# Research Symposium

3 December 2025

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# Clinical Nutrition (including malnutrition)

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#BDAResearch

**Effects of caloric reduction on body weight changes among patients living with Human immunodeficiency virus at a rehabilitation centre**

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**Background**: Weight gain is a recognised complication of both Human immunodeficiency virus (HIV) infection and antiretroviral (ARV) treatment requiring dietary strategies for weight management[1]. Treatment regimens containing bictegravir or dolutegravir are known to lead to greater weight gain (as a side effect), compared to other antiretroviral regimens[2]. Understanding the combined effects of ARVs and caloric intake is essential for weight management in people living with HIV.

**Aim:** To understand whether the changes introduced in a hospital menu between 2023 and 2024 influenced the body weight changes between hospital admission and discharge inpatients living with HIV.

**Method**: Data from October to December 2023 and 2024 were extracted from EMIS electronic patient records, including patient pathway, gender, ethnicity, age, date of admission, date of discharge, nutritional risk score, height and weight on admission and on discharge (or the last one if they were still admitted), weight change and the latest medication. Data collected was analysed using descriptive analysis and independent t-test to compare the average weight change between 2023 and 2024 and the percentage of weight change between the two years. In 2023, a full main meal provided 800 kcal, whereas in 2024, this was reduced to 500 kcal. Approved consent from Caldicott Guardian of the hospital was obtained, ethical approval was not required for the audits.

**Results**: This audit included 28 patients with HIV admitted in October to December 2023 (n=12) and 2024 (n=16). Table 1 presents the weight change between admission and discharge in the two cohorts of patients.

**Table 1:** Body weight changes among patients living with HIV in 2023 and 2024

| | | 2023 | 2024 |
|---|---|---|---|
| Average weight [range] (Kg) | On admission | 68,8 [40,0 ; 98,0] Kg | 65,4 [40,1 ; 87,3] Kg |
| | On discharge | 78,4 [52, 4 ; 104,5] Kg | 69,9 [36,8 ; 102,7] Kg |
| Weight change [range] kg | | 7,4 [-2 ; 12,5] Kg | 4,6 [-3,3 ; 17,5] Kg |
| % Weight change*, overall | | 12,8% | 6,9% |
| % Weight change*, underweight | | 27,2% | 2,2% |
| % Weight change*, normal weight | | 18,0% | 7,5% |
| % Weight change*, overweight | | -2,2% | 13,1% |
| % Weight change*, obese | | -0,6% | - |
| % Weight change* for pt on bictegravir | | 17,3% | 6,4% |
| % Weight change* for pt on dolutegravir | | 17,1% | 5,8% |

** Change between hospital admission and latest assessment before discharge. **The differences on weight change (expressed in Kg and in percentage) between groups were not statistically significant (p= 0.481 and p=0.297, respectively).*

**Discussion**: The results suggest that food is not the only factor influencing weight changes. Although the reduction in the total energy value of hospital main meals between 2023 and 2024 may have had a positive effect, as reflected in the less pronounced weight changes observed in 2024 compared with 2023, the non-significant differences could be explained by the small sample size. ARV medication[1,2] and other factors may also contribute to body weight variation among patients living with HIV. Also, the hospital only controls the main meals provided and not the additional snacks purchased by patients, which may interfere with the results.

**Conclusion**: Reducing the energy value of meals from 2023 to 2024 may be associated with desirable changes in body weight among patients living with HIV, however ARV medication[1,2] and behavioural factors also contribute to these changes. As the differences were not statistically significant, further research is required to explore additional dietary factors, as well as behavioural determinants.

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**A quality improvement study of early dietetic intervention in the Emergency Department.**

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**Background:** Malnutrition is a serious but unrecognised problem that affects one third (32%) of adults ≥ 65 years old on admission to hospital[1]. Despite the availability of malnutrition screening tools, older adults experience delays in receiving dietetic support due to healthcare professionals lacking time and capacity in screening patients upon their hospital arrival[2]. Undetected malnutrition leads to worsened health outcomes including increased risk of infections, pressure sores and prolonged hospital stays[3]. This quality improvement project explored the effectiveness of implementing a model of care in which a Dietetic Assistant Practitioner (DAP) delivers early nutritional interventions in the emergency department of a general hospital. The aim was to enhance patient care and safety for older adults at risk of malnutrition while reducing pressure on the acute dietetic service and minimising breaches in referral response times.
**Methods:** A service evaluation study was conducted for eight weeks at the emergency department (ED) of Macclesfield District General Hospital. A DAP was deployed every Monday (9:00 AM–5:00 PM) to screen patients ≥65 years old using the Malnutrition Universal Screening Tool (MUST). In the first four-week (control phase), patients received standard care from ED staff, with referrals submitted to the dietetic team as per existing pathways. In the second four-week (intervention phase), the DAP provided immediate nutritional interventions to at-risk patients without the need for a formal referral. A variety of variables including time to referral, time to dietetic input, total number of dietetic referrals and breaches within the whole acute dietetic service, as well as length of hospital stay were collected. Quantitative data analysis was conducted using SPSS version 29 to compare pre-and post-intervention metrics. For two-group comparisons for non-parametric data, the Mann Whitney U test was used. All results were considered statistically significant at p ≤0.05. The project was approved by the Ethics Committee of Manchester Metropolitan University.

| **Results:** | ***Control*** | ***Intervention*** | ***P value*** |
|---|---|---|---|
| Total number of malnourished patients recruited in the study | 20 | 20 | |
| Total number of patients screened within 24 h of admission by ED staff | 0 | 0 | |
| Total number of malnourished patients referred to the dietetic service | 8 | 0 | |
| Days to referral to dietetic team | 11.38 ± 11 | 0 | <0.001 |
| Days taken by dietetic team to see the patients | 4.8 ± 6 | 0 | <0.001 |
| Total number of days patients waited to be seen by the dietetic service | 20 ± 16 | 0 | <0.001 |
| Length of hospital stay | 8.7 ± 9.7 | 8.06 ± 8.6 | 0.985 |
| Mean number of all daily referrals (not limited to malnourished patients) | 8 | 5.5 | <0.001 |
| Mean number of all daily breaches (not limited to malnourished patients) | 2.95 | 0.8 | <0.001 |

**Discussion:** Our findings indicate sub-optimal knowledge on when and how to perform MUST. Patients were not screened within 24 h of admission, and 12 out of 20 were not referred to the dietetic department likely due to inaccurate or missed screening. This aligns with previous research which shows that malnutrition is often under-identified[4]. However, our new model of care helped to timely detect malnutrition due to the introduction of a DAP that screened, assessed and treated patients at the front door, thereby reducing mean time to a dietetic intervention. Furthermore, due to the DAP working at the front door, dietetic caseload was reduced, leading also to less care pathway breaches. To our knowledge, this is the first study that explored how a timely intervention not only improves patient care, but also alleviates dietetic workload.
**Conclusion:** By integrating a DAP into the emergency setting, timely nutritional care can improve patient safety, and streamline dietetic service efficiency.

**References:**

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# Weight Changes and Nutritional Risk in Substance Misuse Detoxification Patients at a Rehabilitation Hospital

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**Background**: Over 60% of individuals with substance use disorders experience varying degrees of malnutrition(1) due to poor intake, impaired absorption, and metabolic disruption caused by substance use(2). Detox patients are therefore at heightened nutritional risk. In 2024, the center reduced the calories of main meals from 800 to 500 kcal to control unintentional weight gain in the rehabilitation center population. This audit aimed to assess weight changes between hospital admission and discharge, BMI, and MUST scores in detoxification patients, and to evaluate the impact of the reduced meal energy content. **Methods:** Medical records of all patients admitted from the Detox pathway between the same annual quarter, 1st October–December 31st, in 2023 and 2024 were analysed. Data collected included age, ethnicity, gender, admission/discharge dates, weight (kg), BMI (kg/m$^2$), and medication use for alcohol, heroin, and opioid detoxification. Descriptive analysis was conducted using Microsoft Excel. Approved consent from Caldicott Guardian of the hospital was obtained; ethical approval was not required for the audits. **Results**: The study included 28 Detox patients (n=11 in 2023, n=17 in 2024). The majority were White British (39%), aged 30–64 years (mean: 48,6), and 82% male. Table 1 summarises weight-related outcomes between both patient cohorts in 2023 and 2024.

Table 1. Mean weight changes and percentage variation by BMI category and medication in patients undergoing detoxification, between baseline and endpoint in 2023 and 2024 (after the institutional menu change).

| | | 2023 | 2024 |
|---|---|---|---|
| **Mean weight ± SD [range] (kg)** | Baseline | 73,4 ± 19,5 [40,0 to 109,3] | 79,9 ± 15,2 [51,5 to 118,2] |
| | Endpoint | 77,2 ± 17,0 [52,4 to 112,7] | 81,5 ± 16,0 [56,4 to 123,4] |
| **Weight change ± SD [range] (kg)** | | 3,8 ± 4,2 [-2,6 to 12,4] | 1,5 ± 6,6 [-10,9 to 17,5] |
| **% Weight change*, overall** | | 6,9 % | 2,2 % |
| **% Weight change*, underweight** | | 23,1 % | - |
| **% Weight change*, normal weight** | | 4,2 % | 1,5 % |
| **% Weight change*, overweight** | | - 2,8 % | 4,2 % |
| **% Weight change*, obese** | | 3,9 % | - 3,4 % |
| **% Weight change* for pt on Acamprosate** | | 5,1 % | 1,9 % |
| **% Weight change* for pt on Buprenorphine** | | 6,7 % | 9,9 % |
| **% Weight change* for pt on Methadone** | | 17,7 % | 4,0 % |

Key * mean % of weight change between baseline and endpoint; pt = patients

MUST scores remained consistently low over time, with only slight variations. Among patients prescribed Acamprosate (n=9), 33,3% (n=3) were classified as overweight or obese at both admission and endpoint. All patients receiving Buprenorphine (n=2) were overweight at both time points. Among those on Methadone (n=6), 50% (n=3) were overweight or obese at both admission and endpoint, and 16,7% (n=1) were underweight at admission and normal weight at endpoint.

**Discussion**: The results suggest that despite the menu meal reduction of 300kcal, the weight change was minimal. Dietary intake, treatment, and other factors(2) likely influence weight changes in people who use drugs. Other factors to consider include phase of detoxification, multiple drug use, duration of use, food insecurity, poverty(2), and length of stay (max 12 weeks pathway). Although poor nutritional status, malnutrition, or nutrient deficiencies are common in drug addicts(1), these data showed that the MUST score was low risk. Generally, the BMI of drug users is lower than nonusers(2), but these data only had a small number of patients who were underweight in 2023 and none in 2024. In fact, a limitation of this study is its overall small sample size.

**Conclusion**: The menu main meal reduction of 300kcal made no difference to the overall weight changes in substance use disorder patients. Other medication and environmental factors may be influencing the body weight. Further research into the combined effects of diet, ideally with a tailored intervention/individual diet counselling and treatment during detoxification is needed.

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**The impact of macronutrient composition on milk volume requirements for achieving enteral feeding appropriate viscosity, and its effect on the nutritional profile of blended meals**

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**Background** Enteral feeding provides essential nutrition to those unable to meet needs orally[1]. The viscosity of home-prepared blended feeds (BF) varies widely and requires fluid adjustment for safe delivery. Thick blends risk tube blockage; excessive dilution reduces nutrient density. Energy-dense fluids such as milk are commonly used for modification [2], yet evidence on how macronutrient composition affects milk volume and resulting nutritional changes is limited. The International Dysphagia Diet Standardisation Initiative (IDDSI) offers a novel method to assess blend viscosity in non-clinical settings, aiming for Level 1–3 [2, 3]. This study explored these effects when meals were modified with whole milk to reach IDDSI Level 3 consistency, for common tube sizes, 12 and 14 French Gauge(Fr)[2].

**Methods** Ten meals, chosen for variability and sustainability, including a frozen ready meal and Level 4 puréed meal were blended with whole milk until reaching IDDSI Level 3, verified by flow test (8.5–9.5 mL remaining) and viscometer. Nutritional composition was analysed pre- and post-modification. Paired t-tests examined nutrient changes; Spearman correlation and linear regression assessed relationship between macronutrient content and milk volume added. Ethical approval was not required.

**Results** Milk volume required to achieve Level 3 ranged from 150 mL to 801 mL. Protein content correlated strongly with milk volume (ρ = 0.817, p = <0.01), and linear regression showed that each additional gram of protein predicted ~51 mL more milk, whereas fat and carbohydrate showed no significant relationship. Post-modification, energy density decreased but remained within commercial enteral feed ranges (0.98–1.92 kcal/mL)[3]. Several micronutrients per 100 kcal (folate, iodine, iron, and vitamins D and B6) declined significantly (p < 0.05), while calcium, vitamin B12, and saturated fat exceeded reference values. One blend (puréed roast beef dinner) fell marginally below the Level 3 flow threshold despite the highest measured viscosity (10,096.67 cP). All other meals met target flow and viscosity parameters ranging between 2224.3cP-4578cP. One blockage occurred in the 14 Fr tube for one meal, cleared easily with water flush.

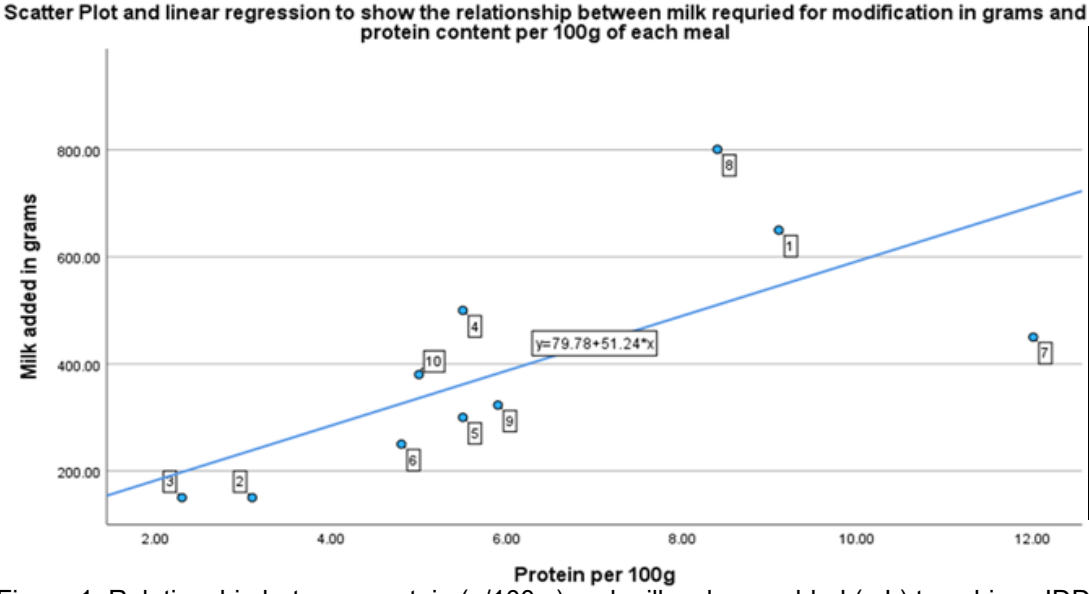


Figure 1. Relationship between protein (g/100 g) and milk volume added (mL) to achieve IDDSI Level 3 consistency.

**Discussion** The unmodified meal protein content was the principal determinant of milk volume required to reach target consistency. These findings support tailored dietary strategies for blended feeds, such as categorising by protein content and recommending specific blending fluids, to minimise nutrient dilution and/or over nutrition. Although micronutrient losses occurred, overall energy density and macronutrient balance remained clinically acceptable and comparable to commercial feeds. A singular blockage in the 14 Fr tube, attributed to a seed fragment, suggests IDDSI Level 3 is suitable for these tube sizes with adequate homogenisation; thinner consistencies may be required for smaller tubes.

**Conclusion** This study provides quantitative evidence linking protein content with fluid requirements for texture modification in blended enteral feeds. Tailored adjustment strategies can support safe practice and preserve nutritional adequacy. Broader research across meal types, fluids, and clinical settings is warranted to inform practical guidance and optimise outcomes.

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# A retrospective audit reviewing paracentesis frequency with specialist dietetic intervention

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**Background:**
Patients with decompensated cirrhosis and refractory ascites requiring regular paracentesis are often sarcopenic and malnourished with an increased risk of morbidity and mortality[(1)]. Tailored dietetic intervention including high protein diet, set mealtimes and nutritional supplementation, improves outcomes and quality of life[(2)]. Our specialist liver dietitian started to provide a regular bespoke service to patients attending for day case paracentesis instead of these patients having appointments in dietetics clinics. The aim of the audit was to evaluate whether specialist dietitian input during day case paracentesis would improve patient outcome.

**Methods:**
A retrospective audit was carried out between Sep 22 -Aug 23 (Year 1), when there was dietetic input on request only, compared to Sep 23-Aug 24 (Year 2) when a regular specialist dietetic service was provided. We obtained the following data using our electronic records: demographics, diagnosis, number of paracenteses, frequency of dietetic input and patient outcome. The audit was registered with the trusts' clinical effectiveness team; ethical approval was not required.

**Results:**
In year 1 (Y1), 232 drains were placed with 33 patients (21M (63.6%), age range 36-75, mean age 60; 12F, age range 45-89, mean age 72; average 7 drains/patient). In year 2 (Y2), 116 drains were placed with 31 patients (18M (58.1%), age range 35-84, mean age 61; 13F, age range 30-86, mean age 69; average 3.75 drains/patient). The main diagnoses between both years were: ARLD (58% and 61%) and MASH (24% and 20%). Long term drains were inserted in 5 (15%) in Y1 and 6 (19%) in Y2.

In Y1, 5 (15%) patients received dietetic input during paracentesis with a total of 6 dietetic episodes (n=0.026 dietetic episodes per drain). In Y2, 19 (61%) patients received dietetic input during paracentesis with 55 dietetic episodes (n=0.47 dietetic episodes per drain).

**Discussion:**
The main difference was found between drain frequency for patients who required 10 drains or more. In Y1, 6 (18%) patients required an average of 24.5 drains, with an average dietetic input per patient of 0.67 encounters. Outcomes for this patient group included; 1 diuretic controlled ascites, 1 ongoing decompensation, 1 liver transplant, 3 mortality. In Y2, 3 (9.7%) patients required an average of 16.3 drains, with an average dietetic input per patient of 8 encounters. Outcomes for this patient group included 1 diuretic controlled ascites, 1 TIPPS, 1 liver transplant.

**Conclusion:**
Our data shows that proactive dietetic input delivered during day case paracentesis provided the following advantages: reduced drain frequency, improved mortality rates for frequent drainers, better patient experience, reduction in clinic appointments, reduced non-attendance to clinic and importantly reduced costs (PBR for paracentesis £749, a saving of at least £75 000 from Y1 to Y2).

**References:**

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# Specialist dietitian input for day case paracentesis patients can improve nutrition trajectory in decompensation: a retrospective audit

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**Background:** High prevalence of sarcopenia is seen in patients with decompensated liver disease. Therefore, recognition and assessment are key to prevent the associated morbidity, mortality and poorer quality of life[1]. We evaluated our hepatology specialist dietitian's proactive service, whereby patients were seen on the day case paracentesis unit for large volume paracentesis (LVP) patients, without the need for referral or outpatient appointments. To see if regular dietetic intervention had beneficial outcomes on anthropometric measures (AM) and overall improved outcomes including; referrals for surgical interventions, reduction of drains and mortality.

**Method:** A retrospective audit was conducted between September 2023 and August 2024. AM included Hand Grip Strength (HGS) (non-dominant hand, best of 3) and Mid Upper Arm Circumference (MUAC) (non-dominant arm using BAPEN method[2]). Measures were only taken when patients had received dietetic input during their day case LVP, AM taken during inpatient admissions was not included. Number of dietetic interventions and dietetic discussion topics were also recorded. The main topics discussed were supplement reviews, 2-3 hourly eating habits, high protein sources, late evening supper, fat malabsorption, carbohydrate sources, dietetic literature, low salt advice and exercise. Data was excluded from analysis if only initial AM were obtained. The audit was registered with the trusts' clinical effectiveness team; ethical approval was not required.

**Results:** 116 drains were carried out on 31 patients during this audit year. Of these, 19 (61.3%) patients had received dietetic input during 98 drains, averaging 5.2 dietetic episodes over the year (14 male (73.7%), age range 35-84, mean 58.5; 5 female, age range 30-73, mean age 60). Average time between pre and post AM was 6.8 months. 19 (100%) patients were assessed as having sarcopenia thus all commenced on oral nutrition supplements. 0 patients received initial NGT feeding.

Table 1. AM measures

| | HGS | MUAC |
|---|---|---|
| **Pre and post measurements** | 16 patients | 13 patients |
| **Average change** | 2.9kg increase (SD 5.25kg) | 2cm increase (SD 3.89cm) |
| **Total number of increases** | 10 patients increased on average by 5.9kg | 8 patients had an average increase of 4.1cm |
| **Unchanged** | 1 | 1 |
| **Total number of deceases** | 5 decreased by an average of 2.4kg | 4 decreased by an average of 1.6cm |

Patients with above average HGS and MUAC had more favourable outcomes including; 1 placed on the transplant list, 1 TIPPS and 3 diuretic controlled ascites. Unfavourable outcomes were seen in those with decreasing AM; 2 mortalities, 1 rocket drain, 1 ongoing decompensation. 1 patient whose AM decreased, subsequently had a NGT inserted. They showed an improvement in AM leading to a successful liver transplant. No patients who showed improvements with anthropometric measures died within 3 months of audit completion.

**Discussion:** It has been shown that a 10% reduction in HGS is associated with increased mortality pre-transplant[3]. This audit supports that those patients who have declining AM having unfavorable outcomes, including increased mortality and palliative interventions. Conversely, patients with improved AM have favorable outcomes including onward referral for surgical interventions and improvements in liver function. This is a small retrospective audit but does support that HGS alongside MUAC is an effective tool to identify patients with sarcopenia, provide more targeted intervention and help to monitor dietetic interventions.

**Conclusion:** Our data shows monitoring of AM allows dietitians to screen for and prioritise patients who require intensive dietetic interventions, prepare patients for surgical intervention and highlight patients who may require palliative care input.

**References:**

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# Critical Care

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#BDAResearch

**Nutritional and functional recovery following nasogastric tube removal on stepdown from the intensive care unit: a service evaluation**

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**Background:** As Intensive Care Unit (ICU) survival improves, many patients experience muscle loss and functional decline [(1)]. Adequate nutrition is essential, but post-ICU oral intake is often limited by dysphagia, poor appetite, or gastrointestinal dysfunction [(2)]. While enteral nutrition via a Nasogastric Tube (NGT) can help meet nutritional needs, NGTs are often removed prematurely after ICU stepdown. This service evaluation aimed to compare nutritional and functional recovery indicators in ICU stepdown patients who maintained versus removed NGT feeding.

**Methods:** All consecutive adults (≥18 years) stepped down from ICU to medical wards and fed via NGT on ICU were included: those with long term feeding tubes were excluded. Weight, mid-upper arm circumference (MUAC), and handgrip strength (HGS) as nutritional and functional recovery indicators were collected retrospectively from May 2024 to April 2025 at ICU stepdown and hospital discharge using patient records and routine clinical assessments. Descriptive statistics (n, % for categorical data; mean ± SD for continuous) summarised nutritional and functional recovery indicators and chi-square test compared groups. Ethical approval was not required; the project was submitted as a service evaluation (approval pending).

**Results:** Of 151 eligible patients, 55 had repeated measures for the outcomes of interest and were included in the analysis (missing data were due to early discharge or disengagement). Aged ranged 18-81years (mean 57.7, SD 15.3), ICU stay 2-38 days (mean 8.6 days, SD 8.24), and total hospital stay 3-137 days (mean 25.2 days, SD 20.53). At hospital discharge, HGS improvement was significant (92.6% vs. 64.3%, p = 0.0273), with a significant association between maintaining NGT and HGS stability/improvement ($\chi^2(2) = 7.202$, p = 0.0273). Weight and MUAC changes were not significant, though more patients who maintained NGT had stable/improved MUAC (74% vs 50%, p = 0.177; weight p = 0.9891).

Table 1: Improved or stable weight, MUAC, and HGS in post-ICU patients with maintained vs. removed NGT.

| Nutritional and recovery indicators | Maintained NG (n=27) | Removed NGT (n=28) | P value |
|---|---|---|---|
| **Weight change (kg), Mean ± SD** | 1.85 (3.98) | -1.06 (4.28) | |
| Weight loss, n (%) | 12 (44.5) | 13, 46.4 | 0.9891 |
| Weight gain, n (%) | 10 (37.2) | 10, 35.7 | |
| Stable weight, n (%) | 5 (18.5) | 5, 17.9 | |
| **MUAC change (cm), Mean ± SD** | 0.28 (1.22) | -0.27 (0.93) | |
| MUAC reduced | 7, 26 | 14, 50 | 0.1777 |
| MUAC improved | 9, 33.3 | 7, 25 | |
| Stable MUAC | 11, 40.7 | 7, 25 | |
| **HGS change (kg), Mean ± SD** | 4.09 (5.39) | 1.36 (3.35) | |
| HGS reduced | 2, 7.4 | 10, 35.7 | 0.0273 |
| HGS improved | 23, 85.2 | 15, 53.6 | |
| Stable HGS | 2, 7.4 | 3, 10.7 | |

*P < 0.05. MUAC: mid-upper arm circumference; HGS: handgrip strength.

**Discussion:** Continuing NGT feeding after ICU stepdown may support nutritional and functional recovery. In this evaluation, patients who maintained NGTs had more stable/improved MUAC and HGS, despite similar weight changes, highlighting the value of functional measures beyond weight alone. These findings align with previous studies linking post-ICU enteral nutrition to lower 30-day readmissions [(3)]. Interpretation is limited by the small sample size, high dropout rate from early discharge and disengagement, and the absence of data on nutritional intake or adequacy, preventing attribution of benefits to NGT feedings.

**Conclusion**: Post-ICU NGT feeding might improve nutritional and functional recovery indicators, but larger, robust studies are needed to confirm these associations.

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**Critical care outreach dietetic service: enhancing post-intensive care nutrition support: a service evaluation**

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**Introduction:** Patients in Adult Intensive Care Units (AICUs) can lose over 15% of muscle mass in the first week, often continuing post-discharge and delaying recovery [(1)]. Nutrition is critical, but often hindered by early feeding tube removal, dysphagia, or poor appetite [(2)]. Upon transfer to general wards, patients are reviewed by newly qualified dietitians with large caseloads. A senior-led Critical Care Outreach (CCO) dietetic service was introduced to support step-down patients during admission and post-discharge. This service evaluation aimed to evaluate dietetic contacts, speciality, nutritional support and changes in anthropometric measures.

**Methods:** All consecutive adults (≥18 years) stepped down from AICU to general wards between 13 May 2024 and 13 May 2025 were included, excluding those handed over to other Specialist Senior Dietitians. Data included dietetic contacts, specialty, and nutritional support. Anthropometric measures such as percentage weight change, handgrip strength (HGS), and mid-upper arm circumference (MUAC) were recorded from AICU discharge to hospital discharge and outpatient review. Patients with missing data or estimated weights were excluded from anthropometric analysis. Weight was measured using a chair scale for inpatients and a standing scale for outpatients; clinically significant weight loss was defined as >5% body weight. Descriptive statistics were used (n, % for categorical data and mean [standard deviation (SD)] and median [interquartile range (IQR)] for continuous data. The evaluation was registered with the Trust (No. 13808).

**Results:** A total of 186 patients met inclusion criteria and were seen by the CCO dietitian, resulting in 681 inpatient contacts (3.3 per patient) and 42 patients having 74 outpatient contacts (1.8 per patient). Average AICU and total hospital stays were 8.4 and 24.2 days, respectively. Primary specialties were General Medicine, Cardiology, and Respiratory Medicine. At AICU discharge, 120 patients (64.5%) received Oral Nutritional Supplements (ONS), 29 (15.5%) were enterally fed, 15 (8%) received both, and 22 (12%) received food fortification advice. Only 56 inpatients (30%) had complete measurements at both AICU and hospital discharge, mainly due to early discharge, physical limitations, or clinical inappropriateness. Among outpatients, complete data were available for only 6 patients (3%) due to most reviews being conducted via telephone and high dropout rates.

Table 1. Weight, HGS, and MUAC changes from AICU to hospital discharge to outpatient review

| Outcome | Timepoint | Mean ± SD | Median (IQR) |
|---|---|---|---|
| **Weight (%)** | AICU discharge and hospital discharge | -1.7 ± 9.1 | -1.7 (-5.44 to 1.28) |
| | AICU discharge and last outpatient review | 6.2 ± 8.4 | 3.15 (2.50 to 10.00) |
| **HGS (kg)** | AICU discharge and hospital discharge | 2 ± 2.7 | 1 (-0.75 to 3.95) |
| | AICU discharge and last outpatient review | 6.4 ± 7.7 | 4.6 (0.40 to 7.50) |
| **MUAC (cm)** | AICU discharge and hospital discharge | 0.5 ±3.4 | 0 (-0.50 to 1.00) |
| | AICU discharge and last outpatient review | 1.4 ± 1.8 | 0.75 (0 to 2.50) |

**Discussion:** The main limitation was missing data in inpatients due to early discharge, patient refusal, or clinical instability. In outpatients, data were limited by remote reviews and high dropout from inpatient to outpatient care, mainly due to non-attendance. Among patients with complete data, no significant weight loss occurred during hospitalisation, with some outpatients showing modest weight gain. Improvements in HGS and MUAC were observed even without weight changes, highlighting their value in nutritional assessment. Limited anthropometric data and lack of nutritional adequacy assessment restricted generalisability and the ability to link outcomes to dietary intake or intervention.

**Conclusion:** Despite low follow-up, the dedicated CCO dietitian was essential in post-nutritional care; however, the small sample and high dropout rate highlight the need for larger studies before drawing firm conclusions.

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# Evaluating the Delivery of Enteral Nutrition via a Nasogastric Tube in Adult Critically Ill Patients: a Service Evaluation

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**Background**
Adequate nutrition is essential for recovery in critically ill patients; however prescribed targets are often not met due to frequent enteral nutrition (EN) interruptions. Over 60% of EN interruptions are linked to intensive care unit (ICU) procedures; many of which are avoidable [1]. Multiple interruptions early in ICU stay have also been associated with increased mortality [2]. However, there is a lack of local data on EN delivery and EN interruptions in ICU patients. The aim of this service evaluation was to examine the frequency, causes, and nutritional consequences of EN interruptions in ICU patients receiving nasogastric (NG) feeding at Royal Derby Hospital.
**Methods**
A prospective service evaluation was conducted over 11 weeks (October-December 2024). Inclusion criteria were adults (≥18 years) in ICU requiring EN via an NG feeding tube. Exclusions: head and neck or maxillofacial surgery (these patients are not considered critically ill but have an ICU stay post-surgery due to ventilation). Data were collected for up to 21 consecutive days per patient. Descriptive statistics were used to report the frequency, duration and causes of interruptions. Ethical approval was not required for this project; it was however approved by the local clinical audit team; audit ID UHDBS486.
**Results**
Fourteen eligible patients were identified, and their records audited (median length of data collection: 15 days; range: 3-21. For patients who remained on the unit >21 days, data collection ceased at day 21). All 14 eligible patients were included, and all experienced at least one EN interruption, with a median of four (range: 1-10). The typical patient missed 3% of their prescribed EN (IQR 0-19.25%), equivalent to approximately 8 hours of feeding (IQR 0-36 hours). NG tube issues (n = 4, 26%) were the most frequent cause, followed by intubation/extubation (n = 3, 19%), tracheostomy insertion (n = 2, 15%), vomiting/nausea (n = 2, 11%), proning/supining (n = 2, 11%), scan/x-ray (n = 1, 6%), high gastric aspirates (n = 1, 4%), unknown (n = 1, 4%), ileus (n = 1, 2%), surgery (n = 1, 2%), and medication (n = 1, 2%).
**Discussion**
All patients experienced interruptions, most commonly due to NG tube issues. This is consistent with in-unit procedure-related interruptions identified by Ramakrishnan et al. [1], and NG tube malfunctions cited by Onuk et al. [2], who linked multiple interruptions with poorer outcomes. EN was frequently held due to concerns regarding high gastric aspirates. Ceasing measurement of gastric aspirates may help reduce EN interruptions and has previously been shown to improve nutritional delivery [3]; however, the longer-term impact of this requires further exploration. Limitations of this evaluation include the exclusion of head and neck or maxillofacial surgery, the small cohort and the short period of data collection.
**Conclusion**
Interruptions to EN are frequent, often preventable and may compromise EN delivery; targeted interventions such as volume-based feeding and streamlined NG tube protocols may improve nutritional delivery in ICU patients.

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**Service Evaluation of the adequacy of Enteral Nutrition Delivered and Interruption Time to Enteral Nutrition on an Adult Cardiothoracic Intensive Care Unit.**

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**Background:** Malnutrition is highly prevalent on an intensive care unit (ICU), a recent study identified that between 38-78% of patients admitted were malnourished[1]. Malnutrition can lead to poorer clinical outcomes for patients that are critically unwell such as increased length of stay and increased mortality[2]. However, underfeeding is a prevalent issue on an ICU. The aim of this service evaluation is to evaluate the adequacy of enteral nutrition delivered to patients on ICU and to investigate the causes, frequency, and duration of interruptions to enteral nutrition.
**Methods:** This was a retrospective observational service evaluation that took place on the cardiothoracic ICU. Patients that met the following criteria were enrolled on the study: intubated and ventilated within first 48 hours of admission to ICU, exclusively enterally fed for 5 or more days from admission and this was their first admission to ICU. Fourteen patients were enrolled. Data was collected on; the amount of enteral nutrition that was delivered, versus, the prescribed target and interruption time alongside the reason. Data was collected for up to 14 days for solely enterally fed patients. Ethical approval was not obtained as this project fell under the remit of a service evaluation.

**Results:** Fourteen patients met the inclusion criteria, mean age was 55.1 years [20-76], 9/14 patients were male (64.3%). There was a mean [range] BMI of 27.1kg/m2 [17.1-33.9]. The average [range] length of ICU admission was 24.3 days [7-58]. Patients received an average [range] of 67.5% [50.6-91.5] and 73.6% [46.7-92.3] of their prescribed target calories and protein respectively. With the average target calories prescribed 1333kcal and the average target calories delivered 888kcal. In addition to this, patients received an average 2338kcal from IV propofol equating to 22.2% of their total calorie intake. The total [range] deficit calorie intake for all 14 patients were 83314kcal [1007-10756]. Whilst the average target protein prescribed was 86g and the average target protein delivered 60g. There was a total [range] of 4803g [50-888] of protein deficit for all 14 patients. There were 993 hours of missed feed across all 14 patients, with extubation and intubation contributing to the highest amount of hours (%), equating to 301hours (30.3%). The second highest reason was gastrointestinal issues, resulting in 291.5hours (29.4%) of feed. The gastric residual volume protocol was not always adhered to, resulting in patient's feeds being reduced inappropriately which in turn has impacted the adequacy of EN.

**Discussions:** Findings are supported by wider literature, demonstrating that patient's nutritional adequacy whilst on ICU is often poor. Although this service evaluation demonstrated poor nutritional adequacy, our findings do show a higher percentage of calories and protein were delivered when compared to a study conducted by Cahill et al. (2010) which reported 59% and 60% of calories and protein respectively were delivered. This service evaluation demonstrated that EN was frequently interrupted, resulting in patients missing a high volume of feed. These were both avoidable and unavoidable reasons. These findings highlight the need to develop fasting guidelines and protocols for extubation and intubation to help minimise interruptions to EN. It has also highlighted the need for further training on gastric residual values to help minimise any unnecessary interruptions to feed.

**Conclusions:** Overall this study highlights that patients on ICU are not receiving adequate EN, this is largely due to both avoidable and unavoidable interruptions to feed. This poses patients at greater risk of malnutrition.

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**Service evaluation of enteral nutrition delivery in the Intensive Care Unit**

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**Background:** Meeting enteral nutrition (EN) goals in the Intensive Care Unit (ICU) is challenging, with several studies demonstrating that patients often fail to receive their prescribed nutrition targets[1]. Data suggests that providing at least 80% of prescribed calories (kcal) and protein targets is associated with improved clinical outcomes[2]. Despite these findings, an international nutrition survey conducted over 26 countries showed that on average patients received only 61% and 58% of the prescribed energy and protein, respectively[3]. This service evaluation aimed to evaluate the adequacy of EN delivered compared to prescribed nutritional targets and identify the frequency and reasons for any interruptions to delivery amongst critically ill patients on the ICU.

**Methods:** Retrospective data was collected for all adult patients ≥18 years admitted to the ICU for at least 72 hours who were exclusively enterally fed. Patients were included in the study for the duration of their exclusive enteral feeding and/or a maximum of 30 days, or until death / ward stepdown / transfer off the unit, if sooner. Patients receiving parenteral, oral or supplementary enteral nutrition were excluded. Data was collected and analysed using a Microsoft Excel tool. Target feed delivery was defined as meeting minimum 80% of prescribed nutrition volume (mL). The data collection period was January to March 2025. Ethical approval was not required, and the project was approved by the business unit governance team as required by local Trust guidelines (reference: RFHU_91924/25).

**Results:** Thirty-nine patients were included in the service evaluation. The mean study timeframe was 15 days (range 3 days - 30 days). Most patients (*n*=33; 85%) commenced EN within 48 hours of admission to ICU. Patients received mean of 59% (SD ± 21.6) of their EN targets with most patients (*n*=31) receiving below 80% of their prescribed EN. No patients received 100% of their prescribed EN targets. 100% (*n*=39) of patients had at least one interruption to their feed delivery, with a total of 181 episodes recorded across the study duration. “Feed held and interrupted” was the most common reason for the disparity in prescribed versus delivered enteral feed (table 1).

Table 1: Number of episodes

| **Reasons for differences in prescribed vs delivered enteral feed** | | | |
|---|---|---|---|
| **Feed held / interrupted** | **Dietetic regimen not followed** | **Starter EN protocol not followed** | **Reduced for high gastric residual volumes (GRVs), vomit, bleed** |
| **181** | 90 | 43 | 33 |

A sub-analysis of “feed held/interrupted” found that most cases were due to ‘other reasons’ (*n*=44) and extubation (*n*=29), with scans, procedures, clinical instability, and lack of access accounting for the remainder. The corresponding duration (hours) of interruptions for the two main reasons was analysed. Interruptions for extubation had a mean of 26.5 hours (SD ± 19.3; range 5-64 hours). A total of 258 hours were categorised as ‘other’ (including consultant decisions, proning, and hypernatremia), with 96 hours (37%) undocumented or having no identifiable reason.

**Discussion:** Only 21% (n=8) of patients in this study received ≥80% of their prescribed nutrition targets, highlighting a gap between current practice and evidence-based recommendations associated with improved outcomes in critically ill patients[2]. Interruptions to EN delivery were evaluated, revealing inconsistencies in documentation and adherence to protocols. Limitations of this study were missing retrospective data and additional inaccuracies due to enteral feeding pumps not integrated with the electronic patient record (EPR). Recommendations include a comprehensive review of fasting guidelines, targeted nursing education regarding documentation of feeding regimens and interruptions, consideration of volume-based feeding strategies, and integration of enteral feeding protocols and pump data into the EPR to enhance clinical practice.

**Conclusion:** Meeting EN goals in the critical care setting is challenging and patients often fail to receive their prescribed nutrition targets as highlighted within this study. This was largely due to interruptions, inadequate documentation and inconsistent adherence to protocols. This study emphasises the importance and need for system level improvements in addressing these barriers to optimise nutritional care and patient outcomes in ICU.

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**Service evaluation of predictors for parenteral nutrition and time to solid diet following cytoreductive surgery with hyperthermic intraperitoneal chemotherapy, at a specialist centre.**

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**Background:** Cytoreductive surgery (CRS) with hyperthermic intraperitoneal chemotherapy (HIPEC) is specialist procedure combining surgery and heated chemotherapy to treat peritoneal malignancy. It is associated with ileus and delayed nutrition after surgery [(1)], and consensus on parenteral nutrition (PN) protocols and best nutritional practices in this cohort is lacking [(2-5)] on initial ICU admission and stepdown to the surgical ward. The aim of this service evaluation was to identify potential predictors of PN initiation, PN duration, and time to solid diet initiation, following CRS with HIPEC, to guide individualised patient care in this nutritionally vulnerable population.

**Methods:** A retrospective observational analysis was undertaken of all adult patients (18+ years) who underwent CRS with HIPEC at a specialist centre between February 2023 and March 2024 (n=30). There were no exclusion criteria. The initiation and duration of PN, and time to solid diet were compared across CRS subcategories relating to specific organ resections and stoma formation. Data were analysed descriptively (mean values reported due to low kurtosis and skewness) and statistically (single factor analysis of variance; significant at $p \leq 0.05$). Being a service evaluation, this project did not require ethical approval.

**Results:** 24 of 30 patients (80%) were initiated on PN, and 6 patients (20%) were able to transition to an adequate oral diet before PN was required. Mean PN duration was 14.4 days (SD 7.4, kurtosis -0.49, skew 0.51), and mean time to solid diet was 9.0 days (SD 4.0, kurtosis 1.21, skew 1.00).

PN initiation was significantly more likely with small bowel (SB) resection than without (94% and 36% respectively, $p=0.04$) and with peritonectomy compared to without (95% and 50%, $p=0.01$).

PN duration was significantly longer with SB resection than without (mean 16.4 and 7.0 days, respectively, $p<0.01$), with large bowel (LB) resection together with SB resection compared to without (mean 16.8 and 9.7 days, respectively, $p=0.02$), and with stoma formation compared to without (mean 19.3 and 9.5 days, respectively, $p=0.01$).

Time to solid diet was significantly longer with gastrectomy than without (mean 13.6 and 8.0 days, respectively, $p<0.01$) and with stoma formation compared to without (mean 11.8 and 8.3 days, respectively, $p=0.05$). No other significant differences were observed between CRS subcategories and these three nutritional outcomes.

**Discussion:** The high incidence of PN seen in this service evaluation is comparable to that seen in other research in patients undergoing CRS with HIPEC [(1-5)], and reinforces the nutritional vulnerability of this patient group. However, our novel analysis suggests, for the first time, several predictors for PN need, PN duration, and time to solid diet, based on specific surgical subcategories of this complex procedure. These findings may help guide individualised nutritional management of these patients on ICU admission and following ward stepdown. A limitation of this evaluation is its modest sample size, so this data collection will be an ongoing process, to improve the reliability of our findings.

**Conclusion:** This service evaluation provides novel data which may advance the individualisation of nutrition management among patients undergoing CRS with HIPEC.

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**Preoperative Carbohydrate Loading and Postoperative Clinical Outcomes in Elective Cardiac Surgery: A Retrospective Service Evaluation**

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**Background:** Preoperative carbohydrate loading is a component of Enhanced Recovery After Surgery (ERAS) protocols that improves postoperative outcomes in general surgery, but evidence specifically in cardiac surgery remains limited[1]. At Harefield Hospital, carbohydrate loading was implemented as part of the Harefield Enhanced Recovery and Optimisation in Cardiac Surgery (HEROICS) project, a local multidisciplinary ERAS initiative. This service evaluation aimed to assess postoperative clinical outcomes following preoperative carbohydrate loading in adults undergoing elective cardiac surgery.

**Methods**: This service evaluation included adults (≥18 years) undergoing elective cardiac surgery at Harefield Hospital, UK, between July 2022 and February 2023. Patients with diabetes or gastroparesis were excluded. All patients who received preoperative oral carbohydrate loading (Nutricia PreOp: 4x200ml the evening before surgery and 2×200ml the morning of surgery; total 151g carbohydrate) with sufficient data were compared with a sequential, eligibility-matched cohort who did not receive carbohydrate loading (clear fluids only). Data were retrospectively collected from prospective records, including demographics, clinical/surgical details, nutrition route, and time to commence oral intake. Primary outcomes were hospital and intensive care length of stay (LOS). Secondary outcomes included glycaemic control, wound/pulmonary infections, gastrointestinal symptoms (vomiting, high gastric residuals, antiemetic/prokinetic use), and need for substantial vasoactive support (using predefined thresholds). Statistical analysis was completed using SPSS v30, applying chi$^2$, Fisher's exact, Fisher-Freemen-Halton, Mann-Whitney U and t-tests, following normality assessment. Associations between carbohydrate loading and hospital LOS were assessed with multivariable linear regression. This project was approved by the local institutional review committee (ID 7441); ethical approval was not required.

**Results:** In total, 122 patients were included (n=61 in each group); baseline characteristics were similar. Median age was 69 [IQR 59-75] years, and median APACHE II score was 14 [11-17]. Most patients commenced oral intake during the first week of intensive care (91.7% vs 86.9%, $p$=0.38), at a median of 2 [1-2] days postoperatively in the carbohydrate loading group and 1 [1-2] day in the non-carbohydrate loading group ($p$=0.12). Patients receiving carbohydrate loading had a significantly shorter hospital LOS (median 6 [5–10] vs 9 [6–16] days, $p$<0.001; 35% reduction in mean hospital LOS after adjusting for age, sex, body mass index, surgery type, and illness severity), and fewer required substantial postoperative vasoactive support (32.8% vs 57.4%; $p$=0.01). Despite similar rates of postoperative insulin use (34.4% vs 32.8%; $p$=0.85), median cumulative insulin doses required during the first postoperative week trended toward a >50% reduction in the carbohydrate loading group (17.5 [11.0–43.2] vs 37.3 [20.3–70.0] IU; $p$=0.06). No significant differences were observed in any other outcome.

**Discussion:** The shorter hospital LOS and reduced need for vasoactive support observed in patients receiving carbohydrate loading align with previous findings suggesting cardiovascular stability benefits of preoperative carbohydrate loading in cardiac surgery[2]. Reduced insulin requirements may indicate improved metabolic recovery, although this trend did not reach statistical significance. This may reflect limited statistical power, as glycaemic control was a secondary outcome, or the complex metabolic landscape of cardiac surgery[3]. These findings support continued use of carbohydrate loading in elective cardiac surgery, with observed benefits for patient recovery and suggested advantages for resource utilisation and NHS costs that warrant further evaluation.

**Conclusion:** Elective cardiac surgery patients receiving preoperative carbohydrate loading had a significantly shorter hospital LOS, required significantly less vasoactive support, and showed a trend towards requiring lower insulin doses, supporting its continued inclusion within cardiac ERAS protocols.

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# Are Enteral Feeds Appropriately Stopped Pre-Procedure in Ventilated Critical Care Patients? A Service Evaluation

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**Background:** Enteral nutrition (EN) interruptions are common in critical care prior to procedures due to fasting practices. However, when a patient is on ventilation, they often have a protected airway and therefore do not always need to fast for procedures. There are no local guidelines that guide fasting protocols on critical care. The consequences of interruptions to enteral feed include not meeting patient's nutritional requirements which is associated with poor outcomes[1,2]. The aim of this service evaluation was to assess the consequences of unnecessary enteral nutrition interruptions in ventilated patients with a protected airway, in critical care.

**Methods:** A retrospective case note review was conducted between April to July 2024. The records of 104 patients on a general critical care ward were screened with, 21 ventilated and on EN. Data was extracted from the patient record on procedure type, timing of feed stoppage and resumption, and documentation about the decision to pause the feed. This service evaluation did not require ethical approval; the registration number was 12189. Descriptive statistics taken where the mean (with standard deviation) & the median (with range) were both reported to summarise the data.

**Results:** Feed interruptions were most often associated with theatre procedures, chest drains, and imaging. A total of 36 feed interruptions were identified, with a median fasting duration of 8 hours (range: 2–52 hours). Patients experienced one to four interruptions, with two patients having four interruptions. On average, each interruption led to patients receiving 28% less calories and 23% less protein, compared to their estimated requirements. The timing of interruptions was recorded in 19%, and feed restart times in 8% of cases. The health professional responsible for the interruption was documented in 31% of cases. Nursing staff documented the decision for the interruptions in 55% of the cases documented. Patients with multiple interruptions in an admission experienced losses of 31% of calories & 28% of protein throughout time enterally fed.

**Discussion:** Consistent with previous research, prolonged interruptions to enteral nutrition were common among ventilated patients leading to not administering recommended amounts of nutrition[3]. Fasting duration often exceeded those included in guidelines such as that for patients with a cuffed airway tube enteral feeding should continue until the patient is called to the operating room[4]. In patients with protected airways fasting is not always necessary. Enteral feeding can be stopped, and the stomach aspirated immediately before a procedure and then be restarted immediately post-procedure to minimise nutritional deficits. A lack of guidance for intubated patients on enteral nutrition leaves decisions down to the judgement of individual healthcare professionals[5]. Delayed or undocumented restarting of feeds further compounds the risk of nutritional compromise. This lack of clarity around clinical decision-making not only affects patient outcomes but also raises questions about accountability. Additionally, there was often no documentation indicating who made the decision to stop or restart feeding. The absence of clear documentation and of fasting guidelines, may represent a barrier to continuity of care and optimal nutritional support. The study was limited by the small sample size of 21 patients & 36 cases of interruptions restricts the generalisability of the findings to the wider critical care population.

**Conclusion:** Reducing the length of time enteral nutrition is stopped in intubated patients has the potential to improve the nutritional status and outcomes of patients. Local evidence-based protocols are needed that identify clinical responsibility, encourage effective documentation, and inform decision-making about fasting pre-procedure in patients with protected airways, to optimise the nutritional management of patients on critical care.

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# Nutrition After Critical Illness: A Scoping Review Exploring Barriers, Consequences, and Nutritional Interventions Beyond Hospital Discharge

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**Background**: Survivors of critical illness frequently do not achieve recommended nutritional targets due multiple barriers. Consequently, malnutrition is prevalent during hospitalisation[1], and up to 12 months post-hospital discharge[2]. Despite proven benefits of dietetic interventions in other rehabilitation settings, nutrition and dietetic rehabilitation for ICU survivors is underutilised[1] . Post-critical care recovery clinics rarely incorporate dietetic services, leaving a crucial gap in care during a critical phase of recovery[3]. This scoping review aims to systematically identify and synthesize available evidence on barriers to meeting nutritional targets experienced by adult survivors of critical illness following hospital discharge, the consequences associated with inadequate nutritional intake, and dietetic interventions designed to overcome these barriers.

**Methods:** Using Joanna Briggs Institute methodology in conjunction with the PRISMA-ScR checklist, searches were conducted in MEDLINE, Embase, CINAHL, Web of Science, and Cochrane databases (2010-2024) for studies on adult ICU survivors' post-hospital discharge, reporting nutrition barriers, consequences and/or dietetic interventions. 2010 marks the publication of the NICE guidelines on rehabilitation after critical illness[4], which incorporate the available nutrition evidence up to that point. Questions; 1) What are the barriers to meeting nutritional adequacy within the first year following hospital discharge? 2) What are the consequences associated with inadequate nutritional intake? 3) What nutritional and dietetic interventions have been explored to address barriers and improve nutritional adequacy? Factors identified from the data are analysed and presented using a conceptual framework derived from the Biopsychosocial model and the Social Ecological Model Ethical approval was not required.

**Results:** Forty-three studies (36, 84% were observational, 3, 7% were interventional and 4, 9% were qualitative) were included encompassing 32,165 participants. Commonly reported barriers included (n, % of studies) appetite loss (17,40%), dysphagia (11, 26%), and psychological distress (17,40%), contributing to inadequate dietary intake (8,19%), malnutrition (18,42%) and weight loss (24,56%) persisting up to 12 months. Body composition changes observed in 9 (21%) of studies, demonstrated increased fat mass whilst lean mass was maintained or lost. Despite high nutritional risk, only 16 (37%) of studies reported dietitian input. Dietetic interventions (8, 19%) improved nutritional, physical and psychological outcomes.

**Discussion:** A high prevalence of intrapersonal factors such as malnutrition, weight loss and inadequate dietary intake driven by barriers including appetite loss, fatigue, taste changes, dysphagia and psychological factors. Changes in body composition indicated a recovery trajectory characterised by increased fat mass, with lean mass either maintained or decreased. Previous reviews focused on ICU and hospital stays[1], this scoping review extends the understanding to encompass up to twelve months following hospital discharge. Limitations should be acknowledged. Methodological heterogeneity among studies, including nutritional targets, malnutrition assessment tools, interventions and follow up limits direct comparisons and interpretation of results. Most evidence came from observational studies, restricting causal conclusions on specific nutritional strategies. Variability in ICU cohorts (age length of stay, follow up) constrained subgroup analyses, and the disproportionate representation of COVID-19 survivors may limit generalisability.

**Conclusion:** This scoping review identified that appetite loss, psychological distress and dysphagia are the main barriers for achieving nutritional adequacy in critically ill adults following hospital discharge, with only 37% of studies reporting dietetic input. It emphasizes the complexity of nutritional recovery faced, highlighting significant gaps in nutritional care following hospital discharge. Understanding nutritional challenges from survivors' perspective is essential before evaluating specific nutritional interventions addressing the diverse nutritional needs of individuals recovering from critical illness.

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# Diabetes

## Supported by Diabetes Specialist Group

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#BDAResearch

**Evaluating health outcomes through empowerment to self-manage Type 2 Diabetes.**

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**Background:** Remission (HbA1c ≤47mmol/mol without medicine), good glycaemic control and weight loss can all reduce the risk of developing diabetes related complications which currently cost the NHS approximately £485million/year[(1)]. A UK study demonstrated that 13% of people were in remission 27% of the time over 5 years, after losing 10-15kg[(2)]. NHS Forth Valley offer a programme which increases participant empowerment and advises on long term lifestyle changes. There is substantial evidence of an association between shared decision making (between participants and healthcare professionals) and improved decision quality, patient knowledge and patient risk perception[(3)]. There's no evidence that other structured education programmes in the UK measure remission rates as part of their health outcomes following attendance of a structured education programme.
The aim of this evaluation is to demonstrate that increasing participant empowerment score, leads to better self-management as evidenced by improved health outcomes which include HbA1c, weight change and achievement and maintenance of remission.

**Methods:** Participants diagnosed with Type 2 Diabetes who have not already attended structured education were referred to the programme via GP. Participants consented to their health data being collected, this included: health measurements, participant change in empowerment score. Mean statistical analysis was used within excel. SCI Diabetes (Scottish Diabetes patient management system) was used to review participant's health results and remission status. A nationally validated diabetes empowerment questionnaire was used at the start and end of the programme. Participants also completed an evaluation form. Ethical approval was not required as this was a service evaluation, but QI guidance was sought.

**Results:** The average empowerment score increased by 27% by the end of the programme and 54% of participants completed both questionnaires. The average HbA1c reduction was 9mmol/mol over 12 months for participants who did not achieve remission. The average HbA1c at 12 months was 54mmol/mol. Good glycaemic control is recognised as 58mmol/mol or less. From 195 participants, 39 people (20%) achieved remission for 2 years following their attendance and 23 people (12.2%) achieved remission for 5 years. Participants' average weight loss was 5kg over 5 years.

**Discussion:** The average weight loss was 5kg compared with the widely recognised amount (10-15kg)[(2)], yet 12.2% of participants achieved remission throughout the full 5 years. After participating in the programme, participants focus on more than just weight and consider other lifestyle changes including: goal setting, increased physical activity, stopping smoking, reducing alcohol intake and monitoring carbohydrate intake.
Participant 1 evaluated that they have found the programme beneficial through "understanding Diabetes and how to live with it through diet, exercise and general lifestyle changes." Participant 2 commented "With the help of the NHS team we hope to continue to help each other and have set SMARTER goals and targets by organising a walking group, healthy cooking lessons and joining the weight management programme".
These quotes demonstrate the programme has equipped participants with skills to support self-management and achieve greater health outcomes.

**Conclusion:** In conclusion, these preliminary findings demonstrate that empowerment offers opportunity to help participants; make sustainable lifestyle changes, reduce the risk of complications and the burden of associated health care costs within the Type 2 Diabetes service. Importantly, it allows people to take control and could be transferrable to other service deliveries and warrants further evaluation.

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# Cross-sectional analysis of the relationship between deprivation, risk perception and Type 2 Diabetes Mellitus (T2DM) knowledge within Merseyside.

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**Background:** The positive correlation between deprivation and national Type 2 Diabetes Mellitus (T2DM) prevalence is established within the literature [(1)], however the impact that deprivation plays upon T2DM knowledge and risk perception is less clear. Merseyside contains some of the greatest areas of deprivation within England, in addition to rising T2DM incidences. This research aimed to gain a cross-sectional understanding of current T2DM knowledge within Merseyside and identify any correlation in relation to deprivation and perception of risk.

**Methods (5th December 2024 to 12 January 2025)**

This cross-sectional study employed purposive and self-selection sampling and was advertised via social media platforms and places of business throughout Merseyside. T2DM knowledge was assessed using an adapted 22-item Diabetes Knowledge Questionnaire-Revised (DKQ-R) [(3)], whilst deprivation was measured using the Index of Multiple Deprivation (IMD). Statistical analysis of variables was conducted using an independent t-test, a univariate one-way analysis (ANOVA), and a Spearman's Rank correlation. Further supplementary questions were included to explore participant's perception to what they believe the risks of having T2DM to be, and their worry of developing T2DM, which were analysed descriptively. Ethical approval was granted by the University of Chester Research Ethics Committee (2024_02_AHREC_BM).

**Results:** Following the omission of 7 participants due to incomplete responses, 85 participants were included within the analysis. Sociodemographic data identified a greater proportion of female (n=59, 69.4%), White British (n=77, 90.6%) and 25–34-year-old participants (n=26, 30.6%) completed the survey. The mean DKQ-R score achieved by participants was 12.74 (SD: 4.734). Statistical analysis revealed no significance between participant IMD scores and T2DM knowledge ($p = .792$, $r = .029$), nor borough of residence and IMD scores ($p = .217$). Significance, however, was identified in participants who stated their concern with developing T2DM (n=49, M=11.43 out of 22, SD = 4.55), as they presented with greater DKQ-R scores ($t(85) = -3.135$, $p = .002$).

**Discussion and Conclusion:** Level of deprivation and geographical location bared no determination upon an individual's T2DM knowledge within Merseyside. This finding contrasts with existing literature, which finds that family income held a positive correlation with knowledge levels [(3)]. Whilst acknowledging the sociodemographic limitations identified above, extrapolation of significant findings from this study suggest that future T2DM initiatives within Merseyside should consider focusing upon the enhancement of individual risk awareness over deprivation or geographical location, as this is shown to result in significantly greater T2DM knowledge.

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**Service evaluation of a dietetic-led in-service training to improve staff confidence in delivering nutrition and physical activity advice in diabetes care**

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**Background:** The Quality Outcomes Framework 'QOF' financially incentivises primary care organisations to record a dietary review by a suitably competent professional for all people with diabetes within the preceding 12 months. The Diabetes Education and Management Group and Diabetes UK detail the competencies non-dietetic healthcare professionals (HCPs) must demonstrate to provide effective nutritional and physical activity advice [1] with the expectation that other healthcare professionals in diabetes care meet the entry level competence of a generalist dietitian where relevant [2]. Senior members of the diabetes team identified a need for nursing colleagues to provide reliable, first-line nutrition and physical activity advice in both inpatient and outpatient settings. This service evaluation reviewed the effectiveness of a bespoke dietetic-led educator update for nursing staff on perceived confidence levels to deliver nutrition and physical activity advice.

**Method:** Two diabetes dietitians delivered in-person, group education across the 5 key domains. (1. general clinical nutritional diabetes guidelines, 2. physical activity, 3. assessing nutritional intake, 4. diabetes nutritional knowledge and 5. nutritional knowledge pertaining to different patient groups and co-morbidities). A bespoke questionnaire was designed for this service evaluation in line with the Nutrition and Physical Activity Briefing Document [1]. Although this tool was not formally validated, it aligned with the training needs and relevant domains. Nursing colleagues who attended (n=10) completed an anonymous 47-item questionnaire using a 5-point Likert scale both pre and post training to indicate levels of perceived confidence in their ability to meet nutritional and physical activity competencies for patients living with diabetes. Data were analysed using descriptive statistics and paired t-test. Ethical approval was not required.

**Results:** Nursing colleagues (n=10) had a mean confidence score of 116.5 ± 40 pre training, increasing to a mean confidence of 154.6 ± 34.5 post training (n=10) indicating improved confidence at meeting nutritional and physical activity competencies. Paired t-tests indicated a statistically significant improvement in confidence ($p < 0.001$) to meet the competency framework following training. Results were normally distributed and included nursing bands 5-7 all working within a UK Diabetes and Endocrinology Department.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Pre-Training Confidence | 122 | 68 | 121 | 97.5 | 51 | 74 | 171 | 155 | 159 | 146 | **116.5 ± 40** |
| Post-Training Confidence | 158 | 126 | 181 | 140 | 124 | 80 | 192 | 187 | 182 | 176 | **154.6 ± 34.5** |

**Discussion:** The training significantly improved nursing staff confidence in delivering nutritional and physical activity advice, supporting the case for dietetic-led upskilling initiatives. These findings though self-reported, limited in sample size suggest that structured in-service education can enhance workforce competency across a range of nursing agenda for change bands. Future work is planned to evaluate the impact of this training on patient outcomes.

**Conclusion:** Dietetic-led in-service training effectively enhanced the confidence of the diabetes workforce in meeting nutrition and physical activity competencies. Future training and evaluations will include a larger sample size and assess the impact on patient outcomes.

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# Education including Practice based learning

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**Dietetic students' perceptions and experiences of Point of View technology for communication skills education: A mixed methods study**

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**Background:** Considering the significant impact of communication skills on healthcare outcomes[1], and their importance in the dietetic profession, it is critical to consider how these skills are taught in pre-registration communication skills education. Since the Covid-19 pandemic, there has been a surge of digital technologies shaping approaches to research and clinical practice[2]. Despite this, the introduction of more digital technologies into dietetic education has been limited. Point of View (POV) technology devices are high-quality hands-free devices that record video from the user perspective. The aim of this study was to explore dietetic students' experiences with POV devices and their perceptions of their role in their communication skill development.

**Methods:** A parallel mixed-methods design, underpinned by experiential learning theory, was used to explore the integration of POV video devices in communication skill training for first-year MSc Nutrition and Dietetics students. Eligible participants were ≥18 years old, had used POV devices in a practice Objective Structured Clinical Examination (prOSCE), and participated in the communication skills module. A full-population sample was sought for an online survey (25 of a possible 30), with 17 recruited for post-assessment focus groups. Quantitative data from adapted, validated measures (Communication Skills Attitude Scale[3]; Technology Acceptance Model[4]) were analysed in SPSS using descriptive statistics. Qualitative data from focus groups, facilitated by trained researchers with no prior relationship with the students, were thematically analysed using Braun and Clarke's six-phase inductive approach[5]. For their communication skills coursework, students could choose to review either POV recordings or traditional video recordings. Quantitative and qualitative findings were integrated in a mixed methods framework to enhance interpretation. Ethical approval was granted and the study was preregistered (both anonymised).

**Results:** 13 students (52%) had accessed the footage for both the patient/actor and themselves. Overall perceptions of the devices scored highly (mean 148, SD 25.8), with key high scores found for system quality (21.7, SD 3.9), perceived ease of use (21.4, SD 4.6), attitude towards using (21.1, SD 4.5) and perceived usefulness (20.6, SD 4.8). These scores indicated generally favourable acceptance of the technology, though some dimensions suggested scope for further optimisation. From focus groups, five preliminary themes were generated: 1) Accessibility and Inclusivity; 2) Emotions and Attitudes Towards Device; 3) Perceived Value of POV Technology; 4) Suggestions for Enhancement; and 5) User Experience and Usability. These themes illustrated both the perceived strengths of POV technology (e.g., simple to use, valuable for (non)verbal communication skill development) and areas for improvement (e.g., incorporation of guidance to support students embed POV videos into reflection).

**Discussion:** Overall, students perceived the POV technology as useful, easy to use, and valuable for enhancing (non)verbal communication skills, aligning with previous research on technology acceptance in healthcare education. Qualitative findings highlighted its potential inclusivity for diverse learning styles, as well as practical considerations such as device comfort, cultural accessibility, and optimal integration into the curriculum. While the results support the broader adoption of POV devices in dietetic and other healthcare training, further research across multiple institutions is needed to confirm generalisability and address identified usability challenges.

**Conclusion:** POV technology was well-received by dietetic students, offering potential to enhance communication skills training and inclusivity, though further multi-institutional research is needed to address usability and accessibility challenges.

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# Evaluating Learner Confidence Following an Eight Day Peer Enhanced e-Placement (PEEP) for Pre-Registration Dietetic Learners

Coles E

**Background:** Research across allied health professions indicates that simulated learning experiences can significantly increase student knowledge and confidence in their professional and clinical skills (1, 2) and students who completed a simulation based placement have demonstrated significantly better clinical competence in a subsequent placement than students who had completed a traditional introductory placements (3). **Aim:** To evaluate changes in learner confidence among pre-registration dietetic students before and after completing an eight-day virtual Peer Enhanced e-Placement (PEEP). **Methods:** An online pre- and post-placement survey, adapted from the *Clinical Confidence Scale* (4), assessed confidence across key dietetic competencies, including dietary recalls, consultations, peer feedback, digital communication, and readiness for NHS placements. Items were rated on a five-point Likert scale (1 = low to 5 = high confidence). Wilcoxon Signed-Rank Tests compared pre- and post-scores, with descriptive statistics used to analyse confidence changes. Ethical approval was not required as this was a service evaluation of an educational activity; participation was voluntary and anonymous. **Results:** In 2024, fourteen year one Masters in Dietetics students attended PEEP. Thirteen answered both the pre- and post-practice placement survey (93% response), with results in table 1. Completion of the evaluation was voluntary but encouraged.

**Table 1:** *Pre- and post-PEEP self-rated confidence scores (n = 13)*

| **Confidence Domain** | **Pre-PEEP Mean (SD)** | **Post-PEEP Mean (SD)** | **Mean Change** | **p-value** | **Significance** (p <0.05) |
|---|---|---|---|---|---|
| Conducting dietary recalls | 3.46 (0.52) | 3.91 (0.83) | +0.45 | 0.0348 | **Significant** |
| Undertaking basic dietetic consultations | 3.00 (0.41) | 3.70 (0.67) | +0.70 | 0.0027 | **Significant** |
| Communicating dietetic messages via online platforms | 2.92 (0.86) | 4.00 (0.45) | +1.08 | 0.0050 | **Significant** |
| Giving and receiving peer feedback | 3.92 (0.76) | 4.18 (0.98) | +0.26 | 0.0578 | Not statistically significant |
| Readiness to commence NHS practice placement | 3.00 (0.58) | 3.91 (0.75) | +0.91 | 0.0083 | **Significant** |

Upon evaluation, 100% (14 students) reported they received enough supervision during the 2 weeks and 100% (14 students) reported they would recommend the placement to other students.

**Discussion:** PEEP participation significantly improved student confidence across key professional skills, supporting previous evidence that simulation-based placements enhance preparedness for clinical practice (1–3). The largest gain in digital communication reflects the effectiveness of the virtual learning format. Despite the small sample size and reliance on self-reporting, results suggest PEEP provides valuable preparatory experience for NHS placements.

**Conclusion:** The Peer Enhanced e-Placement significantly improved dietetic students' confidence and readiness for practice, demonstrating the value of structured, simulation-based learning as part of pre-placement education.

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**Student perception of AI and AI-powered simulation in dietetics**

Coles, E

**Background:** Artificial intelligence (AI) is reshaping healthcare, with growing applications in clinical decision support, service delivery, and simulation-based training. Evidence suggests that use of simulation, specifically virtual patients, can improve healthcare students' communication skills and clinical decision-making (1). Additionally, simulation offers a scalable, practice-based approach to bridging this gap and can be used for up to 30% of dietetic learners practice based learning hours (2). Yet, teaching on using AI, and the use of AI-powered simulation in education remains largely absent from pre-registration dietetic programmes. Our aim was to investigate dietetic students' perceptions of AI in practice, including their confidence using AI, their educational exposure to AI, and potential of AI powered simulation as a meaningful method to support training.

**Methods:** This project was conducted as a service evaluation of an *AI in Dietetics* practice-based learning. A short pre- and post-session questionnaire was used to assess students' perceptions of AI and AI-powered simulation. Participants anonymously rated six statements using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree), exploring understanding of AI, confidence using AI tools, perceived relevance to dietetic practice, and the potential of simulation to support clinical reasoning and decision-making. Descriptive statistics were used to summarise responses, and qualitative comments were analysed thematically to capture additional insights. As a service evaluation, ethical approval was not required. Participation was voluntary and anonymous.

**Results:** Ten dietetic students (83% response rate), from two Universities, completed both the pre- and post-survey. Just 30% of students agreed they had a good understanding of AI, and none reported receiving sufficient AI teaching during their training. While confidence in using AI tools was low (40% agreed), 80% of students agreed or strongly agreed that AI is relevant to current and future dietetic practice. Crucially, 80% believed that online, AI-powered simulation could help them develop clinical reasoning and decision-making skills, and supported the inclusion of formal AI education in dietetics. Qualitative feedback showed perceived value in exposure to varied simulated clinical scenarios and appreciated the potential for skill development in repeated, low-risk practice.

**Discussion:** Learners recognised AI as highly relevant to dietetic practice but reported limited understanding and confidence in its application. The positive response to AI-powered simulation suggests potential for this approach to enhance clinical reasoning and digital competence. However, as findings are based on a small cohort, results should be interpreted with caution. Further research with larger and repeated cohorts is needed to confirm these trends and evaluate the longer-term impact of integrating AI and simulation into dietetic education.

**Conclusion:** This small-scale evaluation indicates that dietetic students recognise the relevance of AI to their future practice and view AI-powered simulation as a valuable tool for developing confidence, decision-making, and digital readiness. While these findings are encouraging, they are based on a limited sample and should be interpreted with caution. Further research with larger cohorts is needed to confirm these results and explore how AI and simulation can be effectively embedded within dietetic curricula to prepare a digitally competent future workforce.

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# Cognitive compassion in action: transforming critical appraisal through group work in undergraduate dietetics

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**Background:** Integrating cognitive compassion-based practices in higher education enhances inclusivity and critical thinking(1), aligning with the British Dietetics Association's Curriculum Framework. Recognising empathy and teamwork as core competencies, the University of Hertfordshire redesigned its AGREE II(2) critical appraisal assignment for 2024/25 to foster collaboration, reduce marking burdens, and address the implications of generative Artificial Intelligence (AI). This project aimed to evaluate the impact of the redesigned assessment on student achievement, time efficiency, and overall student experience.
**Methods:** Small student groups were tasked with independently appraising ESPEN Clinical Guidance using AGREE II before undertaking an assessed structured discussion. A preparatory workshop introduced cognitive compassion-based micro-skills such as empathetic communication, which students were encouraged to apply during group preparation. Each group participated in a live, 30-minute peer-reviewed assessment, with individual grading based on evidence quality (20%), critical thinking (50%), and compassion-focused group management (30%). Assessors observed but did not participate in the discussions, enabling real-time marking. As this was an evaluation of teaching service provision, ethical approval was not required.

**Results:** The 2024/25 cohort outperformed previous years with a mean grade of 70.5% compared to an average mean of 65.0% across 2020/21–2023/24. The lowest grade in the cohort exceeded prior averages by 8.1%. Students demonstrated deeper critique and novel insights, contributing to higher achievement. Feedback indicated that compassion-focus training positively influenced group dynamics **(table 1)**. Assessors reported improved grading efficiency, with marking time reduced from 15-20 hours to just 5, and noted a more engaging process with richer student contributions.

| **Table 1 – Qualitative student feedback after compassion-focussed group assessment** |
|---|
| "I loved learning about compassionate communication as it has helped tremendously in team working both at understanding my own actions and team and team dynamics." |
| "I was more confident in ensuring everyone's opinion was heard and felt valid." |
| "I'm still finding it hard when a member dominated discussions." |
| "…we were more intentional with fostering a group dynamic and environment that engaged everyone." |

**Discussion:** These findings underscore the benefits of embedding cognitive compassion in group assessments. This practice enhances academic attainment and marking efficiency while supporting the development of key competencies for future dietitians, including empathy, self-regulation, team working and critical thinking. Future research will explore student feedback in greater depth to assess overall learning experience and investigate potential attainment gaps.

**Conclusion**: Embedding a cognitive compassion focus into group assessments improves academic outcomes, enhances efficiency, and supports the development of essential professional skills.

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**Improving Dietetic Students' Perceived Confidence in Clinical Documentation and Letter Writing Through Structured Training and Practice-based Learning.**

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**Background:** The ability to produce accurate, safe and effective clinical notes and letters is an essential skill for student dietitians prior to attaining professional registration[1]. However, little is known about student confidence in this area either before or after placement. Existing literature focuses primarily on teaching and assessment of oral communication for dietetic students[2], rather than written. This service evaluation aimed to assess changes in dietetic students' confidence in writing clinical notes and letters, following a structured training package and related practice-based learning (PBL) activities within a Higher Education Institution (HEI).

**Methods:** Undergraduate dietetic students completed a self-assessment questionnaire before and after a 3-week period in the early stages of their first 12-week placement (May–June 2025). Confidence in clinical note taking and letter writing was measured using a five-point Likert scale (1 = not confident; 5 = very confident). Students completed a bespoke, multi-modal clinical documentation training package comprising of best-practice theory, simulated case documentation, peer feedback, group discussions and an online test. During the 3-week period, students participated in weekly dietetic clinics within the HEI to apply their learning. Mean and standard deviation (SD) scores and paired t-tests were used to assess changes in confidence completing clinical notes and letters. Ethical approval was not required as this study was classed as a service evaluation.

**Results:** Twelve responses were collected from students who completed questionnaires before and after the 3-week period. Following training and the 3-week PBL experience, confidence significantly increased in clinical note writing (P = 0.002) and letter writing (P = 0.001) (table 1).

Table 1: Changes in Student Confidence Scores in Clinical Note Writing and Letter Writing Before and After Structured Training and related Practice-based Learning activities.

| Student Confidence Area | Time point | Mean | N | Standard Deviation | P value |
|---|---|---|---|---|---|
| Clinical note writing | *Before* | 2.58 | 12 | 0.79 | 0.002 |
| | *After* | 4.00 | 12 | 0.74 | |
| Clinical letter writing | *Before* | 2.25 | 12 | 0.62 | 0.001 |
| | *After* | 3.83 | 12 | 0.72 | |

**Discussion:** A structured training approach combined with PBL activities can support dietetic students to increase confidence with clinical note taking and letter writing. The significant improvement in self-reported confidence suggests that even a short, focused intervention can positively impact students' preparedness for clinical documentation tasks on placement. Given the importance of mastering these fundamental skills before registration[1], these findings highlight the value of targeted interventions aligned with core competencies. Future research should aim to objectively explore dietetic student competence in clinical documentation, as assessed by service users and dietitians.

**Conclusion:** A structured training package combined with related PBL activities can significantly improve dietetic students' confidence in clinical note and letter writing skills.

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# DigiDiet: Development and Content Validation of a Knowledge, Attitudes, and Practices Questionnaire in Digital Health for Dietitians and Nutritionists

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**Background:** Digital health technologies including artificial intelligence (AI), and telemedicine are increasingly embedded in clinical care and the Nutrition Care Process (NCP) (1,2). However, no validated tool exists to assess dietitians' and nutritionists' knowledge, attitudes, and practices (KAP) towards digital health technologies. This study has aimed to develop and validate the DigiDiet questionnaire for dietitians and nutritionists to measure KAP in digital health technologies for future testing in international cohorts (e.g. USA, Australia, Canada, Europe).

**Methods:** A mixed-methods design was used following Phase 1 of Boateng et al.'s (2018) framework for scale development. Participants were purposely selected to ensure diversity across practice settings from the UK and Australia and were recruited through professional networks via email. An expert panel of dietitians, nutritionists and digital health experts (n=23) were invited to evaluate the items via an online Qualtrics™ survey using a 3-point scale (endorse, endorse with changes, reject). Incomplete responses were identified and excluded from the main analysis (n=12). Content Validity Ratio (CVR) analysis was used to evaluate inter-rater agreement. Qualitative feedback was gathered through open-ended responses to refine item clarity, relevance, and terminology. Ethical approval was obtained (MRA-24/25-46688).

**Results:** A literature review identified 205 items from 28 studies, refined into 126 draft items across the KAP domains aligned with the NCP and digital health competency frameworks. A total of 116 items were retained after CVR analysis (CVR ≥ 0.636) and expert feedback (n=11) indicating excellent inter-rater agreement. Following review, 7 items from the Attitudes domain and 3 items from Practices were rejected. The final DigiDiet questionnaire included 27 Knowledge, 46 Attitudes, and 43 Practices items. There was comprehensive coverage of digital health technologies and their application in practice, such as mobile health, telemedicine, and artificial intelligence. Qualitative feedback indicated the importance of clarity in terminology and revealed variability in digital literacy. This supports the need for accessible and inclusive digital training content.

**Discussion:** As digital health technologies are increasingly integrated into NCP a validated instrument specific to dietetics and nutritionists is essential to equip them with profession-specific digital tools (1,2). A 116-item DigiDiet questionnaire was developed to measure KAPs related to digital health among dietitians and nutritionists, providing a foundation for future validity testing. Compared to existing questionnaires, DigiDiet offers profession-specific insights, enhancing its potential use across clinical, educational, and policy settings. The DigiDiet questionnaire was designed to reflect the diverse roles of dietitians and nutritionists across clinical, community, public health, and educational settings, enhancing its generalisability.

**Conclusion:** The DigiDiet was developed to be used to measure KAPs in digital health in international cohorts of dietitians and nutritionists, providing a foundation for future validity testing. The DigiDiet can support the identification of training needs and inform the integration of digital health technologies into dietetics and nutrition education, practice, and policy.

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**Before, during and after the COVID-19 pandemic. How has pre-registration dietetic assessment changed in UK universities? - A mixed-methods study.**

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**Background:** All the degrees taught at universities during the COVID-19 pandemic had to adapt to a more digital assessment environment. This research aimed to explore the methods used before, during, and after the COVID-19 pandemic to assess whether the required knowledge, skills, and values were achieved at each stage of the dietetic learner journey. The research also explores the reasons why the assessment methods were maintained or changed after the pandemic was over, and if this affected the students' performance (grades).
**Methods:** This was a mixed-methods study (cross-sectional and qualitative). Dietetic educators within higher education institutions in the UK, accredited by the BDA, were recruited through an online questionnaire sent by email (July-August 2024). Participants were asked to respond to which assessment methods were used before, during and after the COVID-19 pandemic, qualitative rationale for changing the assessment mode once the pandemic was over (assessed with a Thematic Analysis), and if students' performance improved or declined when the assessment was shifted (chi-square analysis, $p<0.01$ considered statistically significant). Ethical approval was received from Nuala Byrne (School of Education-University of Nottingham).
**Results:** Twenty participants completed the questionnaire. Of these, 90% reported modifying their assessment practices during the COVID-19 pandemic, predominantly by transitioning to online formats. Several of these online assessment approaches were retained post-pandemic. The assessment types examined included written examinations, presentations, essays, and Objective Structured Clinical Examinations (OSCEs)

| |
|---|
| The main reasons why some assessments remained online were: "Staff are more aware of online platforms and potential for their use in the future". "Student and staff preference for some online presentations/OSCEs due to hybrid working, reduced need for travel, and reduced anxiety for students" |
| The main reasons why some assessments came back to face-to-face were: "We reverted to live presentations as we found that students were able to communicate more effectively without worrying about technology", "Less risk of AI use, more constructively aligned, easier to assess character and professionalism in person", "The live presentation enables a more robust assessment of skills. It favours student performance" |

Most respondents (60%) reported no perceived change in performance, while 20% were uncertain. In contrast, 15% observed a decline, and 5% reported an improvement.
**Discussion**: Our results aligned with Wright et al (2022)[1] who found that communication skills are challenging to assess in dietetics in a virtual setting, but agreed on the importance of telehealth training for the future workforce. Also, with Mottiar et al (2022)[2] who identified that one of the main challenges that online assessment brought was the potential presence of academic misconduct. And with Hall et al (2022)[3] who found that examination scores do not show a consistent increase or decrease after online shifting.
**Conclusion:** Participants expressed divergent views regarding the continuation or discontinuation of online assessments, revealing a complex balancing act between practicality, integrity, and pedagogical alignment. This study highlights the need for additional investigation into how perceptions of online vs. face-to-face assessments impact learning outcomes, performance and academic integrity in dietetics higher education.

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# From Knowledge to Practice: Educating Clinicians in Ketogenic Dietary Therapies (KDT) Through a Global Mentorship Program Model

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**Background:** Ketogenic diet therapy (KDT) is an effective treatment for drug-resistant epilepsy (DRE), offering an alternative for patients who do not respond to anti-seizure medications (1). Despite this, access to KDT for appropriate patients globally who could benefit from potential life changing treatment for DRE remains an issue (2). A major barrier to wider implementation is the lack of specialist training and support for healthcare professionals, particularly dietitians, who play a central role in the safe and effective delivery of KDT. This study aims to evaluate the impact of an international mentorship program designed to increase dietitians' knowledge, confidence, and practical capacity to deliver KDT in local services.

**Methods:** Endorsed by the International Neurological Ketogenic Society (INKS) and Matthew's Friends charity, the Program is structured to provide a scaffolded learning experience led by renowned global experts in KDT. It includes:

- Day 1: Foundational knowledge is established through classroom style plenary sessions.
- Day 2: Theory is translated into practice during a cookery workshop led by an expert KDT chef.
- Ongoing: Mentor-led virtual sessions consolidate learning, encourage reflection and foster a collaborative local and/or international learning community.

This study is a program evaluation, in which participants (recruited through attendance) completed structured digital surveys pre- and post-program, measuring self-reported knowledge and confidence using a 5-point Likert scale (1 = poor, 5 = excellent). Descriptive analysis was used to compare pre- and post-training scores. Ethics approval was not required as this was a service evaluation project with anonymised participant data.

**Results:** Since its launch in November 2023, the Program have been delivered in seven countries (Ireland, Spain, Germany, UAE, Argentina, Colombia, and France), training 245 dietitians from 16 countries. Pre- and post-program surveys were completed by 183 participants (response rate: 75%). Evaluations showed an improvement in participants' self-rated knowledge and confidence to manage patients on KDT (mean scores increased from 3.54 to 4.74, where 5 = excellent knowledge and confidence). While no formal statistical tests were applied, the magnitude of change suggests meaningful improvement. 95% of participants rated the Program as "excellent," and 5% as "good."

**Discussion:** The Program appears to be effective in improving dietitians' self-rated knowledge and confidence in delivering KDT, particularly in countries with limited access to formal training. While the results are promising, further research using validated tools and formal statistical analysis is needed to confirm the findings. Additionally, the role of ongoing mentorship in sustaining confidence and competence warrants further exploration. These findings are consistent with literature demonstrating the value of mentorship in continued professional development across allied health professionals (3).

**Conclusion:** The Global Mentorship Program offers an accessible and scalable training model that complements existing programs such as KetoCollege Advance. It is especially valuable for regions where financial or geographic barriers limit access to training. By equipping dietitians with the knowledge and support needed to deliver KDT, the Program has the potential to improve patient access to this treatment and enhance quality of life for individuals living with DRE.

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**Increasing Professional development and Peer support for Band 5 Dietitians with the input of a Legacy Mentor Dietitian**

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**Background:** It is widely recognised that new starters within the NHS are more likely to leave within the first 2 years of practice without adequate professional or peer support [(1)]. Band 5 Dietitians within the trust are based across sites and can be isolated from their peers. A monthly Band 5 journal club was set up in 2022 to help recently qualified staff develop knowledge and critical appraisal skills, as well as providing opportunity for peer support. However, these sessions ran infrequently so limited the opportunities for attendance. A Legacy Mentor Dietitian was appointed as part of a system-wide pilot in 2023, which aimed to provide targeted support and guidance for early career staff. Responsibility for supporting the Band 5 sessions were included in this role. The aim was to increase the number of Band 5 Dietitian Peer/education sessions by 50% in 12 months, whilst maintaining an attendance rate of at least 75% through completing a quality improvement project.

**Methods:** A Quality improvement project was designed using the Plan-Do-Study-Act (PDSA) model [(2)], ethical approval was not required as this was a staff-based intervention. Sessions were co-ordinated by the Legacy Mentor Dietitian. Session times, venues/delivery and content were carefully considered based on feedback from the Band 5 Dietitians. Content was expanded to include broader aspects of professional development aligned with the four pillars of practice. The total number of sessions delivered over the 12-month period from February 2024 – January 2025 was compared with those conducted for the previous year period. Monthly sessions were planned with the option of attending in person and virtually. All Band 5 Dietitians at the Trust were invited to attend and provide feedback on the sessions. Attendance for each session was calculated as a percentage. Staff feedback was gathered via post-session evaluation forms that included a 5-point scale rating of usefulness and an open-text field for qualitative reflection on value and impact. Responses from the evaluation form were analysed by the Legacy Mentor Dietitian. Qualitative comments were thematically grouped to identify common themes. Quantitative data were manually collated and expressed as percentages.

**Results:** A total of six Band 5 Dietitians in the department were invited to the sessions. Ten sessions ran in 2024 - an increase of 100% compared to five sessions in 2023. Average attendance rate was 81.5% in 2024. 100% of staff found the sessions useful, with 55% rating sessions as extremely useful and 45% as somewhat useful. Key themes from the qualitative feedback showed staff valued the shared learning and connections with their peers as well as increased confidence in their own professional development.

**Discussion:** The outcomes of the QI project exceeded expectations, with a 100% increase in sessions delivered. Having a person with dedicated time and experience to organise and coordinate these sessions helped with the outcomes achieved. The sessions ran more frequently allowing for more regular peer support and professional development opportunities which were valued by the staff. This supports the idea that a Legacy Mentor Dietitian or similar dedicated role is aligned with national workforce strategies for the use of dedicated roles to support staff development and retention. [(3)] It could therefore be a recommendation to pilot this within other Dietetic departments.

**Conclusion:** The Legacy Mentor Dietitian played a pivotal role in increasing professional development and peer support for Band 5 Dietitians with improved attendances and perceived usefulness in one Trust.

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# First Contact Dietitians

## Supported by First Contact Dietitians Specialist Group

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#BDAResearch

# Evaluating Occupational Therapy and Dietetics in Primary Care: Perspectives from Health-Service Users

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**Background:** Occupational therapists (OTs) and dietitians are increasingly working in primary care in England, following NHS initiatives[1,2]. However, evidence about their impact and optimal integration into primary care teams remains limited[3,4]. The aim of this patient and public involvement (PPI) activity was to explore health-service users' perspectives, priorities, and experiences of OT and dietetic care in primary care to inform future research design and funding applications.

**Methods:** Three discussion groups were conducted between January and June 2025. Recruitment strategies were designed to promote diversity and inclusion, with advertisements placed in GP surgeries, libraries, outpatient clinics, professional networks, social media, and patient and public involvement groups. Participation was offered in-person or online, with interpreters available if required.

Each discussion group followed a semi-structured topic guide exploring experiences of OT and dietetic care, perceived benefits and barriers, views on integrating these services into GP practices, research priorities, and preferred research methods. Sessions were audio-recorded, transcribed, and anonymised. Data were analysed thematically to identify key themes. Ethical approval was not required as this activity involved PPI rather than research; informed consent was obtained from all participants. This project was supported by a CAHPR-YH Small Grant Award.

**Results:** Participants (aged 25–85+, 9 female, 5 male) represented diverse ethnic backgrounds: White (7), Asian or Asian British (4), and Black, Black African, Black Caribbean or Black British (3). Thematic analysis identified three key themes: impact of care, benefits of primary care practice, and future research priorities.

Impact of care involved greater confidence, independence, mental health, and dietary management, though some issues were reported with follow-up, waiting times, and remote communication. Benefits of primary care-based practice included improved access, continuity, prevention, and cost-effectiveness, with embedding OTs and dietitians in GP surgeries seen as enhancing personalised care and easing secondary care pressures. Future research priorities focused on inclusive language, qualitative methods, engagement of underserved communities, and public information about OT and dietetics roles.

**Discussion:** Health-service users valued personalised and accessible care from OTs and dietitians in primary care, echoing priorities identified in previous calls for integrated, person-centred services[1,2]. The findings highlight opportunities to improve early intervention and reduce pressures on secondary care by embedding allied health professionals in GP practices. Incorporating service-user perspectives into future research design and public awareness efforts may enhance engagement, equity, and service effectiveness.

**Conclusion:** PPI insights confirmed strong support for researching OTs and dietitians in primary care, highlighting opportunities to improve accessibility, personalised care, and outcomes.

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# Food Allergy

## Supported by Food Allergy Specialist Group

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#BDAResearch

**Evaluation of a 'Patient food and drink book' orientation session on the food allergy awareness of patients in a Rehabilitation Hospital**

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**Background:** Food allergies are increasingly prevalent, around 6% of the UK adult population have a food allergy(1), requiring identification and management processes within hospital clinical and food services to ensure patient safety(2). Although national standards require staff training and the provision of allergy information, there is limited research on patient awareness of food allergens and the effectiveness of in-hospital information dissemination. A 'Nutrition and Allergy Procedure' was launched between Jan-May 2025 for management of allergies promoting the 'Patient food and drink book.' The aim of this service evaluation was to assess the impact of a 'Patient food and drink book' orientation session on patients' awareness of food allergies and to identify potential gaps in information provision during hospital stays.

**Methods:** Two cross-sectional questionnaires on Google Form were adapted from the Patient-Led Assessments for the Care Environment(3), with a section on food allergy awareness, and were undertaken with patients (adults living with HIV, homeless and/or detoxing) in a rehabilitation hospital. Following the launch of the Nutrition and Allergy Procedure the first survey (June 2025) was undertaken with all in-patients. A month (July 2025) after the introduction of a 'Patient food and drink book' orientation session were delivered face-to-face within 48 hrs by a MSc dietetic student for all new admissions, the second survey was undertaken. The orientation and surveys supported patients to minimise misunderstanding and for inclusion, as some patients had learning disabilities. Data was manually entered and analysed using Google Form. The data presented here is focused on the allergy awareness section: patients' knowledge of food allergies, awareness of the 14 major allergens, and recall of any allergy-related information or materials (e.g., menu, food and drink book) available or provided during their stay. Patient consent was obtained and all data was anonymised for confidentiality. Approved consent from Caldicott Guardian of the hospital was obtained and ethical approval was not required as this was a service evaluation.

**Results:**

Table 1 Patients' familiarity with food allergies.

| | 1st survey (June) | 2nd survey* (July) |
|---|---|---|
| **Number of patients** | 78.5% (n=11/14) | 89% (n=8/9) |
| **Reported an allergy** | 7% | 0% |
| **Asked you about any food allergies you may have?** | 71% | 100% |
| **Did they know who to ask about food allergies?** | 71% | 100% |
| **Did they know how many food allergens there are in the UK?** | 7% | 75% |

* all new admissions patients were include

In the first survey (June 2025) 14% (n=2/14) declined, and 7% (n=1/14) was unwell. In the second survey only 11% (n=1/9) declined.

**Discussion:**

The new 'Patient food and drink book' orientation session with patients on admission supports their knowledge and awareness of food allergens. In addition only one patient reports an allergy from both cohorts. Although the knowledge about the 14 allergens increased it was still not 100%, so it is possible they feel this does not apply to them. Furthermore, the overall sample size was limiting.

**Conclusion:** This service evaluation provides an insight into patients' familiarity with food allergens and how the 'Patient food and drink book' orientation session can be used to improve their awareness and potentially improves their hospital experience. Further research is needed to have a better understanding of patients and public knowledge with regards to allergies.

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**Development and implementation of a food allergy procedure in a rehabilitation hospital**

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**Background:** Allergies in the United Kingdom (UK) are rising for both paediatric and adults hospital admissions, between 1998-2018 more than 30% of anaphylaxis cases were food allergies(1), adding to the demands on the national healthcare system (NHS). Dietitians play a crucial role in developing and implementing dietetic-led catering models for food allergies. The UK legislation requires all food services and nutritional providers, including the NHS, to provide information about the presence of any of the 14 specified allergens in food and nutritional items served to patients, staff or visitors(2). It is vital that information relating to food allergies is collected and communicated as quickly as possible to relevant staff to ensure patient safety(2). The aim was the development and implementation of the 'Nutrition and Allergy Procedure'.
**Methods:** Mixed method approach used by the specialist dietitian nurse ward manager to develop a 'Nutrition and Allergy Procedure'. Consent was obtained from patients and staff to complete face-to-face scoping surveys in Jan 2025 to inform the procedure content. The patient survey considered patient food allergy status, confidence in the food service, and knowledge of whom to ask about food allergies. The staff survey explored their practices and communication related to food allergies. The final procedure was approved late Jan 2025 and formed the basis of two nurse training days (29 Jan and 14 May), and an allergy awareness event for both staff and patients (29 May). A second staff survey (face-to-face and via emails) was circulated post-launch to gauge allergy knowledge. Allergy identification was collected from the catering list over 8 months (Jan to Aug). Data collected was stored in password protected Microsoft Excel sheets, and analysed using descriptive analysis. Approved consent from hospital Caldicott Guardian hospital was obtained and ethical approval was not required as this was a service development, implementation and evaluation.
**Results:** **Table 1.** Scoping survey with patients (adults living with HIV, homeless and/or detoxing) and staff

| Patient (n=13/15) | | | Staff* (n=5) | | | |
|---|---|---|---|---|---|---|
| Reported allergy | Confidence in service | Who to speak to about allergy | Who to speak to about allergy | Inform catering | Inform dietitian | Catering list |
| 0% | 100% | 23% | 40% | 60% | 20% | 20% |

*Five hospital stakeholders (including chef, host, nurses, healthcare assistants)

**Table 2.** Post-launch survey for staff (n=17/71, 24%)

| Catering staff* (3/71) | | | | | Clinical staff (14/71) | | | |
|---|---|---|---|---|---|---|---|---|
| Allergy training | Aware of 14 allergens | Allergy protocol awareness | Aware if cross-contamination | Served first procedure | Allergy training | Aware of 14 allergens | Identified 14 allergens | Aware of the catering list |
| 67% | 100% | 100% | 100% | 100% | 50% | 57% | 86% | 21% |

* Three out of four catering staff (2 chefs and 2 hosts).

**Table 3.** Allergies identified on the catering list over 8 months

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug |
|---|---|---|---|---|---|---|---|
| 16% | 15% | 19% | 19% | 38% | 24% | 0% | 0% |

**Discussion:** The scoping surveys highlighted issues on communication and lack of staff knowledge in allergy procedures, possibly because there was no specific allergy procedure. This helped focus the information for the procedure development. The post-launch results highlight the need for more awareness of food allergens for clinical staff. Staff participation was limited (24%), perhaps advertising the survey better, allowing more time for it to be conducted and carrying it out in person could boost participation. Three out of four catering staff participated, completing the surveys face-to-face. The catering staff had good knowledge of food allergens protocols, precautions with cross contamination, and knew procedures to identify patients with allergies in the catering list. The catering list showed allergy identification increased in May, possibly linked to the launch period or due to the patients admitted during that time.
**Conclusion:** The 'Nutrition and Allergy Procedure' implementation improved the knowledge of clinical staff and identification of allergies. Catering staff demonstrated they had up-to-date training and experience with managing allergies. Ongoing knowledge training programs for clinical and kitchen staff are crucial for implementing this change(3). Three, six and twelve months audits are planned to support change.

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**Hospital meal provision and adverse reactions to food: a mixed method approach exploring patient experience.**

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**Background:** Adverse food reactions refers to any abnormal clinical response to an ingested food that can be immune-mediated (IgE or non-IgE) or non-immune, such as food intolerances. Prevalence of self-reported adverse reactions to food is reported as 36%(1). This presents significant challenges to inpatient settings and can lead to safety risks from adverse reactions and inadequate nutrition, potentially delaying recovery and extending hospital stays. While regulatory bodies have reported gradual improvements in hospital food quality(2), there is limited understanding of patient experience around food provision, especially amongst those with adverse food reactions. This study investigated the experience of food provision in hospitalised patients with an adverse reaction to food(s), exploring their satisfaction and gaps in current catering practices.

**Method:** Inpatients in an acute hospital with an adverse reaction to food, were surveyed about their experience of food provision during their hospital stay. Patients were identified via the electronic patient record system. Those who were not cognitively intact, unable to complete the questionnaire due to clinical status or were being enterally or parentally fed were excluded from the study. Ethical approval was granted from Manchester Metropolitan Research Ethics Committee (Project ID: 64744). Analysis of quantitative data used statistical Package for the Social Sciences (SPSS) version 29.0. Thematic analysis was used for the qualitative data.

**Results:** During the study period (3 months), 52 patients reported having an adverse reaction to food. Of these, 30 patients participated (70% female), 19 were excluded and 3 declined. Overall, participants with a formal diagnosis of an adverse reaction to food had a more negative food provision experience, as did those who reacted to more than one food (*$p = 0.023$ and $p = 0.02$ respectively).* There was no significant difference in catering experience between IgE and non-IgE mediated adverse reactions ($P > 0.05$). Concerningly, 37% of respondents couldn't always find any suitable food and 20% received food containing their causative food. Participants who perceived staff as having little or no knowledge of their adverse reactions to food had a more negative experience than those who perceived staff as knowledgeable (*$p = 0.003$)*. When asked how the food catering system could be improved for people with adverse reactions to food, three themes were identified: "increase variety of meals", "clear labelling on menu" and "increase staff training and staff knowledge".

**Discussion:** The predominance of female participants may reflect a high identification rate within electronic records or greater survey response among women. Further results indicate a formally diagnosed adverse food reaction is associated with gaps in food meal provision, resulting in a more negative experience during hospital stays. This suggests current catering processes may lack flexibility for complex dietary needs and emphasises a potential clinical risk, as 20% of participants reported receiving their causative food while in hospital. Additionally, negative experiences were linked to perceptions of staff knowledge, indicating importance of communication and training within hospitals.

**Conclusion:** By having a patient-centred focus, this study has identified new findings on the catering experience of patients with an adverse reaction to food when in hospital. The results highlight a lack of safe and equitable care and provides a stepping stone for future investigation to address disparities in care for these patients.

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# Food Services

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#BDAResearch

**Pilot evaluation of replacing a bulk-cooked evening meal with an à la carte menu (jacket potato, sandwich, or salad) in a large acute hospital with review of impact on cost, patient satisfaction and nutritional provision.**

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**Background:** Providing a choice of suitable hospital meals is essential to support good nutrition. A successful catering service will achieve this in a cost-effective manner, whilst meeting required nutritional standards. The aim of this service evaluation was to assess the impact of a menu change from bulk evening meals to a 'lite bites' menu for a 3-month pilot, outcomes included cost, ability to meet dietary needs, compliance with food standards (1)(2), staff and patient feedback, including ability to meet patient expectations and patient safety.

**Methods:** Ethical approval was not required. A pilot 'lite bite' evening meal menu (jacket potato with fillings/ sandwich or salads) replaced hot meals for three months (Aug–Nov 2024) on five adult wards, specialties included: gastroenterology/hepatology, thoracic surgery, elderly care, cardiology, trauma & orthopedics (130 beds). A la carte hot plated meals were available if the lite bites menu was unsuitable. Patient feedback was collected via questionnaire, staff feedback via Microsoft Forms survey. Weekly uptake and cost data from Symbiotix were reviewed by the working group, and nutrition-related patient safety incidents monitored manually via DATIX. Assessment of compliance with Digest assessment checklist was completed by the food service dietitian.

**Results:** Jacket potatoes were popular (38–58% of weekly orders; 9/34 patients cited it as a favourite), whereas staff feedback highlighted menu repetition (53%). Use of hot plated meals rose from 10.6% to 23.2%, offsetting baseline cost savings, resulting in no net financial change (see table 1). The pilot met Digest capacity requirements but failed to comply with the Digest checklist (missing choice of two vegetables) (1). No significant change in patient safety incidents was observed.

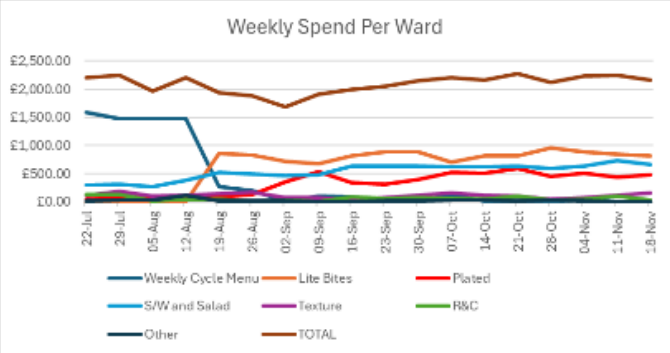


**Table 1: Weekly spend/ward during 'Lite Bite' trial:**

**Discussion:** Patients welcomed jacket potatoes and fillings but missed flexibility of bulk hot meal provision. Staff reported menu repetition as problematic. Challenges included meeting Digest vegetable standards (1), especially for easy-to-chew diets, and meeting the needs of patient with more complex dietary restrictions, which led to increased hot plated meal use. Packaging for the lite bite's menu also increased plastic use, requiring attention if the pilot were to be considered for permanent implementation.

**Conclusion:** Jacket potatoes and fillings were a well-liked option, but the removal of cooked meal options did not result in cost saving and challenged ability to meet patient needs & comply with Digest Standards. Staff feedback was not positive.

**References:**

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## Evaluation of production and plate food waste from low carbon emissions menus in a rehabilitation hospital

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**Background:** Food waste has become a worldwide concern, where the National Health Service's (NHS) hospital catering service is estimated to contribute 3% of the total NHS Carbon Footprint Plus [(1)]. Food waste is incurred during procurement, preparation, delivery and in its service with the intent to be eaten but ending up wasted[(2)]. Large efforts are being made by hospitals to reduce food waste as they play a crucial role in connecting health with environmental sustainability[(2)]. Here we focus on plate (served food that remains uneaten by patients), spoilage waste and cook fresh production waste[(2)]. Food not eaten may indicate poor food consumption and can lead to increased risk of malnutrition due to unmet nutritional requirements in nutritionally vulnerable patients[(2)]. Food thrown away due to spoilage (damaged or out of date) or production waste (thrown away during the preparation and cooking process) can have a negative environmental impact and be very costly[(2)]. The aim of this catering service evaluation was to investigate the amount of food waste generated by the wards and kitchen between summer and winter menus and to assess whether menu adjustments are needed to reduce food waste and associated carbon footprint.
**Method:** The rehabilitation hospital serves (28 beds); this includes continental breakfast, three-week cycle menus for cook-fresh lunch, cook-freeze dinner as well as snacks. Food waste was collected between January and December 2024, twice a day form the kitchen (spoilage and production waste) and wards (uneaten plate waste). Waste was measured using electronic scales, in kilograms (kg) and categorized by location (kitchen or wards). The morning ward collection included dinner and breakfast and the afternoon collection represented lunch and snacks. Data was collected and stored using Microsoft Excel sheets. The data was cleaned and six months were selected, excluding months where weight values were missing, to compare waste between the Summer (August- October 2024) and Winter (April, May and November 2024) menus. Data was analysed using descriptive analysis and the carbon footprint was calculated manually (1kg x 2.5 factor). Ethical approval was not sought as it was not required for a service evaluation.
**Results:** **Table 1.** Total food waste at a rehabilitation center over six months

| | *Kitchen* | *William ward* | *Catherine ward* | *Total* | *Per month* |
|---|---|---|---|---|---|
| ***Weight (kg)*** | 271.05 | 340.72 | 339.30 | 951.07 | 158.51 |
| ***Carbon footprint ($KgCO_2e$)*** | 688.5 | 865.4 | 861.8 | 2415.7 | 402.6 |

**Table 2.** Compares food waste of the Summer and Winter menu

| *Three week cycle menus* | *Summer* | *Per day* | *Winter* | *Per day* |
|---|---|---|---|---|
| ***Weight (kg)*** | 559.53 | 7.16 | 391.54 | 4.85 |
| ***Carbon footprint ($KgCO_2e$)*** | 1421.2 | 18.2 | 994.5 | 12.3 |

Specific days with high food waste from the summer menu were Sunday roast of week 2 (average 9.42kg; 23.9 $KgCO_2e$) and meat free Mondays of week 3 (average 8.64kg; 21.9 $KgCO_2e$). In the winter menu they were Monday Quorn Chilli and Chicken massaman curry (on average 7.58kg; 19.3 $KgCO_2e$), and Tuesday Fish pie and macaroni (on average 6.73kg; 17.1 $KgCO_2e$) of week 1 and Friday Fish and chips or Vegan burger (on average 6.17kg; 15.7 $KgCO_2e$) of week 2.
**Discussion:** The low-carbon emission winter menu provided minimal food waste and reduced carbon emissions as a whole[(3)], weekly and daily. Several factors may have contributed; including food portion size, as well as chefs' familiarity with the new low-carbon emission summer menus, based primarily on NHS England recipes. The highest daily food waste levels observed on both menus included roast meals, meat free days and fish or pasta days. The NHS England Net zero team has already reported on NHS food waste from roast meals, but we are learning about meat free days and other sustainable changes.
**Conclusion:** The low-carbon emission winter menu reduced food waste and carbon emissions, whereas the low-carbon emission summer menu and some specific days needed adjustments to optimise menu planning and minimise waste while maintaining nutritional quality and patient choice.
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**A pilot study to evaluate the accuracy of artificial intelligence (AI) tools to collate nutritional data from supermarket food labels.**

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**Background:** For dietitians working in varied areas such as clinical, food service, industry and policy making, it is essential to keep up to date with the nutritional content of foods available in supermarkets. This used to involve physically reviewing labels in-store or viewing online shopping sites. Now with freely available artificial intelligence (AI) tools, it is possible to have this data automatically collated. However, there is uncertainty around the accuracy of the AI data output [(1)]. The aim of this pilot study is to evaluate the use of freely available AI tools to collate labelled nutritional information and compare it against actual supermarket labels.
**Methods:** Two AI tools, Copilot [(2)] and Chat GPT [(3)], were used to search and collate nutritional data online (per 100g: energy (kcal); fat (g); saturated fat (g); carbohydrate (g); sugars(g); protein (g); fibre (g); salt (g)) to the nearest 0.1 decimal place (energy to the nearest whole number) from 5 random supermarkets with online shopping sites (Asda, M&S, Sainsbury's, Tesco, Waitrose) for 5 named ready meals (Lasagne; Cottage Pie; Chicken Tikka Masala, Macaroni Cheese; Sweet & Sour Chicken). Standardised search phrases (containing terms: current; core range; own brand) were used for both AI tools. AI data was compared against the nutritional data recorded from the physical food labels from each of the supermarkets and assessed to either 'match' (100% match), be 'within 5%' (±5% of the value), or 'no-match' (>5% difference).Ethics approval was not required as the study does not involve participants or use of personal data.

**Results:** Overall, there was little agreement between the online AI tools and supermarket label data (Table 1). Data that matched or ±5% was similar for both AI tools (Copilot 20%; ChatGPT 26%). ChatGPT reported 36% of no data available. There was variation within supermarkets of matching data (Copilot 5-23%; ChatGPT 0-55%). There was only 1 product that matched all nutritional datapoints (ChatGPT, Cottage Pie, M&S). In the output summary, Copilot noted that when data was not available *'estimates were made based on typical ingredients and similar products*'.

*Table 1: Summary of all datapoints (8 nutrients, 5 supermarkets, 5 meals)*

| AI tool and Supermarket Label | Copilot | ChatGPT |
|---|---|---|
| Match (100%) | 19 (9%) | 36 (18%) |
| Within 5% (±5%) | 21 (11%) | 17 (8%) |
| No Match (>5% difference) | 143 (72%) | 75 (38%) |
| No data | 17(8%) | 72 (36%) |

**Discussion:** We found two AI tools were similar in matching (±5%) approximately a quarter of the nutritional datapoints. However, the majority of data did not match or was not available. Some supermarkets had more matching data, and this may reflect if more data is available online. Copilot openly estimates data when it was not available, raising questions about where the data comes from, this was seen less in ChatGPT. Limitations such as AI estimating when no data was available should be highlighted. Further work is needed to learn how to best use AI tools, perhaps with less standardised requests and more adaptive prompts.

**Conclusion:** In this small pilot we found a lack of data to currently support the use of two freely available AI tools to collate supermarket label data. Only two AI tools were used and further research is required to reflect the accuracy of other free AI tools. We hope to expand this exploratory work and learn how to effectively integrate AI tools and nutrient data collection into our dietetic practice.

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# Gastroenterology

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#BDAResearch

## Efficiency and Engagement of a Digital Assessment Tool Used in Coeliac Disease: Retrospective Evaluation

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**Background:** An annual review provides the specialist Coeliac disease (CD) dietitian and service user the opportunity to monitor adherence to a gluten free diet[1]. In addition, screening for complications that may have an impact on long-term outcomes such as nutritional deficiencies, bone health as well as quality of life. However, due to limited clinic capacity and caseload volume, the demand is not always met[2]. This study aimed to evaluate an assessment digital virtual annual review tool (VAR) as an alternative method of reviewing clinically stable adults living with CD; by investigating the service user response rate and impact on dietetic time.
**Method:** This was a single center retrospective study including stable adult services users living with CD for more than 3 years waiting for their annual review. The service users received access to the assessment digital VAR through a secure link via Dr-Doctor software between 30th September 2022 and 30th March 2024. The innovative tool, developed by specialist CD dietitian expertise and published literature, assessed CD symptoms, GFD adherence, quality of life, service user satisfaction and preferred follow-up method. Demographic was grouped for age and ethnicity. The statistical test Chi squared analysed the relationship between the service user response rate and demographics with a p-value <0.05 observing significant difference. The median denoted time taken by a specialist CD dietitian to review the VAR, with outcomes presented as frequency and percentages. Ethical approval was obtained via local HEI, and information governance approval was received through local NHS trust procedures.
**Results:** Of 202 contacted, the majority (81.7%; n=165) of service users engaged with the digital VAR tool. The demographics did not influence response rate (table 1). The specialist CD dietitian required 14 minutes on average to triage a singular VAR tool. Following triage, 72.4% (n=102) did not require interim input prior to their routine annual review. Only 22% (n=31) were invited to a follow-up clinic appointment with the specialist CD dietitian to discuss symptoms or GF dietary adherence. Service users mainly preferred the VAR tool for future dietitian annual reviews (55%, n=78).

Table 1: Sample Description and Engagement.

| **Category** | **Age (years)** | | | **Biological sex** | | **Ethnicity** | | | **Time since diagnosis (years)** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 18-40 | 41-62 | >63 | Male | Female | White British | Non-white British | Prefer not to say | 3-10 | 11-14 | 15+ |
| **Responded*** | 36 | 71 | 34 | 40 | 101 | 82 | 53 | 6 | 84 | 20 | 37 |
| **No response** | 16 | 14 | 7 | 13 | 24 | 16 | 19 | 2 | 28 | 3 | 6 |
| **P value** | 0.11 | | | 0.42 | | 0.27 | | | 0.20 | | |

*24 excluded due to non-consent for information to be used in research.

**Discussion:** To the authors knowledge there are limited studies that include services users living with CD, exploring the response rate and dietetic service impact of an alternative digital review method. The results indicate high engagement with the digital review approach, regardless of demographics, contrasting with findings from existing research[3]. Service user preferences further reinforce the positive findings with over half choosing to be re-reviewed digitally in future. The time saved when triaging for the specialist CD dietitian allows for prioritisation of clinic slots for non-clinically stable adults living with CD.
**Conclusion:** A digital method of assessment may provide a more efficient way of annually reviewing clinically stable adults living with CD, meeting current UK recommended standards of care. Finally, it may also be a clinically useful assessment tool for both dietitians and other clinicians in the field of long-term conditions.

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## The Role of Diet in Modulating the Gut Microbiome During and After Antibiotic Treatment: A Scoping Review

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**Background:** The gut microbiome plays a crucial role in human health, and antibiotics can significantly disrupt its composition, leading to dysbiosis, reduced microbial diversity, and increased susceptibility to disease (1). Dietary interventions have emerged as a potential strategy to mitigate antibiotic-induced disruptions, although evidence supporting specific dietary recommendations remains unclear (2). The aim of this scoping review was to explore and map the literature on dietary influences on the gut microbiome during and after antibiotic use, highlighting dietary compounds associated with microbiome recovery.

**Methods:** This scoping literature review systematically searched the PubMed, Web of Science, and Scopus databases using predefined inclusion and exclusion criteria to identify relevant studies published between 2015 and 2025 that incorporated omics techniques. From 257 records retrieved, 250 were excluded after screening, and seven studies met the inclusion criteria for this review. The Boolean string used was ((("gut microbiome") OR ("gut microbiota")) AND (diet) AND ((("antibiotic use") OR (antibiotics) OR (antimicrobial)) AND ((("microbial recovery") OR ("microbial resilience")). Studies were screened for eligibility, data were extracted and synthesised narratively, and thematic analysis was applied to identify dietary patterns and components influencing microbiome recovery. Ethical approval was not required as this review analysed previously published data.

**Results:** The review identified consistent evidence that, when broad-spectrum antibiotics were used, a high-fibre diet, notably those rich in microbiota-accessible carbohydrates (MACs), supports gut microbiota recovery by enhancing short-chain fatty acid (SCFA) production and microbial diversity. In contrast, Western dietary patterns, high-fat diets and low fibre intake were linked to decreased microbial richness, increased pathogenic bacteria and prolonged dysbiosis following antibiotic use.

**Discussion:** These findings align with current evidence suggesting that dietary composition plays a critical role in modulating the gut microbiome, particularly during periods of disruption such as antibiotic use (2) Diets rich in fibre and microbial-accessible carbohydrates appear to promote resilience and faster microbial recovery, while Western dietary patterns, high-fat diets, and low fibre intake may exacerbate dysbiosis. This reinforces the growing consensus that nutrition should be considered a key factor in supporting gut health during and after antibiotic treatment.

**Conclusion:** This scoping review found that evidence from animal models indicates that high dietary fibre intake, administered during and after antibiotic treatment, supports gut microbiome recovery. Regardless of the antibacterial used, fibre contributes to microbial restoration across both phases of antibiotic exposure. However, human studies are still needed to determine which fibre types and doses provide the greatest benefits. Integrating these findings into dietetic practice should be carefully taken into account, considering individual variability, fibre tolerance, gut health, and potential food–drug interactions to promote microbiota recovery following antibiotic therapy.

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## Evaluating NHS Community-Based Dietitian-Led Clinics for Irritable Bowel Syndrome (IBS): A Service Evaluation

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**Background:** Community-based dietitians are well-positioned to deliver personalised care for patients with IBS. Following diagnosis, dietetic assessments involve detailed clinical and dietary histories, symptom evaluation, and tailored care planning [1]. A pilot programme was launched to provide expert dietary management through NHS-funded, dietitian-led IBS clinics in community settings, aligned with national guidelines [2].
**Aim:** To evaluate the impact of specialist dietitian input on IBS symptom severity in patients attending dedicated community-based IBS clinics.
**Methods:** Monthly dietitian-led IBS clinics were conducted over 12 months in 2023. Patients *(n* = 47 patient referrals) completed a validated symptom questionnaire, at initial and follow-up appointments, based on the Gastrointestinal Symptom Rating Scale for IBS (GSRS-IBS) [3]. Eleven gastrointestinal symptoms were rated on a 4-point Likert scale (1 = none to 4 = severe). Incomplete questionnaires were excluded. A two-way repeated measures ANOVA assessed changes in mean symptom scores over time. This study is registered as a health service evaluation and adheres to ethical standards for service improvement, uses anonymous data, and does not require formal ethical approval under HRA guidance.
**Results:** Of 47 patients, 24 completed both initial and follow-up assessments. Follow-up occurred 2–3 months post-initial appointment. The ANOVA revealed a significant reduction in symptom severity across all gastrointestinal symptoms except lethargy which increased: *F(1,10) = 12.57, p<0.01, MSerror = 0.0552*. Figure 1 illustrates the changes in mean symptom scores at follow-up.
**Discussion:** The evaluation demonstrated statistically significant improvements in IBS symptoms following specialist dietitian input. Despite the limited sample size, findings support current clinical guidelines recommending dietitian-led interventions for IBS management [2]. The use of ANOVA was appropriate given the data's normal distribution and homogeneity of variance. While Likert scales are ordinal, their limited range and distribution justified parametric analysis and the use of mean values. Future analyses may explore aligned rank transformation as a more suitable method for ordinal data.

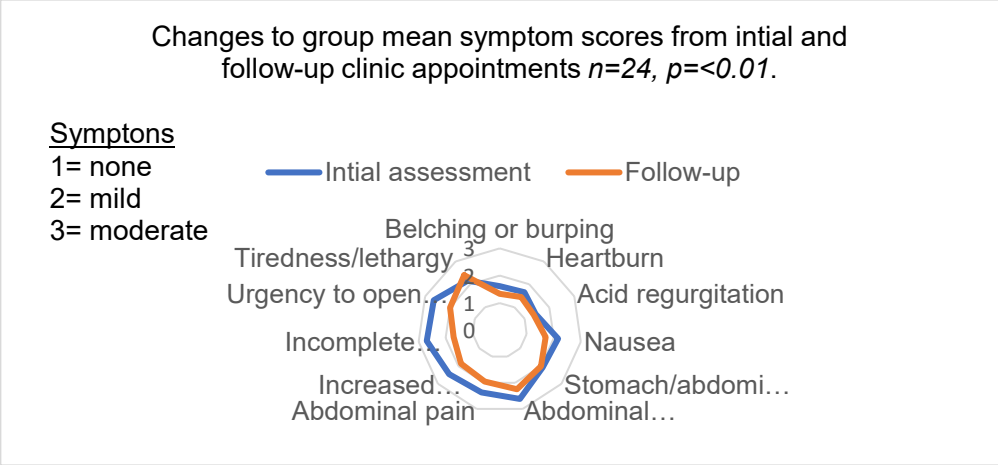


Figure 1: Changes in mean symptom scores from initial to follow-up appointments (*n* = 24).

**Conclusion:** Specialist dietitian-led IBS clinics in community settings significantly improved patient-reported symptoms. These findings provide compelling evidence for the integration of dedicated dietetic services into routine IBS care pathways. Expanding this model and conducting larger-scale evaluations could enhance service delivery and patient outcomes across the NHS.

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## Feasibility randomised controlled trial of a novel dietary pattern (The 8x5 Diet) for adults living with Bile Acid Diarrhoea

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**Background:** Symptoms in bile acid diarrhoea (BAD) are more debilitating than those in diarrhoea-predominant irritable bowel syndrome.(1) There is a paucity of evidence on food, nutrition and diets,(2, 3) and randomised controlled trials (RCTs) are needed.(4) We aimed to test the feasibility of conducting an RCT of a novel intervention (The 8x5 Diet) to inform the design of a definitive, larger RCT.
**Methods:** A nationwide, remote, parallel group feasibility RCT, with a sequential explanatory qualitative design. A protocol was published.(5) UK adults with $^{75}$selenium homocholic acid taurine-confirmed primary or post-cholecystectomy BAD and ongoing diarrhoea were randomly 1:1 allocated to The 8x5 Diet or usual care for 8 weeks following an up to two-week baseline period. We aimed to recruit 67 participants based on published guidance via online advertising platforms using self-selection sampling. A researcher not involved in the trial generated the allocation sequence via an online randomisation service (sealed envelope) using unstratified permuted block randomisation. The 8x5 Diet was dietitian-delivered in two sessions three weeks apart on Zoom. Bespoke digital resources were used, informed by research findings(2) and focus group discussions in adults living with BAD and UK dietitians. Feasibility and secondary data collected included the Diet Satisfaction Score (DSS)(6), Health Diet Index (HDI)(7), weighed 7-day food records and semi-structured interviews. Data were analysed in SPSS Statistics 28 (IBM, USA) and NVivo 12 (Lumivero, USA). Inferential statistics were not performed as this was a feasibility study. The University of Manchester Research Ethics Committee approval: 2024-19094-33261. Trial registration number: NCT06259396. Protocol amendments included removal of a self-screening eligibility questionnaire to increase engagement with the research team.
**Results:** From 02/04/2024 to 31/01/2025, of 131 enquiries, 41 individuals were eligibility assessed on Zoom, 29 consented (71%, 95% CI: 55 to 84) and 26 participants were recruited (63%, 95% CI: 47 to 78). Twenty-three participants were randomised (56%, 95% CI: 70 to 98), median age 49 years (IQR: 39-59), 20 (87%) female, 21 (91%) white British. Retention at 8 weeks in The 8x5 Diet and control groups were 67% (8 out of 12, 95% CI: 34 to 90) and 82% (9 out of 11, 95% CI: 48 to 98), respectively. Questionnaire data completion was 100%. Mean DSS was 3.9/5 (95% CI: 3.4 to 4.4). Median HDI score in The 8x5 Diet group increased from 62% (IQR: 53-71) to 71% (IQR: 66-86) at week 8 vs. in controls: 52% (IQR: 47-70) to 50% (IQR: 46-62). Themes supported quantitative outcomes including relief from BAD in 75% (6 out of 8, 95% CI: 35 to 97) of participants in The 8x5 Diet group: (1) study acceptability: remote appointments, the researcher-patient relationship, and trial duration; disablers: working away from home, weighing food; (2) 'how I made the trial work for me': dedication, habit formation, intervention testing; (3) liberty: being heard, confidence with food, less dietary restriction, a more varied diet. Low nutrient intakes were found in both groups.
**Discussion:** Study design hindered progression to a definitive, larger RCT. Challenges included advertising and low engagement rates. Small sample size limited estimating certainty on whether the higher retention rate in the control group compared to the intervention group was due to the intervention. It also limited insight on intervention effect on BAD and nutrient intakes. Comparative RCTs are lacking. Sampling bias, participant characteristics including co-morbidities, and self-reported outcomes seriously impact on external validity.
**Conclusion:** The study obtained insufficient participants, which limited analysis and prevented RCT progression. Future remote study design issues to address to estimate the effect of The 8x5 Diet on BAD include finding ways to increase willingness to participate and to identify further recruitment pathways.

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**Evaluating Surgical, Nutritional, and Functional Outcomes in Patients with or without a Jejunostomy Following Oesophageal Cancer Resection: A Service Evaluation**

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**Background:** Oesophageal cancer (OC) significantly impacts nutritional status, resulting in a reduced survival rate (1). Postoperative jejunostomy tube feeding (JEJ) is widely used to optimise postoperative nutrition, with 56% of upper gastrointestinal (UGI) units adopting it routinely (2). This service evaluation aimed to review surgical, nutritional, and functional outcomes in patients undergoing oesophagectomy for OC from January 2023 to January 2024, comparing those with and without JEJ (No-JEJ).

**Methods:** The retrospective evaluation screened 147 patients from the UGI records of a teaching hospital, of which only 48 patients met the inclusion criteria. Ethical approval was not required as this was a service evaluation; however, it was registered on the Trust's integrated governance system (Ulysses) and was subsequently approved. Data collected included demographics, postoperative percentage weight loss (%WL) at 3, 6, 9, and 12 months, postoperative complications, length of hospital stay (LoS), and quality of life (QoL) scores, rated from 1 to 4, using a validated questionnaire. Statistical analysis performed using SPSS (v29) utilised non-parametric Mann-Whitney U, independent t-tests, and Fisher's exact tests, with correlation and regression exploring associations between variables, with a significance level of $p<0.05$.

**Results:** Among 48 patients, 43 (89.6%) had a JEJ, with 37.2% undergoing left thoracoabdominal oesophagectomy and 30.2% undergoing minimally invasive oesophagectomy. The JEJ group experienced a greater median %WL throughout the post-operative period compared to the No-JEJ group, with 11.0% vs 3.2% (n=26 vs n=*2*) at 9 months. By 12 months, both groups showed weight regain (- % WL). Despite varying n, intraoperative JEJ insertion was associated with a median 14.0% vs 5.0% WL at 6 months (*p=0.03*), 13.0 vs 1.0 %WL at 9 months (*p=0.01),* and 15.0 vs 0.0 %WL at 12 months (*p=0.03)* compared to preoperative JEJ insertion. Additionally, comorbidities such as type 2 diabetes predicted greater %WL at 6 months (n=*40, B= –12.1, p=0.01*) and 12 months (*n=28, B = –17.1, p=0.008)*, whereas JEJ feeding tube use was not predictive.
Of the 35 responders to the QoL questionnaire (JEJ n=32, No-JEJ n=3), the median rating scores for reflux issues were greater in the No-JEJ group (*p=0.04*), whereas the median score for psychological burden was greater in the JEJ group (*p=0.04).* Furthermore, postoperative adjuvant treatment significantly increased the median rating scores for 'difficulty talking' (*p=0.04*) and 'problems with drinking liquids' (*p=0.019*). Surgically, longer LoS in the JEJ group (12 vs 8 days) positively correlated with feeding duration (*n=43, r=0.341, p=0.03*). Moreover, JEJ patients had higher postoperative complication rates: cardiac issues (*p=0.02),* anastomotic leaks (*p<0.001*), and respiratory complications (*p=0.02*)

**Discussion:** Despite group imbalance (43 vs 5) being a significant limitation, the trends between the groups show greater %WL, post-operative complications, and LoS in the JEJ group, which probably reflects disease progression and surgical complexity rather than the JEJ-related effects. The findings, therefore, suggest that a risk-based approach to JEJ use is necessary, particularly as early oral feeding becomes more feasible in minimally invasive surgeries. (3).

**Conclusion:** The outcomes suggest that the routine use of jejunostomy after oesophagectomy should be reconsidered, and the decision on jejunostomy feeding should be risk-stratified, guided by the baseline nutritional status, comorbidities and surgical complexity.

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## A cross-sectional survey investigating motivators and barriers to UK probiotic yoghurt consumption

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**Background:** Probiotic yoghurt consumption is associated with improved gut, immune, and metabolic health and reduced disease risk[1]. Existing studies exploring probiotic use indicate 33% of the UK population are current probiotic users[2], yet despite increasing consumer interest and product availability, little is known about the factors specifically influencing probiotic yoghurt consumption. The aim of this research was to explore the motivators and barriers to probiotic yoghurt consumption among UK adults in 2024, to inform public health messaging and dietary guidance.
**Methods:** A quantitative cross-sectional survey was conducted in July–August 2024 using a self-administered online questionnaire via Qualtrics XM software, current version during the period of data collection. UK adults aged 18 years and above were recruited through convenience and snowball sampling. Participants responded to multiple-choice questions capturing sociodemographic data, consumption frequency, attitudes to probiotic dairy and information source, alongside validated scales assessing health-consciousness, knowledge of probiotics, and perceived benefits and barriers adapted to probiotic yoghurt. Additional free text responses determining probiotic knowledge were deductively coded into categories cited by ≥5% of participants for quantitative data analysis. Data were analysed using IBM SPSS Statistics version 28 employing descriptive statistics to assess consumption patterns and perceived barriers, Chi-square tests to examine associations between consumption and sociodemographic variables, one-way ANOVA testing the interaction between consumer groups and mean knowledge, health consciousness, and perceived benefit scores as well as comparing mean consumption, knowledge, and attitude scores across information source categories, and Spearman's rank correlation assessing the association between attitudes and consumption frequency, with statistical significance set at $p \leq 0.05$. Ethical approval was granted by Cardiff Metropolitan University's School of Sport and Health Sciences Research Ethics Committee (Ref: UG-9637).
**Results:** Among the 71 respondents (69% female; 53.5% aged 25-34 years) consumption was high, with 88.7% (n=63) reporting probiotic yoghurt use and 45.1% (n=32) frequent intake, classified as at least once a week. Consumption was significantly associated with gender ($\chi^2$=9.947, $p$=0.041) and income ($\chi^2$=20.114, $p$=0.028). While general probiotic knowledge was high with 72%-76% (n=51-54) identifying that probiotics support gut function, contain live bacteria and should be consumed daily, detailed understanding of optimum dosage and foods containing probiotics was limited (14% n=10, 24% n=17 respectively). Belief that probiotic yoghurt improves health was the strongest predictor of consumption ($r_s$=0.637, $p$<0.001), whereas cost, scepticism about health claims, disliking the taste and perceived lack of necessity were key barriers. The source of information significantly impacted belief in the benefit ($F(4)$=2.95, $p$=0.027) and necessity of probiotics ($F(4)$=3.20, $p$=0.019), with health professional advice associated with higher agreement with those beliefs (M=4.00, SD=0.00; M=3.50, SD=0.71 respectively [4-point Likert scale]), as well as greater knowledge (M=6.00/8.00, SD=1.41), and consumption (M=2.50/3.00, SD=0.71). Conversely, food industry and internet sources of probiotic information were linked to reduced belief in benefits (M=1.75, SD=0.98; M=3.00, SD=.), knowledge (M=5.25, SD=0.96; M=4.00, SD=.) and consumption (both sources M=2.00, SD=0.82).
**Discussion:** These findings support previous research highlighting perceived benefits as primary motivators of probiotic use[2], which this research found increases willingness to overcome barriers such as disliking taste and cost. Despite relatively high awareness, misconceptions persist particularly regarding optimum dosage and recommended usage, highlighting vulnerability to marketing claims such that products with greater dosage provide more value. Mistrust in marketing claims and cost influenced frequency of consumption but did not fully deter use. Healthcare professional guidance was linked to greater trust, knowledge, and uptake.
**Conclusion:** UK probiotic yoghurt consumption is driven by perceived health benefits and these findings suggest dietitians, as health professionals who are experts in nutrition, are best placed to promote the general population's functional knowledge of probiotic yoghurt and increase informed use to support health maintenance.

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# Healthy ageing, frailty and older adults

## Supported by Older People Specialist Group

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#BDAResearch

**A service evaluation of dietitian-led nutritional interventions for people living with dementia at risk of malnutrition.**

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**Background:** People living with dementia often experience cognitive and physical changes that affect eating and drinking, which can lead to malnutrition. Dietitians are crucial in addressing the barriers to optimal nutrition and supporting continued independence. Evidence on the effectiveness of nutritional interventions for people living with dementia is mixed [(1)], but there is limited literature on dietitian-led interventions. This NIHR research internship project aimed to evaluate a dietitian-led nutrition support intervention for people living with dementia focusing on the impact on body weight change, plus patient and carer opinions, confidence and satisfaction with the intervention.
**Methods:** This mixed-methods service evaluation involved retrospective case note reviews of 92 eligible participants living with dementia who were seen by a dietitian at least once between January 2021 and February 2023. Descriptive statistics were conducted in Excel and used to analyse demographic, anthropometric, clinical, and administrative data. The participants who were still alive, were not in a care home or admitted to hospital, were eligible to complete a bespoke survey (n=17) to collect quantitative and qualitative data regarding confidence and satisfaction with the dietetic service. The primary outcome was total body weight change. Ethical approval was obtained from the University of Sheffield (#051228).
**Results:** Participants in the case note review included 92 people living with dementia, including 68 females (n/N; 74%), 61 aged >80 years (n/N; 66%) and 57 living with Alzheimer's disease (n/N; 62%). The average percentage weight loss at the time of referral was -4.3%. Following intervention by a dietitian, participants who were reviewed and had anthropometric measures taken (49/92; 53%), saw an average weight gain of +0.4%. Participants prescribed oral nutritional supplements (ONS) by the dietitian at initial assessment (32/92; 35%) increased their body weight by an average of +3.9%. Participants where ONS was prescribed after initially following a food first approach (12/92; 13%) experienced an average weight loss of -4.1%. Those not prescribed ONS (12/92; 13%) gained +1.9%. The most common reason for discharge from the dietitian was death or deterioration in condition (n/N; 45%). Thirty participants were eligible to complete the survey and 17 (n/N; 56%) responded, of whom 16 were carers. Most participants reported being very or completely satisfied with the dietetic care (n/N; 71%) and the main reported benefit was feeling reassured (n/N; 71%). However, only 29% reported increased confidence in dealing with nutrition challenges. Participants mostly (n/N; 59%) reported that they did not feel earlier dietitian input would have been helpful. Participant feedback included a desire for easier/quicker service access, their positive perceptions of ONS and that implementing advice could be challenging due to patient engagement with one participant stating they *"made limited progress and it has not made much impact because it does not fit the circumstances, my wife refuses things."*
**Discussion:** The findings indicate that dietitian-led interventions can effectively mitigate weight loss in people living with dementia. Prescribing oral nutritional supplements appears to have a positive impact on patient body weight change. However, as food first without ONS was effective for some participants, this indicates that a dietitian's clinical judgement is crucial. These findings are supported in other studies [(1-3)] including in a 12-week multi-disciplinary intervention involving dietetic input [(3)], where food first and ONS were used. Participants positive perceptions of ONS may reflect the relative ease of implementation with one participant commenting that it "*would have been better to have ready-made shakes initially instead of powdered shakes.*" More robust research is needed to determine the effectiveness of ONS for this cohort. Most patients are referred at a late stage of disease progression, which likely limits the impact of the interventions. Interestingly, survey participants did not feel earlier dietitian input would have been more helpful. While participant satisfaction with the service was high, improvements could be made to support patients living with dementia and their carers to increase confidence in nutritional interventions and further improve clinical outcomes.
**Conclusion:** Dietetic interventions can effectively address weight loss in people living with dementia, but improvements are indicated to strengthen clinical outcomes and increase carer confidence and satisfaction.

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**An exploratory study of the association between age, nutrition and the skin barrier**

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**Background:** The structure and function of the skin become progressively compromised with older age, which can lead to impaired wound healing and vulnerability to external stresses. Whilst some evidence shows that individual nutrients or dietary patterns may modify the disruption of barrier function homeostasis in ageing skin, much uncertainty remains[1]. This exploratory study therefore aimed to examine variations in skin characteristics across different age cohorts and assess their potential associations with diet.

**Methods:** This cross-sectional study used convenience sampling to recruit participants (n=41) across two sites, the University of Hertfordshire (UH), and Age UK Barnet. Sample size was determined by time, logistical and funding considerations. Participants were distributed across five age cohorts: 20-29, 30-39, 40-59, 60-70 and 80+. The study was fully compliant with all ethical standards set by the Declaration of Helsinki and received ethical approval from the UH Health, Science, Engineering and Technology Ethics Committee (Protocol: 0617 2025 Jan HSET). Eligible participants were sent an information sheet prior to enrolment. Data collection in the laboratory followed a standardised protocol: first weight, height, waist circumference, and body fat measurements were taken, then participants completed a demographic and health questionnaire and a validated graphic online food frequency questionnaire (eNutri, University of Reading, UK). Finally, skin characteristics were measured using non-invasive instruments; skin barrier function via trans epidermal water loss (TEWL), skin hydration, and stratum corneum cohesion via protein removed from stratum corneum. Data were analysed using IBM SPSS Statistics (Version 29), with correlation and General Linear Model (GLM) analyses. Non-parametric variables were transformed prior to analysis.

**Results:** 73% of participants were female and 83% were of white ethnic background. After controlling for body fat percentage, there was no significant association between age or gender and TEWL, stratum corneum hydration, and stratum corneum cohesion. There was a significant negative correlation between TEWL and body fat (p=.003) and body fat quartiles (p=.022), with the most significant variance between the lowest and highest body fat quartiles (p=.046). After controlling for body fat, fibre intake was significantly positively correlated with stratum corneum cohesion (p=.027) and hydration (p=.005), and long-chain omega-3 polyunsaturated fatty acid (LC n-3 PUFA) intake was significantly positively correlated with stratum corneum cohesion (p=.023).

**Discussion:** The findings suggest that the amount and deposition of body fat may modulate the effect of age on skin characteristics, especially TEWL, which suggests that higher adiposity may have a positive effect on skin barrier function. This hypothesis has been supported in previous studies investigating BMI and the skin barrier[2]. The significant association of higher fibre and LC n-3 PUFA intake with higher stratum corneum cohesion may indicate a potential role for these nutrients in supporting skin integrity, building on existing evidence showing beneficial effects of LC n-3 PUFA dietary supplementation in the treatment of inflammatory skin conditions and skin ulcers[3]. While preliminary, these findings suggest a possible influence of nutritional status and intake on age-related changes in skin function, warranting further investigation.

**Conclusion:** This exploratory study offers preliminary insights into the relationship between dietary intake and skin health. Further research with larger, adequately powered cross-sectional samples is needed to investigate these associations more robustly, including the effect of body fat on skin barrier function.

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## A Collaborative Pilot Study To Enhance Nutrition for Community Falls Prevention

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**Background** Falls are a major public health issue, costing the NHS £2.3 billion annually, disproportionately affecting older adults (1). Malnutrition, sarcopenia, and frailty, which increase with age, heighten falls risk but are preventable (2). Multifactorial assessments and interventions can reduce falls by 20-30% (3), however nutrition and hydration, which are key to muscle health, are seldom considered. The aim of this pilot was to enhance NHSCT community falls assessments with nutrition and hydration triggers, enabling early detection of malnutrition risk, whilst also empowering falls practitioners to provide timely advice on food-first fortifications and public health information on hydration & Vitamin D.

**Methods** Knowledge of the impact of nutrition and hydration on falls risk was scoped within the Trust Falls Team. Training on malnutrition, hydration, bone health, Vitamin D, frailty and muscle health was provided. The falls' screening tool was reviewed and updated with validated malnutrition screening, questions on fluid intake (i.e. a fluid restriction in place or achievement of the recommended 1600mls (F) - 2000mls (M) fluid per day) and Vitamin D supplement usage. A 7- month pilot of the revised falls screening tool was agreed for patients referred to the falls team. Fact sheets on Vitamin D (BDA), hydration in older adults (BDA) and Food First advice for the community setting (PHA), along with enhanced dietetic referral criteria for those with ≥2 falls in the past year, at high malnutrition risk, poor functional indicators, and frailty (Rockwood score ≤7) were agreed. Data was collated and analysed using descriptive statistics with Excel. Ethical approval was not required as this was a service improvement project, but health Trust approval was granted.

**Results:** Of those screened (n=166), mean age was 75, with an average of 6 falls annually, and a Rockwood frailty score of 5. 35% (n=40) were identified as at risk of malnutrition and received food-first advice from Falls Practitioners. 44% (n=73) had a recent blood result available, revealing insufficient or deficient Vitamin D status. 70% (n=117) received Vitamin D and hydration advice and fact sheets following screening. Over-the-counter Vitamin D supplement use increased from 50% (n= 83) to 90% (n=149). 9% (n=10) met enhanced dietetic referral criteria. Data available from 6 patients indicated 50% (n=3) had an increase in hand grip strength post dietetic advice.

**Discussion:** Frailty, malnutrition and falls often coexist. Individuals who were screened and identified at malnutrition and hydration risk may not have otherwise been detected in the community. They benefitted from screening and early intervention from the falls team, suggesting embedded nutrition/hydration triggers can enhance detection and self-management.
Vitamin D deficiency is common in the NI population and supplementation is recommended for over 65-year-olds. Inclusion of Vitamin D questions within the falls screening tool enabled targeted Vitamin D advice, which boosted over the counter supplement use.
Both the upskilling of falls staff through training and the enhanced dietetic referral criteria facilitated earlier detection of malnutrition and the provision of targeted and timely nutrition and hydration advice. However, a limitation of the pilot was the small number of dietetic assessments with available hand grip data.

**Conclusion:** Although a small pilot, it suggests that training of falls practitioners and integration of malnutrition, hydration, and Vitamin D triggers into falls prevention screening enhances falls assessments. Larger studies would be beneficial to further build upon the evidence of the benefits of nutrition interventions in improving muscle strength for falls prevention.

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# Mental Health, Eating Disorders and Learning Disabilities

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**The Role of the Dietitian and Nutritionist in ADHD Affirming Care within Eating Disorders (ED) and Disordered Eating (DE) services**

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**Introduction:** ADHD Attention Deficit & Hyperactivity Disorder clients are overrepresented in eating disorder (ED) and disordered eating (DE) services [(1)] yet current care models often fail to meet the needs of ADHD clients [(2)]. Increasing recognition of ADHD as part of natural neurocognitive diversity calls for a shift away from normative, ableist models of care toward approaches that emphasise autonomy, respect, and tailored support. Dietitians and nutritionists play a key role in addressing feeding and eating challenges among this population, but limited research explores their role in delivering neurodiversity-affirming, person-centred care within ED and DE contexts. This study explores the experiences of dietitians and nutritionists to identify gaps and opportunities for improving support for ADHD clients within ED and DE services.
**Methods:** This qualitative research study used purposive sampling to recruit five UK-registered dietitians and nutritionists (3 dietitians and 2 nutritionists) through advertisements posted on the researcher's Facebook™ and Instagram™ accounts. All participants were registered with either the British Dietetic Association (BDA) or the Association for Nutrition (AfN). Semi-structured, one-to-one interviews were conducted via Microsoft Teams™ between October 2024 and January 2025. Interviews were recorded and transcribed verbatim. A Neurodiversity-Affirming (NDA) model [(3)], informed interview schedule explored ADHD-related eating and feeding challenges, care practices, and practitioner confidence. Transcripts were thematically analysed. Ethical Approval PGT-9763
**Results:** Four main themes emerged using thematic analysis: (1) Understanding ADHD and its impact on eating patterns, (2) Systemic failures and barriers to care, (3) Supportive neurodiversity-affirming approaches, and (4) Cultivating humility and relatedness. Practitioners described how executive, cognitive, emotional, and interoceptive differences influence eating behaviours, including binge–restrict cycles, emotional eating, and challenges with meal preparation. ADHD was viewed as closely intertwined with disordered and eating disorder presentations, underscoring the need to recognise neurocognitive diversity in care. Systemic barriers—such as delayed ADHD identification, limited screening, and compliance-based care—often led to clients being labelled "non-compliant," reducing treatment effectiveness. Practitioners emphasised the value of flexible, autonomy-supportive, and non-pathologising approaches that prioritise trust, validation, and individualised strategies. Finally, limited confidence in applying ADHD-affirming care highlighted the need for accessible resources, training, and system-level reform to improve inclusivity and effectiveness in dietetic practice.
**Discussion:** This study highlights how ADHD traits—such as executive dysfunction, emotional dysregulation, hyperfocus, and forgetfulness—influence disordered eating patterns, including binge–restrict cycles, emotional eating, and difficulties with meal preparation. These findings support the principles of ADHD-affirming care, which view neurological differences as natural variation and promote strengths-based, individualised support. Systemic barriers, including delayed ADHD identification, limited screening, and compliance-based care, reduced motivation and engagement, aligning with Self-Determination Theory (SDT) [(4)], which emphasises autonomy, competence, and relatedness. While motivational approaches like guided SDT show promise, they require adaptation to reflect neurodivergent communication and processing styles. Dietitians play a vital role in delivering compassionate, integrated care, and addressing training and resource gaps is key to improving outcomes for individuals with ADHD within ED/DE services.
**Conclusion:** This study highlights significant gaps in care for ADHD clients with feeding and eating challenges, including DE and ED, such as delayed identification and limited tailored support. These differences, associated with ADHD-related traits, highlight the need for individualised, strengths-based approaches. Effective care must move beyond compliance-driven models to prioritise autonomy, accessibility, and nervous system safety. An NDA approach is essential to providing compassionate, practical, and affirming support that truly meets neurodivergent clients where they are.

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**Audit of energy provision in an Acute refeeding admission for Adolescent anorexia nervosa**

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**Background:** Children and young people (CYP) with anorexia nervosa (AN) can require acute inpatient admission for medical stabilisation due to the clinical effects of starvation. A clinical guideline[1] (CG) with a detailed meal plan devised by the dietetic team is used to refeed these patients, it aims to provides 2500kcal (+/- 2.5%) per day to achieve optimal weight restoration of 0.5 - 1kg/week [2]. Meals and snacks are served by ward staff according to the CG. 46% of CYP admitted to the hospital from January 23 – January 24 gained less than the recommended minimum of 500g per week on average and 11.5% lost weight during the admission[3]. The aim of this audit was to assess if the energy provision of daily snacks and meals within the acute hospital met the expectation outlined in the CG of 2500kcal (+/- 2.5%)"

**Methods:** A dietitian was present for the serving of all meals and snacks for eight individual days across three different wards. These days were chosen at random. Food was objectively weighed using the same set of new scales. Nutritional information provided by the Manufacturer of the food items alongside Excel was used to analyse the energy content (Kcal) of the food provided for each day. Ethical approval was not required, Trust permission was granted, and the audit registered to the AmAt database.

**Results:** 3/8 days met the criteria of 2500kcal (+/- 2.5%). The average daily calories provided were 2327.8kcal. This is 6.9% less than the target calorie content of 2500kcal. The lowest energy content recorded was 1992kcal and the highest was 2665kcal, giving a difference of 673kcal.

**Discussion:** Whilst the audit explored food provision it does not consider the actual food consumed or consider energy expenditure or other purging behaviours. It cannot conclusively be said that sub optimal provision of energy from food is responsible for the 46% of CYP who did not meet minimum weight restoration targets, however it is likely to be a contributing factor. Underfeeding by as much as 6.9% could significantly impact weight restoration. In this patient group sub optimal weight restoration can lead to suspicion of unhelpful behaviours and an increase in restrictive practices being placed on the CYP such as bathroom and movement restrictions. It is vital that such restrictive practices only be used if necessary. This audit highlights the need to be confident that energy provision is as expected, prior to assuming that the CYP may be undertaking purging or unhelpful behaviours. A small sample size and possible bias from staff being observed are limitations. A strength is the capture of data across three different wards, consistent under provision across these wards' points to challenges within the CG itself and not staff interpretation of the CG.

**Conclusion:** Due to the importance of providing appropriate energy and its potential implication on immediate physical health and long-term outcomes it remains vital that we address this discrepancy in expected energy provision verses actual energy provision. As a result, Meal plans need to be reevaluated to ensure more accurate energy provision aiming for a minimum deviance of 2.5% from expected energy provision.

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**Preliminary results from a pilot survey exploring food insecurity and mental wellbeing in university students**

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**Background:** Food insecurity (FI) is increasingly prevalent among university students and is associated with adverse health outcomes. Despite rising food bank use and national concerns, little is known about the extent of FI in student populations and its relationship with mental well-being and eating behaviours. The aim of this pilot survey was to determine the prevalence of food insecurity and examine its associations with mental wellbeing and dietary habits among university students.

**Methods:** An anonymous, online survey was conducted from April to August 2025 among university students. Ethical approval was granted by the university's Ethics Committee (ID: 0855-795). Food security status was assessed using the Food Insecurity Experience Scale and the Household Food Insecurity Access Scale[1]. Mental wellbeing was evaluated with the WHO-5 Well-Being Index[2], and eating habits were assessed using a Short 15-Item Food Frequency Questionnaire[3]. Statistical analysis was conducted using Microsoft Excel (Office Online) for descriptive statistics, chi-square tests, and independent t-tests.

**Results:** A total of 61 students (78.7% females) completed the survey with 41% of students experiencing food insecurity (mild (64%), moderate (32%), severe (4%) levels). No significant association was found between food insecurity and WHO-5 wellbeing scores (p=0.795). While fruit intake was lower among students with FI, and they reported more irregular breakfast patterns, no significant differences in dietary habits were observed. However, trends approaching significance were observed for fruit consumption (p = 0.08), following other types of diets (p = 0.06), and use of food assistance resources (p = 0.06). Awareness and use of university food/financial support services were low, though students with FI were more likely to use food support (50%) than students with FS (0%).

**Discussion:** Findings suggest food insecurity is notably prevalent among university students and may be linked to poorer diet quality. However, the lack of statistical association with wellbeing or dietary variables may reflect sample size limitations. Low awareness and uptake of support services highlight potential areas for university-led interventions.

**Conclusion:**

Future research is needed to better understand the complex relationship between food insecurity, mental wellbeing, and dietary behaviours in university population. Additionally, student-suggested initiatives such as improved visibility of resources, subsidised healthy options, and more immediate access to mental health support should be explored further.

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**A mixed-methods evaluation of a dietetic pathway within an all-age community eating disorder service**

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**Background:** Eating disorders (EDs) are psychological conditions associated with abnormal eating behaviours and consequent physical and psychosocial impairment. Where poor nutritional status is commonplace, dietetic support is crucial within multidisciplinary teams (MDTs). However, with a lack of professional guidelines articulating the dietetic role, it is often poorly defined and under-represented[1], [2]. To address this at a local level, a dietetic pathway was developed within an NHS all-age community ED service. The pathway defined dietetic role, referral criteria and intervention package. One year post implementation, a mixed-methods evaluation aimed to assess pathway acceptability from patient and MDT perspectives.

**Methods:** A novel 14-item online mixed-methods survey, incorporating both Likert-scale and free-text questions, was used to evaluate patient acceptability of the dietetic pathway. Semi-structured interviews evaluated MDT acceptability of the pathway. Qualitative data from both the survey and interviews was analysed using reflexive thematic analysis. Quantitative survey data was analysed using descriptive statistics. Purposive sampling via a gatekeeper within the Trust was utilised for recruitment. University and Trust ethical approval was gained.

**Results:** Nine patients and two clinicians partook in the evaluation. Findings are triangulated and presented under three themes. ***Dietetic role (theme 1)*****:** MDT clinicians reported that the pathway enhanced their understanding of the dietetic role and viewed dietetic input as complementary to wider care, though 22% of patients felt dietetic input aligned only somewhat with their overall multidisciplinary treatment. ***Pathway knowledge (theme 2)*****:** Clinicians reported limited pathway awareness including referral criteria. No patients reported dietetic access or referral issues and 89% understood the rationale for their referral to dietetics. ***Structuring dietetic delivery (theme 3)*****:** Both MDT clinicians and patients valued the balance of structure and flexibility within the pathway. Clinicians recognised the benefit of formalising a pathway, and 100% of patients reported a collaborative, person-centred approach with their dietitian.

**Discussion:** Consistent with literature[1], the evaluation highlighted a shared view that structured dietetic input is valued but must be balanced with a holistic approach. A novel finding was the divergence between patient and MDT perspectives on the extent to which dietetic care aligned with wider multidisciplinary care. While MDT clinicians reported limited knowledge of pathway specifics, such as referral criteria, this was not reflected in patient experience. Despite knowledge gaps, MDT clinicians demonstrated appreciation and understanding of the dietetic role, contrary to some literature[2].

**Conclusion:** The evaluation supports the acceptability of a dietetic pathway within an NHS all-age community ED service, though MDT training may enhance adherence. Divergent patient-clinician perceptions may merit further exploration. Findings are interpreted cautiously due to sample size and some survey completion difficulties.

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**What factors contribute to weight gain and obesity for adults in the community and clinical settings with serious mental health illnesses: A scoping review of current evidence.**

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**Background:** It is recognised that those with serious mental illness (SMI) are affected by obesity at a higher rate than the general population[1]. It is understood that there is a complex interplay of factors that lead to obesity within the general population, and this is represented in the Foresight Report Model of Obesity[2]. However, a similar model for those with serious mental illness does not exist, despite this population being more at risk of developing obesity[2]. This scoping review aimed to scope the current research looking at the causes of obesity within the serious mental illness population.
**Methods:** This scoping review was conducted according to the scoping review extension of the 'PRISMA Guideline for the Completion of Scoping Reviews'[3]. Online databases were searched using a detailed search strategy, and included CINHAL Complete, Cochrane Library, Medline-Ovid, Embase-Ovid, PubMed and Medline- Web of Science journals. All papers were stored on EndNote for analysis. Titles were firstly reviewed by two reviewers and non-relevant papers removed. Abstracts were then reviewed and finally full papers to produce the final dataset for data extraction.
As this study was a scoping review, no ethics approval was required.
**Results:** A total of 8985 papers were identified from the database search with 337 papers in the final dataset for analysis. This dataset was then split into two categories: pharmacological and non-pharmacological papers. 25 non-pharmacological studies and 159 pharmacological studies were included in the final dataset. Individual data extraction from the pharmacological studies would not significantly add to the current understanding around this topic due to the high number of reviews already published around the obesogenic effects of medication. However, it was useful to compare the volume of papers focussed on medication effects to research into other factors leading to obesity within this population, to highlight the potential disparity in the body of research. After data extraction of the non-pharmacological papers, a narrative synthesis of qualitative and quantitative papers was conducted. Extraction included methodology used in paper, participants studies, outcome, outcome measure and reported effects.
The most common mental illness was psychosis or psychotic disorder with 5 papers studying this population in the final dataset. The most common factor leading to weight gain was unhealthy eating behaviours. This included high levels of snacking, eating when not hungry or nighttime eating. Social and environmental factors were also reported across the 25 included studies, such as cooking ability and finances leading to increased risk of weight gain. In terms of methodology, only three of the papers included in the final dataset used qualitative methodologies. Additionally, only 5 papers recruited from an inpatient environment and inpatient factors were only reported as an exposure three times from all included papers.
**Discussion:** This review was able to identify that the scope of the current research is mainly focussed on pharmacological studies, with comparatively few studies looking at additional factors. This is in line with a previous rapid literature review conducted in 2014[4]. This paper demonstrates that it is likely that obesity is the result of a combination of different factors. However, there appears to be a gap in the research focused on the inpatient environment and using qualitative methodologies, with relatively little reported about this complex environment.
**Conclusion:** Current research into the factors leading to obesity in those with serious mental illness appears to be limited, although there is emerging evidence of several factors which may contribute to weight gain which require further investigation. In particular, qualitative methodologies and inpatient populations appear underrepresented in the current body of research

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#BDAResearch

**A qualitative study of health care staff, to identify and map themes surrounding the spread, scale and sustainability of a prudent treatment for malnutrition in a community hospital.**

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**Background:** Value-Based Health Care (VBHC) represents an equitable and sustainable approach to Health Care resource utilisation[1]. Despite achieving improvement on local levels (within individual wards or care settings) few VBHC interventions end up being spread, scaled and sustained more widely[2]. Prudently treating undernutrition within community settings, using a 'food-first treatment approach' in place of prescribed nutritional supplement drinks, is an example of this. This study aimed to obtain the experience of a wards staff, and map possible implementation barriers and enablers to successful scaling and sustainability.
**Methods:** The nutritional risk scores of patients, in a community hospital, were used to determine their nutritional care treatment pathway. Moderate and high nutritional risk patients were given, where clinically appropriate, 'food-first' nutritional treatment (a Homemade Fortified Milkshake, HFMS) by the ward-based nursing care staff. A 'VBHC Quadruple aims' measurement framework was developed, (populating identified clinical outcomes, cost, patient experience and staff experience) to report and illustrate the impact of implementing the HFMS[3]. To obtain the ward staff experience relating to possible enablers and barriers of the HFMS implementation, qualitative research took place as semi-structured interviews. Eight staff were interviewed. These were transcribed and themed systematically, via manual colour coding. This data was then scored based on the number of times the themes were mentioned, to facilitate their thematic analysis. Identified enablers and barriers were collated, and these themes mapped to identify their possible positive or negative influence on culture, systems and structure on the HFMS implementation plan. Approval was granted by Swansea University's School of Management, Research Ethics Board (1202498688973).

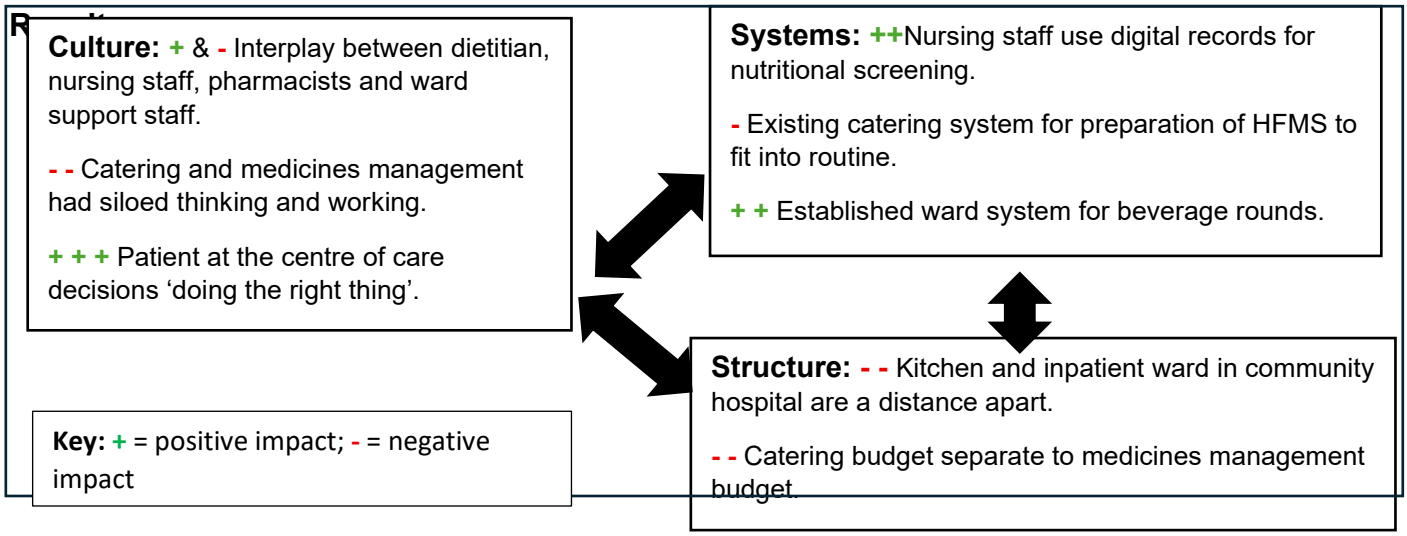


***Figure 1*** *The thematic analysis of the staff interviews mapped, illustrating the enablers or barriers as either 'culture, systems or structure' considerations in relation to the HFMS implementation plan.*

Positive feedback from the staff interviews included the 'patient-centred' approach the HFMS offered: "It has made my job satisfaction better. We're really helping more patients have better nutrition and hydration".

**Discussion:** Taking a VBHC approach, where staff experience is part of an outcome's measurement framework, may strengthen the implementation of 'patient-centred, transformative care.

**Conclusion:** Interviews with ward staff provided an opportunity to systematically theme and map possible HFMS delivery enablers and barriers, and the effect on the spread, scale and sustainability of the project.

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**Reliability and repeatability of Continuous Glucose Monitors for assessing postprandial responses in healthy individuals**

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**Background:** Continuous Glucose Monitors (CGMs) have revolutionised diabetes care. Recently, focus has shifted to the use of CGMs to assess post-prandial responses in the field of personalised nutrition although the accuracy, reliability and repeatability of these devices in the healthy population, remains unclear (1). The aims of this study were as follows; In healthy participants, to explore the agreement between two CGM devices worn simultaneously; to compare the post-prandial response measured by CGMs and conventional blood glucose analysis; and to explore the repeatability of the CGM-measured post-prandial response.

**Methods**: This was a longitudinal, repeated measures study. Six healthy participants (Age: 24.0±2.1 years, BMI:23.7±2.1) simultaneously wore two FreeStyle Libre Pro, one CGM per arm, for 7 consecutive days. In this time, participants completed two Oral Glucose Tolerance Tests (OGTT) on two separate mornings during which serial capillary measures were obtained at baseline and for 120 minutes. OGTTs comprised of 75g maltodextrin. 1727 paired interstitial glucose values were analysed for bias using Wilcoxon paired signed-rank tests, and for limits of agreement using Bland-Altman. The percentage absolute relative difference (PARD) was calculated. Differences between area under the curve (AUC) and incremental area under the curve (iAUC) were compared using repeated-measure ANOVA. Paired t-tests compared repeatability between the two OGTTs.

**Results**: Interstitial glucose was higher in the dominant arm by a median of 0.1mmol/L ($p<.0001$). Significant individual differences were observed in five out of six participants. Bland-Altman analysis showed limits of agreement of 1.38mmol/L and 1.40mmol/L. Median PARD was 6.2% (130.1% $RCV_Q$). iAUC values measured by CGMs were significantly lower than capillary blood glucose (CBG) measures, by 102mmol/L x 120 minutes in the dominant arm ($p = .0309$) and 121.4mmol/L x 120 minutes in the non-dominant arm ($p = .0480$). OGTT AUC results from CBG were not repeatable ($p = 0.128$), however, repeatability was observed in AUC and iAUC values obtained from both CGMs.

**Discussion**: Whilst a median bias was present between dominant and non-dominant CGM values with wide limits of agreement, PARD was on par with what was previously reported by the manufacturer (2). Post-prandial responses were mixed and likely reflect limitations of low study power. Larger studies are necessary to assess post-prandial responses. The need for standardised practices for CGM studies in healthy individuals is also discussed.

**Conclusion:** Differences in CGM readings between dominant and non-dominant arms was on par with manufacturer reports however post-prandial responses were varied and further studies are necessary to understand CGM capabilities in individuals without diabetes.

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## A Service Evaluation: Micronutrient Provision in Patients Receiving Inpatient Parenteral Nutrition

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**Background:** Parenteral nutrition (PN) is indicated for patients who are unable to receive adequate nutrition orally or enterally and therefore rely on PN for micronutrient delivery (1). Whilst existing literature primarily focuses on access routes and PN-related complications, there is limited appraisal of micronutrient provision (2). Micronutrient deficiencies can result in significant clinical consequences, yet factors influencing their delivery in PN are often overlooked. Given these gaps, the nutrition support team (NST) at an NHS Trust in the South of England looked to evaluate current practice to identify inconsistencies and improve the quality and safety of micronutrient provision.

**Aim:** This service evaluation aimed to assess the adequacy of micronutrient provision in inpatients receiving PN. It also aimed to identify whether there was a relationship between micronutrient provision and potential influencing factors, such as BMI, PN access route, day of the week (weekday vs. weekend), hospital site, medical specialty (surgical, medical, or ICU), and whether PN bags were preordered. The project also aimed to explore NST handover rates to determine their potential impact on micronutrient delivery.

**Methods:** Retrospective data were collected for 42 consecutive inpatients who received PN in January 2025. Data were collected from NST notes and patient drug charts including patient characteristics, hospital site, day of the week, NST plans, PN prescriptions and additional micronutrient prescriptions. Statistical analyses (Chi-squared tests, Fisher's Exact tests, and Fisher-Freeman-Halton Exact tests) were performed using SPSS (v28) to examine relationships between influencing factors and micronutrient provision. As this was a service evaluation, ethical approval was not required. The project was registered with the Trust's clinical governance reporting system.

**Results:** Micronutrient provision was deemed adequate on 75.7% (271 days) of the total 358 PN days analysed. The remaining 24.3% (87 days) were classified as inadequate due to PN being held or having a 'day off' (4.2%), incorrect PN prescriptions (2.5%), missing prescribed additional micronutrient prescription despite being recommended by the NST (3.3%) or missing additional micronutrient recommendations by the NST (14.2%). Handover of PN plans to the ward teams were documented on only 8.1% (29 days) of PN days. Statistically significant differences in micronutrient provision were observed when comparing weekdays and weekends ($P=0.04$) and whether PN bags were preordered ($P<0.001$).

**Discussion:** This service evaluation suggests findings in line with existing literature highlighting the risks of inconsistent handovers and the effect of the weekend in clinical care (3,4). Addressing these gaps is crucial for safe, consistent and effective nutritional care. Key recommendations include education for the wider multidisciplinary team to increase awareness of the importance of micronutrients, consideration of weekend NST cover, and embedding handovers within NST ward rounds.

**Conclusion:** This service evaluation identified inconsistencies in micronutrient provision for PN patients, particularly linked to handover practices, weekend service and PN bag preordering.

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**The experiences of primary care dietitians working collaboratively with general practitioners in England: A qualitative study**.

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**Background:** General practitioners (GPs) express limited confidence and knowledge in managing nutritional and lifestyle related health conditions. While existing research suggests that collaborative care between GPs and dietitians can reduce GP workload, enhance patient care capacity and generate cost savings, few studies have captured the lived experiences of primary care dietitians. This study aimed to explore the experiences of primary care dietitians working with GPs in England, exploring the benefits and challenges of collaborative care.

**Methods:** A double hermeneutic, interpretative phenomenological approach was utilised. Semi-structured interviews were undertaken with primary care dietitians (n=5), audio-recorded and transcribed verbatim. Transcripts were analysed using Interpretative Phenomenological Approach (IPA) to identify patterns related to topics, issues, similarities and differences across participant experiences [1]. Ethical approval was obtained from the University of Plymouth Faculty of Health Research Ethics and Integrity Committee (Project ID: 5258).

**Results:** Four superordinate themes were generated: (i) interprofessional collaboration, (ii) job security, (iii) professional fulfilment, and (iv) raising awareness and establishing professional recognition. Themes and sub-themes are presented in Table 1.

**Table 1:** Superordinate with sub-themes

| Superordinate theme | Sub-themes |
|---|---|
| **Interprofessional collaboration** | Varied GP engagement |
| | Support and supervision |
| **Job security** | Contractual ambiguity |
| | Financial uncertainty |
| **Professional fulfilment** | Autonomy in practice |
| | Role satisfaction |
| **Raising awareness and establishing professional recognition** | Role ambiguity |
| | Recognition and promotion |
| | Relationship building |

**Discussion:** Dietitians expressed a strong sense of fulfilment, particularly due to the autonomy within their roles. Barriers to collaboration included time constraints and GPs' limited understanding of the dietitian's role, reflecting challenges highlighted among other allied healthcare professionals in primary care [2,3]
Dietitians in this study advocated for greater recognition through self-promotion, education and data informed strategies to demonstrate their value.

**Conclusion:** This study demonstrated that dietitians face barriers in collaborating with GPs, highlighting the need for dietitians to actively promote their value to GPs and policymakers through self-promotion, education and allied healthcare professional collaboration, while Primary Care Networks should consider strategies to support dietitians and enhance workforce sustainability.

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**The Impact of Impaired Cognition on Diabetes Control in Those Living with Type Two Diabetes: A Systematic Literature Review**

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**Background:** Cognitive impairment (CI) and dementia are increasingly prevalent among individuals with Type 2 Diabetes Mellitus (T2DM), potentially impacting diabetes self-management and outcomes. Previous research suggests that CI may contribute to poorer glycaemic control and increased hospitalisation rates. The aim of this systematic literature review was to explore whether CI or dementia affects diabetes control in individuals with T2DM, using diabetes-related outcomes as indicators.

**Methods**: A systematic literature review was conducted using databases including PubMed, CINAHL, and Cochrane Library. Studies were selected based on PIO criteria and critically appraised using Joanna Briggs Institute tools. A narrative synthesis approach was employed due to heterogeneity in study designs and outcome measures. Ethical approval was not required as this study involved analysis of previously published literature.

**Results:** Thirteen studies met the inclusion criteria. Individuals with comorbid dementia and T2DM had significantly higher rates of potentially preventable hospitalisations, particularly due to dehydration and urinary tract infections. Findings on blood pressure and HbA1c levels were mixed, with some evidence suggesting moderate glycaemic control may be safer (1,2). Elevated in-hospital mortality rates were observed, although improved care in some settings may mitigate this risk.

**Discussion:** The findings suggest that CI negatively impacts diabetes control, particularly in relation to hospitalisation and mortality. Variability in cognitive screening tools and lack of adjustment for confounding factors limit comparability across studies. Multidisciplinary interventions, including dietetic input, may improve outcomes for this population (3).

**Conclusion:** Individuals with comorbid dementia and T2DM experience poorer health outcomes. Early intervention and tailored multidisciplinary care are essential to improve diabetes management in this vulnerable group.

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**Assessing and modelling fortified vegan products' impact on vitamin D intake in UK adults following vegetarian and vegan diets.**

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**Background:** Vitamin D deficiency remains prevalent across all UK dietary groups, with plant-based populations at particular risk (1). While vegan diets have historically shown lower vitamin D intakes than vegetarian diets (2), the recent surge in fortified vegan product availability presents an opportunity to reevaluate this. The Office for Health Improvement and Disparities has also recognised the need for fortification and supplementation strategies to address widespread vitamin D deficiency (3). This study aimed to compare vitamin D intake among UK adults following vegetarian and vegan diets (vegetarians and vegans, respectively) and model the effect on intake of transitioning vegetarians' non-vegan food sources to fortified vegan product equivalents.

**Methods:** Vitamin D fortification content (µg/100g) of all available vegan products (excluding seasonal items, and non-vegan D3 sources (as both D2 and D3 are capable of resolving deficiency (3))) were recorded across four major UK online supermarkets (227 fortified vegan products included in total). Mean fortification and highest fortification levels were calculated for each food category. These values were applied to the reported annual vegan intakes and used to calculate vegan median daily vitamin D intakes. Standard McCance and Widdowson vitamin D values were applied to the reported annual vegetarian intakes and used to calculate vegetarian median daily vitamin D intake. Substitution-based dietary modelling was used to model the median daily vitamin D intakes of transitioning vegetarians' on to mean and highest fortified vegan product equivalents. Annual intakes were reported in preexisting quantitative Food Frequency Questionnaire (FFQ) data from 13 vegans and 20 vegetarians (n = 33) provided via an unpublished Harvest study (Quandrum Institute). Ethical approval was received for the parent study and was inclusive of this study's subsequent data use and dissemination (IRAS ID 310348). Non-parametric statistical tests were used due to the not normal distribution of the data.

**Results:** Vegans had statistically non-significantly higher median daily vitamin D intakes than vegetarians (3.21 (IQR:3.79) vs 2.75 (IQR:3.98) µg/day, $p = 0.181$). This increase became significant with vegans on the highest fortified vegan products (7.36 (IQR:9.45) µg/day, $p < 0.001$). Vegetarian-to-vegan transition using mean fortified products resulted in mild but statistically significant increases in intake (3.38 (IQR:4.00) µg/day, $p = 0.004$), but not when compared to median vegan intake ($p = 0.06$). Only maximum mean and highest fortification vegan intakes (11.40 and 18.90 µg/day, respectively), maximum mean and highest fortification modelled vegetarian intakes (12.60 and 45.60 µg/day, respectively), and median highest fortification modelled vegetarian diets (13.60 (IQR:12.92) µg/day), exceeded the Reference Nutrient Intake (RNI) (10µg/day). While 70% of highest fortification modelled vegetarian median intakes surpassed the RNI, 30% remained intake insufficient.

**Discussion:** Modern vegan diets may be less vitamin D deficient than those of vegetarians, contrary to previous findings, and fortified vegan products, especially highly fortified ones, could substantially improve vitamin D intake. However, persistent insufficiency is likely without supplementation or policy intervention. Results should be interpreted cautiously, due to limitations such as potential FFQ recall bias and lack of validation, lack of objective biomarker data and small sample size. Food waste was not assessed, and the study did not attempt to quantify the healthfulness of the diets beyond vitamin D intake.

**Conclusion:** Strategic utilisation of highly vitamin D fortified vegan products may allow nutrition professionals to significantly improve vitamin D intakes in all dietary groups. However, further modelling research and broader public health intervention methods, such as at policy-level (mandatory fortification) and consistent supplementation remain essential to bridge deficiency gaps.

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**Gut microbiota alterations in adult epilepsy. A systematic review with insights for therapeutic implications.**

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**Background:** Epilepsy affects over 50 million people worldwide, and up to 40% of cases are drug-resistant, creating major clinical and economic challenges. Gut microbiota dysbiosis is increasingly implicated in seizure susceptibility through SCFA depletion, altered tryptophan metabolism, and neuroimmune activation [(1,2)]. Adult-focused evidence remains limited, despite diverse seizure types and comorbidities in this population. The aim of this systematic review was to analyse gut microbiota diversity, compositional shifts, and functional pathways in adults with epilepsy compared with healthy controls.
**Methods:** This systematic review followed PRISMA 2020 guidelines and included observational studies reporting gut microbiota in adults (≥ 18 years) with epilepsy versus healthy controls. Exclusion criteria were paediatric and interventional studies, as the focus was on baseline composition. Literature searches were conducted in PubMed, Web of Science, Cochrane Library, and ClinicalTrials.gov. Alpha diversity indices were pooled using random-effects meta-analysis, where data permitted, while beta diversity, taxonomic shifts, functional pathways, and classifier AUCs were narratively synthesised. Ethical approval was not required as this study analysed previously published data.
**Results:** Eight studies ($n$ = 1,203) met inclusion. Adults with epilepsy showed reduced alpha diversity, with significant decreases in richness and evenness indices (Chao1, MD = −52.51; 95% CI −83.80 to −21.22; $p < 0.01$; Simpson, g= −0.91; $p$ = 0.005), Shannon results were inconsistent. Beta diversity analyses confirmed distinct microbial community structures compared with controls. Taxonomic shifts were characterised by depletion of SCFA-producing commensals (*Faecalibacterium*, *Roseburia*, *Coprococcus*) and enrichment of pro-inflammatory taxa (*Escherichia-Shigella*, *Fusobacterium*, *Akkermansia*). Functional predictions indicated upregulation of tryptophan-kynurenine and fatty acid metabolism with partial downregulation of immune pathways. Classifier models (random forest, LEfSe) achieved high diagnostic performance (AUC = 0.92−0.97), with discriminatory genera including *Bacteroides*, *Prevotella_9*, *Fusobacterium*, *Faecalibacterium*, *Parabacteroides*, and *Blautia.* Key findings are summarised in Table 1.

*Table 1. Summary of key findings across included studies.*

| Domain | Key findings in adults with epilepsy |
|---|---|
| **Alpha diversity** | ↓ Richness (Chao1, MD = −52.51; 95% CI −83.80 to −21.22; $p < 0.01$; Simpson, g = −0.91; $p$ = 0.005) |
| **Beta diversity** | Distinct microbial community structures vs controls |
| **Taxa** | ↓ *Faecalibacterium*, *Roseburia*, *Coprococcus;* ↑ *Escherichia–Shigella*, *Fusobacterium*, *Akkermansia* |
| **Functional pathways** | ↑ Tryptophan-kynurenine and fatty acid metabolism ↓ immune pathways. |
| **Classifiers** | Random forest/LEfSe AUC = 0.92–0.97; key discriminatory genera: *Bacteroides*, *Prevotella_9*, *Fusobacterium*, *Faecalibacterium*, *Parabacteroides*, *Blautia* |

**Discussion:** Adult epilepsy is associated with gut microbiota dysbiosis characterised by loss of SCFA-producing commensals and enrichment of pro-inflammatory taxa, which may contribute to neuroinflammation and neuroexcitability [(1,2)]. These findings highlight a reproducible microbial pattern across studies, consistent with mechanistic evidence linking dysbiosis to neurological dysfunction. While causality cannot be inferred, the convergence of altered diversity, reduced SCFA-producers, and upregulated tryptophan-kynurenine metabolism suggests biologically plausible pathways. This may inform adjunctive dietary, prebiotic, and probiotic strategies for adult epilepsy management [(3)].
**Conclusion:** Adults with epilepsy demonstrate reproducible compositional and functional gut microbiota alterations linked to neuroinflammation and neuroexcitability, supporting the potential of microbiome-informed dietary and probiotic interventions as adjunctive management strategies.

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**The Impact of a Bespoke Mindfulness Intervention for Registered Dietitians on Resilience, Burnout and Stress – A Cluster Randomised Control Trial**

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**Background:** As front-line healthcare professionals (HCPs), Registered Dietitians (RDs) may present with elevated levels of burnout and stress that can impact resilience (1). RDs have a duty to make their own health a priority to adequately support others and maintain professional standards (2,3). The aim of this cluster randomised control trial was to investigate the impact of a bespoke mindfulness intervention on levels of resilience, burnout and stress amongst UK RDs.

**Methods:** An online mindfulness intervention was designed and delivered by a RD also qualified as a mindfulness teacher. Ethical approval was gained from the Faculty of Medicine and Health Research at the University of Nottingham (FMHS 70-1123) in December 2023. RDs were recruited via social media, BDA regional branches and snowballing. Participants were randomised 1:1 to waitlist control (WLC) or intervention group using an online random number generator. Outcomes were measured with a pretest-posttest design using validated tools: Brief Resilience Scale, Perceived Stress Score and Maslach Burnout Inventory which consists of three domains – emotional exhaustion depersonalisation and personal accomplishment. All participants were sent the tools via an online survey at 4 timepoints: pre-intervention (T0), immediately post (T1), 3 months post (T2), 6 months post (T3) intervention. A short evaluation of the intervention was also shared with the intervention group at T1. Responses to the survey were analysed using Wilcoxon Signed-Ranks test to determine whether changes to the measures between baseline and 6 month follow up were statistically significant and the effect size of any change. Evaluations were analysed using descriptive statistics (star ratings).

**Results:** Thirty-two participants who were randomised completed T0 survey (15 to WLC, 17 to intervention) and 10 from each group completed T3 survey. Changes in outcome measures between T0 and T3 for the intervention group are shown in table 1. No significant differences were observed for any outcomes in the WLC group. Fifteen participants (94%) rated the intervention highly, with 5 stars out of 5.

**Table 1: Effect of mindfulness intervention on outcomes between T0 and T3 for intervention group**

| Outcome measure | | Median (IQR) | | Z-score | *P*-value | Effect size (r) |
|---|---|---|---|---|---|---|
| | | T0 | T3 | | | |
| BRS | | 2.67 (2.17 - 3.00) | 3.42 (2.54 - 4.00) | -1.735 | .083 | - |
| PSS | | 20.5 (15.00 - 23.75) | 11.00 (5.75 - 16.75) | -2.296 | .022[a] | -.088* |
| MBI | EE | 24.00 (15.25 - 32.75) | 10.50 (4.50 - 23.00) | -2.143 | .032[a] | -.420** |
| | DP | 5.00 (2.25 – 9.25) | 2.50 (1.00 – 7.25) | -0.051 | .959 | - |
| | PA | 25.00 (22.50 – 30.75) | 29.50 (27.75 – 32.75) | -1.989 | .047[a] | -.390** |

IQR: Inter-quartile range; BRS: Brief Resilience Scale; PSS: Perceived Stress Score; MBI: Maslach Burnout Inventory; EE: Emotional Exhaustion; DP: Depersonalisation; PA: Personal Accomplishment; Int: Intervention group; WLC: Waitlist Control Group; [a]Wilcoxon-Signed-Ranks test p<0.05; *small effect size; **medium effect size

**Discussion:** The findings show that a bespoke mindfulness intervention could have a positive impact on perceived levels of stress, emotional exhaustion and personal accomplishment amongst RDs. Although not all findings were statistically significant, the results show a general positive trend for the outcome measures in the intervention group compared with WLC group. The findings align with existing literature which, although not specific to RDs, show that mindfulness interventions can have a positive impact on outcomes for HCPs (4). The mindfulness course was evaluated highly by attendees, suggesting acceptability of such interventions in practice. Limitations of the current study are acknowledged, including small participant numbers, unavoidable self-selection bias and previous knowledge or experience of mindfulness not being accounted for.

**Conclusion:** A bespoke mindfulness intervention has potential to improve perceived levels of burnout and stress amongst RDs. Further research involving larger sample sizes and longer follow up periods could provide further impact of such interventions.

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**UK cross-sectional market survey of vitamin D fortification in plant-based alternatives: the effect of animal-based product substitution on vitamin D intake**

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**Background**: Vitamin D is essential for bone health, immune regulation and brain development. In the UK, 64% of adult dietary vitamin D is consumed through animal-based sources[1]. However, as plant-based products, which are naturally low in vitamin D, are increasing in popularity[2], dietitians and researchers are concerned that intake may be reduced, increasing the risk of deficiency and its related conditions. This study aimed to (i) describe the frequency and level of vitamin D and other micronutrient fortification in plant-based alternatives; and (ii) model the impact of substituting animal-based products with plant-based alternatives on vitamin D consumption in relation to the 10 μg daily reference nutrient intake (RNI).
**Methods**: A cross-sectional survey of eight major UK supermarkets was carried out in December 2024 documenting all currently available plant-based alternative products for milk, yoghurt, cheese, meat, fish and eggs. To be included, products had to be unflavoured, not aimed at children (<1 years of age) and intended to directly replace animal products. Product information (name, brand, storage method, organic status, sweetened status, vitamin D fortification status and quantities of vitamin D, calcium, iodine and vitamin B12 per 100 g/ml) was extracted from online retailer websites or in-person. The percentage of products fortified with vitamin D and the median and range of vitamin D content were calculated. All plant-based products were compared with the vitamin D content of their animal-based versions[3]. Calcium, vitamin B12 and iodine values were also collected and compared. Ethical approval was not required for this study. Daily intake modelling was used to analyse the effect of substituting animal-based portions with vitamin D fortified and unfortified plant-based alternatives on vitamin D intake and achieving the RNI. Four animal-based reference scenarios and eight plant-based scenarios, ranging from all fortified plant-based substitutions down to all unfortified, were modelled. Portion sizes were based on BDA recommendations and number of daily portions was based on current UK and BDA guidelines and average UK intake (using the National Diet and Nutrition Survey).
**Results**: Percentages of plant-based products fortified with vitamin D totalled: milk (69%, n=111/160, median=0.75 μg); yoghurt (75%, n=44/59, mdn=0.77 μg); cheese (7%, n=4/60, mdn=1.5 μg); fish (0%, n=0/17); meat (0%, n=0/124); and eggs (33%, n=1/3, mdn=2.4 μg). Excluding organic products, which legally cannot be fortified, 90% of milks and 76% of yoghurts were fortified. The majority (>60%) of plant-based milks and yoghurts were also fortified with vitamin B12 and calcium but not iodine (milk: 38%, n=61/160; yoghurt: 10%, n=6/59). Vitamin B12 was the only fortificant added to meat (19%, n=23/124) and no fish were fortified. Substituting three animal-based dairy portions a day with fortified plant-based alternatives increased daily vitamin D intake by 1450% (0.2 v. 3.1 μg); increasing the RNI contribution from 2% to 31%. However, substituting two weekly portions of fish (one oily) reduced daily vitamin D provided by 100% (1.7 v. 0 ug); decreasing the RNI contribution from 17% to 0%. Animal-based, fortified- and unfortified- plant-based scenarios totalled 3.3 μg, 3.9 μg ad 0 μg respectively (achieving 33%, 39% and 0% of the daily RNI).
**Discussion**: Encouragingly, since 2020, there has been a 24% increase of plant-based milk vitamin D fortification. The high frequency of inorganic milk and yoghurt fortification creates a high likelihood of unintended selection. Despite the loss of vitamin D intake from key animal sources (e.g., oily fish), three plant-based dairy portions, as recommended by the BDA, replaces and exceeds this loss. None of the modelled scenarios provided sufficient vitamin D intake, highlighting the necessity to follow supplementation guidelines to meet the RNI if sun exposure is inadequate. However, supplement use is poor in the UK[1] (17% of adults), putting the public at risk of deficiency. Recommendations for manufacturers to fortify all plant-based products and for government-regulated fortification policies, which have been successful in other countries, would aid intake. These should include other micronutrients, such as iodine where fortification was poor. Application in dietetic practice could include advising all service-users to follow supplementation guidelines and to seek fortified and high content animal or plant-based products.
**Conclusion**: Neither animal- nor plant- based dietary modelling scenarios achieved the vitamin D RNI, with significantly lower intakes for diets based on unfortified plant-based products, highlighting the importance for the UK public to follow supplementation guidelines and seek fortified products.

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**Exploring physical assessment use and training in UK dietetic practice: A cross-sectional survey**

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**Background**: Physical assessment involves observing and evaluating the body to detect physical signs that may indicate health issues, including those related to nutrition. Dietitians may use physical assessment to help diagnose and monitor nutritional problems. In the UK, the extent to which dietitians use physical assessment is unclear, as published literature predominantly focuses on anthropometry, with limited reference to other assessment techniques (1). Evidence suggests that dietitians often rely on assessments conducted by other healthcare professionals (2), with lack of training cited as a barrier to performing physical assessments (3). In 2020, physical assessment was formally introduced to the British Dietetic Association's (BDA) Curriculum Framework. Dietitians who completed pre-registration education after this point are expected to have received training in this area. This study aimed to explore how widely physical assessment is used by UK dietitians, whether training influences its use, and how dietitians perceive their knowledge of and ability to carry out physical assessments as well as their attitudes towards training.

**Methods**: A cross-sectional online survey was conducted using Qualtrics between January and February 2025. Registered dietitians were recruited using professional networks and Instagram. A sample size of 200 was pragmatically chosen based on the project's scope and timeframe, balancing feasibility of recruitment with the need for meaningful data. The survey included questions on participant demographics, physical assessment training, current use of physical assessment, and perceived barriers and enablers to use. Data were analysed using descriptive statistics (counts and percentages) and inferential tests (Chi-squared and Fisher's Exact). Ethical approval was obtained from the University of Hertfordshire Health, Science, Engineering and Technology Ethics Committee with Delegated Authority (ethics ID: 0048 2024 Nov HSET).

**Results**: A total of 83 registered dietitians (91.6% female) completed the survey. Physical assessment training was typically received during pre-registration education (85.5%) or in the workplace (43.4%). All respondents reported using anthropometry in practice; while 83.1% used general physical assessment, 55.4% vital signs, 39.8% functional measurements and 18.1% auscultation. Training was significantly associated with greater performance of assessments across several domains, particularly vital signs, general physical assessment, and auscultation ($p < 0.05$, Cramer's $V \approx 0.4$). Apart from functional measurements (grip strength, sit-to-stand), dietitians were more likely to use information from medical notes than perform assessment themselves. Among those trained in general physical assessment, 43.1% reported using it in approximately 75% of patient assessments. ($\chi 2$, $p=0.044$, $\Phi=0.221$). More dietitians who graduated after the 2020 BDA curriculum change reported receiving training in general physical assessment and vital signs at university (60.7% vs 54.5%, 17.9% vs 16.4% respectively), although these associations were not statistically significant ($p > 0.05$). Despite differences in perceived adequacy of knowledge and prior training, 87.9% of respondents agreed that physical assessment training would enhance their practice.

**Discussion**: Registered dietitians in the UK appear to use a range of physical assessments in practice, but the extent of use varies by type, and training appears to influence use. While additional training opportunities may support wider use, other factors not explored in this study may also affect implementation.

**Conclusion**: This study highlights that while UK dietitians use various physical assessment techniques, their use is influenced by training, with further research needed to optimise education and support integration into practice.

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**Development and nutritional analysis of a novel dough ball snack fortified with *Acheta Domesticus* cricket powder as a dietary protein source.**

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**Background:** With an increased focus on sustainable[1], as well as healthy diets and an awareness of the unsustainable nature of production practices linked to key dietary protein sources such as meat farming, insect proteins have gained attention in recent years. As alternative sources of protein, insects are nutritionally versatile with potential as functional foods[2]. The aim of this research was to develop a savoury snack formulation using A*cheta Domesticus* (*AD*) cricket powder as a protein fortifier and investigate the impact of fortification on nutritional composition.
**Methods:** A control recipe containing 15g protein per 100g was developed (eight 10g ball portion proposed), followed by three fortified formulations. Bugvita 100% *AD* powder (69g per 100g) was added to each fortified formulation respectively in 15g ($C_{15}$), 20g ($C_{20}$), and 25g ($C_{25}$) amounts., Four replicates of each formulation were freeze-dried, and Kjeldahl[3], Soxhlet[4], Ash[5] and Moisture analyses completed. Carbohydrate by difference and energy calculations based on nutritional composition was also conducted. All data were analysed using ANOVA with Fisher's Least Significant Difference and Duncan's New Multiple Range post hoc tests carried out with IBM SPSS statistical software. Ethical approval was not required for this study.
**Results:** Fortification of $C_{15}$, $C_{20}$, and $C_{25}$ with *AD* powder was significantly ($p$ = <0.001) associated with increase in crude protein (6g, 8g, and 9g increases; 21g, 23g, and 24g per 100 respectively). Fat content significantly reduced ($p$ = <0.001; 2g reduction) at $C_{15}$ as compared with control, then began restoring in $C_{20}$ and $C_{25}$ (nonsignificant). Energy content trended similarly to fat content. Ash content of $C_{15}$, $C_{20}$, and $C_{25}$ was negatively correlated with increased fortification (nonsignificant). Carbohydrate content of $C_{15}$ ($p$ = 0.006; 4g reduction), $C_{20}$ ($p$ = <0.001; 6g reduction), and $C_{25}$ ($p$ = <0.001; 8g) significantly reduced compared to control.
**Discussion:** Per 100g, $C_{15}$, $C_{20}$, and $C_{25}$ formulations meet requirements for labelling as 'a source of high protein' (protein accounting for >20% of the energy value)[6]. A reasonable assumption was made of small overall protein losses through Maillard reactions occurring during the baking process[7]. Reduction of carbohydrate through $C_{15}$, $C_{20}$, and $C_{25}$ may occur through reduced starch gelatinisation and starch retrogradation behaviours associated with increased fortification. The proposed underlying mechanism for fat reduction in $C_{15}$ and increase in $C_{20}$ and $C_{25}$ is a lipid accumulation threshold, where lipid-binding to chitin in *AD* powder initially reduced fat content to a point, beyond which overall fat content increased, possibly due to increased lipids suspended in the dough matrix overall. Ash content negatively correlating with increased fortification is thought to be due to increased chitin-mineral complexes minimising mineral availability.
**Conclusions:** Overall, *AD* powder fortification produced high protein dough balls successfully with protein content of $C_{15}$-$C_{25}$ at 21-24% and some impact on other nutritional components, though further studies on consumer acceptability and sensory properties are recommended, to explore further aspects of potential for dietetic applications in protein-focused nutritional support products or influence on athletic performance.

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# Nutrition Support

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#BDAResearch

## Service evaluation of a digital dietary assessment tool in Hepato-Pancreato-Biliary (HPB) surgery

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**Background:** Dietary assessment is an essential component of dietetic clinical practice (1). Current assessment methods such as 24-h dietary recalls and paper food diaries require time, knowledge, and skill, but may be inaccurate because of under-reporting, misinterpretation, or daily variations in dietary intake (2). Digital dietary assessment tools have been shown to improve completion rates, increase the accuracy of estimated nutritional intakes, and reduce costs (3). However, very little research has looked at whether digital tools assessing dietary intake can be successfully introduced and used within routine clinical practice, with apps remaining under-utilised by healthcare professionals, including dietitians (4).
This project aimed to evaluate patient engagement with a digital dietary assessment tool, myfood24 (https://www.myfood24.org), and gather feedback on usability and acceptability

**Methods:** All patients undergoing HPB surgery, under the care of the HPB specialist dietitians, were invited to participate at their first dietetic appointment. Exclusion criteria included non-English language and no access to an appropriate digital device. Patients were asked to input dietary intake into the Myfood24 app/web-browser over a 24-hour period at least 2 times a week. A written user manual was provided alongside dietetic support to facilitate completion. During follow up the dietitian assessed recorded dietary information to facilitate discussions about diet and nutritional targets. Following participation an electronic link to a questionnaire was sent to patients for feedback on usability and acceptability. Usage data was collected from Myfood24. Descriptive statistics have been used to summarise results. Ethical approval was not required due to it being a service evaluation, but permission was obtained from information governance.

**Results:** Between November 2023 and June 2024, 59/90 (66%) of invited patients activated the app, and 49/90 (54%) completed at least one diary entry. The average age of the 49 patients was 63 years (range 33-84). A median 9 diaries were completed (range 1- 163). Of the patients that engaged with the app, 20 completed a patient feedback form. An average rating of 3.7/5 was given for ease of use. 14/20 (70%) patients strongly agreed or agreed that using the myfood24 app had made them more aware of their dietary intake. 14/20 (70%) patients agreed that using the app had made their consultation with their healthcare professional more informative. Qualitative feedback showed some patients didn't find the app user friendly or struggled to find food items. Others struggled to complete due to feeling unwell.

**Discussion:** The results show the feasibility of introducing a digital dietary assessment tool, myfood24 into a HPB dietetic service. However, further work is required to explore the barriers to patient participation and usability within other dietetic teams and patient populations.

**Conclusion:** 54 % of HPB patients undergoing surgery engaged with a digital dietary assessment tool. Of those who provided feedback, 70 % felt it made them more aware of their dietary intake and the consultation more informative.

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**A service evaluation of the 4 year trends in patient demographics of a dietetic community enteral nutrition caseload**

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**Background:**
Almost two decades ago, NHS Lothian introduced a specialised group of dietitians to care for patients with enteral feeding tubes outwith the hospital, known as the Community Enteral Nutrition Team (CENT)(1). Since 2020, NHS Lothian's CENT found that the number of patients on their caseload decreased by 8%. The aim of this evaluation was to investigate four-year trends in patient demographics within the CENT caseload to determine potential factors contributing to this decline and to better understand changes in the population receiving community-based enteral nutrition support.

**Method:** In this retrospective service evaluation, data from 296 patients in 2020 and 272 patients in 2024, was collected. This data included age, clinical diagnosis, sub-diagnosis, type of feeding tube, access route, locality, length of time with feeding tube in place, deprivation level, dietetic outcome and distance from Liberton hospital. Ethical approval was received from Queen Margaret University. Ethical approval from the NHS was not required because it was classified as an audit. No data was normally distributed, so was analysed using non-parametric tests. Age, co-morbidities, Scottish Index of Multiple Deprivation (SIMD) decile, tube type, length of time on home enteral nutrition (HEN) and access route were grouped based on year. Therefore, a Mann-Whitney test was used to determine if there was a significant difference between the two time points. Length of time on HEN and clinical conditions were grouped based on SIMD decile and a Kruskal-Wallis test was used to determine if there was a significant difference.

**Results:** Overall, there was an 8% decrease in the number of patients in the CENT caseload from 2020 to 2024. In comparison to 2020, in 2024, there was a significant reduction in the number of patients made nil-by-mouth ($p<0.05$), a reduction in the proportion of non-balloon gastrostomies and patients had enteral feeding tubes for a significantly longer time period ($p<0.05$). On average, patients in 2020 had an enteral feeding tube in place for 618 days compared to 1055 days in 2024. Additionally, in 2020, 15% of patients had no outcome set which doubled to 30% in 2024. There were no significant differences in age, tube type, SIMD decile distribution, number of co-morbidities and clinical condition, between 2020 and 2024.

**Discussion:** This service evaluation does not provide a clear explanation for the reduction in patient numbers but does contribute towards improving demographic understanding of HEN patients. This may influence clinical practice in this area and may help determine target areas for quality improvement or service review. In order to determine reason for patient number reduction, a future evaluation could review this caseload at more regular time intervals. Additionally, the study could be repeated in other HEN teams to further dietetic understanding of this population.

**Conclusion:** In conclusion, this evaluation did not find a clear reason for the reduction in numbers within the CENT caseload between 2020 and 2024, but it provided the most up-to-date demographic data of HEN patients in NHS Lothian.

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**A Mixed Method Exploration of Healthcare Professionals' Home Parenteral Nutrition Admixture Selection in Adults with Chronic Intestinal Failure**

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**Background:** Home Parenteral Nutrition (HPN) admixture choice varies internationally[1]. In England, licensed multichamber bags (MCB) are promoted[2], although a substantial proportion of patients continue to receive bespoke HPN regimens. This study aimed to evaluate how nutrient profile influences admixture selection and explore variation in decision-making.

**Methods:** Twenty Healthcare Professionals (HCP) reviewed the same 32 hypothetical cases, in an online Judgement Analysis. Ethical approval was obtained (2024-18877-32734). Key nutrient attributes varied in each case and were used as covariates in a multilevel, mixed effects logistic regression model. After reviewing each case the HCP indicated their HPN admixture selection and provided details on lipid dosing. Following data analysis, the same participants were invited to online focus groups to explore the results. Transcripts were uploaded into Nvivo (version 12®) and thematically analysed[3].

**Results:** Bespoke regimens were selected in 448 (71.3%) cases (222 in a hybrid regimen, using 1-5 MCB/week). Variation in admixture selection and lipid dosing was noted between participants. MCB selected varied between 12.5 and 50.0%, with mean lipid dosing 0.41(0.30) to 1.03(0.25) g/kg/day across participants. All nutrients assessed were significantly associated with bespoke HPN usage, with use of aqueous bags (model coefficient 2.83 (2.20, 3.47) p<0.001) the most influential being use, selected in 436/623 (70.0%) cases. Non-standard electrolyte dosing also drove bespoke HPN use.
The main themes identified from the focus groups are shown in table 1. A spectrum of perspectives were displayed across themes, from fixed traditional practice, reflection, critical evaluation and adaptation.

Table 1: Factors Influencing Differences in HPN Admixture Selection

| Theme | Subtheme | Quotes |
|---|---|---|
| Interpersonal Characteristics | Valuing Experience<br>Judgement<br>Interpreting the evidence and dosing guidelines | "*Where I used to work, we would go down the five : two route, so that's fat twice a week and that was, just practiced. It was just what everyone did*". |
| The Team | Culture: Hierarchical to collaborative working<br>Established centre practice<br>Adjusting to new ways of working | "*So, I'm a pharmacist. I sit with the dietitian, and we throw discussions of MCBs options back and forth between the two of us.*" |
| HPN Service Constraints | MCB product limitations<br>Perceived Administration burden<br>Homecare company variability<br>Meeting requirements whilst moving to a MCB first approach | *"(we need) more data on being able to double spike all of the different Intravenous fluids so that we're not constrained"* |

**Discussion:** These findings highlight variation in decision-making with multiple factors present, beyond nutritional and clinical characteristics. Further work is required to support consensus in HPN prescribing practice, with a collaborative multidisciplinary approach needed.

**Conclusion:** Decisions about HPN admixture choice and lipid dosing vary amongst HCP despite the same nutritional and clinical information being provided. This results in non-uniformity in prescribing decisions.

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# Obesity

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#BDAResearch

**Effectiveness of Tier 3 Adult Multidisciplinary Weight Management Services in the UK: A Systematic Review**

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**Background**: Obesity is a chronic, relapsing and progressive disease and prevalence is increasing in the UK[1]. Tier 3 weight management services provide specialist care for adults with complex obesity. However, evidence remains limited regarding the overall effectiveness of these services[2]. Therefore, this systematic review aimed to evaluate the clinical effectiveness of Tier 3 weight management services in the UK on weight-related outcomes.
**Methods:** A search of MEDLINE, EMBASE, PsycINFO, Web of Science, and Scopus was conducted in accordance with PRISMA guidelines to identify UK studies involving adults with BMI ≥30 kg/m$^2$ (or ≥27.5 kg/m$^2$ for ethnic minorities) with/without obesity-related comorbidities, receiving Tier 3 specialist interventions which were multidisciplinary, including pharmacotherapy, dietary, exercise and/or behavioural elements. Studies designs included retrospective (n=10) and prospective observational (n=6), cross-sectional (n=1), single-arm intervention (n=5), non-randomised controlled (n=1) and randomised (n=1) controlled trial (RCT). The primary outcome was change in BMI. Secondary outcomes included weight, waist circumference, clinical, and behavioural measures. Due to study heterogeneity, data were synthesized narratively. Risk of bias was assessed using the Cochrane Risk of Bias tool (RoB2) for randomised trials, the Risk of Bias in Non-Randomised Studies of Interventions (ROBINS-I) for non-randomised interventions, and the Risk of Bias in Non-Randomised Studies of Exposures (ROBINS-E) for observational studies. The review was registered a priori on PROSPERO (CRD420251004359).
**Results:** The search identified 1305 articles; and 24 studies met inclusion criteria. Sample sizes ranged from 44 to 2976 (total n=15346) (38.9% to 89.4% female) with mean baseline BMI ranging from 35.7 to 50.6 kg/m$^2$. Ethnicity data were reported in 9 out of 24 studies (3.8% to 56.2% were non-white). Intervention duration ranged from 12 to 96 weeks. Reduction in mean BMI post-intervention varied between -1.3 kg/m$^2$ and -7.0 kg/m$^2$. Mean weight change ranged from -3.5 kg to -20.65 kg. Clinically significant weight loss defined as 5% or greater was only reported in 6 studies. Secondary outcomes showed reductions in waist circumference, HbA1c and blood pressure, however reporting was inconsistent. Risk of bias was high across non-randomised and observational studies, and low for the RCT.
**Discussion**: This review found that Tier 3 weight management services in the UK can lead to short-term weight loss, though outcomes vary widely. Results are broadly consistent with previous research[3], but the evidence base is limited by high heterogeneity. Limitations include four studies with outlying mean weight loss values that may have inflated the overall effect positively, reliance on observational designs, inconsistent reporting of secondary outcomes, and lack of standard deviations (SD). These findings highlight the need for more standardised, high-quality studies powered to assess outcomes in subgroups that might experience inequalities as well as long-term effectiveness. There is a critical need for Tier 3 services to conduct and publish rigorous service evaluations to improve the evidence quality.
**Conclusion**: Tier 3 weight management services in the UK appear to be effective in the short-term to reduce weight. There was considerable inter-individual variability in weight loss. We recommend that future research explores which intervention components mediate effectiveness in priority patient groups. Further, there is a need for standardised reporting and controlled trials to clarify long-term effectiveness.
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**Supporting young adults (18-34 years) to achieve a healthier weight and behaviours**

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**Background:** Data suggest that obesity prevalence is increasing among young adults in England, with 35% of 16-24 and 58% of 25-34 year-olds living with overweight or obesity[1]. This is of concern given the strong association between obesity and chronic disease and the complexity of managing chronic disease for longer. Positive sustainable changes to lifestyle, including diet, alcohol and physical activity levels alongside healthy weight management, could lead to enhanced long-term benefits. However, 18-34-year-olds are currently under-represented in evaluations of weight management programmes (WMP)[2,3] and may feel current services are not tailored or relatable to their needs. This study explores the wider benefits that a community WMP, which focusses on behaviour change support around diet, activity and mindset, provides to young adults.

**Methods:** An online survey, hosted on Qualtrics, was developed with questions about diet, alcohol, physical activity, wellbeing, self-esteem and the social support provided for both group and online members. All 18–34-year-olds, living in the UK and Ireland, who were established members of the community WMP (attending for >4 weeks) and were not pregnant, were invited to take part. The survey included a variety of quantitative question styles including Likert scales, where level of agreement/disagreement was assessed on a scale of 1-5 and multiple choice, and some questions seeking optional free text responses where the data was thematically analysed. Where relevant mean ±standard deviation is reported. Ethical approval was obtained from the University of Nottingham School of Biosciences (ref SBREC202425017FEO).

**Results:** 3466 responded (n=204 online; 335 aged 18-24), 93.2% (n=2233) identifying as female and 97.4% (n=2334) as white ethnicity. Mean baseline Body Mass Index was 37.9 ±7.8 kg/m$^2$ with a weight change of -11.4 ±9.2% at the time of the survey (median attendance =32weeks (IQR 19–60). Before accessing support, 33% (n=901) respondents could cook tasty meals from scratch, 28% (n=778) could only cook using ready-made ingredients, 6% (n=162) could only cook ready meals and 5% (n=144) responded that they could not cook at all. After accessing support respondents reported more confidence in changing their eating habits (91%, n=2591) and ability to prepare healthier meals from scratch (p<0.001).
The most common challenges with cooking were finding time to cook (53%, n=1415), the cost of fresh food (44%, n=1186) and knowing what to cook (34%, n=929) but responses suggested that strategies had been implemented *"I plan meals ahead and shop using a list and try to stick to it so that it saves me money and helps me to eat healthy. I have a positive relationship with food now"*, *"batch cooking is key to prepare for days when I know I will not want to cook"*. In terms of alcohol consumption, 27% (n=668) had reduced the alcohol they drink, 17% (n=428) had swapped some or all for low-alcohol alternatives, 14% (n=341) had cut down on binge drinking and 10% (n=251) had completely stopped drinking alcohol. Almost two-thirds (64%, n=1575) of respondents were more active since accessing the WMP motivational support. However, some respondents felt that there could be more emphasis in the group setting and the resources more accessible. Overall, 77% (n=2194) felt able to challenge negative thoughts they may have had about their ability to lose weight, 89% (n=2304) respondents agreed the WMP helped them develop a better relationship with food and changed the way they think and feel about food in a positive way (87%, n=2244). In addition, 58% (n=1832) felt their mental wellbeing had improved with the majority (85%, n=1565) attributing this to the support. The group support was valued (92%, n=2387) and relatable to them (90%, n=2339).

**Discussion:** The findings suggest the community WMP supports weight loss and promotes confidence in the ability of young adults to change their dietary habits and physical activity levels, supporting positive behavioural changes which could improve long-term health. Some challenges around cooking were identified. Of surprise was the greater number of young adult respondents accessing in-person group support over online support making it difficult to determine any between-group differences in the changes reported. Future research is needed to explore the needs of 18-24-year-olds who were under-represented in the study population.

**Conclusion:** Community weight management programmes can support weight loss and foster confidence in young adults to adopt healthier dietary and physical activity habits, promoting long-term health.

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## A Service Evaluation of Dietetic Services within a Multidisciplinary Paediatric Weight Management Clinic

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**Background:** Childhood obesity is one of the major public health concerns. It is multifactorial in origin and has long-lasting health consequences (1). According to WHO, the prevalence of children living with overweight or obesity has risen dramatically from 8% in 1990 to 20% in 2022 (2). There is growing evidence on childhood obesity interventions; however, few studies evaluate the long-term effectiveness of dietetic input in multidisciplinary (MDT) clinics (3).

**Aim:** This study evaluated the dietetic services provided in the Consequences of Excess Weight (CEW) clinic, a Tier 4 MDT child weight management service. It investigated the association between the number of dietetic consultations as a part of the MDT CEW clinic and subsequent changes in Body Mass Index (BMI) Standard Deviation Score (SDS) over time. Similarly, the relationship between the number of 1:1 dietetic consultations and BMI SDS change was also explored. The study also investigated whether changes in BMI SDS were related to demographic variables such as age, gender, and ethnicity.

**Methodology:** This observational study employed a retrospective design. Ethical approval was obtained from Manchester Metropolitan University for this observational, retrospective service evaluation (SE). The NHS trust granted formal approval for data collection from electronic clinical records. Patients who attended the CEW clinic for a minimum of three months, with at least two face-to-face appointments, were included in the SE. Comparisons for differences in BMI SDS changes were carried out using the Kruskal-Wallis and Mann-Whitney U tests, considering the non-normal distribution of the data.

**Results:** A total of 106 patients met the inclusion criteria, but 14 cases had incomplete data and were excluded from the analysis. Clinical engagement analyses showed that the mean number of CEW face-to-face appointments was 3.85 (SD = 1.64), and the mean number of additional 1:1 dietetic contacts was 2.98 (SD = 2.55). The Kruskal-Wallis test showed that neither the number of face-to-face appointments nor 1:1 dietitian sessions was associated with a significant BMI SDS change ($p = 0.504$ and $p = 0.090$, respectively). Mann-Whitney U-test showed that the younger children aged 4-12 years had a significantly higher reduction in BMI SDS (-0.37 ± 0.349) than that of the adolescents aged 13–19 years (-0.06 ± 0.249), $p < 0.001$. The results of the Mann-Whitney U-test on gender and the Kruskal-Wallis test on ethnicity with relation to BMI SDS change found no significant difference.

**Discussion**: The SE did not find an association between the quantity of dietetic contacts or face-to-face dietetic contacts with the MDT CEW service. This may be an indication that other dietetic factors may be more important in supporting weight management in the service users, for example, the nature of the information given, which could be a topic for further evaluation. The findings regarding the difference in BMI SDS change and age groups underline the need for age-specific interventions, such as engagement, behavioural support, and family involvement may improve outcomes in adolescents

**Conclusion:** The SE highlights the need for further studies to explore other factors which may impact the effectiveness of dietetic involvement in a CEW clinic.

**Acknowledgements:** The author(s) want to thank the Paediatric Dietitian Team and the CEW MDT Team at Royal Manchester Children's Hospital. Their support and help were essential in finishing this service evaluation.

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**Reduced subjective sleep quality is associated with greater fast-food consumption, snacking, and reduced intuitive eating in the general population.**

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**Background**
Diet and sleep have a significant complex relationship, with poor sleep often accompanied with greater energy intake[1,2]. Whilst the underlying mechanisms are not fully clear, this could be due to changes in appetite signals, or changes in signals that are associated with seeking pleasure and reward, such as energy dense foods. The aim of this study was to examine the relationship between subjective sleep quality, snacking, and fast-food consumption. In addition, this study explored the association between sleep and intuitive eating.
**Methods**
This study employed a cross-sectional, questionnaire-based design among adults of the general population. Online surveys were advertised, inviting adults to report their habitual subjective sleep quality and duration using the Pittsburgh Sleep Quality Index (PSQI)[3]. They also completed the Food Frequency Questionnaire (EPIC–Norfolk FFQ) and included additional questions regarding snacking frequency. In addition, participants were presented with 11 typical fast-food items and asked to report how often they consumed each item. Intuitive eating was explored using the Intuitive Eating Scale-2 (IES-2)[4]. Participants answered questions relating to their perceptions of feeling an unconditional permission to eat, eating for physical rather than emotional reasons, reliance on hunger and satiety cues, and body-food choice congruence.
Linear regression was used to examine the association between sleep (PSQI score) and each variable, adjusting for age, smoking status and alcohol consumption.
Ethical approval was granted by Northumbria University College of Ethical Reviewers (Project ID: 2229).
**Results**
A total of 290 participants (215 females (74%), and 75 males (26%)) fully completed the questionnaires. The mean (± standard deviation) age, body mass index (BMI), and typical sleep duration of the respondents were 31±11 years, 26±6 kg/m$^2$, and 7.1±1.2 h respectively. 29% of the participants were considered as having good quality sleep (PSQI ≤ 4), while 71% were classified as having poor quality sleep (PSQI ≥ 5).
A significant positive association was found between PSQI score and the consumption of fast-food items per week ($\beta$ = 0.126, p = 0.019). Furthermore, a positive association was found between the PSQI score and snacks consumed per day ($\beta$ = 0.049, p = 0.005). Significant negative associations were observed between PSQI score and mean intuitive eating score (β = -0.053, p < 0.001), eating for physical rather than emotional reasons (β = -0.082, p = 0.002), reliance on hunger and satiety cues (β = -0.041, p = 0.009), and body-food choice congruence (β = -0.073, p <0.001). However, no significant associations were found for PSQI score and unconditional permission to eat (p > 0.05).
**Discussion**
These results suggest that individuals with habitual poor subjective sleep quality are more likely to consume more fast food and snacks; this is also linked with lower intuitive eating scores. Such food choices for individuals with poor sleep may be connected to signals related to reward seeking, as opposed to signals relating to hunger and fullness. Certainly, convenience may be a factor that should not be ruled out. This was not measured in the study.
**Conclusion**
This study highlights that poor subjective sleep is associated with greater fast-food consumption, as well as lower intuitive eating. Public health practitioners and weight management specialists should consider these findings when providing services, ensuring a holistic approach to preventing the development of obesity.
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## A Qualitative Study of Male Perspectives on Weight Management and Tailored Interventions

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**Background:** Obesity remains a significant public health challenge in England, contributing to the rise in chronic conditions and increasing pressure on healthcare services [(1)]. Weight management programmes (WMPs) support weight loss, but men remain consistently underrepresented, limiting public health impact and raising concerns about their ability to engage and support men effectively [(2)]. This qualitative study explores men's perspectives on weight management, focusing on the accessibility, relevance, and suitability of current WMPs and the potential benefits of gender-specific approaches.
**Method:** Secondary data from a PhD pilot project investigating men's views on WMPs were analysed. Participants were recruited through community and university networks to capture a range of male perspectives across different backgrounds. Data were collected through an online questionnaire with open- and closed-ended questions. Thematic analysis followed Braun and Clarke's framework [(4)], using NVivo 15 for coding [(5)]. Ethical approval was granted by London Metropolitan University; approval number MSCDN250225PY.
**Results:** Participants (N = 17) were adults aged 25–63 years with BMIs ranging from 26.2 to 37.1 kg/m², mostly White and residing in Camden and Islington. A summary of the themes generated from the thematic analysis is presented in Table 1. Participants had mixed perceptions of weight management, with some viewing it as beneficial, while others described it as challenging to sustain. While accessibility to WMPs have improved, many participants reported limited awareness and underuse by men. Views on gender-specific interventions varied: some expressed strong support for male-only programmes, while others preferred mixed-gender groups, highlighting the value of choice to support engagement.

| Research Question | Final Theme |
|---|---|
| ***Research Question 1: Male Opinion Towards Body Weight Management*** | Perceptions of Weight Management |
| | Approaches to Weight Management |
| | Barriers to Weight Management |
| ***Research Question 2: Male Opinion on the Current WMPs*** | Awareness and Understanding of Programmes |
| | Perceived Accessibility and Effectiveness |
| | Suitability for Men |
| ***Research Question 3: Male Perspective Towards Tailored WMPs*** | Uncertainty and Indifference |
| | Support for Tailored Programmes |
| | Opposition to Tailored Programmes |

Table 1. Summary of final theme and description

**Discussion:** This study found that although men value weight management and its health benefits, many are unaware of available services and feel existing programmes don't meet their needs. Gendered perceptions often cause disengagement, with participants expressing a preference for male-only, that feel more relatable and stigma-free. These findings highlight the importance of designing weight management services that align with men's specific preferences, communication styles, and motivations.
**Conclusion:** Findings underscore the need for flexible, gender-sensitive weight management strategies that account for men's preferences and barriers. Offering diverse formats and increasing awareness may enhance male engagement and improve public health outcomes.

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# Oncology

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#BDAResearch

**A Service Evaluation of Postoperative Surgical, Nutritional, and Functional Outcomes in Patients Undergoing Oesophageal Cancer Resection: A Comparative Analysis Based on Feeding Tube Utilization**

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**Background:** Oesophagectomy is a key treatment for oesophageal cancer, but recovery is often complicated by increased metabolic demands and poor oral intake. Jejunostomy (JEJ) tubes can provide critical nutritional support, yet their use remains controversial due to potential complications [1][2]. The aim of this service evaluation was to compare outcomes in patients with and without a JEJ-tube at Oxford University Hospitals (OUH) focusing on weight loss, quality of life post-surgery and post-surgical complications, such as, anastomotic leaks, respiratory complications, surgical-site infections, delayed gastric emptying and JEJ-related morbidity. OUH has established an evidence-based preoperative nutritional pathway that includes assessment of dysphagia grade and progression, weight history, sarcopenia, and malnutrition severity to guide appropriate feeding tube insertion in patients undergoing an oeosphagectomy surgery.

**Methods:** This retrospective service evaluation included 48 patients who underwent oesophagectomy at OUH between January 2023 and January 2024, using data from Electronic Patient Records (EPR). Patients were divided into two groups: those with a jejunostomy (JEJ, n = 43) and those without (no-JEJ, n = 5). Outcomes assessed included post-operative weight loss at 1, 3, 6, 9, and 12 months, post-operative complications, and quality of life (QoL), measured using the EORTC QLQ-OG25 questionnaire. This tool evaluates symptoms, eating difficulties, and overall wellbeing on a 1-4 Likert scale. Supplementary data from external dietetic teams, including missing weight measurements, were collected to ensure complete datasets. Statistical analysis was undertaken using SPSS (v27) which included independent t-tests, Mann-Whitney-U tests, and Fisher's exact tests, with $p<0.05$ considered significant. Ethical approval was not required as this project was classified as a service evaluation; however, it was registered on the OUH Ulysses system and discussed with the Allied Health Professionals (AHP) Research Group.

**Results:** JEJ placement occurred in 89.6% of cases, primarily those with advanced cancer stages (T3/T4). JEJ and no-JEJ groups had no statistically significant differences in nutritional, functional or surgical outcomes at any postoperative time point. Although not significant, JEJ patients showed trends towards greater weight loss beyond 6 months post-operatively and higher rates of complications, including anastomotic (JEJ: 16.4%, No-JEJ: 0.0%) and chyle leaks (JEJ: 11.6%, No-JEJ: 0.0%). QoL results revealed minor trends and near-significant differences in bile symptoms ($p=0.084$) and disease awareness due to presence of feeding tubes ($p=0.053$), although none reached statistical significance.

**Discussion:** This service evaluation suggests that routine JEJ insertion may not benefit all oesophagectomy patients, particularly given the higher complication rates observed. However, the small, imbalanced sample size, particularly in the No-JEJ group limits the generalisability. High-risk patients, defined as those with evidence of malnutrition, low BMI, or significant unintentional weight loss that can indicate increased vulnerability to postoperative complications, may have a clear benefit from JEJ feeding. It is, therefore, crucial to assess each patient's nutritional status and risk both pre-operatively and post-operatively to determine the most appropriate nutritional support strategy. A uniform approach to postoperative nutritional support may lead to unnecessary interventions and associated complications.

**Conclusion:** This evaluation supports a more selective, risk-adapted approach that balances nutritional benefits against potential complications to optimise recovery. Future research should adopt a prospective study design with a larger sample size to better inform nutritional support strategies following oesophagectomy surgeries.

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**The effectiveness of energy-based nutrition interventions on clinical outcomes in adults with haematological malignancies: A systematic review.**

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**Background:** Haematological malignancies (HM) occur when blood cells grow uncontrollably disrupting cell function[1]. HM and their treatments can negatively impact nutritional status by reducing appetite and increasing metabolism[2] leading to negative outcomes such as wasting[3]. Oncology management guidelines encourage nutritional support, yet evidence regarding the nutrition intervention delivery method to optimise treatment and clinical outcomes is limited and conflicting[4]. This systematic review aimed to evaluate varying nutritional interventions provided in the management of adult patients with HM on malnutrition related clinical outcomes including weight change, serum albumin, infections, energy and protein intakes and quality of life (QoL) and highlight potential avenues for research in this area.
**Methods:** A systematic review of randomised control trials (RCTs) using Cochrane guidelines. Web of Science, Medline and Applied Social Sciences Index and Abstracts were searched using variations of terms 'haematological malignancies', 'nutritional intervention' and 'clinical outcomes.' Full publications published between 2004-2024 in English were eligible, older studies were deemed not to reflect current clinical practise. Nutrition intervention RCTs detailing energy requirement estimation method, energy intakes and clinical outcomes were included. The outcomes analysed by this review were the most common outcomes measured across the included RCTs from each of the six categories within the A-F assessment tool. Participant groups included adults receiving any cancer treatment for any type of HM during the intervention. As this was a literature review, ethical approval was not required.
**Results:** Of two-hundred and ninety-seven results, six RCTs met inclusion criteria. Included RCTs were quality assessed using the Cochrane Risk of Bias Tool (RoB), all were deemed low-moderate quality. Five RCTs reported intervention groups consumed higher energy and protein intakes than control groups by means of 19.3% and 43.3% respectively. Interventions implemented early in treatment and involving individualised dietetic support were more likely to improve clinical outcomes such as QoL, infection, albumin and weight.
**Discussion:** Early nutrition support implementation and dietetic involvement were associated with improved clinical outcomes in QoL, albumin, infection levels and weight. However, extensive methodological variability between RCTs for example, route of nutrition, QoL measurement tools and timeframes of both intervention and follow up, limited comparison and statistical analysis. More cohesive research is needed to confirm optimal nutrition intervention method and the extent of impact of increasing intakes on clinical outcomes. The development of a research protocol may ensure cohesion between study design.
**Conclusion:** Results suggest nutrition interventions may increase energy and protein intakes however, due to methodological differences between studies, optimal nutrition intervention method and the impact of increasing intakes on clinical outcomes remains unclear.

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**Nutritional challenges and lived experiences of patients with ALK+ lung cancer undergoing targeted therapies: a secondary qualitative analysis**

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**Objectives:** Lung cancer is the most commonly diagnosed cancer worldwide and the leading cause of cancer-related mortality (1). Anaplastic lymphoma kinase-positive (ALK+) non-small cell lung cancer (NSCLC) affects ~3-5% of patients, often younger adults and never-smokers. While targeted therapies (tyrosine kinase inhibitors, e.g., alectinib, brigatinib) have improved survival, little research explores patients' nutritional challenges and coping strategies. The aim of this qualitative study was to investigate the lived nutritional experiences of people with ALK+ NSCLC receiving targeted treatment.
**Methods:** A secondary qualitative analysis of 11 one-to-one semi-structured interviews from a PhD study focused on improving nutritional care in cancer was conducted. Participants with ALK+ NSCLC were recruited via UK charities and support groups; interviews were conducted online (Zoom) across multiple UK regions (including Wales and Scotland) between May and August 2023, audio-recorded and transcribed verbatim; one interview per participant. Inclusion criteria: ≥18 years, English-speaking, able to use Zoom, no consent-limiting impairment, and receipt of cancer treatment in the UK within the previous five years. We used the Framework Method to explore experiences related to nutritional wellbeing (2). Coding was conducted manually by the research team with iterative discussion. Ethical approval and consent from each participant were obtained, UREC Registration No: 221657.
**Results:** Demographically, participants were 27–75 years old (median ~50), predominantly female (8F/3M), with self-reported ethnicity largely white British and representation including black British and Asian (Chinese), with some not reported.
Five interconnected themes were identified.

1) Symptoms disrupted intake: appetite reduction or increase, taste changes, and weight fluctuation affected dietary patterns. "*I was just ravenous all the time, you'd eat your meal, and literally half an hour late, you'd be like: "I could just eat that again". So there's never any sort of fullness*." – L68.
2) Motivation for prehabilitation and self-management: participants expressed a desire to optimise diet and mental health alongside treatment. "*I feel prehabilitation would be positive, because I think preparation is probably everything*." – L64.
3) Social support as scaffolding: family, peers, and online communities provided practical and emotional help with nutrition. "*My husband was concerned. He does sort our food out for me now, he cooks for me and does my breakfast, and makes sure I have drinks*" – L2.
4) Ambivalence toward targeted therapies: gratitude for life-extending TKIs coexisted with frustration about chronic side effects influencing eating. "*I absolutely hate it. I had just started Lorlatinib and I knew that the whole thing was supposed to be bad, but I didn't realize it was literally your brain switching off to the fact that you are full*." – L64.
5) Limited tailored input led to self-education: participants reported insufficient personalised nutritional guidance and turned to self-directed strategies and online resources. "*I'll just say now that I wasn't offered any paperwork, any nothing, no pamphlets, no Macmillan leaflets, no nothing about food and nutrition*." – L29.

Themes were inter-related, for example symptoms often prompted self-education; social support was seen as important to support prehabilitation efforts.
A limitation of this study is the small and self-selected sample.
**Conclusion:** People living with ALK+ NSCLC on targeted therapies face under-recognised, ongoing nutritional challenges. These findings support early, proactive, person-centred nutritional care embedded within multidisciplinary oncology services; tailored advice may aid treatment adherence and wellbeing.

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**A Prospective Observational Study on Changes in Handgrip Strength and Weight in Adult Head and Neck Cancer Patients Receiving Radical Radiotherapy (+/- Chemotherapy) Treatment at A Cancer Centre.**

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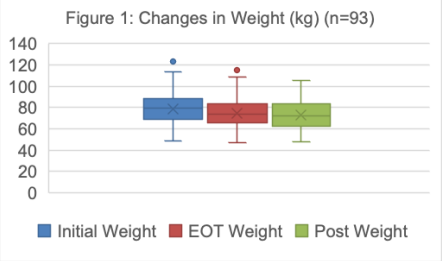
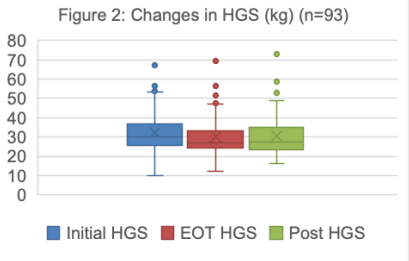
**Background:** Between 50-75% of Head and Neck Cancer (HNC) patients experience moderate to severe malnutrition [1]. Dietitians play a key role in HNC care to minimise weight loss and preservation of muscle mass. In cancer patients, protein catabolism significantly hinders the preservation of muscle mass throughout treatment [2]. Reduced handgrip strength (HGS) is associated with increased risk of mortality, disability, and other health complications [3]. Understanding their relationship between weight and HGS is important and addresses an existing gap in the literature. This study aimed to examine the changes in HGS and weight in HNC patients and explored the relationship across an average of 12-week period, including before, during, and after radical radiotherapy ± chemotherapy.
**Method:** Weight, body mass index (BMI), and HGS were recorded for 93 patients at baseline, end of treatment (EOT), and 4–8 weeks post-treatment. Participants were recruited at their pre-treatment assessment, approximately one week before commencing radical HNC therapy. Inclusion criteria were completion of curative-intent radiotherapy with a total dose of 60–65 Gy delivered over 30–35 fractions (5–6 weeks). Patients were followed up once a week during treatment and once every 2-3 weekly for up to 8 weeks post-treatment. Thirty-two patients were lost to follow-up, primarily due to missed appointments or unrecorded HGS measurements. HGS was measured using the non-dominant hand (unless contraindicated, e.g., surgical flap) in a standing position, with the best of three attempts recorded using an Abbott© Handgrip Dynamometer (Model EH101). Data were compiled in Excel, and descriptive statistics (mean ± standard deviation (SD)) were used to characterise the cohort and assess changes in weight and HGS. Correlation between variables was determined using Pearson's correlation coefficient. All patients provided verbal consent for the use of their anonymised anthropometric data.
**Results:** The analysis showed that on average the population lost a clinically significant percentage weight loss of 8.6% and 7.6% decrease in HGS from initial treatment to post treatment. A total of 87% patients lost weight and 76% of patients experienced decline in HGS (Figure 1 and 2). Correlation analysis revealed no significant relationship between changes in HGS and weight (p= 0.91).

| Table 1: patient demographic | Average | SD |
|---|---|---|
| Descriptive (n=93) | | |
| **Sex** | **80% (74)** | **NA** |
| Age | 64 | 10.9 |
| **Initial HSG** | **32.2** | **10.4** |
| Initial Body weight | 78.4 | 15 |
| **Initial BMI** | **27.1** | **6.6** |
| EOT HGS | 30.2 | 10.2 |
| **EOT Body Weight** | **74.1** | **13.3** |
| EOT BMI | 25.5 | 5.4 |
| **Post treatment HGS** | **30.3** | **10.7** |
| Post treatment Body Weight | 71.5 | 14.5 |
| **Post treatment BMI** | **26** | **9.5** |




**Discussion:** Weight loss occurred in most patients (87%), consistent with previous studies showing persistent weight loss in HNC despite intervention [3]. Nevertheless, the data set exhibits high variability (high SD), suggesting that generalisations based on the average may be inappropriate. HGS is practical to use in the clinical setting and may help to inform dietetic intervention (e.g., high-protein nutrition support). One limitation of the study and relevance to clinical practice is the lack of standardisation of HGS so further research into functional measures is warranted to aid to inform dietetic intervention in HNC.

**Conclusion:** Although both weight and HGS declined significantly, there is no significant correlation between the two. Future Direction: assess correlations between acute toxicities, weight, and HGS.

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**Impact of a specialist hepato-pancreato-biliary dietitian (HPB) on pancreatic cancer patients within a district general hospital (DGH)**

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**Background:**
The management of the pancreatic cancer patient is complex and requires a multidisciplinary team (MDT) approach. Previously, the MDT lacked dietetic support, relying solely on medical staff. This aim of this project was to explore the impact of introducing a Specialist HPB Dietitian in a DGH. It aims to assess changes in patient management, focusing on four key outcomes: referral rates to dietetics, implementation of tailored dietary advice, improvements in nutritional status, and better symptom control.

**Method:**
This service evaluation and retrospective audit reviewed electronic records of pancreatic cancer patients diagnosed between January 2018 and August 2024. Outcome data using the National Health Service outcomes framework[1] have been collected from January 2020 to August 2024 (56 months) using a data collection tool from the British Dietetic Association Oncology Specialist Group[2]. Ethical approval was not required due to the nature of the evaluation.

**Results:**
Before the introduction of a Specialist HPB Dietitian, only 32% of pancreatic cancer patients were referred to dietetic services in 2018-2019. After the role was introduced (2020–2024), 81% of 282 patients were referred. Among those seen, 100% met patient-focused goals (including bespoke verbal/written advice and support provided to manage condition/symptoms), and 79% achieved or partially achieved dietitian-focused goals. Regarding nutritional status, 60% maintained or minimised deterioration, 76% managed symptoms through dietetic support, and all patients met goals related to assessment, nutritional improvement, and end-of-life care.

**Discussion:**
The introduction of a Specialist HPB Dietitian improved referral rates and enhanced patient-centered care within the MDT for pancreatic cancer management in a measurable way. This role facilitated tailored dietary interventions that helped maintain nutritional status and improve symptom control, demonstrating the value of dietetic expertise in comprehensive cancer care.

**Conclusion:**
This service evaluation highlights the vital role of specialist dietitians within the MDT at a DGH, demonstrating their powerful impact on improving nutritional outcomes for pancreatic cancer patients.

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**Patient reported experience measures of a hepato-pancreato-biliary (HPB) dietitian within pancreatic cancer services in a district general hospital.**

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**Background:** Specialist HPB dietitians are key in providing nutritional support, optimising PERT, and managing symptoms in pancreatic cancer care. While patient-reported outcome measures (PROMs) are widely reported, patient-reported experience measures (PREMs) evaluating dietetic input are scarce, though some studies highlight gaps in PERT education, with one UK survey showing a third of patients felt under-informed[1].

This project aimed to assess patient experience and the impact of HPB dietitian-led PERT education within the multidisciplinary team (MDT).

**Method:** A Pancreatic Enzyme Replacement Therapy (PERT) patient questionnaire was sent electronically with consent via email or text to 22 patients reviewed between July 2023-April 2024 who had either recently or previously been diagnosed with pancreatic cancer and had HPB dietitian input. The questionnaire was devised by the HPB dietitian using questions agreed and reviewed by the MDT. The questionnaire contained eight multiple choice questions with a box for comments and one free-text. Results were received via JISC Online Survey platform and analysed. Ethics approval was not required.

**Results:** 11/22 (50%) questionnaires were returned. Results were as follows:

- 8/11 (73%) had very good or good understanding of PERT prior to HPB involvement, increasing to 11/11 (100%) after seeing the HPB dietitian
- Only 5/11 (45%) patients were very confident or quite confident on PERT prior HPB Dietitian involvement, increasing to 10/11 (91%) after seeing the HPB dietitian
- 9/9 (100%) patients found the PERT information booklet either very helpful or quite helpful
- 11/11 (100%) patients were either very satisfied or satisfied with the HPB dietetic service
- 11/11 (100%) patients felt well supported by the HPB dietitian service
- 10/11 (91%) patients would recommend HPB dietitian service to friends and family

Free text comments stated patients reported feeling supported, reassured, and listened to, highlighting the dietitian's professionalism, clarity, and ability to build rapport. Communication was praised, with patients feeling fully informed and their questions answered simply and effectively. One area for improvement was a desire for more detailed information on how different foods affect the body and bowel.

**Discussion:** Patients reported improved understanding and confidence in managing PERT following HPB dietitian input, with communication and care consistently rated positively, reflecting the value of a professional and supportive approach, similar to previous findings[1]. While overall satisfaction was high, a request for more detailed dietary information highlights am opportunity for service refinement, consistent with qualitative evidence that practical guidance enhances acceptability and perceived benefit[2]. A key limitation is that the online questionnaire may have excluded those without digital access, introducing potential bias.

**Conclusion:** Patient experience data strongly supports the positive impact of HPB dietitian involvement, reinforcing the essential role of specialist dietetic input within the multidisciplinary cancer care pathway.

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**Evaluating Body Composition from Routine Computed Tomography (CT) in Early-Stage Resectable Lung Cancer.**

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**Background:** Opportunistic CT analysis of body composition, using routinely available scans allows identification of body composition abnormalities such as muscle loss, a common manifestation of cancer-relation malnutrition, associated with poor clinical outcomes(1). This study aimed to assess whether routine CT scans can be used to identify early body composition abnormalities in patients with lung cancer and whether these parameters are associated with sex, age or BMI. We hypothesise that CT assessment of body composition can identify body composition abnormalities that cannot be detected by BMI category alone.

**Methods:** This study analysed 32 unenhanced CT scans from treatment-naïve adult patients with early-stage resectable non-small cell lung cancer who underwent routine pre-treatment [$^{18}$F]FDG PET/CTs between 2009–2018, who had been recruited onto the REPLICA study(2) (Ethical approval IRAS number: 228790). Patient demographics (age, sex, BMI) were collected from scan metadata. Body composition was assessed using OsiriX MD software at the L3 vertebral level. Skeletal muscle, subcutaneous, visceral, and total adipose tissue were segmented based on Hounsfield Unit (HU) thresholds in duplicate by two trained MSc dietetics students and cross-sectional areas were recorded, before conversion to height-normalised indices. Average of both students measurements were used for statistical analysis. Phenotypic cut-offs for low muscle mass were applied using validated Martin, 2013 sex & BMI-adjusted thresholds(3). Data were recorded in REDCap and analysed in SPSS v29. Descriptive statistics (presented as mean(SD)), t-tests, and one-way ANOVA (with Bonferroni correction) were used to examine associations between body composition metrics, sex and BMI category. Significance was determined at $p<0.05$.

**Results:** Of 32 patients, 59% were male. Mean(SD) age was 72.5(9.5) years. Skeletal muscle index ($cm^2/m^2$) differed by BMI category (healthy: 47(5) $cm^2/m^2$ vs. obese: 60(9) $cm^2/m^2$, $p=0.011$), but not sex, however, there was no statistically significant difference in the prevalence of low muscle mass by sex (male: 38% vs. female: 22%, $p=0.657$), or between BMI categories (normal: 29% vs. overweight: 43% vs. obese: 29%, $p=0.856$). Total adipose tissue index ($cm^2/m^2$) was higher with increasing BMI category (healthy: 111(28) vs. overweight: 166(32) vs. obese: 213(25), $p=0.003$ (healthy vs. overweight), $p<0.001$ (healthy vs. obese), $p=0.015$ (overweight vs. obese)), while no sex or BMI-related differences were noted with subcutaneous adipose tissue index. Visceral adipose tissue index ($cm^2/m^2$) differed by sex (male: 89.6(38.9) vs. female: 49.2(21.7), $p=0.016$) and BMI category (healthy: 110(35) vs. obese: 42(20), $p<0.001$).
**Discussion:** Prevalence of low muscle mass did not differ by sex or BMI category. Only total adipose tissue index differed between BMI categories. These findings indicate that BMI category, particularly in the overweight range, does not clearly reflect underlying body composition. These findings are consistent with literature showing that CT-derived body composition abnormalities are common at all BMIs(4). Routine analysis of CT scans for this purpose could enable earlier identification cancer-related malnutrition and support timely, individualised prehabilitation interventions. Despite limitations including small sample size and lack of data on confounders such as ethnicity or weight history, these results emphasise the potential value of investigating integrated body composition analysis in lung cancer care.
**Conclusion:** These findings highlight an important limitation of BMI compared to CT-based body composition analysis for detecting malnutrition, in the form of low muscle mass and abnormal adiposity. The findings underscore the importance of body composition assessment to inform dietetic intervention in patients undergoing surgery for lung cancer.

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**'Nutritional management and consideration of parenteral nutrition (PN) in patients admitted with malignant bowel obstruction (MBO): A service evaluation'**

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**Background:** There are no published guidelines for the nutritional management of malignant bowel obstruction (MBO) (1). Clinical management guidelines refer to nutrition (2, 3), however advice is not evidence-based. Existing literature extensively discusses the use and appropriateness of parenteral nutrition (PN) in advanced cancer. We anticipated that management of MBO may be inconsistent and nutrition, particularly PN, overlooked. The aim of this service evaluation was to understand current variation in nutritional management of MBO in hospital.

**Methods:** Ethical approval was granted via Imperial College Healthcare NHS Trust. We prospectively screened for patients admitted with confirmed or suspected MBO over a 5-month period. Data gathered from electronic patient records including demographics, diagnoses, MBO management, nutritional interventions including PN, and outcomes were recorded with a data collection tool.

**Results:** 26 patients were admitted from Oct 2023-Feb 2024. 73% were female (n=18). Mean age on admission was 62 years (range 37-92y). All had stage II-IV metastatic cancer of primary gynaecological (54%, n=14) or gastrointestinal (46%, n=12) origin. Obstructions were predominantly of the small bowel (81%, n=21), and were single rather than multi-level (n=19 and n=7 respectively).

Management of MBO was conservative, with no patients receiving surgery. 65% of patients were made nil by mouth (NBM) for 0-6 days. A naso-gastric tube was inserted for drainage in 17 cases (65%), with two patients refusing this intervention. One patient received enteral nutrition via naso-jejunal tube (NJT), and four patients received PN during admission for 5-36 days (mean 18 days). One patient was admitted receiving home PN and died during admission.

81% of patients were referred to the dietitian during admission. PN was discussed within the multi-disciplinary team (MDT) in 35% of cases, and 23% of patients were referred to the nutrition team. Documented reasons for PN not being prescribed included MBO resolving, poor prognosis and/or concerns regarding discharge from hospital, and patient choice. In five cases, there was no documentation of PN being discussed or considered. No patients were discharged home with PN.

MBO resolved in 81% of cases (n=21), with 77% of patients being discharged to hospice, nursing home, or home. 6 patients died during admission. Screening for malnutrition was only completed in 50% of admissions. Of those screened, mean percentage weight loss during admission was 9.3% (range 2-20.7%). 35% of patients had at least one previous admission with MBO (range 1-7).

**Discussion:** The nutritional care of patients admitted with MBO varied and referral for nutritional assessment was inconsistent. Four patients received PN. However, it is unclear why PN was prescribed in these cases yet not considered in others with similar presentations. MDT management of MBO was acute, with little consideration of advanced care planning should MBO re-occur, despite this often being the case, and this not being the first presentation with MBO more than 1/3 of the time.

Percentage weight loss was calculated in only 50% of cases due to poor completion of malnutrition screening. Weight loss was significant. Whilst in advanced malignancy meeting full nutritional requirements may not always be the aim, the impact of malnutrition on comfort and quality of life should be considered.

**Conclusion:** This service evaluation highlights significant variation in current management. Guidelines that standardise the nutritional assessment, pathway of care, and advanced care planning for MBO would be beneficial.

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# Optimising Nutrition Prescribing

## Supported by Optimising Nutrition Prescribing Specialist Group

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#BDAResearch

**Audit to assess whether dietitians set measurable outcomes for the use of oral nutritional supplements as an intervention among malnourished patients living in the community or care home settings.**

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**Background:** Malnutrition affects approximately 3 million people in the UK, with 1.3 million over the age of 65(1). Oral nutritional supplements (ONS) are commonly prescribed in community and care home settings to address malnutrition, often without prior food-based interventions. Despite their widespread use and cost to the NHS of over £240 million per year and rising(2), there is limited evidence on whether dietitians consistently set measurable outcomes when initiating ONS. This audit aimed to assess the frequency and types of measurable outcomes set by dietitians in South East London (SEL) and to evaluate the specificity of weight-related goals.

**Methods:** A retrospective audit was conducted using data extracted from GP ONS audit spreadsheets across six SEL boroughs between 1st April 2023 and 31st March 2024. The dataset included adult (≥18 years) free-living or care home patients who were registered with a SEL GP, and had an active ONS prescription initiated by acute or community dietitians. Data collected included demographics, prescribing source, presence and type of outcomes, and whether Advisory Committee on Borderline Substances (ACBS) criteria were met. Descriptive analysis was used to quantify the presence and types of outcomes recorded. Outcomes were categorised as measurable (e.g. target weight, wound healing) or non-measurable (e.g. quality of life) based on predefined criteria. Ethical approval was not required. Guy's and St Thomas' NHS Foundation Trust audit reference: 17933.

**Results:** Of 1,248 patient records, 742 (59%) ONS prescriptions were dietitian-initiated. Among these, 55% (n=406) had no outcomes set, 26% (n=191) had measurable outcomes, and 19% (n=145) had non-measurable outcomes. The most common measurable outcome was weight (n=177, 93%), with 79% (n=140) aiming for weight gain and 21% (n=37) for weight stability. Target weight gain varied from 1–10% (n=76, 54%), 11-20% (n=43, 31%), 21-30% (n=20, 14%) and 39% (n=1, 0.7%). Only 6% (n=12) and 1% (n=2) of outcomes related to pressure sores and wound healing, respectively. Non-measurable outcomes included minimising nutritional losses (n=62, 11%) and maintaining nutritional status (n=46, 8%). Half of the patients were no longer under active dietetic review (n=377, 51%).

**Discussion:** Despite guidance from the British Dietetic Association advocating for measurable outcomes in dietetic practice(3), most dietitians in SEL did not set them when prescribing ONS. Where outcomes were set, many lacked specificity, limiting their utility for ongoing review by other healthcare professionals, and nearly half of prescriptions did not meet ACBS criteria. With the increasing cost-burden on the NHS, this raises concerns about the appropriateness and sustainability of ONS prescriptions, especially given the financial and environmental costs of these products.

**Conclusion:** It is crucial that dietitians are trained, both pre- and post-registration, to use an evidence-based, measurable approach to dietary management and ONS use as, with ongoing review, this could enhance patient care, support appropriate prescribing, and reduce unnecessary NHS expenditure.

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**Piloting a new hospital discharge pathway for patients requiring Oral Nutritional Supplements (ONS) – the No ONS Prescription (NOP) Approach**

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**Background:** The Prescribing Support Dietitian Team (PSDT) manage the clinical care of patients discharged from secondary care by dietitians on ONS. In 2023, 836 patients were referred to PSDT from acute dietetic colleagues. Acute dietetics would request a GP10 ONS prescription via primary care until PDST review. The average waiting time until first contact with PSDT was 80 days. At first PSDT contact 80% of patients required a change to their ONS prescription compared to the prescription they were discharged on. 44% didn't required ONS at all. As result there was wastage and over-use of ONS. We hypothesised that earlier PDST intervention could negate need for GP10 prescriptions in many instances.

**Method:** A No ONS Prescription (NOP) pathway in which patients assessed by dietitians as requiring continued ONS use in primary care are provided with a 2 week supply of ONS on discharge from secondary care was piloted. This was initiated on a sequential basis to include four secondary care sites. Acute dietitians provided ONS discharge supply and an appointment letter for PSDT follow-up at the point of discharge. The PSDT reviewed the patient within a target of 10 days to determine if an ONS prescription was required. PSDT recorded outcome of initial patient contact for analysis

**Results:** 154 patients followed the NOP pathway between February and December 2024. Average waiting time from discharge to first contact with PSDT was 11 days. Outcomes of first PSDT contact are summarised in Table 1. In total 37% of patients (n=58) did not require ongoing use of ONS and therefore did not require a GP10 ONS prescription. 29% (n=44) required a change to ONS prescription – most commonly (19%) reducing quantity of ONS. Only 34% of patients (n = 52) remained on the same product and quantity they were discharged on. The cost avoidance derived from no GP10 ONS prescription at point of discharged was £8122.

| Outcome of PSDT Contact | Number of Patients | % |
|---|---|---|
| Continue Same ONS | 52 | 34 |
| Reduce Quantity of Same ONS | 29 | 19 |
| Recommend Stop ONS | 26 | 17 |
| Did Not Attend | 11 | 7 |
| Patient Stopped ONS | 10 | 6 |
| Change of ONS | 9 | 6 |
| End of Life (expected death within 2 weeks) | 7 | 4 |
| Increase Quantity of Same ONS | 6 | 4 |
| Deceased prior to Contact | 4 | 3 |
| **TOTAL** | **154** | **100** |

Table 1.

**Discussion:** This pilot has shown that despite much earlier dietetic review following NOP pathway, a significant proportion of patients do not require ongoing ONS use once discharged from hospital. 44% of patients did not require ONS at 80 days (2023) compared to 37% of patients not requiring ONS at 11 days (NOP 2024). Patients have cited improved clinical condition and access to preferred foods as factors in significant improvement to intake at home. Interestingly, several patients anecdotally reported pressure to take ONS within hospital from healthcare teams.

**Conclusion:** This novel approach has shown great potential for both financial and environmental efficiencies by reducing unnecessary ONS prescriptions.

# Paediatric

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**The Effects of a Gluten Free Diet on Future Cardiovascular Disease Risk in Children Diagnosed with Coeliac Disease: A Systematic Review**

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**Background:** Coeliac disease (CD) is estimated to effect 1 in 100 children in the United Kingdom (UK)[1]. Evidence has shown that in the UK, processed gluten free food products (GFFP) have a higher saturated fat (SF) content than equivalent gluten containing foods[2]. High dietary consumption of SF is a recognised contributing factor to developing dyslipidaemia; childhood dyslipidaemia is strongly associated with atherosclerotic cardiovascular disease (CVD) in adulthood[3]. **Aim:** This systematic review (SR) aims to evaluate whether children diagnosed with CD are at increased risk of CVD as a result of consuming a gluten-free diet (GFD); such evidence is yet to be synthesised within a published SR.
**Methods:** CINAHL Ultimate, PubMed and Wiley Online Library databases were searched between February and October 2024. PICO search terms included 'children' OR 'adolescents' AND 'coeliac disease' AND 'gluten-free diet' AND 'lipid profile' OR 'cardiovascular disease'. Search term variants were used depending on database vocabulary criteria. Included studies were critically appraised for methodological quality using The Joanna Briggs Institute critical appraisal checklists[4]. Only one reviewer carried out the search, and ethical approval was not required.
**Results:** Following exclusion from screening of titles and abstracts, 14 out of 1558 articles identified remained, of which 4 did not meet PICO criteria. Subsequently, 10 peer-reviewed articles were included within the SR of cohort, cross sectional and case-control design. Main study findings and key characteristics were collected and summarised within a table. High-Density Lipoprotein Cholesterol (HDL-C) significantly increased in 4 studies in children diagnosed with CD following a GFD ($p<0.001$) [5,] ($p<0.01$) [6], ($p\leq0.05$) [7,8]. Low-Density Lipoprotein Cholesterol (LDL-C) increased after 6 and 12 months of GFD adherence in 3 studies; 1 study identified significant increases in LDL-C in children diagnosed with CD consuming >4 processed GFFP daily ($p=0.001$), but not in those consuming <2 processed GFFP daily[9]. 1 study found significant increases in triglycerides after 1-year GFD adherence ($p=0.0325$)[10].
**Discussion:** Increases in blood lipids (BL) observed in children with CD are likely due to healing of villous atrophy, resulting from GFD adherence. Significant increases in HDL-C in children diagnosed with CD indicates a potential cardioprotective effect of the GFD, whereas increases in LDL-C are concerning due to links with atherosclerotic CVD as an adult[2]. The higher SF content of processed GFFP may therefore contribute to increases in LDL-C. However, indirect comparisons were made between changes to BL in children with CD due to differing comparator groups, highlighting a limitation of this SR.
**Conclusion:** Short term GFD adherence has conflicting effects on the BL of children diagnosed with CD; further longitudinal studies are needed to assess the longer-term effects of a GFD on BL of children diagnosed with CD, especially in regards to the nutritional quality of a GFD to justify the need of cardioprotective dietary education by registered dietitians for paediatric patients with CD.

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## Content Analysis of Marketing Themes in the Promotion of Ultra-Processed-Foods for Young Children

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**Background:** In 2024, ultra-processed foods (UPFs) were found to contribute 47% of total energy intake in toddlers, rising to 59% in 7-year-olds, in the UK [(1)], and new evidence is emerging about health implications of UPF consumption. One concern is the marketing strategies employed by UPF manufacturers to attract both children and guardians, encouraging them to be a regular part of the diet. This research uses the NOVA classification [(2)] to identify UPFs commonly available in UK supermarkets, and identifies marketing themes in these products and how these are directed towards children and guardians. The aim of this research was to conduct a qualitative content analysis to analyse marketing themes and identify perceivable health, nutritional and/or promotional messages in the packaging and form of UPFs targeted to young children in the UK.
**Methods:** A manual qualitative content analysis was conducted of the packaging and form of a purposive sample of UPFs (*n*=35 – sample size selected due to project capacity) identified as targeted to young children in the UK. Relevant marketing categories were identified of colours, imagery, promotional messaging and interactivity. Data was coded as per observed features from which themes of interpretive meaning were identified. Ethics approval was obtained from the Cardiff Metropolitan University Ethics Committee: UG-9587.

**Results:** Findings revealed three overarching themes: 'Implicit and Explicit Reference to Simplicity and Purity' through rudimentary colour, wholesome language (organic, natural) and photographs of wholefoods; 'Promotion of Perceived Healthfulness' through fruit and vegetable imagery and language forming direct health and/or nutrition claims (immunity, 5-a-day) and indirect health and/or nutrition messages, and; 'Educational Framing Pertaining to Young Children's Imagination and Development' through primary colours, illustrative fantasy and/or activity imagery and interactivity which mimicked toys (vehicle shapes, fantasy scenes).

**Discussion:** This research corroborates existing studies which found marketing themes across commercial foods targeted at children, including the use of cartoons and fantasy/activity imagery. Theoretical themes discussed suggest at least two distinct modes of marketing through attending to social and moral values. Specifically, through the use of rudimentary colour, pictorial and verbal reference to fruits and vegetables, wholesomeness and naturalness cues, health and nutrition claims and interactivity to promote ideals of health, nutrition and early learning experiences. The associations found were relevant to existing concerns regarding claims made on UPF packaging and their discordance with overall contribution to individual health [(3)], which could be useful in policy making regarding UPF marketing limitations, particularly for foods targeted at young populations.

**Conclusion:** This research suggests marketing techniques that seek to appeal to both children and guardians by pertaining to social and moral values through use of colour, imagery, language and interactivity. Regulation of how pre-packaged food stuffs aimed at young children are marketed could be informed by the findings of this research to reduce manufacturer influence on consumer habits, to promote healthier intakes in UK child populations.

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**Pre-registration education in paediatric dietetics – a survey of paediatric dietitians to establish current practice and challenges**

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**Background:** Paediatric Dietetics has historically existed as a postgraduate speciality. However, there is increasing concern regarding the recruitment and retention of dietitians into paediatric roles, with difficulties reported by leads at tertiary children's hospitals and members of the British Dietetic Association (BDA) Paediatric Specialist Group (PSG)[1]. Integrating paediatric education earlier in the pre-registration curriculum will allow learner placements to take place and encourage dietitians into the paediatric speciality[2]. No evidence currently exists to understand the current provision of paediatric dietetic placements.

**Aim:** To collect information on the provision of paediatric placements and paediatric dietitians' barriers and enablers for placement delivery.

**Method:** A survey was designed by the authors using Microsoft Forms. The survey was distributed to all members of the BDA PSG via email, PSG Managers sub-group and posted on the PSG Facebook page. The open question responses were analysed and then coded into themes. A copy of the questionnaire is available on request. Ethical approval was deemed unnecessary.

**Results:** Summary of Paediatric Placement Survey (n=58*)

| Category | Details |
|---|---|
| Placement Provision | 100% of respondents provided a paediatric placement. |
| Work Settings | • 40% District General Hospitals<br>• 31% Tertiary Children's Hospitals<br>• 27% Community Settings<br>• 5% Other |
| Placement Duration | Ranged from single shadowing days to placements >6 weeks.<br>No clear pattern between work setting and placement duration. |
| Identified Barriers | • Low staffing/capacity to support learners<br>• Lack of higher education institution (HEI) theoretical training in paediatric dietetics<br>• Perception of paediatrics as too specialist/complex<br>• Lack of student interest in paediatrics<br>• Perceived difficulty compared to adult settings |
| Universities Involved | Learners were taken from 23 Higher Education Institutions. |
| Apprenticeship Hosting | 28% units also hosted dietetic apprentices alongside students. |
| Enablers to Placement Expansion | • Need for improved university education in paediatric dietetics<br>• Greater staff support and education, particularly for consolidation<br>• Normalisation of paediatric placements within curricula and learner expectations |

*The lead for student training within Paediatric teams was requested to respond on behalf of individual departments, so it was not possible to state a response rate; no information exists on the number of paediatric dietetic teams in the UK

**Discussion:** Key issues include limited staffing capacity, continued marginalisation of paediatrics within the dietetic curriculum, the complex nature of paediatric casework, and perceived low levels of student interest and preparedness. These factors were identified as potential risks to successful placement outcomes. Many departments want to make learner training in the paediatric speciality more robust. Several respondents noted offering robust student placements had positively influenced recruitment into their teams. However, concerns remain among paediatric dietitians regarding the sustainability of placements.

**Conclusion:** Paediatric Dietitians provide learner placements in a variety of ways across the UK. There is a desire to become further involved in training, but this can be hampered by a lack of theoretical training at pre-registration level. The PSG Education Committee will continue to work with HEI's to further incorporate paediatric dietetics into the curriculum to normalise and demystify this speciality. A paediatric student training toolkit is in development to support practice educators and students in this area.

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**Prescribing Delays and Supply Challenges in Paediatric Dietetics: A National Survey of Dietitian Perspectives**

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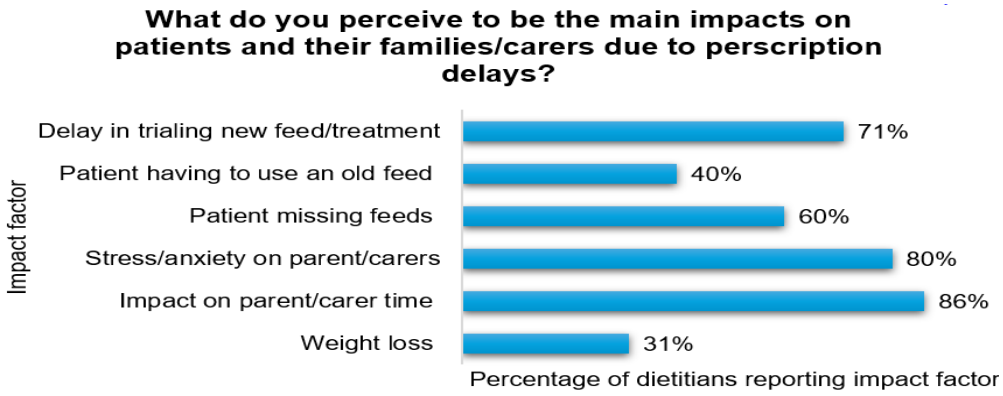
**Background:** Paediatric dietitians recommend specialist infant formulas, oral nutrition supplements (ONS) or enteral feeds, which are usually prescribed by General Practice (GP). Delays in receiving these products appear common and may affect nutritional status, disrupt feeding plans, increase dietetic contacts, as well as placing burden on carers; recent national supply problems have amplified these issues[1] [2].
**Aim:** To explore Paediatric dietitian perspectives on current prescribing practices including delays and the role of dietitian prescribing.
**Methods:** An anonymised 15-item questionnaire (mainly multiple choice, two free-text) was built in Microsoft Forms and distributed via the BDA Paediatric Specialist Group (n=1130) in Oct 2024; data were analysed in Excel using descriptive statistics and rapid coding.
**Ethics:** NHS REC not required (professional, anonymous staff survey; no patient/identifiable data). Participation was voluntary; completion implied consent. Data collection followed GDPR via Microsoft Forms.
**Results:** 124 paediatric dietitians completed the survey. (11% of the Paediatric Specialist Group membership). All surveys were fully completed. 98% (n=121) ask GPs to prescribe specialist infant formula, ONS or enteral feeds. 97% (n=112) reported experiencing prescribing delays, with 53% (n=60) stating that the issue has worsened over the past 6-12 months. The most frequently cited reasons included GP delays in actioning prescription requests, supply chain issues, and delivery companies failing to process orders correctly. 79% of dietitians report spending 0.5 to over 3 hours per week managing delays. Impacts on patients and families are summarised in figure 1. Just under a quarter (n=29, 23.4%) of responses advocated for dietitians to have full prescribing rights, removing the need to rely on GPs or delivery companies. Many respondents (n=10, 8%) believe removing the need for FP10 prescriptions could simplify processes, reduce delays, and prevent unnecessary administrative burdens on GPs.

Figure 1




**Discussion:** Prescribing delays in paediatric dietetics are widespread and significantly impact both clinical efficiency and patient care. Delays have clinical, stress and time implications for families. This study highlights the frequency and causes of these delays, with nearly all respondents reporting disruptions, often exacerbated by supply chain issues and administrative bottlenecks. Potential barriers, including additional training requirements, governance processes and cost implications, would also need to be addressed before extending prescribing rights
**Conclusion:** The findings support the need for systemic reforms, including enhanced collaboration between healthcare providers and consideration of extended prescribing rights for dietitians. Empowering dietitians to manage prescriptions directly could streamline processes, reduce delays, and improve outcomes for paediatric patients requiring nutritional support.

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# Public Health

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**Food Choices and Online Menu Calorie Labelling: A Comparison Across BMI Classifications and Perceptions of Impact.**

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**Background:** Mandatory calorie labelling was implemented in April 2022 in the United Kingdom aiming to reduce out of home (OOH) exposure to excessive calories, addressing rising levels of obesity and those at risk of weight gain[1]. Earlier research identified overweight individuals to have larger reductions in calories chosen[2]. However, differences between Body Mass Index (BMI) classifications have not been explored using an online ordering medium. Consumer perception of calorie influence on food choices is another area that remains unexplored, particularly how perceptions vary and impact on calories chosen. This study aimed to compare calorie choices across NHS BMI classifications and to explore perceptions of calorie information on online menus.

**Method:** This quasi-experimental study used a questionnaire test-retest design imitating an online menu on a convenience sample recruited via social media. Convenience sampling was used for accessibility and time restraints. The questionnaire was piloted, and distributed on JISC, formed of eight main and eight side dish questions, presented twice, with and without calorie information. Participants received two individual calorie totals for each set of menu questions, calculated from the total calorie content for each meal choice and side. Using SPSS, data was considered normally distributed and variances equal if *p*-values from a Shapiro-wilk test, a Kolmogorov-Smirnov test and Levene's test were $p>.05$. A two-way mixed ANOVA was conducted to determine the main effect of BMI groups and presence of calorie information and the interaction. A second two-way mixed ANOVA was conducted to identify the main effect of perception of calorie influence and interaction with calorie information. Values of $p<.025$ were considered statistically significant, due to a Bonferroni adjustment. This study was approved by the Division of Allied Health Research Ethics Committee of The University of Chester (Reference: 2024_01_AHREC_KF).

**Results:** 185 participants completed the questionnaire, the majority within the healthy BMI classification (55%), a female dominant population (66%) and predominantly higher education (64%). A significant main effect ($p=.002$) was identified when calorie information was present, a mean reduction of 360.60kcal [95% CI = 107.34, 457.61]. No significant main effect was observed between BMI classifications ($p=.443$) or interaction between BMI and calorie information ($p=.074$). Whilst not significant, the healthy group (n=102) appeared to have lower calorie choices with and without calorie labelling (-370kcal), the overweight group (n=55) showed the largest reduction in calories chosen with labelling present (-492.38kcal), the obese group (n=20) appeared to increase calories chosen with calorie labelling (28.80kcal). A significant main effect was identified for perceived calorie influence ($p<.001$). Identifying participants who identified as more significantly influenced chose lower calorie options (12.1%). However, no significant interaction was identified between perceived calorie influence and presence of calorie information ($p=.028$).

**Discussion:** The inclusion of calorie labelling on online menus appears to significantly reduce number of calories selected. These results are similar to a meta-analysis finding calorie labelling lead to a significant reduction in calories chosen[3]. This supports the provision of calorie information to make informed decisions when ordering OOH. The non-significant finding between BMI and calorie labelling is comparable to a similar study also observing no significant difference[4]. Whilst not significant, the patterns observed between BMI classifications may suggest BMI could impact how consumers understand and interpret calorie labels. Further quantitative studies may be beneficial to identify if these patterns may be significant in a larger sample size. Consumer perception on the influence of calorie labelling can impact the level of policy effectiveness. These outcomes have not previously been described, and further qualitative studies may support a better understanding of consumer perception. A limitation of this study was use of a convenience sample, introducing a potential selection bias. Additionally, the small sample size, and uneven distributions across BMI classifications and perception groups may limit the generalisability of the findings.

**Conclusion:** This study concluded online menu labelling appears to significantly reduce number of calories selected by consumers. Comparisons between BMI classifications, whilst not statistically significant, suggest BMI may play a role in how consumers engage and interact with calorie labels. This study identified that calorie labelling influenced behaviour no matter perceived influence of labelling. Furthermore, whilst calorie labelling alone can reduce calorie selection, consumer perception may also influence effectiveness.

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**Estimation of energy requirements in the adult transmasculine population on testosterone treatment for at least six months: an observational pilot study**

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**Background:** Estimation of Resting Metabolic Rate (RMR) using predictive equations is a crucial aspect of dietetic assessments, as misestimation of nutritional requirements may result in inappropriate dietary interventions and adverse health outcomes. However, predictive equations may be less accurate for individuals deviating from the original sample population. Cisgender-focused RMR predictive equations should therefore be used with caution for transmasculine patients. The aim of this research was to investigate the validity of two predictive equations – the Henry[1] and Katch-McArdle[2] equations – in estimating RMR in adult transmasculine individuals undergoing testosterone treatment for at least six months.
**Methods:** Ethical approval was granted by the Research Ethics Committee at a London University. The study was observational and did not meet the criteria whereby additional approval from the NHS Research Ethics Committee was required. Due to time-constraints, a convenience sample of seven free-living participants was used. These were recruited through snowball sampling involving social media promotion, LGBTQIA+ community groups and not for profit organisations. Individuals under 18 years of age, with electronic cardiac devices or metal body implants, or at risk of pregnancy were excluded, to eliminate factors that may put participants at risk or reduce accuracy of the results. Participants' characteristics were analysed with a questionnaire. 85.7% of participants were aged 18-30, whilst 14.3% of participants were aged 30-60. BMI ranged between 23.4 ± 1.9 kg/m$^2$. Lastly, 86% of participants had a White background and 14% were of African heritage. Height and weight were measured and used for the Henry equation. Bioelectrical impedance analysis (BIA) estimated fat-free mass and, calculating an average of the male and female profiles, was used for the Katch-McArdle equation. RMR was measured via indirect calorimetry (IC) for five minutes, using an average of the male and female profiles to obtain a standardised measured RMR (RMRm). Data was analysed using SPSS and a Friedman's Test was used to assess differences between RMRm and predictive equations, alongside Bland–Altman plots to visualise agreement.
**Results:** RMRm was 2422 ± 787 kcal/d. Predictive equations were compared to RMRm at group level. A Friedman's test revealed a significant difference between predictive equations and RMRm ($p < .001$). Post-hoc tests highlighted a significant difference in distributions between RMRm and Henry-female (adjusted $p < .05$), which was not found in the other two equations ($p > .05$). Bland–Altman analysis revealed a consistent underestimation of RMRm across all predictive equations, with a bias ranging from 858 to 1010 kcal/day.
**Discussion:** Findings suggest that female-specific equations may be inappropriate for the estimation of RMR in the transmasculine population established on testosterone, indicating that male-specific or unisex equations should be preferred. However, the observed discrepancies could be partially attributed to measurements errors – given the numerous limitations of this study. The scarce literature on testosterone's effects on IC and BIA challenged the design of this research protocol. A small sample size and the reduced duration of IC may have impacted the validity of the findings. These should therefore be interpreted cautiously. Future research should include larger sample size and a minimal IC measurement duration of ten minutes, discarding the first five for increased accuracy. Manufacturers' recommendations on gender markers selection for all equipment are essential, as "sex" and "gender" are often wrongly used interchangeably. Future research could also investigate nutritional requirements in the initial stages of testosterone treatment (0-6 months), when requirements may not yet be assimilable with those of cisgender males.
**Conclusion:** This study highlights the limitations of sex-specific and unisex predictive equations, in estimating RMR of transmasculine individuals on testosterone treatment. Findings suggest the need for further research towards the development of inclusive, evidence-based assessment tools, to guarantee accurate estimation of nutritional needs and reduce the risk of under- or over-feeding in transmasculine patients.

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**Developing evidence-based practice about Long COVID for the 'Nutrition and Covid-19 Recovery Knowledge Hub' designed for healthcare practitioners and people recovering from COVID-19**

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**Background:** The 'Nutrition and COVID-19 Recovery Knowledge Hub' was developed by the University of Plymouth and designed as a resource for patients and healthcare practitioners using peer reviewed evidence to develop information on nutritional care to support adults recovering from COVID-19. At the time of development little was known about long COVID, a multisystem disorder characterised by persistent or new symptoms lasting for more than 12 weeks after initial SARS-CoV-2 infection, which cannot be explained by alternative diagnoses [(1)].

The aim was to identify and assess relevant, original studies that addressed the interaction between Long COVID and diet, and the dietary impact on recovery, with a view to these data being used to support development of information on long COVID for the 'Nutrition and Covid-19 Recovery Knowledge Hub'.

**Method:** A literature review using a systematic approach was undertaken of original studies (qualitative, quantitative or mixed methods), published between December 2023 and May 2025 and available through ProQuest to address the following questions:

1. Does nutrition and diet have a role to play in the development of long COVID?
2. What is the dietary advice for people living with long COVID?

Search terms included 'Long Covid', 'diet', 'nutrition' and their synonyms, using Boolean operator (AND) to allow for the combination of words and search terms. Eligibility criteria included provision of evidence for the role of diet or nutrition in the development of Long Covid or in the management of symptoms in any adult group (≥18 years of age) in any care setting, with the relevant CASP tool used to assess quality. Ethical approval was not required according to the NHS Health Research Authority Decision Tool.

**Results:** Of the 151 papers reviewed only 16 met the eligibility criteria however, these studies were mostly of a small sample size and variable quality. Of note were studies about micronutrient supplementation suggesting a potential role for polyphenols, zinc, Vitamin D3, C and K2 in reducing chronic inflammation and supporting immune function [(2)] with zinc deficiency (identified at least 3-months prior to COVID-19 infection via a blood test) suggesting greater risk of hospitalization and mortality particularly when associated with cardiac and renal comorbidities with implications for more severe disease and development of long COVID.[(3)] In terms of whole diet approach, a study of 68,896 COVID-19 positive adults suggested that a diet rich in fruits, vegetables, and oily fish, coupled with moderate consumption of red and processed meats as part of a healthy lifestyle was associated with reduced long-COVID risk, 41% lower risk of death and 22% lower risk of hospitalization[(5)] whilst a small study of 305 subjects suggested that adherence to a Mediterranean dietary pattern may help improve metabolic and cardiovascular health in people living with long COVID but did not address whether diet influences the development of long COVID.[(6)]

**Discussion:** Although evidence is limited and variable in quality, findings suggest diet may influence Long Covid risk and recovery. Whole-diet patterns and micronutrient-rich foods show potential in reducing inflammation and supporting immune health. More robust, large-scale studies are needed before advising on supplementation of specific micronutrients solely for the management of Long Covid symptoms.

**Conclusion:** The evidence identified in this review suggests that whole-diet patterns rich in fruits, vegetables, and oily fish, coupled with moderate consumption of red and processed meats may be beneficial for people recovering from Long Covid, with further studies needed to identify benefits of specific micronutrients.

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**HARNESSING AI IN NUTRITION: A Comparative analysis of AI models for dietary recommendations during care and post-discharge.**

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**Background-** Over 3 million individuals in the UK are at risk of malnutrition **(1)**. With healthcare systems under strain, there is growing interest in whether artificial intelligence (AI) could supplement existing dietetic support. This project aimed to evaluate how effectively different AI tools can support personalised dietary guidance post-discharge, particularly for patients without access to a dietitian, using criteria of accuracy, adaptability, accessibility, safety, and NHS integration potential.
**Methods-** Comparative evaluation of three types of AI-based tools: large language models (LLMs), including GPT-4 and Co-Pilot; dietary tracking apps such as MyFitnessPal; and virtual reality (VR) behavioural companions like Replika. Ten patient profiles were created to assess tool performance, representing diverse medical conditions, ages, genders, weights, and ethnic backgrounds. These were based on real-life clinical scenarios to ensure results reflected the public. Red teaming scenarios were used to test safety in high-risk prompts (e.g., disordered eating). Evaluation criteria were developed through a structured process informed by NHS and BDA dietary guidelines and refined with supervisor input. Criteria included: **accuracy** (alignment with evidence-based guidelines), **adaptability** (responsiveness to diverse patient needs), **accessibility** (ease of use across different digital literacy levels), **safety** (ability to identify risks and avoid harm), and **NHS integration potential** (scalability, cost, and compliance with data standards). This was a student-led service evaluation and did not require ethical approval.
**Results-** LLMs produced evidence-based, tailored recommendations but failed to signpost to professional services. Replika provided motivational support but lacked clinical depth. Diet apps were accessible but struggled with portion accuracy and had limited adaptability to complex conditions. None of the tools offered culturally tailored advice. AI-generated images, while engaging, often portray unrealistic portion sizes. No tools fully breached safety in red teaming scenarios but are missing unprompted safety elements. This evaluation highlights a significant gap in post-discharge nutritional care, with 51% of patients not receiving follow-up support **(2)**.
**Discussion-**In this evaluation of ten patient profiles, AI tools showed potential to support post-discharge nutrition care by offering immediate dietary guidance, basic meal planning, and habit-building strategies. While these findings suggest that AI could act as a bridge for individuals without access to a dietitian, the tools should be viewed as complementary rather than as replacements for qualified professionals. The evaluation criteria were validated against NHS and BDA dietary guidelines, which ensured that outputs were clinically relevant. However, the tools consistently lacked features such as referral pathways, cultural adaptability, and NHS integration. These gaps highlight the need for further development before AI can be safely and effectively embedded into practice. Our findings are consistent with previous research showing that while AI-based diet apps and LLMs can provide personalised recommendations **(3)**, they often lack cultural sensitivity and clinical signposting Similarly, studies on diet-tracking tools have reported challenges with portion accuracy and limited adaptability for complex conditions **(4)**. This suggests that although AI demonstrates promise, more robust validation and real-world testing are needed to establish its reliability in clinical and community settings.
**Conclusion -** AI tools may enhance access to nutrition advice post-discharge, but further development is needed to ensure safety, inclusivity, and clinical relevance.

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## Training Needs of United Kingdom Dietitians supporting people with Food Insecurity

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**Background:** Food insecurity (FI) is a growing public health concern in the UK. Registered Dietitians (RDs) are uniquely positioned to support food-insecure populations, yet evidence regarding their preparedness and training needs remains limited.[1,2]. The aim of this research was to (1) Explore the training needs, knowledge, and confidence of UK dietitians in relation to food insecurity; and (2) Contribute UK-specific findings to the international *Food Security, Education, and Empowerment for Dietitians* (FEED) project.

**Methods:** This qualitative study formed part of the FEED Europe project, initiated by EFAD. Data were collected between 10 March 2025 and 27 March 2025 using a semi-structured focus group guide, adapted from the FEED Europe framework. Thirty-two participants, including (UK dietitians RDs and final-year dietetic students) were recruited via LinkedIn and British Dietetic Association (BDA) communication channels. Focus groups (n=28) were conducted and transcribed verbatim, and data were thematically analysed using NVivo Pro 12. Ethical approval was granted by the Glasgow Caledonian University Health and Life Sciences Ethics Committee (HLS/LS/A24/050).

**Results:** Thematic analysis revealed three core themes: (1) Understanding and Education, (2) Challenges for Dietitians, and (3) Responsibility and Collaboration. These themes underpin four key findings: RDs have inadequate knowledge of FI, constraining their ability to support food-insecure populations; RDs do not routinely screen for FI in the UK and have poor knowledge of validated tools; low confidence in RDs is associated with feelings of embarrassment and discomfort; and some RDs do not perceive their role as aligning with public health practice, which may influence their engagement with FI-related interventions and advocacy.

Quote from Theme 1: *"I guess when people think of food insecurity they think of people starving or with nothing at all, but that's not really it, is it?"*

Quote from Theme 2: *"Time constraints is a big thing for me. So, I'm working in the NHS, and our caseloads are very busy. So, it's not an area we have time to cover in detail."*

Quote from Theme 3: *"I do think it is the government, but I just think it all falls down to charities in my area anyway."*

**Discussion:** While there is a gap in UK-based research on this topic, the findings of this study align with global evidence highlighting gaps in FI knowledge and the limited use of screening tools among RDs. They also reveal differing perceptions of the RD role in relation to tackling FI between those working in acute and community settings. This study offers novel insights, including a limited awareness of the agricultural and systemic determinants of FI, diverse views on professional responsibility in addressing FI, and a shared view that FI is poorly integrated into current dietetic education and training. In addition, the research identified a notable lack of collaboration between UK RDs, government bodies, and non-governmental organisations in tackling FI at a systemic level.

**Conclusions:** This study recommends that revisions to undergraduate and postgraduate dietetic curricula be considered to incorporate more comprehensive training on identifying and supporting food-insecure populations; ongoing continuing professional development opportunities should be made available to help practising RDs enhance their knowledge, skills, and confidence in addressing FI across different settings; and that there is a pressing need for greater collaboration between UK RDs, government bodies, and non-governmental organisations to tackle FI at a systemic level and strengthen the profession's role in public health advocacy.

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**Improving availability of healthy food to staff at Guy's and St Thomas' NHS Foundation Trust (GSTT) during the night shift: A service evaluation survey to review existing service provision and eating habits**

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**Background:** Working at night is essential for health and emergency service personal to provide 24-7 provision. With one in nine of the total UK workforce engaging in night work and with an increase of 5% over recent years (1), night workers are an essential UK occupational group. The NHS is one of the main employers of night workers in the UK (2). GSTT employs approximately 3,000-night shift workers. A survey was conducted to describe the eating habits of night shift workers and what can be done to better support food and drink intake when working at night.
**Methods:** An anonymous online survey using MS Forms was distributed to GSTT staff via internal staff communication channels between July to October 2024. Eligibility were staff who work night shifts (including the hours of 11pm-6am). Data collected included working hours, site of work, food preferences, eating habits on a night shift, break facilities, healthy vending preferences, gender, age, job group, ethnicity and pay band. Questions were a mix of multiple choice (e.g. 4 Likert scale) and free text. There were no target responses, but the aim was to reach a large convenience sample of staff that work a night shift. Descriptive statistics were reported for quantitative data and thematic analysis for free text data. Ethical approval was not required for a service evaluation.
**Results:** 665-night shift workers (approximately 22% of all those working at night), completed the survey. 61% agreed that they would purchase healthy food if it was sold at night, with 47% willing to walk up to five minutes to buy the food, and 31% unable to leave their workplace. When asked for suggestions to improve food available to staff working night shifts, free text responses from 156 staff (24% of those who completed the survey) were grouped according to key themes including healthy variety of food and drink (31%), improved accessibility (30%), affordability (26%), staff canteen (11%) and hot food options (10%). Mixed responses were received with regards to vending machines, with comments including "more vending"; "sell decent food items"; "working vending"; "card, not just cash", "allergy information" and "I would prefer to not get food from a vending machine".
**Discussion:** Staff working night shifts across GSTT expressed strong dissatisfaction with current food provision. Night shift staff would like nutritious, hot, fresh, and affordable meals, not just vending machines. Food must be accessible onsite. Current options are often too expensive, prompting calls for staff discounts or free meals. There's strong demand for healthy, culturally diverse choices, better staff facilities, and working vending machines with card payment facilities. Staff feel food provision should reflect the value and demands of night work. This is inline with The Shift-Diabetes Study that found shift workers with type 2 diabetes wanted to make healthier food choices during night work but were inhibited due to limited access to food (3).
**Conclusion:** Night shift staff need affordable, healthy, and hot food options available onsite and overnight 24-7, with better access, facilities, and variety as evidenced in the literature (3,4). Vending machines alone are not perceived as sufficient and current offerings are seen as inadequate and inequitable, supporting the need to explore tailored approaches to better support the dietary needs of staff working at night. The next step is to develop recommendations for GSTT regarding food provision for staff working nights.

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## Exploring Afro-Caribbean Dietary Practices: Student Perceptions of Healthy Eating and Reference to the Afro-Caribbean Eatwell Guide Through Semi-Structured Interviews

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**Background:** Afro-Caribbean communities in the United Kingdom face disproportionately high rates of non-communicable diseases, often linked to a lack of culturally responsive health interventions that reflect traditional food practices. The British Dietetic Association (BDA) (2020) emphasised culturally sensitive dietary advice for sustainable change. Ojo et al. (2023) identified a 17-year evidence gap, underscoring the need for updated, geographically relevant research.

**Aim:** To explore how cultural factors influence dietary choices among Afro-Caribbean students at Coventry University (May–July 2024), using the Afro-Caribbean Eatwell Guide (Saint Hill, 2022)

**Methods:** A qualitative study was conducted with six second generation Afro-Caribbean students from dietetics, nursing, biosciences, and social care disciplines, recruited via purposive and snowball sampling. Semi-structured interviews were held via Microsoft Teams, with ethical approval (P162744, April 2024). Braun and Clarke's (2006) inductive thematic analysis was applied. Rigorous protocols ensured informed consent, anonymity, confidentiality, data protection, and reflexivity. The topic guide explored cultural mealtime practices, perceptions of Afro-Caribbean Eatwell Guide – visual resource provided individually, and suggestions for improving culturally tailored interventions (Saint Hill, 2022).

**i. Personal perceptions of healthy eating**

*P6: "Some people do go over the limit and put a lot of oil in a jollof rice dish. But I do say half or more than half a pot, less than half should be a good requirement." P4: "My dad would typically have salt on the rice when he's cooking it...may then add salt to the cooked dish...without trying it first."*

**ii. Cultural Perceptions of Health and Body Image**

*P1: "I do get criticised...oh, you're so skinny because that's not typical...it's more common especially for women to have that full figure…then you're seen as healthier."*

**iii. Socio-Cultural Influences and UK Environment:**

Participants recalled consuming large portions of meat and carbohydrates, often enhanced with extra salt and oil to increase satiety. The acculturative shift diluted traditional dietary practices, prompting student concerns over losing cultural authenticity and highlighting the tension between cultural preservation and nutritional adaptation in food choices**.** Participants reflected on inherited food habits from first-generation parents in their dietary choices. Dietetic students noted that underrepresentation of Black dietitians may affect dietary intervention effectiveness in Afro-Caribbean communities.

**Discussion:** Findings align with Moore et al. (2023), who conducted an intervention in Leeds that taught participants how to adapt traditional foods more healthily using the Afro-Caribbean Eatwell Guide portions. Both studies highlight cultural authenticity and cultural preservation towards diet for stronger adherence to healthy eating guidelines and low awareness of the Afro-Caribbean Eatwell Guide from non-dietetic students (Saint Hill, 2022). This study highlighted the need for culturally competent professionals to lead community-based dietary interventions in accessible spaces such as places of worship and community centres (Ali, 2019).

**Conclusion:** Cultural identity shapes dietary behaviours among Afro-Caribbean students. Advancing nutritional equity requires integrating culturally sensitive strategies and inclusive representation to enhance engagement (Moore et al, 2023; Ali, 2019).

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## A pilot survey to evaluate the use of the novel Sickle Cell Nutrition Eatwell guide in practice

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**Background:** Sickle Cell Disease (SCD) is a genetically inherited red blood cell disorder, with an estimated population of 17,500 in the UK. Both the medical and nutritional management in SCD is affected by health inequalities; the nutritional health inequalities are linked to the lack of nutritional care provision, the lack of understanding of the impact of the nutritional needs in SCD on patient outcomes and the lack of tailored nutritional resources and information available to both sickle cell patients, carers and providers[1]. Key nutritional problems requiring specialist and tailored nutritional care include chronic inflammation, increased malnutrition risks, growth delays and multi-organ system complications[2]. The need for a tailored Eatwell Guide (EWG) in SCD was identified in a co-design nutrition project funded by NHS England resulting in the novel Sickle Cell Nutrition (SCN) – EWG. This pilot survey thus sought to evaluate how the SCN - EWG was being used in practice to address these nutritional knowledge gaps since its launch in November 2024.

**Methods:** The survey used a convenience sampling approach to recruit potential participants from a mailing list of people who downloaded the SCN-EWG from the Sickle Cell Nutrition Academy (SCNA) website. The electronic survey was created using Microsoft forms (2024) consisting of a mixture of 12 open and closed-ended questions which were divided into 2 main sections: 'About you' and 'Your experience with the SCN-EWG'. The survey was available online for 2 weeks. Informed consent was obtained from all participants (n=50) who were 18 years and older. Since the HRA enquiry did not deem the survey as research, ethical approval was not needed, however full GDPR and data privacy was maintained.

**Results:** The survey had a 42% (50/120) response with 100% of the respondents recommending the SCN-EWG as a helpful tool. Table 1 below reflects the key findings of the survey in relation to how and by whom the SCN-EWG was used in practice in the UK.

**Table 1:** An overview of how the SCN-EWG was used in practice in the UK

| Who used the tool? | Which Regions were included? | How was the tool introduced? | How was the tool used? |
|---|---|---|---|
| **(17) 34.3%** - HCP<br>**(12) 24.3%** - Individuals with SCD<br>**(4) 8.6%** – Students, researchers<br>**(4) 7.1%** - SCD Caregivers<br>**(13) 25.7%** - Other | **(18) 36%** - London<br>**(10) 20%** - Pan Midlands<br>**(9) 18%** - SE England<br>(**4) 8%** - Scotland<br>(**2) 4%** - SW England<br>**(1) 2%** - NW England<br>**(1) 2%** - Wales<br>**(5) 10%** - Other | **(20) 40.7%** - by HCP<br>**(12) 24%** - From the SCNA website<br>**(7) 13%** - Family and friends<br>**(4) 9.3%** - Social media<br>**(7) 13%** - Other | The tool was used by most to learn more about sickle cell nutrition<br>To support patients to make better dietary choices to improve their health, food choices and plan meals<br>The tool was used to share with family and friends<br>The tool was also used by some HCP in consultations with patients |

**Discussion:** Despite the many limitations of the survey in relation to sample size, time for recruitment and sample choice being people with an existing interest in SCN, the survey still provided helpful primary insights on how the SCN-EWG is being used in practice. Although it was not possible to clearly distinguish the number of dietetic or nutritional professionals from amongst the HCPs, it was encouraging to see the range and initial levels of engagement of the respondents with the SCN-EWG. Moreover, the growing UK wide use of the SCN-EWG in the short space of time since its launch in November (4 months prior) is promising, given that 100% of the respondents recommended the guide as a helpful nutritional tool with the potential benefit of improving the nutritional knowledge of patients and providers in the UK.

**Conclusion:** Whilst the findings of this pilot survey cannot be generalised, it does highlight the potential value of the SCN-EWG as a helpful nutritional tool to address the nutrition knowledge gaps of sickle cell patients and providers, however, more data is needed to verify its impact on practice and patient outcomes.

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**A Qualitative Exploration of Staff and Volunteer Perspectives on How Effective Trussell Trust Food Banks are at Supporting Clientele**

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**Background:** Food banks are under enormous pressure to provide for the growing number of food insecure people, with diet-related illnesses rising in parallel with food insecurity[1][2]. As a result, their effectiveness to support clientele has come under scrutiny by research projects across the globe, seeking the clients' voices on their experiences[3]. However, there is limited research into the effectiveness of food banks within a UK context that specifically seek the perspectives of staff and volunteers on how effective their services are at supporting clients.
**Aim:** To explore the perspectives of staff and volunteers on how effective Trussell Trust food banks in Wales are at supporting their clients.

**Method:** This exploratory qualitative cross-sectional study used thematic analysis to explore the perspectives of six staff and four volunteers from different food banks using semi-structured interviews. Convenience and judgmental sampling was used to recruit participants. All interview transcripts were reviewed twice by the researcher to enhance validity and reduce bias. This project received Cardiff Metropolitan University's Department of Ethics approval (Ethics Reference No. UG-9614).

**Results:** Microsoft Excel was used to thematically analyse results. The use of pivot tables determined that six out of thirteen themes best reflected the participants' views, with all ten commenting on; 'food bank challenges', 'client challenges', 'client experience', 'ability to meet client's needs', 'interagency connections', and 'dietetic input' in relation to food banks' effectiveness. These themes revealed the main findings to support the perspective that food banks are effective at supporting clients who are willing to engage with *all* food banks have to offer, not just the emergency food provision.

**Discussion:** These themes uncovered the innerworkings of how food banks diligently support their clientele despite the constant challenges faced both by themselves and their clients. Trussell Trust's streamlined referral and digital collection system enable vital data to be used to fight for their clients' cause, not just through specific local practical provision but by actively bringing important issues to the attention of the government[2][3]. Food banks' growing network of interagency connections effectively links clients with other practical support such as financial advice improving their ability to meet clients' needs[3]. It was acknowledged by most participants that dietetic input could contribute to the effectiveness of their services[4]. Results were limited by the small sample size. These results, though not generalisable, are potentially transferable to future studies.

**Conclusion:** This study concludes that the overwhelming perspective of participants is that food banks are effective at supporting the clients who are willing to engage with the wider network of support, indicating a view of ineffectiveness to support clients who are not willing to engage past the receipt of emergency food provision. Food banks recognise the need to better engage those who only come for emergency food therefore, ethnographic research is warranted to determine if dietetic input could aid better engagement to further improve food banks effectiveness.

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## A Systematic Review Investigating Possible Effects of the Mediterranean Diet in Cardiovascular Disease Prevention and Progression

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**Background:** Cardiovascular disease (CVD) is reported to be the leading cause of mortality, accounting for one third of all global deaths in 2021[1]. Primary research has highlighted that the Mediterranean diet (MedDiet) possesses anti-inflammatory and antioxidant properties that may offer protection against atherosclerosis[2]. However, secondary research analysing the influence of the MedDiet on the underlying pathology of CVD is limited, with a focus on incidence and mortality. This systematic review (STR) aims to assess the effect of the MedDiet on the prevention and progression of CVD when compared to a low-fat diet, which may have a higher inflammatory index. Differences in cholesterol profile, inflammatory markers and anthropometric measures were observed amongst males and females considered at high risk of CVD or with established coronary heart disease (CHD). Comorbidity presence included dyslipidaemia, hypertension, obesity and type 2 diabetes mellitus, and family history of CVD was considered.
**Methods:** The search question was formulated using the PICOS format (population, intervention, comparison, outcome, study design). Thirty advanced searches were carried out across PubMed, Cinahl Ultimate and Cochrane Library. A total of 4283 records were identified and collated on EndNote, where smart groups were used to organise sources from each database, accounting for specific fields. PRISMA 2020 guidelines[3] were used to select seven randomised controlled trials (RCTs), meeting the eligibility criteria of peer-reviewed trials conducted in Mediterranean countries, published between 2014-2024. The Cochrane Risk of Bias tool 2.0 was used to score the quality of each RCT[4]. Participants were assigned either the MedDiet or a low-fat diet. Adherence to the MedDiet was measured using a validated 14-item questionnaire, with potential dietary variations between countries considered a confounding variable. Outcome measures were intergroup and baseline differences in cholesterol profile, inflammatory markers and anthropometric measures. Ethical approval was not required for this STR.
**Results:** Following the application of the Cochrane Risk of Bias Tool 2.0, all RCTs were deemed as low risk of bias. A total of 3510 participants were included, consisting of 1703 individuals considered at high risk of CVD and 1807 patients with established CHD. Adherence to the MedDiet for twelve months significantly decreased total cholesterol (225 ± 4.6 mg/dL vs. 201 ± 4.5 mg/dL; $p = .001$) and LDL-cholesterol (144 ± 3.9 mg/dL vs. 132 ± 4.0 mg/dL; $p = .001$) amongst participants considered high risk of CVD, although this was not significant for those with CHD and endothelial dysfunction (ED). Individuals at risk of CVD who followed the MedDiet for twelve months showed a 50 % decrease in C-reactive protein (CRP) (3.8 ± 1.1 mg/mL vs. 1.9 ± 1.1 mg/mL; $p < .001$), whilst those with CHD and non-severe ED showed a decrease of 22.5 % (2.71 ± 0.30 mg/mL vs. 2.1 ± 0.03; $p = .035$). Monocytes decreased amongst those at risk of CVD at twelve-months post-intervention (85.0 ± 4.2 vs. 57.3 ± 2.0; $p < .001$). Waist circumference significantly decreased amongst some individuals at risk of CVD after twelve months of adhering to the MedDiet (102 ± 1.3 cm vs. 98.6 ± 1.4 cm; $p < .001$), however no significant decrease occurred in those with CHD and ED.
**Discussion:** The MedDiet is rich in monounsaturated and polyunsaturated fats, which are high in antioxidants and polyphenols. These components may offer a cardio-protective effect, by enhancing the mechanisms of reverse cholesterol transport and lowering levels of inflammation. This can reduce risk and development of atherosclerosis, which is the key contributor to the onset and progression of CVD. The MedDiet had a greater influence on those at high risk of CVD compared to those with CHD, possibly related to the extent of damage to the endothelium. Limitations of this STR included confounding variables such as cholesterol-lowering medications or exercise participation.
**Conclusion:** The MedDiet is an effective means of reducing risk and progression of CVD by improving associated biomarkers, therefore should be incorporated into dietetic practice. However, disease severity should be considered, as fewer significant results were found among individuals with CHD and severe ED.

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## Supporting Healthy Diet in Pregnancy: Evaluation of the Foodwise in Pregnancy Smartphone App

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**Background**: Diet during pregnancy is an important determinant of maternal and child health(1). Supporting people to eat healthily during pregnancy is likely to be supportive of appropriate weight gain, and as maternal diet is a key influence on the infant diet, could have potential for improved nutrition in the first 1,000 days and beyond(2). Smartphone applications present a potentially scalable, cost-effective strategy to promote healthier dietary behaviours during pregnancy(3), yet many lack credibility and evidence-based content(4). To address this, the Foodwise in Pregnancy (FWiP) app was developed as part of the all-Wales Nutrition Skills for Life programme(5). It is a bilingual, evidence-based mobile app designed to provide tips on eating well, being active, and healthy weight gain during pregnancy. It includes interactive features underpinned by behaviour change theory, including goal-setting, and credible nutrition guidance. The aim of this study was to determine which aspects of the app were the most useful for users and recommendations for further development.
**Methods:** A mixed methods approach was taken. The app was downloaded by users independently. The numbers of users and their demographic data provided during registration was obtained from the app platform with consent. A Microsoft Forms survey was distributed via email to all registered app users and participant engagement interviews were undertaken with healthcare professionals (HCPs) and pregnant women. Interviews were conducted using topic guides, recorded and transcribed. Descriptive analysis of quantitative data was followed by comparison of data from app users and HCPs to identify themes. The evaluation was registered on the Audit Management and Tracking system (AMaT) and approved as a service evaluation.
**Results:** Between November 2022 and 2024, 1,972 pregnant women and 161 HCPs registered to use the app. Most pregnant users of the app were aged 25-34 (n=1,246; 63.2%). A BMI of >30 was reported by 782 users (39.6%). Most users registered during their first trimester (n=1,152; 58.4%).
There were 21 survey responses from pregnant users, and 16 from HCPs. In surveys and engagement interviews (n=3), most pregnant women (n=17 surveyed; 81%) and all HCPs reported high levels of trust in the app due to the links with the NHS and involvement of dietitians. A third of users reported making changes to their lifestyle since using the app such as eating more fruit (n=7; 33%), more vegetables (n=7; 33%), less sugar (n=9; 43%), fewer high fat foods (n=7; 33%), and a more varied and healthier diet overall (n=8; 38%). Useful features were reported as: the provision of helpful information, interactive features such as food/physical activity diary (n=9; 43%) and being able to access the app at any time (n=13; 62%).
Interviewees reported "*It contains a lot of information and also tells you what's a myth and what's not*", and "*Really useful to understand what you should and shouldn't eat, especially for first time mums like me*". HCPs valued the app as a convenient way to address healthy eating as a 'blanket approach' and 75% (n=12) reported feeling more confident in discussing healthy lifestyles with pregnant women. Suggestions for improvement included additional languages, enhanced functionality, and visual updates.
**Discussion:** The evaluation may have been limited by low response rates and small sample sizes. However, the FWiP app improved timely access to trusted, impartial nutrition advice that other pregnancy apps lack(4) and supported HCPs in promoting healthy lifestyle during pregnancy. App users reported reduced dietary sugar and fat consumption, as found in other studies(6). Most women accessed the app in early pregnancy, enhancing the potential benefits for foetal nutrition and development and maternal health and wellbeing. The app meets an identified need for accessible and cost-effective healthy eating support in pregnancy(3).
**Conclusions:** The FWiP app has improved access to trusted antenatal nutrition advice and supports HCPs in promoting healthy behaviours during pregnancy. Larger sample sizes and data analysis of ethnicity and socioeconomic status are needed to fully understand and maximise its effectiveness.

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## A Realist Scoping Review of how Community Nutrition Interventions work in the UK: Implications for the 'Nutrition Skills for Life' Programme

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**Background:** Nutrition Skills for Life (NSFL), coordinated by NHS dietitians, provides training and support for communities and organisations to implement Community Nutrition Interventions (CNIs) that meet identified needs. The complex individual, socio-cultural and environmental factors that interact to influence dietary intakes bring challenges to evaluating CNIs, therefore it is crucial to understand how and under what circumstances interventions bring about change(1). A realist approach aims to theorise what it is about a programme that might cause change and to develop programme theory(2). To inform future NSFL evaluation, this scoping review, using a realist approach aimed to determine the underpinning initial programme theory (IPT) for how CNIs support socioeconomically disadvantaged (SED) communities to access a healthy diet.
**Methods:** Reporting standards for realist syntheses (RAMESES) and scoping reviews (PRISMA-ScR) were followed(3),(4). The review was conducted between July 2022 and September 2023 and the protocol was registered on the Open Science Framework(5). Four electronic databases and grey literature were searched. Of 1920 documents identified, 45 met the inclusion criteria e.g., conducted in the UK between 2012-2022. Documents were assessed for relevance to the research question and usefulness in terms of their contribution towards determining the IPT. Data relating to Context (C), Mechanism (M) and Outcomes (O) were extracted and C-M-O configurations (CMOCs) developed. CMOCs were coded and grouped according to patterns and themes to build coherent arguments which could contribute towards determining the IPT. The final consolidated CMOCs were expressed as "if…then…because" statements to clearly articulate the configuration, the mechanism activated and the context in which the mechanism was contingent(6).
**Results:** The CMOCs (n=170) extracted from the data sources were grouped as 10 broad areas of interest, or classifications, for how CNIs might work particularly for SED communities. Four classifications that were highly relevant to the NSFL programme and had the most associated CMOCs, were further refined and synthesised into consolidated CMOCs (n=17). One of the CMOCs was, **if** organisations supporting vulnerable groups fully understand the factors that impact on people's eating patterns (C) **then** nutritional interventions are more likely to meet individual/ community needs and circumstances resulting in improved nutritional health and wellbeing (O) **because** existing knowledge, beliefs and priorities that influence decisions around food are acknowledged and more tailored, practical, trusted advice and support is provided (M). Interventions worked if they acknowledged and addressed identified barriers to healthy eating; provided reliable, trusted, easy-to-understand nutrition messages; were delivered by confident, skilled knowledgeable practitioners; and facilitated strategies such as goal setting and meal preparation.
**Discussion**: The consolidated CMOCs (IPT) for understanding community needs; consistent nutrition messages; knowledgeable, skilled, confident practitioners and practicing new skills, provided valuable insight into potential mechanism (building partnerships and trusting relationships, reducing confusion from conflicting messages, practitioners' confidence and self-efficacy to provide support and individuals' confidence and self-efficacy to feed themselves and their family well) that could positively impact diet quality and health outcomes. Findings were consistent with realist research that investigated cooking skills programme theory(7) and provided valuable insights, a first step towards developing the programme theory for how CNIs work.
**Conclusion**: This review yielded evidence that informed the development of an IPT for how CNI's can support people in more SED areas to access a healthy diet. Realist evaluation is recommended, to test, refute and refine this IPT with stakeholders, particularly SED population groups.

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# Renal Nutrition

## Supported by Kidney Dietitian Specialist Group

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#BDAResearch

**Cost Savings without Compromising Nutrition: Oral Nutritional Supplements in Kidney Care**

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**Background:** Malnutrition affects up to 54% of patients living with kidney disease (1). Oral nutritional supplements (ONS) need to be low in volume and electrolytes while providing moderate to high protein, leading to reliance on high cost ONS. £4.9million was spent on adult ONS in South East London in 2023-2024 (2). This service evaluation assessed the impact of switching patients from high to low cost ONS**.** Primary objectives were to assess projected annual cost savings and compare the nutritional profiles of the ONS. A secondary objective was to explore patients' experiences following the switch.

**Methods:** Over 6 months, kidney dietitians reviewed pre-dialysis and dialysis patients that were on ONS. Patients were switched to a low-cost ONS where appropriate. Data collection was completed during follow up appointments including: demographics, duration on ONS, indication and type of ONS, reason for not swapping (if applicable). Following the swap, we collected: patient experience data, ONS nutritional information and cost differences in the products. Information was inputted into an anonymised spreadsheet with each patient being given a numerical code. Quantitative data was then analysed used Microsoft Excel formulas and qualitative data was summarised. No ethics approval was required, the project was registered with the trust's clinical audit database.

**Table 1**

| **Ethnicity** | **Number of patients (%)** |
|---|---|
| White – British | 16 (32.7) |
| Black British - Caribbean | 14 (28.6) |
| | |
| Black – British | 7 (14.3) |
| Asian | 5 (10.2) |
| Black – African | 4 (8.2) |
| Other | 3 (6.1) |
| **BMI** | |
| <18.5kg/m2 | 4 (8.2) |
| 18.6-25kg/m2 | 33 (67.3) |
| >25.1kg/m2 | 12 (24.5) |
| **Modality** | |
| On renal replacement therapy | 48 (98) |
| Pre-dialysis | 1 (25) |

**Results:** 51 patients were involved in the collection; 2 patients were removed before reviewing the results as the ONS were not a direct swap. In the sample 25/49 (51%) were male. Ages ranged from 39 to 96 years, with a median age of 77 years. Table 1 shows demographic information. Of the patients who switched ONS, **83%** transitioned from *Fortisip Compact Protein* to *Fresubin Pro Compact.*

For the patients that did swap ONS, the total projected annual cost saving was **£14,410,** or **£464.84** per patient.

Table 2 shows the mean of the nutritional components pre and post the swap, with standard deviation (SD).

**Table 2**

| | **Higher cost ONS (SD)** | **Lower cost ONS (SD)** |
|---|---|---|
| Calories (kcals) | 502 (198.5) | 498 (195) |
| Protein (g) | 30 (11.7) | 30 (11.5) |
| Volume (mls) | 208 (78) | 208 (78) |
| Potassium (mmols) | 5 (2.48) | 5 (2.41) |

Out of the 49 patients, 18 did not switch ONS. In context of patient experience, 11/18 (61%) of patients who did not switch ONS declined swapping due to their choice. The most common reason was due to the lack of flavour variety in the new ONS, 5/18 (27.8%). The next most common reason was due to preferring their previous ONS 4/18 (22.8%).

**Discussion:** We anticipate that cost savings could be further improved as additional flavours become available in the new ONS. Notably, 40% of the cohort had been on ONS for over 12 months. This finding highlights a significant opportunity for cost savings in long-term ONS use. We recommend that the clinical indication for patients on ONS beyond 12 months be reviewed to ensure continued necessity. A limitation is the small sample size, covering only one trust. However, the project aligns with the NHS goal for cost-effective prescribing (3).

**Conclusion:** The results show that switching patients to a low-cost ONS achieved cost savings without compromising the nutritional content.

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**Exploring the reliability of the kidney dietetic outcomes tool platform when determining the nutritional problem and desired outcome.**

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**Background:** The aim of the Kidney dietetic outcomes tool (KDOT) platform is to pool data, allowing for the exploration of outcome measures to demonstrate the impact of dietetic interventions; a need not currently being met[1]. The KDOT platform was recently revised using the BDA model and process of nutrition and dietetic practice[2] to standardise the approach. To allow for consistency and accuracy in documentation, standardised language was also introduced. The main aim of this study is to explore the reliability of the KDOT platform and standardised language when used by kidney dietitians to determine the nutritional problem and the desired outcome of adults living with Chronic kidney disease stages 3-5.

**Methods:** This study incorporated both a cross-sectional (inter rater reliability) and repeated measures (intra rater reliability) design. Fifteen dietitians working at Kidney units in NHS hospital trusts within the United Kingdom were recruited via the BDARNG monthly newsletter. A total of 36 case studies were developed by a working group of kidney dietitians and service users. To assess inter-rater reliability, each case study was assessed by 5 dietitians who were asked to identify the nutritional problem and desired outcome, using only the standardised terminology provided. To assess intra-rater reliability, twelve case study scenarios, representing moderate and high dietetic complexity[3] cases, were presented to each dietitian twice, one month apart. Krippendorf's alpha, Cohens kappa and pairwise agreement were used to determine the inter and intra rater reliability. Ethical approval was obtained locally.

**Results:** 14 dietitians completed the study whose demographics were representative of the UK dietetic workforce. A poor level of agreement between dietitians was observed when determining the nutritional problem (Krippendorfs α=0.282 (CI 0.209-0.357) n=36) where, only 36% of the time, dietitians agreed on the same terminology. This was also observed when determining desired outcome (Krippendorfs α=0.076 (CI 0.028-0.123) n=36) where, only 35% of the time, dietitians agreed on the same terminology. A moderate agreement was noted within dietitians for nutritional problem (Cohens κ= 0.472) and poor for desired outcome (Cohens κ=0.263). It was observed that Intra agreement levels dropped when the complexity increased. Band 7 dietitians and mid-career dietitians (10-20 years in practice) had the strongest internal consistency in comparison, although this remained as moderate agreement for intra-rater reliability.

**Discussion:** The results demonstrated poor inter-rater and poor to moderate intra-rater reliability. The results indicate that there may be a lack of shared understanding of the terminology, where they either misunderstood the terms or applied the terms differently in response to the case study scenarios provided. When stratifying for complexity, years of experience and banding there were differences observed within the groups. Increased complexity may have created a higher cognitive burden due to lack of understanding.

**Conclusion:** To enable accurate and consistent documentation in the KDOT it is recommended that training is provided on the use of standardised language terms, where clear description around the terminology is provided to avoid both ambiguous and subjective interpretation. A revision on the number of terms may also be required.

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**Exploring the opinions of kidney dietitians on the use of standardised language terminology when determining the nutritional problem and desired outcome.**

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**Background:** The use of standardised language terminology in dietetic documentation has been introduced into the kidney dietetic outcomes tool (KDOT) platform to facilitate both the accuracy and consistency in the recording of outcomes. Content validation has already been examined in both general dietetics[1] and oncology[2]. However there remains concerns on the accuracy and consistency of its use in practice. This study aims to explore the opinions of kidney dietitians following their use of standardised terminology when determining the nutritional problem and desired outcome.
**Methods:** Fourteen dietitians working in adult kidney units based in NHS hospital trusts within the United Kingdom were recruited to the study. The study explored the reliability of using standardised language terminology to determine the nutritional problem and the desired outcome of case studies designed to reflect service users living with CKD stages 3-5. Upon completion of the study, the dietitians were asked to complete a survey consisting of 7 questions, focussing on the acceptability of using standardised terminology. The responses were captured using a Likert scale with opportunity to provide feedback using free text. Descriptive statistics were used to present the responses. Reflexive thematic analysis was used to create themes from the free text. Internal consistency of the survey was determined using Cronbach's alpha. Ethical approval was sourced from Leeds Beckett University Ethics Committee [Reference number:136689].
**Results:** The survey demonstrated excellent internal consistency (α=0.927). Thirteen dietitians (93%) completed the survey. When determining the nutritional problem, from 73 codes provided, 69% (n=9) agreed or strongly agreed that the terminology represented the full range of dietetic problems in CKD. When used to complete the case study scenario tasks, only 62% (n=8) felt the terminology represented the full range of dietetic problems in CKD. In contrast, when determining the desired outcome, 77% (n=10) felt the terminology (n=22 codes) represented the full range of desired outcomes. However, when used to complete the case study scenario tasks, 92% (n=12) felt there was enough choice of outcomes. Overall, 77% (n=10) felt the standardised terminology used in the KDOT met the needs of the kidney dietitian. Three themes were created from the free text which were: too many choices, want to choose more than one option and level of confidence in using standardised terminology.
**Discussion:** It is possible that some dietitians felt overwhelmed and fatigued with the number of standardised terms provided when determining the nutritional problem and desired outcome. Due to a lack of familiarisation, some dietitians reported their confidence in using the standardised terminology was poor. Some found it hard to choose between similar standardised terms, and to determine the highest dietetic priority if there was more than one problem. This compares well with a BDA survey[3] conducted in 2023, which reported dietitians found it hard to choose the best standardised language term from a long list. However, confidence grew as they became more accustomed to the terms. To enable accurate and consistent recording of outcomes, training on the use of standardised language terms, where clear description around the terminology is provided, could reduce ambiguous and subjective interpretation. A limitation of the study is the small sample size of dietitians that completed the survey, meaning the findings should be interpreted with caution.
**Conclusion:** Evidence suggests that the use of standardised terminology to document nutritional problems and desired outcomes in CKD is acceptable to kidney dietitians. Greater familiarisation with the terminology, supported by training and discussions where discrepancies occur, may ensure a more consistent approach to using standardised language in practice.

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**An evaluation of dietetic input at a new haemodialysis (HD) unit.**

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**Background:** Current guidance states that all people undergoing HD should have access to a specialist renal dietitian (1) and be seen within one month of starting (either newly or change of modality) (2). In 2019 a new dialysis unit within the Manchester University NHS Foundation trust renal services opened. However, as no dietetic funding was in place the unit was without dietetic cover until February 2022. The aim of the project was to evaluate if patients felt dietetic input supported their care.

**Methods:** Prior to any dietetic assessments, baseline questionnaires (10 questions) were completed by the Dietitian and dialysis support staff on all 53 HD patients during the first two visits by the Dietitian in February 2022. Repeat questionnaires were conducted in September 2023 (same 10 questions with additional 5) by the Dietitian and Renal Dietetic Assistant. Questionnaires included a mix of multiple choice, ranking and closed questions. They explored what previous dietetic input they had, perceived knowledge and confidence at managing their renal diet, what education areas were important to them, what they wanted to achieve from their dietetic contacts and feedback on our service i.e. how the advice was delivered or where it took place. Answers were collected in Excel and used to collect number of responses and averages. Ethical approval was not required for this service evaluation.

**Results:** At baseline, 19 (35%) of the 53 patients had received dietary education for HD. By repeat questionnaires, 16 patients of the original cohort had either died, undergone a kidney transplant or moved to another HD unit. Repeat questionnaires were completed by 45 patients (8 declined). 91% of patients felt it was “easy” to speak to a Dietitian. 93% of patients felt the education provided was “easy to understand.” 80% of patients in the repeat questionnaires stated they wanted their dietetic input during their dialysis session.

Table 1: Perceived responses to questions (ranked out of 10) - baseline and repeat.

| Question | Baseline average | Repeat average | Range |
|---|---|---|---|
| How confident do you feel about managing your renal diet? | 6.8 | 7.4 | 1-10 |
| How knowledgeable do you feel? | 6.2 | 8.1 | 1-10 |
| How useful do you find the advice? (new question) | n/a | 7.2 | 1-10 |

Table 2: Top 4 answers about what patients hoped to achieve from their dietetic input - baseline and repeat

| | |
|---|---|
| 1. Be healthier/ have a balanced diet | 2. General advice on what to eat and drink/avoid |
| 3. Gain or lose weight | 4. Maintain my potassium and/or phosphate levels |

Table 3: Ranking in order of how important issues were to patients - baseline and repeat.

| | |
|---|---|
| 1. Having good potassium levels | 2. Maintaining muscle strength |
| 3. Keeping to my fluid allowance | 4. Reducing my salt intake |
| 5. Having good phosphate levels | |

**Discussion:** Providing HD education improved patients perceived confidence and knowledge to manage their renal diet. In addition, the results suggest patients support the status quo; they like the location of reviews and how information was verbalised. By seeking feedback on the most important issues for patients, it allows for the service to remain focused on the delivery of patient-centred care. In addition, the service provided at this HD unit is now in line with national guidance. A limitation to note is that as a member of the Dietetic team completed most of the questionnaires which may have caused patients to feel pressurised to answer in a certain way. Confidential questionnaires may have gathered more honest feedback.

**Conclusion:** Newly established dietetic input at the HD unit helps patients to feel more knowledgeable and confident, suggesting dietetic input helps to empower them to manage their renal diet. Results also suggest that current departmental processes are supported by patients.

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**Gastric Mucosal Calcinosis Case Study: A Diagnosis to Consider in People with Kidney Failure and GI Symptoms?**

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**Background**: Gastric mucosal calcinosis is a rare condition characterised by calcium deposits in the gastric mucosa and associated with altered mineral metabolism seen in chronic kidney disease. Here we present a case of gastric mucosal calcinosis in a haemodialysis patient with the aim of raising awareness of this rare diagnosis.

*Case Presentation:* A 79 male presented with a 3-month history of nausea, early satiety, abdominal pain, solid sensation to abdomen, vomiting 2-3 times a week, loss of appetite and 3kg history of weight loss (BMI 26kg/$m^2$). Malignancy was suspected and the patient was referred to gastroenterology for investigation.

Relevant medical history: IgA nephropathy; kidney failure diagnosed 2005, renal replacement therapy history: peritoneal dialysis (2005-2008 and 6 months in 2009), renal transplant (2008-2009), and haemodialysis (2009-present). CT chest findings in 2020 revealed extensive calcification of the coronary arteries. Evidence of secondary hyperparathyroidism since 2014; refractory secondary hyperparathyroidism diagnosed 2017.

Relevant medication history: alfacalcidol (250-500ng daily), cholecalciferol (60,000units fortnightly), cinacalcet (changed to Etelcalcitide 2024), lanthanum carbonate (stopped in 2023), sevelamer carbonate (2023-present).

**Methods and results:** *Investigation and Findings:* CT scan was unremarkable. Gastroscopy revealed a marked abnormality in the rugal folds of the gastric body; biopsy findings reported evidence of calcium within the gastric mucosa. Laboratory results at the time of biopsy included elevated serum calcium and phosphate levels.

***Management and treatment:*** Alfacalcidol treatment was stopped and Etelcalcitide dose increased. The patient has been advised to have small, regular meals and has commenced nutritional supplement drinks to support dietary intake.

**Discussion**: G**astric mucosal calcinosis** is a rare condition seen in kidney failure, driven by disturbances in calcium and phosphate metabolism, and associated with **secondary hyperparathyroidism.** Whilst this diagnosis was the result of an incidental finding it is highly likely the condition was contributing to the patients' symptoms. Like vascular and soft tissue calcifications, there are no proven treatments for **gastric mucosal calcinosis**; clinical management is targeted at managing risk factors (lowering calcium, PTH and phosphate). Dietitian support can help manage biochemistry and nutritional consequences. There is no prevalence, or outcome, data reported for **gastric mucosal calcinosis**; it may be underdiagnosed.

**Conclusion:**

In patients presenting with upper gastrointestinal symptoms and a history of risk factors such as hyperphosphataemia and elevated parathyroid hormone, gastric mucosal calcinosis should be considered as a differential diagnosis.

**Renal dietetic input, serum potassium and dialysate potassium in a maintenance in-centre haemodialysis cohort.**

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**Background:** Patients with end-stage kidney disease receiving dialysis are at high risk of dyskalaemia, which is associated with arrythmias, cardiac arrest or sudden death (1). The UK Kidney Association Haemodialysis guideline (2019) recommends aiming for pre-dialysis potassium range of 4.0-6.0 mmol/L, through individualised dietary review, medications and dialysis prescription (2). We aimed to (A) examine the incidence of hypo- and hyperkalaemia; (B) explore the dietetic input and dialysate potassium in relation to pre-dialysis serum potassium.

**Methods:** This was a cross-sectional service evaluation of all in-centre haemodialysis patients in a single renal unit. The default dialysate potassium at our unit is set at 2mmol/L, with the availability of low-potassium (1mmol/L) and high-potassium (3mmol/L) dialysate on clinicians' request. Data from three consecutive monthly pre-dialysis sessions including serum potassium, dietetic input, dialysate prescription and use of an oral potassium binder SZC (Sodium zirconium cyclosilicate) (3) was collected between September and December 2024 via the renal dietitians' datasheet and our local renal electronic health record (VitalData).

**Results:** In total, 300 patients were included in this study. Their mean age was 64 (SD:15) years, median dialysis vintage of 28 (IQR:43) months and 62% male. The incidence of hyperkalaemia ($K^+$≥6mmol/L) and hypokalaemia ($K^+$<4mmol/L) was 9% (n=27) and 15% (n=44), respectively. Of those with hyperkalaemia, 30% (n=8) were on low-potassium dialysate, 74% (n=20) had dietetic review and 4% (n=1) on SZC. Of the 7 not reviewed by dietitian, all had only a single incidence of hyperkalaemia. Of those with hypokalaemia, 25% (n=11) were on high-potassium dialysate and 50% (n=22) had dietetic review. Overall, 14% (n=42) were prescribed and received non-default dialysate potassium, of these, this was documented on 29% (n=12) monthly multi-disciplinary team reviews. Among those on high-potassium dialysate (n=15), 73% (n=11) had $K^+$<4mmol/L, none had $K^+$≥6mmol/L, 53% (n=8) had dietetic review. Among those with low-potassium dialysate (n=27), none had a K <4mmol/L, 26% (n=7) had $K^+$≥6mmol/L, 44% (n=12) had recent dietetic review. Among those on the default dialysate, 7% (n=19) had hyperkalaemia and 13% (n=33) had hypokalaemia.

**Discussion:** In our haemodialysis cohort, hypokalaemia was more prevalent than hyperkalaemia (15% vs 9%). However, patients with hyperkalaemia received more dietetic input compared to their counterparts. There was a similar percentage of patients with hyperkalaemia receiving a 1mmol/L dialysate (30%) as those with a hypokalaemia receiving 3mmol/L dialysate (25%), despite the Renal Association recommendation to use the highest potassium concentration possible whilst maintaining safe potassium levels. There was little documented evidence of regular review of non-default dialysate prescriptions on monthly MDT reviews. Of those receiving 1mmol/L and 3mmol/L dialysate, the majority had not received recent dietetic review and there remained notable incidence of hyperkalaemia and hypokalaemia respectively.

**Conclusion:**Our results point to a need for more focus on hypokalaemic patients for dietetic support and judicious high-potassium dialysate prescription on the monthly multi-disciplinary team review. We plan to undertake a quality improvement project to raise the salience of dialysate potassium prescription in our unit and to focus as much on patients with hypokalaemia.

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**UK practices around Intradialytic Parenteral Nutrition: A survey investigating the perspectives of kidney dietitians**

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**Background:** Intradialytic Parenteral Nutrition (IDPN) has been used in the UK as a supplementary form of nutrition in people undergoing haemodialysis treatment. IDPN is used to reduce the risk of protein-energy wasting which is known to be associated with higher risk of adverse events including mortality.
UK clinical practice guidelines suggest IDPN may be considered when oral or enteral intake is inadequate, however there is a lack of evidence demonstrating its effectiveness. Existing evidence is limited by small study size and selective inclusion criteria. The largest randomised controlled trial (n=186) in the past 20 years did not show any improvement in nutritional parameters and mortality rate with the use of IDPN, and only a few small studies, with identified limitations, have shown potential benefit[1].

The aim of this survey was to identify the practice patterns of IDPN use within the UK, including perceived advantages and barriers.

**Methods:** A survey was developed to capture UK practice of IDPN use, including: i) criteria of commencing IDPN ii) auditing and monitoring iii) perceived advantages and barriers of using IDPN. The survey was distributed electronically via the BDA Kidney Dietitian Specialist Group (KDSG) in April 2025.

**Results:** 26 responses were received, 6/26 were excluded due to duplication. The 20 responses represented 30% of adult renal centres in the UK. 65% (13/20) use IDPN.

92% (12/13) follow IDPN guidelines including local (or guidelines from another Trusts). 6/12 centres commence IDPN based on multidisciplinary team (MDT) clinical assessment and 1/13 use MDT assessment without a guideline. The majority of centres 92% (12/13) do not audit the effectiveness of IDPN.

When asked about facilitators to using IDPN, 85% (11/13) reported support from doctors and the MDT, and 69% (9/13) reported experienced colleagues and local clinical guidelines, facilitated the usage of IDPN in their Trust. Of the centres not using IDPN, the major barriers of using IDPN were reported as the lack of evidence (86%, 6/7) following by inadequate staff training and cost of IDPN (71%, 5/7).

**Discussion:** IDPN use appeared to be more common practice in renal centres with larger patient populations. This is consistent with existing research which has demonstrated greater resources in larger centres likely contribute to increased IDPN prescribing.

The majority of responding centres reported the use of local guidelines on IDPN prescribing; there is an absence of national guidance. Findings support the need for a national IDPN guideline; national clinical guidelines are considered to improve patient outcomes and cost-effectiveness.

Limited evidence was suggested to be the biggest barrier of not using IDPN. Leading international guidelines have recommended adequately powered and long-term clinical trials comparing the independent effects of IDPN and oral nutritional supplementation on nutritional status, morbidity, mortality, and quality of life are required[2].

**Conclusion:** Although concerns regarding cost-effectiveness and limited evidence, multiple UK renal use IDPN; a national guideline would help support consistent national practices which could facilitate a national clinical audit to help better evidence the effectiveness of IDPN.

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**Addressing health inequalities in renal nutrition: culturally tailored patient education for Bengali populations**

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**Background:** Chronic Kidney Disease (CKD) disproportionately affects the South Asian population in the UK, including the Bangladeshi community in Tower Hamlets, where disease progression and mortality rates are higher than in other groups (1). While dietetic support is recommended by NICE for CKD management (2), barriers such as language and cultural mismatch contribute to reduced engagement and poorer outcomes. At the Royal London Hospital's Advanced Kidney Care Clinic (AKCC), Bengali patients make up 30% of the caseload, yet many were not engaging with standard English-language group education. The aim of this service improvement project was to develop and pilot a culturally tailored Bangla-language group session to improve attendance and patient understanding.

**Methods:** Eligible patients identified as Bangladeshi via hospital electronic records were invited to Bangla-language dietary education sessions, delivered both online and face-to-face. All session materials—including invitations, quizzes, and feedback forms—were translated into Bangla. A Bengali-speaking Renal Dietitian led the sessions, using culturally relevant foods and terminology. Patients received phone calls in Bangla to encourage attendance and involve family members. Learning was assessed using pre- and post-session quizzes, and anonymous feedback was collected. Ethical approval was not required as this was a service improvement project.

**Results:** Four pilot sessions were held (2 online, 2 face-to-face). Online sessions achieved 100% attendance (n=12), the first face-to-face session also had 100% attendance (n=4), while the second face-to-face session, invited via administrative staff, had 10% attendance (1/10). Overall attendance for Bangla sessions was 60%, compared to 30% for English sessions. Quiz results showed significant knowledge improvement (mean pre-score 10%; mean post-score 80%). All attendees rated the sessions as "very good" or "excellent."

**Discussion:** Delivering education in the patient's first language by a culturally concordant clinician improved engagement and comprehension. Tailored content resonated with participants, helping address longstanding health inequalities in this population. Personalised phone calls and the use of Bangla text contributed to increased trust and attendance.

**Conclusion:** Culturally tailored group sessions in Bangla improved engagement and health literacy for Bengali patients with CKD. This scalable approach supports NHS health equity goals and offers a replicable model for underserved communities.

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# Service Evaluation

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**A service evaluation finds dietitian-led rapid access clinic provides early input to post-discharge hospital patients at risk of malnutrition and delivers oral nutritional supplement cost savings**

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**Background:** Malnutrition contributes to significant disease burden and costs the UK an estimated £23.5 billion annually, highlighting the need for early intervention[1]. To address community dietetic wait times and rising oral nutritional supplement (ONS) costs, the Guy's and St Thomas' Nutrition and Dietetic service introduced a Rapid Access Clinic (RAC) for patients newly discharged on ONS and not under existing dietetic care, with the aim of providing individualised, cost-effective care, in line with local ONS prescribing guidelines and Advisory Committee on Borderline Substances (ACBS) criteria[2]. This service evaluation aimed to assess the feasibility of a dietitian-led RAC in providing early intervention to patients at medium-high risk of malnutrition within two weeks of hospital discharge and to evaluate whether cost savings are achieved through changes to ONS prescriptions.
**Methods:** Eligible patients were referred by secondary care dietitians at discharge and scheduled into one of five weekly telephone slots, later increased to six to meet demand. Following RAC dietitian review, samples of cost-effective ONS were sent to patients and tolerance reviewed by dietetic assistants, if applicable. All appointments from 1 April 2024 to 30 September 2024 were included, regardless of attendance. Data were retrospectively collected from electronic records, entered monthly into an Excel database and analysed using descriptive statistics. Variables included age, gender, ethnicity, Body Mass Index (BMI), Malnutrition Universal Screening Tool (MUST) score, attendance, wait times, onward referrals, prescription changes and cost savings. Anonymous patient experience survey responses were also collected. The service evaluation was registered with Guy's and St Thomas' NHS Foundation Trust (16588); ethics approval was not required. **Results:** Of the 138 slots available, 96% were utilised and attendance rate was 77%. Average time for appointment was 13 days, 12% experienced delays due to clinic logistics and 5% due to delayed referral post discharge. Median patient age was 72 years (IQR 72-84) and 54% were male. 50%, 26%, 7%, 13% identified as White, Black, Asian, Mixed or Other heritage respectively and 5% undefined. 78% were at medium-high risk of malnutrition (MUST ≥1), 36% had a BMI <18.5kg/m$^2$. After review, 47% of ONS prescriptions were discontinued, primarily because they did not meet ACBS criteria, with additional reasons for discontinuation including non-engagement and patient preference. Thirty-nine percent were switched to cost-effective primary care products[2], 1% had their dose reduced and 13% continued their hospital prescription. Referrals for ongoing dietetic care were high at 68%, 26% were discharged to GP without ONS or dietetic input, 3% were discharged to GP with short-term ONS prescription and 2% passed away before ONS sample review. Although patient experience survey responses were low (14%), most respondents (83%) reported high levels of satisfaction. The estimated annualised cost-savings from ONS prescription changes were approximately £178,000.
**Discussion:** The service delivered early, individualised dietetic intervention to a diverse cohort, consistent with evidence that such interventions after hospital discharge improve patient outcomes and reduce healthcare costs[3]. Continuity of care is recognised as vital[1]; the RAC facilitated direct referrals to appropriate services, avoiding potential delays via GP-mediated referrals. This evaluation demonstrates the vital role dietitians play in optimising ONS prescribing by reviewing whether prescriptions meet ACBS criteria, with evidence that early intervention and sample provision supports switches to cost-effective products. Longer term evaluation is needed to assess clinical outcomes after RAC review and further explore patient experience given the low survey response. Future research should assess cost-benefits in terms of savings on ONS spend as well as referral rates to dietitians and GPs, relative to service delivery costs. **Conclusion:** The Dietitian-led Rapid Access Clinic is a feasible model that provides both timely interventions to address malnutrition and generates ONS prescription-related savings. Further research is needed to evaluate long-term clinical outcomes, patient satisfaction and overall cost-effectiveness including ONS savings, referral patterns and service delivery costs.

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**How has my leadership approach focusing on autonomy fostered innovation and engagement in my team of dietitians: a multi-method case study**

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**Background:** An engaged, innovative workforce is essential when the NHS faces workforce challenges and ongoing change. Employee engagement is associated with reduced staff turnover, lower sickness rates, improvements in patient experience and patient outcomes (1). Autonomy and empowerment are key antecedents to engagement and innovation. The study aims to examine whether an autonomy-giving leadership approach (2), based on delegation of authority and self-directed decision-making results in a team of dietitians who are innovative and engaged.

**Methods:** A single exploratory multi-method case study, involving a survey, using validated questionnaires (Appendix 1) to measure empowerment (autonomy) (3), innovation and engagement, and semi-structured interviews to provide depth and meaning. Subjects were direct-reports identified via purposive sampling of dietetic team leads (n=12). Questionnaires were shared via Microsoft Forms for completion by participants in their own time and analysed via mean and standard deviation. Interview questions were selected to identify whether the leadership approach and the behaviours displayed supported innovation and engagement and were undertaken by the author. Thematic analysis was undertaken to interpret findings from the semi-structured interviews. As a leadership case-study no ethical approval was required. Clear process, requirements and information handling was explained to participants prior to consenting to the study. Principles included confidential and private interviews, data not shared between participants, records and transcripts stored securely and data anonymised.

**Results:** All participants responded to both questionnaire and semi-structured interviews. Participants were moderately empowered, displaying highest scores in self-determination, decision-making and autonomy dimensions. Participants had average levels of engagement overall, scoring the highest in dedication. 92% of participants agreed with the dimensions related to innovation. Participants moderately or strongly agreed that their leader displayed behaviours that encouraged autonomy. (see Appendix 2 for full results)

Thematic analysis generated three key themes; the understanding of autonomy; the relationship between autonomy, innovation and engagement and how the leadership approach and traits influenced autonomy, particularly focusing on trust and support "*you actually trust that person to be responsible for their own time and their own service and how they want it to go, that's massive to me, to feel trusted and then, makes me feel all makes me feel happier and more motivated*". Additional themes included the positive influence of leadership on non-direct reports and the opposite of autonomy, where micromanagement resulted in feelings of frustration, disengagement and stifled idea generation. Participants felt that autonomy may not always be right, depending on the individual, their role and experience. There was a balance required between giving autonomy, and a perceived lack of interest or support. 2 participants who felt at times the leadership approach resulted them in feeling disengaged and unsupported, scored the lowest levels of engagement "*I think there is a line between autonomy and feeling left*"

**Discussion:** There is a positive association between autonomy, innovation, and engagement, and this was demonstrated in the team. Leadership of the team was autonomous, and this fosters innovation and engagement. Key leadership empowering behaviours of support, decision-making, confidence, and trust enabled team members to make decisions and innovate. A focus on leadership-empowering behaviours may promote an active autonomy giving approach, rather than a passive 'let them get on with it approach' which affected levels of engagement in certain participants. A key strength was the combination of qualitative and quantitative methods, however it is also acknowledged that sample size was small, and the cross-study nature makes results non-generalisable. Interviews were conducted by the author which could have introduced social desirability bias, although the relationship between participants and author could have fostered honest discussions about the leadership approach.

**Conclusion** A leadership approach delegating authority, promoting decision making and providing support fosters autonomy, innovation and engagement.

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**Perceptions of Dietitians, Documentation, and Nutrition Confidence in Acute Care Settings: A Service Evaluation**

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**Background**
In acute multidisciplinary healthcare settings, nutrition occupies a unique and sometimes ambiguous space. While dietitians are the recognised specialists, nutrition is frequently treated as a shared responsibility—leading other healthcare professionals to provide informal advice, often without consultation. Unlike many clinical domains, nutrition is influenced not only by science but also by public discourse, social media, and personal beliefs, which can contribute to misplaced confidence and inconsistent practice (1). Nutrition also remains underrepresented in medical training (2), and documentation practices may limit effective collaboration (3). This service evaluation explored how dietetic input is perceived, used, and valued within acute hospital teams, focusing on documentation, confidence in providing nutrition advice, and the observed accuracy of advice delivered by non-dietitians.

**Method**
Two anonymous online surveys were distributed over a three-month period in mid-2025 within a large NHS acute trust. One survey targeted dietitians, the other non-dietitians (doctors and nurses) across medical and surgical specialties. All acute adult dietitians in the Trust (n=25) were invited and responded. Non-dietitians were invited via email, Trust newsletters, and peer sharing; the denominator is unknown due to open distribution. Surveys included multiple choice, Likert scale, and open-ended questions. Descriptive statistics (frequencies, percentages) summarised responses. This service evaluation was registered with the Trust's audit department.

**Results**
Fifty non-dietitian (doctors and nurses) responses and 25 dietitian responses were received. Over half of non-dietitians (52%) reported giving nutrition advice daily, 54% rated their knowledge as "Good". However, 52% also rated their knowledge as "much lower" than dietitians'. Trust in dietitians was high (86% "completely trust"). In contrast, dietitians rated non-dietitian knowledge as "Poor" in over half of responses, with 52% reporting that incorrect or misleading advice was given "often." Dietitians rated the nutrition knowledge of both doctors and nurses similarly, with no substantial differences observed between the two groups. Key barriers to reading dietetic notes included time pressures, excessive length, perceived irrelevance, and reliance on verbal communication. While 96% of dietitians strongly supported more MDT nutrition education, only 38% of non-dietitians did. Both groups identified clearer documentation, improved MDT presence, and easier communication as priorities. Differences between specialties or roles were not formally analysed due to small subgroup numbers.

**Discussion**
This study revealed a disconnect between non-dietitians' confidence in providing nutrition advice and dietitians' observations of frequent inaccuracies and limited nutrition knowledge among colleagues. While non-dietitians rated their own knowledge positively, dietitians consistently rated it as poor and reported regular instances of incorrect advice. This gap may also explain why dietitians strongly supported more MDT nutrition education, whereas non-dietitians were less likely to prioritise it — perhaps reflecting overconfidence or limited awareness of training needs. Although the survey included both doctors and nurses, no meaningful differences were identified in how these groups responded, and subgroup numbers were too small for detailed analysis. Despite these differences, both groups prioritised clearer documentation, improved MDT presence, and easier communication. These shared goals present opportunities to strengthen collaborative nutrition care through more targeted education and professional role clarity.

**Conclusion**
Addressing the disconnect between perceived and observed nutrition knowledge may be achieved through targeted cross-disciplinary education, stronger MDT presence, clearer role definition, and improved documentation to support safer, more consistent nutrition care within acute hospital teams.

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**A review of Nutritional Status in Homeless Adults at a Rehabilitation Center: Two cohort retrospective audits.**

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**Background:** People experiencing homelessness face significant health challenges including food insecurity [(1)] and malnutrition, often leading to nutritional status fluctuations. Limited and inconsistent access to nutritious meals often leads to cycles of undernutrition and compensatory weight gain when food becomes available [(1)]. Additionally, food insecurity is linked to poorer mental [(1)] and physical health outcomes, exacerbating the risk of obesity and related comorbidities in this population. In 2024 the center reduced the energy and protein of main meals in order to control weight gain in the rehabilitation center population. The aim of this review was to compare the weight change of homeless patients before (2023) and after (2024) reducing the energy content from 800 to 500 kilocalories of main meals.

**Methods:** Two retrospective cohort audits were analyzed for the homeless patients admitted during October to December 2023 (n=9) and October to December 2024 (n=9). Data collected included age, ethnicity, gender, human immunodeficiency virus (HIV) status, length of stay, weight and BMI at admission and discharge, and overall weight change. Medication records were reviewed to assess prescriptions associated with weight gain and any secondary effects that could impact nutritional status. Descriptive statistical analysis was used to compare trends between cohorts. This study was conducted as a service evaluation using anonymised patient data in line with hospital protocols. Approved consent from Caldicott Guardian of the hospital was obtained, ethical approval was not required for the audits.

**Results:** In 2023, patients (n=8, all male, mean age 54.3 years) had a mean stay of 4.3 months and gained an average of 7.0 ± 7.7 kg. In 2024, patients (n=5, all male, mean age 51.8 years) stayed for 3.2 months on average and gained 9.0 ±7.8 kg. In 2023**,** 1 patient was underweighted, 5 had a healthy weight, 1 was overweight, and 2 had obesity at admission. By discharge**,** 5 had a healthy weight, 2 were overweight, and 2 had obesity**.** In 2024**,** 2 patients were underweighted, 6 had a healthy weight, and 1 was overweight at admission. By discharge**,** 1 remained underweight, 5 had a healthy weight, 2 were overweight, and 1 had obesity. Despite the dietary modification, most patients in both cohorts experienced weight gain.

**Discussion:** Although the dietary modification aimed to reduce unintended weight gain, the 2024 cohort still showed an increase in body weight with a higher absolute mean in 2024 (9.0 kg vs. 7.0 kg)**,** suggesting that despite the intervention, other factors, such as medication use, metabolic adaptations and limited physical activity played a key role. Medications such as mirtazapine and methadone, known to increase appetite and fat retention, may have contributed to these outcomes. These findings align with broader research [(2)] highlighting the complex interplay between food insecurity, mental health, and medication-induced weight changes in homeless population.

**Conclusion:** Nutritional modifications alone may not be sufficient to control weight gain in homeless patients. The findings suggest that medication effects, food insecurity [(1)], and patient demographics are key factors influencing weight and nutritional outcomes. A multidisciplinary approach including dietary adjustments, medication management, and targeted support for food insecurity is crucial for improving health outcomes in this vulnerable population.

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**A Quantitative Evaluation of Advice and Interventions for Bone Health Management in a Specialist Dietetic Coeliac Service**

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**Background:** Coeliac disease (CD) affects approximately 1% of the population[1] and predisposes patients to bone disorders such as osteoporosis, adversely impacting health and quality of life[2]. Dietary and lifestyle changes can aid in minimising the risk of osteoporosis; however, the effectiveness of dietary advice on bone health in CD remains unclear. All newly diagnosed patients receive one appointment covering standardised advice on calcium, vitamin D, and physical activity (PA) as part of routine care, as well as being offered a DEXA scan to evaluate bone density at diagnosis. This study aimed to achieve a patient-level understanding of current bone health screening and management and to identify opportunities for improvement.

**Methods:** This was a single-centre retrospective observational study. Patients diagnosed with CD between 2021 and 2023 were screened and identified from an existing database via convenience sampling. Data was collected via a questionnaire, which was piloted before dissemination and evaluated patient acknowledgement and interpretation of standardised advice; whether routine care was given, and how soon after diagnosis care was received. Dietary calcium intake was estimated using a Food Frequency Questionnaire and Nutritics™, which was designed using an existing validated tool. Statistical analyses, including chi-squared tests and ANOVA, were performed using SPSS (v29 2024). Governance approval was obtained from Sheffield Teaching Hospitals.

**Results:** The study had a response rate of 52% (53 questionnaires). The sample included 17 males (33%) and 36 females (68%), with a mean BMI of 26.78 ± 6.3 kg/m². DEXA scans were conducted in 85% of patients, with no significant differences by gender ($p = 0.223$) or age ($p = 0.388$). 87% reported receiving calcium-related advice, 67% received advice on vitamin D, and 49% on PA (Figure 1). 31% met the recommended calcium intake (>1000 mg/day). Across all advice types, 64% found it “easy to understand.” Significance was determined at p-value <0.05.

**Discussion:** The findings highlight a discrepancy in the delivery of standardised calcium, vitamin D, and PA advice to newly diagnosed patients with CD, as well as patient recognition and/or application of this information. Current methods of delivering advice may not be sufficient to facilitate behavioural change, potentially influenced by differing perceptions of need or barriers to implementation. However, the retrospective nature of this study relies on patient memory, which is a limitation of the study and jeopardises recall accuracy.

**Conclusion:** This evaluation highlights gaps in patient acknowledgement and adoption of advice on calcium, vitamin D, and PA; therefore, refining delivery methods and co-developing educational tools with patients could help bridge these gaps and improve bone health outcomes in coeliac disease by enhance understanding and promoting meaningful health behaviours.

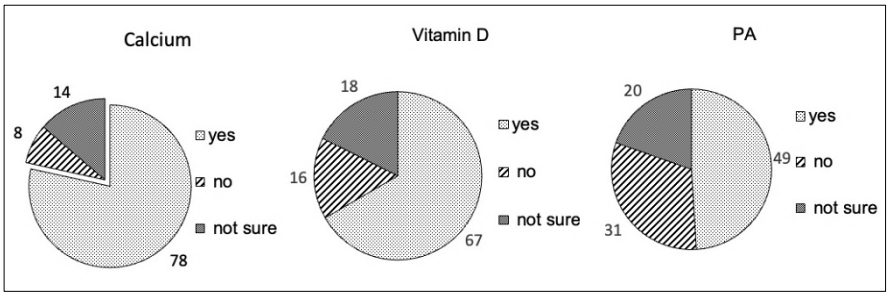


**Figure 1. Proportion of Patients Receiving Advice on Calcium, Vitamin D, and PA**

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**A clinical audit of parenteral nutrition standards and practices at a UK district general hospital.**

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**Background:** Parenteral nutrition (PN) provides intravenous nutrition for patients unable to tolerate enteral feeding(1). PN delivery is complex and carries significant risks, requiring strict governance. In 2010, NCEPOD (*"A Mixed Bag"*) highlighted deficiencies in PN practice (2). In response, a re-audit of PN care was undertaken at St Richard's Hospital (SRH) in 2024 against the eight NCEPOD standards: indication, timeliness, assessment, monitoring, fluid management, prescribing/compounding, catheter choice/insertion/care, and documentation/training. Findings were compared with data from an identical 2021 audit. This re-audit aimed to assess compliance with all eight NCEPOD standards and compare outcomes with the 2021 audit. The primary outcome was the change in patient weight during PN therapy; secondary outcomes included compliance with each standard and documentation completeness.

**Methods:** A retrospective clinical audit of all adult inpatients receiving PN at SRH from April to October 2024 was performed. Data were collected on indication, timing of initiation, patient assessment, clinical and biochemical monitoring, fluid management, prescribing/compounding, catheter care, staff training, and use of a PN proforma. Compliance with each NCEPOD standard was recorded and benchmarked against 2021 audit results. Normality was assessed using the Shapiro-Wilk test. Body weight change was normally distributed and compared using a paired t-test. Other outcomes are presented descriptively as percentages. Analyses were performed in R/SPSS with $p < 0.05$ considered significant. The audit was registered with the SRH Clinical Audit Department; as a service evaluation, NHS ethical approval was not required.

**Results:** Seventeen adult patients receiving PN were included in the 2024 re-audit (n=17) compared with 45 in 2021 (n=45). Patients in 2024 experienced statistically significant weight loss during PN therapy ($p < 0.001$), indicating under-monitoring and inadequate energy provision. Appropriate PN indication was met in 64.7% (11/17) in 2024 versus 77.7% (35/45) in 2021. Timely initiation of PN declined: 23.5% (4/17) in 2024 versus 64.4% (29/45) in 2021. Documentation of treatment goals was absent in 2024, and monitoring data were inconsistently recorded, with incomplete datasets limiting comparisons across some standards.

**Discussion:** The findings suggest a deterioration in PN governance at SRH since 2021. Reduced compliance with standards, absent documentation, and patient weight loss during PN highlight significant concerns. Interpretation is limited by the smaller 2024 cohort (n=17, n=45 in 2021), which may affect comparisons. However, the results are consistent with other UK audits, which show similarly poor documentation of PN goals and monitoring (3). Likely contributing factors include the absence of a standard PN proforma, variable multidisciplinary involvement, and limited staff training on PN governance.

**Conclusion:** This re-audit highlights persistent deficiencies in the quality of PN at SRH. Implementation of a standardised PN proforma, enhanced multidisciplinary training, and regular re-audit are recommended to improve documentation completeness, monitoring, and patient outcomes. These measures are essential to ensure compliance with NCEPOD standards and the safe delivery of PN.

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**Prevalence of obesity and weight loss outcomes following referral to a dietitian in a Tertiary HIV Clinic: a service evaluation**

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**Background:** People with HIV (Human Immunodeficiency Virus) are at increased risk of diabetes and cardiovascular disease contributed to by the rising prevalence of overweight and obesity in this population(1). People with HIV are less active and experience greater food insecurity than the general population(1). They find it harder to access community weight management programmes due to economic or cultural barriers and HIV related stigma(2). Weight management is the main indication for dietetic referrals from the Sheffield Teaching Hospitals HIV service. The aim of this service evaluation was to determine the prevalence of obesity (body mass index (BMI) >30kg/m$^2$) in people attending a tertiary HIV clinic, evaluate whether they were referred to a dietitian and, if referred, assess their weight loss outcomes.

**Methods:** A retrospective case note review was registered as a service evaluation with the trust clinical effectiveness unit. The weight and BMI of all patients attending the HIV clinic in April 2023 were recorded. For patients with BMI >30kg/m$^2$ any documented discussion about weight management and/or referral to the dietitian was extracted from their medical records. The weights and BMI of those patients with BMI over 30 were recorded again after one year.

**Results:** Of the 100 patients included in the case note review, 40% (40/100) had a BMI>30kg/m$^2$. Of these 55% (22/40) had a documented discussion about weight management with a clinician and were offered a referral to the dietitian. Two thirds (68%,15/22) of patients accepted the dietetic referral and 40% (9/22) of these attended the appointment. Mean number of attendances to the dietitian over one year was 2.7/year. Under half (45%,4/9) of patients attending the dietitian lost weight, with a mean weight loss of 4.2%/year. Mean weight change for all those attending the dietitian was +0.4%/year whilst mean weight change for all patients with BMI >30 (n=40) at baseline was +0.04%.

**Discussion:** Rates of obesity amongst this small sample of patients in the Sheffield HIV service exceeded the national prevalence in the general population of 29%(3).This evaluation shows that many offered a dietetic referral fail to take it up and the current dietetic service is only helping a small proportion achieve significant weight loss. The sample size was small but indicated that there was no difference in weight loss between those who attended the dietitian and those who did not. The current service may not be meeting the need for weight management support.

**Conclusion:** Engaging people with HIV in weight management starts with discussion by clinicians and referral on to suitable support. Further work is needed to understand why a significant proportion of patients do not accept dietetic referral or attend their first appointment and if they are engaging with other services for weight management support.

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**Weight Management in a Tertiary HIV Clinic – A Patient Survey**

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**Background:** Weight management is the main indication for dietetic referrals at the Sheffield Teaching Hospitals HIV service. Dietetic support is offered via one to one, face to face or telephone appointments. A previous service evaluation at this clinic indicated a high prevalence of obesity with less than a quarter of those with BMI (body mass index) >30kg/$m^2$ accessing dietitian support within the service. A national survey of people with HIV (Human Immunodeficiency Virus) reported a significant felt need for weight management support[(1)] and people with HIV may find it harder to access community weight management programmes due to economic or cultural barriers and HIV related stigma[(2)]. The aim of this service evaluation was to determine how people would prefer to receive support for weight management and understand the barriers and facilitators to engagement.

**Methods:** The survey was designed then piloted with four patients and registered as a service evaluation via the trust clinical effectiveness unit. A link to the survey was sent via SMS to all patients with a dietitian appointment (n=102) for weight management in the preceding 12 months. In addition, all patients attending the HIV service from February to April 2025 were invited to complete the online survey via posters displayed at clinic. The survey included a mix of multiple choice and free text questions on satisfaction with weight management advice, preference for location, mode of delivery of support, and barriers and facilitators to weight management.

**Results:** Twenty survey responses were received. 70% (14/20) of respondents had been seen by the dietitian in the HIV service. Most respondents (13/14, 93%) were satisfied with the service and identified a way dietetic advice had helped them. Respondents most frequently (12/20, 60%) preferred to receive support within the HIV service rather than from community programmes or their GP practice. Respondents most frequently stated they would prefer one to one support (14/20, 70%) and face to face (15/20, 75%). Just under a third (6/20, 30%) would be interested in attending a weight management support group. Barriers identified to engaging with weight management included the burden of HIV and other health conditions, socio-economic factors, and mental health.

**Discussion:** Survey respondents were satisfied with the current model of face-to-face, one-to-one support from the dietitian in the HIV service. In contrast, NICE[(3)] recommends more frequent support in a multicomponent group programme for weight management. Responses suggest that barriers related to HIV may reduce uptake of support to manage weight. Further evaluations are required to better understand patient perspectives and inform the co-design of effective and accessible weight management services for people with HIV treated at Sheffield Teaching Hospitals.

**Conclusion:** Providing weight management support within the HIV service may help overcome barriers to engaging with community-based weight management programmes. Whilst one to one support is preferred, offering group support in line with NICE guidelines, within the HIV service, may be an acceptable alternative to some.

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**Exploring the Acceptability and Effectiveness of Weight Management Services for Idiopathic Intracranial Hypertension: A Qualitative Study of Patient and Provider Perspectives**

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**Background:** Idiopathic Intracranial Hypertension (IIH) is a debilitating neurological condition predominantly affecting younger women living with obesity, which can lead to blindness if untreated. Weight loss is the only disease-modifying treatment, yet optimal approaches to delivering effective and acceptable support remain unclear.[1] By exploring the perspectives of patients, clinicians, and an NHS commissioner, this study provides novel insights to inform the redesign of weight management services for people living with IIH (plwIIH). **Methods:** Semi-structured interview were conducted using Microsoft teams with eight patients diagnosed with IIH, eight healthcare professionals, and one NHS commissioner based in Southeast London. Participants were purposively sampled to capture key stakeholders perspectives. Data were analysed using Framework Analysis. Ethical approval was granted as a Quality Improvement Project (QIP 17360). **Results:** Distinct themes emerged within each stakeholder group. Patients reported profound emotional distress and functional impairment due to IIH diagnosis and symptoms. They valued empathetic care and peer support while facing challenges sustaining weight management changes. Clinicians described workload pressures, fragmented care pathways, and limited resources to provide tailored interventions. The commissioner highlighted funding constraints and the need for scalable, adaptable service models. Key cross-stakeholder insights and recommendations are summarised below.

| Theme | Patients | Clinicians | Commissioner |
|---|---|---|---|
| **Emotional & Functional Burden** | Profound anxiety, isolation, and disruption to daily life. | Recognise distress but focus on comorbidities and motivation. | Limited understanding of emotional impact. |
| **Support Systems** | Value empathetic care, peer connection, and cultural relevance. | Highlight need for structured peer groups and strong clinician-patient relationships. | Favour scalable, cost-effective support models. |
| **Service Accessibility** | Frustration with waiting times, unclear pathways | Cite underfunding, staff shortages, and fragmented services. | Acknowledge funding and coordination barriers. |
| **Tailored Care** | Desire holistic, psychological, and culturally sensitive support. | Advocate for integrated IIH-specific pathways and staff training. | Open to personalised models if cost-efficient. |
| **Recommendations** | Holistic care, peer support, integrated services. | MDT collaboration, clearer referral processes, upskilling staff. | Targeted commissioning adaptations, staff training. |

**Discussion:** Emotional and systemic barriers often undermined IIH patients' engagement with weight management. Stakeholders highlighted practical opportunities to improve care, including proactive psychological support, peer networks, and integrated multidisciplinary pathways. Targeted staff training in IIH-specific care and empathetic communication may be essential to mitigate the disconnect between patients and clinicians and enhance patient care. **Conclusion:** Improving weight management services for plwIIH may require greater emphasis on psychological care, multidisciplinary coordination, culturally tailored interventions and upskilling of clinicians. Larger studies are needed to explore these recommendations further.

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**Improving staff retention through flexible working in a large university hospital dietetics department.**

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**Background:** Focus groups led by Human Resources identified the lack of flexible working as the main reason Dietitians left the Trust. However, Clinical Team Leads (TLs) reported a discrepancy between this feedback and low number of applications submitted by their team, prompting further investigation.
**Aim:** This service improvement project aimed to understand barriers to applying for flexible working, explore staff perceptions across all banding levels, and develop an action plan to improve retention.
**Methods:** To minimise bias, impartial TLs from other sites facilitated small, band-specific, semi-structured group interviews in accordance with MFT's ethical standards and fostering open discussion. Each one-hour session used seven open-ended questions to explore staff understanding and opinions of flexible working, The questions prompted discussions about current practices, application processes, barriers, decision-making, and desired improvements. Facilitators then shared the overall feedback with other TLs and the Lead AHP. After considering both local and Trust-wide guidance, the following measures were trialled:

- Flexible working options to be discussed during probation reviews and annual appraisals.
- Staff supported to work from home regularly for remote consultations, training, and development.
- Working hours adjustable between 07:00 and 18:00 (with core hours 09:30 to 14:30) at short notice.

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**Results**: Table 1 – Main barriers to flexible working identified from the group interviews.

| | |
|---|---|
| Organisational Culture | - Policy driven, too formal.<br>- Not transparent, not open and honest discussion.<br>- Lack of fairness of access, only for higher bands with childcare needs.<br>- Working pattern adjustments based on service needs; personal needs rarely considered.<br>- Not trusted (to work off site).<br>- Fear of retribution or being seen as less committed if requesting.<br>- Trials rarely made permanent. |
| Personal | - Work-life balance difficult to achieve.<br>- Limited day-to-day flexibility.<br>- Accommodating social life, personal appointments, and childcare needs is difficult. |
| Professional | - Professional development time insufficient.<br>- Worried about impact on caseloads and team dynamics if ask. |

Table 2 – Comparison of resignations rates and flexible working arrangements in place pre and post-project.

| | | 2022/2023 (pre-project) | 2024/2025 (post-project) |
|---|---|---|---|
| Staff with flexible working arrangements (all bands) | | 28% | 83% |
| Resignations | Band 5 | 24% | 6% |
| | Band 6 | 25% | 15% |
| | Band 7 | 2.5% | 1.5% |
| | Band 8a | 4% | 0% |

**Discussion**: Although complete participants' anonymity could not be ensured, the approach allowed TLs to gain valuable insight into the practical barriers and impacts of limited flexible working. This enabled more targeted departmental changes and gave staff a genuine opportunity to be heard. Following these interventions, staff retention improved across all dietetic pay bands, particularly lower bands, with no other clear confounding factors identified. Furthermore, total sickness days fell from 329 to 306, and total special leave days from 42 to 37 between 2022/2023 and 2024/2025, further boosting the active dietetic workforce.
**Conclusion**: A Trust policy alone is not enough to support flexible working. It is essential to understand staff needs and perceptions, as well as the practicalities of applying for and facilitating flexible arrangements. This project demonstrates that flexible working is achievable and can significantly improve staff retention and workforce stability, even within a large and busy university hospital setting. Listening to staff and addressing real barriers leads to positive outcomes for both individuals and the organisation.
**References:** Manchester University NHS Foundation Trust (2023) *Flexible Working Policy*

# Supplementary Prescribing (Medicines)

## Supported by Prescribers Sub-Group

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#BDAResearch

**Dietetic Prescribing of Intra-Dialytic Parenteral Nutrition (IDPN): Case Study of One Patient Over One Year**

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**Background:** IDPN is parenteral nutrition (PN), delivered via the haemodialysis machine during dialysis sessions. It supports patients with inadequate oral intake, particularly when other nutrition routes are not feasible[1, 2]. Case Summary: A 35-year-old male on home haemodialysis with uncontrolled type 1 diabetes, longstanding dialysis history, and poor adherence to renal diet and medications. IDPN was indicated due to gastroparesis (chronic vomiting/diarrhoea, failed gastric pacemaker), oesophageal stricture (regurgitation despite dilations), pancreatic insufficiency (malabsorption, unable to take enzymes orally), vascular stenosis (no access for separate PN), enteral tube refusal (psychological barriers), and frequent hospital admissions (dehydration, malnutrition, unsafe home dialysis). Aim: demonstrate that a renal dietetic prescriber, experienced in complex PN management, can manage IDPN effectively and safely.

**Methods:** Retrospective review of dietetic notes and electronic patient records from Dec 2023–Dec 2024. Parameters included nutritional status, biochemistry, IDPN sessions, dietetic time, and hospital admissions. Ethics approval was not required due to audit regulations.

**Results:** IDPN was given 3/week Dec'23-Jan'24 (inpatient) and Feb-Apr'24, 4/week Apr-Sept'24, 3/week Sept-Nov'24 and 2/week Nov'24 onwards, on the in-hospital dialysis unit. IDPN prevented admissions, improved nutritional status, and corrected deficiencies.

| Date | Albumin g/L (35-50) | Selenium *µmol/L (0.80-1.50)* | Zinc µmol/L (10-22) | Copper µmol/L (11-22) | Vitamin A µmol/L (1.05-2.80) | Vitamin D µmol/L (50+) | Vitamin E µmol/L (12-42) |
|---|---|---|---|---|---|---|---|
| 8/11/23 | 16 | 0.35 | 5.8 | / | / | / | / |
| 17/1/24 | 24 | 0.66 | 12.0 | 13.8 | 0.28 | 19.9 | 10.7 |
| 17/9/24 | 23 | 1.00 | / | 12.6 | / | / | / |
| 26/10/24 | 26 | / | 19.2 | / | / | / | / |
| 19/12/24 | / | / | / | / | 0.84 | 15.2 | 24.6 |

| Date (IDPN tracker) | Weight, post-dx (kg) | BMI (kg/m2) | Mid-arm circumference (cm, centile range) | Triceps skinfold thickness (mm, centile range) | Mid-arm muscle circumference (cm, centile range) | Handgrip strength, right hand (kg, centile range) | Handgrip strength, left hand (kg, centile range) |
|---|---|---|---|---|---|---|---|
| 6/12/23 (day 1 of inpt IDPN) | 33 | 12.3 | / | / | / | / | / |
| 22/2/24 (day 1 of outpt IDPN) | 37.1 | 13.7 | 18.1 <5$^{th}$ | 3.5 <5$^{th}$ | 17.0 <5$^{th}$ | / | / |
| 18/7/24 (5mo outpt IDPN) | 42 | 15.6 | 19.6 <5th | 5.0 <5$^{th}$ | 18.0 <5$^{th}$ | 22.4 <10$^{th}$ | 20.8 <10$^{th}$ |
| 10/12/24 (10mo outpt IDPN) | 43.3 | 16.1 | 21.0 <5$^{th}$ | 5.0 <5$^{th}$ | 19.4 <5$^{th}$ | 22.5 <10$^{th}$ | 20.2 <10$^{th}$ |

Raised liver function tests and triglycerides were seen from 8-months, despite reducing IDPN frequency, but sample contamination with IDPN was suspected. Glucose control was limited by insulin self-administration, and fluid overload avoided due to gastrointestinal (GI) losses. Hospital days reduced from 126 (pre-IDPN) to 5 (on IDPN) over comparable periods. Dietetic prescriber time: 171 IDPN bags prescribed/13 months, averaging 24mins contact time/bag, including upper-arm anthropometrics; much quicker than the alternative to dietetic prescribing: a non-prescriber dietitian who averaged 4hrs contact time/bag for medically prescribed IDPN, without arm measurements.

**Discussion:** Standard intake vs. requirement assessments advised by literature[1-3], were ineffective due to GI losses and refusal of EN/PN. IDPN proved effective in improving nutritional status and reducing admissions. Success relied on the specialist PN expertise of the dietetic prescriber who closely monitored and adjusted the prescription in a timely manner. Despite higher cost, IDPN likely offset expenses through reduced hospitalisation. Dietetic prescribing of IDPN was time efficient vs. the standard prescribing model.

**Conclusion:** Renal dietitian-led IDPN prescribing had a significant clinical impact, demonstrating the value of dietetic prescribing in complex nutrition management.

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## A 7-year audit of prescribing practice by an intestinal rehabilitation dietitian.

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**Background:** All prescribers are expected to adhere to the Royal Pharmaceutical Society (RPS) competency framework[1]. This includes prescribing safely and professionally and improving prescribing practice[1]. Prescribing in intestinal rehabilitation is complex as several medications are off-label, unlicensed and controlled drugs. The aim of this audit was to describe the prescribing practice of an intestinal rehabilitation dietitian over a 7-year period and ensure the RPS competency framework were met.

**Methods:** All prescribing activity from August 2017 to July 2024 was prospectively recorded and analysed on Excel®. Data collected included date the clinical management plan (CMP) was agreed and completed, type of prescribing activity (i.e. parenteral nutrition (PN), new medication prescribed, medication deprescribed, dose amendments and other medication alterations). Examples of meeting the RPS prescribing governance competencies relating to prescribing safely and professionally and improving prescribing practice was identified. Ethical approval was not required as auditing prescribing practice is a Trust and RPS requirement.

**Results:** All patients agreed to prescribing and 251 CMPs were completed in collaboration with 6 designated prescribing practitioners (DPP). All CMPs were in place before prescribing started. Nineteen CMPs were reviewed after 12 months so prescribing could continue. The dietitian met with a DPP on 13 occasions to discuss prescribing governance including reflecting on and improving her prescribing practice. A total of 1868 prescribing activities were recorded (see Table 1). New medications were prescribed (n= 511), medications were deprescribed (n=52), doses increased (n=5) and decreased (n=7) and 2 changes in formulation from IV to oral. Six annual audits of prescribing practice were submitted to the Trust demonstrating safe prescribing, one of which was published[2]. No adverse events were recorded and no prescribing was passed back to the DPP. The CMP was updated 3 times due to updates in Trust and national guidelines and a return to practice form completed after a 12-month break. Improving prescribing practice and supporting other prescribers was demonstrated with the creation of a national supplementary prescribing group.

**Table 1 Prescribing activity**

| **Medication** | n |
|---|---|
| Parenteral Nutrition | 749 |
| High output stoma medication (Proton pump inhibitors, Loperamide, Codeine, Oral rehydration solution) | 64 |
| Oral Micronutrients (Forceval, Thiamine, Selenium, Zinc, Vitamin D, Calcium, Iron) | 66 |
| Oral & enteral electrolytes (Sodium, Potassium, Magnesium, Phosphate) | 20 |
| IM/IV micronutrients (Vitamins A, D, E, B12, Selenium, Thiamine, Cernevit®, Additrace®/Addaven®) | 115 |
| IV fluids plus electrolytes (Potassium, Magnesium and Phosphate) | 842 |
| Pancreatic enzyme replacement therapy (PERT) | 2 |
| Others (Catheter locks, Ondansetron, Octreotide) | 10 |

**Discussion:** An intestinal rehabilitation Dietitian was able to safely and effectively prescribe a range of medications within her scope of practice including controlled drugs (codeine), off-label and unlicensed medications. This builds on previous work demonstrating safe and effective prescribing practice[2]. The RCP competencies on prescribing governance relating to prescribing safely and professionally and improving prescribing practice were achieved and no adverse effects from prescribing observed. Challenges faced in this speciality include the risk of malabsorption due to intestinal failure requiring intense monitoring to reduce complications.

**Conclusion:** The RPS competency framework is a valuable resource for monitoring safe and effective prescribing by dietitians. If granted independent prescribing rights, dietitians would continue to utilise the framework to ensure safe and effective prescribing.

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**Perceptions of Supplementary Prescribing in Dietetics: A Qualitative Study**

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**Background:** Earlier this year, the British Dietetic Association (BDA) released a call to extend Dietitians rights to prescribe from supplementary prescriber status to full independent prescribing[1]. Supplementary prescribing is known to be cumbersome, primarily through the need to utilise clinical management plans[2]. Currently, little is known about dietitians' own experiences of supplementary prescribing. Therefore, the aim of this study was to explore dietitians' perceptions of supplementary prescribing and its impact on patient care, professional roles, and service delivery.
**Methods:** Utilising data from participants defining themselves as Dietitians working within extended roles (n=98), this qualitative study analysed responses from a sub-set of Dietitians who self-identified as 'formally prescribing or advising on medication' (n=61). Data were derived from an open-ended item in a 13-question electronic survey, piloted with four dietitians. A convenience sample was recruited via social media (Twitter/X) and targeted email to Dietetic managers. Contact emails were identified through word of mouth, NHS Trust Dietetic websites and recent job adverts advertised on NHS Jobs. Two reviewers independently conducted a thematic analysis following Braun and Clarke's six-step approach[2], before synthesising results through discussion and consensus. Ethical approval was not required as per the Health Research Authority (HRA) ethics decision tool.
**Results:** Sixty-one dietitians (62% of the wider sample) reported formally prescribing or advising medication. Five overarching themes were identified:
1. Enhanced patient care and service efficiency - participants highlighted quicker access to medicines and when the dietitian could prescribe: *"Enables timely prescriptions to be made without the limitations of finding a doctor to complete and safer for the patient."* (P82).
2. Professional autonomy and recognition - being able to prescribe heightened their standing and sense of professional legitimacy within teams. "*I do feel more respected within my Diabetes team and also the wider dietetic department*." (P86).3. Role ambiguity and structural barriers - however, unclear boundaries and inconsistent processes across organisations created ambiguity about scope. "*Occasional confusion regarding my role as a distinction from other dietitians or other HCP's"* (P1).
4. Workload, emotional impact, and burnout risk - taking on prescribing responsibilities also brought emotional strain, including self-doubt. "*Sometimes Imposter Syndrome*" (P44).
5. Need for training, support, and fair remuneration - numerous participants asked for clearer structures, ongoing support, and pay that reflects the added responsibility. "*Cons - Despite extended role with more responsibility, no remuneration."* (P71); "*Cons - no clear guidance and competencies can vary depending on where you work."* (P77).
**Discussion:** These findings support existing evidence that dietetic prescribing roles may improve patient care, efficiency, and professional autonomy[3,4]. However, systemic challenges such as administrative burdens, governance inconsistencies, and lack of recognition may limit sustainability and discourage wider uptake of supplementary prescribing, potentially slowing the growth and impact of prescribing within dietetics. Limitations regarding the ambiguity of the term 'formally advising' are acknowledged.
**Conclusion:** Dietitians perceive supplementary prescribing as enhancing practice and outcomes, but reforms in training, governance, and remuneration are needed to realise its full potential.

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## Enhancing prescribing practice among dietitians in a Nutrition Support Team

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**Background:** In April 2023 two dietitians from the Nutrition Support Team (NST), having completed a Postgraduate Certificate in Medicines Management, were annotated on the HCPC register and added to the Trust's Non-Medical Prescribers register. They began implementing their qualifications as supplementary prescribers, initially focusing on patients with Type 3 intestinal failure (IF). These patients were medically managed with the IF medical team, who also served as the designated medical practitioners (DMPs). After 12 months, prescribing activities expanded to include patients with Type 1 and Type 2 IF, who were medically managed by a range of specialties including oncology, haematology, colorectal and hepatobiliary surgery, upper gastrointestinal surgery, and intensive care. Clinical management plans (CMPs) were completed for each patient, although the requirement for individual CMPs has been cited as a barrier to active prescribing by dietitians [1]. To address this, the dietitians and DMPs collaboratively developed a streamlined process for CMP completion and weekly sign-off. This evaluation aimed to assess whether these changes led to increased prescribing activity, which in turn maintains clinical competence using the agreed core formulary.
**Methods:** A retrospective review of the NST dietitians' prescribing logs was conducted, comparing data from 2023–2024 with 2024–2025. As this was a service evaluation, ethical approval was not required.

**Results:** In 2023-2024 the combined activity of two dietitians (equal to 1.6 WTE) generated 717 different prescriptions, over a range of 12 different medicines. In 2024/2025 there was a period of sick leave for one of the two dietitians, (reducing from 1.6 WTE to 0.9 WTE, potential for 44% less activity), and despite this 991 prescriptions over 14 different medicines were recorded.

**Discussion:** Consistent with existing literature, the requirement for individual CMPs under the supplementary prescribing model was identified as a barrier to efficient prescribing. During the first year, individual CMPs were completed and signed by DMPs, which proved time-consuming and occasionally hindered prescribing activity. Following an annual review, a revised process was introduced: a single CMP template was developed, signed by DMPs and dietitians, and applied to each new patient assessed. For Type 1 and Type 2 IF patients, written agreements were established with the medical consultants referring teams, allowing NST dietitians (under DMP supervision) to prescribe using the core formulary. CMPs were uploaded to the electronic patient record system (EPIC), ensuring transparency and accessibility. Each CMP included clear parameters for when to refer back to an independent prescriber. The log to record data has been further developed for use for 2025/2026 to sub-divide drug categories, to demonstrate diversity of prescription use.

**Conclusion:** Although supplementary prescribing has practical difficulties, this evaluation demonstrates that, with collaborative planning and streamlined processes, dietitians can significantly increase their prescribing activity and efficiency within a shared caseload. As highlighted by Ruddock & Rees (2022), supplementary prescribing has served as a stepping stone, but independent prescribing is now the standard for many other professions [2]. Until such rights are granted, it is essential that dietitians actively use their qualifications to generate data that can inform policy and support the BDA's advocacy efforts.

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## Evaluation of A Dietitian's Prescribing Activity in a Head and Neck Radiotherapy Clinic

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**Background:** Non-medical prescribing (NMP) has been proposed as a means to improve quality of care and service efficiency[1]. In head and neck radiotherapy (RT), timely symptom control is critical to preventing malnutrition and reducing its associated morbidity and mortality[2]. Consequently, extended scope practice for dietitians, such as supplementary NMP, is supported within head and neck cancer services[2]. Supplementary NMP requires a shared agreement involving the medical practitioner, patient and supplementary prescriber, recorded in a signed, patient-specific Clinical Management Plan (CMP). Despite the establishment of dietetic NMP practice in this clinic since 2020, a review had not yet been conducted, even though audit is recommended[3,4]. This service evaluation aimed to examine dietetic prescribing activity in the head and neck RT "on treatment" clinic over a six-month period.
**Methods:** All patients seen in the head and neck "on treatment" RT clinics between April-September 2023 (inclusive) were included. Patients opting out of NHS data collection were excluded. Data were collected retrospectively through review of electronic case notes on EPIC. Data collected encompassed diagnosis, treatment details (e.g. radical or palliative intent), completion status of the CMP, and prescribing activity; including whether a prescription was issued, total number of prescriptions per patient, number of prescriptions by medication and the timing of prescribing during the patient's treatment. Descriptive statistics were performed using Microsoft Excel. Ethical approval was not required for this service evaluation.
**Results:** A total of 37 patients were included in the evaluation, of whom 33 (89%) met criteria for a CMP – that is, adults experiencing side effects associated with RT to the head and neck, under care of head and neck oncologists. Of these, 23 CMPs were completed (70% of those indicated). 14 patients were prescribed for under CMPs (61% CMP utilisation). Across these 14 patients, 40 prescriptions were issued with a mean of 2.86 prescriptions per patient (SD 1.29), and a median of 3.0 [range 1.0- 5.0]. The median time to first prescription from the start of RT was 15 days [range 14-36]. Table 1 details the most frequently prescribed medications. Other prescriptions issued were for co-codamol (n=4), codeine phosphate (n=2), morphine sulfate (n=2), senna (n=1), lansoprazole (n=1) and domperidone (n=1).

| Name of medication | No. of prescriptions issued | % of Total |
|---|---|---|
| Lidocaine mouthwash | 11 | 28 |
| Paracetamol | 7 | 18 |
| Antacid and oxetacaine | 6 | 15 |
| Macrogol 3350 | 5 | 13 |

Table 1: Most frequently prescribed medications

**Discussion:** Supplementary NMP was conducted for most with an agreed CMP, enabling timely access to a broad range of medications essential for managing acute RT side effects at symptom onset. While the doctor reviews patients once weekly, the dietitian sees them twice weekly, allowing more frequent symptom monitoring and timely prescribing. Improved symptom management may enhance holistic care and nutritional outcomes and free the doctor's time for other tasks. Although supplementary NMP was utilised in most patients with CMPs, it was not universal. Additionally, some medications included on the CMP, such as ondansetron and oxycodone, were not prescribed at all during the review period; this information may be valuable for informing future revisions of the CMP template for supplementary NMP dietitians in the RT clinic.
**Conclusion:** During the evaluation period, dietetic prescribing accounted for 40 prescriptions, with 61% CMP utilisation, potentially improving RT-related side effect management. Further work is required to explore reasons for 39% non-utilisation of CMPs and why 30% of patients meeting CMP criteria, did not have one.
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**Early experiences of prescribing of Glucagon-like peptide-2 (GLP-2) analogues for short bowel syndrome chronic intestinal failure by dietitian supplementary prescribers: three cases**

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**Background:** Intestinal failure (IF) occurs when the intestines can't properly digest food and absorb nutrients and fluids needed for the body to function. Teduglutide, is similar to human glucagon-like peptide 2 (GLP-2), a hormone made in the gut that increases absorption of nutrients from the intestine. GLP-2 analogues for short bowel syndrome chronic intestinal failure (SBS-cIF) were approved for use in Health and Social Care Northern Ireland in 2022. The Regional Intestinal Failure Service in Northern Ireland manages 220 patients, 77 on Home Parenteral Support (HPS). At present 15 of these patients are eligible for GLP-2. The aim of this study was to report early experience introducing GLP-2 to a specialist intestinal failure service and evaluation of management of same by dietitian supplementary prescribers.
**Methods:** Three patients with SBS-cIF were commenced on GLP-2 analogues in July 2023. They were counselled initially by medical and dietetic members of the IF team and furnished with written information and contact details. An appropriate Clinical Management plan (CMP) was developed for these patients. Dietitian supplementary prescribers then undertook daily phone calls for up to 4 weeks to monitor fluid balance and effect of drug, alongside tailored dietetic advice, before moving to weekly, then monthly online and telephone monitoring. Prospective, contemporaneous recording of data pertaining to HPS volumes, stoma outputs, macronutrients, weight and side effects were reviewed using both paper and electronic records during July 2023 to July 2024. GLP-2 analogue prescriptions were renewed 3 monthly and doses were calculated and prescribed by dietitians adjusting for weight. Telephone review of each patient occurred 3 monthly prior to new GLP-2 prescription. Prescriptions were then renewed by dietitian supplementary prescribers and forwarded to the homecare company via Trust online system. Home Parenteral Support (HPS) formulations were adjusted and prescriptions reviewed and again signed by dietitian supplementary prescribers.

**Results:** One female, two males. All 3 had 100cm or less to end jejunostomy. Starting volumes of PN were 20-21 Litres per week. By week 20 all had reduction of between 55-65% (7-12L) in weekly PN volumes, by week 104, 67-75% (15 L). All had 16-40% reduction in PN total kcalories at 20 weeks, 42-100% reduction in PN total kcalories at 104 weeks. Stoma volumes were reduced by 37-69%. Weight increased by 4-7kg in each patient. Median Dose 3.6mg/day. Dietitian supplementary prescribers signed 12 GLP2 prescriptions and made 12 HPS prescription changes.

**Discussion:** GLP-2 analogues are a life altering treatment for those with SBS-cIF reducing dependence on HPS. Reduction in HPS dependence in our early experience is more favourable than another UK IF centre study [(1)] who reported only a minimum 20% reduction in daily volumes at 6 months compared with 55-65% in our patient group. We used a higher median dose 3.6mg/day compared with 3.0mg in this same cohort [(1)]. An earlier study [(2)] showed reduction in PN at 20 weeks by a minimum of 20% and maintained this reduced intake at 24 weeks, again compared with reduction in PN dependence of more than 3 times this amount (65%) in our study in a similar timeframe. The drug was well tolerated, with limited side effects reported including increase in stoma size, borborygmi and headaches. None were debilitating, and all 3 continue on GLP-2 analogues. The benefit of dietitian led reviews in this patient group included intensive support, immediate alteration of HPS volumes and composition, monitoring of side effects and appropriate adjustment of GLP-2 dose for weight and dietary manipulation. The dietitian in these cases being the appropriate professional to prescribe both GLP-2 and HPS. The Crown report states 'One professional should not be expected to take responsibility for clinical decisions that are actually taken by a colleague'[(3)].

**Conclusions:** The dietitian led service is labour-intensive but gave a greater reduction in HPS than corresponding centres.

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## A service evaluation of dietitian supplementary prescribers in Inherited Metabolic Disorders (IMD)

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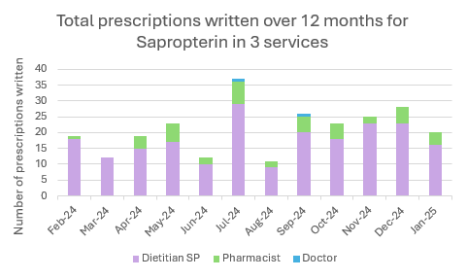
**Background**: UK Dietitians were granted supplementary prescribing (SP) rights in 2016. Dietitians must undertake the non-medical prescribing course and register as a supplementary prescriber with the Health and Care Professions Council, UK. A Clinical management plan (CMP) must be agreed annually with the patient, signed by the SP and independent prescriber (IP) for the SP to prescribe within their scope of practice. In England there has been limited management options for Phenylketonuria (PKU) with the mainstay of management being a low phenylalanine diet. In December 2021, the National Institute for Health and Care Excellence[1] approved the use of the first medication for PKU in England; Sapropterin Dihydrochloride. Sapropterin works as a cofactor for the enzyme, phenylalanine hydroxylase, which allows a less restricted diet while keeping serum phenylalanine levels within target range for age[2]. This high-cost medication can only be prescribed from IMD centres. The aim of the service evaluation was to review the dietitian prescriber activity and the experience of the patients, carers and the multi-disciplinary team (MDT).
**Methods**: Three prescribing IMD dietitians (2 adult, 1 paediatric) reviewed how many prescriptions and CMPs were written over 12 months (February 2024-January 2025) retrospectively from electronic notes. Informal feedback on the role of a SP dietitian was obtained from patients, their carers and the MDT via emails asking for their thoughts on dietitians prescribing sapropterin (open question). The replies were analysed by Microsoft Co-pilot to provide the main themes and quotes selected to show the benefit. This was a service evaluation, so no ethical approval was needed.
**Results**: A total of 260 prescriptions were written for Sapropterin Dihydrochloride within 3 IMD services in 12 months. 82% by SP dietitians (215 prescriptions), 18% by IMD pharmacist or doctor. 66 new or repeat CMPs were written in 12 months. Dietitians were only prescribing Sapropterin Dihydrochloride, usually for durations of 90 days. No adverse events were reported. Seven cases were taken back to the IP for discussion due to phenylalanine levels being out of range. Ten service users provided feedback. The main themes were efficiency, personalised care, trust and satisfaction, flexibility and convenience, support and easy communication. Three IMD doctors and one IMD pharmacist provided feedback, all saw a benefit to dietitian prescribing and support dietitians becoming independent prescribers.




| A selection of quotes from patient and carer feedback |
|---|
| "The dietitian understands the finer details of our children's condition so can easily recommend alternative substitutes for us to try if necessary." |
| "The benefit is that as well as prescribing my medication my dietitian also monitors my phenylalanine levels." |
| "We can have direct and pretty much immediate contact, not having to wait until an appointment." |
| "It is much simpler and quicker process through my dietitian. My dietitian is knowledgeable on my medication and my condition, where as my GP is not." |

**Discussion**: This is the first report of SP dietitians prescribing sapropterin for PKU. This service review shows that dietitians working in IMD can successfully prescribe within their scope which can help ease the burden to clinical services in this growing field. Dietitians are in frequent contact with patients reporting back phenylalanine concentrations and monitoring their dietary management which leads to medication reviews and stock checks. Challenges include time needed to complete CMPs and time to monitor medication adherence.
**Conclusion**: Dietitians working in these specialist roles are ideally positioned to help patient's understanding, concordance, and management of their diet and medication. This data provides further justification for dietitians to become effective independent prescribers, helping to improve patient centred personalised care.

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**Survey to explore supplementary prescribing by dietitians.**

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**Background:** On completion of a non-medical prescribing qualification, dietitians can prescribe medicines using a supplementary prescribing (SP) model, governed by use of a clinical management plan (CMP) agreed with a doctor and the patient [1]. As of April 2025, there are 398 qualified dietitian prescribers in the UK [2]. Very little is known about current dietitian prescribing roles and their scope of practice. Therefore, the aim of this survey was to understand more about dietitian prescribers and their prescribing activity, but also to explore their experiences of implementing the role in practice.
**Methods:** A survey (hosted by Jisc Online Surveys) was circulated by email to the membership of the BDA Prescribers Specialist Sub-Group in December 2024. The survey comprised questions to gather demographic details about the dietitian prescribers (length of clinical experience, job banding and when HCPC SP annotation was achieved), investigate aspects of prescribing practice (clinical setting and frequency of prescribing), identify medicines that were being prescribed and explore experiences of implementation of the prescribing role. Descriptive statistics were used to analyse the quantitative data and qualitative content analysis supported interpretation of experiences of implementing prescribing roles. Ethical approval was not required for this survey.
**Results:** 76 responses were received. 81% of the dietitian prescribers had been working for >10 years (47% >20 years). A majority were in job roles at band 7 or above (94%). Most had achieved HCPC SP annotation between 2021-2024 (72%). 55% of the dietitian prescribers had prescribed for the first time within 6 months of SP annotation. However, 22% had still not started prescribing. The majority of prescribing was undertaken in hospital settings (39% outpatients and 36% inpatients). Medicines prescribed were diverse and comprised >30 different groups of medicines, aligned with the clinical areas of practice (e.g. insulin, anti-emetics, phosphate binders, parenteral nutrition).

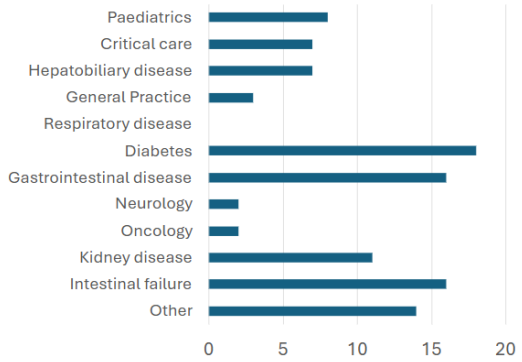


Fig 1. Clinical areas where dietitians were prescribing

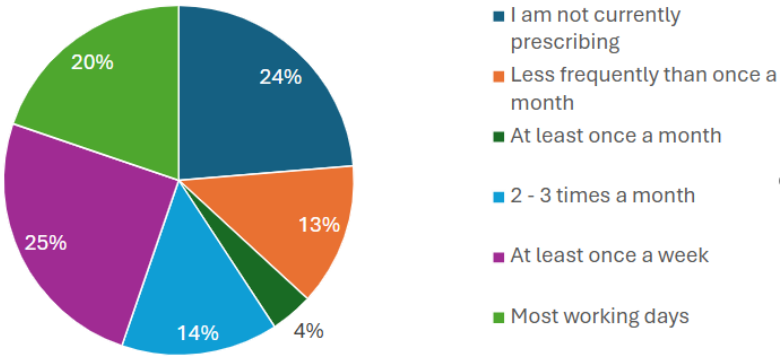


Fig 2. Frequency of prescribing by dietitian prescribers

Experiences of implementing dietitian prescribing into the workplace varied, but 45% of dietitian prescribers faced long delays. Differences in local governance procedures accounted for some of these. However, other reasons were more practical in nature: using the CMP, navigating IT systems, budgetary issues, lacking clarity on roles and responsibilities within teams and level of local supervision and support.
**Discussion:** Most dietitian prescribers are actively prescribing a diverse range of medicines. However, barriers exist to implementing the SP model in practice, affecting patient care. Most other non-medical prescribing professions prescribe independently so workplaces and colleagues are unfamiliar with the SP model. Use of a CMP has previously been shown to be cumbersome and outdated [3]
**Conclusions:** The scope of dietitians' supplementary prescribing is vast and is being undertaken in many clinical settings. Many of the barriers to implementing dietitian prescriber roles in practice could be overcome if dietitians were able to prescribe independently, increasing their impact.

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**Continuous Ketone Monitoring in the Management of Ketogenic Diet for Epilepsy: A Case Study**

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Table 1. Overview of Ketone Levels

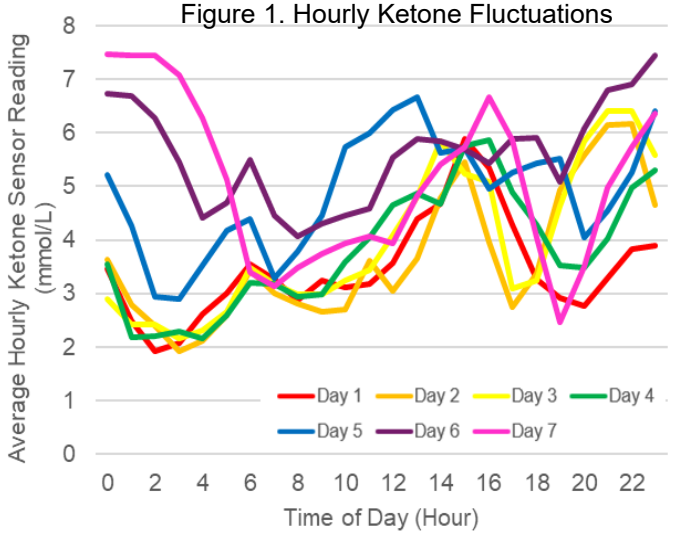
| Time Period | Lowest (mmol/l) | Highest (mmol/l) | Average (mmol/l) |
|---|---|---|---|
| 07.01 – 13.00 | 2.4 | 7.1 | 3.8 |
| 13.01 – 19.00 | 1.5 | 7.5 | 5.0 |
| 19.01 – 07.00 | 1.5 | 8.0 | 4.2 |
| All data | 1.5 | 8.0 | 4.3 |

**Background:** The ketogenic diet (KD) is an established and effective dietary therapy for drug-resistant epilepsy in children (1). Regular ketone monitoring is essential to ensure metabolic stability and therapeutic efficacy. In the UK, ketone monitoring is typically conducted using capillary blood medical devices prescribed by dietitians as part of KD management. However, the invasive nature of capillary testing can reduce adherence. This case study aims to evaluate the use of continuous ketone monitoring (CKM) as an alternative method of monitoring and its potential to improve management of the KD. Currently CKM medical devices are not available to prescribe in the UK.

**Methods:** A single observational case study was conducted involving a 6-year-old boy with myoclonic astatic epilepsy, with recurrent episodes of non-convulsive status epilepticus, established on a classical KD (ratio 3.5:1) for 24 months. The family were provided with a CKM sensor (SiBio) free of charge, which was used alongside standard clinical care for 9 days (7 complete 24-hour periods). Written consent for publication was obtained from the caregiver, ethical approval was not required.

**Results:** A total of 2281 readings were recorded (approximately one every 5 minutes). Two capillary ketone readings taken during this period correlated within 0.1 mmol/L of the CKM readings. The sensor identified both therapeutic (2.5–6 mmol/L) and high ketone levels (>6mmol/l). A summary of the data is provided in Table 1. One high reading exceeded the device's measurable range. There are no capillary levels to confirm the high CKM results. The patient remained asymptomatic of hyperketosis, and no intervention was given. Ketone levels fluctuated widely over 24 hours, with drops in the early morning and late afternoon, though lack of contextual data limits interpretation. A graph demonstrating average ketones hourly over a day, only using complete 24 hour data, in Figure 1. The family reported that CKM provided reassurance, improved understanding of ketone variability, and reduced the discomfort and burden associated with finger-prick testing. The family found CKM offered a clear view of ketone trends, which was more reassuring to the family, than isolated capillary readings. Additionally, it mitigated the patient's discomfort associated with capillary testing by providing a less invasive method for ketone monitoring.

Figure 1. Hourly Ketone Fluctuations




**Discussion:** This case illustrates the potential of CKM to enhance caregiver understanding, support shared decision-making, and reduce the burden of conventional monitoring methods. The patient had no recently reported episodes of hyperketosis identified by conventional ketone testing. The family's experience underpins the value of continuous data: *"KD is a 24/7 job, and the more data we had, the better we could care for our son."* Although limited to one case, the findings illustrate opportunities for integrating such technology into dietetic prescribing practice once approved devices become available in the UK.

**Conclusion:** In this single case, CKM improved the ketone monitoring experience. The ability for dietitians to prescribe CKM devices could improve both patient and dietetic outcomes. Further research is needed to evaluate its long-term feasibility, accuracy, and clinical impact in paediatric epilepsy care.

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# Women's Health and Fertility Nutrition

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#BDAResearch

**Discussing nutrition during antenatal care: a qualitative study of midwives' experiences in Nigeria**

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**Background**: Nigeria has one of the highest maternal mortality rates in the world, with 1047 deaths per 100,000 live births in 2020; an increase of 14% since 2017 [(1)]. Maternal nutrition is important for maternal and infant health and positive pregnancy outcomes. Midwives are responsible for advising about nutrition during antenatal care; the International Confederation of Midwives (ICM) recommends that all midwives should have a solid understanding of nutrition [(2)]. However, UK studies have found that many midwives felt underprepared to offer nutrition advice during antenatal care [(3)]. The nutrition knowledge and experiences of Nigerian midwives is unknown.

**Aim**: To explore Nigerian midwives' perspectives and experiences related to the importance of maternal nutrition and their role in advising about nutrition during antenatal care.

**Methods**: Nigerian midwives working in community or hospital antenatal care were purposively recruited by email. There were invited to participate in an online, semi-structured interview, asking them about their experiences of advising pregnant women about nutrition, as part of their care. Verbatim transcriptions of the interviews conducted with 10 midwives were produced and analysed according to Braun and Clarke's guide [(4)] to produce themes. Ethical approval was given by the study university, and from Rivers State Government, Nigeria (RSHMB/RSHREC/2024/043).

**Results**: Four themes derived were: 1) Nutrition messages are important: ‘*’We have turned it into fun, where we bring certain food stuff and teach how it is made to our mothers”*. 2) The impact of poor nutrition: ‘*’So, the nutritional aspect is very poor …and that's because of all this, you see more maternal and child death”*. 3) Current training in nutrition: ‘*’I think more should be spoken more about this gestational diabetes…, it seems like we don't really know the effects of their pica on pregnancy and their unborn babies*’’. 4) Multidisciplinary working: “*The nutritionists that was posted to our hospital started talking…but the pregnant mothers paid less attention…it took the intervention of the Matron to get them to listen*’’. Midwives acknowledged the importance of maternal nutrition and demonstrated sound nutrition knowledge and of the risks associated with poor nutrition. They all reported receiving training about nutrition but agreed unanimously that more nutrition education was needed. They were comfortable referring to dietitians, (when available), but felt that women were less trusting of dietitians, not having the same close relationship as they did with midwives.

**Discussion**: Nigerian midwives were more knowledgeable and confident about discussing nutrition during pregnancy, compared to UK midwives [(3)]. This may be because they have first-hand experience of the devastating impacts of poor nutrition, which are less obvious in the UK. Despite this, they wanted further training about nutrition, particularly related to pregnancy complications such as PICA and Gestational Diabetes.

**Conclusion**: Further teamwork between midwives and dietitians, such as including dietitians in the delivery of midwives' nutrition education, would enhance antenatal care; both regarding the delivery of important nutrition messages and the acceptance of such messages by the women in their care.

**Nutritional Considerations for Implementing a Vegan Diet for Perimenopausal and Post-Menopausal Women – A Narrative Review**

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**Background:** The menopause, a natural transition nearly all women experience around the age of 52, is often accompanied by hot flushes, sleep disruption, mood changes, brain fog, and musculoskeletal pain, which may be alleviated by dietary changes [(1)]. Over the past decade, veganism has grown in popularity for ethical, environmental and health reasons, but poses nutritional challenges, particularly around bone health, as menopausal women are already at increased risk of osteoporosis [(2)]. This review examines nutritional considerations for peri/post-menopausal women following vegan diets, focusing on symptom management and adequacy.

**Method:** A structured literature review was conducted in PubMed, CINAHL and Google Scholar using terms related to vegan diets, menopause and key nutrients. Studies on peri/postmenopausal women were included; those on hormonal therapy, animals or lacking nutritional relevance were excluded. Data on sample size, age and outcomes were logged, but heterogeneity precluded meta-analysis, so a narrative synthesis was performed.

**Results:** A total of 124 studies were included, including 22 RCTs, 56 narrative reviews, 2 systematic reviews, 43 observational studies, and 1 qualitative survey, predominantly from Western settings. Some evidence suggests that vegan menopausal women typically report less bothersome symptoms than omnivores, prompting further investigation into trialling a vegan diet as a form of non-hormonal therapy to treat menopausal symptoms [(2)]. Few studies compared intakes directly against RNIs. Key nutrients that should be prioritised include protein, essential nutrients vitamins B12 and $D_3$, omega 3 fatty acids and minerals calcium, iron, zinc, iodine and selenium, to avoid the risk of nutritional deficiencies from implementing a vegan diet low in these nutrients. As the risk of obesity is prevalent during the menopausal transition due to the decline in sex steroids reducing basal metabolism, a focus on energy balance and appropriate and carefully monitored energy deficits are of utmost importance to meet individual needs to achieve a healthy weight.

**Discussion:** Evidence suggests a well-planned, balanced vegan diet can be achieved in peri/post-menopausal women to aid the alleviation of menopausal symptoms, all whilst meeting nutritional requirements and potentially reducing the risk of health issues prevalent during the menopause. Although the mechanisms underlying why the vegan diet can lessen symptoms have not yet been confirmed, research suggests this may be due to positive effects on brain health, hormonal function and nutrition patterns consistent with that of a vegan diet. Additional studies are needed to determine the mechanisms behind vegan nutrition patterns in connection with the alleviation of menopausal symptoms, especially during perimenopause.

**Conclusion:** This review plays a crucial role in highlighting the potential nutritional deficiencies that may arise in veganism and the menopause, providing effective strategies to address them. Vegan menopausal women should supplement vitamins B12 and $D_3$ and mineral iodine due to the lack of plant-food sources, in addition to consuming plant-foods rich in protein, omega 3 fatty acids, and minerals iron, calcium, zinc and selenium.

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**Magnesium supplementation and its effect on dietetic outcomes and quality of life in polycystic ovary syndrome: A systematic review**

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**Background:** Polycystic ovary syndrome (PCOS) affects 2–26% of women of reproductive age worldwide, with prevalence influenced by the criteria used and the population studied [1,2], and is commonly associated with a broad spectrum of complications [2] such as low serum magnesium [3]. As magnesium is a cofactor regulating varied biochemical reactions in the body [4], this review aimed to assess whether magnesium supplementation can improve dietetic outcomes and quality of life, including sleep quality.
**Methods:** A systematic search was performed using CINAHL Ultimate, ERIC, Academic Search Ultimate, APA PsycArticles, APA PsycInfo, MEDLINE and SPORTDiscus. Search terms included synonyms and terms related to PCOS and Magnesium. Inclusion criteria comprised studies with participants of any age diagnosed with PCOS by recognised criteria, who received any form of magnesium supplementation alone or in combination with other supplements, without restrictions on dosage, frequency, or publication date. Only peer-reviewed studies in English with direct interventions were included. Outcomes associated with the British Dietetic Association framework, such as body composition, blood sugar levels, blood pressure, lipid profiles, and quality of life measurements, including sleep, were included. Titles, abstracts and papers were screened by a single reviewer, and quality-appraised using Joanna Briggs Institute tools [5]. Findings were evaluated through a narrative synthesis. No ethical approval was required for this review.
**Results:** Seven hundred and ninety-five articles were screened, of which eleven studies met the inclusion criteria. Study participants varied from 15 to 45 years, and trials ranged from eight to twenty-six weeks. Most studies used magnesium oxide; one used microlipodispersed magnesium. Nine studies were conducted in Iran, one in Italy and one in the United States. No significant effect was observed on body composition (weight, BMI, waist circumference, or hip circumference), blood pressure, or sleep quality. Statistically significant improvements were noted with magnesium oxide alone in blood glucose levels ($p = 0.007$) and in enhancing quality of life ($p = 0.0001$), including physical functioning, emotional well-being, energy levels, and social interactions, with the use of magnesium oxide alone. Serum lipid findings were mixed. Some studies reported no significant differences between magnesium oxide alone or combined with calcium carbonate within eight weeks. In contrast, magnesium oxide alone over five months was associated with reductions in total cholesterol ($p = 0.001$), HDL ($p = 0.008$), and LDL ($p = 0.035$). Combined with melatonin, it resulted in reductions in total cholesterol ($p = 0.001$) and LDL ($p = 0.001$), along with an increase in HDL ($p = 0.009$) within eight weeks. Co-supplementation with zinc, calcium, vitamin D, and metformin in twelve weeks reduced total cholesterol ($p=0.04$) and triglycerides ($p=0.001$), while combined with vitamin E in twelve weeks reduced total cholesterol ($p=0.001$) and triglycerides ($p=0.05$).
**Discussion:** Magnesium is essential for energy production and regulating blood glucose and blood pressure. However, evidence remains limited and inconclusive on improving dietetic outcomes on PCOS due to variations in intervention dosage and duration, unclear risk of bias in recruitment and outcome assessment, and different supplement combinations. The broad age range of the study population may also reduce reliability, as ageing alters magnesium metabolism, absorption, and physiological response. Homogeneity in study location resulted in a lack of generalisability of findings. Only one study assessed quality of life; therefore, more evidence is needed. It is unclear whether the effect on lipid profiles was synergistic or primarily driven by other supplements.
**Conclusion:** The effects of magnesium supplementation on PCOS dietetic outcomes and quality of life are unclear, and further high-quality research is needed, considering age-related absorption and metabolism, and evaluating different forms of magnesium, as magnesium oxide has lower bioavailability.
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## Glucagon-like peptide-1 receptor agonist use among women of reproductive age in the Republic of Ireland: a cross-sectional study

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**Background**: Obesity among women of reproductive age is rising globally and is linked to adverse reproductive, maternal, infant, and long-term health outcomes(1). As a modifiable risk factor, addressing obesity is key to improving health across the life course. Glucagon-like peptide-1 receptor agonists (GLP-1RAs) are effective for obesity management and may also benefit physical and mental health in this group(2). This study examined GLP-1RA use among women of reproductive age in the Republic of Ireland (ROI), alongside related lifestyle changes and the care and support received.

**Methods**: An online cross-sectional survey was conducted via REDCap (May to July 2025) among adults (≥18 years) living in ROI during GLP-1RA use. Participants were recruited through social media, professional networks, and snowball sampling. Data on sociodemographics, GLP-1RA use and information sources, health status, and behaviour change were collected. Analyses in STATA reported summary statistics stratified by sex and age (reproductive age 18–45 years). Categorical and binary variables are presented as frequencies and percentages. Ethical approval was obtained from the RCSI Research Ethics Committee (REC: 202503028).

**Results**: A total of 1,731 individuals completed the survey. This analysis focuses on a subset of 969 women of reproductive age (median age 40, IQR 7). Key findings are summarised in Table 1.

*Table 1. Key Findings of GLP-1RA use among women of reproductive age in the ROI*

| Category | Key Findings n (%) |
|---|---|
| **GLP-1RA use** | Semaglutide n=455 (46.9%); Tirzepatide n=419 (43.2%); Liraglutide, Dulaglutide or other GLP-1RAs n=95 (9.9%) |
| **Prescriber** | General Practioners (primary care) n=486 (50.2%); Specialist Consultant (secondary/ tertiary care) n=180 (18.6%); Online Healthcare Professionals n=224 (23.1%) |
| **Main reasons for use** | Weight-related n=711 (73.4%); Future health n=696 (71.8%); Reproductive health n=143 (14.8%); Type 2 Diabetes n=65 (6.7%) |
| **Diet changes** | Decreased Calories n=783 (82.9%); Increased Protein n=542 (64.2%); Increased Fibre n=359 (42.5%); Increased Fruit&Veg n=355 (42.1%); Decreased Alcohol n=445 (52.7%) |
| **Physical activity changes** | Increased Aerobic n=298 (34.2%); Increased Strength n=290 (33.3%) |
| **Follow-up care** | Healthcare Professionals n=632 (65.2%); Social media n=538 (55.5%); Internet n=363 (37.5%); General Practioners n=356 (36.7%); Dietitian/Nutritionist n=167 (17.2%) |
| **Stopped use** | n=109 of total sample (11.2%), of whom 24 (22.0%) cited family planning. |

**Discussion**: This is the first study to examine the use of GLP-1RAs among women of reproductive age living in the ROI. While international evidence around GLP1-RA use increasingly highlights reproductive health considerations, including impacts on contraception and fertility, awareness remains limited(3). Enhancing understanding of these issues is essential to support informed decision-making and optimise care. In this study, nearly all respondents reported making changes diet and physical activity (PA) while using GLP-1RAs. However, most relied on social media rather than registered HCPs for guidance related to these lifestyle changes. To ensure safe and effective obesity management, and to optimise nutrient intake evidence-based dietary and PA guidelines should be developed to complement the use of obesity medications.

**Conclusion**: These findings highlight the need for clear guidelines and evidence-based resources to optimise the combined use of pharmacotherapy and behaviour change strategies in reducing obesity among women of reproductive age in the ROI.

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**Effectiveness of Probiotics and Synbiotics on Hormonal Profiles in PCOS: A Systematic Review and Meta-analysis**

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**Background:** Polycystic ovary syndrome (PCOS) is among the most prevalent endocrine disorders, affecting up to 10 % of women of reproductive age, and is characterised by hyperandrogenism alongside clinical features such as hirsutism, menstrual irregularities, and ovulatory dysfunction, collectively impacting women's physical, metabolic, and psychological health [(1)]. Although the exact aetiology remains unclear, emerging evidence suggests a bidirectional link between gut microbiota dysbiosis and PCOS pathogenesis, prompting interest in probiotics and synbiotics, as safe, accessible, and well-tolerated alternatives to pharmacological therapies, particularly for women seeking non-hormonal or dietary-based interventions [(2)]. This systematic review and meta-analysis evaluated the effectiveness of probiotic and synbiotic supplementation on hormonal and clinical outcomes in women with PCOS, while also exploring the influence of intervention type, co-interventions, BMI classification, and intervention duration.

**Methods:** Eight placebo-controlled RCTs involving 504 women aged 18-45 with PCOS (diagnosed using Rotterdam criteria) were identified through systematic searches of PubMed, Embase, Google Scholar, ScienceDirect, and the Cochrane Library (2015-2025). Primary outcomes included total testosterone, SHBG, LH/FSH ratio, DHEAS, and hirsutism. Meta-analyses were conducted using a random-effects model in RevMan Web to account for expected heterogeneity. Subgroup analyses compared probiotic vs synbiotic interventions and the presence vs absence of lifestyle/dietary co-interventions. Narrative synthesis was used to explore BMI-specific and time-related effects, by qualitatively summarising trends and effect directions across studies. Ethical approval was not required, as only previously published data were analysed.

**Results:** Synbiotic interventions significantly increased SHBG levels (MD = 9.57 nmol/L; 95 % CI: 1.62 to 17.52; $p$ = 0.03), contributing to a significant pooled effect across studies (MD = 8.38 nmol/L; 95 % CI: 1.57 to 15.19; $p$ = 0.02). Favourable trends for other outcomes were observed in individual trials, particularly those with lifestyle co-interventions and longer durations; however, pooled results were not statistically significant. Narrative synthesis suggested enhanced hormonal responses, particularly in SHBG and DHEAS, at 24 weeks, though BMI-specific outcomes could not be quantitatively assessed.

**Discussion:** Synbiotics may enhance hepatic SHBG production, helping to counter hormonal imbalance in PCOS by binding excess androgens and mitigating clinical symptoms such as hirsutism, acne, and menstrual irregularities, while supporting broader reproductive and metabolic regulation. These findings align with existing evidence on the gut–endocrine axis [(3)], highlighting the need for evidence-based policy development to incorporate microbiota-targeted strategies within dietetic services and PCOS care guidelines. The lack of significant effects for other hormonal outcomes may reflect short intervention durations, variation in probiotic strains, and limited stratification by BMI or PCOS phenotype. Additionally, heterogeneity and inconsistent baseline data across studies further limit the strength of conclusions.

**Conclusion:** Gut interventions show promising potential to improve hormonal profiles in PCOS, particularly though synbiotic supplementation and increased SHBG production, warranting high-quality trials to evaluate long-term efficacy and inform future clinical and policy frameworks.

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**Nutritional Adequacy of Daily Diets for PCOS as Recommended on YouTube**

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**Background:** Polycystic Ovary Syndrome (PCOS) affects 10-13% of women of reproductive age, and lifestyle interventions, including dietary modification, are typically recommended as first-line treatment[1]. Many women with PCOS report inadequate dietary support from healthcare professionals and turn to alternative sources, such as social media, for advice[2]. The aim of this study was to assess the extent to which "What I Eat in a Day" videos for PCOS align with official dietary guidelines, and whether the nutrition adequacy of the diets presented is associated with viewer engagement or the creator's professional background.
**Methods:** This cross-sectional content analysis used a systematic YouTube search on 19th May 2025 with the phrase "What I eat in a day for PCOS", identifying 207 videos. Eighteen met the inclusion criteria: English-language, long-form, personal vlog style, UK or US origin, and sufficient dietary detail. Nutrient intake for 14 nutrients was analysed using Nutritics and converted into %compliance with sex-, age-, and country-specific dietary guidelines. One-sample t-tests or Wilcoxon signed-rank tests assessed compliance; Spearman's rank-order correlation examined associations with engagement; and t-tests or Mann-Whitney U tests compared compliance by creator professional background (health or fitness professionals *vs*. lay content creators). Ethical approval was not required due to the use of publicly available data.

**Results:** Compliance with dietary guidelines was significantly below 100% for energy (M = 82.7%, SD = 22.6%; $p$ = .005), carbohydrates (Mdn = 56.4%, IQR = 45.6-72.2; $p$ < .001), vitamin D (Mdn = 32.6%, IQR = 7.7-71.5; $p$ = .005), calcium (M = 72.7%, SD = 32.4%; $p$ = .002), and iron (M = 73.3%, SD = 29.1%; $p$ = .001). Compliance exceeded 100% for total fats (M = 155.7%, SD = 37.6%; $p$ < .001) and saturated fats (M = 137.1%, SD = 51.9%; $p$ = .008), but was below the recommended upper limit for free sugars (M = 42.9%, SD = 33.7%; $p$ < .001). No significant associations were found between viewer engagement and %compliance with dietary guidelines. Videos by health or fitness professionals showed higher % compliance for energy ($t$(15) = 2.47; $p$ = .026) and magnesium ($t$(15) = 2.73; $p$ = .016) compared to lay creators, with no other significant differences observed. No content creators identified as registered dietitians or nutritionists.

**Discussion:** Observed deviations in %compliance likely reflect popular PCOS-specific strategies (e.g. low carbohydrate and free sugar intake), but overall alignment with dietary guidelines was inconsistent. Featured diets from the analysed videos were high in saturated fat and showed poor compliance with key micronutrients, raising concerns given the role of nutrition in PCOS-related metabolic and reproductive health. Professional status showed a limited association with dietary content quality, and viewer engagement was unrelated to guideline alignment, reflecting previous findings that PCOS-related content on social media often includes misinformation, regardless of creator background or video popularity[3].

**Conclusion:** YouTube "What I Eat in a Day" videos for PCOS frequently fail to meet dietary guidelines, highlighting the need for more evidence-based digital content and greater accountability among content creators.

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## Alcohol-free and low-alcohol before and drinks during pregnancy: A cross-sectional UK wide survey

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**Background:** There is no known safe level of alcohol intake during pregnancy [(1)]. Alcohol-free drinks (beers, ciders, wines, and spirits containing <0.05% alcohol by volume (ABV)), and low-alcohol drinks (between 0.05-1.2% ABV) are increasingly popular beverages [(2)], however their use before and during pregnancy is unclear. The aim of this study was to explore the use of alcohol-free and low-alcohol drinks before and during pregnancy.

**Methods:** A cross-sectional online survey was developed and piloted. Women aged ≥18 years in the UK who were pregnant or recently pregnant were recruited via targeted social media advertisements in February 2025. The survey had questions about pregnancy history, intake of alcoholic, low-alcohol- and alcohol-free drinks before and during pregnancy, attitudes to these drinks, sources of information, and demographic characteristics. Participants' pattern of alcohol consumption pre pregnancy was categorised as "low-risk" (<14 units/week) or "increasing-risk" (>14 units/week) [(3)]. Categorical responses were compared with chi-square or Fisher's exact tests. Significance tests were two-tailed and alpha set at 0.05. Ethical approval was granted by University of Plymouth Faculty of Health Ethics and Integrity Committee (reference 5946).

**Results:** There were 2092 respondents, of whom 55.7% were 25-34 years (n=1167), 90.0% were White (n=1881) and 61.0% multiparous (n=1283). In the three months before pregnancy 6.1% (n=128) were classified as drinking alcohol at "increasing risk" levels (>14 units/week), 41.7% (n=873) reduced/abstained from alcohol and 40.9% (n=857) consumed alcohol-free or low-alcohol drinks.

During pregnancy,13.5% (n=282) consumed alcohol, which was more common in the increasing risk category ($p<0.01$). 71.3% (n=1491) consumed alcohol-free or low-alcohol drinks during pregnancy; 91.4% of the increasing risk category vs. 69.9% of the lower risk category ($p<0.01$). The most common reasons for consuming alcohol-free or low-alcohol drinks were "*to choose a safer alternative to alcohol*" (71.9%, n=1073) to "*feel included in social events involving alcohol"* (68.8%, n=1026) and "*I like the taste*" (45.2%, n=674). Most respondents (77.8%, n=1627) thought consuming alcohol-free drinks during pregnancy was very acceptable, compared to 10.8% (n=225) for low-alcohol drinks. 56.7% (n=1188) thought there was insufficient information available about consuming these drinks during pregnancy, with internet searching the primary source of information, rather than health care professionals.

**Discussion** At 41.3%, the UK has one of the highest of alcohol consumption during pregnancy, which is a public health concern [(4)]. The findings of this survey suggest that similar to the general population [(2)], alcohol-free and low-alcohol drinks may be used during pregnancy as a harm reduction tool in those seeking to reduce alcohol intake, however some are concerned about their safety.

**Conclusion** Alcohol-free and low-alcohol drinks are commonly consumed before and during pregnancy, however there are concerns about their safety and labelling. They may be used as a harm reduction tool in those who are in the increasing risk drinking category pre pregnancy. Clear guidelines about alcohol-free and low-alcohol drinks during pregnancy are needed for health care professionals so that consistent advice can be provided.

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**Obesity Diagnosis and Intervention in Primary care (ODIP): An Exploratory Qualitative Study from the Perspective of Healthcare Professionals**

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Clinical Lead Dietitian for Bariatric Surgery, UHCW NHS Trust, Children's Transformation Obesity Clinical Lead, NHS England, Assistant Professor, Coventry University

The aim of this qualitative research was to understand existing obesity assessment and referral processes in primary care, and the role of dietitians for obesity management. A convenience sample of general practice healthcare professionals practicing in the UK was recruited via a targeted social media strategy, using virtual snowball sampling. Data were collected using semi-structured interviews and analysed using framework analysis. Twenty participants were interviewed (11 general practice nurses and nine general practitioners). The findings were published in two peer reviewed journal articles:

**An exploration of the experiences and attitudes of healthcare professionals towards enteral tube feeding for adults living in the community following stroke**

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We applied to the BDA GET for £4,080 to support our project in September 2022. We wanted to undertake preliminary research focussed on enteral feeding after stroke to inform future studies planned for a doctoral research application. The idea developed from practicing as a Stroke Specialist Dietitian and an obvious gap in the evidence. Work started on the project alongside full-time NHS work in early 2023. The aim of the study was to explore the experiences and attitudes of healthcare professionals involved with caring for adults living in the community who receive enteral tube feeding following stroke. Five key points emerged from the study findings: (1) Quality of life and nutritional support are considered the most important aspects of tube-feeding in adults living in the community following stroke; (2) Patient choice should be considered in all aspects of decision-making about tube feeding; (3) Good communication and training are considered important for successful tube-feeding in the community; (4) Patients' participation in administering their own feed or involvement in mealtimes is variable and related to their choice and health impairment; (5) Blended feeding is considered an option providing practical and safety consideration are addressed. We disseminated the findings via an abstract to the BDA Research Symposium and a paper in the Journal of Human Nutrition and Dietetics in 2024. Overall, we found the process of applying for GET funding was straightforward and the award enabled us to carry out a study and disseminate findings which add to the evidence base for dietetic practice. We continue with plans to seek further funds for doctoral research.

**Establishing and evaluating a beverage intake measurement tool for the UK workplace: The Fluid at Work Study**

Dr Rachel Gibson RD, Dr Megan Whelan RD, King's College London

The aims of the Fluid at Work Study were to: (1) investigate the current measurement tools used to measure beverages/fluid intake in workplace settings, (2) identify an existing tool or develop a new beverage intake measurement tool for use in UK working age adults and, (3) test how well the tool performed in measuring beverage intake and to determine if it provided reliable measurements. We conducted a systematic review of published literature to identify and describe tools that have been used to measure fluid and beverage intake in working age adults. We found that existing studies that measured beverage intake in free living working age adults tended to use whole dietary assessment tools, such as diet records or recalls, rather than beverage specific measurement tools. Additionally, we identified that few dietary assessment tools have been validated and reliability tested against beverage intake, and none have been evaluated in a UK working adult population. We also conducted an online survey of nutrition professionals working in workplace diet and health to find out what they currently use in practice and what they would consider priorities for a beverage and fluid intake measurement tool. Two thirds reported always or sometimes assessing the fluid/beverage environment in the workplace and current measurement tools used tended to be recall by questionnaire. They reported the priority would be a tool that is free to use and provides reliable measurements. We presented our findings form the systematic review and survey to the BDA Work Ready Steering group. From the round table discussion, 14 features were identified as being important to a beverage intake measurement tool. The Workplace Beverage Intake Questionnaire (WBIQ) was designed based on stakeholder requirements to estimate short term beverage intake. Evaluation of the WBIQ in 70 UK office-based workers found moderate reliability in measuring overall beverage intake, beverage intake during working hours, and intake across five categories of beverages (plain water, coffee, tea, sugar sweetened beverages, low calorie soft drinks) and caffeine from beverages. Acceptability analysis indicated that a large majority of participants agreed the tool was easy to navigate, and easy to use.

**Investigating the prevalence, predictors and outcomes associated with enteral feeding intolerance in critically ill adults: a retrospective cohort study**

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We successfully applied to the BDA GET fund to support this study investigating enteral feeding intolerance (EFI) in critically ill adults. EFI is a common cause for failure to meet nutritional targets in critically ill patients. However, EFI is poorly defined, and prevalence varies according to the definition used. Predictors and outcomes associated with EFI have also been difficult to quantify due to the lack of a standardised definition. The aim of this study was to determine the prevalence of EFI in critically ill adults according to the definition proposed and: i) to examine associated predictors and ii) the impact on patients' outcomes including intensive care unit (ICU) length of stay and mortality.
A single centre retrospective cohort study collected data on patients admitted to a tertiary critical care unit in the UK. Data were collected on demographic variables, use of mechanical ventilation, medication, nutrition (calorie/protein targets; calories/protein received), nursed prone, gastrointestinal symptoms, intensive care length of stay, and 60-day mortality.
47.7% (n=191/400) of patients experienced at least one day of EFI. The median duration of intolerance was 1 day (range 1-21 days). Statistically significant predictors of EFI were fentanyl ($p<0.001$), dexmedetomidine ($p=0.045$) and hepato-pancreato-biliary disease ($p=0.011$). ICU length of stay was statistically significantly increased in patients with intolerance compared to those without EFI ($p<0.001$).
EFI is commonplace in critically ill patients; however, for the majority, this intolerance is of short duration with limited impact on nutrition outcomes. Early identification and treatment strategies may reduce ICU length of stay, but further research is needed to investigate this.

**BDA GET Grant (21/05) The pursuit of personalized care| The development of metabolic maturation in infants born premature and the relationship to growth**

Dr Luise V. Marino (RD, PhD), Kate Pearse, Dr Aneurin Young, Professor Mark J Johnson, Professor R Mark Beattie, Professor Jonathan R. Swann
University Hospitals Southampton NHS Foundation Trust and University of Southampton

A BDA Get grant (£28,000) was awarded in 2021 sought to better understand how metabolism changes with maturity in infant born preterm. Growth failure in infants born preterm is a significant issue, increasing the risk of poorer neurodevelopmental outcomes and metabolic syndrome later in life. During the first 1000 days of life biological systems mature rapidly involving developmental programming, cellular senescence, and metabolic maturation, regulating normal growth and development. However, little is known about metabolic maturation in these infants or the relationship with growth.

The objectives of the BDA GET grant were to i) examine the available evidence on urinary markers of metabolic maturation and their relationship with growth in infants born preterm and those with congenital heart disease as part of two scoping reviews DOI: 10.3390/nu14193957 and DOI: 10.1017/S1047951122003262 the results of which suggested considerable gaps in our knowledge; and ii) to complete a pilot study characterize patterns associated with urinary metabolites in extremely preterm and very preterm infants, and to explore relationships with growth over time. The study was conducted in a tertiary neonatal unit which serves as a regional referral center for surgical, cardiac and other pediatric subspecialties. Infants were eligible for inclusion if they were born at a gestation of less than 32 weeks postmenstrual age (by ultrasound assessment). Infants with surgical problems or who had genetic syndromes expected to impact growth were excluded. Clinical, nutritional and growth data were gathered from multiple clinical information systems and by research nurses. Untargeted hydrogen-1-nuclear magnetic resonance ($^{1}$H-NMR) spectroscopy was used as the method to characterize changes in urinary metabolites over time and explore relationships with growth and nutritional intake. Urine samples were collected from infants, following parental consent to participate in this study, with the first sample being collected as close to birth as possible and weekly until the point of discharge (around 37 weeks gestational age). Partial least squares regression models were constructed to identify metabolic variation associated with age, growth, and nutrition.

The results of this initial study showed differences in biochemical-aging between very (mean 29.4weeks±1.08 gestational-age; *n*=21) and extremely (≤28weeks gestational-age; *n*=33) preterm infants, but these differences were not apparent when urinary metabolites were aligned to postmenstrual age. Citrate was the only metabolite significantly positively associated with weight-for-age Z-score. At weeks 1 and 2, citrate was positively associated with gestational age, and a greater increase in WAZ from birth to discharge. Biochemical aging aligned to chronological age differed between very and extremely preterm infants, but this variation was lost when aligned to postmenstrual age. Urinary citrate excretion in the first two-weeks of life was associated with weight gain and may be a future modifiable biomarker to improve growth outcomes. A manuscript reporting the results are currently under review – Journal of Proteomics.

The output from the BDA GET grant has improved our understanding of metabolic maturation in infants born preterm and has resulted in three peer review publications and dissemination of the results at two international conferences. In addition, routine urine collection has been incorporated into a large longitudinal cohort study namely the Growth Assessment in Preterm infants at University Hospital Southampton NHS Foundation Trust, which will use a systems approach to explore the development of personalized nutrition and dietetic care to vulnerable preterm infants with the ambition of improving longer term metabolic outcomes.

**Ketogenic Diet Registry**

Natasha E Schoeler, RD PhD

Although effectiveness of ketogenic dietary therapy (KDT) as a treatment for drug-resistant epilepsy has been demonstrated in clinical trials, key research questions remain; many best addressed by a collaborative approach. With the support of a BDA GET grant, we aimed to establish an international registry of individuals with epilepsy referred for KDT to determine long-term clinical and safety outcomes and identify the most suitable candidates.
To determine data items for inclusion in the registry, dietitians, neurologists, nurses, clinical psychologists, biochemists and other KDT healthcare professionals were invited to partake in a two-round Delphi survey. Participants indicated the degree to which they agreed/disagreed with inclusion of each item. Pre-defined thresholds of ≥75% (strongly)agree and <15% (strongly)disagree were adopted. Agreed data items were entered into an electronic registry platform using REDCap software. Three UK and two European KDT centres piloted data entry using the registry platform and reported on its acceptability and feasibility of use via a questionnaire.
153 participants across six continents responded to the Delphi, including all healthcare professions within KDT multidisciplinary teams. 70 items reached agreement threshold, including sociodemographic, medical and dietetic data at baseline (referral), follow-up (routine appointments after starting diet) and post-diet.
Centre feedback indicated that data items were easy to understand and time taken for data entry was 'about right (between 0-30minutes per section), although additional funding for dietetic and clinician hours would be needed for long-term implementation. 25% of data was verified against medical records and was 99.7% accurate.
With support of the international KDT community, we have determined data items for inclusion in an international registry. We are now proceeding with a longitudinal feasibility study, including centres from low- and middle-income countries, alongside biosample metabolomics data collection to further explore predictors of response to KDT.
*The BDA GET grant supported this project.*

**Systematic review of factors associated with energy expenditure in adults with cystic fibrosis**

Darren Sills, (PhD student) Research Dietitian and Specialist Cystic Fibrosis Dietitian

People with cystic fibrosis (CF) have a high risk of malnutrition due to anorexia, malabsorption and high resting energy expenditure. Current guidelines recommend energy requirements of 110-200% of those required by healthy individuals based on consensus opinion. We successfully applied for a BDA GET grant to support the time to undertake a project to review factors associated with energy expenditure in adults with CF. We undertook a systematic review and completed a narrative synthesis. Due to study heterogeneity meta-analysis was inappropriate. We found 23 significant factors identified which when combined gave 21 unique significant factors. We unable to demonstrate consistent contributing factors associated with energy expenditure and in the era of highly effective medications in CF this requires further examination.

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