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ABSTRACT BOOKLET

**Abstracts are presented as accepted for publication.*

OC01. A novel personalised nutrition intervention with tailored behavioural support to increase legume consumption in university students. *P.S. Elliott[1], L.D. Devine[1], E.R. Gibney[1], A.M. O'Sullivan[1] 1. Institute of Food and Health, School of Agriculture and Food Science, University College Dublin, Dublin 4, Ireland.*

Personalised nutrition (PN) interventions have primarily focused on using differences in biological traits to generate personalised dietary advice(1). While PN interventions have been efficacious in improving dietary behaviours relative to generic dietary advice(2), none have attempted to personalise behavioural support based on perceived barriers to support dietary behaviour change. As populations must move towards eating sustainable and healthy diets, PN interventions that provide tailored behavioural support may support the consumption of less commonly eaten foods central to sustainable and healthy diets, such as legumes. This pilot feasibility trial sought to test the efficacy, feasibility, and acceptability of a novel PN intervention incorporating tailored behavioural support for increasing legume intakes in young, healthy university students.

Young, healthy university students (18–30 years) were recruited from the UCD PLAN'EAT Living Lab. Intervention development was guided by the Behaviour Change Wheel(3). At baseline, participants completed a demographic questionnaire, a survey where they ranked three pre-selected barriers to eating certain foods, and ≥2 24-hour dietary recalls. Participants were then randomised to an intervention or control group. All participants underwent an in-person diet counselling session with a nutritionist and received a PN report detailing a recommendation to improve their legume intake. Intervention group participants received additional tailored behavioural support based on their primary self-selected barrier to legume consumption. Those who chose 'lack of convenience' as their primary barrier received legume foods; those who chose 'lack of cooking skills' received cooking demonstration videos; and those who chose 'lack of habit' were counselled on habit-building strategies. After ~4 weeks, participants completed ≥2 24-hour dietary recalls and received a PN report detailing how their diet changed compared to baseline. Differences in food group and nutrient intakes between groups were analysed with an independent sample *t*-test or Mann-Whitney *U* test that compared change in intake variables between groups. Statistical analysis was conducted using R (v.4.4.3).

Fifty-nine students were randomised to control or intervention groups, with n=49 completing all endpoint measures (n=34 female; n=15 male). Individuals in the intervention group (n=23; n=16 female; n=7 male) reported a significantly greater increase in legume (+50.0 g/d; 95% CI: 12.5, 87.4; p=0.01) and selenium (p=0.03) intakes, and a significantly greater decrease in red meat intake (p=0.04), compared to individuals in the control group (n=26; n=18 female; n=8 male). The magnitude of difference in legume intakes between groups was large (d=0.79).

This novel PN intervention with tailored behavioural support was efficacious in increasing legume intakes relative to a standard PN intervention. Results will help to inform the development of a larger randomised controlled that will use novel decision tree algorithms

to deliver personalised dietary advice with tailored behavioural support in the UCD PLAN'EAT Living Lab.

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Student Competition

OC02. Assessing blood pressure variability and phenotypes in older adults: Comparing clinic and ambulatory blood pressure monitoring. *C. Goland [1], P. Heavey [1] and G. Cuskelly [1] 1. SHE (Sport, Health and Exercise) Research Centre, Department of Sport and Health Sciences, Technological University of the Shannon, Athlone, Ireland.*

Accurate blood pressure (BP) assessment is crucial for early detection and management of hypertension, which remains a leading risk factor for cardiovascular diseases. Traditional one-off clinic blood pressure (CBP) measurements do not capture within-day BP variability [1], potentially missing BP phenotypes like masked hypertension (which is a normal BP in the clinic but elevated outside clinic) [2]. Additionally, CBP may also lead to overdiagnosis due to white-coat hypertension (BP readings are elevated in a clinical setting but normal outside clinic) [3]. Ambulatory blood pressure monitoring (ABPM), therefore offers a more comprehensive assessment, capturing BP fluctuations throughout the day and night [4]. This study aimed to compare BP phenotype determinations between CBP and ABPM methods, in an apparently healthy adult cohort of >50 years.

After approval by TUS Research Ethics Committee and following informed consent by volunteers, 100 participants not on antihypertensive medication were recruited from various workplace locations in Athlone, Ireland. ABPM was measured using a Welch Allyn 7100 device, while CBP was measured using an Omron M3 BP monitor. Participants completed both CBP and ABPM measurements, with CBP measured the day after completion of ABPM. Phenotypes were defined using standard CBP and ABPM thresholds [5]. Masked hypertension was defined as a normal CBP (≤140/90 mmHg) with elevated ABPM (24-hour mean ≥130/80 mmHg). White-coat hypertension was defined as an elevated CBP (≥140/90 mmHg) with normal ABPM (24-hour mean <130/80 mmHg).

Eighty-five participants (of which 30 were male) completed the protocol. The mean age of participants was 55.6 years (SEM±0.47). Masked hypertension was detected in 12.9% (n=11) of participants, while white-coat hypertension was observed in 9.4% (n=8) of participants. CBP and ABPM were positively correlated for both systolic BP ($r_s = 0.551$, $p < 0.001$); and for diastolic BP ($r_s = 0.579$, $p < 0.001$) , though CBP values were higher by 9.7 mmHg (systolic) and 6.4 mmHg (diastolic). Bland-Altman analysis showed wide limits of agreement for both systolic (−13.22 to +32.63 mmHg) and diastolic BP (−9.79 to +22.59 mmHg).

Results show that almost one-fifth (22.3%) of adults aged over 50 and not taking anti-hypertensive medication have either masked hypertension (potential underdiagnosis of elevated BP) or “white-coat hypertension” (leading to overdiagnosis). This level of misdiagnoses of BP highlights the value of ABPM in detecting masked hypertension and refining cardiovascular risk stratification in older adults.

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Student Competition

OC03. Examining associations between body composition, resting metabolic rate, appetite and energy intake in older adults. *A. Quinn[1,2,3], B. Mullen[1,2,3,4], L. Kirwan[1], H. M. Roche[1,2,4], C. A. Corish[1,2] and K. Horner[1,2,3] 1. School of Public Health, Physiotherapy and Sports Science, University College Dublin, Dublin 4, Republic of Ireland, 2. UCD Institute of Food and Health, University College Dublin, Dublin 4, Republic of Ireland, 3. UCD Institute for Sport and Health, University College Dublin, Dublin 4, Republic of Ireland and 4. Nutrigenomics Research Group, UCD Conway Institute and School of Public Health, Physiotherapy and Sports Science, University College Dublin.*

Some evidence, mainly in adults with overweight/obesity, has shown that fat-free mass (FFM) is associated with appetite and energy intake (EI), which may be mediated by resting metabolic rate (RMR) [(1)]. Understanding these associations in older populations is important, as ageing is associated with several physiological processes including an age-related decline in skeletal muscle mass, known as sarcopenia and an age-related decline in appetite, known as anorexia of ageing. However, studies investigating these associations in older adults are limited [(2,3)]. This cross-sectional analysis examined relationships between body composition, RMR, appetite and EI from data collected in Ireland as part of the European multi-centre APPETITE project [(4)].

69 community dwelling older adults (27M, 42F; BMI = 24.63 ± 2.99 kg/m^2) with body composition, resting metabolic rate, appetite and EI data were included in the present analyses. Body composition was measured via air displacement plethysmography (ADP). RMR was measured following an overnight fast using indirect calorimetry. Appetite was assessed in the fasted state, following a fixed breakfast meal (30, 60, 120 and 180 minutes using visual analogue scales (VAS). Appetite was also assessed at baseline via the Simplified Nutritional Appetite Questionnaire (SNAQ). EI was assessed at 180 minutes after a standardised breakfast (340 kcal, 57g carbohydrate, 8g fat, 11g protein) at a fixed *ad libitum*lunch test meal. Habitual EI was assessed via a 3-day food diary completed in the week prior to the test meal. Data were analysed using simple and partial correlations and multiple regression (SPSS v29, IBM, Munich, Germany) to explore associations and identify predictors of energy intake, adjusting for age and sex. Path analysis was conducted (IBM SPSS AMOS v27, Chicago, Illinois) to examine potential mediation effects. Statistical significance was set at $p < 0.05$

FFM was positively associated with RMR, fasting appetite VAS ratings and SNAQ score ($p < 0.05$ for all). Test meal and daily EI were significantly correlated ($p < 0.05$). Adjusting for age and sex, FFM correlated with test meal EI (ADP, $r = 0.41$, $p < 0.001$). Neither FM, nor BMI were associated with appetite or EI ($p > 0.05$ for all). General linear modelling including FFM, FM, RMR, age and sex, indicated that FFM and RMR ($p < 0.05$) independently predicted ad libitum EI. Path analysis showed that RMR largely mediated the effect of FFM on EI ($p < 0.001$).

RMR may mediate the link between body composition and EI in older adults, with FFM influencing EI via RMR. Lower FFM and RMR may contribute to reduced energy intake and could be targeted in interventions to improve appetite in older adults. Further longitudinal studies are warranted.

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Student Competition

OC04. Transitioning towards sustainable and healthy dietary behaviours: perceived barriers among university students. L.D. Devine[1], P.S. Elliott[1], M.F. O'Neill[1], A. Horgan[1], E.R. Gibney[1] and A.M. O'Sullivan[1] *1. Institute of Food and Health, School of Agriculture and Food Science, University College Dublin, Dublin 4, Ireland.*

The urgency to shift the population to more sustainable and healthy diets is widely recognised, and enabling dietary behaviour change is critical to this transition[(1)]. This study aimed to identify university students' perceived barriers to transitioning towards more sustainable and healthy dietary behaviours (SHDBs).

Young, healthy university students (18-30 years) were recruited to the UCD PLAN'EAT Living Lab (LL). At baseline, participants completed a demographic, health, lifestyle, and dietary behaviour questionnaire, and ≥1 24-hour dietary recalls. SHDB barriers were examined via an adapted online questionnaire[(2)], to include barriers related to increasing fruit, vegetable, and legume intakes, and reducing meat and high fat, salt, and sugar (HFSS) food intakes. The questionnaire comprised twenty-two closed-response questions using a 5-point Likert scale (score -2 to +2) and one open-response question to ascertain any additional barriers. Food group intakes were calculated, and participants were assigned to 'low', 'medium', or 'high' intake categories for fruit and vegetables (FV), meat, and HFSS foods, and to either a 'non-consumer' or 'consumer' category for legume intake. Barriers were analysed for each food group relative to the following participant categories, to include FV (low), legume (non-consumer), meat (high), and HFSS food (high) intakes. Statistical analysis was conducted using R (v.4.4.3). Open-ended question responses were analysed via content analysis. Identified barriers were then mapped to the Capability, Opportunity, and Motivation Behaviour (COM-B) model[(3)] and the Theoretical Domains Framework (TDF)[(4)].

Four hundred and twenty participants are enrolled in the UCD PLAN'EAT LL. Preliminary analysis includes 201 participants (n=150 female; n=50 male; n=1 prefer not to say). The median (25th, 75th percentiles) intake of fruit was 142.5g/d (54.6, 248.0), of vegetables was 128.9g/d (86.7, 188.2), of legumes was 0.0g/d (0.0, 29.7), of meat was 77.2g/d (16.0, 135.2), and of HFSS foods was 176.0g/d (110.0, 263.7). Barriers mapped to the COM-B model and TDF were identified from the closed-response questions for each food group, to include: FV (e.g., expense (COM-B: physical opportunity; TDF: environmental context/resources)), legumes (e.g., perceived preparation time/effort (COM-B: reflective motivation; TDF: beliefs about consequences)), meat (e.g., taste (COM-B: automatic motivation; TDF: emotion)), and HFSS foods (e.g., enjoyment (COM-B: automatic motivation; TDF: emotion)). Additional barriers were identified from the open-response question for each food group, to include: FV (e.g., time constraints (COM-B: physical opportunity; TDF: environmental context/resources)), legumes (e.g., lack of recipe/meal knowledge (COM-B: psychological capability; TDF: knowledge)), meat (e.g., perceived nutrient shortfalls (COM-B: psychological capability; TDF: knowledge)), and HFSS foods (e.g., convenience (COM-B: physical opportunity; TDF: environmental context/resources)).

These initial findings provide further insight into the barriers to adopting a sustainable and healthy diet and will aid in informing the design of tailored interventions to be delivered within the UCD PLAN'EAT LL to support SHDB change among university students.

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OC05. Guiding adolescent boys in Ireland to more plant-based diets: the fibre challenge.

C. McCann[1,2], S. Mehmood[1,3], N. Yep[1,3], N. Clarke[1], M. A. T. Flynn[1,2] *1. Food Safety Authority of Ireland, Dublin 1, Republic of Ireland, 2. School of Biomedical Sciences, Ulster University, Coleraine, Northern Ireland and 3. School of Biological, Health and Sports Sciences, Technological University Dublin, Dublin 7,Ireland.*

Dietary fibre intakes of male adolescents living in Ireland fall short of recommendations [(1,2)]. In addition to addressing low fibre intakes, food-based dietary guidelines (FBDG) for male adolescents need to address the environmental impact of current food consumption patterns [(3)]. Plant-based diets are typically higher in dietary fibre and more environmentally sustainable than omnivore diets [(4)]. This study aimed to develop FBDG to guide male adolescents towards a more plant-based diet in a safe and optimal manner, and to explore the impact on dietary fibre intakes.

Secondary analysis of National Children's Food Survey II and National Teens' Food Survey II [(1)] identified commonly consumed foods (≥10% consumers) and patterns of consumption. These were used to develop 4-day omnivore meal patterns within energy requirements (including one lacto-ovo vegetarian day) for males at nine age-points (9y, 10y, 11y, 12y, 13y, 14y, 15y, 16y, 17–18y), covering five UK90 growth percentiles (5^{th}, 25^{th}, 50^{th}, 75^{th}, 95^{th}), and four physical activity levels (PAL) (1.4, 1.6, 1.8, 2.0). Energy requirements were calculated, informed by actual height and weight data, using the Henry equation [(5)]. For environmental sustainability, diet modelling reduced current recommended intakes of meat and dairy, and iteratively adjusted foods used in each diet to achieve macronutrient targets and 13 micronutrient goals [(2)]. The nutritional composition of modelled meal patterns was assessed using Nutritics software. FBDG were developed in terms of types and amounts of foods needed from different food groups.

The four-day meal patterns developed through diet modelling (*n*180) included supplementation which resolved inadequate vitamin D levels. Initial predicted fibre levels provided were strikingly high (median 43 g/day, range 19 - 72 g/day; median fibre density 4.0 g/MJ, range 3.2 – 4.8 g/MJ), where all modelled diets surpassed fibre adequate intake (AI) goals by 125% on average. Fibre was strongly related to energy requirements (R^2=0.868, p<0.001). Iterative adjustment in diet modelling of fibre-rich foods, including foods from the vegetables/ fruit and the cereals/breads/potatoes food groups, reduced predicted fibre levels provided (median 24 g/day, range 16 -38 g/day; median density 2.3 g/MJ, range 1.8 – 3.5 g/MJ), where all modelled diets surpassed fibre AI goals by 27% on average. These adjustments reduced the association of fibre and energy requirements (R^2=0.775, p<0.001). Otherwise, modelled diets met most macronutrient and micronutrient targets, except for shortfalls in docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA), and vitamin E (apart from older boys, >15 years, with PAL 1.8 - 2.0).

FBDG developed to guide male adolescents in Ireland towards more plant-based diets will require complex guidance on the inclusion of fibre-rich foods from the vegetables/ fruit and the cereals/ breads/ potatoes food groups. Such guidance is related to energy requirements and so will vary according to body size and PAL.

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Student Competition

OC06. Investigating the factors that influence fish consumption in children aged 4 to 11 years in Northern Ireland: A parental survey. *B. Muki[1], M.S. Mulhern[1], E. M. McSorley[1], J.J. Strain[1], P. J. Allsopp[1] and A. J. Yeates[1] 1. Nutrition Innovation Centre for Food and Health (NICHE), School of Biomedical Sciences, Ulster University, Coleraine, Northern Ireland.*

Children in the UK are not meeting the recommended amount of at least two portions of fish per week, including one portion which should be oily[1,2]. Factors which influence fish consumption in children are not fully understood and data on actual fish consumption in children is limited[3]. This study investigated fish consumption and the factors affecting fish consumption in children aged 4 to 11 years living in Northern Ireland (NI).

A cross-sectional online survey was conducted among parents of children aged 4 to 11 years residing in NI between October 2024 and February 2025. The survey included qualitative and semi-quantitative questions assessing sociodemographic factors, children's fish consumption, and parental knowledge about fish and the dietary guidelines. Descriptive statistics were used to summarize the data, while Chi-square, correlation and regression analyses were conducted to identify key determinants and barriers to fish consumption of children.

A total of 385 parents (85.7% mothers, 14.0% fathers and 0.3% other guardians) completed the survey, having 1 to 4 children aged 4-11 years (565 children), with the majority (53.8%) being from a White British background. The findings revealed that preferred fish dish of children was fish fingers (white fish), with 79.0% of children choosing it. Oily fish was consumed by only 44.7% of children. Shellfish was the least consumed fish category, with only 19.8% children ever consuming it. The majority (71.9%) of the children liked the taste of fish, and a whooping 66.8% did not like the smell. Parents who enjoyed cooking fish at home were significantly more likely to report favorably for how their children felt about the smell (X^2 =21.4, $p<0.001$) and taste (X^2 =56.6, $p<0.001$) of fish compared to those who didn't like to cook fish. Most parents (94%), were knowledgeable about the health benefits of fish. This also positively influenced children's fish consumption (X^2 =5.20, $p<0.023$). Furthermore, children of parents (81.5%) who consumed fish while growing up were 2.5 times more likely to consume fish compared to children whose parents didn't ($p<0.002$,OR=2.54). Also, 63.4% of the parents were not aware of any fish consumption guidelines for children and 20.5% never cook fish, with those aware of guidelines being twice more likely to cook fish ($p<0.002$,OR= 2.13). Some 71% of the parents were less likely to give fish to their children owing to concerns about potential toxins in fish ($p<0.013$,OR=0.29).

This study shows the kind of fish mostly preferred by children. The smell of fish is a major sensory barrier. Findings also highlight the critical role of parents in shaping children's fish consumption habits. These findings can help inform strategies to improve fish consumption, enhance the appeal of fish-based meals, and encourage early exposure to fish which will form future parental habits.

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Student Competition

OC07. Early prenatal predictors of breastfeeding intention in women at risk of gestational diabetes in Ireland, UK, Spain, and Australia. *Liz McGovern[1,2], Fionnuala M. McAuliffe[2], Christy Burden[3], Cristina Campoy[4,5], Helena Teede[6], Timothy Skinner[7,8], Rachel A. Laws[9], Helle Terkildsen Maindal[10], Sharleen O'Reilly[1,2]on the behalf of the Impact Diabetes B2B Consortium 1. UCD School of Agriculture and Food Science, University College Dublin, Belfield, Dublin 4, D04 V1W8, Ireland, 2. UCD Perinatal Research Centre, School of Medicine, University College Dublin, National Maternity Hospital, Dublin 2, D02 YH21, Ireland, 3. Academic Women's Health Unit, Translational Health Sciences, Bristol Medical School, University of Bristol, UK, 4. Department of Pediatrics, School of Medicine, University of Granada, Spain, 5. Instituto de Investigación Biosanitaria ibs.GRANADA, Health Sciences Technological Park, 18012, Granada, Spain, 6. Monash Centre for Health Research and Implementation, School of Public Health and Preventive Medicine, Monash University, Australia, 7. Institute for Psychology, University of Copenhagen, Denmark, 8. Australian Centre for Behavioral Research in Diabetes, Deakin University, Melbourne, Australia, 9. School of Exercise & Nutrition Sciences, Institute for Physical Activity and Nutrition, Deakin University, Australia, and 10. Department of Public Health, Aarhus University, Denmark.*

Gestational diabetes and obesity negatively impact breastfeeding outcomes[(1,2)], but little is known about the breastfeeding intention of those at risk of gestational diabetes. Prenatal breastfeeding intention is predictive of initiation and influenced by demographic, health, and breastfeeding-related factors[(3)]. This study aimed to identify early prenatal factors influencing breastfeeding intention in a population at-risk of gestational diabetes, focusing on modifiable factors that could inform early intervention strategies.

This cross-sectional secondary analysis used baseline data from the 'Bump2Baby and Me' randomised controlled trial. Women at risk of gestational diabetes <24 weeks gestation (n=804) were recruited in Ireland (n=213), UK (n=205), Spain (n=211), and Australia (n=175) between February 2021 and April 2022. The gestational diabetes risk screening assessed age, body mass index (BMI), ethnicity, prior gestational diabetes, and family type 2 diabetes history. A proxy breastfeeding self-efficacy score combined participant questionnaire data using validated measures of feeding attitude, willpower, and health literacy. Analyses included chi-square tests for categorical variables, ANOVA for continuous variables, and univariate and multivariate logistic regression to identify predictors of breastfeeding intention.

Of participants, 89% (n=631) intended to breastfeed and 69% (n=494) planned to breastfeed exclusively. In multivariate analysis, predictors of exclusive breastfeeding intention included breastfeeding-positive infant feeding attitude (AOR 11.10, 95% CI 6.73-18.31), higher breastfeeding self-efficacy (AOR 5.44, 95% CI 3.11-9.53), being breastfed themselves (AOR 2.02, 95% CI 1.26-3.26), Spanish site location (AOR 2.68, 95% CI 1.45-4.95), and higher BMI (AOR 0.52, 95% CI 0.31-0.86) after adjustment for demographic, health, and breastfeeding-related variables. Factors independently associated with any and exclusive breastfeeding intention were feeding attitude, health literacy, breastfeeding self-efficacy, being breastfed themselves, prior breastfeeding experience and its duration, BMI, and psychological health. Additionally, independent factors associated with any breastfeeding intention were education level, ethnicity, marital status and smoking during

pregnancy, while age and country were associated with exclusive breastfeeding intention. Higher BMI negatively impacted breastfeeding intention across all analyses. Spain had the highest exclusive breastfeeding intention (80% vs 64-66% other sites).

Our findings reveal opportunities for improving breastfeeding outcomes among women at risk of gestational diabetes. The modifiable factors - infant feeding attitude and breastfeeding self-efficacy - were the strongest predictors, suggesting clear pathways for early prenatal screening and intervention. Non-modifiable predictors enable better identification of women at risk of poor breastfeeding outcomes for tailored support.

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Student Competition

OC08. Impact of a multidisciplinary day-case intervention on dietary intake and symptom severity in hyperemesis gravidarum: a quasi-experimental study. *E.C. O'Brien[1], E. Cowhig[1], J. Doherty[2], M. Bennett[2], S. Curran[2], S. Murphy[2], L. Sheehy[2], H. McHale[2], S.L. Killeen[2] 1. School of Biological, Health and Sports Science, Technological University Dublin, Dublin, Ireland and 2. The National Maternity Hospital, Dublin, Ireland.*

Hyperemesis gravidarum (HG) is a severe form of nausea and vomiting in pregnancy that negatively impacts dietary intake, gestational weight gain and fetal growth [(1,2)]. While day-case management has been shown to be more cost effective and acceptable to patients [(3,4)], its impact on dietary intake remains unexplored. The IRIS Clinic at the National Maternity Hospital, Ireland was established to provide specialised, day-case management to women with HG [(5)]. The intervention includes weekly IV fluids, anti-emetic medication review, individualised dietetic assessment, midwifery continuity of care, perinatal mental health support, comfort care packs, written information, HG-specific snack menu and peer-support. This study aimed to analyse dietary intakes before and after exposure to this intervention.

This quasi-experimental study utilised a pre-test and post-test design. Participants (n=51) were recruited from the IRIS clinic between 2021 and 2023. Upon their first presentation (T1) and after receiving specialised care for six to eight weeks (T2), participants completed 24-hour dietary recalls and questionnaires assessing HG symptoms (PUQE score), well-being (WHO-5) and demographics. Medical charts were also reviewed. Nutrient intake was analysed using Nutritics version 6.09 and compared to individual requirements for energy and protein, as well as EFSA dietary reference values (DRV) for macronutrients, micronutrients and water. Data were analysed using paired sample t-tests, McNemar tests and one-sample tests.

On admission to the clinic, participants had a mean (SD) gestation of 13.8 (5.3) weeks, age of 32.8 (5.1) years and BMI of 25.2 (4.9) kg/m^2. Half (55%, n=28) were nulliparous, and among those who had one or more children, 45.8% (n=11/24) had a history of HG. From T1 to T2, PUQE score reduced by 2.8 points (10.5 [2.7] *vs.* 7.7 [3.3], $P<0.001$) and wellbeing improved by 24.5% (19.4 [13.5] *vs.* 43.8 [20.8], $P<0.001$). Dietary energy and protein intakes increased from T1 to T2 by 381 (663) kcal/day (1009 [444] *vs.* 1389 [578], $P<0.001$) and 15.5 (32.4) g/day (44.4 [24.8] *vs.* 59.9 [27.6], $P=0.001$), respectively. Carbohydrate, fibre, fat, omega-3 fatty acids, iron, calcium, iodine, folate and vitamin C dietary intakes also significantly increased post-intervention, though vitamin D remained unchanged. The proportion of individual energy and protein requirements met significantly increased (energy: 49.1 [25.4] vs. 68.0 [32.0]; protein: 72.3 [47.7] vs. 100.8 [58.5]). All nutrients measured were significantly below DRVs at both timepoints, except for iron at T2.

This study suggests that specialised day-case management at the IRIS Clinic improves dietary intake among women with HG. However, overall nutrient intakes remained below recommendations, highlighting the ongoing dietary challenges by this population. Future research should explore additional strategies, including enteral and parenteral nutrition, to further optimise dietary intake for women with HG.

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OC09. Food fortification with B-vitamins in relation to immune function in older adults: analysis from the TUDA study. *U. Shabbir, H. McNulty, C. Hughes, M. Ward, J. Dooley and L. Hoey 1. Nutrition Innovation Centre for Food and Health, Ulster University, Coleraine, Northern Ireland.*

Inflammageing is a low-grade inflammatory state characterised by increased inflammatory markers associated with the ageing process[1]. Nutritional status is well recognised to play an important role in inflammageing and consequently human health[2]. Of note, evidence shows that low/deficient status of the metabolically interrelated B-vitamins required for one-carbon metabolism, folate, B^{12}, B^{6}, and riboflavin, and/or elevated concentrations of the related metabolite homocysteine, are associated with increased markers of inflammation[3]. Regular intake of fortified foods can optimise B-vitamin status[4] but whether higher dietary intakes can reduce inflammation has not been explored. The aim was to investigate the impact of fortified foods and B-vitamin status on inflammatory markers in older adults.

Eligible participants (n = 2944) were identified from the Trinity-Ulster-Department of Agriculture (TUDA) study of community-dwelling adults (≥60 years, n = 5186) recruited from the island of Ireland (2008–2012). Fortified food intake was assessed using a food frequency questionnaire. Red blood cell folate, serum total B^{12}, plasma pyridoxal-5-phosphate (PLP; B^{6}), erythrocyte glutathione reductase activation coefficient (EGRac; riboflavin), and plasma homocysteine were measured, along with the pro-inflammatory markers (interleukin IL-6, tumor necrosis factor-alpha [TNF-α] and c-reactive protein [CRP]), and the anti-inflammatory marker IL-10. Inflammatory markers were investigated in relation to fortified food intake and B-vitamin biomarkers using multiple linear regression, adjusted for age, sex, waist circumference, timed up-and-go and socioeconomic deprivation.

Highest consumption of fortified foods (8+ servings/wk) compared to non-consumption was associated with lower CRP (β: -0.072, 95% CI: -0.707 – -0.173, $P<0.001$). No significant associations were observed between fortified food and any of the other inflammatory makers. When the relationships between inflammatory markers and of B-vitamin biomarkers were explored, decreasing quartiles of vitamin B^{6} were each associated with higher CRP compared to the highest quartile of B^{6} status ($P<0.01$). Higher CRP was also observed in the lowest compared to the highest quartile of folate status ($P<0.05$). Furthermore, the highest compared to the lowest quartile of homocysteine concentrations was associated with higher CRP ($P<0.05$) and TNF-α ($P<0.01$). No significant associations were observed between vitamin B^{12} or riboflavin biomarkers and any of the inflammatory measures.

These findings suggest that higher intakes of fortified foods and improved status of folate and vitamin B^{6} may positively impact immune function in older adults. These results, if substantiated by randomised controlled trials, may provide nutrition-based solutions for better immune health and improved quality of life.

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Student Competition

OC10. Exploring the role of deprivation in a school-based food intervention study: impact on diet diversity and quality in primary school children. *D. Olgacher[1], C. Wallace[1], S. F. Brennan[1,2], F. Lavelle[3], S. E. Moore[1,2], M. Dean[2], M. C. McKinley[1,2], P. McCole[4], R. F. Hunter[1], L. Dunne[5], N. E. O'Connell[2], C. R. Cardwell[1], C. T. Elliot[2], D. McCarthy[2], and J. V. Woodside[1,2] 1. Centre for Public Health, Queen's University Belfast, Belfast, UK, 2. Institute for Global Food Security, Queen's University Belfast, Belfast, UK, 3. Department of Nutritional Sciences, King's College London, London, UK, 4. School of Business, Maynooth University, Maynooth, Co. Kildare, Ireland and 5. Centre for Evidence and Social Innovation, Queen's University Belfast, Belfast, UK.*

A healthy diet is a key modifiable factor in prevention of childhood obesity(1), however many schoolchildren in the UK struggle to meet national dietary guidelines(2). This issue is particularly pronounced in socioeconomically-disadvantaged areas, where both poorer diet quality and higher obesity rates are prevalent(2,3). Project Daire tested two school-based food interventions, aiming to improve children's health-related quality of life, wellbeing, and dietary behaviours(4). This secondary analysis examines whether the effects of these interventions on diet diversity scores (DDS) and diet quality scores (DQS) of 6-7 and 10-11-year-old children were moderated by school deprivation levels.

A randomized-controlled, factorial-design cluster trial was conducted in primary schools across varying socioeconomic areas in Northern Ireland (NI). Schools were assigned to one of four 6-month intervention arms: 'Nourish', 'Engage', 'Nourish and Engage' or Control (Delayed). Nourish modified the school food environment and provided exposure to local foods and food-related experiences. Engage delivered educational activities on nutrition, food and agriculture. Food consumption data were collected using age-appropriate questionnaires at baseline and 6-month follow-up. DDS and DQS were calculated based on adherence to the UK's food-based dietary guidelines, the Eatwell Guide, for home, school and/or total consumption. Deprivation was measured using the NI Multiple Deprivation Measure 2017, based on school postcode. Random-intercept, multilevel models, adjusted for baseline scores and school clustering, were used to assess intervention effects, with interaction tests exploring moderation by deprivation.

A total of 445 children aged 6-7 years and 458 children aged 10-11 years from 15 schools participated. Among 10-11 y children, those who received Nourish showed increases in school DDS (mean difference=2.79, 95% CI 1.40, 4.19; P=0.001) and total DDS (mean difference=1.55, 95% CI 0.66, 2.43; P=0.002) compared to those who did not receive it, with no corresponding changes in DQS. Analysis according to deprivation revealed that 10-11 y children from more deprived school areas in Nourish experienced increases in school DQS (mean difference=2.4, 95% CI 0.31, 4.4; P=0.02) and total DQS (mean difference=1.8, 95% CI 0.19, 3.4; P=0.03) compared to children in the No Nourish group. Conversely, children from less deprived school areas in Nourish showed a decrease in total DQS (mean difference=-1.5, 95% CI -2.7, -0.28; P=0.02) compared to children in the No Nourish group. No significant changes were observed in other outcomes or confirmed through interaction tests for 6-7 or 10-11-year-old children in the Nourish or Engage groups.

Children from more deprived school areas demonstrated a positive response to the Nourish intervention, with improvements in DQS compared to those from less deprived school areas, while all children receiving Nourish showed improvements in DDS. These findings highlight the potential of an intervention which addressed the school food environment in reducing dietary inequalities in disadvantaged groups.

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OC11. Preliminary analysis of dietary sustainability in Irish children: insights from the National Children's Food Survey II. *Michael O'Neill[1], Petra Van Der Wel[1], Maria Buffini[1], John Kearney[2], Laura Kehoe[3], Janette Walton[3], Albert Flynn[4], Breige McNulty[1] 1. Institute of Food and Health, School of Agriculture and Food Science, University College Dublin, 2. School of Biological & Health Sciences, Technological University Dublin, Dublin, Ireland, 3. Department of Biological Sciences, Munster Technological University, Cork, Republic of Ireland and 4. School of Food and Nutritional Sciences, University College Cork, Ireland.*

Our global food system is a burden on natural resources, using up to 55% of habitable land(1), and generating 78% of freshwater pollution(2). To elevate this burden, the EAT-LANCET Commission proposed a Planetary Health Diet (PHD), where whole grains, fruits, vegetables, nuts and legumes comprise a greater proportion of foods that should be consumed(3). It is imperative that populations move towards this plant-based diet, but in order to do so we need to understand current dietary patterns and adherence to the PHD across different population groups. This study aims to assess the adherence of diets of children in Ireland to the PHD and to examine how demographic factors and individual PHDI scoring components relate to dietary sustainability.

Data were sourced from the nationally representative National Children's Food Survey II (NCFS II, 2017–2018)(4), which collected food and beverage intake through four-day weighed food diaries from 600 Irish children aged 5–12 years. The Planetary Health Diet Index (PHDI) was created to score dietary intakes against the PHD(5). Individual foods were scored according to the PHDI to yield a total score (0=nonadherence, 140=total adherence) for each participant. The statistical weighting factor was adjusted for social class to ensure sample representativeness. Weight status was classified using the IOTF system(6). Data were analysed in SPSS V29, mean PHDI scores were calculated and differences across different socio-demographic variables were assessed using independent t-tests, one-way ANOVA and generalised linear modelling.

Overall, the PHDI score for Irish children was 74.4, with no significant difference in scores by sex (male, n=73.4; female, n=74.5). However, a significant difference was noted between age groups, with 5–8-year-olds having a higher PHDI score than 9–12-year-olds (5–8, n=75.0; 9–12, n=73.0; $p = 0.023$). A significant difference was also apparent in PHDI scores across social class categories with children whose parents were classified as professional, managerial, and technical workers (75.2) or non-manual workers (74.1) having a higher PHDI score compared to children whose parents were classified as skilled manual workers (70.1; $p<0.01$). No differences were noted for the PHDI scores across weight classification. Among limiting food categories within the score components, red/processed meat had the greatest and eggs the least impacted on the PHDI score. Among the favourable food categories, unsaturated oils had the greatest and soy foods the least impact on the overall score.

This study provides context on the adherence to the PHD in Irish children, with an overall low score suggestive that current dietary patterns will require a substantial shift to ensure sustainability. Future research however is required to develop a more comprehensive sustainability index to assess children's diets and to extend the evaluation of dietary sustainability to other population groups using nationally representative data.

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Student Competition

OC12. Solid-state fermentation effects on the anti-nutrient and antioxidant capacity of single cell proteins for food applications. *N. Sunderland and C. Barry-Ryan Sustainability and Health Research Hub – SHRH, Greenway Hub, Grangegorman, Dublin 7, School of Food Science and Environmental Health, TU Dublin, City Campus, Central Quad, Grangegorman Lower, Dublin 7.*

By 2050 the global population is projected to exceed 10 billion, increasing the strain on resources and exposing Europe to a potential protein deficit due to its heavy reliance of imported protein sources. InnoProtein aims to promote protein self-sufficiency in the region through the investigation of Single Cells Proteins (SCPs), including fungi, microalgae and bacteria as sustainable alternatives. There is growing interest in the use of SCPs for food applications and solid-state fermentation (SSF) is one such method currently being used to produce protein rich fungal biomass, using food industry waste as fermentation substrates. However, there are a number of safety concerns associated with these new protein sources, including antinutritional compounds [(1)], such as phytic acid and tannins, which are capable of reducing nutrient uptake by binding to vitamins and minerals. Furthermore, it has been suggested the SSF may enhance antioxidant activity [(2)] which may alleviate the risk of cell damage and other health issues. As such anti-nutritional and antioxidant studies of SCPs are essential for the protection of human health and consumer interests. This study aimed to examine the efficacy of SFF in reducing anti-nutrients and enhancing the antioxidant capacity of food waste substrates used for the development of new protein products.

Food industry waste including B grade cereals and beans, such rice, barley and soy, as well lupin bean pomace all underwent SSF, with unfermented grains and beans used as controls. Antinutrients, phytate and tannins, were extracted from the fermented and control samples, and their levels determined using spectrophotometry. A study was conducted to optimise the antioxidant yields from all samples. These extracts were subsequently evaluated using total phenolic content (TPC), ferric reducing antioxidant power (FRAP) and 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging activity to analyse the effect of SSF on antioxidant capacity.

The results indicate that SSF has the potential to reduce phytate content. Samples prepared through SSF had lower phytic acid levels (0-32 -1.27 g/100g sample) compared to the control samples (2.80 – 3.23 g/100g sample). Furthermore, tannin levels were undetected in the fermented samples and only detected in small amounts in the control samples. Analysis of antioxidant capacity on the samples showed that the TPC levels for the fermented samples (142 – 384 mg GAE per100g) were greater that those observed in the control samples (18 – 162 mg GAE per 100g), with similar trends observed in both the FRAP and DPPH assays.

This preliminary study suggests that SSF has the potential to reduce the anti-nutrient levels and increase the antioxidant capacity of these grains and beans. While the overall aim of the InnoProtein project is to develop new protein rich products this study also highlights the potential to further develop such products with increased functional properties.

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Student Competition

OC13. Food-based dietary guidelines and adolescent boys: 'the ups and downs' of iron fortification. *S. Mehmood[1,2], C. McCann[1,3], N. Yep[1,2], N. Clarke[1], M. A. T. Flynn[1,3] 1. Food Safety Authority of Ireland, Dublin 1, Republic of Ireland, 2. School of Biological, Health & Sport Sciences, Technological University Dublin, Dublin 7, Republic of Ireland and 3. School of Biomedical Sciences, Ulster University, Coleraine, Northern Ireland.*

Adequate nutrition during male adolescence (10-19 years) is essential for growth and development[(1)]. Food-based dietary guidelines (FBDG) for male adolescents facilitating safe, optimal guidance to more plant-based diets are needed to mitigate climatic impact of current food consumption patterns in Ireland[(2)]. Ensuring iron intakes are not excessive is important for protection against iron overload, given the high prevalence of hereditary haemochromatosis in Ireland[(3)]. This study aimed to develop FBDG for male adolescents that meet their nutritional needs more sustainably, whilst exploring the impact on iron intakes.

Secondary analysis of National Children's Food Survey II and National Teens' Food Survey II[(4)] identified commonly consumed foods (≥10% consumers) and patterns of consumption. These were used to develop 4-day omnivore meal patterns (including one lacto-ovo vegetarian day) within energy requirements for males at nine age-points (9y, 10y, 11y, 12y, 13y, 14y, 15y, 16y, 17–18y), covering five UK90 growth percentiles (5^{th}, 25^{th}, 50^{th}, 75^{th}, 95^{th}), and four physical activity levels (PAL) (1.4, 1.6, 1.8, 2.0). Energy requirements were calculated, informed by actual height and weight data, using the Henry equation[(5)]. For environmental sustainability, diet modelling reduced current recommended intakes of meat and dairy and iteratively adjusted foods to achieve macronutrient targets and 13 micronutrient goals. The nutritional composition of modelled meal patterns was assessed using Nutritics software. FBDG were developed in terms of food types needed from different food groups.

The four-day meal patterns developed through diet modelling (*n*180) included vitamin D supplementation. High iron levels were initially predicted (median total iron 18 mg, range 6.9 - 32.1 mg/day; median haem *vs.* non-haem iron 1.0 mg *vs.*16.6 mg/day, range 0.4 – 8.3 mg/day *vs.* 6.2 – 30.9 mg/day). The high iron levels were driven mainly by fortified foods in the cereals/bread food group. Predicted total and non-haem iron provided by modelled diets were positively associated with energy requirements (R^2=0.776, $p<0.001$ *vs.* R^2=0.772, $p<0.001$, respectively), while haem iron intakes were not. Iterative diet modelling adjusted the use of breakfast cereals voluntarily fortified with iron. Remaining iron-fortified foods in the cereals and breads food group were due to mandatory fortification of UK-imported flour and similar diet adjustments were not possible. Adjustments successfully reduced high total and non-haem iron levels provided and did not affect haem iron (median total iron 11.9 mg, range 8.0- 18.7 mg/day; median haem *vs.* non-haem iron 0.9 *vs.*10.7 mg/day). The associations of total/non-haem iron and energy requirements were also reduced (R^2=0.320, p<.001/ R^2=0.515, p<0.001, respectively). Otherwise, modelled diets met main macronutrient targets and exceeded micronutrient goals, except vitamin E.

Sustainable FBDG ensuring optimal iron intakes are hampered by variable iron levels in fortified foods. Additional complexity arises due to the unpredictable proportion of UK-imported flour in Irish products, which is mandatorily iron-fortified.

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Student Competition

OC14. Attitudes towards low and zero alcohol products amongst male students. *S. Sheridan[1] and G.J.Cuskelly[2] 1. S. Sheridan, Registered Associate Nutritionist, BSc Nutrition and Health Science (2024), Technological University of the Shannon, Athlone, Co. Westmeath, Ireland and 2. Dr G.Cuskelly SRD, BSc, PhD Lecturer in Nutrition (Dept of Sport & Health Science), Principal Investigator (TUS SHE Research Centre) in the Technological University of the Shannon, Athlone, Co. Westmeath, Ireland.*

Alcohol consumption among male students has reached concerning levels, posing significant risks to public health and society globally[(1)] . Low- and no-alcohol alternatives of a variety of alcohol-containing beverages are now available and while some studies[(2)] suggest that zero- and low-alcohol beverages could mitigate high alcohol consumption, these products nonetheless remain controversial as other studies suggest they provide a gateway to underage drinking[(3)]. Significant concerns have been raised in relation to the marketing of zero-alcohol beverages, which often share similar labelling, packaging, and branding with their alcohol-containing counterparts[(4)]. Though low- and zero-alcohol alternatives do not necessarily lead to similar risks as those associated with alcohol, there are nonetheless reports of unintended consequences, such as heightened awareness of the associated alcohol brand among younger consumers[(3)]. The aim of this study was to investigate male students' attitudes to advertising of zero and low alcohol beverages.

This study was approved by the Technological University of the Shannon's Department of Sport & Health Research Ethics Committee. Male students who were attending a third level HEI in the Republic of Ireland were recruited. The inclusion criteria were (i) male aged 18-30 years old, (ii) attending university in the Republic of Ireland, (iii) studying part time or full time (iv) either alcohol or non-alcohol consumer. Data were collected using an online questionnaire delivered using Microsoft Forms, which was pilot tested before distribution.

Those who were recruited (n=185) and provided consent were then screened for eligibility. After application of screening criteria, 151 completed the survey and were included in data analysis. The majority of participants reported awareness of having seen zero- and low-alcohol advertisements; primarily in supermarkets (42%), followed by in shops (16%), on TV advertisements (13%), at either bus stops or on public transport (12%), on their mobile phones (11%) and at sports events (5%). When prompted with a closed question, forty-four percent of participants regarded it as controversial to promote zero-alcohol products at sports events. There were mixed opinions regarding whether zero-alcohol drinks should be advertised with the term "alcohol" on the label, given their alcohol-free content with 32% either agreeing or strongly agreeing that the term alcohol should be removed from advertising compared to 29% who disagreed.

The findings suggest a majority of males surveyed have an awareness of advertising of zero and low alcohol beverages with supermarkets being the most common location of exposure to advertising. The responses regarding the promotion of these products at sports events and the use of "alcohol" in labelling suggest further research is warranted to further explore attitudes to advertising.

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Student Competition

OC15. Nutrition for Life: A collaborative and community engagement approach to developing a whole-school food and nutrition policy. *N.McGee[1] and M.McLoone[2] 1. Carndonagh Community School, Carndonagh, Co. Donegal and 2. Department of Health & Nutritional Sciences, Atlantic Technological University, Ireland.*

Childhood and adolescence are a critical time of physical, psychological, and social development. Therefore, installing healthy dietary habits is a priority at this stage of life. However, it is well documented that it is a period of poor nutritional intake. This exposes Children and Young People (CYP) to potentially serious health-related problems[(1)]. As CYP spend a significant part of their life in an educational setting, it makes this an ideal place to intervene and promote healthy eating practices(2). The aim of this study was to undertake a multi-stakeholder - students, parent(s), guardian(s), staff and Board of Management (BOM), situational analysis to inform the development of a whole-school food and nutrition policy.

Following ethical approval from the Faculty of Science Ethics Committee at ATU, Sligo (REF HPP202301), three specific participatory sessions were held for students and one each for staff/BOM and parent(s)/guardian(s) based on the principles of the World Cafe (WC) methodology as per the WC Foundation[(3)].These were held in one rural mixed post-primary community school in Co. Donegal. The number of participants in each session was 24 at Junior Cycle, 4 at Transition Year & 5th Year, 6 at 6th Year, 9 at staff/BOM and 4 at parent(s)/guardian(s). The data from each WC was analyzed using a thematic analysis approach(4).

The themes that emerged from students were body image, the importance of good nutrition for well-being, their high consumption of ultra-processed food (UPF) and sugar sweetened beverages (SSB), low availability of healthy foods, better education, the influence of others, the cost of healthy food, incentives to eat healthily, long queues and student involvement in policy development. Staff and BOM themes included the high consumption of UPF and SSB by students, the healthy food intake by some students, the influence of the home and school environments, the positive impact of being involved in elite sports, improved education, the influence of social media, parent(s)/guardian(s) involvement, and the need for a whole-school approach. Parent(s) and guardian(s) themes were the influence of the home and school food environments, increased adolescent autonomy, better education, student involvement, the contrast between the primary and post-primary school food environments, and the impact of body image on food choice.

The results from this study highlights a range of themes that stakeholders in a post-primary school believe to be important to inform the development of a whole-school food and nutrition policy. While the setting for this study was at second level, it is relevant to any sector where CYP spend a significant amount of their time as it will assist with the creation and maintenance of supportive healthy eating policies and environments.

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Student Competition

OC16. Exploring the use of primary care services by participants with metabolic syndrome: secondary analysis of TILDA. *J. Whelan[1], M. McDonnell-Naughton[2] and G. J. Cuskelly[1] 1. Department of Sport & Health Science, Technological University of the Shannon Midlands, Ireland and 2. Department of Nursing, Technological University of the Shannon Midlands, Ireland.*

Primary care (PC) is the first point of contact accessible by self-referral to health services in Ireland provided by a general practitioner. Metabolic syndrome (MetS) is a clustering of clinical markers including elevated fasting blood glucose, blood pressure, plasma triglycerides, reduced high-density lipoprotein cholesterol and the presence of central obesity[(1)]. MetS is of increasing public health concern, as its markers contribute to the risk of cardiovascular disease and associated multimorbidity results in increased burden of healthcare costs[(2)]. Despite this, there is currently no model of care for MetS in Ireland. The Irish Longitudinal Study on Ageing (TILDA) is a longitudinal prospective study which collects data on health, economic and social circumstances[(3)]. TILDA data has been used to identify MetS prevalence[(4)] using both the National Cholesterol Education Program Third Adult Treatment Panel (ATPIII)[(5)] and the International Diabetes Foundation (IDF) criteria[(6)]. This planned analysis, based upon MetS categorisation by McCarty et al.[(4)] will compare PC service use by participants with and without MetS during Wave 1 and 3.

TILDA data was accessed via application, and data analysis was conducted on-site in TILDA offices. The cohort consists of participants aged 50 and older, living independently in the Republic of Ireland. The first cohort was recruited between October 2009 and February 2011 (Wave 1), with a follow-up health assessment (HA) conducted between March 2014 and October 2015 during Wave 3 (no HA data was collected during Wave 2). PC service use data was collected by trained interviewers using computer-aided personal interviews (CAPI)[(4)]. PC use frequency was compared between MetS and non-MetS participants, across Waves 1 and 3, using Pearson Chi-Squared using Stata18.

3618 participants had a complete dataset to calculate their MetS status at both waves. Calculated prevalence of MetS at Wave 1 was significantly different between ATPIII (28%) and IDF (34%) ($p<0.001$). Based upon ATPIII criteria for MetS in Wave 1, with regard to having accessed occupational therapy (OT) services, a significantly greater proportion of those who accessed OT were determined retrospectively to have had MetS ($p=0.012$). A similar trend was evident for physiotherapy, ($p = 0.018$), optician services ($p=0.003$), chiropody services ($p=0.002$) and dietetic services ($p=0.000$). In Wave 3, a similar trend was observed based upon ATPIII criteria for MetS for OT ($p=0.018$), optician services ($p<0.001$) and chiropody services ($p<0.001$). No significant difference in physiotherapy services in Wave 3. Data on dietetic use was not available for Wave 3.

At baseline, MetS prevalence was higher using the IDF definition than the ATPIII definition, consistent with previous findings[(4)(7)]. Amongst TILDA participants, significantly more older adults who access dietetic, occupational, chiropody and physiotherapy services have MetS. Screening patients for MetS, is potentially beneficial for enhancing strategic targeting of PC services.

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Acknowledgments

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Student Competition

OC17. Quality and accuracy of complementary feeding information online: a cross-sectional content analysis of Instagram posts. *A. Rafter[1,2], E. Proctor[1,2], M. Conway[1], M K. Fialkowski[3] 1. School of Biological, Health and Sports Sciences, Technological University Dublin, Dublin, Ireland, 2. School of Medicine, Trinity College Dublin, Dublin, Ireland and 3. Nutrition Support Shared Resources, University of Hawaii Cancer Center, Honolulu, Hawaii.*

The increasing use of social media as a source of infant feeding advice raises concerns about the quality and accuracy of information available to parents. The World Health Organisation (WHO) recommends the introduction of solid foods at around 6 months of age, in addition to breastmilk, and the consumption of a diverse diet, including animal source foods, fruits and vegetables, and pulses, nuts and seeds [(1)]. The objective of this study was to examine the reliability of complementary feeding information shared on Instagram, assessing its alignment with these established guidelines.

A cross-sectional content analysis was conducted on Instagram posts in March 2025. Posts related to complementary feeding were collated using 13 relevant hashtags, such as #babyledweaning, #startingsolids and #firstfoods. 50 posts per hashtag were collected, screened for eligibility, and analysed for accuracy based on the WHO guidelines and quality using the Principles for Health Information on social media (PRHISM) scoring tool [(2)]. PRHISM utilises 13 principles to evaluate health-related social media content and ranges from 0 to 100, with higher scores indicating better information quality. Scores are classified as Poor (0–25), Mediocre (26–50), Good (51–75), and Excellent (76–100). The timing of food introduction, in months, was compared to the WHO 6-month guideline. Food types were compared to the WHO guidelines across 3 categories: 1) Animal sources 2) Fruit and vegetables 3) Pulses, nuts, seeds. Due to the public nature of the data, this study was exempt from formal review by an ethics committee.

A total of n=650 posts were collected and, following screening, n=301 posts were included for analysis. Out of the n=100 of these posts outlining when to introduce complementary foods, the majority (93%) recommended starting at 6 months old, which aligns with the WHO guidelines. The remaining posts recommended introduction earlier than 6 months. About half of the n=268 posts that included information on types of foods to introduce encouraged consumption of all 3 recommended food groups, while 41% included 2 of the 3 food groups. In terms of quality, the material on the posts was classified as mediocre, with a mean PRHISM score of 35%. The most significant PRHISM score reductions were attributed to deficiencies across three principles: attribution, supplementary information, and the presentation of risks and benefits. Their mean scores (± SD) were 0.23 (± 0.75), 0.12 (± 0.65), and 0.91 (± 1.05), respectively, out of a maximum score of 4.

With Instagram's growing popularity as a social media platform, it holds significant potential as a tool for disseminating evidence-based nutrition advice. Social media evaluation tools, such as PRHISM, can serve as resources for content creators, enabling them to deliver high-quality, reliable, and well-researched information on infant nutrition and other health-related topics.

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Student Competition

OC18. The impact of one-to-one peer support on mothers' breastfeeding goals and maternal wellbeing: a scoping review. *Khayla Timothy[1], EJ O' Sullivan[2] and Á. O'Connor[1] 1. SHE Research Centre, Department of Sport & Health Sciences, Faculty of Science and Health, Technological University of the Shannon, Ireland and 2. School of Biological, Health and Sports Sciences, Technological University Dublin, Ireland.*

Breastfeeding support is essential in helping mothers achieve their breastfeeding goals. While research in Ireland has explored the role of healthcare professionals[1,2] and breastfeeding support groups[3,4] in supporting breastfeeding, little is known about the impact of one-to-one peer support on mothers breastfeeding goals. Peer support offers mothers emotional support and increases their confidence in their ability to achieve their breastfeeding goals[5]. Despite the potential benefits of one-to-one breastfeeding peer support, no published research has explored its effectiveness in Ireland. Given the increasing global focus on maternal wellbeing and breastfeeding support as public health priorities, understanding the role of peer support is crucial for informing policy and practice. This review aimed to address and examine the impact of one-to-one peer support on mothers' breastfeeding goals and maternal wellbeing.

A scoping review was conducted, guided by Arksey & O'Malley's five-step framework (2005)[6] and reported in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Reviews guidelines[7]. A comprehensive database search was conducted using seven electronic databases and reference lists of included papers were screened. Inclusion criteria focused on studies exploring mothers' perspectives on one-to-one peer breastfeeding support, excluding those from healthcare professionals or peer supporters. Only studies on support provided by trained peer supporters or mothers with breastfeeding experience were included, while those solely examining support from healthcare professionals were excluded. Primary research was included, secondary research was excluded. Qualitative data were analysed using reflexive thematic analysis following Braun & Clarke's (2022) updated approach[8].

The review identified 34 papers (16 quantitative, 7 qualitative, 6 mixed-method, 3 secondary analysis with 2 papers discussing their primary outcomes) spanning 11 countries. Two overarching qualitative themes were generated: (1) 'Breastfeeding goals: set, met, and beyond' highlighting the positive impact peer support has on enabling mothers to achieve their breastfeeding goals and sometimes to extend their initial goal and (2) 'The impact of one-to-one peer breastfeeding support on maternal wellbeing through emotional support', demonstrating the important role the peer supporter has on encouraging, reassuring and boosting mothers confidence. Additionally, one quantitative outcome was identified: 'The impact of one-to-one peer support on initiation, continuation, and exclusivity of breastfeeding,' with (87.5%) of the quantitative studies indicating a positive association between receipt of one-to-one peer support and breastfeeding rates.

This review underscores the significant role one-to-one peer breastfeeding support plays in empowering mothers to achieve their personal breastfeeding goals while also enhancing maternal wellbeing. These findings highlight the need for greater integration of structured one-to-one peer support into maternal health services in Ireland to optimise breastfeeding outcomes and maternal wellbeing. Future research aims to explore the experiences of

mothers receiving one-to-one peer support in Ireland and will inform the further development of peer support training programs.

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Student Competition

OC19. Beyond folic acid – what is the nutritional content of fertility and pregnancy supplements on the Irish market? *N. Yep[1,2], A. Dunphy[1], C. Erraught[1], L. Farrell[1], S. Fox[1], C.B. O'Donovan[1] 1. The Food Safety Authority of Ireland, Dublin 1, Ireland and 2. School of Biological Health & Sports Sciences, Technological University Dublin, Dublin 7, Ireland.*

Folic acid supplementation (400 µg) is recommended for women of childbearing age and during the first 12 weeks of pregnancy to prevent neural tube defects [(1)]. While nutrients such as zinc, selenium and omega-3 are important for fertility, there is limited research on other substances with a nutritional or physiological effect [(2, 3)]. Food Supplements (FS) placed on the Irish market must be notified to the Food Safety Authority of Ireland (FSAI) [(4)].

The aims of this study were to: 1) identify and compare the levels of nutrients present in these FS to European Food Safety Authority (EFSA) Tolerable Upper Intake Levels (ULs) 2) identify other substances (plant botanicals, amino acids, probiotics) present.

Data on FS for fertility and pregnancy, notified between January 1st-December 31st 2024, were extracted from FSAI Food Notifications System including product/brand name, ingredient list, health claims and nutritional information. Based on product name, ingredients (zinc, selenium, folic acid) and health claims for fertility and reproduction, FS were categorised as: "female fertility", "male fertility", "pregnancy", "postpartum/breastfeeding" and "combination" (FS > one category). Exclusion criteria were duplicate notifications and illegible labels. Data were analysed by frequency and distribution analysis conducted using SPSS (Version 29.0.01).

A total of 49 FS were identified and categorised as female fertility (n=10), male fertility (n=14), pregnancy (n=17), postpartum/breastfeeding (n=5), combination (n=3). The median levels of folic acid were 400 µg (35,816) in female fertility (n=8), pregnancy (n=15), postpartum/breastfeeding (n=4) and combination (n=3) FS. For male fertility FS (n=9), median levels of folic acid were 600 µg (200,600). The most common mineral in female fertility and pregnancy FS was zinc (n=14), in male fertility FS it was selenium (n=14). All postpartum/breastfeeding (n=5) and combination (n=3) FS contained iodine, iron, and zinc. The labelled levels of nutrients did not exceed the defined ULs.

In male fertility FS, maca root *lepidium meyenii* (n=7) and l-carnitine (n=9) were the most common plant botanical and amino acid identified. Maca root was found in one female fertility and pregnancy FS, while not in the other categories. L-arginine was the most frequent amino acid in female fertility FS (n=2), while amino acids were not found in any of the other categories. The most common bacterial strain in these FS was *Lactobacillus rhamnosus* (n=5).

The study shows that levels of nutrients and other substances vary based on the category assigned to the food supplement. In terms of labelled nutrient values, none of the products contained levels exceeding the EFSA ULs. However, as this category of products evolves, it is important that food businesses continue to comply with EU food law requirements placing only safe food on the market. FSAI will continue to monitor these FS which are aimed at vulnerable groups.

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Student Competition

OC20. Compare adhernace to ESPEN recommendations for Oncology Patients at the Oncology Unit Cavan Monaghan Hospital (CMH), Cavan. *M. Brady[1], B.Mallon Moore[1], M.Gilmartin[1] 1. Cavan Monaghan Hospital, Lisdarn, Co.Cavan.*

The National Malnutrition Screening Survey (1) states that the risk of malnutrition is significantly higher in those with cancer compared to those without. ESPEN (European Society for Enteral and Parenteral Nutrition) recommend routine screening and rescreening for malnutrition and referral to dietetics as appropriate. ESPEN also suggest nutritional requirements for oncology patients. The overall aim of this study was to audit adherence to ESPEN recommendation for patients attending for chemotherapy at the oncology unit at CMH.

Referral criteria was implemented in September 2023. All patients with one or more of the following: Upper GI, hepatobiliary, head and neck, lung cancer, weight loss, uncontrolled symptoms, swallowing difficulties, MST or MUST ≥2. This was then audited. Retrospective data was collected. 30 patients were selected (August 2024- December 2024) who had commenced chemotherapy at CMH. This recent cohort were also selected because if referrals to dietetics were indicated these could be actioned. Secondary data captured was the waiting time and weight loss from referral to dietetics to assessment and percentage of nutritional requirements being met. This was coded and inputted into the HSE NCCA audit tool for analysis.

90% of those who were starting chemotherapy had malnutrition screening completed, with 80% of these completed accurately. 0% of this cohort had malnutrition screening repeated. Of those who had malnutrition screening completed 43% were referred to dietetics. When compared to local policy it was evident that at least 60% of patients should have been referred. Indicating that 17% of patients were not referred to dietetics. The average wait time from referral to dietetics to assessment was 2.5weeks, with this ranging from 0-6 weeks. 57% of patients who were referred had weight loss at the time they were assessed by the dietitian. This weight loss ranging from 2-10%. This weight loss is deemed significant and severe. At the initial assessment by the dietitian 21% were meeting >75% of their estimated caloric and protein requirements estimated using ESPEN criteria and clinical judgement. At the follow up assessment 86% were meeting >75% of their calorie and protein requirements.

The oncology unit at CMH are highly compliant with malnutrition screening on initial presentation for treatment with high levels of accuracy. However, limited rescreening is being carried out. When comparing a standardised malnutrition screening tool against locally agreed referral criteria it is clear that some referrals are likely to be missed suggesting that a more comprehensive tool is needed eg. Patient Guided Subjective Global Assessment Tool. Prolonged time from referral to assessment has likely impacted the severity of weight loss experienced by patients. Analysis of patients meeting estimated calorie and protein requirements at initial dietetic assessment versus follow up clearly demonstrates the impact dietetic intervention has.

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OC21. Assessing diet quality of Irish children aged 8-11 years old using the KidDASH score: how healthy and environmentally sustainable are children's diets? *M C Conway[1,2], J M Harrington[3], S N McCarthy[2] 1. School of Biological, Health and Sports Sciences, Technological University Dublin, Dublin, Ireland, 2. Department of Agrifood Business and Spatial Analysis, Teagasc Food Research Centre, Dublin, Ireland and 3. School of Public Health, University College Cork, Cork, Ireland.*

Compliance to food based dietary guideline (FBDG) recommendations by children is known to be low[(1)]. Diet quality scores such as DASH offer another way to assess the healthiness of dietary intakes[(2)]. In adults, higher diet quality has been found to be associated with lower environmental impact[(2)], however, this has not been widely studied for children's dietary intakes and associated environmental impact. The current study aims to assess diet quality of children's intakes using a modified KidDASH score and to estimate the environmental impact of food consumption across quintiles of KidDASH score.

A 3-day food diary collected in the Cork Children's Lifestyle Study (CCLaS) for children aged 8-11-years-old was used in the current study and environmental impact estimated in terms of greenhouse gas emissions (GHGE, gCO2eq) and water footprint (WF, litres)[(1)]. The KidDASH score was calculated using children's dietary intakes as previously described[(3,4)]. A total of 10 dietary components were used to generate this score including: wholegrains, fruit, vegetables, low-fat dairy, nuts & legumes, red or processed meat, sweetened snacks, salty snacks, sugar sweetened beverages, and salt. A total KidDASH score was calculated by summing the scores of each component, and this total score was then divided into quintiles of KidDASH score. A higher KidDASH score, either continuous or quintile, indicates higher diet quality. ANOVA was used to determine differences in intakes (g/day), GHGE (gCO2eq/day) and WF (Litres/day) across quintiles of KidDASH.

Mean daily food intake was 1716g/day, with a mean KidDASH score of 27, GHGE of 4642g/day and WF of 120litres/day. Despite increasing total amount of food intake, GHGE decreased significantly across quintiles, from 5099gCO2eq/day in quintile (Q)1 of KidDASH score to 4218gCO2eq/day in Q5, whereas dietary WF significantly increased across quintiles, from 112 litres in Q1, to 130 litres in Q5. There were significantly higher intakes of 'fruit and vegetables' and 'dairy' in participants in Q5 than the other quintiles, and significantly higher intakes of 'pulses, nuts and legumes' in Q5 than in Q1, Q2 and Q3. There was a higher percentage of children meeting recommendations for 'fruit and vegetables' and 'dairy' in Q5. There were significantly lower intakes of 'meat, poultry, fish', in Q5 compared to Q1 and Q2, with significantly lower intakes of processed meats in Q5 compared to all other quintiles. Intakes of 'discretionary foods and beverages' decreased with increasing quintile of KidDASH, resulting in decreases in associated environmental impact of these foods across quintiles.

GHGE and WF varied across quintiles of KidDASH, as did dietary intakes of food groups. Those in the highest quintile (Q5) had lower intakes of discretionary foods, however, there is still potential for further improvements to diet quality even in those in the highest quintile.

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OC22. Assessing the feasibility of food-based guidelines for homeless services. *D. Ravikumar-Grant[1] and C. Kelly[1] 1. Discipline of Health Promotion, University of Galway, Galway Rd, Galway, Ireland.*

Food provision is a key part of daily life within homeless services and yet there are no standardised food-based guidelines to aid homeless services in food provision, on a national level. Previous Irish research has shown a high consumption of fast food, takeaways and low fruit and vegetable intake within homeless services [1; 2]. Service providers have also been highlighted as gatekeepers of food provision within homeless services [3]. In research with service users and service providers a need for food-based guidelines tailored to homeless services was identified [3]. Food-based guidelines were developed in conjunction with a public patient involvement (PPI) panel, comprised of homeless service providers and academics with experience working with the homeless population [4]. This was to ensure that the resource was useful to service providers and accounted for the practical considerations of their daily life in homeless services. The aim of this study was to test the co-designed food-based guidelines with homeless service providers that are currently working in homeless services.

Homeless services across the island of Ireland were recruited using snowball sampling. A site visit was conducted to explain the food-based guidelines to services and they were given 2- 4 weeks to implement the food-based guidelines. After this period, on-site semi-structured interviews were conducted with service providers to assess whether food-based guidelines were feasible for staff to use, including the relevance of recipes, advice on healthy eating, portion control, basic knife skills, stocking a dry goods pantry and links to other resources. The second phase of data collection included an observation of a meal service in each recruited homeless service, using a predeveloped checklist. Data were stored on NVivo and analysed thematically.

Seven services were recruited for this study, with five services from the Republic of Ireland and two services from Northern Ireland. All participants found the food-based guidelines easy to understand. All services except one were able to implement the guidelines and trial the recipes with the majority of recipes being received well. One service did not have cooking facilities but could still use the food-based guidelines to manage their dry goods pantry and examine the nutritional content of meals provided through external catering services. Barriers to implementation included the availability of cooking facilities, and the need to make use of donated food. Resources on how to stock a pantry, the Eatwell Plate, basic knife skills and reading food labels were also considered useful by participants.

Service providers reported that these food-based guidelines have the potential to benefit homeless service users, given that service providers do not always have previous experience with food provision. Full implementation of these guidelines should be tested in other services providing food to marginalised groups.

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Student Competition

OC23. Evaluating nutritional quality, extent of processing and front-of-package claims: An audit of toddler-specific foods available in Irish supermarkets. *M. Murray [1], G. McMonagle [1] and B. Power [1] 1. Department of Health and Nutritional Sciences, Atlantic Technological University, Sligo, Ireland.*

Early childhood is a period of rapid growth and development in which nutrition plays a crucial role [(1)]. Evidence indicates an increase in the popularity and availability of ultra-processed (UP) infant and toddler foods even though they typically have a lower nutritional quality than minimally processed (MP) foods [(2)]. Such foods often contain on-pack claims which may influence the perceptions and purchasing behaviour of parents [(3)]. Despite this, there is a lack of recent research examining infant and toddler foods sold in Irish supermarkets. This study evaluated the nutritional quality, claims/messages and level of processing of commercially available infant and toddler food products in Ireland.

A cross-sectional audit of five supermarkets with the leading market shares in Ireland was conducted both online and instore. Nutrition information, ingredients, on-pack claims and messages were recorded. Foods were categorised into breakfast, lunch, fruit/dessert or snacks. The NOVA classification system [(4)] was used to assess processing level and it was verified by another author. The traffic light nutritional profile model (TLM) was applied to the relevant data to assess nutritional quality. On-pack claims and messages were categorised into “nutrition”, “health” or “other” (unregulated). The Kruskal–Wallis test ($p<0.05$) in SPSS (version 28, IBM Corp.) was performed to test for differences in levels of nutrients between NOVA groups.

A total of 347 foods aimed at age 4 - 40 months were recorded. Overall, breakfast foods, fruit/desserts and snacks contained medium levels of total sugars (5-22.5g/ 100g). Whereas all foods were low in salt (<0.3g/ 100g). The majority of foods were considered UP (n = 166, 47.8%), with UP foods being highest in total fat, saturated fat, sugar and salt ($p<0.001$) . A significant association was found between the product category and the level of processing with 76.6% (n = 36) of breakfast cereals being UP ($\chi2$ (6) = 200.12, p = < 0.001). UP foods were more likely to contain unregulated claims, 43.4% (n = 23) of UP food contained an unregulated claim compared with 26.4% (n = 14) of MP foods which contained an unregulated claim ($\chi2$ (6) = 13.610, $p < 0.05$). “I’m Organic” was the most common on-pack claim.

In conclusion, on a positive note the majority of infant and toddler foods were low in salt. However, most of these food products aimed at young children were classed as UP and of lower nutritional quality. UP foods were also most likely to bear unregulated claims. Food manufacturers should be encouraged to reformulate their products to address the medium levels total sugar. Further research is needed to explore the effects of on-pack claims on parents' perceptions of the healthiness of baby and toddler-specific foods.

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Student Competition

OC24. Environmental impact of food consumption and sociodemographic factors in Northern Norway through an intersectional lens. *B. Kucuk[1], C. Rylander[1], M.H. Carlsen[2], M.W Lundblad[1], L.F Andersen[2], G. Skeie[1] 1. Department of Community Medicine, Faculty of Health Sciences, UiT the Arctic University of Norway, Tromsø9019, Norway and 2. Department of Nutrition, Institute of Basic Medical Sciences, Faculty of Medicine, University of Oslo, Oslo 0316, Norway.*

Food systems contribute significantly to environmental degradation. The interplay of sociodemographic factors influences food choices and thus, the environmental impacts of diet. The food consumption behaviour also exhibits notable regional and local variations, reflecting the unique characteristics of specific areas. In Northern Norway, the distinct climatic conditions underscore the importance of context-specific research to better understand and support the transition toward more environmentally sustainable diets and the development of targeted interventions(1). This study investigated the environmental impact of food consumption in Northern Norway, focusing on intersectional dynamics.

A cross-sectional design was employed using data from The Tromso Study(2), an ongoing population-based cohort study in Northern Norway. The diet was assessed using a food frequency questionnaire, and the environmental impact of diet was estimated for greenhouse gas emissions, water use, land use, acidification, and eutrophication using a Norwegian life cycle analysis food database(3). Multiple linear regression analyses were performed to examine the associations with sociodemographic variables using three-way interactions with sex, education, and income in an inter-categorical intersectionality framework. Pairwise contrasts were calculated to assess the mean differences between interacting groups. All statistical analyses were performed using the R statistical software. Study is approved by the Regional Committee for Medical Research Ethics (REK Nord 563600) and the Norwegian Data Protection Authority.

Across the different environmental indicators, total number of participants ranged between 11,022 and 11,119. The typical diet in Northern Norway substantially impacts the environment, with dairy products being the primary contributor. Sociodemographic factors in the regression models account for 53.4% to 73.0% of the variation in environmental indicators, with strong statistical significance ($F = 237.0–553.4$, $p < 0.05$). When controlling for energy intake, age was inversely linked to the environmental impact, whereas a higher body mass index corresponded to a greater environmental impact. No clear association with sex was observed, and the associations among environmental impact, education, and income varied. Including intersectional analyses did not significantly improve the explanatory power of the models. Although a few pairwise comparisons were statistically significant, the effect sizes were generally small.

The findings support the need for strategies to reduce the environmental burden of food consumption in Northern Norway while considering the importance of various sociodemographic factors and their complex dynamics.

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Student Competition

OC25. Assessing the impacts of current Irish dietary patterns through a One Health lens.

D.T. Burke[1, 2], P. Hynds[1], A. Priyadarshini[1, 3] 1. Environmental Sustainability & Health Institute, Technological University Dublin, D07 EWV4 Dublin, Ireland, 2. School of Business, Technological University Dublin, Aungier Street, Dublin 2, Ireland and 3. School of Business, Maynooth University, Maynooth, Co. Kildare, Ireland.

Food production and dietary patterns play a central role in nutrition and the myriad interactions across human, animal, and ecosystem health, emphasising the need for a One Health approach ([1-5]). This study aims to evaluate current Irish diets within this framework.

A cross-sectional dietary and health survey was conducted (July to December 2021) in Ireland with a representative sample size of 957 adult respondents. A farm-to-fork life cycle assessment (LCA) following LCA methodology based on International Standards of Organization (ISO) 14,040 and 14,044 was employed to assess nine human health and environmental impacts (fine particulate matter formation, freshwater and marine ecotoxicity and eutrophication, human carcinogenic and non-carcinogenic toxicity and terrestrial acidification and ecotoxicity) using OpenLCA 2.0.4 in concurrence with the AGRIBALYSE® database [(6-8)]. Thirteen distinct dietary patterns were assessed: total population, rural, urban, omnivore, flexitarian, pescatarian, vegetarian, vegan, 'meat-focused', 'dairy/ovo-focused', 'vegetable-focused', 'seafood-focused', and 'potato-focused', employing the daily volume of consumed food (g/per capita/day) as the functional unit. BMI was calculated for each respondent based on self-reported health metrics (i.e., height and weight).

The survey was initiated by 1023 respondents, and after removing incomplete responses, 957 were analysed. Overall, 70.8% of respondents lived in urban areas, while 29.2% lived in rural areas. The 25–34-year-old age group was the most represented (32.4%), along with the €25,000-€49,999 pre-tax household income bracket. Results indicate the 'meat-focused' diet exhibited the highest impact for fine particulate matter formation, marine eutrophication, and terrestrial acidification. The 'seafood-focused' diet had the highest impact on freshwater and marine ecotoxicity, freshwater eutrophication, and human carcinogenic toxicity. The 'potato-focused' diet exhibited the highest human non-carcinogenic and terrestrial ecotoxicity. Transitioning from the "mean" Irish diet to a vegan diet resulted in the highest percentage decrease across all nine impacts (60.4% to 107.3%), followed by the 'vegetable-focused' diet (28.5% to 66.2%). Rural (27.8 kg/m^2) and 'meat-focused' (27.7 kg/m^2) diets were associated with the highest mean BMIs, while the vegan diet exhibited the lowest (24.4 kg/m^2). Results indicate that data-derived dietary patterns may be more predictive of health and environmental outcomes than self-identified "traditional" dietary delineations. However, trade-offs need to be considered as increased consumption of cereals and fruits leads to higher freshwater and terrestrial ecotoxicity, while higher seafood consumption results in increased human carcinogenic toxicity.

Diets with lower meat intake, coupled with increased consumption of domestically produced vegetables (i.e., 'vegetable-focused' diet) could be adapted to meet the cultural and climatic needs of Ireland and similar regions. Moreover, adopting sustainable diets—'vegetable-focused', vegetarian, and vegan—can improve nutrition and human, environmental, and animal health. Findings emphasise the need for tailored, evidence-

based policies to improve consumer communication and enhance awareness of the interconnectedness of diets within the One Health framework, promoting diets that balance nutritional quality and sustainability.

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OC26. Glycaemic control in the first 12 months post-diagnosis with Type 1 Diabetes in paediatric service users who commenced insulin to carbohydrate ratios and carbohydrate counting at diagnosis. *M. Gallagher[1,2], A. Bennett[1], L. Kelly[3] 1. Discipline of Clinical Medicine, Trinity Centre for Health Sciences, St James' Healthcare Campus, Dublin 8, Ireland, 2. School of Biological and Health Sciences, Technological University of Dublin - City Campus, Central Quad, Grangegorman, Dublin 7, Ireland and 3. Department of Nutrition and Dietetics, Midlands Regional Hospital Portlaoise, Dublin Road, Portlaoise, Laois, Ireland.*

Type 1 Diabetes Mellitus (T1DM) requires lifelong exogenous insulin therapy to maintain normoglycaemia[(1)]. There is a sizeable body of evidence supporting the role of Carbohydrate Counting (CC) in improving glycaemic control among adults with T1DM[(2, 3)]. The effect of CC and Insulin to Carbohydrate Ratios (ICRs) on the glycaemic control of children and adolescents with T1DM is uncertain[(4, 5)]. This study aimed to compare glycaemic control (HbA1c) in the first 12 months post-diagnosis among paediatric patients who received 'standard education' at time of diagnosis and were discharged on fixed insulin doses, versus those who received intensive CC education at time of diagnosis and were discharged on ICRs with correction doses.

A retrospective audit of medical charts was conducted in October 2024 in Midlands Regional Hospital Portlaoise, Ireland. Sociodemographic and health characteristics were gathered. HbA1c measures were categorised by number of days post-diagnosis and analysed based on insulin-dosing approach. Seventy-eight parents/guardians of the paediatric cohort were invited to complete an online survey on the dietetic education received when their child was diagnosed. Data analysis were conducted using IBM SPSS Statistics Version 28.0 for Windows 11. The Independent Samples t-test was used to compare two means among normally distributed continuous variables. The Mann-Whitney U test was used to compare two means among non-normally distributed continuous variables. Between-category differences in an independent variable with three categories and a non-normally distributed continuous dependent variable were compared using the Kruskal-Wallis test. Bivariate correlations were performed to assess the direction of a relationship between two variables. The Pearson correlation coefficient assessed the strength of the relationship between normally distributed variables.

Eighty-five patients were included (n=40 fixed insulin doses, n=45 ICRs). Median (IQR) age at diagnosis was 10.1 years (6.5, 12.7). Although mean HbA1c values were lower among those discharged on ICRs at three of the timepoints explored, there was no statistically significant difference in HbA1c values among those discharged on fixed insulin doses compared to those discharged on ICRs at any of the five timepoints. For example, 271-360 days post-diagnosis, those discharged on ICRs (n=34) had a mean HbA1c of 61.8mmol/mol while those discharged on fixed insulin doses (n=25) had a mean HbA1c of 64.8mmol/mol. Mean and median HbA1c levels in both cohorts exceeded the target threshold of 53mmol/mol at all timepoints. Forty-eight parents/guardians completed the online survey (61.5% response rate). Less than half (n=23, 47.9%) reported that 'time of diagnosis' was the best time to learn about CC and ICRs. Many respondents highlighted the impact of their child's diagnosis on their own well-being (n=6, 12.5%).

Further research is required to identify the optimal time for CC interventions in the paediatric cohort, while considering the glycaemic control of the patient alongside the well-being of the family.

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Student Competition

OC27. Food additive usage in Irish food products, baseline data from the Irish National Food Ingredients database. *K. Hynes [1], J. Walton, A.P Nugent and B.A McNulty 1. UCD Institute of Food and Health, School Agriculture & Food Science, University College Dublin, Belfield, Dublin, Ireland, 2. Department of Biological Sciences, Munster Technological University, Cork, Ireland and 3. Institute for Global Food Security, School of Biological Sciences, Queens University Belfast, Belfast, Northern Ireland.*

Current dietary patterns have been partly shaped by the obesogenic food environment in which we live, contributing to the increase in prevalence of many non-communicable diseases among populations worldwide [(1)]. In terms of food availability, there have been major changes in the ranges and varieties of foods accessible to the consumer globally, with increased numbers of food products high in energy, fat, sugar and salt [(2)]. In order to combat this in Ireland, initiatives such as the introduction of the Sugar Sweetened Beverage Tax and the initiation of the Reformulation Taskforce in Ireland [(3)], have meant that in recent years the composition of food products have shifted including the use of additives. In order to understand the impact of these changes, the aim of the study was to establish baseline data of food additive usage in food products in Ireland prior to reformulation initiatives being introduced.

Data were used from the Irish National Food Ingredient database (INFID), a multi-faceted database which lists detailed information at brand level from food packaging labels, collected from participants of the Irish national food surveys reflecting the foods consumed within the survey period[(4)]. For this study, data were extracted from INFID V3, which corresponds to data collected during the National Adult Nutrition Survey (NANS; 2008-2010). Ingredient lists for each pre-packaged food product were utilised to record all additives used within products, along with their function in the food. This was completed to a sub ingredient level for each food product. The types and frequency of food additives used were described using SPSS to explore patterns of usage.

Baseline data from INFID V3 indicated that across the 2552 food products extracted, 249 different types of additives were used, with the most commonly occurring additives being Citric Acid, Lecithin, Mono- and Diglycerides of fatty acids and L-Ascorbic acid. These additives used were included to increase antioxidant properties, enhance flavour, preserve foods and act as emulsifiers respectively. The food categories which contributed the highest frequency of additives were cereals and bakery products (31.5%), dairy products (13.1%), pre-prepared dishes (10%) and meat and meat products (8.6%). When examining sweeteners in particular, the most frequently occurring were Aspartame, Acesulfame Potassium, Acesulfame K and Sucralose and these were mainly used in beverages.

From this baseline study, the large variety of additive usage in food products is apparent. This study along with NANS II data once available, will allow for a comparative analysis to be conducted to ascertain any changes in frequency and type of additive usage and the contributing food groups which contain additives in the diet. This will be important to ascertain as food reformulation may have resulted in a change in landscape of additive usage.

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Student Competition

OC28. Current dietary iodine intakes of Irish adults: results from the National Adult Nutrition Survey II. *A. Murtagh[1], K. Dunne[1], M. Buffini[1], L. Kehoe[2], E. O'Sullivan[2], A. Flynn[3], J. Kearney[4], J. Walton[2], and B. McNulty[1] 1. UCD Institute of Food and Health, University College Dublin, Dublin, Ireland, 2. Department of Biological Sciences, Munster Technological University, Cork, Ireland, 3. School of Food and Nutritional Sciences, University College Cork, Ireland and School of Biological & Health Sciences, Technological University Dublin, Dublin, Ireland.*

Iodine is an essential mineral and a key component of the thyroid hormones, which play a crucial role in regulating metabolism, supporting various organ systems and is involved in development of the foetus during pregnancy[(1)]. Previously, adults living in Ireland were reported to have generally adequate intakes of iodine, with milk consumption identified as a significant source of iodine in the diet[(2)]. However, in recent years Irish dietary patterns have changed[(3)], and as we move towards a more sustainable plant-based diet[(4)], iodine status should be assessed. Therefore, this study aims to determine the usual dietary iodine intake and the primary dietary sources of iodine.

Analyses were based on data from the National Adult Nutrition Survey II (NANS II) (2021-2022), a nationally representative food and beverage consumption survey in Ireland (n = 1000; 489 males, 511 females). Dietary assessment included two independent 24-hour dietary recalls at least 7 days apart. The iodine composition within the Irish food composition database was updated using data from various sources, with the Irish Total Diet Study (TDS) used as the primary source of data[(5)]. Usual intakes of iodine (µg) were calculated via the NCI-method using SAS© Enterprise Guide. The prevalence of inadequate intakes of iodine (excluding energy under-reporters[(6)] was estimated using estimated average requirements (EAR) of 95 µg/day established by the US Institute of Medicine (IOM). Contribution of food categories to iodine intakes were also calculated. Statistical analyses were carried out using SPSS (IBM SPSS Statistics 27), assessing differences in intakes across sex and age groups.

Usual iodine intakes in the total population were adequate (150±89µg/day) with 30% of the populations intakes below the EAR. A significant difference between sexes was noted, with males having higher iodine intakes per day compared to females (172 ±97 µg/day vs 130±76 µg/day, respectively, ($p<0.001$)). Furthermore, those aged 65 years and older (n=282) had a significantly higher iodine intake compared to those aged between 19 and 64 years (n= 718) (155±89µg/day vs 148±90µg/day, respectively ($p<0.001$)). Milk was the main source of dietary iodine, contributing 33% of total dietary iodine intakes, followed by beverages (11%), butter, spreads, fats and oils (9%), cheeses (8%) and fish including fish dishes (5%).

Dietary iodine intakes in adults living in Ireland are adequate, however it is important to monitor dietary iodine intakes and sources as trends towards milk alternatives among other factors may impact iodine intakes across the Irish population. Equally, it would be important to conduct the measurement of urinary iodine concentrations in this population to provide further information on iodine status.

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OC29. The impact of the involvement in food growing on biodiversity knowledge & behaviours. *M. Mahroug[1], M. Walker[2] and A. Moore Heslin[3] 1. School of Biological, Health, and Sports Sciences, Technological University Dublin, Grangegorman, D07 EWV4 Dublin, Ireland, 2. School of Agriculture and Food Science, University College Dublin, Belfield, D04 V1W8 Dublin, Ireland and 3. Airfield Estate, Overend Way, Dundrum, D14 EE77 Dublin, Ireland.*

Our food system is the main cause of biodiversity loss, with current industrial agricultural practices significantly degrading ecosystems and habitats [(1)]. The food system contributes to 28-34% of global greenhouse gas emissions [(2)]. Those involved in food production often have a deeper understanding of sustainable practices and biodiversity [(3)], but addressing the global biodiversity crisis requires broadening access to this knowledge. This aligns with Sustainable Development Goal (SDG) 12: Responsible Consumption and Production, which emphasises the importance of incorporating sustainable practices at all societal levels. Engagement in sustainable horticulture has also been associated with greater perceived health benefits amongst gardeners, further underscoring the potential positive outcomes of sustainable food practices [(4)].

This study aimed to explore associations between involvement in food growing and food- and biodiversity-related knowledge and behaviours among Irish adults.

A cross-sectional, anonymous online survey comprising 34 food- and biodiversity–related questions was developed using SurveyMonkey and disseminated across Ireland via newsletters, volunteering websites, social media, and posters. Participants (n=579) were categorised as either “food growers” or “non-food growers” based on whether they reported spending time in nature to grow food. Data were analysed through Chi-squared and Mann-Whitney U tests in IBM SPSS Statistics (Version 29).

Of a total of 579 participants (73% female, age range 18-92 years, median age = 44±30), 14% were categorised as food growers (n=82), with the remaining 86% indicating they did not partake in food growing (non-food growers) (n=497). No significant demographic differences were observed between groups.

The findings revealed that 22% of food growers always consider the impact of their food choices on biodiversity, compared to 5.6% of non-food growers ($p<0.001$). Regarding perceptions of agricultural practices, over half of food growers (52%) strongly disagree that current methods of food production are good for biodiversity, compared to a third of non-food growers (33%) ($p=0.009$). Knowledge of regenerative agriculture is significantly higher among food growers (66%) compared to non-food growers (36%)($p<0.001$).

No significant differences in biodiversity-friendly food purchasing behaviours were found between groups, with both food growers and non-food growers purchasing similar amounts of organic, local, and seasonal food. Organic food accounted for an average of 34.9% of food growers' and 37.3% of non-food growers' weekly shops; locally produced food for 52.1% and 53.7%, respectively; and seasonal food for 47.6% and 44.4%, respectively.

Food growers have a stronger consideration for biodiversity and more critical perceptions of current agricultural practices. This suggests that those actively involved in food growing are more conscious of the environmental implications of their choices. Despite this, the lack of significant findings in biodiversity-friendly behaviours between groups highlights that there remains a gap between knowledge and behaviour in terms of sustainable food choices.

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Student Competition

OC30. Parental knowledge of, attitudes toward, and adherence to the FSAI supplementation and food-based recommendations for iron in small-for-age toddlers: a pilot study. *O. Eslami, GJ.Cuskelly, and Á.O'Connor 1. SHE Research Centre, Department of Sport & Health Sciences, Faculty of Science and Health, Technological University of the Shannon, Ireland.*

The Food Safety Authority of Ireland (FSAI) food-based dietary guidelines indicate an inadequate iron intake (i.e., below estimated average requirements) in 1-3-year-old toddlers growing small-for-age (≤ the 25th percentile). To ensure this group meets daily iron requirements, the FSAI advises parents to offer their child an iron supplement at a dose of 7 mg on four days per week or to use iron-fortified formula milk (with an iron level ≥ 1 mg/100 mL) daily. In addition, the food-based recommendations encourage including 30 grams of red meat three days per week and 30 grams of iron-fortified breakfast cereals for at least five days per week[(1)]. This cross-sectional pilot survey aimed to explore parents' awareness of, attitudes towards, and adherence to the FSAI recommendations for iron intake in small-for-age toddlers.

After approval by TUS and ICGP Research Ethics Committees, a convenience sample of parents of small-for-age toddlers was recruited by advertising on social media accounts of two parenting websites in Ireland (Rollercoaster.ie and Everymum.ie). Parents were asked to complete an online Knowledge-Attitude-Practice (KAP) questionnaire. The scores for each section of the survey, as defined by the researcher, were computed and analysed to measure correlations between KAP components. Correlation coefficients (r) were interpreted as follows: < 0.3 weak; between 0.3 and 0.7 moderate; and > 0.7 strong (considered statistically significant if the P-value < 0.05).

Forty parents met the eligibility criteria and all completed the survey. The majority were mothers, White Irish, university-educated, and employed. Nearly all parents (97.5%) were aware of the functions of iron. However, they demonstrated varying levels of nutrition knowledge about food sources and dietary enhancers and inhibitors of iron absorption, with knowledge ranging from 50% to 88%. Awareness of FSAI guidelines for iron supplements, iron-fortified breakfast cereals, and red meat were 7.5%, 10%, and 27.5%, respectively. The proportions of parents with positive attitudes towards recommendations for iron supplements, iron-fortified formula, iron-fortified breakfast cereals, and red meat were 25%, 32.5%, 65%, and 87.5%, respectively. Less than 1% of the respondents adhered to recommendations for iron supplements (n = 0) or iron-fortified formula (n = 2). Whereas adherence rates for recommendations regarding iron-fortified breakfast cereals and red meat were 20% and 30%, respectively. There were significant positive moderate correlations between knowledge and practice scores (r = 0.35, P = 0.027) and attitude and practice scores (r = 0.39, P = 0.014).

In summary, there was poor awareness of, and adherence to, the FSAI recommendations for iron in this small sample of mostly college-educated parents with small-for-age toddlers. Given that small-for-age children need extra iron from supplements and/or formula milk, public health campaigns are needed to increase parents' awareness and promote guidelines in the community.

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Student Competition

OC31. Consumer intentions to consume vitamin D fortified foods: A role for developing and communicating a national fortification strategy. *S.N. McCarthy[1], L. McGuinness[1], M. McCarthy[2], ME Kiely[3] 1. Department of Agrifood Business, Teagasc Food Research Centre, Dublin, Ireland, 2. Department of Management & Marketing, Cork University Business School, University College Cork, Ireland and 3. Cork Centre for Vitamin D and Nutrition Research, School of Food and Nutritional Sciences, University College Cork, Cork, Ireland.*

Meeting vitamin D nutritional requirements is challenging due to its low availability in the food supply. Hence, Fortification strategies have been implemented in countries such as Canada and Finland, with demonstrated success [(1,2)]. However, this success relies on consumer acceptance of vitamin D fortified food products [(3)]. The aim of this study was to determine factors that influence acceptance vitamin D food fortification in Irish adults with a view to informing fortification strategy.

A consumer questionnaire was developed to identify strategies for the resolution of vitamin D deficiency, and develop consumer centric approaches to food fortification to increase likelihood of acceptance and uptake. The questionnaire consisted of a range of constructs that influence and underpin consumer use of fortified foods and/or supplements, knowledge and attitudes pertaining to vitamin D and associated health outcomes.

The survey was completed online by 1008 adults in Ireland in February 2025. Overall consumer intention to purchase and/or consume food products with added vitamin D was high with 75% of consumers responding positively to the intention statements. Mean scores for intention were significantly higher for women compared to men (5.0 vs 4.7 $p<0.01$). Regression analysis revealed that intention was significantly and positively influenced by social norms, whereby peer groups recommended vitamin D fortified foods or were already consuming them. Positive attitudes to fortification in addition to understanding the link between healthy diet and fortification also significantly increased the intention to consume vitamin D fortified foods. Perceived benefit of consuming fortified foods and perceived susceptibility to the consequences of a diet low in vitamin D also increased the intention to consume. Cues to action such as social media posts and public health campaigns along with advice from GP would also increase intention to consume vitamin D fortified foods.

The likelihood of success of a National Vitamin D fortification strategy will increase if the drivers of intention to consume vitamin D fortified foods are carefully considered and implemented into any plans. The high levels of intention indicate that the majority of Irish adults are positive regarding the consumption of vitamin D fortified foods. Using the cues to action such as social media and public health campaigns as well as GP advice to communicate the consequences of vitamin D deficiency as well as the health benefits associated with consuming fortified foods will serve to increase consumers intention to purchase and consume vitamin D fortified foods. This in turn will also positively influence social norms resulting in a ripple effect of the benefits across greater proportions of the population increasing awareness and intention to consume. These insights can assist in developing and implementing an effective vitamin D food fortification strategy that is suitable for the Irish population.

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OC32. A qualitative study to identify barriers and enablers to integrating sustainable Food systems on nutrition and dietetics curricula in higher education in Ireland. *N. Wu[1], J. Kinghan[1] and S. Browne[1,2]1. School of Public Health, Physiotherapy & Sports Science, University College Dublin, Ireland and 2. Institute of Food and Health, University College Dublin, Ireland.*

Sustainable food systems (SFS) have gained critical importance due to global environmental degradation, social inequities, and adverse impacts on human health[(1)]. Nutrition and dietetic professionals play a pivotal role in influencing food systems, yet SFS education in dietetic curricula remains underdeveloped, leading to low professional confidence and perceived competence of SFS informed pratice[(2,3,4,5,6,7,8,9,10,11)]. This study explores the barriers and enablers to integrating SFS into CORU-accredited dietetic academic programs in Irish universities, aiming to identify opportunities for enhanced integration.

Using purposive sampling, academic staff and program directors involved in core modules across four universities were selected for semi-structured interviews conducted via Zoom. A brief video covering the four pillars of sustainability was sent to participants before the interviews to familiarize them with the topic. Data analysis employed cumulative content analysis, identifying themes and patterns within the transcripts.

Of 13 invited participants, 9 provided consent to participate. Three key themes emerged: (1) Current integration and application of SFS in the curriculum, (2) Strategies for implementing SFS content, and (3) Uniting expertise to transform dietetic education. Barriers identified include unclear inclusion of SFS in CORU standards, curriculum content overload, limited staff expertise, and institutional rigidity. These factors have contributed to a gap between the perceived and actual integration of SFS principles in dietetic education. Conversely, enablers include increased student demand, university support, availability of resources, interdisciplinary collaboration, and alignment of SFS content with professional standards. Explicitly incorporating SFS competencies into national standards of practice, providing dedicated funding, and expanding staff resources for curriculum development are essential steps toward integration. Additionally, pedagogical innovation, institutional flexibility, and stakeholder engagement are critical for systemic change.

Current actions to incorporate SFS education can be done by explicitly integrating SFS content into the existing curriculum, engaging in intervarsity collaborations to share resources and best practices, advocating for curriculum reform, and utilizing available support at both the university and national levels.

This research highlights that SFS education in Irish dietetic programs is in its early stages. However, significant opportunities exist to standardise sustainability competencies and align curricula with global sustainability goals, paving the way for a transformative approach to dietetic education.

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Student Competition

OC33. How well do baby and toddler foods meet Ireland's first reformulation targets?

O.C. Lyons[1], G. O'Shaughnessy[1], A. McCann[1], M.A.T. Flynn[1,2], and S. O'Mahony[1,3] 1. Food Safety Authority of Ireland, Dublin, Ireland, 2. Ulster University, Coleraine, UK and 3. Institute of Food and Health, University College Dublin, Dublin, Ireland.

Infants and young children (IYC; ≤36months) are a nutritionally vulnerable group due to their complex needs. Early childhood dietary habits persist into adulthood and preferences for sweet and salty foods can lead to diet-related noncommunicable diseases[(1)]. Therefore, commercially available complementary foods (CACFs) for IYC should be nutrient-rich and low in sugar and salt. However, previous research found inappropriate CACFs high in sugar and salt on the Irish market[(2-5)]. To address this, the Food Reformulation Task Force published reformulation targets for sugar and salt in appropriate CACFs[(6)]. This study aimed to benchmark the proportion of CACFs on the Irish market in 2017 and 2021 that met these reformulation targets.

Product labelling information for CACFs on the Irish market were collected in-store in 2017[(2,3)] (n=590) and 2021[(4,5)] (n=353). Products were organised into eight categories (100% fruit and/or vegetable purées, cereal-based products, dairy-based products, confectionery, savoury meals, snacks/finger foods, ingredients (e.g. stocks) and drinks (2017 only)). The proportion meeting the reformulation targets was determined for each year. Product ingredient lists were examined to assess the proportion that met the no added sugar (allowance given for macerated/mashed/puréed fruit and vegetables) and no added salt targets in 2021 (no ingredient lists collected in 2017). CACFs meeting the total sugar target (≤15% energy for savoury meals and snack/finger foods) were assessed by calculating the percentage energy from total sugar. CACFs meeting the total sodium targets (≤50mg/100kcal for all except 100% fruit and/or vegetable purées, and ≤100mg/100kcal if cheese is named on front-of-pack in savoury meals) were assessed by calculating the amount of sodium per 100kcal. Data analysis was completed using RStudio (v4.4.0).

In 2021, in four CACF categories, most products met the no added sugar target (73%–100%), although adherence was lower in snacks/finger foods (43%), confectionery (25%), and ingredients (0%). Also in 2021, except for ingredients (0%), most products in all other categories met the no added salt target (93%–100%). In 2017, 56% of savoury meals and 53% of snacks/finger foods met the total sugar target, compared to 45% and 51%, respectively, in 2021. In 2017, 53%–100% of products met the ≤50 mg/100 kcal sodium target, and in 2021, 51%–98% met the target, with 0% of ingredients meeting it. The proportion of savoury meals meeting the ≤100mg/100kcal sodium target was 78% in 2017 and 90% in 2021. No statistically significant differences were observed between 2017 and 2021.

While for some categories most products met the targets, there is still room for improvement in several categories. Notably, a higher proportion of CACFs on the Irish market in 2017 met the reformulation targets when compared to those on the market in 2021, suggesting that increased reformulation efforts are needed by the food industry.

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OC34. What's in a meal: preliminary findings on the energy density of children's meals in the Irish foodservice sector. *C. Dunne[1], G. O'Shaughnessy[1], A. McCann[1], O. C. Lyons[1], S. O' Mahony[1,2] 1. Food Safety Authority of Ireland, Dublin, Republic of Ireland and 2. Institute of Food and Health, University College Dublin, Dublin, Ireland.*

In Ireland, 17.7% of children are living with overweight or obesity[(1)]. Food served in the foodservice sector is estimated to account for 13% of children's dietary energy intake in Ireland[(2)]. There is limited evidence on the energy density of children's meals sold in foodservice outlets in Ireland. To address this evidence gap, the aim of this study was to determine the median energy content of popular children's meals sold in Irish foodservice outlets in 2024 and to examine if outlets offer different portion sizes for younger and older children.

Popular children's meals were identified using a market research survey commissioned by the Food Safety Authority of Ireland and implemented by Ipsos B&A. A convenience sample of these popular children's meals were collected from standalone restaurants, hotel restaurants, takeaways and pubs that serve food in Dublin in 2024. Meals were analysed for their energy content (kcal/meal) by an accredited laboratory, using the energy calculation for food in accordance with Regulation (EU) No 1169/2011[(3)]. Descriptive statistics were determined, and a subsequent comparison was made with the European Food Safety Authority's Average Requirement (AR)[(4)] for daily energy intake (kcal/day) in boys and girls (adjusted to a moderately physical activity level (PAL)) aged 3 years (PAL=1.4) and 12 years (PAL=1.6). Meal portion sizes offered on menus for children of different age groups were collected. Statistical analysis was completed using RStudio v4.4.0.

A convenience sample of n=84 children's meals was collected including chicken nuggets and chips (n=18), burger and chips (n=17), chicken curry and chips/rice (n=17), pasta and sauce (n=16), and sausage and mash/chips (n=16). Beef burger and chips had the highest median energy (kcal) content containing 1046.18 kcal/meal (IQR:210.80; min-max 740.94-1449.96), followed by chicken curry and rice/chips containing 908.20 kcal/meal (IQR:576.10; min-max 369.20-2342.64), chicken nuggets and chips containing 892.50 kcal/meal (IQR:123.17; min-max 629.44-1157.20), sausage and mash/chips containing 814.80 kcal/meal (IQR:261.88; min-max 503.36-1115.96) and pasta and sauce containing 486.28 kcal/meal (IQR:191.63; min-max 287.64-782.40). The highest median energy density was measured in beef burger and chips, which contributed 95.45% of the AR for energy in 3-year-old girls, in contrast to 48.12% of the AR for energy in 12-year-old boys. The lowest median energy density was measured in pasta and sauce which contributed 44.37% of the AR for energy in 3-year-old girls, in contrast to 22.37% of the AR for energy in 12-year-old boys. No outlet (n=0) offered different portion sizes for younger and older children.

This study found some popular children's meal options that were energy dense. Despite younger children requiring less energy intake than older children, outlets did not offer smaller portions. There is a need to reduce the energy density of some children's meals sold in Irish foodservice outlets.

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OC35. Advancing sustainability in dietetic practice-education: perceptions of dietitian educators. *S. Browne, [1-2] L. Haydon,[1] and K. O'Driscoll. [1] 1. School of Public Health, Physiotherapy & Sports Science, University College Dublin, Ireland and 2. Institute of Food and Health, University College Dublin, Ireland.*

The unsustainable food system drives climate change, poor nutrition, and rising diseases. Dietitians can help address these issues[1-3], but Sustainable Food Systems (SFS) are underrepresented in CORU-accredited dietetic curricula. Practice placements could build SFS competencies, but integration is under explored.

The aims and objectives of this study were to explore the perspectives of registered dietitians involved in student training within CORU-accredited dietetic programmes in Ireland on integrating SFS into practice education

Semi-structured interviews were conducted with registered dietitians working as university practice-tutors on CORU-accredited dietetic programmes and practice-educators at UCD-affiliated placement sites. Data were analysed using conventional content analysis to explore barriers and enablers influencing SFS integration.

Participants included seven university-based practice-tutors and eight practice-educators (4 acute-based; 4 community-based). Barriers, enablers, and opportunities for integrating SFS into practice-education were identified. More limitations were raised regarding acute services, however transferable skill sets were considered opportunities such as sustainable oral nutritional supplements and enteral feeding prescribing practices, harnessing sustainable dietary counselling within current guidelines, and SFS-focused projects, and menu audits. Tailored dietary advice was deemed more feasible in community, outpatient, and discharge situations. Educators need SFS training from universities and professional bodies, with support required at individual, organisational, and policy levels

This study highlights some immediate opportunities for SFS integration in practice education and supports that would benefit educators. Key recommendations include strengthening policies, organisational mandates, advocacy, and professional development. Universities should develop SFS-focused placement guidelines and align identified opportunities with CORU standards. Further research and piloting SFS initiatives on placements is recommended to accelerate and evaluate adoption

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Student Competition

OC36. The effect of phenotypic factors on gut transit time and stool consistency in those with self-reported gastrointestinal symptoms. *B. Finnerty,[1,2,3] M. Rooney,[1,3] É. Gregory,[1,3] G. Bennett,[1,3] C. Ní Chonnacháin,[1,3] C. Carey,[1,2] A. Lucey,[1,2] E. L. Feeney. [1,3] 1. Food for Health Ireland, University College Dublin, 4, Dublin, Ireland, 2. School of Food and Nutritional Sciences, University College Cork, Cork, Ireland and 3. Institute of Food and Health, School of Agriculture and Food Sciences, University College Dublin, Dublin, Ireland.*

Gastrointestinal discomfort is a common issue with significant social and economic impacts[1]. Functional gastrointestinal disorders affect over 40% of the global population, yet studies on mild to moderate self-reported symptoms remain scarce[2]. Gut transit time (GTT) and stool consistency are key indicators of digestive health. Variations in these indicators may be influenced by multiple factors including sex, age, body mass index (BMI) and diet[3]. While previous studies have examined the relationship between stool consistency and GTT, limited research has explored how sex and BMI may influence these associations, particularly in populations without diagnosed inflammatory bowel disease. The aim of this study was to investigate if phenotypic factors, i.e., sex and BMI, affect GTT and stool consistency in a non-clinical cohort with self-reported gastrointestinal symptoms.

As part of a dietary intervention trial (ISRCTN17696788), adults with self-reported, recurrent, mild to moderate digestive discomfort were recruited. This analysis examines the baseline cohort. GTT was measured using the “blue dye” method[4].GTT was stratified as; short (<14 hours); medium (14–58 hours) and long (>59 hours)[4]. Stool consistency was measured using the Bristol Stool Form Chart (BSFC)[5], where higher scores are associated with a softer stool[5]. Correlation analysis was performed between GTT, stool consistency, sex and BMI using Spearman’s correlation and Chi-square analysis using SPSS version 27. General linear models were used to evaluate the difference in GTT between sexes, adjusting for age and BMI.

A total of *n* 89 adults (34.8% male), mean age ± SD 34.9 ± 5.7 years, and BMI 26.4 ± 4.7 kg/m^2 were included in the present analysis. Mean GTT was 32.2 ± 24.1 hours in the cohort as a whole. When stratified by sex, GTT was 13.3 ± 30.7 hours longer in females vs males (P=0.026). Significant inverse associations were observed between GTT and BSFC scores (r=-0.313, P=0.003). Within sex analysis revealed a stronger association among females (r=-0.477, P<0.001) than males (r=0.031, P=0.867). When stratified by GTT category, a significant association between sex and GTT was observed, $X^2(2)=6.806$, P=0.033. No associations were observed between BMI and GTT. Neither sex nor BMI had an effect on stool consistency as assessed by BSFC.

The present analysis indicates that stool consistency is associated with GTT, with softer stools linked to shorter transit times, in a cohort of adults with self-reported gastrointestinal symptoms. Findings also suggest that sex may affect GTT, as females reported significantly longer GTT than males. These findings highlight the importance of considering sex-specific differences and other phenotypic factors in gastrointestinal health research. Such insights could help to inform future research into the prevention, diagnosis, and treatment of gastrointestinal motility disorders.

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OC37. Feasibility and acceptability of integrating the PortionSizeEd mobile app into the SNAP-Ed curriculum among adolescents in Hawai'i: A pilot study. *Emerald Proctor[1, 2], Kiari H. L. Aveiro[3], Ian Pagano[3], Lynne R. Wilkens[3], Leihua Park[4], Leilani Spencer[4], Jeannie Butel[4], Corby K. Martin[5], John W. Apolzan[5], Rachel Novotny[4], John Kearney[1], Chloe P. Lozano[3] 1. School of Biological, Health and Sports Sciences Technological University Dublin, Ireland, 2. School of Medicine Trinity College Dublin, Ireland, 3. University of Hawai'i Cancer Center, USA, 4. University of Hawai'i at Manoa, USA and 5. Pennington Biomedical Research Center, USA.*

This pilot study aimed to assess the feasibility and acceptability of integrating the PortionSize Ed (PSEd) mobile health (mHealth) app into the Supplemental Nutrition Assistance Program Education (SNAP-Ed) curriculum among adolescents in Hawai'i.

Eligible students (grades 6-8, 11-14 years) from two classrooms were randomized into: (1) the standard SNAP-Ed Hawai'i programme, Hawai'i—Food and Lifeskills for Youth (HI-FLY), or (2) HI-FLY combined with PSEd. HI-FLY[(1)] was delivered over six weeks and included lessons on nutrition, physical activity, and food safety. PSEd[(2)], an image-assisted dietary assessment and nutritional education app, provides real-time feedback on adherence to tailored U.S. Department of Agriculture MyPlate[(3)] food group recommendations. Dietary intake was recorded at baseline (week 0) and post-intervention (week 7). The HI-FLY group completed written records and the PSEd group completed app-based dietary records. Demographic data were collected at baseline. Feasibility was assessed based on (1) ≥65% enrollment and (2) ≤15% attrition. Acceptability was evaluated using (1) User Satisfaction Survey (USS) scores and qualitative responses and (2) Computer System Usability Questionnaire (CSUQ) scores (PSEd only). The USS used a 6-point Likert scale (higher scores being optimal/better) and the CSUQ used a 7-point Likert scale (lower scores being optimal/better).

Overall, 41/50 (82%) of eligible students enrolled in the study. Participants (49% female, 85% at least part Native Hawai'ian/Pacific Islander) were randomised into PSEd (n=19) or HI-FLY (n=22). Attrition was low (2.4%). USS mean (±SD) scores for HI-FLY and PSEd respectively, were 4.4 (±1.3) and 4.4 (±1.6) for ease of use, 4.2 (±1.15) and 4.2 (±1.4) for portion size recording, and 4.5 (±1.1) and 4.2 (±1.3) for training adequacy; p-values >0.05. PSEd participants reported that the easiest aspects of app-based records were finding foods (38.9%) and the photo feature (33.3%), while challenges were taking photos (38.9%) and app technical issues (16.7%). For HI-FLY written records, 50.0% of participants cited the written format as easiest, and 27.3% reported struggling with portion size estimation. The PSEd CSUQ mean (±SD) score was 3.8 (±0.9), with subscale scores of 3.9 (±0.9) for system usefulness, 3.9 (±0.8) for information quality, 3.9 (±1.7) for interface quality, and 3.4 (±2.1) for overall satisfaction

The integration of PSEd into the HI-FLY curriculum was feasible, as evidenced by high enrollment and low attrition. USS findings suggest similar satisfaction levels between written and PSEd app-based food records. CSUQ usability scores were neutral. The USS and CSUQ highlighted areas for future PSEd app improvement. The findings of this pilot study support the potential for integrating mHealth tools into SNAP-Ed for adolescents in Hawai'i.

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Student Competition

OC38. Dietitians' attitudes to omega-3 supplementation in adult clinical practice. *J. Boland[1], N. McGettigan[2], J.L. O'Neill[2], J. Hovey[2], K. Mohadawoo[2] 1. University College Dublin, Ireland and 2. Danone Nutricia, Dublin, Ireland.*

Nutrition is crucial in the treatment of disease related malnutrition. In chronic catabolic diseases, omega-3 could be of specific importance by acting directly or indirectly on the inflammatory state[(1)]. Omega-3 is widely recognized for its cardioprotective effects, but research suggest benefits in other clinical areas. Omega-3 possesses immune-modulating and anti-inflammatory effects, shown to reduce inflammation in patients with cachexia[(2)], stabilise or improve appetite[(3)] and attenuate muscle loss in patients with cancer[(4)]. This study aimed to identify attitudes and practices amongst dietitians in Ireland regarding the use of omega-3 supplementation in adult care.

An electronic survey was distributed via The Irish Nutrition and Dietetic Institute, Cancer Nutrition Network, and Irish Nutrition Jobs Facebook group to collect data from registered dietitians over 4 weeks. A subset of questions targeting oncology dietitians, were included to help better understand use of omega-3 containing oral nutritional supplements (ONS). Descriptive statistics were employed to summarise and analyse the data.

38 full survey responses were analysed. Over half (53%, n=20) were hospital-based dietitians working in various clinical areas. Just over a quarter (26%, n=10) reported high confidence in their knowledge of omega-3 and its role in health and disease (score ≥8/10). However, 66% (n=25) rarely or never discuss the role of omega-3 with patients and over a third (39%, n=15) never recommend omega-3 supplements. Among those who commented on supplementation practices (n=28), many preferred a food-first approach (43%, n=12). Responses indicated inconsistency in type and dosages of supplementation used. Combined omega-3 supplements (docosahexaenoic acid & eicosapentaenoic acid) were often mentioned (21%, n=6), and doses ranged from 200-1000mg daily. Top clinical areas identified for potential omega-3 supplementation benefits were cardiology (n=16), pregnancy/fertility (n=7) and brain health (n=6). Concerns around the use of omega-3 supplements included clinical and safety concerns (n=9), lack of evidence (n=4), unclear dosage guidance (n=4) and cost (n=4). Majority (97%, n=37) agreed continuing professional development opportunities on omega-3 supplementation would be valuable. Among a subset of oncology dietitians (n=16), omega-3-containing ONS are not routinely recommended, and taste was identified as a potential barrier to compliance (56%, n=9). Favourable features of omega-3 containing ONS include compact volume (50%, n=8) and higher protein (38%, n=6).

This study highlights potential uncertainty amongst dietitians in Ireland around omega-3 supplementation. Evidence based education on the role of omega-3 supplementation and clear guidance on dosage is needed to support recommendations in clinical practice.

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Student Competition

OC39. Salt intakes in adults in Ireland: compliance with recommendations and key food sources. *Janette Walton[1], Emma O'Sullivan[1], Maria Buffini[2], Breige A McNulty[2], John M Kearney[3], Albert Flynn[4] and Laura Kehoe[1,4] 1. Department of Biological Sciences, Munster Technological University, Cork, Ireland 2. Institute of Food and Health, University College Dublin, Belfield, Dublin 4, Ireland 3. School of Biological, Health & Sport Sciences, Technological University Dublin, Dublin, Ireland and 4. School of Food and Nutritional Sciences, University College Cork, Ireland.*

The Food Safety Authority of Ireland (FSAI) have set target maximum population salt intakes of 6g/d for adults and to support the roadmap for food product reformulation, the Food Reformulation Task Force has identified a need for information on current intakes and key dietary sources of selected nutrients including salt[(1)]. The aim of this study was to estimate current intakes of salt among adults in Ireland and to identify the key dietary sources of salt among this population group.

Analyses were based on the National Adult Nutrition Survey II (NANS II) (2020-21) of adults in Ireland (*n* 1000) (19-64y: 718, ≥65y: 282) (www.iuna.net). Food and beverage intake data were collected via two independent 24-hour telephone dietary recalls (at least 7 days apart, with each day of the week accounted for) and participants were asked to provide a spot urine sample (*n* 997). All participants were provided with a photographic food atlas prior to the dietary recalls and older adults (≥65y) were asked to record their food intake the day before to assist with the recall. Urinary sodium was measured by indirect ion-selective electrode using Abbot Alinity instrumentation. Mean 24-hour urinary excretions of sodium (*n* 974) were estimated by correcting the mean sodium concentrations in the spot urine samples using sex-specific 24-hour urine volume estimations for Irish adults[(2)]. Mean 24-hour urinary sodium excretions (mg) were expressed as salt equivalents (g) (Sodium x 2.5/1000) for males and females separately. To determine the dietary sources, salt intakes from food sources (excluding discretionary salt) were estimated using UK and Irish food composition data (updated to reflect the salt composition of foods in Ireland). The key dietary sources were determined using SPSS© using the mean proportion method[(3)].

For males, the mean 24-hour excretion of sodium expressed as salt equivalents was 9.5g for those aged 19-64 years and 9.4g for those aged 65 years and over. For females, the mean 24-hour excretion of sodium expressed as salt equivalents was 7.8g for those aged 19-64 years and 6.5g for those aged 65 years and over. The key sources of sodium (accounting for 80% of intakes) were 'meat & meat products' (23%) (of which 'cured & processed meats' (13%) and 'meat dishes' (6%)), 'breads' (20%), 'soups, sauces & miscellaneous foods' (8%), 'milk & yogurt' (6%), 'biscuits, cakes & pastries including crackers' (5%), 'vegetables & vegetable dishes' (5%), 'grains, rice, pasta & savouries' (5%) and 'cheeses' (5%).

Overall, these findings show that intakes of salt among adults of all ages in Ireland are above the target maximum population intake of 6g/d and highlight the need for strategies to reduce these intakes which could include reformulation of the salt content of the key food sources identified.

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OC40. Dietary fibre intakes in adults in Ireland: key sources and compliance with recommendations. *Janette Walton[1], Maria Buffini[2], Emma O'Sullivan[1], Breige A McNulty[2], John M Kearney[3], Albert Flynn[4] and Laura Kehoe[1,4] 1. Department of Biological Sciences, Munster Technological University, Cork, Ireland, 2. Institute of Food and Health, University College Dublin, Belfield, Dublin 4, Ireland, 3. School of Biological, Health & Sport Sciences, Technological University Dublin, Dublin, Ireland and 4. School of Food and Nutritional Sciences, University College Cork, Ireland.*

Dietary fibre (DF) is important for normal bowel function and has been associated with a reduced risk of non-communicable diseases. The European Food Safety Authority (EFSA) have set an adequate intake (AI) for DF of 25g/d for normal laxation in adults(1). Data from the National Adult Nutrition Survey (NANS) (2008-10) (www.iuna.net) in Ireland over 15 years ago highlighted low intakes of DF with respect to these recommendations in adults aged 18-64 years (19.2g/d) and those aged 65 years and over (18.9g/d)(2). The aim of this study was to estimate the current role of DF in adults in Ireland including intakes, key sources and compliance with recommendations.

Analyses were based on the National Adult Nutrition Survey II (NANS II) (2020-21) of adults in Ireland (*n* 1000) (19-64y: 718, ≥65y: 282) (www.iuna.net). Food and beverage intake data were collected via two independent 24-hour telephone dietary recalls (at least 7 days apart, with each day of the week accounted for). All participants were provided with a photographic food atlas prior to the study and older adults (≥65years) were asked to record their food intake the day before to assist with the recall. DF content of foods was determined using UK and Irish food composition tables. Usual intakes of DF were calculated via the NCI-method using SAS© Enterprise Guide. At a population level, mean intakes were compared to the AI. At an individual level, the proportion of adults not achieving the recommended target (25g/d) considered adequate for good health was determined. The key dietary sources were determined using SPSS© using the mean proportion method(3).

Mean±SD intake of DF among adults aged 19-64 years was 18.3±6.1g (males: 19.6±6.2g, females: 17.1±5.6g) and for adults aged 65 years and over was 17.8±5.8g (males: 18.6±5.9g, females: 17.0± 5.5g). Mean intakes of DF were below the AI for both 19-64 year olds and those aged 65 years and over. At an individual level, 86% of 19-64 year olds and 89% of those aged 65 years and over had intakes below 25g. The key dietary sources of DF among adults aged 19-64 years were 'bread & bread products' (22%), 'vegetables & vegetable dishes' (15%), 'fruit & fruit juices' (12%), 'breakfast cereals' (8%), 'potatoes & potato products' (8%) and 'grains, rice, pasta & savouries' (8%) and for those aged 65 years and over were 'bread & bread products' (24%), 'vegetables & vegetable dishes' (18%), 'fruit & fruit juices' (13%), 'breakfast cereals' (12%) and 'potatoes & potato products' (10%).

These findings indicate that based on current dietary patterns, intakes of DF are below recommendations among adults in Ireland and highlight the need to investigate targeted dietary strategies to address these low intakes among this population group.

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OC41. Physical activity levels among patients with type 2 diabetes at primary health care centres in Copiapó, Chile: A cross-sectional study. *Sergio Jiménez-Torres[1], José C. Fernández-Cao[2], Joanna Rojas-Calisto[2], Francisco Vega-Ortiz[3], Antonia López-Saldivar[3] Noemí Varas-Campos[4], Paulina Godoy-Adaros[4], Carolina Rojas- Torrejón[5] 1. Department of Kinesiology, Faculty of Health Sciences, University of Atacama, Copiapó, Chile, 2. Department of Nutrition and Dietetics, Faculty of Health Sciences, University of Atacama, Copiapó, Chile, 3. Bachelor's Degree in Kinesiology, Faculty of Health Sciences, University of Atacama, Copiapó, Chile, 4. Bachelor's Degree in Nutrition and Dietetics, Faculty of Health Sciences, University of Atacama, Copiapó, Chile and 5. CODIACO Study, University of Atacama, Copiapó, Chile.*

Type 2 diabetes mellitus (T2D) is a condition for which physical activity (PA) has proven to be an effective strategy in both prevention and treatment (1,2). Along with medication and a healthy diet, PA is one of the main pillars for managing T2D. Despite its benefits, there is a noticeable gap in understanding PA and how it is measured among individuals with T2D in Chile. The International Physical Activity Questionnaire (IPAQ) is a well-validated and user-friendly tool that helps assess PA across various populations, including the Chilean one (3,4,5). This provides an excellent opportunity to collect reliable and comparable data on the activity levels of this group. The utilisation of the IPAQ in this study is an attempt to address the knowledge gap while maintaining a consistent and practical approach, particularly in resource-limited settings, such as primary health care centres (PHCCs). This study aimed to characterise and compare levels of PA in women and men with T2D, users of the PHCCs of Copiapó.

This study included a total of 118 participants, comprising 76 women (64.4%) and 42 men (35.6%), all aged between 30 and 65 years. They were all users of the PHCCs in Copiapó. This descriptive research applied a cross-sectional design, drawing on data from the CODIACO cohort to assess the levels of PA among individuals diagnosed with T2D. We made sure to exclude individuals with diabetic neuropathy, nephropathy, cancer, or any severe inflammatory or infectious conditions, as well as women who were pregnant or breastfeeding. The Scientific Research Ethics Committee of the University of Atacama approved the study. Age (years) and PA (MET-min/day) were expressed as median and interquartile range (IQR). Data were analysed using SPSS software. To obtain significant differences, we used the Mann-Whitney U test, considering p-values below 0.05 as statistically significant.

The age of the participants was 59.0 (52.5 - 63.0) years, and the overall median level of total PA was 1039.5 MET-min/day (IQR: 341.5–2799.0). When disaggregated by gender, women exhibited a lower median PA level of 882.0 MET-min/day (IQR: 231.0–2772.0) compared to men, whose median was 1386.0 MET-min/day (IQR: 462.0–4023.0). Although the difference between genders did not reach statistical significance (P = 0.067), the trend suggests that men may be more active than women within this diabetic population.

This study demonstrates that (PA) levels among individuals with T2D appear to be less than optimal for effective disease management. Although the results suggest that gender differences exist, with males tending to be more active than females, these differences did

not reach statistical significance. Considering that T2D management relies on PA, proper nutrition, and medication, the findings highlight the need for targeted interventions to improve these pillars and promote better health outcomes and quality of life.

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Acknowledgments

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OC42. Food supplement use in adults in Ireland: Prevalence and types and compliance with nutrient specific supplement recommendations. *L Kehoe[1,2], M Buffini[3], E O'Sullivan[1], B.A. McNulty[3], J.M. Kearney[4], A Flynn[2] and J Walton[1] 1. Department of Biological Sciences, Munster Technological University, Cork, Ireland, 2. School of Food and Nutritional Sciences, University College Cork, Ireland, 3. Institute of Food and Health, University College Dublin, Belfield, Dublin 4, Ireland and 4. School of Biological, Health & Sport Sciences, Technological University Dublin, Dublin, Ireland.*

Food supplements are concentrated sources of nutrients (e.g. vitamins/minerals) or other substances with a nutritional or physiological effect that are marketed in 'dose' form (e.g. pills, tablets, capsules, liquids)[(1)]. In Ireland, there are two nutrient specific supplement recommendations for adults. For vitamin D, those aged 13-64 years are recommended to take a 15µg supplement daily (between 31st October-17th March) and those ≥65 years to take a 15µg supplement daily (all year round)[(1)]. For folic acid, all women of childbearing age (WCBA) (16-50y) are recommended to take a 400µg supplement daily[(3)]. The aim of this study was to determine the prevalence and types of supplement use among adults in Ireland and to examine compliance with supplement recommendations.

Analyses were based on the National Adult Nutrition Survey II (NANS II) (2020-21) of adults in Ireland (*n* 1000) (19-64y: 718, ≥65y: 282) (www.iuna.net). Food and beverage intake data (including food supplements) were collected via two independent 24-hour telephone dietary recalls (at least 7 days apart, with each day of the week accounted for). Product labels for all food and beverages including food supplements were obtained directly from participants or photographed from retail outlets. A database of all food supplements used was created and compliance with supplement recommendations was examined using SPSS© based on usage reported via the two 24-hour dietary recalls.

Overall, 52% of adults aged 19-64 years and 59% of those ≥65 years consumed a food supplement on at least one of the recall days. Among those aged 19-64 years, 'multivitamins & minerals' were the most common type of food supplement used (27% of all supplements recorded), followed by single vitamin D supplements (18%) and fish/linseed/primrose oils (15%). Among those ≥ 65 years, single vitamin D supplements were the most common type of food supplement used (22%) followed by 'multivitamins & minerals' (15%), fish/linseed/primrose oils (15%) and 'vitamin D & calcium supplements' (14%). With respect to supplement recommendations for vitamin D, 16% of adults aged 19-64 years (12% males, 20% females) (who were sampled between 31st October-17th March) took a 15µg vitamin D supplement daily and 25% of adults ≥65 years (20% males, 29% females) took a 15µg vitamin D supplement daily (all year round). For folic acid, 12% of WCBA (19-50 years) took a folic acid supplement of ≥400µg on at least one of the recall days, however, just 7% met the recommendation of taking 400µg of folic acid from a supplement daily.

These findings indicate that significant proportions of adults in Ireland are taking various types of food supplements however, compliance with supplement recommendations for vitamin D (all adults) and folic acid (WCBA) is low and strategies are needed to improve compliance among these population groups.

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The National Adult Nutrition Survey II (NANS II) was funded by the Irish Department of Agriculture, Food and the Marine (DAFM) under the 2019 Food Institutional Research Measure (FIRM) awards.

OC43. Knowledge, awareness and behaviours regarding dietary guidelines for fish consumption among pregnant and breastfeeding women in the UK and Ireland. *N. Mackay[1], B. Muki[1], E.M. McSorley[1], M.S. Mulhern[1], P.J. Allsopp[1], J.J. Strain[1] and A.J. Yeates[1] 1. Nutrition Innovation Centre for Food and Health (NICHE), Ulster University, Coleraine, Northern Ireland.*

Maternal fish consumption during pregnancy and breastfeeding provides important amounts of iodine, vitamin D and long chain n-3 polyunsaturated fatty acids (PUFA) and is associated with beneficial neurodevelopmental outcomes for infants[(1)]. Dietary advice, however, on fish consumption during pregnancy is based on reducing risk of contaminant exposure (such as methylmercury (MeHg)) with less emphasis placed on the benefits[(2,3)]. This study aimed to investigate the knowledge and awareness of dietary guidelines for fish consumption among pregnant and breastfeeding women and to assess their own fish consumption.

An anonymous qualitative survey was designed and implemented through JISC online surveys to assess sociodemographic factors, knowledge and awareness of national dietary guidelines on fish consumption and recent intake of fish. Women aged 18–50 years who were pregnant or breastfeeding (infant ≤12 months of age) and residing in the UK/Ireland were recruited via Ulster University email and social media. A total of 443 (141 pregnant, 302 breastfeeding) women completed the survey through August to December 2024. Descriptive statistics were generated and chi-squared analysis conducted using SPSS (IBM v29.0).

The responders were aged 31- 35 years (44%), educated to university level (49%), resident of Northern Ireland (95%) and of white ethnicity (96%). Awareness of the existence of dietary guidelines for fish consumption was generally good, but higher among pregnant compared to breastfeeding women (82 vs 49%; p=0.03). Education was a significant predictor of awareness only in pregnant women (p=0.001). Understanding of the dietary advice was lower overall (53% pregnant; 29% breastfeeding), with 32% pregnant and 63% breastfeeding women unsatisfied with the information available. Most women reported eating fish just 1-3 times per month (43% pregnant; 51% breastfeeding). Chi-squared analysis revealed significant associations between having a higher level of knowledge (pregnant x^2=36.7, p<0.001; breastfeeding x^2=34.7, p<0.001) and awareness (pregnant x^2=27.5, p<0.001; breastfeeding x^2=25.1, p<0.001) about dietary guidelines and having a higher intake of fish.

Overall, reported fish consumption was low among pregnant and breastfeeding women who responded to this survey and less than the national dietary advice to consume two portions per week[(2)]. This study has highlighted that knowledge and awareness of dietary guidelines on fish consumption is positively associated with fish consumption. Public health advice could provide clearer and more meaningful messages emphasising the benefits of consuming fish during the critical periods of pregnancy and lactation[(4)].

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OC44. Associations between dietary scores and metabolic health 10 years after pregnancy: Findings from the ROLO longitudinal birth cohort study. *Emmanuella Oluwaferanmi Akinsooto (UCD Precision Medicine MSC student)[1], Sophie Callanan[1], Fionnuala McAuliffe[1] 1.UCD Perinatal Research Centre, School of Medicine, University College Dublin, National Maternity Hospital, Dublin, Ireland and 2. School of Medicine, University College Dublin, Ireland.*

Cardiovascular diseases in women are often misdiagnosed and underdiagnosed. The diet may play a key role in early prevention strategies to tackle this growing problem. Healthy dietary patterns are associated with favourable metabolic health profiles in women including lower blood pressure, better glycaemic control, and optimal adiposity. However, most studies focus on the reproductive years or post menopause. Limited research exists during the late reproductive years, which could represent an important window for intervention.

This is a prospective analysis of 372 women from the ROLO longitudinal birth cohort study, who were followed up 10 years after pregnancy. The study was conducted at the National Maternity Hospital in Dublin, Ireland, from January 2007 to January 2011 [1,2]. Dietary data was collected from a food frequency questionnaire 10 years after pregnancy and used to calculate Energy-Adjusted Dietary Inflammatory Index (E-DII) and Healthy Eating Index-2015 (HEI-2015) scores [3]. Anthropometry, body composition, blood pressure, and non-fasting blood samples were obtained to examine cardiometabolic health. Ten year and lifetime QRisk scores were calculated to estimate cardiovascular risk. Women were dichotomised into those with a 'High' and 'Low' HEI-2015 and E-DII score and metabolic health outcomes between 'High' and 'Low' groups were compared. Crude and adjusted linear regression models were performed to examine associations between dietary scores and cardiometabolic outcomes to adjust for confounders.

The median age of women was 43 (40.07, 45.22) years, and the median BMI was 25.64 (23.50, 29.24) kg/m 2 10 years after pregnancy. The mean (SD) HEI -2015 score was 1.427 (0.997) and the median (IQR) E-DII score was -0.77 (-1.499, 0.117).Women with 'High' HEI-2015 score, indicating better diet quality had lower alanine levels (mean = 0.2 mmol/L, SD = 0.04), compared to those with a 'Low' HEI-2015 score (mean = 0.2 mmol/L, SD = 0.03; p = 0.021). Women with a 'Low' E-DII score, indicating a less-inflammatory diet had higher vitamin D levels (median = 58.4 nmol/L), compared to those with a 'High' E-DII score median = 46.6 nmol/L; p < 0.001). In adjusted linear regression analysis, a higher HEI 2015 score was positively associated with a ratio of omega 3 fatty acids to total fatty acids (B = 0.454; 95% CI,- 0.022, - 0.886; P=0.040). A higher E-DII score was associated with lower 25-hydroxy vitamin D (B=-3.053; 95% CI, -5.891, - -0.215; P=0.035) and a higher 10-year cardiovascular risk (Q-Risk) B = 0.151; 95% CI: 0.001, –0.302; P = 0.049).

Diet quality and inflammatory potential may be associated with cardiometabolic health in women 10 years postpartum, highlighting a potential intervention strategy for the reduction of cardiovascular risk in midlife. Further research is needed to validate our findings.

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Student Competition

OC45. Beneficial effect of tributyrin and tripropionin on colitis is mediated by modulation of gut microbiota. *Z.Y. Chen[1],* S. Huang,[1] and W. He,[2] 1. School of Life Sciences, The Chinese University of Hong Kong, Shatin, NT, Hong Kong, China and 2. School of Food and Biological Engineering, Jiangsu University, 301 Xuefu Road, Zhenjiang 212013, Jiangsu, China.*

Dietary fiber and its products of short-chain fatty acids including acetic, propionic and butyric acids in the colon play an important role in preventing non-communicable diseases and protecting gut health[1 2]. However, propionic and butyric acids have an undesired smell and cannot be directly used as a dietary supplement. In contrast, their respective triacylglycerols tributyrin (Tb) and tripropionin (Tp) are odorless. The present study aimed to synthesize Tb and Tp, investigate their protective effects on experimental colitis, and explore their beneficial effect on gut microbiota in mice.

Tb and Tp were respectively synthesized using glycerol, butyric acid or propionic acid as substrates catalyzed by acidic ionic liquids[3]. The conversion rate of Tb could reach 96%, while that of Tp was 80%. To test the effect of Tb and Tp on gut health, male C57BL/6J mice were used (n=6-8 per group) and dextran sodium sulfate (DSS) was added into drinking to induce colitis. Tb and Tp in a dosage of 0.5% or 1.0% were added into diets. All the data were expressed as the mean ± SEM. The homogeneity of variance and normality were analyzed with Brown-Forsythe test and the Kolmogorov–Smirnov test, respectively. The data were then analyzed by one-way ANOVA with Dunnett's post hoc test or Kruskal-Wallis test with Dunn's post hoc test. $P < 0.05$ was considered statistically significant.

Dietary Tb and Tp could significantly alleviate the colitis symptoms in mice (disease activity index: control: 0.13±0.13; DSS: 11.38±0.26; 1% Tp: 9.13±0.30; 1% Tb: 8.13±0.35), improve the integrity of gut barrier, modulate inflammatory response by reducing the expression of pro-inflammatory cytokines TNF-α (control: 1.0±0.06; DSS: 2.28±0.10; 1% Tp: 1.20±0.12; 1% Tb: 1.27±0.09) and IL-1β (control: 1.0±0.11; DSS: 2.05±0.15; 1% Tp: 1.42±0.13; 1% Tb: 1.34±0.13), and alleviate the oxidative stress by decreasing MPO expression (control: 5.00±1.32; DSS: 49.67±7.21; 1% Tp: 21.33±3.43; 1% Tb: 19.83±2.39) in the colon. Moreover, Tb and Tp could restore the gut microbiota diversity by increasing Chao index (control: 294.20±10.48; DSS: 155.1±8.88; 1% Tp: 205.2±22.52; 1% Tb: 222.4±13.66) and Shannon index (control: 3.55±0.12; DSS: 2.96±0.16; 1% Tp: 3.47±0.06; 1% Tb: 3.42±0.06), and reconstruct the gut microbiota composition via inhibiting the growth of pathogenic bacteria and promoting that of beneficial bacteria. Furthermore, the protective effect of Tb and Tp on acute colitis was dampened after antibiotics-treated mice. Fecal microbiota transplantation further confirmed that Tb and Tp-altered gut microbiota contribute to the protection against colitis in mice.

Dietary Tb and Tp could effectively improve gut health by protecting the intestine barrier, reducing the oxidative stress and suppressing the inflammatory responses in the colon, and restoring the gut microbiota dysbiosis. Most importantly, such protective effect of Tb and Tp in gut health was mediated by modulation of gut microbiota.

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OC46. The Impact of the COVID-19 Pandemic on Women's Breastfeeding Experience Within the Irish Healthcare System. *A.Bacon[1],EJ.Osullivan[1] 1. School of Biological, Health, and Sports Sciences, Technological University Dublin, Grangegorman Campus, Grangegorman Lower, Dublin 7.*

The World Health Organization (WHO) recommends initiating breastfeeding within the first hour of birth, exclusive breastfeeding for six months, and continued breastfeeding, while incorporating solid foods for up to 2 years and beyond. In addition, breastfeeding should be initiated and maintained regardless of the mother's SARS-CoV-2 virus (COVID-19) status [(1)]. Despite these recommendations, there were international concerns regarding risk of vertical transmission through breastfeeding [(2)]. As a result, the pandemic had a global effect on women's experiences breastfeeding and the support they received, both positively and negatively. This study aimed to explore how COVID-19 impacted the breastfeeding supports mothers in Ireland received.

This study used pre-collected data from an online survey conducted by Bainne Beatha and TU Dublin in 2022; the initial findings of which have been published elsewhere [(3)]. Eligible participants were 18+ and had breastfed/considered breastfeeding children born in Ireland between 2019-2021. Relevant data analysed for the present study included responses to three questions, qualitative and quantitative, on COVID-19's impact on breastfeeding experiences/access to breastfeeding supports. Braun and Clarke's six-step thematic analysis framework and NVivo 12 were used for qualitative analysis. SPSS was used to analyse the closed-ended question with Chi-squared tests and contingency tables.

2,756 participants (out of 5,412) provided responses to the qualitative questions about COVID-19. Themes developed included: 1. COVID-19's effect on social support while breastfeeding: No access to social support, i.e., friends/family/other breastfeeding mothers, caused increased stress, loneliness, and workload. Participants that did have social support described themselves as "*very lucky*". A significant relationship was observed ($P < 0.001$) between previous experience breastfeeding, either personal experience or vicarious, and how participants felt COVID-19 effected their breastfeeding experience. Of those with no previous experience, 45.9% reported COVID-19 making their experience more difficult compared to just 25.4% with previous experience. 2. COVID-19's effect on participant's time and privacy while breastfeeding: Increased time at home allowed for more time to breastfeed and bond. Increased privacy reduced social stigma and unwanted comments: "*due to Covid restrictions shielding me from the judgment of others.*" 3. Accessibility/quality of medical support varied: Some participants reported having access to high quality medical support and that "*having the supports online is a great resource,"* while others did not, stating that "*it's not consistent.*"

Overall, women's experiences breastfeeding regarding social isolation and medical support, varied significantly during COVID-19. Possible reasons for this include levels of previous experience, which was shown to influence COVID-19's impact, as well as other varying demographic characteristics. However, further research is required to better understand these differences. While actions can be taken to improve breastfeeding experiences in Ireland, e.g., improvement of social support through breastfeeding support

groups, future policies must consider the diversity of experiences to ensure support is individualised.

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Student Competition

OC47. Exploring the relationship between involvement in community gardening and consumption of organic, local and seasonal foods. *Anya Ritchie[1], Ada Chan[2], Aoibhín Moore Heslin[3] 1. School of Agriculture and Food Science, University College Dublin, Belfield, D04 V1W8 Dublin, Ireland, 2. School of Biological, Health, and Sports Sciences, Technological University Dublin, Grangegorman, D07 EWV4 Dublin, Ireland and 3. Airfield Estate, Overend Way, Dundrum, D14 EE77 Dublin, Ireland.*

A community garden is 'an area of land that is let ... to members of the local community for collective gardening purposes and is used or intended for use wholly or mainly for ... the production of vegetable or fruit mainly for consumption by members of the local community; the propagation of plants for environmental or decorative purposes in the local community, and otherwise than for profit' [(1)]. They strive to promote environmental stewardship and communal food production across ages, ethnicities, incomes, and education levels [(2)]. Studies have shown that community gardens could play a key role in promoting sustainable practices and lifestyles. Organic farming which restricts the use of pesticides offers a more environmentally friendly alternative to conventional farming [(3, 4)]. Seasonal eating could also help to reduce the environmental impact of food production as the impact on water stress, land use change and biodiversity could be lessened [(5)]. Seasonal local food does not require additional amounts of energy in its production which can reduce its environmental impact [(5)]. This study sought to examine the relationship between involvement in community gardening and consumption of organic, local and seasonal produce.

A cross-sectional 34-item Biodiversity and Food online survey was circulated to adults, over 18 and living in Ireland (n=578). It included questions on involvement in gardening and food production and the composition of participants' weekly food shop. This survey was circulated via the Airfield Estate newsletter, national volunteering websites, and social media platforms. Data was analysed using IBM SPSS Statistics 29 through independent t-tests, Mann Whitney U tests, and chi-squared tests.

14% of survey respondents were community gardeners (n=78), with the remaining 86% (n=500) not involved in community gardening. The majority of community gardeners were women (65%), and most lived in suburban areas/towns (62%), with 4% residing in the countryside.

Community gardeners purchased significantly more organic food, with 45% of their weekly shop being organic food compared to 30% among non-community gardeners ($p<0.001$). Similarly, seasonal produce accounted for 51% of community gardeners' weekly food shop compared to 41% among non-community gardeners ($p<0.001$). There was a positive association between community gardeners and purchasing food produced in Ireland, with 28% of community gardeners indicating they buy food produced in Ireland in their weekly shop compared to 9.3% of non-community gardeners ($p<0.001$).

Community gardeners' demonstrated significantly greater engagement in sustainable food purchasing through buying more organic, seasonal, and Irish food compared to non-community gardeners. These findings suggest that community gardening may support the adoption of environmentally beneficial food behaviours.

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Student Competition

OC48. Hydration in ileostomates: knowledge, attitudes and practice. N. Magee[1], E.J. Rosbotham[1], L.K. Pourshahidi[1], P. Douglas[1], V. Gilpin[2], E.E.A. Simpson[3], J. Davis[2], C.I.R. Gill[1*]
1. Nutrition Innovation Centre for Food and Health (NICHE), Ulster University, Coleraine, Northern Ireland, UK, 2. School of Engineering, Ulster University, Belfast, Northern Ireland, UK and 3. School of Psychology, Ulster University, Coleraine, Northern Ireland, UK.

Ileostomy surgery is a life-saving operation which involves removal or resection of the large intestine. People living with an ileostomy (ileostomates) are at increased risk of dehydration due to reduced capacity for water, sodium and potassium uptake, while those with a high output stoma (HOS) (expected in 30% of small-bowel stomas post-operatively) have increased intestinal losses resulting in electrolyte depletion and poor fluid status. Although there is no consensus on the definition or treatment of HOS, it is proposed that output > 1400 ml/day is likely to have adverse outcomes on fluid status and kidney function [(1)]. This study aimed to determine ileostomates' hydration related behaviours, and to identify factors which contribute to dehydration, increased stoma output and HOS.

The study survey was co-created by a Patient and Public Involvement group. Participant-reported data included urinary frequency, stoma output volume and consistency, and dehydration symptoms. Food and beverage frequency questionnaires assessed intake behaviours. A validated hydration knowledge questionnaire (HyKS) was adapted for ileostomates, along with a hydration facilitators and barriers (H-FAB) scale[(2)] to address barriers related to output / intake monitoring, convenience, and knowledge. Ethical approval was granted by the Ethical Filter Committee in the School of Biomedical Sciences at Ulster University (*FCBMS-24-170-A*).

The survey was distributed online, and complete responses were returned by 291 ileostomates across the UK and Ireland (74% female) with a median (IQR) age of 52 (41, 61) years and BMI of 26.3 (22.6, 30.7) kg/m^2. Median (IQR) time elapsed since ileostomy formation was 3.8 (1.3, 10.1) years and the most common reason for surgery was ulcerative colitis (38.5%). Average estimated daily stoma output was 1454 (1069, 1965) ml/ day, with 40% experiencing loose or watery output and 56% classed as experiencing HOS (i.e. > 1400 ml/day)[(1)]. No relationships were observed between duration of stoma, output volume or consistency (P>0.05). However, frequency of dehydration-related symptoms and ileostomy output (r=0.267, P<0.001) and daily fluid intake (r=0.134, P=0.02) were positively correlated. Daily fruit and vegetable consumption was 327 (161, 510) g/day and fluid intake were 2019 (1491, 2606) ml/day. Fruit and vegetable intake was negatively correlated with dehydration symptoms (r=-0.184, P<0.01). There were no differences in HyKs for those with normal output versus HOS (score: 13/30 (9/30, 17/30)), however those with HOS scored significantly higher in the convenience H-FAB subscale (P=0.048), indicating these factors presented a greater barrier to achieving adequate hydration.

Whilst fluid intake met general population recommendations[(3)], it contributed to symptoms of dehydration within this group. This is reflected in the prevalence of HOS, which appears to persist for several years post-surgery. Hydration knowledge was poor across the population; targeted interventions are warranted to improve awareness and self-management of HOS in ileostomates.

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Student Competition

OC49. Area-level socioeconomic deprivation, B-vitamin status, and cognitive function in older Irish adults: observational analysis on a North-South ageing cohort. S.L Haggerwood[1], L. Hoey[1], A. Moore[2], C. Hughes[1], M. Ward[1], H. McNulty[1] *1. Nutrition Innovation Centre for Food and Health, Ulster University, Coleraine, Northern Ireland and 2. School of Geography and Environmental sciences, Ulster University, Coleraine, Northern Ireland.*

Populations globally are ageing, placing an additional burden on public health services, owing to deteriorating physical and mental health. Particularly, anxiety, depression and cognitive dysfunction occur commonly in older adults[(1)]. Associations between physical and social environments with health outcomes are a key focus, with the emergence of geographical studies seeking to understand the spatial relationships between living environments, diet, nutrition and cognitive health. We previously showed that greater area-based deprivation was associated with poorer cognitive function, but this was based on a screening tool for cognitive assessment which did not permit specific cognitive domains to be examined[(2)]. Furthermore, the metabolically interrelated B-vitamins (folate, B12, B6 and riboflavin) are recognised to play a role in the preservation of cognitive function in ageing[(3,4)], but whether biomarkers of these B-vitamins are influenced by socioeconomic deprivation has not been explored. Thus, this study aimed to investigate associations between area-based deprivation, biomarkers of B-vitamin status and cognitive function in older adults.

This study analysed data from the Trinity-Ulster-Department of Agriculture (TUDA) study, which recruited community-dwelling older adults (n=5,186) from Northern Ireland and the Republic of Ireland (2008 to 2012). Following the removal of participants taking B-vitamin supplements or B12 injections, 4,322 participants were eligible for inclusion. Individual area-based deprivation scores were assigned using geo-referencing and the data integrated from both jurisdictions into quintiles (Q1 representing 20% least deprived; Q5 representing 20% most deprived). Global cognition and sub-domains (attention, delayed memory, immediate memory, language and visuospatial) were measured using the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS), with a global score <80 indicative of cognitive dysfunction. Folate, vitamins B12, B6, and riboflavin biomarkers were measured using gold standard methods. Statistical analysis was performed on SPSS version 29, using ANCOVA test with post-hoc Bonferroni analysis and logistic regression being conducted, controlling for relevant covariates.

Vitamin B6 and riboflavin status generally decreased ($P<0.001$), and homocysteine concentrations increased ($P<0.01$), with greater area-based deprivation. As area-level deprivation increased (from least to most deprived), scores for global cognition and each sub-domain decreased sequentially ($P<0.001$), with the greatest effect observed for the visuospatial function domain (by 7.5 points). Compared to the Q1, the risk of cognitive dysfunction was significantly higher in Q4 (OR=1.537; 95%CI 1.181-2.000, P=0.001) and Q5 (OR=1.915; 95%CI 1.498-2.447, $P<0.001$). Of the B-vitamins, lower riboflavin status was associated with greater risk of cognitive dysfunction (OR=1.615; 95%CI 1.108-2.352, P=0.013).

The findings suggest that older adults residing in more socioeconomically deprived areas, in both North and South of Ireland, have lower vitamin B6 and riboflavin status and poorer global and domain-specific cognitive function. Improving B-vitamin status may protect against cognitive dysfunction in these at-risk groups. Further investigation, in the form of randomised control trials is required to confirm these findings.

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Student Competition

OC50. Acute effects of combined inulin and nitrate supplementation on vascular function in hypertensive adults. *J. Virgili[1], B. Bond[1], A. Vanhatalo[1], D. Vauzour[2], G. Le Gall[2], and L. Torquati[1] 1. University of Exeter Medical School, Faculty of Life and Health Sciences, University of Exeter, St Luke's Campus, Exeter, EX1 2LU, UK and 2. Norwich Medical School, Faculty of Medicine and Health Sciences, University of East Anglia, Norwich, NR4 7TJ, UK.*

Cardiovascular disease is a major contributor to premature mortality and reduced quality of life in older adults, with age-associated vascular dysfunction and hypertension exacerbating these risks[1]. Endothelial dysfunction, characterised by impaired vasodilation, reduced nitric oxide (NO), and increased vascular resistance, is both a consequence and cause of hypertension[2]. While flow-mediated dilation (FMD) is commonly used to assess endothelial function[3,4], interventions to improve cardiovascular health in hypertensive adults remain limited. Dietary factors like inorganic nitrate and inulin from plant-rich diets may enhance NO and fibre-derived short-chain fatty acids (SCFAs) production, potentially offering additive benefits for vascular function[5,6,7,8]. While nitrate's effects on cardiovascular health are well-documented[9], the potential additive benefits of combining nitrate and inulin on vascular function remain unexplored. This knowledge gap is critical, as such a combination might offer additive benefits by simultaneously increasing NO bioavailability and SCFAs production, both contributing to vascular function.

To address this knowledge gap, we conducted a double-blind, randomised crossover study investigating whether a combination of nitrate and inulin (INU+N; 15g and 1300mg) may result in a greater FMD response at 4h post consumption compared to inulin alone (INU; 15g) in 22 hypertensive adults aged 45-74 years. Blood flow rate along the vessel wall, known as shear rate (SR), was measured as a crucial mechanical trigger for dilation at baseline and 4h post supplementation. FMD, blood pressure (BP), plasma SCFAs, and NO biomarkers were also evaluated. Linear mixed-effects models were used to examine the effect of INU+N versus INU supplementation. Sex, medication, condition order, condition, time, and their interaction were modelled as fixed effects; the participant was included as a repeated factor; and the baseline outcome, age, and BMI were included as covariates.

The results indicated a significant increase in FMD% 4h post-supplementation with INU+N compared to INU alone, with a mean difference of 1.78±1.69% (95% CI 1.06-2.49%, $p < 0.001$). FMD normalised to SR area under the curve was higher following INU+NIT compared to INU (0.01±0.00 AU, 95% CI 0.00 – 0.02 AU, $p < 0.001$). Plasma nitrite and nitrate concentrations were substantially elevated following INU+N compared to INU, with mean differences of 254.40±98.45 nM (95% CI, 212.61–296.20 nM) and 261.95±108.35 µM (95% CI, 215.77–308.13 µM), respectively ($p < 0.001$ for both). Neither supplementation affected systemic concentrations of SCFAs or systolic BP; however, INU+N resulted in a reduction in diastolic BP compared to INU (-4±6 mmHg, 95% CI, -7 - -2 mmHg, $p = 0.003$).

The combination of nitrate and inulin demonstrated improved FMD, diastolic BP, and NO biomarkers, suggesting enhanced vascular function beyond the short-term effects of inulin alone. These findings highlight the potential additive cardiovascular benefits of combining nitrate and inulin, thereby presenting novel dietary intervention strategies for individuals with hypertension.

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Student Competition

OC51. Alignment of the Planetary Health Diet with pregnancy dietary guidelines: insights from two cohorts. *Aoife Davis[1], Sophie Callanan[1], Gillian A. Corbett[1, 2], Eileen C. O'Brien[1, 3], Alexander Douglass[1, 4], Fionnuala M. McAuliffe[1, 2]1. UCD Perinatal Research Centre, UCD School of Medicine, University College Dublin, National Maternity Hospital, Dublin 2, Ireland, 2. National Maternity Hospital, Dublin 2, Ireland, 3. School of Biological, Health and Sports Sciences, Technological University Dublin, Dublin 7, Ireland and 4. College of Health and Agricultural Sciences, University College Dublin, Ireland.*

The Planetary Health Diet is a mostly plant-based diet that aims to optimise human health by providing essential nutrients whilst minimising the environmental impact of food production through sustainable food choices([1]). Pregnancy is a time in the life course with additional nutritional requirements to support maternal and fetal health. Limited data exists on whether the planetary health diet fulfils key nutritional requirements during pregnancy. This research aimed to examine the alignment of the Planetary Health Diet Index in pregnancy with maternal nutrient intake and dietary guidelines to determine whether adherence to this dietary model supports optimal nutrition during pregnancy.

Pregnant women (n=678) from two Irish cohorts: the ROLO (Randomised cOntrol trial of LOw glycemic index diet to prevent macrosomia) and MicrobeMom studies were analysed. Dietary intakes in early pregnancy were determined using 3-day food diaries and used to calculate individual Planetary Health Diet Index scores. Women were dichotomised by the median score, to create a 'High' (>88.99) and a 'Low' (≤88.99) Planetary Health Diet Index group. Differences in nutrient intakes and adherence to dietary guidelines between the 'High' and 'Low' groups were explored. Linear regression models analysed the associations between the Planetary Health Diet Index score and maternal nutritional status while adjusting for potential confounders such as energy intake and dietary under-reporting.

Participants had a median (IQR) age of 32.77 (30.02, 35.2) years and BMI of 25.22 (23.1, 28.09) kg/m^2. Compared to those with a 'Low' Planetary Health Diet Index score, those with a 'High' score reported higher intakes of dietary fibre (g/day) (17.32 (13.39, 21.08) vs 21.74 (18.28, 25.88), p<0.001), iron (mg/day) (10.48 (8.48, 12.82) vs 12.06 (9.48, 14.60), p<0.001), folate (µg DFE/day) (250.73 (193.88, 312.45) vs 279.57 (219.43, 356.81), p<0.001), and calcium (mg/day) (837.75 (695.36, 1056.72) vs 956.57 (751.84, 1155.03), p<0.001). Compared to those with a 'Low' Planetary Health Diet Index score, a greater proportion of women in the 'High' scoring group met recommendations for dietary fibre reference intake (10.3% vs 28.9%, p<0.001), vitamin A population reference intake (51.6% vs 67%, p<0.001) and average requirement (71.1% vs 81.4%, p=0.002), vitamin C population reference intake (39.9% vs 61.4%, p<0.001) and average requirement (57.5% vs 74.3%, p<0.001), and calcium population reference intake (38.8% vs 65.2%, p<0.001) and average requirement (65.2% vs 76.3%, p=0.002).

The Planetary Health Diet may support maternal nutritional adequacy during pregnancy, while promoting environmental sustainability. Our findings provide valuable insights that can inform future dietary recommendations for pregnancy, contributing to both maternal health and planetary well-being. Further research is needed to explore the long-term

maternal and fetal health implications associated with adherence to the Planetary Health Diet during pregnancy.

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Student Competition

OC52. Inadequate micronutrient intakes in children aged 2 years in the Cork BASELINE Cohort Study – A pilot analysis for the Zero_HiddenHunger_EU project. *E. M. Creedon, Á. Hennessy, K. D. Cashman and M. E. Kiely[1] 1. Cork Centre for Vitamin D and Nutrition Research, School of Food and Nutritional Sciences, University College Cork, Cork, Ireland.*

Hidden hunger is micronutrient deficiency caused by low intake and/or absorption of minerals and vitamins[1,2]. This form of malnutrition often presents without any obvious clinical symptoms but significantly impacts the immune system, childhood growth and brain development, and accelerates multi-system aging. Children are particularly at risk due to their increased nutritional needs during critical growth and development [3].

The Zero_HiddenHunger_EU project aims to estimate the true prevalence of micronutrient malnutrition in the European population by harmonising the analysis of micronutrient intake and status data from large-scale dietary surveys and cohort studies. This study was a pilot analysis of micronutrient intakes among toddlers in the Cork BASELINE Birth Cohort Study.

Dietary intake data from two-day weighed food diaries collected among 468 children (median [IQR] age of 2·1 [2·1, 2·2] years) were analysed using the Statistical Programme for Assessing Dietary Exposure (SPADE) in R Studio (2024.12.1). Mean daily intakes of 12 priority micronutrients were calculated, and the prevalence of inadequate intakes was determined using Harmonised Average Requirements (H-AR) proposed by Allen and colleagues[4].

Overall, the proportion of children with micronutrient intakes below H-AR thresholds was as follows: iron (20%), zinc (8.2%). calcium (2.4%), magnesium (0%), iodine (5.6%), selenium (24.4%), vitamin A (RE) (0.6%), riboflavin (0.2%), folate (4.3%), vitamin B12 (0%), and vitamin D (96%).

The mean (95% CI) usual intake of iron was 6.8 (6.6, 7.0) mg/d; 24.1% of females and 16% of males had intakes below the H-AR of 5mg. With mean (95% CI) usual intakes of zinc at 5.2 (5.1, 5.4) mg/day; 10.1% of females and 6.3% of males were below the H-AR of 3.6mg/day. Females had a significantly higher proportion of selenium intakes below the H-AR of 17µg compared to males (30.5% vs 18.5%, $P < 0.05$), with a mean (95% CI) usual intake of 20 (19.1, 21.0) and 21.3 (20.3, 22.3) µg/day, respectively. A small proportion (11.5%) of children used micronutrient-containing supplements, of which vitamin D was the most common, with 49/54 supplement users. Usual vitamin D intakes at the 95th centile were 9.2 (95% CI 8.0, 10.2) µg/day.

This pilot analysis of usual micronutrient intakes among young children in Ireland shows variability in intakes of vitamins and minerals. Applying H-ARs enables international comparisons and highlights the need for further investigation into low selenium and zinc intakes in this cohort, as well as development of strategies to address inadequate iron and vitamin D intakes. The higher prevalence of inadequate selenium intakes among females warrants research into sex-specific nutritional vulnerabilities.

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Student Competition

OC53. The cholesterol-lowering effect of cheese compared to butter: does sex play a role in the LDL particle response to dairy fat? *Martina Rooney,[1,2] Simone Dunne,[1,2] Fiona C McGillicuddy,[3] Eileen R Gibney,[1,2] Emma L Feeney.[1,2] 1. Food for Health Ireland, University College Dublin, Dublin, Ireland, 2. UCD Institute for Food and Health, University College Dublin, Dublin, Ireland and 3. UCD Diabetes Complications Research Centre, University College Dublin, Dublin, Ireland.*

A growing body of evidence demonstrates the cholesterol-lowering effects of cheese compared to butter[1,2]. Exploratory work considering novel lipoprotein biomarkers indicated that LDL cholesterol reductions observed following dairy fat consumption are driven by reductions in LDL particle (LDL-P) concentrations[3]. This suggests a trend towards a less atherogenic profile, with a decrease in small LDL-P and increase in large LDL-P concentrations[3]. Recent analysis has found sex to impact the cholesterol response to dairy fat in middle-aged, overweight adults, with the greatest benefits observed in females[4]. This study aimed to explore if the shift in lipoprotein particles after chronic cheese consumption differs between males and females.

This secondary analysis pools data from two parallel-arm randomised controlled trials with similar protocols, where participants (*n* 196, 42.9 % male) received ~40g fat per day, either as 120g cheese (*n* 104) or deconstructed cheese (49g butter, 30g calcium caseinate and a calcium supplement, *n* 92) for 6 weeks. LDL-P concentration and particle size were measured by LabCorp Inc (Morrisville, North Carolina, USA) using nuclear magnetic resonance (NMR) spectroscopy using the Vantera NMR Clinical Analyser. Differences in LDL-P in post-dairy fat consumption was investigated using two-factor ANCOVA on SPSS® V29.0.1.0 for Mac, adjusting for baseline values, study, baseline BMI, age, baseline fat intake as a percentage of total energy (%TE) and change in energy (kcal), with Bonferroni adjustment.

Participants were aged mean ± SD 59.6 ± 6.4 years with a BMI of 28.0 ± 3.6 kg/m^2. In the group as a whole, LDL-P concentration decreased significantly in response to cheese compared to deconstructed cheese (-41.4 ± 212.5 nmol/L vs 16.9 ± 244.2 nmol/L, P=0.004). A significant sex × treatment interaction was observed for LDL-P (P=0.028). Within-sex analysis found males and females to respond differently. In males, there was a decrease in large LDL-P concentrations in response to dairy fat (-43.2 ± 212.3 nmol/L) while no change in females was observed (2.8 ± 237 nmol/L, P<0.001). For small LDL-P concentrations, an increase was found in the male (45.6 ± 301.4 nmol/L) but not the female (-2.5 ± 223.7, P<0.001) group.

Cheese was shown to lower LDL-P compared to deconstructed cheese in the cohort as a whole. When stratified by sex, males and females were shown to respond differently to dairy fat, with a more favourable response observed in females, with an increase in large LDL-P and decrease in small LDL-P post-consumption of cheese. These findings may play a role in personalised nutrition. Further investigation into a wider range of lipoprotein biomarkers is warranted.

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OC54. Assessing adherence to the Planetary Health Diet among Irish teenagers: preliminary analysis based on data from the National Teens' Food Survey II. *P. van der Wel[1], M. O'Neill[1], Maria Buffini[1], John kearney[2], Laura Kehoe[3], J. Walton[3], B. McNulty[1] 1. UCD Institute of Food & Health, University College Dublin, Dublin, Ireland, 2. School of Biological & Health Sciences, Technological University Dublin, Dublin, Ireland and 3. Department of Biological Sciences, Munster Technological University, Cork, Ireland.*

The Eat-Lancet Planetary Health diet (PHD) has been proposed for an optimal, nutritionally balanced plant-based diet that is environmentally sustainable(1). However, adoption of this diet is challenging because of the reliance of national food systems on animal food products. This can be observed in Ireland were dietary patterns show that meat and dairy accounted for 65% of diet related greenhouse gas emissions(2). To understand the shift required to move towards sustainable dietary patterns It is important to understand current diets and adherence to a plant-based diet such as the PHD. Hence, the aim of this study is to examine adherence to the PHD in Irish adolescents and to identify any significant differences between demographic groups.

Analyses were based on data from the National Teens' Food Survey II a nationally representative food consumption survey; (2019-20; 13–18y; n 428; 51% female)(4). The Planetary Health Diet Index (PHDI)(2) was used to assess dietary adherence to the PHD. Foods were categorized into the PHDI's 15 food groups, and each participant was given a score (nonadherence: 0 - total adherence: 140) based on their adherence. Statistical weighting factor adjusted for social class, ensuring sample representativeness. Data were analysed in SPSS V29, mean PHDI scores were calculated and differences across different socio-demographic variables were assessed using independent t-tests, one-way ANOVA and generalized linear modelling.

The PHDI score for Irish adolescents was 56.38, with females having a significantly higher score compared to males (59.74 vs. 54.07; respectively; p= <0.01), there was no significant difference noted in scores between younger and older adolescents (13-15yrs versus 16-18yrs). In addition, no significant differences in PHDI score were noted across weight status or the adolescent's parent/guardian social class. In terms of food group components that influenced the overall PHDI score, among the limiting food categories, red and processed meats had a negative impact on the score indicating consumption levels were not in line with the PHDI recommendation (≥100 g/d minimum and ≤14 g/d maximum). Whereas for the favourable foods in the score, both added unsaturated oils (≤3.5% of total energy intakes minimum and ≥ 21% of total energy intakes maximum) and soy foods, (minimum 0g/d and maximum ≥50g/d) were noted as having the least impact on PHDI scores indicating low consumption levels.

Adolescents in Ireland show moderate adherence to the Planetary Health Diet, with females scoring significantly higher than males. These findings suggest that dietary interventions aiming to improve planetary health diet adherence could particularly target adolescents based on their current dietary patterns in order to shift towards dietary sustainability. Adapting sustainability dietary indices for adolescents remains a challenge, indicating further work needed.

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Student Competition

OC55. Food literacy programmes targeted at preschool-aged children and their carers, an examination of their outcomes – a scoping review. A. Mc Donnell Gillic[1], A. Kennedy[1], J.M. Kearney[1] 1. Faculty of Sciences and Health, School of Biological, Health and Sports Sciences, Technological University Dublin, Grangegorman, Dublin 7, D07 H6K8.

Lifelong dietary habits are shaped during the Early Years, the development of healthy food behaviours reduces the overall risk of non-communicable disease in later years(1). Food Literacy programmes are utilised to foster food literacy development and have been shown to yield positive outcomes(2). This scoping review aimed to examine the existing literature on food literacy programme outcomes targeting preschool-aged children and their parents and to identify the reported outcomes of these programmes.

A scoping review was conducted following the Joanna Briggs Institute methodology(3). A comprehensive search of PubMed, Embase and Web of Science, and grey literature sources was performed using keywords related to “food literacy” and “nutrition literacy”. Inclusion criteria focused on studies examining Food Literacy programmes targeted at preschool-aged children.

Five distinct food literacy programmes were reviewed across eight papers. All programmes reported enhanced participants' understanding of nutrition, with positive outcomes observed in children (2 programmes), parents of 0–5-year-olds (2 programmes) and early years carers/educators (1 programme). Positive behaviour change was noted in two programmes, including increased consumption of healthy foods like fruit and vegetables. One programme positively influenced family meal practice, reporting that children became more involved in mealtime planning and preparation. Qualitative data indicated the development of parent empowerment following programme participation and the importance of community engagement and social support for positive outcomes. Sustainability assessed for one programme across two papers was linked to policy alignment and consistent evaluation. Outcome measures varied across programmes employing various tools to measure nutritional knowledge and diet quality. The lack of control groups in all but one programme limits the certainty that observed impacts were directly attributable to the interventions. Furthermore, outcome data were typically collected immediately post-intervention, limiting the assessment of long-term sustainability

Food literacy programmes hold promise for improving food-related knowledge, attitudes, and behaviours in preschool-aged children and their parents. Outcome measures from the programmes varied considerably, impacting the ability to compare program outcomes. Future research should focus on strengthening programme sustainability through use of control groups, consistent outcome measures and longer-term follow-up to gauge lasting impact.

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Student Competition

OC56. Prevalence of appetite disorders in cancer survivors and associations with nutritional status and quality of life. *L. Keaver 1. The Health and Biomedical Strategic Research Centre (HEAL), Atlantic Technological University, Sligo, Ireland.*

Appetite disorders such as anorexia and early satiety are common in individuals undergoing cancer treatment and may persist into the post-treatment phase[1]. These symptoms can negatively affect dietary intake, nutritional status, and overall well-being[2]. Among cancer survivors receiving ongoing care in Ireland—whether actively in treatment or attending follow-up in outpatient settings—the prevalence and impact of appetite disturbances remain poorly defined. Understanding their relationship with nutritional status and quality of life is essential for improving supportive care in this population. The aim of this study was to determine the prevalence of different appetite disorders in cancer survivors and the association with nutritional status and quality of life.

Cross-sectional surveys were conducted with cancer survivors attending day ward and outpatient settings in one hospital in the West of Ireland. Participants were questioned about the presence of changes in appetite (none, anorexia, early satiety, or both). Nutritional status was determined using the Patient Generated Subjective Global Assessment form[3], body mass index, and handgrip strength. Quality of life was measured using the EORTC-QLQ-C30[4]. Ethical approval was obtained from Sligo University Hospital.

229 individuals completed the study. The sample had a mean age of 63.5 years (SD = 12.0). Most participants were female (n = 138, 61.1%), had been diagnosed within the previous five years (n = 167, 73.9%), and were undergoing active treatment at the time of data collection (n = 159, 70.4%). Among those receiving treatment, chemotherapy was the most prevalent modality (n = 129, 81.1%), followed by hormonal therapy (n = 19, 11.9%). Breast cancer represented the most frequently reported diagnosis (n = 58, 25.7%), with colorectal (n = 32, 13.8%), haematological (n = 28, 11.1%), lung (n = 12, 5.2%), and upper gastrointestinal or liver cancers (n = 10, 4.3%) comprising the remaining major categories. In total, 24.5% were affected by a disorder of appetite. 15.3% reported no appetite, 19.2% early satiety and 10% experienced both. Individuals who reported a disorder of appetite were more likely to be female, have experienced weight loss in the last six months, have reported lower food intake in the last six months, be at higher risk of malnutrition, be less likely to have handgrip strength >85th percentile, and have a significantly lower mean global health status score.

Appetite disorders can have a significant impact on nutritional status and quality of life. Dietetic and medical interventions should consider the impact this can have on treatment and nutritional management plans.

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OC57. How did the Coronavirus disease lockdown disrupt glycaemic management in type 2 diabetics? *M. Gallardo[1], C. Doepking[1] , J. Rojas-Calisto[1], S. Jimenez[2] 1. Department of Nutrition and Dietetics, Faculty of Health Sciences, University of Atacama, Copiapó, Chile and 2. Department of Kinesiology, Faculty of Health Sciences, University of Atacama, Copiapó, Chile.*

The Coronavirus disease (COVID-19) pandemic, caused by SARS-CoV-2, brought with it measures of social distancing and confinement [(1)] that altered the management of chronic diseases, such as type 2 diabetes mellitus (T2DM). This condition affects 537 million people worldwide, and patients with T2DM were at increased risk of severe complications during the pandemic [(2,3)]. Despite its importance, there is a lack of information on how confinement affected glucose control in this population, making it necessary to investigate this phenomenon to improve care strategies in future crises (4). This review aimed to describe the effect of the period of COVID-19 confinement on glycaemic control in patients with T2DM, to provide evidence-based clinical and public health recommendations.

The search strategy was performed in the MEDLINE databases via the PubMed interface and the Web Of Science Core Collection (WOS) via its own interface. The search terms included “Glycemic control”, “Blood glucose self-monitoring”, “Glycemic variability”, “Diabetes mellitus type 2” and “Lockdown”. The search period covered the years 2019 to 2022. The study selection process was performed based on the eligibility criteria, which corresponded to studies conducted in patients diagnosed with type 2 diabetes mellitus, studies that addressed confinement during the COVID-19 pandemic, studies with data on glycaemic control during COVID-19 confinement, original studies with observational design and published in Spanish, English and Portuguese.

The search strategy yielded background information from 11 publications comprising 10,836 patients with T2DM. Glycaemic control was assessed by glycated haemoglobin (HbA1c), baseline glycaemia, postprandial glycaemia and glycaemic variability before, during and after confinement due to the presence of the SARS-CoV-2 virus. The studies appear to have found a sustained decrease in HbA1c during the lockdown; no significant changes in basal blood glucose values were found during the period, and an unclear trend was found for postprandial blood glucose values and glycemic variability (GV). However, no studies were found that presented information on GV before, during and after confinement. However, the authors of the study emphasize that fluctuations in glucose levels, whether above or below the normal range, may potentially contribute to the development of complications.

This review identified a limited number of studies on the impact of COVID-19 confinement on glycaemic control in patients with type 2 diabetes. The findings suggest that, although glycosylated haemoglobin (HbA1c) and baseline blood glucose remained within acceptable ranges, there was no consensus on postprandial blood glucose values, revealing possible alterations in dietary management during confinement. The absence of studies assessing glycaemic variability, a critical parameter for metabolic control, is noteworthy. It is recommended that glycaemic variability monitoring be integrated into future research and clinical protocols, as it could more accurately reflect the imbalances generated by health crisis situations.

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OC58. The prevalence of sarcopenia in a sub-acute respiratory rehabilitation inpatient unit. *Alison Maughan[1] , Jennifer Reid[1] , Cíara Walsh[2], Jaqueline Boyle[2] 1. University College Dublin, Belfield, Dublin 4, Ireland and 2. Peamount Healthcare, Newcastle, Dublin.*

Sarcopenia is the progressive loss of skeletal muscle mass, strength, and function. It is associated with numerous adverse outcomes, including increased risk of falls, hospitalisation, and mortality(1). Sarcopenia and respiratory disease have many shared risk factors, including physical inactivity and poor nutrition. In respiratory disease, the prevalence of sarcopenia is positively associated with disease severity(2). To the authors knowledge, there are no existing studies on the prevalence of sarcopenia in a respiratory rehabilitation in-patient cohort.

Primary Aim: To determine the prevalence of sarcopenia in a sub-acute respiratory rehabilitation inpatient unit.
Secondary Aims: (i) To assess risk of malnutrition, (ii) To assess adequacy of energy and protein intake.

Patients admitted to the respiratory rehabilitation unit were recruited over a 4-week period in April 2024. Sarcopenia risk was screened for using the validated SARC-F questionnaire. Participants who screened positive for risk of sarcopenia had their hand grip strength (HGS) assessed via hand-grip dynamometry, and their appendicular skeletal muscle mass assessed via bioelectrical impedance analysis. Calf circumference was measured as a secondary marker of muscle mass. Sarcopenia was diagnosed based on EWGSOP2 1 criteria. Risk of malnutrition was evaluated using the MUST screening tool. Dietary intake data was gathered for participants that were seen by a dietitian.

26 participants took part in the study. 84.6% were at risk of developing sarcopenia based on SARC-F score. 23.1% had probable sarcopenia (low HGS in the absence of low muscle mass), and 15.4% had confirmed sarcopenia (low HGS and low muscle mass). All participants with confirmed sarcopenia were at high risk of malnutrition. Of the participants who were seen by a dietitian, 0% were meeting their estimated energy requirements through food alone, while 20% were meeting their estimated protein requirements.

A combined total of 38.5% of participants had either probable or confirmed sarcopenia, putting them at an increased risk of adverse outcomes. All participants at high risk of malnutrition had confirmed sarcopenia. Going forward, it is essential that standard pathways are developed to routinely identify individuals with sarcopenia. This will allow for appropriate exercise and nutrition interventions to be put in place, with the potential to improve patient outcomes.

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Student Competition

OC59. Milk feeding practices during hospitalisation and post-discharge: findings from a nutrition audit. J. Santos[1], A. Doolan[2], F. Dunlevy[3], S. Clancy[1], J. Kearney[1], A. Kennedy[1] *1. School of Biological, Health and Sports Sciences, Technological University Dublin, Dublin, Ireland, 2. Neonatal Department, The Coombe Hospital, Dublin, Ireland, and 3. Nutrition and Dietetics Department, The Coombe Hospital, Dublin, Ireland.*

Human milk is the optimal choice for preterm infants, reducing the risk of complications associated with premature birth(1). Exclusive breastfeeding also supports sustainability objectives by reducing the environmental impact associated with formula production, packaging, and distribution(2). However, breastfeeding preterm infants remains challenging, particularly after discharge from neonatal care(3). This study aimed to explore and describe the feeding journey of preterm infants, with a focus on the type of milk feeding during hospitalisation and at discharge, and the progression of these practices during the post-discharge follow-up period.

A retrospective chart review of babies born in 2023 was conducted in May and June 2024. The audit included preterm infants born at the Coombe Hospital weighing <1500g. Exclusion criteria were infants with contraindications to oral feeding, those transferred to other healthcare facilities, or who did not continue attending follow-up appointments at the Coombe Hospital. This Nutrition Audit was approved by Audit Office (AQUA-2024-04-01).

50 charts were reviewed. During hospitalisation, all infants received human milk as their first enteral feed, with 27 (54%) receiving donor human milk. Commercial milk formula (CMF) was introduced at some point for 27 (54%) of the infants, and 31 (62%) were fed directly at the breast at least once. At discharge, 24 infants (48%) were documented as receiving exclusively breast milk (fortified or unfortified), 12 (24%) were fed a combination of breast milk and CMF, and 14 (28%) were exclusively formula-fed.
At six weeks corrected age (CA), feeding data were unavailable for two infants (n=48). The number of exclusively formula-fed infants increased to 31 (64.6%), while those receiving exclusively breast milk declined to 9 (18.8%), and 8 (16.7%) were fed a combination of breast milk and CMF. During the second follow-up, at a mean corrected age of 4 months, 44 charts were reviewed, with complete feeding data available for 35 infants. Among them, 3 (8.6%) were exclusively fed with breast milk, 7 (20%) received both breast milk and CMF, and 25 (71.4%) were exclusively formula-fed. For the third follow-up, at a mean corrected age of 7 months, 21 charts were reviewed, with complete feeding data available for 16 infants. Among these, 1 (6.3%) was exclusively fed with breastmilk, 3 (18.8%) received both breast milk and CMF, and 11 (68.8%) were exclusively formula-fed.

This audit highlights a significant decline in breast milk intake rates following discharge, with an increasing number of infants transitioning to exclusive formula feeding over time. To mitigate this decline, evidence-based interventions such as comprehensive lactation support programmes, tailored parental education, and structured follow-up pathways should be prioritised, given the nutritional and environmental benefits of breast milk.

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OC60. Dining for Joint Health: A case study on the impact of anti-inflammatory foods on rheumatoid arthritis in an older adult. *John Carroll, Aoife E. McNamara 1. NutRI Research Group, Department of Biological Sciences, Munster Technological University, Cork, Ireland.*

Rheumatoid arthritis (RA) is a chronic inflammatory disease that primarily affects older adults, leading to joint inflammation, pain, and functional decline. While pharmacological treatment remains central to management, dietary factors are increasingly recognised for their role in modulating inflammation. Diets high in processed foods may aggravate RA symptoms, whereas those rich in fibre, polyphenols, and omega-3 fatty acids have been associated with improved disease outcomes [(1)]. The Dietary Inflammatory Index (DII) is a tool designed to assess the inflammatory potential of an individual's diet [(2)]. This single-participant case study explored the relationship between dietary inflammatory potential, disease activity (DAS28), and physical function (handgrip strength and Timed Up and Go test) in a 60-year-old male with RA.

A 60-year-old man with a confirmed diagnosis of rheumatoid arthritis (RA) participated in this ethically approved single-case study. Dietary intake over the previous month was assessed using a Food Frequency Questionnaire (FFQ), and the inflammatory potential of the diet was calculated using the Dietary Inflammatory Index (DII) [(2)]. Disease activity was estimated using a modified Disease Activity Score-28 (DAS28), based on self-reported counts of tender and swollen joints along with a Visual Analogue Scale (VAS) [(3)]. Physical function was evaluated through handgrip strength, measured using a dynamometer, and the Timed Up and Go (TUG) test. Grip strength values were compared against age- and sex-specific normative data [(4)], while TUG performance was assessed using established reference standards. All assessments were completed in a single session and descriptively analysed relative to the corresponding reference values.

The participant's diet was classified as moderately pro-inflammatory, with a Dietary Inflammatory Index (DII) score of +1.28. A DAS28 score of 4.15 indicated moderate rheumatoid arthritis (RA) disease activity. Handgrip strength measured 22.0 kg in the dominant hand and 30.3 kg in the non-dominant hand, both of which were below the 10th percentile for his age and sex [(4).] In contrast, the Timed Up and Go (TUG) test result of 9.36 seconds fell within the normal range for lower-limb mobility. These findings suggest a potential link between a pro-inflammatory dietary pattern, reduced upper-body functional strength, and increased RA disease activity. Reduced grip strength has previously been associated with functional impairment and disease burden in individuals with RA (5). Despite the limitations of a single-case design, these results are consistent with previous research exploring the relationship between diet and RA outcomes [(1)].

This case study suggests a potential link between dietary inflammation, reduced physical function, and RA disease activity. While findings are limited, they highlight the value of dietary assessment and the need for further controlled research.

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Student Competition

OC61. Monitoring the marketing and promotion of commercial milk formulae in Irish retail stores. *L Kingkumar[1] and EJ O'Sullivan[1] 1. School of Biological, Health and Sports Sciences, Technological University Dublin, Grangegorman, Dublin 7.*

There is a positive correlation between exposure to commercial milk formula marketing and the probability of formula feeding [(1)]. As such, the International Code of Marketing of Breast Milk Substitutes (the Code) is a voluntary set of regulations to restrict marketing and promotion of all commercial milk formulae and safeguard breastfeeding [(2)]. Despite the Code restricting promotion of *all* commercial milk formulae, regulations within Irish legislation only restrict the promotion of infant formula (i.e., products marketed as suitable for infants aged 0-6 months) [(3)]. To date, there has been no systematic evaluation of adherence to the Code or Irish legislation within the Irish retail environment. The objective of this study was to monitor the advertising and promotion of commercial milk formula products in Irish retail stores and determine adherence to Irish legislation and the Code.

A comprehensive audit was conducted across four distinct retail outlets: Chemist Warehouse, Dunnes Stores, SuperValu, and Tesco. Each location was audited four times over a five-week period between March and April 2024. The audits captured instances of both compliance and non-compliance, including any evidence of violations of legislation (regulations) and the Code. In total, 30 regulations and 19 articles of the Code were assessed. The data collected encompassed a range of details such as date, store, location, brand, product, format, weight, and price. These data were analysed and organised in Excel.

In total, 216 products were assessed across the four sites. Of the 30 regulations monitored, breaches were observed for 7. All products audited were considered to breach Regulations 18G. 6c, 18K. 2, 18L. 3a-d, and 18L. 4a of SI 490 of 2023 [(3)]. Many of these Regulations stipulate what should be included on “informational and educational material” about commercial milk formulae. The authors consider the boxes the formula is packaged in to be “informational” material. In addition, violations of 7 articles of the Code were noted. Again, breaches observed related to the required content on informational and educational material regarding infant feeding and similarity of the packaging of formula within the same brand range. In addition, breaches of the Code included discounted pricing for products marketed as suitable for infants aged 6-36 months. While there were no direct promotions of infant formula observed, promotional devices (e.g., shelf-talkers and other displays) were placed in their vicinity, resulting in cross-promotion.

The study revealed several violations of Irish legislation and the Code in Irish retail stores. This highlights the necessity of consistently monitoring violations in stores and imposing repercussions for violators to deter companies and retail stores from promoting milk formula. In addition, expanding current national legislation to align with the WHO Code is crucial in restricting the promotion of commercial milk formula to safeguard breastfeeding practices.

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OC62. Diet and Oral Health of Elite Irish Athletes. *J. Reid*[*1], C. Barrett*[*1], P. Elliott1, A. Hughes[2], M. O'Sullivan[2], L. Winning[2], O. Cassetti[2], S. Madigan[3], B. Egan[4], M. Crowe[2], A. O'Sullivan[1]. *Joint first authors 1. UCD Institute of Food and Health, UCD School of Agriculture and Food Science, University College Dublin, Dublin, Ireland, 2. Department of Restorative Dentistry & Periodontology, Dublin Dental University Hospital, Trinity College Dublin, Ireland, 3, Department of Physical Education and Sport Sciences, University of Limerick, Limerick, Ireland. Sport Ireland Institute, National Sports Campus, Abbotstown, Dublin, Ireland and 3. School of Health and Human Performance, Dublin City University, Dublin, Ireland.*

The high energy demands of elite sport require high amounts and frequent intake of high-carbohydrate foods and sports supplements to support performance[1,2].The combination of high intakes and frequency of potentially cariogenic foods increase the risk of oral health issues such as dental caries and erosion[3]. Oral health issues can negatively impact performance through pain, inflammation and infection[4,5]. Despite its importance, oral health is often an overlooked aspect of elite athlete care and is largely under-researched. This is the first study to examine the diet and oral health of elite Irish athletes. This study aimed to examine diet and oral health of elite Irish athletes.

A cross-sectional study was completed on a convenience sample of elite athletes, involving dietary recalls, a questionnaire and an oral examination. Dietary intake was assessed using Foodbook24, a validated web-based 24-hour recall tool. Oral health was assessed through a modified WHO oral health questionnaire which assessed self-perceived status, awareness, practices and attitudes. Oral examinations were performed by calibrated dentists using validated indices to assess dental caries, erosion, periodontal health, trauma, temporomandibular joint (TMJ) status and complications related to wisdom teeth. Chi-square tests, t-tests and one-way ANOVA were conducted using SPSS for statistical analysis.

Eighty-eight elite athletes (63% male) from seven sports participated, with a mean age of 25.6 years (range 19-53). The mean energy intake was 2681±1351 kcals/day with carbohydrates contributing 48±9% of total energy intake. Sports supplement use was high: 81% of athletes consumed sports drinks at competition, while 43% and 42% consumed energy bars and gels, respectively. Awareness of oral health risks from supplements was high (>80%). The prevalence of oral health issues included: at least one periodontal condition (100%), periodontitis (53%) untreated dental caries (ICDAS ≥ 3) (90%), dentine caries (60%), erosion (81%) and trauma (44%). Oral pain was reported by 40% of athletes, 28% experienced difficulty eating or drinking and 10% reported negative impacts on performance.

This study highlights a significantly high proportion of oral health issues among elite Irish athletes, with poor self-reported oral health and clinical issues exceeding those reported in previous athlete studies. These findings highlight the need for urgent dental care, targeted oral health strategies and future longitudinal research to better understand the complex relationship between diet and oral health in athletes.

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Student Competition

OC63. Strengthening professional networks in nutrition - evaluation of the NutriPD Community of Practice in Ireland. *T. Cooley[1], S. O'Donovan[1] , and L. Ryan[1] 1. Department of Sport, Exercise and Nutrition, Atlantic Technological University, Galway, Ireland.*

Communities of Practice (CoP) are defined as "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise by interacting on an ongoing basis"[(1)]. A National Forum funded project called NutriPD: Growing Professional Competence in Nutrition established a CoP in 2020 as part of their objectives to grow the profession. The NutriPD CoP, which currently has 165 members, is a professional network connecting qualified, registered nutritionists across the island of Ireland and facilitates knowledge sharing, career development, and advocating for professional recognition and regulation. This study aimed to evaluate the experiences and perceptions of members of the CoP from 2020-2024.

Following ethical approval, participants were sought from the NutriPD CoP to take part in the study via email invitation. Semi-structured, audio-recorded interviews were conducted with members from the NutriPD CoP. These interviews explored their engagement, perceived benefits, and areas for improvement. The transcripts were cleaned, anonymised and analysed using the Braun and Clarke thematic analysis methodology[(2,3)].

Sixteen female participants took part in the study. Each member was from an academic, industry or public health background and their CoP membership length varied from 1-4 years. Reported engagement levels varied from highly active (attending every meeting) to primarily engaging through email updates and occasional meetings. Four primary themes were identified including 'Professional Networking & Community Building', 'Professional Learning', 'Career Development & Opportunities' and 'Future Directions'. Members emphasised the value of connecting with peers and noted that NutriPD helped to combat professional isolation while fostering a collaborative and welcoming environment. Career development was identified as a core function of NutriPD, with members benefiting from job postings, the mentorship programme and career guidance. Opportunities for learning about career pathways were provided through networking with professionals in different sectors and several participants found that the NutriPD mentorship programme played a crucial role in their career progression. Members valued the continuous professional development opportunities such as webinars, expert talks and discussions on emerging research opportunities. Participants suggested enhancing NutriPD's educational role by introducing specialised interest groups. Annual in-person events to allow for face-to-face interactions were seen as vital for strengthening professional relationships. However, some concerns were raised regarding scheduling conflicts, and sustainability of funding and organisation of the network in the long term.

The findings highlight the critical role that a CoP in nutrition (such as NutriPD) has played by providing regular networking opportunities, a community of learning, and showcasing pathways for career progression. To enhance NutriPD's impact, introduction of annual in-person events and special interest groups should be considered. Addressing these

aspects will ensure NutriPD continues to be a valuable and evolving resource for nutrition professionals in Ireland.

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Student Competition

OC64. Influence of obesity on maternal anaemia and its consequences in pregnancy and postpartum: data from the Northern Ireland Maternity System (NIMATS). *S.P. Demirdjian[1], M.A. Kerr[1], M.S. Mulhern[1], P.D Thompson[1], M. Ledwidge[2], M.T. McCann[1]*
1. Nutrition Innovation Centre for Food and Health; Ulster University, Coleraine, UK and2. School of Medicine, University College Dublin, Ireland.

Obesity and anaemia are highly prevalent in women of reproductive age and can severely impact on pregnancy health, increasing the risk of maternal complications and perinatal morbidity and mortality(1). Whilst obesity is an established risk factor for pregnancy complications, its potential relationship with maternal anaemia remains unclear. This study aimed to investigate the influence of obesity on maternal haemoglobin concentrations and anaemia development during pregnancy and postpartum.

This retrospective cohort study used anonymised Northern Ireland Maternity System (NIMATS) data, on pregnant women between 2016-2022. Maternal weight, height, and BMI were measured at 12 gestational weeks (GW) and categorised into normal weight, overweight, and obesity(2). Haemoglobin was routinely assessed at 12 and 28 GW, and in the early postpartum, before hospital discharge, only for those clinically advised. Women without data on anthropometry or haemoglobin at 12GW, or with a history of chronic conditions, miscarriage, or preterm birth before 24 GW were excluded. Cramer's V (V) and η^2 were used for effect size, with $p<0.010$ considered significant.

136,185 pregnant women were included in this analysis, of which 44.1% were of normal weight, 31.1% overweight and 24.8% had obesity. Overall anaemia prevalence was: 4.5% at 12GW (normal weight 5.3%, overweight 4.1%, obesity 3.4%, $p<0.001$, V=0.039); 9.1% at 28GW (normal weight 8.9%, overweight 9.1%, obesity 9.3%, $p<0.001$, V=0.006); and 39.7% at postpartum (normal weight 38.9%, overweight 40.6%, obesity 40.0%, $p<0.001$, V=0.016). Compared to normal weight women, mean haemoglobin at 12GW was higher in those with overweight and obesity (mean±SD 126.1±9.8, 127.8±9.6, 129.1±9.5 g/L, $p<0.001$ η^2=1.6 respectively), however, the decrease in haemoglobin from 12 to 28 GW and to postpartum was more pronounced in women with overweight and obesity (12-28GW: -7.65±11.6, -9.27±11.5, -10.48±11.1 g/L, $p<0.001$, η^2=1; 12GW-postpartum -20.1±16.4, -22.5±15.8, -24.1±15.2 g/L, $p<0.001$, η^2=1.1 for normal weight, overweight and obesity respectively. Among women with normal haemoglobin at 12 GW, 8.1% developed anaemia by 28GW, and 19.1% postpartum (99% CI 7.8-8.3; 18.8-19.4). Oral iron was prescribed in 8.8% (99% CI 8.6-9.0), and blood transfusion was required in 0.28% (99% CI 0.24-0.32). Compared to women of normal weight, those with obesity had a 7.4% higher risk of anaemia at 28GW (relative risk (RR) 1.074, 99%CI 1.01-1.14). Postpartum anaemia risk was 15.5% higher in those who were overweight (RR 1.155, 99%CI 1.11-1.19) and 28.3% higher in those with obesity (RR 1.283, 1.24-1.33). The risk of requiring postpartum oral iron was 8.1% higher in overweight (RR 1.081, 99%CI 1.02-1.14) and 12.1% higher in women with obesity (RR 1.121, 99%CI 1.06-1.18).

Maternal overweight and obesity pose a significant risk for anaemia in the third trimester of pregnancy and postpartum. BMI can help identify pregnant women at increased risk, allowing for early intervention to prevent anaemia and its associated complications.

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Student Competition

OC65. Development and evaluation of an infographic designed to educate on healthy lifestyle behaviours to reduce risk of type 2 diabetes after gestational diabetes. *R. Nolan[1], L. McKnight[2], A.M. Gallagher[1] and A.J. Hill[1] 1. Nutrition Innovation Centre for Food and Health, School of Biomedical Sciences, Ulster University, Coleraine, Northern Ireland and 2. Department of Nutrition and Dietetics, Northern Health and Social Care Trust, Antrim Area Hospital, Antrim, Northern Ireland.*

Gestational diabetes mellitus (GDM) is one of the most common complications in pregnancy, with prevalence increasing over the last decade in line with the obesity epidemic [(1)]. Whilst women diagnosed with GDM receive dietary and lifestyle guidance during pregnancy to control hyperglycaemia, this support is not routinely continued with a reported lack of follow-up care post-pregnancy [(2)]. However, with women at increased risk of developing type 2 diabetes mellitus (T2DM) in the long term [(3)], postpartum weight management strategies are required. Therefore, the aim of this study was to develop and evaluate the feasibility and acceptability of an infographic aimed at promoting healthy lifestyle behaviours post GDM.

Health care professionals (HCPs) (n=19) and researchers (n=2) working with women with GDM in a health care environment in the UK and Ireland were recruited via social media platforms between November 2024 and January 2025. Participants were asked to complete an online questionnaire via REDCap, which assessed the acceptability and need for an educational infographic. This infographic had been developed in collaboration with the Northern Health and Social Care Trust following an identified need for all women to receive advice on weight management after GDM. Responses included both multiple-choice and open-ended questions, which were analysed using content analysis [(4)] via NVivo14 software. Ethical approval was granted by Ulster University's Research Ethics Committee.

Overall, 81% of respondents reported an educational tool for women post GDM would be 'very useful', with reported barriers to women achieving an optimal diet post GDM including, lack of knowledge on risk of T2DM and priority on baby/children. Following evaluation of the infographic, 76.2% of respondents reported there was 'just the right amount' of content, and the majority thought the visual quality of the infographic was either 'excellent' (47.6%) or 'very good' (33.3%). When asked about the clarity of the information, 85.7% reported that the target population would understand the information. Respondents identified that the best time to distribute the infographic was close to the end of pregnancy (57.1%), with remaining respondents answering either at the 6-week postnatal check or both time points. Open-ended responses identified: distribution methods (health visitors, posters in antenatal diabetic clinics) strengths (useful addition of QR codes, addresses a current gap), weaknesses (women need to be willing to read the information, excessive focus on risks of T2DM) and suggestions for improvements (breastfeeding information should be included).

In summary, this infographic was very well received by HCPs/researchers working with women with GDM, reporting it addresses a current gap by raising awareness of the importance of weight loss post pregnancy. It is planned that this infographic will be disseminated widely across healthcare settings to support women post GDM.

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Student Competition

OC66. The effect of inspiratory muscle training on the metabolic status and anthropometry of insulin resistant patients with obstructive sleep apnoea: a pilot investigation. *T. Elshaafi[1,2], O. O'Keeffe[1], D.M.A. McCartney[1], J.L. Faul[2] 1. School of Biological, Health and Sports Sciences, Technological University Dublin and 2. Department of Respiratory and Sleep Medicine, Connolly Hospital, Blanchardstown.*

Rising obesity prevalence has coincided with an escalation in obstructive sleep apnoea[(1)](OSA), with limited treatments available for both conditions. Obesity is a predisposing and exacerbating factor of OSA, while OSA accentuates visceral adipose tissue (VAT) hypoxia[(2)]. The resulting adipose tissue dysfunction and inflammation contribute to insulin resistance[(3)]. Inspiratory muscle training (IMT) has been shown to improve lung function and insulin sensitivity[(4)] , but its impact on VAT hypoxia and obesity-related inflammation is unknown. This study aimed to investigate changes in respiratory muscle function (RMF), anthropometric parameters, and biochemical markers following incremental IMT in obese OSA patients, and to explore the relationship between these changes and insulin resistance.

OSA outpatients were recruited from the respiratory service in Connolly Hospital, Blanchardstown, and provided with inspiratory muscle training devices to use over a 3-4 week period (20 breaths twice daily). The device's resistance was increased weekly. Pulmonary function tests assessed changes in RMF. Blood tests (C-reactive protein (CRP), HbA1c) assessed changes in inflammatory and metabolic status. Anthropometric status (weight, height, BMI, waist circumference) was also assessed. Dietary quality was measured using a food frequency questionnaire, and physical activity level was estimated on a 6-point scale. Daytime sleepiness was assessed using the Epworth Sleepiness Scale (ESS). Non-parametric statistical analyses (Wilcoxon's signed rank test, Cohen's d, Spearman's correlation, paired t-tests) were used to evaluate changes during the intervention.

The participants (n=6) aged from 49-61 years ; were obese (BMI>30kg/m2) and diagnosed with OSA. After the intervention, participants experienced a significant reduction in body weight (Mean = 123kg (SD±11.8) to Mean = 121kg (SD±12.2); p=0.042, with large effect size (Cohen's d = 0.83)). Significant biochemical changes also occurred: HbA1c decreased post-IMT (Mean = 41 (SD±4.9) to Mean = 40.75 (SD±3.7); p=0.066, with a large effect size (Cohen's d = 0.9), a change confirmed by further paired t-test; p=0.035, effect size = 1.828). CRP also decreased post-IMT (Mean = 4.1 (SD±3.12) to Mean = 3.17 (SD±2), p=0.043, with a large effect size (Cohen's d = 0.9)). RMF improvement post-IMT was associated with a reduction in BMI (r=-1, p<0.001). ESS showed a marked reduction post-intervention with a large effect size (Cohen's d= 0.5), but this trend did not reach statistical significance (p=0.225). No significant changes in dietary quality or physical activity level were observed.

Despite its low participant numbers and short duration, this pilot study suggests that IMT use among OSA patients with insulin resistance may attenuate the low-grade inflammation caused by their VAT hypoxia. IMT was also associated with favourable changes in glucostatic control and body weight, which occurred in the absence of changes in diet or physical activity. These findings now need to be tested in a larger cohort of OSA patients.

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OC67. Exploring the impact of medical nutrition therapy in gestational diabetes management: a secondary analysis of the EMERGE trial. *S. O'Reilly[1], D. O'Moore[1], A. Alvarez-Iglesias[2], F. Dunne[2] 1. School of Agriculture and Food Science, University College Dublin, Dublin, Ireland, and 2. School of Medicine, University of Galway, Galway, Ireland.*

Gestational diabetes (GD) poses significant health risks to maternal and child health[(1)]. Medical nutrition therapy (MNT) is the cornerstone of GD management but there is considerable debate on the required intensity of treatment to achieve health gains[(2,3)]. We aimed to explore, using secondary data from the EMERGE trial, whether increased dietetic contact improved maternal health outcomes.

The EMERGE study was a randomised controlled trial of metformin or placebo plus usual care in women recruited before 28 weeks gestation after GD diagnosis in 2 Saolta-group hospitals between 06/2017-09/2022[(4)]. All participants received usual care including MNT, physical activity guidance, glucose monitoring, and regular clinical reviews. Women requiring insulin received additional dietetic sessions as needed. The sample included 510 women (535 pregnancies), with mean age 34.3 years and mean BMI 32.24 kg/m^2 (93% classified as overweight/obese). Dietary quality score was constructed to assess healthy eating guidelines achievement using a 9-item food questionnaire. Dietary changes from baseline to follow-up were examined using paired t-test. Analysis of covariance at follow-up explored between-group differences after controlling for baseline.

Insulin initiation (n=235) was associated with higher baseline BMI (p=0.019), HbA1c and fasting blood glucose (FBG) (p<0.001), and greater gestational weight gain (2.07 kg vs 0.79 kg, p<0.001). Both insulin-initiated and no-insulin groups showed improvements in overall dietary quality scores (p<0.001). Intake of vegetables, high-fibre cereals increased, bread type improved, while sugar, sugar-sweetened beverages, and cakes/biscuits decreased (all p<0.001). Fish intake increased in the insulin group (p=0.018), while red meat and fruit consumption remained unchanged. FBG reduced significantly in both groups (from 5.34 to 4.64 mmol/L in the insulin group and 5.09 to 4.52 mmol/L in the no-insulin group, p<0.001) but HbA1c increased slightly (from 33.97 to 35.52 mmol/mol in the insulin group and 32.16 to 33.56 mmol/mol in the no-insulin group, p<0.001). The placebo group had higher total diet scores than the metformin one (p=0.006). Breastfeeding rates declined from discharge (47% exclusively breastfeeding) to 12 weeks postpartum (27%), with formula feeding becoming predominant (56%).

These findings suggest that MNT provided within usual GD care is effective at improving dietary behaviours and FBG. Extra dietetic input within the insulin-initiated group did not provide additional dietary benefits beyond standard care[(5)].

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Student Competition

OC68. Effectiveness of a blended learning physical assessment training programme in adults to improve malnutrition diagnosis. *J. Cox[1], C. A. Corish[1], M. McKiernan[2], C. O'Brien3, J. Feighan3, B. Gillman[2] and N. Dervan[1]1. School of Public Health, Physiotherapy and Sports Science, University College Dublin, Dublin, Ireland, 2.Department of Clinical Nutrition and Dietetics, Mater Misericordiae University Hospital, Dublin, Ireland and 3. Irish Nutrition and Dietetic Institute, Dublin, Ireland.*

Malnutrition affects a growing proportion of hospitalised adults in Ireland, with prevalence rising from 28% in 2010 to 34% in 2023, largely due to an ageing population and increasing cancer diagnoses([1]). If untreated, malnutrition compromises quality of life, functional independence, and overall health, leading to higher mortality rates and increased healthcare burdens[(2)]. Early identification through routine screening and comprehensive assessment is essential for timely diagnosis and intervention[(3)]. To address this, the Irish Nutrition and Dietetic Institute (INDI) developed the Physical Assessment of Adults in Clinical Practice (PAACP) programme to integrate physical assessment into dietetic practice and enhance malnutrition diagnosis. The aim of this study was to evaluate the effectiveness of the PAACP programme and its potential as a sustainable model for integrating physical assessment and the diagnosis of malnutrition severity across Irish clinical dietetic care.

Sixty-six registered dietitians practising in Ireland voluntarily enrolled in the PAACP programme and consented to participate in the study. Participants completed a bespoke 16-item questionnaire assessing self-reported knowledge, skills, practices, and malnutrition diagnosis at three time points: pre-training (n=66), immediately post-training (n=43), and six months post-training (n=41). The questionnaire included Likert-scale and multiple-choice items. Data were collected anonymously via SurveyMonkey and analysed using IBM SPSS version 29. Descriptive statistics summarised participant characteristics, while Pearson's chi-square tests assessed changes over time, with statistical significance set at $p<0.05$.

Dietitians reported significant improvements across their physical assessment performance from pre-training to six months post-training ($p<0.001$), with comfort increasing from 21 to 76%, confidence from 5 to 76%, and knowledge from 3 to 80%. Skills in assessing muscle mass and subcutaneous fat significantly increased from 8 to 83% and 2 to 80%, respectively. The increase in physical assessment methods was sustained over time. Key barriers decreased significantly ($p<0.001$), including lack of training from 91 to 22%, knowledge from 68 to 5%, and skills from 65 to 5%, although time constraints remained a challenge, increasing from 52 to 76%. While malnutrition diagnosis rates improved, the change was not statistically significant ($p=0.172$). In contrast, the diagnosis of malnutrition severity increased significantly from 39 to 73%, with confidence in diagnosis also significantly increasing from 30 to 66% ($p<0.001$). Use of validated diagnostic tools increased significantly ($p<0.001$), with GLIM criteria use rising from 33 to 71% and AND-ASPEN from 22 to 51%, both remaining the primary diagnostic tools thereafter.

The PAACP training programme improved dietitians' confidence, knowledge, and skills in performing physical assessment, and diagnosing malnutrition and its severity. Barriers such as limited knowledge and skills significantly decreased post-training, while the use of anthropometric measurements and validated diagnostic tools increased. This evaluation has informed the implementation of the PAACP training programme within dietetic teams and departments in Ireland.

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Student Competition

OC69. Diurnal trends in sodium, potassium, and sodium-to-potassium ratio in UK Adults: Insights from the National Diet and Nutrition Survey (NDNS). *C. Goland [1], P. Heavey [1] and G. Cuskelly [1] 1. SHE (Sport, Health and Exercise) Research Centre, Department of Sport and Health Sciences, Technological University of the Shannon, Athlone, Ireland.*

Sodium and potassium intake are critical determinants of blood pressure (BP) and cardiovascular health, with sodium-to-potassium (Na:K) ratio emerging recently as a stronger predictor of hypertension than consumption of either nutrient alone [1]. This study aims to explore diurnal trends in sodium, potassium, and Na:K ratio and identify the key dietary sources during specific periods of the day.

A request was submitted to the UK Data Service for access to the UK National Diet and Nutrition Survey (NDNS) (Project number: 259935). The NDNS collects detailed dietary information annually from a representative sample of the UK population using 3-4 day food diaries [2]. To ensure exclusion of unreliable dietary data from analysis, misreporters of energy intake were excluded using the Goldberg cut-off method [3]. For this analysis, data from 1001 UK adults >18 years, collected between 2016/2017 and 2018/2019, were analysed. This period was chosen to focus on the most current sodium and potassium intakes. Sodium and potassium intake and Na:K across seven daily time intervals were analysed. Key food sources of sodium and potassium during timed periods were also identified.

Sodium intake peaked during 12:00–1:59 pm, with males (n=414) consuming 659.2 ± 429.1 mg and females (n=587) consuming 499.2 ± 287.1 mg, contributing 25% and 28% of total daily sodium intake in males and females, respectively. Sodium intake again peaked during 5:00–7:59 pm, with males consuming 740.5 ± 494.4 mg and females consuming 605.2 ± 353.7 mg, contributing 25% and 30% of total sodium intake in males and females, respectively. Potassium intake was highest during 5:00–7:59 pm in both sexes, with males and females consuming 843.4 ± 490.6 mg and 753.8 ± 416.1 mg, respectively. The Na:K ratio reached its highest peak during 2:00–4:59 pm, with sodium and potassium intakes reaching 751 mg and 188 mg, resulting in Na:K ratios of 3.99 mg/mg and 3.98 mg/mg for males and females, respectively, substantially above the recommended ratio of ≤0.6. Key sodium sources during this period were miscellaneous (17%) white bread (9%), bacon and ham (7%), while potassium sources included potatoes and potato products (16%), fruit (10%), and vegetables (8%).

Targeting periods of high sodium consumption and low potassium consumption may help to inform and formulate public health nutrition advice. Combining this with identifying periods of high Na:K, particularly during the afternoon period, may offer a promising strategy to improve diet quality and reduce cardiovascular risk. Future public health efforts should focus on combining sodium reduction and increasing potassium during periods identified as highest Na:K ratio.

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Student Competition

OC70. Partially replacing animal-based protein foods with plant-based protein foods: a systematic review of randomised controlled trials in healthy adult populations. *A. Courtney[1,2], R. Sweeney[1,2], B. McNulty[1], M. Wallace[1,2], L. Brennan[1,2] 1. School of Agriculture and Food Science, Institute of Food and Health, University College Dublin and 2. Conway Institute, University College Dublin.*

Increasing our intake of plant-based protein is a possible avenue to help improve both population and planetary health[1-3]. The evidence to support this approach to date is limited and largely relies on narrative reviews[4] and modelling studies[5]. The aim of this systematic review was to examine the evidence-base of randomised controlled trials (RCTs) that aimed to shift dietary patterns by partially replacing animal-based protein foods with plant-based protein foods in healthy and free-living adult cohorts.

On December 5, 2024, three electronic databases were searched to identify relevant RCTs (Embase, PubMed and Cochrane CENTRAL). Full texts of 51 studies were reviewed and seven papers (four RCTs, mean study duration 9.5 weeks, sample size range n=36–136) were included. Risk of bias was assessed using the Cochrane Risk-of-Bias tool, version 2.0.

Nutritional status was assessed in two RCTs, a 12-week RCT observed a significant decrease in vitamin B-12 status in the PLANT group (diet containing 70% plant-based protein of total protein intake) compared to the 50/50 (diet containing 50% plant-based protein of total protein intake) and ANIMAL group (diet containing 30% plant-based protein of total protein intake, $p<0.001$) and identified no significant changes among study groups for folate and iron status. Two RCTs evaluated bone and mineral metabolism, the 12-week RCT observed higher concentrations of biomarkers of bone formation ($p=0.007$), resorption ($p<0.001$) and regulatory hormones (among participants with no history of supplement use, $p=0.018$), as well as lower urinary-phosphate and urinary-calcium excretion ($p<0.001$ for both) in PLANT compared to ANIMAL. In contrast, a 6-week dietary intervention observed no significant changes to bone turnover between study groups. Both RCTs observed no significant changes to vitamin D status among study groups.

Participants consuming the highest proportion of plant-based protein sources compared to those consuming more animal-based protein exhibited lower LDL cholesterol (n=2 RCTs, p=0.002–0.004), total cholesterol (n=1 RCT, $p=0.004$) and body weight (n=2 RCTs, $p<0.001$, $p=0.0037$). Lastly, a four-week RCT examined change in meat intake and greenhouse gas (GHG) emissions at week four and psychosocial variables at week eight. The intervention group reduced meat consumption by 63g/day compared to the control group (95% CI:44–82; $p<0.0001$), had estimated reduced GHG emissions (in carbon dioxide-equivalent, $p<0.0001$) and observed increased intentions, positive attitudes, perceived control, and reduced attachment to meat ($p<0.05$ for all) compared to the control group.

In conclusion, this systematic review identified evidence from RCTs that an increased intake of plant-based protein foods may lead to improvements in some CVD risk biomarkers. Results also indicate that dietary shifts to plant-based diets are likely to reduce the impact of dietary intake on GHG emissions. Mixed findings were reported for

nutritional status and bone and mineral metabolism which highlights the need for further research in these areas.

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Student Competition

OC71. Assessing the integration of nutrition education in healthcare curricula in Ireland.

By R. Peel[1], S. O'Donovan[1], A. Gillane[1], and L. Ryan[1]. 1. Department of Sport, Exercise and Nutrition, Atlantic Technological University, Galway, Ireland.

Nutrition Education is vital for healthcare professionals (HCPs), providing them with the knowledge and skills to effectively prevent and manage numerous health conditions. Research suggests that up to 80% of premature deaths and chronic diseases could be prevented through modifiable lifestyle choices, emphasising the crucial role of nutrition in healthcare(1). Doctors, nurses, physiotherapists and pharmacists have a prime opportunity to discuss nutrition with their patients due to regular interactions, allowing them to identify nutritional issues and provide guidance tailored to individual needs(2). This study aimed to assess nutrition education integration in healthcare curricula and explore the opinions of HCPs from these four healthcare disciplines across the island of Ireland.

Twenty-three undergraduate programmes in Medicine, Nursing, Pharmacy and Physiotherapy were identified across the island of Ireland and publicly available data was extracted from the university websites for content analysis to identify nutrition-related topics covered in each programme. HCPs from the four disciplines were invited to semi-structured, audio-recorded interviews to explore their views and experiences regarding nutrition in healthcare. Transcripts were analysed using thematic analysis(3).

Twenty undergraduate programmes (six Medicine, five Nursing, four Pharmacy, and five Physiotherapy) were included. Among all modules examined, seven explicitly mentioned 'Nutrition' in the title, two of which were optional. Most references to nutrition were implicit, comprising a small proportion of the overall module content, and taught from a scientific rather than public health perspective. Twenty-three HCPs (GPs, nurses, physiotherapists and pharmacists) working clinically took part in the interviews, of which 83% were female. Three themes were identified: 'Professional Boundaries, Confidence & Competence in Nutrition', 'Structural & Logistical Barriers to Nutrition Integration' and 'Nutrition Integration Variation and Impact on Healthcare Practice'. Overall participants expressed positive views towards the importance of nutrition in healthcare but reported a lack of confidence in their ability to provide dietary advice. The educational gap was a common topic of discussion for each HCP, with over half resorting to independent study when time allowed. All HCPs expressed a desire for formal nutrition education training to optimise patient care and reduce patient wait times for a dietetic consultation.

These findings reveal a concerning lack of focused nutrition education within HCP training for the four examined HCP disciplines. Despite the recognised importance of nutrition in promoting health and managing chronic diseases, it remains an overlooked component of HCP education. This knowledge deficit has left HCPs ill-equipped to provide nutritional support to patients. Equipping HCPs with a fundamental understanding of nutritional principles is vital through the integration of nutrition into existing curricula and providing targeted training opportunities to meet current HCPs requirements. This improvement would enable HCPs to make informed dietary recommendations, minimise clinical dietitian workload, and better engage patients in lifestyle change discussions.

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Student Competition