pregnant women, and identified inaccessibility to scales and insufficient time as barriers to weighing and conversing with patients. These findings suggest a current gap in perceived responsibility for monitoring GWG and using the PWGC, highlighting the need to reinforce shared ownership between women and antenatal healthcare workers. Additional resources, training on correct PWGC use and patient counselling, and workforce engagement are also needed to overcome barriers to support healthy GWG.

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INDIGENOUS ADOLESCENTS' DISCRETIONARY INTAKE IS INFLUENCED BY BODY IMAGE PERCEPTION, DIETING AND GEOGRAPHICAL LOCATION

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Indigenous Australians have a high burden of disease and poor diets. Perception of overweight is common in adolescents and may have negative associations with diet and bodyweight. We examined adolescents' discretionary intake and its association with demographic, geographic, anthropometric and body image variables. Data from the 2012–13 National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey were used (n = 588, 12–18 years). Discretionary foods and beverages (DF) were based on the Australian Dietary Guidelines. Waist circumference to height ratio defined risk of metabolic complications. Body image, dieting, remoteness, and DF intake were analysed. Prevalence of being at increased risk of metabolic complications was similar among adolescents from urban and remote areas and higher among boys (43%) than girls (28%). More urban adolescents perceived themselves overweight (28%) than remote (7%), but there was no difference by gender. All boys and remote adolescents (100%) who perceived themselves overweight were at risk of metabolic complications compared to 59% of girls and 85% of urban adolescents. Dieting was rare (7%), but was higher among girls who perceived themselves overweight (55%) than boys (18%) and DF contributed less among girls that perceived themselves overweight (27%) than boys (56%). DF contributed more to total energy among urban (42%) than remote (34%) adolescents. More boys than girls had increased risk of metabolic complications, but more girls adjusted their diet and DF intake. Overweight and DF contribution were higher among urban adolescents. More investigation could highlight opportunities to reduce DF intake and address bodyweight and body image issues.

Funding source: Nestlé Australia

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COMPARISON OF NUTRIENT PROFILING SCHEMES TO REGULATE FOOD MARKETING TO CHILDREN IN AUSTRALIA

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Regulation of food marketing to children is seen globally as part of a comprehensive package of policies to promote healthier eating and prevent obesity. Nutrient profiling is commonly used to categorise foods according to their nutrient levels (both beneficial and deleterious). Profiling can determine foods that should be restricted within a food marketing to children policy. The Australian government has used two nutrient profiling systems to classify healthy foods for different purposes. Food Standards Australia New Zealand developed the Nutrient Profiling Scoring Criterion to support the Nutrition, Health and Related Claims Standard. The Health Star Rating system was developed after collaboration with industry, consumer and public health groups as a voluntary front-of-pack labelling system for packaged food products. However, there is no government-endorsed criteria in Australia for determining food appropriate to market to children. The two Australian food industry self-regulatory initiatives that address food and beverage advertising to children include nutrition criteria to determine healthier dietary choices. The World Health Organisation (WHO) Western Pacific region has developed a nutrient profile model for use by Member States to restrict marketing of unhealthy foods to children. This study aimed to investigate and compare the WHO model of nutrient profiling to current Australian models and current industry definitions used to determine the "healthiness" of food suitable to market to children. Overall, the WHO nutrient profile model provides a more comprehensive model aligned with the Australian Dietary Guidelines. To make it most applicable additional Australian-specific food examples could be added.

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GO4FUN – 1000 FAMILIES AND 1000 PROGRAMS

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Approximately one in five children in New South Wales (NSW) are considered overweight or obese. Achieving the NSW Premier's priority of reducing childhood obesity prevalence by 5% by 2025 will result in 62,000 more children being a healthy weight. To meet this goal NSW is delivering the Go4Fun program and a range of obesity prevention strategies. Go4Fun is an innovative, free, evidence-based, community weight management program for children aged 7–13 years and their families. It is delivered at scale across NSW. The program involves healthy eating, games-based physical activity and behaviour change sessions that are delivered by health professionals once per week, over 10 weeks. Go4Fun has successfully reached over 10,000 families since 2011, who have participated in over 1,000 programs. On average, children achieve clinically and statistically significant changes in health and weight-related outcomes. Body mass index decreases by 0.5 kg/m^2 and recovery heart rate by 4.2 beats/minute. There is an increase in the number of days children meet the National Physical Activity Guidelines, and average daily sedentary time decreases. Positive nutrition related outcomes include improved intake of fruit and vegetables, as well as reductions in sweet snack food, salty snack food, takeaway consumption, confectionary and sugar sweetened beverages. The frequency of children eating evening meals in front of the television is lessened and children's self-esteem tends to increase by the completion of the program.

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OUR KIDS, OUR CALL: A DIGITAL-BASED FOOD MARKETING CAMPAIGN TO GAIN COMMUNITY SUPPORT AND INFLUENCE POLICY CHANGE

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We live in an obesogenic environment where the majority of foods advertised are energy-dense and nutrient poor. Children are particularly vulnerable to marketing and lack the capacity to understand advertisers' motives. Food marketing has been shown to influence children's food preferences, encourage purchase requests and ultimately influence food consumption. Reducing children's exposure to unhealthy food marketing has been recommended by both the World Cancer Research Fund and the World Health Organisation as a cost-effective wide-reaching obesity prevention strategy. There is limited government regulation of food marketing to children in Australia. The food industry developed their own voluntary regulation system, however has failed to reduce the amount of unhealthy food marketing since inception. Community support and building momentum plays an important part in influencing policy change. The 3-year 'Our Kids, Our Call' campaign has been developed to increase awareness of the extent of junk food marketing, how it influences children and undermines parent's ability to help

children make healthier choices and ultimately to build community support for stronger food marketing regulations. 'Our Kids, Our Call' is digitally-based and launched in September 2017 with a 6-week social media campaign on Facebook. Community support is also gained offline through Cancer Council New South Wales' model to engage, mobilise and organise community members to influence public policy about cancer. This paper will compare methods of recruitment and present evaluation results. Integrating a bottom-up strategy to increase popular demand for policy change with the traditional top-down approach will assist progress towards a government response to policy action.

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LIFESTYLE INTERVENTION STRATEGIES THAT TARGET WEIGHT OUTCOMES IN PEOPLE WITH PSYCHOSIS; A SYSTEMATIC REVIEW AND META-ANALYSIS

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Lifestyle interventions in people psychosis are often used to treat weight gain. The aim of this study was to systematically review the efficacy of different lifestyle intervention strategies on weight outcomes in people with psychosis. Inclusion criteria included randomised controlled studies that delivered lifestyle interventions with weight outcomes (weight, body mass index, waist circumference and waist-to-hip ratio) as a primary finding in community-dwelling adults with a diagnosed psychotic disorder. Studies published in English from the Cochrane Library, MEDLINE/PREMEDLINE, EMBASE, CINAHL, Scopus, and PsycINFO were included. After screening, 29 articles all with lifestyle interventions providing combined nutrition and/or physical activity components were reviewed. Delivery strategies included education, motivational interviewing, cognitive behaviour therapy and psychoeducation. In addition, some studies (n = 19) personalised the intervention through goal setting and provided regular review of progress. Meta-analyses results found that personalisation of both the nutrition and physical activity components of the interventions (n=4) resulted in a mean weight loss of -4.12 kg [95% CI (-7.77, -2.76)] $p < 0.000$). Studies (n = 8) that did not provide personalisation for both nutrition and physical activity components did not achieve statistically significant weight loss -0.24 kg [95% CI (-3.37, 2.64)] $p < 0.000$). Individual studies in this category that reported statistically significant between-group differences ($p < 0.05$) in weight outcomes tended to have additional intervention components such as financial incentives (n = 1) or psychotherapy (n = 1) which may have positively impacted outcomes. Lifestyle interventions offering nutrition and physical activity components for people with psychosis should support education offered through goal setting and regular review to attain significant weight loss results.

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ALLERGEN MANAGEMENT FOR FOODSERVICE – DEVELOPMENT OF A BEST PRACTICE GUIDELINE

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A review of allergen management in Queensland Health facilities in 2014/15 identified at least 50% did not have an Allergen Management process in place and that 40% had not assessed their menus for allergens or nutritional adequacy in more than two years. The majority of these sites were rural or regional facilities with less than 100 beds. The same survey identified that over 90% of these facilities had access to a dietitian, but only 30% had a dietitian allocated either full or part-time. The remaining 70% had a dietitian visit the site either weekly, fortnightly (25%) or monthly (33%). To address this risk, Statewide Foodservices implemented a number of strategies to assist both rural dietitians and foodservices to manage food allergens safely. A Standard Recipe Tool and Menu Assessment spreadsheet was developed and populated with the current contracted prepared meals, soups, desserts and mid-meals for Queensland Health. These tools provided a means for sites to document recipes including nutritional analyses and allergens and then paste them into the menu assessment tool. An evidence based best practice guideline for allergen management in foodservices was also developed, with input from internal and external experts. This guideline is being published on the National Allergy Strategy Web Page and implementation across Queensland Health facilities is being supported by development of templates, posters and sample procedures and work place instructions. Evaluation of the strategy's success is planned late 2018, with follow up surveys and uptake and use of supporting tools.

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DIETARY ADVICE OBTAINMENT IN IBD PATIENTS – WHO DO THEY TRUST?

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Food avoidance in Inflammatory Bowel Disease (IBD) is common due to gastrointestinal symptoms related to the disease. Patients often seek dietary advice to manage these symptoms from alternative health practitioners and online resources, which may provide conflicting or misinformed advice. The aim of this study was to describe the source and confidence of dietary information accessed by IBD outpatients. A prospective cross-sectional study of outpatients attending clinics with a diagnosis of IBD was conducted over a 12-week period. Participant characteristics and IBD activity (active or remission) was obtained from consenting participants' medical records. A structured interview determined previous dietary advice, source (dietitian, gastroenterologist, GP, internet), and confidence (1 to 5-scale, with 5 being very confident). Confidence rating was compared using ANOVA, with post-hoc Tukey test. Of 117 participants (mean age 44y, 50% male, Crohn's 43%, current active disease 31%), 90% (n = 105) reported avoiding food groups due to IBD symptoms. Participants report receiving advice from dietitians (55%), gastroenterologists (10%), GPs (7%), and internet (55%), Confidence in advice from gastroenterologists was higher than dietitians ($p = 0.043$) or internet ($p = 0.049$); an effect observed only in patients in remission. 83% of patients reported wanting further dietary guidance, particularly advice about evidence-based strategies to manage symptoms. People with IBD obtain dietary advice from a range of sources, with highest confidence in advice from gastroenterologists, not dietitians. This low confidence in dietetic advice highlights the need to improve the profile of dietitians in managing IBD and increase the evidence-base on which to guide practice.

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BREASTFEEDING DURATION AND REASONS FOR CESSATION IN AN AUSTRALIAN LONGITUDINAL COHORT

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Despite recognition as the optimal method of infant feeding, breastfeeding durations by Australian mothers are not consistent with guidelines. There are several sociodemographic factors known to influence breastfeeding duration, however, the reasons for Australian women's breastfeeding cessation are reported less frequently. Additionally, geographic location is rarely investigated as a cofactor in representative samples of Australian women. Using mixed methods analyses and a sample of 1,835 women from the 1973–78 cohort of the Australian Longitudinal Study on Women's Health, research was conducted to i) determine the impact of geographic location and ii) understand the mother's perspective of breastfeeding cessation. Multiple linear regression analysis was used to determine impact of geographic location, while Braun and Clarke's approach to thematic analysis was employed to determine women's reasons for cessation and problems experienced while breastfeeding. Quantitative findings add to existing evidence that Australian women do not breastfeed according to guidelines. Additionally, analysis revealed women in small regional towns were likely to breastfeed for two months longer, compared to those in major cities (coefficient 2.014, 95% CI [0.859, 3.169], $p = 0.001$). Qualitative findings revealed most women experienced at least one barrier to breastfeeding. Themes included; *feeding challenges, mother's choices and beliefs, readiness of the child, external reasons beyond the mother's control, difficulties that resolved and variable experiences of support*. Individualised strategies are likely to be necessary to support Australian women, as they experience a multitude of problems while breastfeeding.

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DIET QUALITY IN PEOPLE WITH CHRONIC LOWER LIMB WOUNDS

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Poor nutrition is widely considered to contribute to non-healing in people with chronic wounds. An analysis of diet quality of a convenience sample of 56 community dwelling adults with wounds below the knee persisting for ≥ 4 weeks was conducted. One off, face-to-face data collection interviews including a diet history, malnutrition assessment (Subjective Global Assessment – SGA) and anthropometric measures, were conducted in addition to a health and demographic questionnaire and review of medical records. Diet histories were analysed using FoodWorks 8. The Healthy Eating Index for Australian adults (HEIFA), was used to assess diet quality. Higher HEIFA scores (maximum 100) represent greater compliance with the Australian Dietary Guidelines. Mean HEIFA score for the study population was 61.5 (SD ± 13.9) ranging from 28.5–98.34. Participants taking dietary supplements of any kind had higher median score (62.7 range 28.5–83.8) than those not taking supplements (52.8 range 28.5–83.8) $p = 0.015$. Women (n = 21) had a higher mean score (64.2 SD 15.0) than men (n = 35) (59.9 SD 13.1) but this did not reach statistical significance. There was no statistically significant difference based on any health or demographic variables (age, living arrangement, polypharmacy or ≥ 3 health conditions), nutrition (SGA, body mass index) or wound variables (infection, recurrence, total wounds, duration of current wound, time since development of first chronic wound) or health related quality of life. This is the first study to describe diet quality in a community dwelling population with chronic wounds. Diet quality showed considerable variation but did not demonstrate any relationship with wound, demographic, health or nutrition variables.

Funding source: Wound Management Innovation CRC

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ENGAGING PATIENTS AND STAFF TO DETERMINE FACILITATORS AND BARRIERS TO DINING ROOM ATTENDANCE IN A REHABILITATION WARD

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Nutrition is an important factor in patient's rehabilitation. Traditional bedside delivery of meals does not encourage social interaction nor facilitate the normalization of meals for transition post discharge from the hospital environment. Communal dining and mealtime assistance has been shown to improve rehabilitation and dietary intake. This project aims to investigate the barriers and facilitators to dining room attendance prior to implementing a decentralised point of service foodservice system. A mealtime audit of 48 patients across 6 mealtimes was completed. Patients were engaged via satisfaction surveys and 15 targeted individual interviews. Twenty-two staff from Nursing, Medical and Allied Health were interviewed during 3 focus groups. 27% of patients were observed to take their meals in the dining room with the remainder of patients eating in their rooms, either in bed or at the bedside. Patients indicated moderate satisfaction with mealtimes, level of assistance and physical environment. The majority of patients interviewed expressed a desire to attend the dining room for meals. They highlighted social interaction and greater independence as motivation to attend. In contrast a small number of patients would rather eat alone or have the choice to attend. Staff felt the physical environment and lack of defined expectations negatively impacted dining room attendance. It is clear that while patients are currently eating in their rooms they would prefer to eat in a centralised dining room. Improving dining room aesthetics and ensuring staff outline the benefits and expectations will facilitate dining room attendance and improve patient experience.

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Concurrent session – Diabetes

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GESTATIONAL DIABETES CARE AT A LARGE MELBOURNE METROPOLITAN HOSPITAL: ASSESSING THE IMPACT OF CURRENT CARE AND DIETETIC MANAGEMENT

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The growing prevalence of gestational diabetes mellitus (GDM) has led to a shortfall between increased demand and capacity of dietitians to deliver GDM-related services. This study identified patterns of dietetic usage by adult women diagnosed with GDM at The Women's Hospital, Melbourne and assessed associations of GDM-care with obstetric and neonatal health outcomes. Data were retrieved from patient management systems and 1254 women with GDM, who delivered at The Women's Hospital between 1 July 2015 and 31 May 2017 were included in analysis. Adjusted logistic regression was used to assess associations between GDM-care and a range of obstetric and neonatal health outcomes, and between dietetic usage and health outcomes. Adjusted linear regression was used to assess associations between GDM-care and dietetic usage. Women requiring pharmacotherapy were more likely to experience obstetric complications (OR 3.22, CI 2.30–4.52, $p < 0.001$). Women with an early GDM diagnosis (< 18 weeks gestation) and those requiring pharmacotherapy had greater dietetic service usage compared to women who were diagnosed later (β-coefficient (95% CI) = 0.25(0.71–1.18), $p < 0.001$) or managed through diet alone ((β-coefficient (95% CI) = 0.06 (-0.01–0.23), $p = 0.030$). Dietetic service users were less likely to experience neonatal complications compared to non-dietetic service users (OR 0.53, CI 0.37–0.78, $p = 0.001$). Early GDM diagnosis and pharmacotherapy use may be an indicator of greater dietetic service usage in women with GDM. Dietetic provision is important for optimising obstetric and neonatal outcomes in women with GDM. These results provide a basis for investigation into the optimal level of dietetic usage in women with GDM.

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WHEN YOU CAN'T SEE EVERYONE: A RISK ASSESSMENT TRIAGE TOOL FOR INPATIENT DIABETES REFERRALS

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Prioritising diabetes referrals for dietetic intervention in an acute inpatient setting can be challenging due to competing demands. In 2013, a triage tool was developed by the Dietetics Department and Diabetes Centre of a tertiary hospital in New South Wales for use by Dietitians and / or Diabetes Educators. The tool incorporates risk factors identified from existing literature and expert consensus across multiple hospitals. Each risk factor is assigned a score reflecting severity of acute risk. Patients are assigned Dietetic services based on the aggregate of their risk factor scores. For example, a patient commencing basal bolus insulin will score more highly than someone commencing metformin. Higher risk patients are prioritised for urgent dietetic intervention; whereas lower risk patients are offered outpatient appointments or community-based services. All score combinations were assessed for appropriate prioritisation by Senior Diabetes Dietitians. Applying the tool typically takes less than 30 seconds per patient. Dietetic and Diabetes Educator inpatient referrals were audited for two months pre (n = 61) and post (n = 59) implementation of the tool in 2013. To assess sustainability, a subsequent two-month audit was conducted in 2017 (n = 61). The proportion of high risk patients receiving dietetic intervention within target timeframes increased from 69% prior to tool implementation, to 93% post initial implementation. This improvement was not as pronounced when the audit was repeated four years later (73%). In conclusion, the triage tool facilitates allocation of dietetic services to inpatients with diabetes, consistent with their level of acute risk. Ongoing tool application and monitoring is needed to ensure sustainability.

Funding source: Liverpool Hospital

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REDUCING DIETARY CARBOHYDRATE FOR DIABETES MANAGEMENT – A CLINICAL PRACTICE CASE SERIES

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The evidence base for reducing dietary carbohydrate in the management of type 1 and type 2 diabetes is small but interesting, and growing rapidly, particularly after the recent endorsement of lower-carbohydrate diets for the general population by the Commonwealth Scientific and Industrial Research Organisation (CSIRO). Indeed, patients are increasingly approaching dietitians requesting advice on reducing dietary carbohydrate to reach diabetes management and other health goals. The strong consumer trend towards lower carbohydrate diets puts dietitians in a position where they may be compelled to respond with advice that supports patients to reduce carbohydrate safely, or face patient disengagement. This talk presents a series of cases studies of adults with both type 1 and type 2 diabetes who have transitioned to a reduced carbohydrate approach with careful dietetic support and endocrinologist supervision. We will discuss the clinical advice offered to ensure energy and micronutrient needs were met, the dietary changes that were implemented, and the effect the approach had on diabetes targets, other health outcomes, and patient wellbeing. We will also reflect on sustainability, and the potential for a reduced carbohydrate approach to become a viable and effective tool in diabetes care in the future.

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REPORTING AND REPLICATING GROUP-BASED EDUCATION INTERVENTIONS FOR THE MANAGEMENT OF TYPE 2 DIABETES: ARE STUDY AUTHORS PROVIDING COMPLETE INTERVENTION DESCRIPTIONS?

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The complete reporting of all components of complex interventions, such as those utilised in group-based education for the management of type 2 diabetes, is essential to allow intervention replication and the translation of evidence into practice. This study aimed to assess the completeness of reporting of group-based education interventions for the management of type 2 diabetes in published trials using the Template for Intervention Description and Replication (TIDieR) checklist.

Data were extracted using the TIDieR checklist to assess the completeness and replicability of reporting of each group-based intervention. Missing intervention details were sourced from other publications or by contacting authors. Fifty-three publications describing 47 studies were included (n = 8,533 participants). Authors of 40 of the 47 included studies (85%) were contacted via email up to three times for missing data. Only three (8%) did not respond. In summary, 87% (46/53) of the studies described the procedures of the intervention, whilst fewer than 50% of studies described whether materials were provided (23/53, 43%), or who delivered the intervention 30% (16/53). The location of the intervention was completely described by only 51% (27/53) studies. Few studies described whether the intervention was delivered as planned (28/53; 53%), whilst 60% (32/53) of studies described any intervention modifications. Group-based education interventions for the management of type 2 diabetes are poorly reported and often incomplete. Future group-based intervention studies should design and publish their results using the TIDieR checklist in order to ensure the completeness of reporting and replicability of interventions.

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TASK AND ROLE PERCEPTIONS OF GDM MANAGEMENT AS REPORTED BY MULTIDISCIPLINARY TEAM MEMBERS IN AUSTRALIA

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Gestational diabetes mellitus (GDM) is increasing and innovative models of care (MoC) are required to ensure women receive adequate care within finite health resources. An understanding of current practices and multidisciplinary team (MDT) member perceptions towards roles and tasks is important for developing MoC. The aim of this survey was to examine the task and role perceptions of the GDM MDT in Australia. A 64-item electronic questionnaire was sent to all Queensland Health facilities between May and June 2017, and was available nationally through professional organisations. Of the 183 respondents, all agreed that a MDT approach is best for managing GDM. However, there was lack of clarity around which MDT members should undertake specific tasks. Most respondents agreed that dietitians can provide medical nutrition therapy but there was also a perception that this can be done by diabetes educators (53%), endocrinologists (35%), midwives (19%), obstetricians (15%) or general practitioners (15%). Similarly, over 50% of respondents believed that advice on how to achieve appropriate gestational weight gain could be given by any of the GDM MDT. Similar results were assessed for 11 other tasks. The results of this national survey indicate there is a lack of role identity in the management of GDM. Potential reasons may be due a lack of evidence to support specific roles, health professionals' beliefs, or lack of appropriate resourcing for MDT members. The results of this research have been used in the development of a novel, dietitian-led MoC to be trialled in Queensland in 2018.

Funding source: Wishlist Sunshine Coast Hospital Foundation

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RESPONSIVE FEEDING IN CULTURALLY DIVERSE YOUNG CHILDREN WITH TYPE 1 DIABETES IN AUSTRALIA – A PILOT STUDY

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'Responsive feeding' is a term used to describe the reciprocal interaction and trust that exists within a parent-child feeding relationship. Poor implementation of responsive feeding practices in children with type 1 diabetes (T1D) negatively affects glycaemic control. This has also been correlated with T1D treatment modality, abnormal weight status, poor dietary quality and cultural background. The relationship between these variables and responsive feeding in children with T1D has not been studied in Australia. A total of 19 parents of children aged 1–5.9 years with T1D from The Sydney Children's Hospitals Network completed four questionnaires; Behavioural Paediatrics Feeding Assessment Scale (BPFAS), Feeding Practices and Structure Questionnaire (FPSQ), Family Questionnaire and Young Children's Food and Drink Questionnaire. Haemoglobin A1c (HbA1c), body mass index (BMI) z-score, weight-for-length z-score, and diabetes treatment information was extracted from electronic patient databases. Correlations were found between HbA1c and BPFAS- Parent Frequency sub-scores (r = 0.456), weight status and BPFAS- Child Problem (r = -0.957) and FPSQ- Covert Restriction (r = 0.994) sub-scores, and core food intake and FPSQ- Family Meal Setting sub-scores (r = -0.56). Children treated with multiple daily injections had higher mean ± SD for FPSQ – Reward for Behaviour (3.50 ± 1.08) and lower mean BPFAS – Child Problem sub-scores (1.00 ± 1.15) than children treated with continuous subcutaneous insulin infusion (2.10 ± 0.86; 3.37 ± 3.86, respectively). No significant differences were found between responsive feeding and cultural background. This pilot study shows a relationship between responsive feeding and these variables in the early childhood years. Future research with a larger sample is needed to explore these relationships in culturally diverse young children with T1D in Australia.

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INITIAL GROUP DIETARY EDUCATION COMPARED TO INDIVIDUAL EDUCATION IN GESTATIONAL DIABETES MELLITUS MANAGMENT: DO OUTCOMES DIFFER ACCORDING TO PREDICTED RISK OF INSULIN THERAPY?

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To assess the effectiveness of initial Group versus initial Individual dietary education for Gestational Diabetes Mellitus (GDM) according to predicted risk of insulin therapy, a retrospective audit of clinical data was conducted. English speaking women who received initial education in a group setting (01-2-2012 to 01-2-2014) (Group), were compared to those who received initial individual education with a dietitian (1-2-2010 to 31-1-2012) (Individual), all followed by one individual dietitian appointment. The same dietary information was provided in both education settings. The risk for requiring insulin in addition to Medical Nutrition Therapy (MNT+In) was assessed using a prediction model that included seven dichotomised clinical variables, tallied for predicting therapy type (MNT only or MNT+In), and likelihood of several adverse pregnancy outcomes. The number, and percentage of women categorised as low, intermediate or high risk for MNT+In and adverse pregnancy outcomes were compared between education settings using Chi-squared tests. There were no significant differences in the number of women categorised as low, intermediate and high risk between settings using the prediction model. However, significantly more women in the intermediate category who received Individual education were managed with MNT only compared to Group education, (65.7% versus 54.8%, $p < 0.01$). This suggests that individualised dietary sessions for women at intermediate risk of insulin therapy, may contribute to lower MNT+In requirements. Further research to test this hypothesis in a randomised controlled trial is warranted.

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DELIVERING EVIDENCE-BASED DIABETES CARE IN PARTNERSHIP WITH PRIVATE HEALTH INSURANCE

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All people with Type 2 Diabetes should be referred for structured diabetes patient education delivered by a multidisciplinary team. The evaluation of evidence-based diabetes programs is essential for determining those most effective in improving the health of individuals with Type 2 Diabetes, while informing effective allocation of resources. A 12-week intensive diabetes program, Diabetes Blitz, was developed and delivered by Ethos Health and facilitated by nib Health Funds. Participants attended seven face-to-face sessions; five with an Accredited Practising Dietitian and two with an Exercise Physiologist. The aim of Diabetes Blitz was to improve quality of life, diabetes indicators and reduce diabetes-related hospital admissions for nib health fund members diagnosed with Type 2 Diabetes Mellitus in the Lake Macquarie area. One hundred nib members completed the program and 92% of appointments were attended. Mean weight loss was 3.5 kgs ($p < 0.0001$) representing an average percentage weight loss of 3.7%. Significant improvements were achieved in Haemoglobin A1c (HbA1c) (-0.3, $p < 0.0001$) and self-efficacy scores (-12.6, $p < 0.0001$) assessed using the Problem Areas in Diabetes questionnaire, reflecting lower diabetes-related distress which is associated with improved self-care behaviours, better glycaemic control and reduced diabetic complications. Of the pa`rticipants above the healthy weight range, 28% lost >5% body weight. Hospital admissions data is yet to be reviewed. The Diabetes Blitz program was effective in improving a range of health indicators associated with improved outcomes in individuals T2DM. Partnerships between private health insurers and practitioners are a promising service delivery model.

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Concurrent session – Apps & Informatics

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TRENDS IN ADDED SUGAR CONSUMPTION BY AUSTRALIAN ADULTS BETWEEN 1995 AND 2012

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Added sugar (AS) intakes are associated with chronic disease with international guidelines recommending less than 10% total energy (% E) intake. This research aimed to compare AS intakes for Australian adult respondents for two nationally representative dietary surveys, from 1995 (n = 8703, unweighted) and 2012 (n = 6,278, unweighted). A systematic method was applied to day 1 of 24-hour recall data in both surveys to estimate AS consumption. One-way analysis of variance (ANOVA) determined longitudinal differences in age groups, body mass index (BMI) and gender while food sources and contributions to energy were determined using multiple linear regression. A significant longitudinal difference in AS intakes was seen by gender ($p<0.001$), age group ($p < 0.001$) and BMI ($p < 0.001$). Per consumer, only those aged 19-29 years exceeded WHO guidelines. AS accounted for 48.2 ± 23.4% and 48.9 ± 23.7% of total sugars intake in 1995 and 2012, respectively. Per capita, AS % E exceeded the WHO guidelines for both surveys (1995 10.76% E, 2012 10.58% E, $p = 0.018$). The proportion of total sugar from AS per capita came from the 'Sugar, honey and syrups' and 'Sweetened beverages' food groups (Males 43.1% 1995, 31.8% 2012; Females 30.8% 1995, 24.62% 2012) The main predictor of AS intake was intake of 'Sugar, honey and syrups' (β 83.25, $p < 0.001$, 1995; β 88.37, $p < 0.001$, 2012). % E from AS in Australian adults have decreased over time, with most age groups aligning to international recommendations. Younger adults continue to exceed recommendations warranting strategies to reduce this risk factor.

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AN EXPLORATION OF ELECTRONIC MEDICAL RECORD PROGRESS NOTES AND PATIENT FOCUSSED INTER-PROFESSIONAL COMMUNICATION BETWEEN INPATIENT DIETITIANS AND OTHER HEALTH PROFESSIONALS

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The advancement of technology in healthcare is inevitable, although it is important to recognise any impacts these changes may be having on interprofessional communications. At Royal Prince Alfred Hospital (RPAH), Electronic Medical Record (eMR) progress notes were introduced at the beginning of 2017 to replace hand written progress notes. The aim is to explore the nature of impact eMR progress notes may have had on inter-professional communication between hospital ward dietitians and other health professionals surrounding patient care. Mixed methods sequential explanatory design was used and included only inpatient dietitians at Royal Prince Alfred Hospital Nutrition and Dietetics Department. Firstly, a self-reported time-motion study was done for two full days 1-week pre and three months post introduction of eMR progress notes. Nine semi-structured interviews were conducted 6 months post the introduction of eMR progress notes. Interviews were recorded and transcribed then analysed using inductive thematic approach. Findings showed that dietitians spend their indirect patient related time mostly on inter-professional communication and documentation. Perceived benefits were better flexibility, efficiency and accessibility to patient information. Most dietitians identified that they were spending less time on their designated ward, and more time in their office resulting in less physical contact with the rest of the care team and less incidental patient related conversations. RPAH inpatient dietitians were overall very positive about the changes to electronic progress notes but have identified that the time spent with medical staff has reduced. This is an important consideration to be aware of for service development.

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AN INTERNATIONAL STUDY ON WEB-BASED EDUCATION FOR DIETITIANS

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Web-based education is a fast-growing trend among dietetic practitioners. This platform can be accessed widely by dietitians regardless of location and time zone. We aimed to conduct the first international study to explore the effectiveness of a web-based portal for Nutrition Care Process (NCP) education. Invitations were distributed to registered members of National Dietetic Associations in 35 countries. Dietitians (n = 424) from 24 countries successfully registered to join the ***'Dietitians Online Nutrition Care Process' (DoNCP)*** website (www.doncp.com.au). Participants were mainly female (92%), worked in clinical setting (80%). An evaluation of the website after three months showed that the learning modules section with case studies was the most popular online activity, followed by live chat discussions. Three months after DoNCP website utilisation, dietitians (n = 68) significantly improved their NCP knowledge ($p < 0.01$) and attitudes including value, confidence, support, and training ($p < 0.005$ for all), as evaluated by the validated Attitudes, Support, and Knowledge of NCP (ASK NCP) questionnaire. No background characteristics including age, highest education level, learning style preference, years of practising experience, country of practice, and work status were associated with the improvement of knowledge and attitudes scores in multivariate models ($p > 0.05$ for all). This suggests that the DoNCP website is an effective web-based portal to support NCP education for dietitians internationally, regardless of sociodemographic characteristics. The online NCP education benefits dietetic profession considering NCP framework is essential in standardise dietetic practice. Findings of this web-based education are valuable and can be used to inform future web-based education for dietitians globally.

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SMARTPHONE APPS SUPPORTING HEALTHY MEAL COPING STRATEGIES AND FOOD ACQUISITION PRACTICES IN FAMILIES

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Smartphone applications (Apps) offer the unique opportunity to support healthy family eating in real-time. An understanding of App content, features and the incorporation of Behaviour Change Techniques (BCT) will better allow practitioners to utilise this technology. This study aimed to undertake a systematic assessment of popular, commercially available apps supporting healthy meal coping strategies and food acquisition practices in families. Searches were conducted in the Google Play Store. Apps were included if they had $\geq$ 20 user reviews, a star rating $\geq$ 4, and were relevant to families. They were excluded if they targeted children, diet monitoring or special diets. Apps were downloaded onto an Android tablet and data extracted regarding app type, content (information and key features) and the incorporation of BCT's. Eligible apps (n = 45 of 1,850 screened) were categorised as recipe apps (33%), shopping lists (27%), meal planners (18%), recipe managers (11%), family organisers (7%), food selection/purchasing information (2%) and meal plan/box service (2%). Pilot data (n = 20) show that 85% included the ability to generate a shopping list and 40% generated meal plans. Recipe apps (50%) provided mostly information with some personalization features. None focused explicitly on healthy family eating. Meal planners and family organisers incorporated the most BCT (mean = 7), with commonly utilised BCT's including 'Adding objects to the environment' (100%) and 'Instruction on how to perform a behaviour' (60%). Meal planning and family organiser apps show promise in supporting families to acquire healthy food. These apps may assist in extending behavioural support to families beyond the consulting room.

Funding source: NHMRC postgraduate scholarship

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MOBILE FOOD RECORD USE AMONG OLDER PEOPLE: A COMPARISON OF SELF-REPORT WITH DIETITIAN-ASSISTED INFORMATION

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The increasing popularity and accessibility of mobile devices (e.g. smartphones and tablets) have the potential to transform traditional dietary assessments. However, there is limited evidence about the use and acceptability of nutrition-focused computer applications (Apps) among middle-aged and older adults. This study utilises the *Research Food Diary* App to compare self-reported and dietitian-assisted assessments of intake among 55 – 75-year-old adults. Sixty-two participants were recruited, with 48 successfully completing a 3-day food diary. Self-reported diaries contained a total of 106 reporting errors, including; food items with missing/implausible quantities, incomplete nutrient profiles or insufficient descriptions to allow automatic coding. Dietetic-based skills and nutrient database knowledge were used to create a set of assumptions to resolve reporting errors. Additionally, a dietitian conducted follow-up interviews with participants to probe for inconsistencies and update the self-reported diaries. These diaries ("assumed" and "dietitian-assisted", respectively) were then compared to the self-reported diaries for nutrient intakes and serves of core foods. One-way repeated measures analysis of variance found the largest differences were for protein, calcium, vitamin B_{12}, zinc and dairy foods (all $P < 0.001$; differences up to 8%). *Post hoc* tests identified pairwise differences between self-reported and either "assumed" or "dietitian-assisted" versions, but not between "assumed" and "dietitian assisted". The strong similarities between "assumed" and "dietitian-assisted" diaries support the application of dietetic assumptions to improve the accuracy of self-reported intake. Food diaries recorded with Apps can be improved when combined with such data cleaning procedures, but should be used cautiously if no data cleaning has been applied.

Funding source: The authors have received no funding for this study. The data is part of a larger study which has received NHMRC funding (APP1095097)

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NEW AND EXPECTANT MOTHERS' CHOICE AND EXPECTATIONS OF ENGAGEMENT WITH SMARTPHONE APPS FOR BREASTFEEDING

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While the initiation of breastfeeding is almost universal in Australia, relatively few women are meeting recommendations for the duration of exclusive and continued breastfeeding. Adequate support can improve breastfeeding outcomes, however one to one approaches are expensive. Smartphone applications (Apps) may provide a cost-effective method of supporting breastfeeding women and have shown promise in other health interventions. A plethora of breastfeeding Apps are available in online libraries, little is known however, of the features which promote user choice and continued engagement. This study aimed to investigate the design features of breastfeeding apps which contribute to i) user choice and ii) ongoing user engagement. In this qualitative study, new and expectant mothers (n=10) were asked to choose, download and explore a breastfeeding app whilst 'thinking aloud'. Semi-structured interviews encouraged participants to elaborate on the think aloud tasks. Sessions were audio recorded, transcribed verbatim and analysed using inductive thematic analysis. Participants chose apps based on icons, the general user interface and titles (immediate look and feel). Reviews and ratings, brands and Australian manufacture (trust and external validation) also contributed to user choice. App features likely to promote continued engagement included breastfeeding trackers and tailored information, support and troubleshooting. Participants expected to engage with apps that held personal relevance. Organisations manufacturing evidence-based breastfeeding apps are encouraged to work with design experts to produce professional and simple user interfaces. Apps for breastfeeding should leverage off existing brands, provide breastfeeding trackers with embedded information and support and allow personalisation in order to increase potential engagement.

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WOMEN'S PERCEPTIONS OF A PREGNANCY WEIGHT GAIN CHART TO SUPPORT HEALTHY WEIGHT GAIN IN PREGNANCY

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The proportion of overweight and obese women delivering babies in Australia is increasing, as is the prevalence of excess gestational weight gain (GWG). This can be attributed, in part, to poor maternal understanding of GWG and limited education from antenatal health professionals. In response, the Royal Brisbane Women's hospital implemented a pregnancy weight gain chart alongside midwife and general practitioner (GP) training as part of a multifaceted initiative. This study aimed to evaluate the perceptions of pregnant women about the care they received relating to GWG and the weight gain charts. Women (n = 260) completed a survey at their 36-week hospital visit with 160 open response comments undergoing thematic analysis using the Framework Approach. Two authors analysed comments for general tone and identified four major themes. Majority (83%, n = 132) of comments were positive or neutral in tone. Constructive feedback on the readability of the charts was provided, with women suggesting the graph is larger and clearly labelled. Most women (95%, n = 62) reported positive experiences in using the chart for increased self-monitoring. Some participants (n = 11) reported gaps in the implementation of weight gain charts, such as irregular use or limited feedback provided by health professionals on their weight gain. A small number (n=14) of women also reported that weight charts contributed to feelings of dissatisfaction with their weight. These findings suggest that weight gain charts are a valuable tool that are well accepted among pregnant women, however highlights the critical role of health professionals in providing to support healthy GWG and lifestyle change.

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MOST FOOD AND SUPPLEMENTS PROMOTED TO AIRLINES TO IMPROVE HEALTH AND WELLBEING FAIL TO DELIVER ON THEIR CLAIMS

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As airplanes increasingly travel further without refuelling, passengers and flight crew can be exposed to flying conditions for up to 17 hours. This poses risks regarding hydration, sleep and jetlag that may be influenced by nutrition. The food and supplement industry has responded with a plethora of products claimed to alleviate one or more of the physiological effects associated with flight. This research aimed to compile a database of products and search the scientific literature for evidence to justify the health claims. Products were identified with search engines (Google and Bing) and travel catering publications (PAX International and Onboard hospitality). Medline and Web of Science (January 1997–2018) were searched to identify studies with foods and supplements in humans involving commercial flights or flight simulators. Recognised tools (Cochrane and AMSTAR) were used to access quality of the studies. Of the 6,639 studies identified only 23 studies met the selection criteria. Melatonin (n = 12), caffeine (n = 3), Pycnogenol (n = 3), Echinacea (n = 1), ginger (n = 1), high carbohydrate and fat (n = 1), low fibre (n = 1), high antioxidant (n = 1) and niacin (n = 1) intake were associated with positive flight outcomes including: sleep, fatigue resistance, mental function and improved resistance to respiratory illness, bloating, thrombotic events and radiation induced DNA damage. No evidence was found for the remaining 98 ingredients in the products identified. Overall, only 14 of the 99 products identified have evidence for claims with the majority unsubstantiated and further research is indicated.

Funding source: University of Sydney – Charles Perkins Centre Summer Scholarship

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Concurrent session – Public Health – Children

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THE NSW HEALTHY CHILDREN INITIATIVE: REDUCING CHILDHOOD OBESITY PREVALENCE THROUGH COORDINATED STATE-WIDE ACTION

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The New South Wales (NSW) Premier has set a target to reduce prevalence of childhood obesity by 5% in ten years. Healthy eating and physical activity are key behaviours to address at a population level. NSW can claim to be one of the few jurisdictions in the world to have halted the increase in childhood overweight and obesity rates. The NSW Healthy Children Initiative (HCI) has contributed through delivery of obesity prevention programs in children's settings. This has been complemented with a community-based treatment program, Go4Fun, which has had over 10,000 families participate. These programs are coordinated and monitored at state-level and delivered locally through dedicated local health district (LHD) positions. LHDs are required to report quarterly on their progress against performance indicators as part of the NSW Health Performance Framework, a significant policy lever. In the early childhood setting 91% of centre-based early childhood services are participating (Munch & Move) and in primary schools 83% of all schools are participating (Live Life Well @ School). HCI has universally achieved improved nutrition and physical activity practices and policies in high reach children's settings. For example, 96% of centre-based services offer fruit and vegetables daily and 88% of primary schools offer a fruit, vegetable and water break. HCI also delivers programs in family day care and the junior community sport setting. This presentation will describe state-level nutrition and physical activity outcomes of HCI and this innovative implementation model of childhood obesity prevention programs, comprising local delivery, state coordination, evaluation and performance monitoring.

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RELATIONSHIP OF INFANT FEEDING PRACTICES AND WEIGHT STATUS AT 2 YEARS: FINDINGS FROM THE SMILE COHORT STUDY

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Breastfeeding duration and age of introduction of complementary foods (solids) have been associated with risk of overweight/obesity in later life. Understanding the association between these practices is vital due to the high proportion of overweight/obese children in Australia. This cross-sectional study analysed data from the South Australian SMILE cohort study. Data on breastfeeding duration and age of introduction of solids were collected in questionnaires completed at 3, 6 and 12 months and weight and height of children were measured after their second birthday. Children's weight status was categorised as acceptable, overweight or obese, based on the World Health Organisation (WHO) age and gender specific body mass index (BMI) classifications. Complete data were available for 983 children (mean ± SD age 29.78 ± 3.51 months). A multivariable logistic regression analysis investigated the association of breastfeeding duration and age of introduction of solids adjusting for confounding variables (maternal age, education, BMI, parity, socio-economic position). Breastfeeding for < 12 weeks (AOR 1.85, 95% CI 1.09 to 3.15) compared to > 24 weeks, and a maternal BMI ≥ 30 kg/m^2 (AOR 2.00, 95% CI 1.18 to 3.67) compared to a BMI < 25 kg/m^2 were associated with an increased risk of overweight/obesity at two years of age. Introduction of solids before 26 weeks was not significantly associated with an increased risk of overweight/obesity at two years of age (AOR 1.33, 95% CI 0.45 to 3.95). The current recommendations in the Australian Infant Feeding Guidelines related to breastfeeding duration and the age of solid food introduction should continue to be promoted and supported in Australia.

Funding source: The Study of Mothers and Infants Life Events affecting oral health (SMILE) was funded by a NHMRC Project Grant (#1046219)

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FOOD PROVISION IN NSW EARLY CHILDHOOD EDUCATION AND CARE SERVICES

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Children who develop healthy eating habits from a young age are more likely to continue these habits in the long term, contributing to

ongoing health and wellbeing. In New South Wales (NSW) 17.5% of children are overweight or obese at the time they start kindergarten. Approximately 268,600 children attend early childhood education and care services which are an important setting for obesity prevention and the development of healthy eating habits. The NSW Health resource, *Caring for Children* provides practical information and advice on adequate nutrition for children aged from birth to 5 years whilst in care. The resource aligns with the Australian Dietary Guidelines and provides guidance and support for services to meet the National Quality Framework. Services participating in the *Munch & Move* program are asked to implement *Caring for Children*. Weekly menus are reviewed by health professionals through this program, which has reached over 3,300 NSW early childhood education and care services. From 2012 to 2017 there was an increase in menus that included fruit and vegetables at least once per day (93% to 96%), only healthy snack options (76% to 92%) and age appropriate drinks (51% to 82%). From 2018 *Munch & Move* will provide professional development training and support for cooks and directors to change their practice and plan a healthy menu that aligns to the *Caring for Children* guidelines. This will be monitored through ongoing menu reviews and advice.

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REDUCING CHILDHOOD OBESITY: A NSW PREMIER'S PRIORITY

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In New South Wales (NSW), the Premier identified a personal priority and whole-of-government commitment to reduce the prevalence of childhood obesity by 5 per cent over ten years. More than one in five children in NSW are overweight or obese. Addressing childhood obesity requires a multifaceted, population-based approach to preventing unhealthy weight gain by supporting healthy eating and adequate physical activity in the long term. No single intervention will have sufficient impact to reverse overweight and obesity trends. Children's current food and physical activity behaviours are not in line with healthy lifestyle guidelines. For example, Australian children obtain more than a third of their kilojoules from unhealthy food and drinks; one in two NSW children regularly consume sugary drinks and one in two eats an unhealthy snack each day. Further, only one in four NSW children meet the Australian Physical Activity Guidelines of one hour of moderate to vigorous physical activity daily. In response to this, NSW has implemented a comprehensive whole of government strategy comprising four strategic directions: state-wide childhood obesity prevention programs; routine identification, advice and support as part of clinical service delivery; education and information to enable healthy choices; and environments to support healthy eating and active living. This presentation will describe state-level action, highlighting some of the innovative approaches that have been developed and provide an analysis of progress towards targets in each strategic direction. Reflections on key learnings from the past four years of implementation and how these will inform the future strategy will also be presented.

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EVALUATION OF THE CANCER COUNCIL NSW HEALTHY LUNCH BOX INTERVENTION

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Cancer Council New South Wales' (CCNSW) *Eat It to Beat It* (EI2BI) program aims to increase fruit and vegetable consumption in families with primary school aged children. One component of the program is a 15-minute Healthy Lunch Box parent education session. An evaluation on the effectiveness of this session was conducted in conjunction with the University of Sydney Prevention Research Collaboration in 2015. The evaluation was conducted at 33 Healthy Lunch Box evaluation sessions delivered between February and April 2015. Participants completed an evaluation questionnaire before the session commenced and were asked to complete a follow up questionnaire one week after attending the session and again six months after the session. The main findings of this evaluation were significant increases in parents' knowledge of both serving sizes and recommended intake of fruit and vegetables; an increase in the proportion of parents who correctly identified water and milk as the best two drinks for children; an increase in the proportion of parents who intended to increase their child's fruit and vegetable intake; an increase in the proportion of parents who were more confident in their ability to pack a healthy lunch box and an increase in parents' perception that the Healthy Lunch Box session had increased the amount of fruit and vegetables that their family ate. The evaluation also recommended a number of areas for future development. A manuscript for publication in the Health Promotion Journal of Australia has been accepted.

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SUPPORTING NSW HEALTHY SCHOOL CANTEENS: FROM POLICY TO IMPLEMENTATION

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School canteens have significant potential to influence student eating behaviours. In New South Wales (NSW) there is cross government commitment to implement the newly revised Healthy School Canteen Strategy. The development of this innovative Strategy has considered evidence from research and key stakeholder feedback about barriers and enablers. Facilitators to implementing the Strategy include taking a whole-of-school approach, cross sectoral and community partnerships, adequate canteen facilities, and using and valuing volunteers. The Strategy includes user-friendly guidelines which clearly and simply define healthy choices and is closely aligned with the Australian Dietary Guidelines. The Health Star Rating System is used as an easier way for canteen managers to assess the nutritional quality of packaged food, which ensures consistent public health messaging at all levels of government. Practical implementation of the Strategy focuses on the food and drink criteria (including promotion, price, placement and product), menu assessment support, canteen business operation support, school support and leadership, impacts on local businesses, food supply and distribution, and encouraging, monitoring and reporting achievement. Primary school implementation support is provided through the Live Life Well @ School program which takes a whole-of-school approach. In addition, at state level, this cross-government strategy also comprises ongoing engagement with the food industry to promote appropriate reformulation and identification of suitable products. An analysis of the reach achieved and levels of adoption, identifying the changes in practice that have driven schools achieving the Strategy will be presented.

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MAKING HEALTHY FOOD DESIRABLE TO CHILDREN; A THEORETICAL MODEL

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In Australia, children are not eating according to the Australian Dietary Guidelines despite numerous public health initiatives. Literature regarding children's views about what influences their food choice is limited, representing a gap in knowledge about children's potential role in improving healthy eating. The study aim was to investigate factors that influence food choices in a primary school setting, described by children. Participatory Action Research was used, completing five action cycles with a convenience sample of children in a non-government school in Tasmania (grades two – six). Data was collected through observation, filming and documentation by researchers using; an open class discussion, a day in the canteen, a specified meal for the day and two Discovery Days (children worked in groups to design a healthy menu). Qualitative data was analysed using a conventional content analysis to establish common concepts that represented factors that influence children's food choice. The concepts (pleasure, texture, social acceptability, versatility and eating context) were used to develop an innovative theoretical model that can guide canteen menus to create healthy food that is desirable to children. This research argues that we have not paid enough attention to children's perceptions when designing programs to improve their eating habits and has the potential to foster professional debate. In conclusion, children are key informants about concepts influencing their food choices, which led to a theoretical model that translates the research outcomes into a practical tool for supporting the promotion of healthy eating in schools.

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THE NUTRITIONAL QUALITY AND FORMULATION OF CHILDREN'S PACKAGED FOODS AVAILABLE IN AUSTRALIAN SUPERMARKETS: A FOLLOW-ON STUDY SINCE THE INTRODUCTION OF THE HEALTH STAR RATING

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The aim of this study was to examine whether the nutritional quality and formulation of children's packaged food products available in Australian supermarkets has improved since the introduction of the Health Star Rating (HSR) labelling scheme. Packaged food products marketed towards children were purchased from three Australian supermarkets in July 2016. Nutritional quality was assessed using the Food Standards Australian New Zealand nutrient profiling scoring criterion. Comparisons were made between the nutrient composition and formulation of products originally available in 2013 and still existing in 2016. Of the 252 children's packaged products analysed, 28.5% displayed the HSR; the majority (81.5%) having a rating of ≥ 3.0 stars. Overall, 53.6% of products were classified as 'less healthy', with HSR-labelled products having a significantly higher proportion classified as 'healthy' than those without the HSR (X^2 26.5; $p < 0.0001$). Reformulation of products that were available in 2013 had occurred in 100% of HSR-labelled products in comparison to 61.3% of non-HSR labelled products. For the majority of products (79.6%), reformulation resulted in an improvement in the product's nutritional composition and, consequently, a reduction in the nutrient profiling score. In conclusion, despite the introduction of the HSR, more than half of children's packaged foods sampled are 'less healthy'. However, early indications suggest that the HSR may stimulate healthier product reformulation.

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Concurrent session – Health Behaviours 2

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COMPARISON OF APPS, WEARABLE CAMERAS AND 24-HOUR DIETARY RECALLS FOR DIETARY RECORDING AND RECALL IN YOUNG ADULTS

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Mobile phone dietary recording applications (Apps) have been suggested as a method of reducing participant and dietitian burden in research settings. Such Apps have been compared with traditional dietary assessment methods, such as 24-hour recalls. However, both methods are self-reported methods and thus susceptible to misreporting. The use of wearable cameras that continuously photograph an individual's surroundings has the potential to detect misreporting. The objectives of this study were to compare the degree of misreporting between the dietary assessment App, Eat and Track (EaT) and the ASA-24-hour dietary recall using wearable cameras, and to examine the comparative validity of the two methods. Thirty-eight participants (11 male, 27 female) aged 18 to 30 years wore Autographer cameras and completed three consecutive days of dietary intake recording with the app and three researcher administered 24-hour dietary recalls. Both methods of diet assessment resulted in unreported foods and beverages. This appeared to be higher with the App method, but was not significant ($P = 0.064$). The most common unreported foods were snacks and beverages. No significant differences were found in the mean intakes of energy and macronutrients between the two methods and Bland Altman plots showed good agreement between the two methods with no obvious bias, however the limits of agreement were wide. At population level, the EaT App shows promise as a dietary assessment tool. Wearable cameras have the potential to reduce the degree of under reporting if participants or dietitians review their images for unreported foods.

Funding source: Australian Research Council and Cancer Council New South Wales.

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THE 'TYPICAL AUSSIE BLOKE STUDY': THE RELATIONSHIPS OF HABITUAL BREAKFAST CONSUMPTION WITH MEDIATORS OF OBESITY AND CHRONIC DISEASE DEVELOPMENT AMONGST YOUNG AUSTRALIAN MEN

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Breakfast is often regarded as protective against obesity and chronic disease risk; however, the evidence to support this is limited and

contradictory. This study explores the relationship between habitual breakfast consumption and mediators of obesity and chronic disease development in young men. This multicentre cross-sectional study recruited men 18–44 years from metropolitan and regional NSW, Australia. Participants completed an online survey about breakfast habits and lifestyle characteristics, and attended a measurement session. Of the 112 men, 94 were Habitual Breakfast Eaters, seven were Occasional Breakfast Eaters and 10 were Habitual Breakfast Skippers. Habitual Breakfast Eaters were more likely to have tertiary qualifications (62.8%); whereas a higher percentage of Occasional Breakfast Eaters (71.4%) and Habitual Breakfast Skippers (80.0%) had secondary school qualifications (p = 0.010). No other demographic characteristics were found to significantly differ. Furthermore, men with different breakfast habits did not significantly vary for: body mass index; waist, hip and chest circumferences; body composition; blood pressure; resting metabolic rate; finger stick measurement of blood glucose and lipid profiles (Triglycerides; total, LDL and HDL Cholesterol); sleeping and waking habits; physical activity and fruit and vegetable consumption. However, Habitual Breakfast Eaters were more likely to consume ≥ five daily eating events (59.6%) than Occasional Breakfast Eaters (28.6%) and Habitual Breakfast Skippers (20%; p = 0.015). Finally, except for number of daily eating events, no other significant relationships were found between breakfast habits and intermediates of obesity and chronic disease risk. Longitudinal studies are needed, with greater number of breakfast skippers, to investigate this more fully.

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WHOLE GRAIN, REFINED GRAIN AND CEREAL FIBRE IN BASELINE DIETS AND INFLUENCE ON BODY WEIGHT STATUS: SECONDARY ANALYSIS OF THE HEALTHTRACK CLINICAL TRIAL

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The specific choices of grain foods by people who are overweight may correlate with anthropometric measures and therefore health outcomes. This secondary analysis of a weight loss clinical trial (HealthTrack ANZCTRN 12614000581662) aimed to investigate baseline associations between body weight and consumption of grain foods, categorised as whole grain/high fibre foods (WG/HF), refined/low fibre (ref/LF) grains, whole grain (WG) and cereal fibre (CF). Baseline data (n = 377) from overweight – obese (body mass index (BMI) 29–35 kg/m^2) participants (31-57 years old) provided a cross sectional view of dietary intake. Diet history data were analysed (AUSNUT 2011-13) in grams and serves including median and interquartile range (IQR) for each category (SPSS V21, USA). Linear regression was used to explore the association between grams, Australian Guide to Healthy Eating (AGHE) serves and anthropometric measures (weight, BMI, waist circumference (WC)). Participants consumed 83.5g/10MJ/day WG/HF (38.1–144.5), 306.4 g/10MJ/day of ref/LF (204.7–410.0), 36.1 g/10MJ/day of WG (19.1–61.8) and 8.9 g/10MJ/day of CF (6.3–11.3). Higher consumption of WG/HF foods (g) predicted a lower weight, BMI and WC (all $p < 0.05$). Higher intakes (g) of WG/HF was associated with lower weight, BMI and WC. Using AGHE serves produced similar result for BMI (B =-0.363, p = 0.009). Higher WG, was predictive of lower weight (B = -0.049), lower BMI (B = -0.018, p = 0.006) and smaller WC (B = -0.043, p = 0.021). Higher consumption of ref/LF grain foods (grams; serves) was associated with greater weight (B = 0.010, p = 0.041; B = 1.488, $p <$ 0.001 respectively) and WC (B = 0.007, p = 0.047; B =1.064, p = <0.001 respectively). Quality of grain foods, particularly WG/HF foods within diets is associated with anthropometric measures, even in the presence of overweight/obesity.

Funding source: Secondary analysis but original source of funding for HealthTrack: California Walnut Commission and Illawarra Health and Medical Research Institute

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HEALTHY EATING AND LIFESTYLE PROGRAM (HELP): EFFECTIVE FOR ALL BMI CLASSES

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Effective long-term lifestyle intervention programs are needed to manage obesity and chronic disease risk. The Healthy Eating and Lifestyle Program (HELP) was a multidisciplinary lifestyle behaviour change intervention conducted at Queensland hospital outpatient centres for weight management in high-risk patients. This study aimed to evaluate long-term weight, quality of life (QoL) and self-efficacy outcomes of people with overweight and obesity attending HELP. Patients with a body mass index (BMI) ≥ 25 kg/m^2 attending various hospital-based clinics in 2014–2015 were invited to participate in HELP. Data on weight, QoL and self-efficacy were collected at the first (initial) and last (review) HELP sessions, and in a 2-year follow-up study. Prior to intervention, there was no significant difference in self-efficacy, physical QoL and mental QoL by BMI class ($p > 0.05$). However, those with class II and class III obesity achieved significant improvements in self-efficacy at 2-years ($p < 0.05$), and significant improvements in mental QoL were confined to those with class III obesity ($p < 0.01$). Significant weight loss was also demonstrated at 2-years with no differences between BMI classes ($p > 0.05$): overweight -3.6kg (-4.7%); obese class I -4.2kg (-4.4%); obese class II -4.5kg (-4.4%); obese class III -4.8kg (-3.6%). These results support secondary prevention programs for individual patients across all BMI classes to improve self-efficacy and QOL and reduce chronic disease risk and progression through weight-loss. The study also provides evidence for the effectiveness of secondary prevention lifestyle interventions for people with more severe obesity.

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DIAGNOSED AS MALNOURISHED: DO PATIENTS' AND THEIR CARERS' AGREE?

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Malnutrition within hospitals and community settings is a growing concern, commonly unrecognised as a comorbidity among patients. This study aimed to explore patients' and their carers' awareness of nutritional status, understanding of malnutrition, and whether they were aware of their malnutrition risk prior to admission to a Perth hospital. Furthermore, the study investigated dietetic care experienced by patients and carers. A retrospective, cross-sectional mixed methods study using telephone questionnaires with patients and their carers was conducted from a convenience sample of patients diagnosed with or at risk of malnutrition. Thematic analysis using the perspective of grounded theory was employed. This study design was evidence level IV as defined by NHMRC. Fifty-six questionnaires were completed, including 32 patients and 24 carers. Four main themes were uncovered. Firstly, patients and carers were found to have limited awareness

of their nutritional status and risk of malnutrition prior to hospital admission. Secondly, knowledge about nutritional status and malnutrition risk was limited, although perceived as adequate by both groups. Thirdly, adequate nutritional care was not seen as a priority to patients and carers. Finally, dietetic care was well-received, however follow-up would be beneficial. Findings suggest that priority must be given to increase public and health professionals' awareness and ability to identify signs associated with nutritional status and risk of malnutrition, further linking nutritional adequacy with desirable health outcomes. This could be achieved through advocating that keeping a stable weight is a sign of good nutrition, and a simple way of measuring nutritional status.

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COMPARISON OF DIET HISTORY AND URINARY ASSESSMENTS OF DIETARY SODIUM AND POTASSIUM DURING THE INTENSIVE PHASE OF A CLINICAL TRIAL FOR WEIGHT LOSS

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Although randomised controlled trials (RCTs) provide the highest level of evidence in clinical nutrition, monitoring dietary intake during trials is essential in interpreting study outcomes. Exploring factors which impact on dietary data collection may aid with improved data quality. Using data from a weight loss RCT, the aims of the study were to compare self-reported dietary sodium (dNa) and potassium (dK) with biomarkers of intake [urinary sodium (uNa) and potassium (uK)] and determine factors associated with the differences between the measures. Data from diet history interviews (DH) and 24-h urine excretion from the HealthTrack study was used. HealthTrack participants study were randomised to usual care (control, *C*), interdisciplinary intervention (*I*), or intervention plus 30g walnuts/day (IW). Mean differences were higher for sodium [dNa-uNa (95% CI) = -1584.67 (-1882.43, -1286.90) for C, -1847.33 (-2138.29, -1556.37) for I and -0.33 (-0.375, -0.287) for IW] than for potassium [dK – uK (95% CI) = -442.27 (-757.11, -127.44) for C, -536.48 (-757.18, -315.79) for I and -0.04 (-0.072, -0.013) for IW]. Multiple linear regression indicated body mass index (BMI) at baseline was a significantly negative predictor of the difference between dNa and uNa for I (β = -106.140, t= -3.258, P = 0.002). BMI at baseline and DH interviewer category significantly predicted the difference between sodium measures for IW (p = 0.000). The DH did not accurately assess dietary sodium and potassium intake during a food-based weight loss RCT. Consideration of patient BMI and interviewer standardisation may help to improve dietary intake data quality in RCTs.

Funding source: The HealthTrack study was funded by the Illawarra Health and Medical Research Institute and California Walnut Commission.

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NSW PREMIER'S PRIORITY ON CHILDHOOD OVERWEIGHT AND OBESITY – ENGAGING CLINICAL SERVICES

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One in four children in New South Wales (NSW) are above a healthy weight and risk significant negative health impacts now and in the future. The NSW Premier's Priority on childhood overweight and obesity is a whole-of-government initiative launched in 2015, with the aim of reducing the prevalence of childhood overweight and obesity by 5 per cent over 10 years (by 2025). One element of this initiative aims to embed routine identification and management of children who are above a healthy weight across health services, including acute, community-based and primary care settings. NSW Health's systems-approach to delivering this program encompasses: provision of practical support for local implementation, delivery of clinical resources and training for health professionals who assess and provide care to children, establishment of secondary weight management services, and extraction of detailed monitoring data to support local practice improvement. This presentation describes preliminary evaluation data, including qualitative data from clinicians, families, and advisory groups, and quantitative data from population surveys and health information systems. We also present a reflection of the first two years of this project. In particular, we provide an analysis of implementation gaps and challenges faced, and reflect on practical steps to overcome key barriers as we look to the future.

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BARIATRIC SURGERY PATIENTS' VIEW ON PRE-OPERATIVE LIFESTYLE EDUCATION

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Bariatric surgery is currently the most effective treatment for obesity, the outcomes of which are optimised by pre-operative lifestyle education (PLE) to promote long-term modification of behaviours. This study aimed to a) describe attendance at PLE programs, b) describe enabling and precluding factors to PLE access and participation by patients who have recently had bariatric surgery. Structured telephone interviews were carried out with patients who had surgery at a public Queensland hospital between December 2015 and January 2017. Participants were asked to report PLE attendance and enablers or barriers to attending and participating. Responses were mapped to the COM-B system (Capability, Opportunity, Motivation). Forty-nine patients consented to participate (74% consent rate, mean age 50 years, 82% female). Fifteen patients (31%) attended PLE. Belief that PLE would not provide additional benefit/knowledge (Motivation) was identified as the most common barrier to accessing PLE, followed by lack of knowledge that PLE was required or recommended (Capability). Similarly, Motivation was identified as an enabler to attendance, particularly reinforcement from other health professionals. Participants reported benefits to PLE participation related to Capability (practical skills) and Motivation (support, accountability). Perceived lack of clinician skills and limited focus of PLE to specific needs of bariatric surgery was also a barrier. Formalised referral processes that highlight importance and expected outcomes of PLE may increase attendance at these programs. Programs developed for this specific target group and focus on practical strategies, motivation and support may promote better participation and ultimately optimise weight and health outcomes.

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Concurrent session – Food & Environment

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EXPLORING CONSUMER PERSPECTIVES ON THE CONCEPT OF 'FAIR FOOD' AND HOW IT MIGHT RELATE TO DIET QUALITY AND THE FUTURE OF A SECURE FOOD SYSTEM

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Environmental sustainability of the food supply, food security and nutrition-related health conditions are interrelated challenges facing populations globally. Linking these challenges to identify solutions requires a food systems approach that embraces novel approaches to food supply like those captured by the 'fair food' movement. This research aims to: explore knowledge, attitudes and behaviours related to the concept of 'fair food'; and examine implications for food security and diet quality. Face validated online survey instruments were developed and administered to subscribed members of two regional 'fair food' networks. Volunteers were invited to complete one of two surveys pertinent to their specific network. Survey instruments collected demographic data and explored various aspects of 'fair food' including accepted definitions, encapsulated values, and barriers to purchase. Descriptive statistics were utilised to analyse quantitative data. Qualitative responses were extracted and descriptively analysed using content analysis. 134 of ~2,400 members participated in the surveys. 'Fair food' was considered important by 98% of member respondents. Key categories identified include: equality of availability/access to food; ethical food supply; sustainable food practices; and nutritious food. While attitudes were positive, an intention-behaviour gap was evident. Poor identification and low availability/accessibility were identified as barriers to 'fair food'. This study has demonstrated that 'fair food' is a meaningful term for consumers, associated with perceived diet quality and elements of food security. Barriers to participation in 'fair food' systems need to be addressed. Future research should assess the impact of 'fair food' purchases on food-related behaviours in an experimental setting.

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ANALYSIS OF UNIVERSITY FOOD OUTLETS RECIPES WHEN APPLYING THE HEALTH STAR RATING SYSTEM AND THE COMPARISON WITH NEW SOUTH WALES HEALTH BENCHMARK CRITERIA

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The Health Star Rating (HSR) front-of-pack labelling system has been endorsed in Australia in 2014, aiming to help consumers make easier and healthier choices by providing interpretive nutrition information. It has been reported to have the potential to be expanded to unpackaged foods. This study examines the HSR system on freshly prepared foods sold on campus and compares it with the New South Wales Health (NSW) benchmark in order to improve the university food environment. Recipes (n=274) of food and drink items sold on the campus of one urban university in NSW were collected previously and nutritional analysis completed. The HSR was calculated for each recipe and NSW criteria of Everyday and Occasional foods were examined. The mean value of HSR for all recipes was 3.09, range from 1 to 5. Forty-nine of the recipes have a "healthy" HSR score 3.5 or above. "Breakfast" (15%), "Dairy dessert" (9%), and "Hot drink" (8%) comprised the majority of the recipes with a score less than 3.5. With the NSW benchmark criteria, 51% of recipes were classified as Everyday foods. Sixty eight percent of the recipes within Everyday group and 35% of the Occasional group had a HSR score of 3.5 and above. This study shows the HSR system can be expanded to freshly prepared foods and the two classification systems obtained similar results in assessing the overall healthfulness of foods sold on-site. Recipe improvement and integrated approaches are suggested in making a healthier campus food environment.

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A QUICK AND EASY TOOL TO AUDIT A FOOD OUTLET AGAINST A SET OF HEALTHY FOOD AND DRINK PRACTICES

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An unhealthy eating pattern is a leading preventable risk factor for chronic disease. Australian adults obtain over one third of their total daily energy intake from an abundant choice of discretionary foods. New South Wales (NSW) Health is taking the lead to promote healthy choices in their health facilities. Implementation of the 2017 NSW Health policy '*Healthy Food and Drink in NSW Health Facilities for Staff and Visitors Framework (Framework)* will remove sugary drinks from sale in NSW Health facilities by December 2017, and increase the availability and promotion of nutritious foods by December 2018. Analysis of current practice reveals a key limitation in healthy food provision policies has been the lack of systematic monitoring and reporting. To monitor and report on the achievement of a healthy food and drink offering, NSW Health has developed a mobile application-tool to collect data which is linked to a food and drink database and reporting system. The tool will enable an audit of the food offering in NSW Health food outlets, including cafés, and vending machines against a set of 12 food and drink practices. The tool has been designed for users with limited nutrition knowledge who can complete the audit in less than 30 minutes. Adoption of the tool provides a standardised approach that will allow NSW Health to undertake an annual state-wide audit to strengthen accountability and implementation of the *Framework.* This paper reflects on the opportunities for other settings to adopt this innovative tool.

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A COMPARISON OF DAIRY MILK, YOGHURT AND CHEESE PRODUCTS AND THEIR NON-DAIRY ALTERNATIVES ON THE AUSTRALIAN MARKET: NUTRIENT PROFILES AND NATIONAL FOOD STANDARDS

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As increasing numbers of people exclude dairy products from their diets, the availability and consumption of non-dairy milks, yoghurts and cheeses is increasing in Australia. It is unknown how these non-dairy substitutes compare nutritionally to traditional dairy options, or how many meet national food standard criteria to be dairy alternatives. Product and nutrition information for dairy and non-dairy milk, yoghurt and cheese products were collected in a sample of the outlets

from the four major supermarket chains in Australia and within two health food stores across Sydney, Australia. The products were first categorised so as to be able to match the dairy products with their non-dairy substitutes. Average macronutrient concentrations per 100 g were calculated and non-dairy products were assessed against national food standards, using protein and calcium content thresholds. The majority of macronutrient compositions of non-dairy milks, yoghurts and cheeses were significantly different to dairy counterparts. Most notably they contained significantly less protein – a key macronutrient provided by the dairy food group. Soy derived milk and yoghurts were occasionally the exception. The greatest contrast in nutrient profiles was in cheeses, with non-dairy cheeses having substantial levels of carbohydrate and little protein. Most of the non-dairy milks (75.8%), yoghurts (96.6%) and cheeses (100%) did not meet the calcium criteria to be classified as a dairy alternative. The vast majority of non-dairy substitutes are effective in terms of cuisine but do not adequately replace the nutrients of dairy and hence cannot be considered alternatives.

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WHO'S ROLE IS IT? MONITORING NUTRITION PROVISION IN MENTAL HEALTH WARDS

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Optimal nutrition within mental health facilities is of the utmost importance as this demographic is subject to increased appetite, developing diabetes and obesity. This study aimed to explore the role of staff during meal provision in the mental health unit of a large hospital in New South Wales. This two-phase qualitative study involved mealtime observations and semi-structured interviews of 13 nurses, 15 consumers and two consumer representatives in mental health wards. Results underwent manual thematic analysis. Three themes were identified (i) role of staff (ii) nutrition knowledge (iii) food service/menu. Staff roles during mealtimes were not well defined. All nurses reported their role was to be present at mealtimes, 33% believed their role was only to monitor and 58% reported they have a duty of care to provide healthy eating advice/encouragement. Despite this, supervision of patients' intake by nursing staff was not observed during mealtimes, only the intake of desserts by consumers with diabetes was monitored by nursing staff. Lack of nutrition knowledge among nurses was reported as the main barrier to guiding consumer choices at mealtimes. Respondents commented there were limited lighter meal options (sandwiches, salads) available. High energy items (desserts, full cream milk, juices, condiments) were freely accessible by consumers. Final recommendations included: (i) addition of lighter options (ii) placing healthier alternatives (skim milk, fruit, yoghurt and water) as the default (iii) defining the role of staff at mealtimes (iv) providing nutrition training to nursing staff and (v) redirect the focus on healthy eating to all consumers.

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THE SCHOOL LUNCHBOX: A DIETITIAN'S INVESTIGATION OF ITS NUTRITIONAL CONTENT

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Given Australia's childhood obesity epidemic, the nutritional content of children's lunchboxes is a key area to investigate. The aim of this research was to evaluate the nutritional profile of commercially packaged foods commonly used as children's lunchbox snacks. Nutrition information were collected from major supermarkets in Australia. Median energy per serving and Health Star Rating (HSR) were calculated and the 2017 Healthy Kids School Canteen Buyers' Guide criterion was applied to determine which products could be sold in school canteens. In total, 1,252 products were analysed. The median energy per serving of all products was 460 kJ or 0.8 of a standard discretionary serve. Snack foods and chips had the highest median energy content of 574 and 543 kJ per serve respectively, and packaged fruit snacks the lowest at 323 kJ per serve. HSR were displayed on 29% of products with a median HSR of 3; sweet biscuits had the lowest HSR score (0.5), whilst snack foods had the highest HSR score (4.0). For the products the 2017 Healthy Kids School Canteen Buyers' Guide was applicable to, only 37% would be eligible for school canteen menus. This study revealed the wide availability of energy-dense, nutrient-poor products available for children's lunchboxes, with the vast majority of products not displaying a HSR. Snack foods, chips, sweet biscuits and savoury biscuits were consistently higher in energy per serving and had poorer scores when applying various criteria. Fruit snacks provide the best pre-packaged lunchbox snacks for children available at supermarkets.

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A PAIRED COMPARISON OF AUSTRALIAN BRAND AND GENERIC PRODUCT COUNTERPARTS BASED ON THEIR HEALTH STAR RATING AND NUTRITIONAL PROFILE

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Front-of-Pack Labels were introduced to help improve dietary habits as rates of overweight and obesity are increasing in all age groups. A hybrid Front-of-Pack Label called the Health Star Rating (HSR) was introduced in 2014 in Australia and New Zealand. The present study investigated the HSR and nutritional content between brand and generic products as well as comparing the nutritional content of brand products with and without a HSR. A total of 2,273 packaged foods with 146 paired comparisons from six food categories were audited from four major Australian supermarkets. Nutrition information per 100g was obtained from the Nutrition Information Panel of the packaged products. HSR score and nutritional content differences were compared using Wilcoxon Signed Rank Test. Overall, 47% of products contained a HSR (38% of brand products and 62% of generic products). Brand products had a significantly higher HSR score for two out of six categories (grains and discretionary foods) than their generic counterparts ($P < 0.05$). Additionally, brand products with a HSR had a lower saturated fat and sodium content than brand products without a HSR. In conclusion, branded products were found to be nutritionally superior compared to their generic counterparts, however, it appears branded foods have the HSR voluntarily displayed more frequently on healthier products. Mandating the HSR across all packaged products in Australia will assist consumers in making informed, healthier dietary choices.

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INVESTIGATING RELATIONSHIPS BETWEEN MACRONUTRIENT INTAKES AND SLEEP IN YOUNG ADULTS

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The study aimed to investigate the relationship between macronutrient intake and sleep duration in young adults aged 18 to 30 years old in their natural environment. A sample of 232 young adults (68 male and 164 female) were recruited from a range of geographic and socio-economic areas in New South Wales to participate in this cross-sectional survey. Dietary data was collected for three days using a custom designed mobile application and sleep was assessed using an online questionnaire. Linear regression models were conducted to investigate the relationship between sleep duration and macronutrient intakes after adjusting for gender, age, body mass index, smoking, energy intake and dietary under-reporting. A statistically significant difference was found between mean ± SD for weekday and weekend sleep duration ($P < 0.001$) with young adults sleeping longer on weekends (504.2 ± 90.4 min, $n = 229$) compared with weekdays (460.5 ± 74.7 min, $n = 232$). Sleep was negatively associated with carbohydrate intake, 0.8 min less sleep with each gram of carbohydrate, for weekdays but not weekends (ß ± SE= – 0.8 ± 0.4; $P = 0.04$, $r^2 = 0.13$). However, after adjusting for dietary under-reporting this association was no longer significant. No associations with other macronutrients were found. Thus, there appears to be no relationship between the daily macronutrient composition and sleep duration but future studies should consider the timing of each meal with a focus on the evening meal and snacks to understand the association previously observed in feeding trials. Greater heterogeneity in the sample population and objective measures for sleep are suggested for more robust and generalizable results.

Funding source: The study is funded by an Australian Research Council Linkage Grant (LP15010083) and Cancer Council NSW.

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Concurrent session – Food Security & Food Systems

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APPLYING THE RE-AIM FRAMEWORK TO A FOOD LITERACY PROGRAM EVALUATION

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Comprehensive evaluation of public health nutrition program aspects such as implementation fidelity needs to be conducted to understand factors that influence program success. Foodbank Western Australia's *Food Sensations for Adults* was extensively revised in 2015 to align with the WA Department of Health's best practice criteria for programs. The program consists of four core modules (including cooking) and one to two optional modules which enable food literacy to be contextualised to the target group. The primary target group are West Australian adults from low to middle income households with low food literacy who want to increase their food literacy skills. The evaluation has been designed using mixed methods with a multi-group repeated measures design targeting participants, educators and organisations. An informative research and evaluation plan was required for this government funded program to provide regular updates on progress over the funding period 2016-2018. The RE-AIM framework was selected as it evaluates multiple dimensions of the performance of a program including Reach, Effectiveness, Adoption, Implementation and Maintenance. The framework assists in guiding reporting indicators. For example, Reach is being measured by representativeness of the target population and reported sharing of program materials with family and friends. Between the start of the evaluation April 2016 until the end of June 2017, 73% of participants are from low to middle SEIFA areas (n = 834) and 73% are sharing program materials with an additional 19% intending to share (n = 657). This type of evaluation framework offers dietitians a planned way to measure a range of useful program indicators.

Funding source: WA Department of Health

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TIME TO RETHINK HOW WE MEASURE FOOD SECURITY IN AUSTRALIA?

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Currently, the Australian government utilises two food sufficiency questions as a proxy measure of national food security. These questions do not capture all dimensions of food security and this may contribute to underreporting of the problem in Australia. The purpose of this study was to investigate food security using the short form of the more expansive Unite States Household Food Security Survey Module (HFSSM) within an Australian context; and explore the relationship between food security status and multiple socio-demographic variables. From November 2014 to February 2015, two online surveys were completed by 2,334 Australian participants, who were registered members of a commercial research marketing company panel. These surveys contained the short form of the HFSSM and 12 socio-demographic questions. Cross tabulations chi-square tests and a multinomial logistic regression model were employed to analyse survey data. Food security status of the respondents was classified accordingly: High or Marginal (74%, n = 1,495), Low (20%, n = 460) or Very Low (16%, n = 379). Significant independent predictors of food security status identified were age ($p < 0.001$), marital status ($p = 0.005$), income ($p < 0.001$) and education ($p < 0.001$). Findings suggest food insecurity is an important issue across Australia and that certain groups, regardless of income, are particularly vulnerable. The use of a multi-item measure may provide a more accurate national indicator of food security in Australia. A more comprehensive tool may better assist government policy and community interventions to specifically target groups at higher risk of food insecurity.

Funding source: Funding provided by Markets and Services Research Centre in the Edith Cowan University School of Business and Law to collect data on food consumption.

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FEMALE, SINGLE AND LIVING IN POVERTY, ACCESSING FOOD IN THE AUSTRALIAN CAPITAL TERRITORY

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Access to food is a basic human right. Yet many Australian women do not receive this entitlement. This study investigated challenges

vulnerable women face when accessing food in the Australian Capital Territory. A cross-sectional mixed method study comprising one-on-one interviews, the Australian Heath Survey (AHS) food insecurity question, and 24-hour recall was conducted. Single women (n=41) average (SD) age 42.4 (± 11.3) years, living in accommodation and on the poverty-line were recruited through purposive and snowball sampling. Ninety-five percent (n = 39) received social security payments; with 42% (n = 17) receiving $200–$300 /week, 54% (n = 15) lived in social or government housing and 56% (n = 23) had responsibility for children. Thirty (73%) had run out of food and could not afford more in the last 12 months. Qualitative findings suggested 68% (n = 28) of women had consumed a balanced meal either the day of, or day before the interview, whereas 6 (15%) women had not consumed a balanced meal 3–10 weeks prior to the interview. Food pantries were reported as a primary food source, although access was limited due to pantry opening times, low income, poor quality food, and limited healthy fresh food options. Further, little knowledge of available services was identified as challenges to accessing nutritious food. Women were likely to source food from > 2 pantries per fortnight and reported supermarkets, specials and reduced-price food products to supplement food pantry supplies. A multi-sectorial and multi-layered socioeconomic approach is required to improve the availability, access and utilization of safe and nutritious food for women and their children.

Funding source: University of Canberra ECARD Grant Program

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NUTRITION KNOWLEDGE, ATTITUDES AND DIETARY INTAKE OF WOMEN OF REPRODUCTIVE AGE IN BUNDABUNDA WARD, ZAMBIA

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Forty (40) percent of Zambian children under age 5 years are stunted. Stunting begins with a woman's pre-pregnancy nutrition status, and is often associated with poor dietary diversity, including a low intake of animal-source foods (ASFs). This study assessed food attitudes, food item cost-effectiveness and dietary intake of women of reproductive age (WRA) in Bundabunda Ward, Zambia. A mixed-methods approach used participatory observation, focus-group discussions with WRA (nulliparous adolescents, and pregnant, breastfeeding and multiparous women), interviews with community health workers (CHWs), and nutritional analysis of WRA's diets (n = 33). The study found a lack of financial resources, inflexible complementary feeding advice and competing priorities compromised the dietary quality of WRA. All WRA's diets were high in maize and other plant-based foods, and relatively low in ASFs and wild foods, such that they were unlikely to meet their metabolic demands for amino acids, namely lysine and tryptophan. Mean iron intake in adolescents was inadequate and calcium intake across groups met less than 50% of requirements. However, eggs were identified as particularly cost-effective sources of protein and micronutrient intake. Mean intake of energy, protein, zinc and vitamin A across all groups appeared adequate when compared to life-stage recommendations. Further efforts on community and national levels, including strengthening the teaching capacity of CHWs, increasing the availability, accessibility and utilisation of ASFs, and further development of context-specific food-based guidelines are necessary to address food security challenges that underpin the ongoing high prevalence of micronutrient deficiencies and stunting in Bundabunda Ward and similar contexts.

Funding source: This research was made possible by funding from the Australian Centre for International Agricultural Research (ACIAR) (Project # FSC/2014/101).

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FAMILY MEALS WITH YOUNG CHILDREN: PARENT IDENTIFIED MOTIVATORS AND BARRIERS ASSOCIATED WITH EATING TOGETHER

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Eating meals as a family is positively associated with diet quality and health outcomes for children. As diet quality amongst young children is often poor, and has potential to influence longer term intakes via tracking, understanding what influences mealtimes among families with young children is important. Thus, the aim of this study was to assess associations between potential motivators and barriers for family meals, and key family meal characteristics, i.e. weekly frequency of: at least one parent eating with child; whole family eating together; parent and child eating the same foods at dinner, and television watching during meals. An online study of parents (n = 992) with children aged 6 months to 6 years was conducted in 2014. Associations were tested using generalised linear models, and considered significant at $p < 0.005$. Key motivators and barriers were considered as those associated with at least three of the four family meal characteristics. Parent-rated importance of family eating together was positively associated with more optimal family meal characteristics. Presence of problematic child mealtime behaviours, difficulty of making separate child and adult meals, and difficulty finding time to eat together (particularly due to parent working hours) were inversely associated with optimal family meal characteristics. Identifying practical strategies to address these barriers, and affirming the reasons that parents that parents feel family meals are important to them, are likely to be important steps for practitioners and researchers in promoting family meals with young children.

Funding source: Institute of Physical Activity and Nutrition, Deakin University

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INVESTIGATING FAST FOOD CHILDREN'S MEALS: HAVE THERE BEEN ANY CHANGES SINCE 2010?

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Australians are spending increasing amounts on eating out. In 2010, our study of children's fast food meals found the majority exceeded 30% of daily energy recommendations for four-year-old children and most exceeded 30% of the upper limit for sodium for children aged 4 to 8 years. This study aimed to determine whether the nutrient composition of fast food children's meals has changed since then, and

compare the meals with children's recommended meal intakes. Meals sold by the largest Australian fast food chains were surveyed to investigate nutrient composition and how they compare to children's recommended meal intakes (30% of daily recommendations). Over 60% and 40% of meals exceeded meal recommendations for energy and nutrients of public health concern for 4- and 8-year-olds respectively. There was wide variability both between and within chains for similar meals. There were small but significant changes in energy ($p = 0.003$), saturated fat ($p < 0.001$) and sodium content ($p = 0.021$) of meals since 2010. However, in some chains, some nutrients increased, e.g. the sodium content increased by more than 50% in one chain, and by 33% at two chains. Many meals still exceed meal recommendations and may contribute to poorer dietary outcomes for children if consumed regularly. With the wide variation in nutrient composition both within and between chains, it may be difficult for parents and children to choose healthier meals. To reduce the negative impact of meals on children's diets, fast food chains should set targets for the reformulation of their products or change defaults to healthier options.

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LARGE VARIATIONS IN DECLARED SERVING SIZES OF PACKAGED CORE FOOD PRODUCTS IN AUSTRALIA AND THE CASE FOR SERVING SIZE STANDARDISATION

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Declared serving sizes on food packaging are unregulated in Australia, and variations in serving size within similar products reduces the usability of this information. This study aimed to (i) assess the variations in declared serving sizes of packaged core foods in Australia, and (ii) compare declared serving sizes to the Australian Dietary Guidelines standard serves, and to sex-specific typical portion sizes consumed by Australian adults. Product information, including serving size, were collected for products from four major Australian retailers. Coefficients of variation were calculated for serving size and energy per serving for core food categories. Percentage differences were calculated between median declared serving sizes and both the standard serves, and Australian sex-specific median portion sizes. Serving sizes within product categories were also compared to the standard serves and median portion sizes. Coefficients of variation ranged from 0% to 59% for declared serving size and 9% to 64% for energy per serving. Over half of the categories had median serving sizes that were substantially (> 25%) different to the corresponding standard serve, and 25% were substantially different to the median portion size for both sexes. Overall, 24% of products had serving sizes similar to (within ± 10%) the standard serves, and 23% to 28% were similar to Australian median portion sizes. There is substantial variation in declared serving sizes of packaged core foods in Australia, and serving sizes are not aligned with either the Australian Dietary Guidelines or typical portion sizes. Future research into effective means of serving size standardisation are warranted.

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Concurrent session – Public Health and Education

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ADVANCED PRACTICE GASTROENTEROLOGY DIETITIAN LED PRIMARY CONTACT SCREENING CLINIC

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Establishment of an Advanced Practice Dietitian Gastroenterology (APDG) led primary contact Gastroenterology Screening Clinic (GSC) at Northern Health has benefited both the patient cohort and the service. Patients from the gastroenterology wait list who fulfilled the selection criteria were offered assessment and management in the GSC (100% acceptance). The clinic ran at full capacity for its initial seven months, triaging 247 patients, escalating 16% of patients due to identification of red flags and successfully discharging 68% of individuals from the service back to their GP. Thirty five percent of patients were referred on to more appropriate services (dietitian, continence physiotherapist, psychologist, hypnotherapist), and 3% were redirected to the Inflammatory Bowel Disease service. There were no Riskman incidents or episodes of diagnostic disagreement between the APDG and the gastroenterologists. The APDG clinic contributed to decreased wait times for non-urgent patients by an average of 342 days; from 523days (range: 473-598 days) to 181 days (range: 163-208 days), decreased number of patients on the Gastroenterology waitlist (167 removed), decreased Emergency Department presentations by patients seen in the GSC (15% to 2%), with overwhelming patient satisfaction (100%), increased staff satisfaction, improved MDT relations and enabled doctors to direct their time to high acuity patients. Patients escalated or remaining on the Gastroenterology waitlist are deemed care ready. Financial analysis indicated a significant cost saving through the establishment of the GSC, well in excess of the cost to provide this service. Governance was developed and available for other services to utilise.

Funding source: DHHS

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IS A TELEHEALTH INTERVENTION FEASIBLE TO IMPROVE DIETARY QUALITY IN CHRONIC KIDNEY DISEASE? PROCESS EVALUATION RESULTS FROM A PILOT RANDOMISED CONTROLLED TRIAL

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Telehealth-delivered dietary interventions show promise for improving the self-management of chronic kidney disease (CKD). This randomised controlled trial aimed to evaluate the feasibility and acceptability of the ENTICE telehealth-delivered dietary coaching trial in predialysis CKD. Participants with stage 3-4 CKD were recruited from three teaching hospitals in Queensland and randomised into two study groups. The intervention group received telehealth coaching addressing diet quality via fortnightly telephone calls and weekly tailored text messages for three months and received tailored text

messages (but no telephone calls) for another three months. The control group received usual care for three months, followed by non-tailored educational text messages for three months. The intervention demonstrated feasibility through the successful recruitment of 80 participants over the six-month recruitment period (35% of 230 people approached; mean ± SD age 62 ± 13 years). Retention was 93% and 98% in the intervention and control groups, respectively. Of 234 planned intervention calls, 225 were successfully delivered (96%). The first intervention call mean ± SD duration was 45 ± 10 minutes, with the subsequent five calls lasting 24 ± 10 minutes on average. All intervention participants (100%) found the tailored text messages to be useful in supporting dietary change, and 81% believed the text messages led them to a healthier diet, compared to 69% and 61% of control group participants who received the non-tailored educational text messages, respectively. The telehealth program demonstrated feasibility and acceptability for improving diet quality for people with CKD who participated in the trial. Future research should evaluate the effectiveness and uptake of telehealth programs into clinical practice.

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VITAMIN D STATUS OF HOSPITALISED PATIENTS RECEIVING PARENTERAL NUTRITION

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The importance of vitamin D (VD) for musculoskeletal health is well recognised. VD deficiency is common in Australia and parenteral nutrition (PN) patients are vulnerable to deficiency due to chronic illness, fat malabsorption and limited replacement in PN multivitamins. VD status has not been adequately described, assessed or corrected in this group. To describe the VD status of hospitalised patients receiving PN over an 8 year period. A retrospective review of 109 patients (118 episodes of PN) with a VD level was conducted. Demographic and clinical data, specifics of PN, outcomes, routine laboratory tests and VD levels were collected. The median (IQR) age was 66.5 (53–75) years and 48.3% were male. Median (IQR) length of stay was 30 (20–40.75) days. 71% of PN indications were upper and lower gastrointestinal surgery. The median duration of PN was 12.2 (9–20) days. 28.8% patients were on prior VD supplementation. All patients had at least one 25-hydroxy-vitamin-D level during PN. The median (IQR) 25-hydroxy-vitamin-D level was 41 nmol/L (29.25–56.75). 65.2 % of patients had deficient levels (< 50 nmol/L) and 89% had insufficient levels (< 75nmol/L). 20 patients received an intramuscular injection (IMI) of VD which failed to normalise levels in nine of these patients with serial 25D levels. More than 65% of patients had VD deficiency, with almost 90% having insufficient levels. Given the low dose of VD in PN multivitamins and IMI appearing to be ineffective in treating VD deficiency, routine evaluation of VD status may be prudent.

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FEEDING PRACTICES AND NUTRITIONAL INTAKES AMONG NON-CRITICALLY ILL, POSTOPERATIVE ADULT PATIENTS: AN OBSERVATIONAL STUDY

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Evidence-based guidelines (EBG) recommend recommencing oral feeding (liquids and solids) ≤24h after surgery. The aims of this study were to determine time to first diet (any) and solid diet prescriptions, delivery and intakes among adult, non-critically ill, postoperative patients. This prospective cross-sectional study was conducted among 100 post-surgical patients at a metropolitan Australian hospital. Demographic and perioperative dietary-related data were collected from patients' medical records or via direct observation. Dietary intakes were observed for the duration patients were enrolled in the study (from end of surgery to discharge). The amount of energy (kJ) and protein (g) consumed per patient per day was analysed and considered adequate if it met ≥ 75% of patients' individually estimated requirements. Overall, 89 and 52 patients consumed their first intake and first solid intake ≤ 24 hours (h) after surgery, respectively. For their first intake, 53% of patients had clear or free liquids. Median times to first diet prescription (range: 1.3–5.7 h), delivery (range: 2.1–12.5 h) and intake (range: 2.2–13.9 h) were ≤24h after surgery for all patient groups. Time to first solid diet prescription (range: 1.3–77.8 h), delivery (range: 2.1–78.0 h) and intake (range: 2.2–78.2 h) varied considerably. Urological and gastrointestinal patients experienced the greatest delays in times to first solid diet prescription and subsequently first solid intake. Only 26 patients met both their estimated energy and protein requirements for ≥ 1 day during their stay. Whilst practice appears consistent with EBG recommendations for commencing nutrition (any type) after surgery, the re-introduction of nutritionally adequate diets requires improvement.

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THE EFFECT OF SYNBIOTIC YOGURT CONTAINING POMEGRANATE POLYPHENOLS ON THE LIPID PROFILE OF INDIVIDUALS WITH HYPERLIPIDAEMIA: A RANDOMIZED CONTROLLED CLINICAL TRIAL

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The World Health Organization estimates 17.5 million deaths every year from cardiovascular diseases due to lipid profile abnormalities. Various dietary approaches have been employed to alleviate hypercholesterolemia at the population level including the development of functional foods. This study aims to evaluate the effects of a synbiotic yogurt on lipid profile and blood pressure in mildly to moderately hypercholesterolemic and hypertensive subjects. The developed synbiotic yogurt contained *L. rhamnusis* and *L. acidophilus*, 2% fructo-oligosaccharide enriched inulin and 20% pomegranate juice concentrate (PJC) and had 90% probiotics survivability, 72% total phenolic compounds and 68% antioxidant activity over a 4-week refrigerated storage. To assess its health benefits, an 8-week parallel, double-blinded, randomized trial was conducted with 48 volunteers, aged 30-65 years, consuming a daily serve of 200g yogurt. Subjects were assigned to 3 groups: a control; group 2 consumed the synbiotic yogurt without PJC, and group 3 consumed synbiotic yogurt containing 20% PJC. Fasting blood samples, 3d dietary records, anthropometric measurements and BP were collected at baseline, end of 4 and 8 weeks. Consumption of synbiotic yogurt containing PJC resulted in 6% decrease in total cholesterol and 8.3% decrease in low-density lipoprotein cholesterol levels

compared with the controls. No significant changes were observed in triglycerides and HDL-C levels. Total cholesterol: HDL-C ratio and LDL-C: HDL-C ratio as atherogenic indices significantly decreased in group 3 compared with the control group. This study indicates the combined effectiveness of probiotics, prebiotics and polyphenols in ameliorating cardiovascular disease risk factors in both women and men.

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REFEEDING SYNDROME – PUTTING IT IN THE FOREFRONT

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Refeeding syndrome (RFS) is a condition which can result in death of patients who are severely malnourished or starved. It can lead to hypophosphatemia, hypomagnesaemia, hypokalaemia, vitamin and thiamine deficiency, sodium retention and hyperglycaemia. Following a root cause analysis (RCA) in 2014 at Campbelltown Hospital a RFS working party was developed to address knowledge, skill and communication between staff. The aim was to develop a model of care and improve the management for patients at risk of RFS. The working party included members from dietetics, nursing, critical care and medical. Ten initiatives were developed to improve RFS management. Results from junior medical officer (JMO) education found 25% of staff were able to identify the key electrolytes of concern pre education and 54% post. Nursing staff showed 15% pre education and 32% post. For the identification of correct supplementation the following was found: JMO: 25% pre and 76% post and nursing: 34% pre and 68% post. JMO's had an 8–22% improvement in identification of patients at risk of RFS while nursing staff showed an 11–30% increase. Audits showed the RFS magnet, flag on journey boards, RFS bed chart and RFS sticker was being used post education, vitamins were being charted on the same day as risk identified 56% of the time, bloods (EUC/CMP) were being ordered daily 44% of the time and reviewed daily 67% of the time. Electrolytes were charted if suboptimal as required 100% of the time and 78% did not have RFS documented on the nursing handover.

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EARLY SKELETAL MUSCLE LOSS IN NON-SMALL CELL LUNG CANCER PATIENTS RECEIVING CHEMO-RADIATION AND RELATIONSHIP TO SURVIVAL

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Sarcopenia is associated with reduced survival and increased treatment toxicities in cancer. However, in non-small cell lung cancer (NSCLC) patients treated with chemoradiation (CRT) the prevalence of sarcopenia at presentation and extent of muscle loss throughout treatment are unknown. This study investigated skeletal muscle changes in NSCLC patients receiving CRT and relationship with survival. Forty-one patients with NSCLC treated with CRT were assessed for skeletal muscle area and muscle density by computed tomography pre-treatment and 3-months post-treatment. Images at week four of treatment were available for 32 (78%) patients. Linear mixed models were applied to determine changes in skeletal muscle over time and related to overall survival using Kaplan Meier plots. Muscle area and muscle density decreased significantly by week four of CRT (-6.6 cm^2, 95% CI -9.7–-3.1, $p < 0.001$; -1.3 HU, 95% CI -1.9–-0.64, $p < 0.001$, respectively), with minimal change between week four of CRT and 3-month post-CRT follow up (-0.2 cm^2, 95% CI -3.6–3.1, $p = 0.91$; -0.27, 95% CI -0.91–0.36, $p = 0.36$, respectively). Sarcopenia was present in 25(61%) and sarcopenic obesity in 6 (14%) of patients prior to CRT, but not associated with poorer survival. Median survival was shorter in patients with low muscle density prior to treatment although not statistically significant (25 months $\pm$ 8.3 vs. 53 months $\pm$ 13.0, log-rank $p = 0.17$). Overall, significant loss of muscle area and muscle density occur in NSCLC patients early during CRT. A high proportion of patients are sarcopenic prior to CRT, however this was not significantly associated with poorer survival.

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DIFFERENCES IN THE INTERPRETATION OF A MODERNIZED MEDITERRANEAN DIET PRESCRIBED IN INTERVENTION STUDIES FOR THE MANAGEMENT OF TYPE 2 DIABETES: HOW CLOSELY DOES THIS ALIGN WITH A TRADITIONAL MEDITERRANEAN DIET?

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Adherence to Mediterranean Diet (MedDiet) is associated with the prevention and management of type 2 diabetes mellitus (T2DM). However, in intervention studies there is discordance in the interpretation of a MedDiet. The purpose of this investigation was to examine, synthesise and develop a review, exploring the qualitative differences in the interpretation of a modernized MedDiet prescribed as an intervention in clinical trials for the management of T2DM, and how closely this aligns with a traditional MedDiet. The 'traditional' MedDiet is often described as a dietary pattern high in unprocessed plant foods (fruits, vegetables, legumes, nuts, wholegrain cereals, and olive oil); moderate consumption of wine; low-moderate in fish/shellfish; and an infrequent consumption of red meat, animal fats, vegetable oils and processed foods. Synthesis of the reviewed literature demonstrates considerable variation in the qualitative interpretation of a MedDiet. We also identified inadequate reporting of MedDiet interventions, despite several studies referring to their intervention as a 'traditional' MedDiet. The majority of studies emphasized the same key dietary components and principles: an increased intake of vegetables, wholegrains and the preferential consumption of white meat in substitute of red and processed meat and abundant use of olive oil. However, the reporting of specific dietary recommendations for fruit, legumes, nuts, bread, red wine and fermentable dairy products were less consistent or not reported. Greater clarity and depth of reporting amongst intervention studies is warranted for the refinement of a modernized MedDiet definition that is distinct from a prudent dietary pattern.

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