

INTRODUCTION: Acrylamide (AA) is a chemical compound that forms in carbohydrate-rich foods when they are cooked at high temperatures and low humidity, raising serious public health concerns. AA has been classified as a Group 2A carcinogen by the International Agency for Research on Cancer.

OBJECTIVES: The present study aims to validate a method to determine AA in cereals and cereal-based products and investigate its presence in different food items.

METHODOLOGY: Ultra-performance liquid chromatography coupled to mass spectrometry (UPLC-MS/MS) was used to detect and quantify AA.

RESULTS: The method performance was validated using international external quality control tests such as proficiency tests (FAPAS) and a certified reference material (ERM-BD272). Parameters such as linearity, limit of detection (LD), limit of quantification (LQ), precision, accuracy and uncertainty were evaluated. The LD and LQ were 0.40 µg/L and 1.22 µg/L, respectively, in compliance with Regulation (EU) 2017/2158. The calibration curve showed linearity with an R² greater than 0.995. The method showed suitable recovery rates (92%-105%) and precision (RSD ≤ 13%), satisfactory participation in proficiency tests (Z-score: 0.69 for Crispbread and -0.93 for Biscuit) and compliant results for the ERM-BD272, demonstrating that the method is fit for purpose. The method was applied to commercially available products, including Maria biscuits, wheat bread, corn flakes, and baby biscuits collected in Lisbon, Portugal. All AA results of the evaluated samples are below the values legislated by the Commission Regulation (EU) 2017/2158.

CONCLUSIONS: Although the AA levels found comply with the limits established by the European Union, continuous monitoring of its occurrence is necessary, considering the remaining uncertainties about the long-term effects of this contaminant and the constant evolution of science, the change in products available on the market and the change in consumption patterns.

PO60. TOTAL PHENOLIC COMPOUNDS AND ANTIOXIDANT ACTIVITY OF OLIVE OILS FROM RIO GRANDE DO SUL, BRAZIL

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INTRODUCTION: Extra-virgin olive oil (EVOO) is a staple in global cuisine and a key component of the Mediterranean diet, valued for its health benefits associated with oleic acid and antioxidants. Brazil relies heavily on imported olive oil, facing high prices, potential adulteration, and limited data on local oil quality. Olive oil production is expanding in southern Brazil, particularly in Rio Grande do Sul (RGS), but comprehensive characterization remains limited.

OBJECTIVES: This study aimed to assess the total phenolic content (TPC), antioxidant capacity, and oxidative stability of EVOO from RGS (n=6) and compare them with the most commercially available EVOO in Brazil, of the Iberian-origin (n=3).

METHODOLOGY: Nine different EVOOs were purchased in triplicate from markets in RGS. Standard quality parameters (free acidity, peroxide value, K232, K270, and ΔK) were determined according to Regulation (EU) No 2022/2105. TPC (mg gallic acid equivalents - GAE/kg) and antioxidant activity (DPPH inhibition, %) were measured by spectrophotometry. Oxidative stability was assessed using the Rancimat method.

RESULTS: All samples met EU quality standards. Statistically significant differences were observed for TPC, antioxidant activity, and oxidative stability, with Iberian EVOOs presenting lower values—TPC (76±15 vs. 147±24 mg GAE/kg), antioxidant activity (58.5±8.9 vs. 80.6±7.1 % [DPPH]), and oxidative stability (5.3±1.27 vs. 11.2±3.18 hours) for Iberian and RGS EVOOs, respectively. Several factors may contribute to

the observed results, particularly storage time and conditions. Phenolic compounds degrade over time during storage. Given that the Iberian EVOOs were stored for a longer period (due to transport associated with the importation process), this may have led to a reduction in phenolic content and oxidative stability.

CONCLUSIONS: These findings highlight the importance of chemical characterization and quality assessment of EVOOs available on the market. Further studies are needed to explore the impact of storage and processing conditions on EVOO composition.

PO61. AVALIAÇÃO DO CUMPRIMENTO DOS REQUISITOS LEGAIS EM SUPLEMENTOS ALIMENTARES COM ARROZ VERMELHO FERMENTADO

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INTRODUÇÃO: A crescente procura e oferta de suplementos alimentares (SA), tornou imprevisível a existência de uma harmonização na regulamentação, por parte da Comissão e do Parlamento Europeu e das Autoridades dos Estados-Membros. O arroz vermelho fermentado é um nutracêutico com propriedades hipolípicas, frequentemente fabricado em Portugal.

OBJETIVOS: O objetivo principal foi analisar se os rótulos dos SA correspondiam aos requisitos estabelecidos pelo Decreto-Lei n.º 136/2005 e suas alterações, bem como outros regulamentos pertinentes.

METODOLOGIA: Análise de rótulos de SA recolhidos em diversos pontos de venda na cidade de Viseu, incluindo supermercados e parafarmácias, durante os meses de maio e junho de 2024. Os critérios de inclusão foram os SA conterem arroz Vermelho fermentado, e os critérios de exclusão foram produtos fora da área geográfica do estudo ou que não contêm o referido ingrediente.

RESULTADOS: Considerando os critérios definidos, foram considerados para a amostra 28 SA, recolhidos em 7 operadores económicos. Em geral foram encontrados 57,1% SA com inconformidades, sendo que a maior prevalência foi encontrada em supermercados, seguido de estabelecimentos especializados na venda de SA, parafarmácias e ervanárias. Destas inconformidades incluem-se 12,5% sobre a ausência de advertências obrigatórias sobre a ingestão diária máxima de monacolíns de arroz vermelho fermentado e 93,75% sobre a presença de imagens e alegações que podem induzir o consumidor a acreditar em benefícios de saúde não comprovados.

CONCLUSÕES: Face ao número de inconformidades observadas relativamente à legislação específica de SA conclui-se que há uma necessidade urgente de maior fiscalização e harmonização da regulamentação para garantir que os consumidores recebem informações precisas e seguras sobre os SA que consomem.

PO62. THE ASSOCIATION OF ANDROID/GYNOID FAT RATIO ESTIMATED BY DUAL-ENERGY X-RAY ABSORPTIOMETRY WITH GAIT SPEED IN ADULTS – THE NUTRIFUNCTION STUDY

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INTRODUCTION: Overweight is associated with functional disability, but the role of body fat (BF) distribution on gait speed remains scarcely explored.

OBJECTIVES: To investigate the association between the android/gynoid fat ratio estimated by DXA and gait speed.

METHODOLOGY: Data collection was carried out as part of the "NutriFunction" research project. A total of 665 individuals (67.2% women), aged between 18 and 85 years (mean: 41 ± 15.8 years) participated in this study. Body composition, gait speed and physical activity were measured using DXA, a 4.6m distance walk test, and the "International Physical Activity Questionnaire – Short Form", respectively. The variable android/gynoid fat ratio was calculated by dividing the android fat mass by the gynoid fat mass, measured by DXA. Linear regression analyses were performed.

RESULTS: An increase of 1 m/s in gait speed in women was associated with a mean decrease of -0.029 in android/gynoid fat ratio (B=-0.03, 95%CI= -0.5, -0.07). This association was not found in men (B=0.04, 95%CI= -0.08, 0.08). In women and men, respectively, age (B=0.003, 95%CI= 0.002, 0.003; B=0.01, 95%CI= 0.01, 0.01) and BMI (B=0.02, 95%CI= 0.02, 0.02; B=0.02, 95%CI= 0.02, 0.03) were associated with an increase in android/gynoid ratio. In men, physical activity was associated with a decrease in this ratio (B=-0.05, 95%CI: -0.08; -0.02).

CONCLUSIONS: A higher android/gynoid fat ratio is associated with lower gait speed in women but not in men, independently of BMI and age.

PO63. THE RELATIONSHIP BETWEEN ANTHROPOMETRIC MEASURES AND DXA-DERIVED APPENDICULAR LEAN MASS IN ADULTS: AN ANALYSIS FROM THE NUTRIFUNCTION STUDY

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INTRODUCTION: The estimation of muscle mass is crucial for the identification of undernutrition and sarcopenia. Dual-energy X-ray absorptiometry (DXA) is a

standard method for estimating appendicular lean mass (ALM). However, simpler and more cost-effective alternatives are needed for broader clinical applications. Anthropometric indicators are widely used to estimate total muscle mass, but evidence on their accuracy in predicting regional muscle distribution across sexes is limited.

OBJECTIVES: To evaluate the association between anthropometric indicators and DXA-derived total and regional ALM in adults.

METHODOLOGY: Weight, height, right side mid-upper arm (MUAG), leg (LG) girths, and skinfolds were measured. Jelliffe equations were used to calculate mid-upper arm (MUAMC) and leg (LMC) muscle circumferences. DXA was used to determine ALM, right arm (RALM) and leg (RLLM) lean mass. Linear regression models, adjusted for age and height, examined associations between DXA estimates and anthropometric indicators, stratified by sex. Results include adjusted R², standardized coefficients and 95% confidence intervals (R²; β; 95%CI).

RESULTS: 668 adults (18-85 years, mean age 41.0±16.1, 67.2% women,) were included. All anthropometric indicators were directly associated with ALM. Among men, MUAMC (0.64; 0.64; 0.58-0.71), MUAG (0.55; 0.63; 0.56-0.71), LMC (0.47; 0.53; 0.45-0.61), and LG (0.49; 0.59; 0.51-0.68) showed strong associations with ALM. For women, MUAMC (0.43; 0.41; 0.36-0.45), MUAG (0.35; 0.41; 0.36-0.46), LMC (0.31; 0.35; 0.30-0.40) and LG (0.38; 0.40; 0.35-0.44) were significantly associated with ALM. Regional analysis indicated that LG was the best predictor of RLLM in men (0.70; 0.48; 0.42-0.54) and women (0.55; 0.34; 0.29-0.38). MUAMC demonstrated the highest association with RALM in men (0.81; 0.58; 0.53-0.63) and in women (0.45; 0.20; 0.17-0.23).

CONCLUSIONS: MUAMC, MUAG, LMC, and LG were directly associated with ALM in both sexes, with stronger associations in men, particularly for MUAMC. These results highlight the importance of considering regional anthropometrics and sex when estimating muscle mass.

PO64. AVALIAÇÃO DA INGESTÃO ALIMENTAR E DO DESPERDÍCIO ALIMENTAR EM DOENTES HOSPITALIZADOS ATRAVÉS DO REGISTO FOTOGRÁFICO

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INTRODUÇÃO: A desnutrição hospitalar afeta entre 20% a 60% dos doentes internados, contribuindo para o aumento da morbilidade, mortalidade e tempo de hospitalização. A avaliação da ingestão alimentar individual é essencial para a identificação precoce de riscos e a implementação de intervenções nutricionais adequadas, contudo, a ausência de ferramentas de precisão constitui um desafio. Paralelamente, o desperdício alimentar nos hospitais compromete a qualidade dos cuidados prestados, acarretando consequências adversas a nível social e ambiental. Assim, uma gestão alimentar eficiente é indispensável para assegurar uma nutrição adequada, promover a recuperação clínica dos doentes e otimizar os recursos hospitalares.

OBJETIVOS: Validar a técnica de registo fotográfico tendo como método de comparação a pesagem real dos alimentos ingeridos e não ingeridos nas refeições principais.

METODOLOGIA: O estudo ocorreu no Centro Hospitalar de Vila Nova de Gaia/Espinho (CHVNG/E) durante 3 dias no ano de 2023. O estudo incluiu 27 doentes tendo sido avaliadas 164 refeições principais. Todas as componentes dos pratos servidos foram pesadas tanto no momento do emplatamento como após as refeições. Simultaneamente, foram tiradas fotografias das refeições nos dois