considerando-se a média obtida do peso (g) dos hortícolas, fruta, alimento fornecedor de hidratos de carbono e de proteína. Excluíram-se os pratos compostos. As recomendações para as capitações foram calculadas utilizando as recomendações nutricionais da EFSA e o Manual de Equivalentes Alimentares da APN. Estas recomendações foram, posteriormente, comparadas com as capitações oferecidas.

RESULTADOS: Analisaram-se 30 almoços diferentes. A quantidade de hortícolas no prato (12-23 meses: 9,4 g; 24-36 meses: 10,8 g) foi inferior à recomendação mínima de 20g a partir dos 12 meses. As quantidades de alimentos fornecedores de hidratos de carbono apresentaram-se sempre acima das recomendações, principalmente dos 12-23 meses (média oferecida de 62,2 g e orientação de aproximadamente 30g). As recomendações para os alimentos fornecedores de proteína foram cumpridas (9-11 meses: 14,2 g; 12-23 meses: 20,3 g; 24-36 meses: 23,9 g). As capitações oferecidas de fruta dos 6-8 meses (84,6 g) e dos 9-11 meses (133,3 g) apenas cumpririam as recomendações se esta fosse a única refeição diária. Dos 12-36 meses, as capitações médias (53,1 g e 46,6 g) cumpriam as recomendações.

CONCLUSÕES: As quantidades de alimentos oferecidas ao almoço nem sempre estavam de acordo com as recomendações, principalmente no que respeita aos hortícolas (por defeito) e ao alimento fornecedor de hidratos de carbono (por excesso).

FINANCIAMENTO: O projeto C2S foi cofinanciado pela Associação Cultural e Recreativa de Cabreiros e pela Direção-Geral da Saúde.

CO24. CHANGES IN ESSENTIAL TRACE ELEMENT LEVELS PRE- AND POST-HAEMODIALYSIS SESSION

Rui Azevedo[1]; Mary Duro[1,2]; Agostinho Almeida[1]

[1] LAQV/REQUIMTE, Department of Chemical Sciences, Faculty of Pharmacy, University of Porto

[2] Fernando Pessoa Energy, Environment and Health Research Unit, Fernando Pessoa University

INTRODUCTION: Chronic kidney disease affects over 10% of the world's population and often requires renal replacement therapy, such as haemodialysis. Haemodialysis patients are at an increased risk of trace element imbalances, which may be due to factors such as inflammation, dietary restrictions, and losses during dialysis sessions.

OBJECTIVES: This study aimed to compare the serum concentration of essential trace elements in chronic haemodialysis patients pre- and post-haemodialysis session. Healthy individuals without evidence of renal impairment were used as a control group.

METHODOLOGY: Samples were collected during routine laboratory testing of patients on chronic haemodialysis. The concentration of trace elements Cu, Zn, Se and Mo was determined by ICP-MS.

RESULTS: After a haemodialysis session, the serum concentration of Cu, Zn and Se increased significantly ($p < 0.001$) by 44% 44%, and 38%, respectively, while Mo decreased by 54% ($p < 0.001$). Before the haemodialysis session, patients had significantly lower serum Cu, Zn and Se concentrations ($p < 0.001$) and a significantly higher serum Mo concentration ($p < 0.001$) compared to the control group. After the haemodialysis session, serum Zn and Se concentrations remained significantly lower ($p < 0.001$), while serum Cu and Mo concentrations were significantly higher ($p < 0.001$) than in the control group.

CONCLUSIONS: The haemodialysis process causes significant changes in the serum concentrations of some trace elements. During the haemodialysis session, Mo is extensively removed, while Cu, Zn and Se are concentrated. However, the observed increase in concentration is higher than what would be expected due to the simple effect of haemoconcentration. These findings suggest that other mechanisms (e.g., haemolysis) are also responsible for the increased serum concentrations of Cu, Zn and Se observed post-dialysis. More studies are needed to confirm these results.

CO25. ENERGY-ADJUSTED DIETARY INFLAMMATORY POTENTIAL OF CHILDREN AND ADOLESCENTS (IAN-AF 2015-2016): AN ALTERNATIVE APPROACH TO THE CHILDREN DIETARY INFLAMMATORY INDEX, BASED ON A NEW REFERENCE POPULATION

Sofia Martins[1-3]; Daniela Correia[1-3]; Catarina Carvalho[1,2,4]; Carla Lopes[1-3]; Duarte Torres[1,2,4]

[1] EPIUnit - Institute of Public Health, University of Porto

[2] Laboratory for Integrative and Translational Research in Population Health, University of Porto

[3] Department of Public Health and Forensic Sciences, and Medical School, Faculty of Medicine, University of Porto

[4] Faculty of Nutrition and Food Science, University of Porto

INTRODUCTION: Low-grade inflammation is a pathological process where diet plays a significant role. The Children's Dietary Inflammatory Index has been used to estimate dietary inflammation in younger ages. However, it is limited to participants aged 6-14 years and excludes several food parameters (FP) with anti- or pro-inflammatory effects, such as flavonoids, n-3 & n-6 fatty acids, trans-fatty acids, caffeine, tea, onion and garlic.

OBJECTIVES: This study aimed to develop and describe a comprehensive tool to estimate the Dietary Inflammatory Score (DIS) among children and adolescents aged 3-17 years, accounting for 38 FP, including the abovementioned FP.

METHODOLOGY: DIS was estimated for 1073 participants (51.7% girls) from the National Food and Physical Activity Survey 2015-2016. The first step was calculating each FP's energy-adjusted intake z-score in our sample, using the energy-adjusted dietary intake means and standard deviations from a reference population within the same age range. The corresponding centered percentile was multiplied by each FP's inflammatory effect score (IES) to obtain the FP-specific DIS. Finally, the individual global DIS was calculated by the sum of all the FP-specific DIS.

Our reference population includes 30280 individuals, available on the Global Dietary Database, and IES were collected from the literature.

Mean and standard deviation (SD) were used to describe DIS. The association between DIS and sociodemographic factors and diet quality, measured through Healthy Eating Index (HEI), was assessed using linear regression analysis. Lower DIS relate to more anti-inflammatory effects.

RESULTS: The mean(±SD) DIS was 0.45±1.95, ranging between -4.71 and 5.38. Compared to children, adolescents had significantly higher DIS (β=0.87[95%CI:0.66;1.11]). Individuals in lower HEI quartiles (Q) showed significantly higher DIS: compared to Q4, Q1 was the most pro-inflammatory (β=2.29[95%CI:1.98;2.61]).

CONCLUSIONS: Our findings suggest that DIS is a promising open tool for estimating dietary inflammation among children and adolescents. Nonetheless, a full validation using low-grade inflammation biomarkers should be performed.

CO26. DEVELOPMENT OF A PHOTOGRAPH-BASED INSTRUMENT TO ASSESS NUTRITION LITERACY IN PORTUGUESE ADULTS

Sofia Sousa[1,2]; Nuno Lunet[1-3]; Ana Rute Costa[1-3]; Milton Severo[1,2,4]; Pedro Moreira[1,2,5,6]; Gabriela Albuquerque[1,2]; Patrícia Padrão[1,2,5]

[1] EPIUnit – Unidade de Investigação em Epidemiologia, Instituto de Saúde Pública da Universidade do Porto
[2] Laboratório para a Investigação Integrativa e Translacional em Saúde Populacional
[3] Faculdade de Medicina, Universidade do Porto
[4] Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto
[5] Faculdade de Ciências da Nutrição e Alimentação, Universidade do Porto
[6] Centro de Investigação em Atividade Física, Saúde e Lazer, Universidade do Porto

INTRODUCTION: Most instruments assessing nutrition literacy are difficult to apply to less educated individuals, or focus on knowledge rather than skills to make healthier food choices.
OBJECTIVES: To develop a photograph-based instrument to assess nutrition literacy in Portuguese adults.
METHODOLOGY: A selection of 90 foods/culinary preparations usually consumed in Portugal (including main dishes, soups, sandwiches, savoury pastries/snacks, sweet pastries/desserts, confectionery, cookies/biscuits, bread, charcuterie/cheese and fruit) were photographed and evaluated using stepwise, standardized methods: (1) 9 experts compared photography angles (90º, 45º and 10º from the horizontal plane) and background colours (blue/grey) regarding food recognition and aesthetics; (2) 12 experts and 10 lay persons identified foods, classified them on a 5-point recognition scale, and quantified portions; and (3) the same panels were asked to select the food with the highest energy/sodium content, from combinations of three photographs (two foods with similar estimated contents and one with higher content); experts also classified the relevance of combinations (4-point scale).
RESULTS: The 45º angle obtained the highest recognition score (5.0 in 85.5% of photographs), the grey background was preferred in 92.7% of photographs, 24.7% of foods were misidentified/misdescribed by at least one person, 20.6% obtained a recognition score <4.5, and 37.3% presented a quantity estimation error >25%. Consequently, the 45º angle and grey background were selected; also, 36 photographs were improved, 26 excluded and 21 newly added, resulting in a selection of 85 foods/culinary preparations. Regarding the photographs' combinations, frequency of correct answers was higher in experts (energy: 81.2% *vs*. 73.5%, p=0.030; sodium: 83.7% *vs*. 76.3%, p=0.038), and six combinations (7.8%) presented a relevance score <3.0. The instrument obtained after evaluation comprised 79 combinations (55 for energy; 24 for sodium).
CONCLUSIONS: These results allow proceeding towards validation of an innovative instrument that enables an easy and equitable assessment of nutrition literacy across the Portuguese adult population.

CO27. MULTIDIMENSIONAL HEALTH IMPACT OF MULTICOMPONENT EXERCISE AND SUSTAINABLE HEALTHY DIET INTERVENTIONS IN THE ELDERLY (MED-E): BASELINE RESULTS

Joana Sampaio[1-4]; Joana Carvalho[1,2,4]; Andreia Pizarro[1,2,4]; Joana Pinto[5,6]; André Moreira[3,4,7]; Patrícia Padrão[3,4,8]; Paula Guedes de Pinho[5,6]; Pedro Moreira[2-4,8]; Renata Barros[3,4,8]

[1] Faculty of Sport, University of Porto
[2] Research Centre in Physical Activity, Health, and Leisure, University of Porto
[3] Epidemiology Research Unit (EPIUnit), Public Health Institute, University of Porto
[4] Laboratory for Integrative and Translational Research in Population Health
[5] Associate Laboratory Institute for Health and Bioeconomy, Laboratory of Toxicology, Department of Biological Sciences, Faculty of Pharmacy, University of Porto
[6] Research Unit on Applied Molecular Biosciences (UCIBIO/REQUIMTE), Laboratory of Toxicology, Department of Biological Sciences, Faculty of Pharmacy, University of Porto
[7] Faculty of Medicine, University of Porto
[8] Faculty of Nutrition and Food Sciences, University of Porto

INTRODUCTION: Data concerning the combined effect of diet and exercise interventions on overall health in the elderly are scarce.
OBJECTIVES: The MED-E project's primary aim was to assess the effect of 3-month sustainable healthy diet (SHD) and multicomponent training (MT) interventions on several health outcomes in the elderly.
METHODOLOGY: A quasi-experimental study assigned older adults into four groups: (1) SHD, (2) MT, (3) SHD + MT, or (4) control group (CG). The SHD intervention included a weekly mixed food supply with nuts, pulses, olive oil and oily fish and individual and group sessions about a SHD. The MT groups were submitted to 50-min exercise sessions three times a week. The outcomes included blood biomarkers, metabolic profile alterations, dietary intake and nutritional adequacy, physical activity (PA) and fitness data, anthropometry and body composition measured by Dual X-ray absorptiometry (DXA), cognitive function, quality of life, and geographical data, assessed pre- and post-intervention.
RESULTS: Preliminary baseline results show that 73,6% of the participants (n=87) were female and had a mean (±SD) age of 72.79 (±5.07) years. The participants had a mean BMI of 28.8 (±4.26) kg/m^2, a mean total fat percent of 39.8 (±6.74) and a mean waist-to-hip ratio of 0.89 (±0.07). The mean PREDIMED score was 9.34 (±1.73), suggesting a Mediterranean Diet moderate adherence. Regarding physical activity, approximately 43% of the participants have not engaged in moderate-to-vigorous PA, assessed by the International Physical Activity Questionnaire - Short Version (IPAQ-SV). Chi-square tests were performed and no significant differences were found between groups for most of the outcomes.
CONCLUSIONS: The MED-E project's baseline results will add knowledge, help strengthen the current evidence and measure the impact of the importance and beneficial contribution of combined SHD and MT interventions as complementary approaches to healthy ageing strategies.

CO28. THE QUALITY OF THE DIET OF PREGNANT WOMEN AND ANTHROPOMETRIC OUTCOMES OF NEWBORNS: A RETROSPECTIVE COHORT STUDY

Rita Ferreira[1]; Juliana Almeida de Souza[2]

[1] Santa Casa da Misericórdia de Torre de Moncorvo
[2] Centro de Investigação de Montanha, Instituto Politécnico de Bragança

INTRODUCTION: Maternal dietary pattern plays a key-role in pregnancy outcomes, including the offspring's health. However, the specific dietary requirements for best fetal growth and development remain unknown.
OBJECTIVES: To understand the association between the Healthy Eating Index (HEI) of pregnant women and the newborn's health.
METHODOLOGY: A Portuguese retrospective cohort, involving 914 parturient from 2 hospitals, was carried out between 2017 and 2019, after Ethical approvement (Ref.:3i30-16, 91/18, 47/2018, 177/19). The HEI was calculated using parturient's food frequency questionnaire and newborns's anthropometric data were collected by birth process. Associations were studied using adjusted linear regression.
RESULTS: The median HEI was 58.8 (P25=52.6,P75=65.9) points. For each point increase in HEI, there is an increase in weight (β=0.10, CI=0.64,8.17, p=0.02) and in head circumference (β=0.10, CI=0.00,0.04, p=0.02) for boys; in Z-length (β=0.09, CI=0.00,0.02, p=0.04) for girls; and a decrease in BMI (β -0.13, CI=-0.12,-0.03, p<0.01), for both gender.
CONCLUSIONS: The quality of the pregnant's diet influences the newborn's anthropometric outcomes, suggesting an intergenerational transmission of risks, worthy of further research.