

CO6. HEALTH AND CAREER RISKS SURROUNDING CONSUMPTION OF DIETARY SUPPLEMENTS

João Marques¹; João Capela^{1,2}

¹ Unidade de Investigação Fernando Pessoa em Energia, Ambiente e Saúde do Centro de Estudos em Biomedicina da Faculdade de Ciências da Saúde da Universidade Fernando Pessoa

² UCIBIO-REQUIMTE (Rede de Química e Tecnologia), Laboratório de Toxicologia, Departamento de Ciências Biológicas da Faculdade de Farmácia da Universidade do Porto

INTRODUCTION: Envisioning improved physical condition often leads to consumption of dietary supplements. This scenario helps creating a net of consumers that rely on unchecked products. Insufficient regulation of dietary supplements helps leads to the use of dangerous or prohibited substances, hence the uprising of health and doping risks for athletes and non-athletes.

OBJECTIVES: This article aims to find out if there are any doping substances, or dangerous amounts of any other component, stated on the labels of the analyzed DS, while also making a statement regarding possible career and health implications towards the consumer.

METHODOLOGY: After refining both dietary brands and supplements, 40 dietary supplements with the full formula available, were selected and divided into pre-workout and post-workout. Further analysis of the dietary supplements constituents was made.

RESULTS: Regarding caffeine, the pre-workout group displayed higher mean caffeine (241±86 mg) than the post-workout group (183±68 mg), and the minimal mean dose was 226±84 mg meanwhile the maximal mean dose was 242±88 mg. Concerning creatine, the pre-workout group displayed lower mean creatine (3106±1079 mg) than the post-workout group (4137±4177 mg), and the minimal mean dose was 3167±1728 mg meanwhile the maximal mean dose was 3917±3643 mg. As for the salt content, the post-workout group displayed a much higher mean salt (2155±4486 mg) than the pre-workout group (464±605 mg) and the minimal mean dose was 1635±3930 mg meanwhile the maximal mean dose was 1708±3926 mg. *Citrus aurantium* extract, Yohimbe extract, *Garcinia cambogia* extract and Maca root extract were also found in the analyzed dietary supplements.

CONCLUSIONS: Several dietary supplements had untested ingredients that when paired up could cause severe health issues. Although some ingredient doses were not concerning, consumption recommendations in the label could lead to dosage abuse. There is need for tighter control and regulations for dietary supplement producers.

CO7. DIETARY INTAKE AND GASTROINTESTINAL MICROBIOME IN ENDURANCE ATHLETES

Fábio Rodrigues¹; Roberto Mendonça¹; Andreia Matos^{2,4}; Lara Costa e Silva⁵; Olga Valentim^{5,6,8}; Carlos Cardoso⁷; Manuel Bicho^{2,3}; Isanete Alonso^{1,2,8,9}

¹ Atlântica - Escola Universitária de Ciências Empresariais, Saúde, Tecnologias e Engenharia

² Laboratório de Genética e Instituto de Saúde Ambiental da Faculdade de Medicina da Universidade de Lisboa

³ Instituto de Investigação Bento da Rocha Cabral

⁴ Instituto de Investigação e Inovação em Saúde/Instituto Nacional de Engenharia Biomédica da Universidade do Porto

⁵ Escola Superior de Saúde da Atlântica

⁶ Grupo NursID do Centro de Investigação em Tecnologias e Serviços de Saúde

⁷ Laboratório de Análises Clínicas, Grupo Dr. Joaquim Chaves

⁸ Escola Superior de Saúde do Instituto Politécnico de Leiria

⁹ Hospital Saint Louis, Société Française de Bienfaisance

INTRODUCTION: The gastrointestinal tract contains communities of microbes that differ by anatomic location and impact human health. Microbial communities differ in composition based on age, diet, and fitness level in the gastrointestinal tract. There is increasing interest in utilizing dietary approaches to modulate the composition and metabolic function of the microbial communities to improve health and prevent or treat injuries. However, the effects of exercise-induced gut microbiota changes in individuals are unclear.

OBJECTIVES: To study the relation between dietary intake and gastrointestinal microbiome on endurance athletes.

METHODOLOGY: In a cross-sectional study, 46 endurance athletes, triathlon and mountain bike, were recruited and categorized in four groups: Boys (n=14), Girls (n=6), Amateur Adults (n=17) and Professional Adults (n=10). Nutritional intake was evaluated by a semi-quantitative Food Frequency Questionnaire from the last 12 months. The faecal microbiota was assessed with GA-map™ Dysbiosis Test (Genetic Analysis AS, Oslo, Norway).

RESULTS: Differences in bacterial abundance were found among groups according to age and fitness level. *Bacteroides fragilis* was more abundant (p<0.05) in Boys (12±2.3 years old) than Amateur Adults (43±7.0 years old), and Professional Adults also had more *Faecalibacterium prausnitzii* (p<0.05) than Amateur Adults. Low *Akkermansia muciniphila* abundance was associated with dietary intake of dairy products (r=-0.350; p=0.017); low *Shigella* spp. and *Escherichia* spp. were inversely correlated with dietary intake of fats and oils (r=-0.293; p=0.048); and high Proteobacteria was directly correlated with dietary intake of meat, fish and eggs (r=0.320; p=0.030).

CONCLUSIONS: In the present study, the data suggests that gastrointestinal microbiome profile is associated with the dietary intake, age and fitness level of endurance athletes. However, more studies are needed to fully understand the impact of endurance exercise as a gut microbiome profile modulator.

CO8. SODIUM AND POTASSIUM EXCRETION AND QUALITY OF LIFE: PRELIMINARY RESULTS FROM THE IMC SALT PROJECT

Carla Gonçalves^{1,3}; Tânia Silva-Santos^{1,4}; Patrícia Padrão^{1,4}; Sandra Abreu^{2,5}; Pedro Moreira^{1,2}; Olívia Pinho^{1,6}

¹ Faculdade de Ciências da Nutrição e Alimentação da Universidade do Porto

² Research Centre in Physical Activity, Health and Leisure, Faculty of Sport of University of Porto

³ University of Trás-os-Montes and Alto Douro

⁴ EPIUnit - Institute of Public Health of University of Porto

⁵ Faculty of Psychology, Education and Sports of Lusófona University of Porto

⁶ LAQV-REQUIMTE, Laboratory of Bromatology and Hydrology, Faculty of Pharmacy of University of Porto

INTRODUCTION: Sodium (Na) and potassium (K) are key nutrients within a healthy diet. Few evidence is known about the relation of Na and K intake on quality of life (QOL).

OBJECTIVES: This study aims to investigate the differences between 24-h urine Na and K excretion as a proxy for Na and K intake and QOL in workers from a Portuguese public university, participants from IMC SALT project.

METHODOLOGY: In this cross-sectional study with baseline data, we used one 4-h urine excretion to assess Na and K intake, complete collection was validated by creatinine excretion. QOL was assessed using WHOQOL-BREF index. Participants were divided into two groups according to their estimated 24-h urine sodium excretion (adequate: <2.0 g/day; high: ≥2.0 g/day) and potassium level (low: <3.51 g/day; adequate: ≥3.51 g/day).

RESULTS: Regarding the 60 participants, most were female (53.3%) and the mean age was 47.9±9.5 years. Mean Na excretion was 3.1±1.4 g/day (25% with adequate Na intake) and K was 2.6±0.7 g/day (13.3% with adequate K intake). The WHOQOL-BREF scores among participants were high, which reflect a good

QOL and the mean physical, psychological, social and environmental domain scores were 81.7 ± 12.1 , 81.8 ± 10.4 , 82.6 ± 13.1 , and 77.9 ± 9.8 , respectively. There were no statistically significant differences in WHOQOL scores of the three domains between the groups of participants classified according to urine Na and K excretion, except for social domain that was better classified for participants with excessive Na intake (76.1 ± 15.4 vs. 84.8 ± 11.7 , $p=0.049$).

CONCLUSIONS: Our preliminary results shows that excessive Na intake is related to a higher score of QOL social domain. This result has to be taken into account when designing interventions to reduce salt intake. Further studies are needed to clarify the association of Na and K intake on QOL.

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CO9. PREDICTION EQUATIONS FOR ESTIMATING BODY WEIGHT IN OLDER ADULTS

Ana Rita Sousa-Santos^{1*}; Rita S Guerra^{1-3*}; Ana Sofia Sousa^{1,3,4}; Rui Valdivieso^{1,5}; Cláudia Afonso^{1,6}; Pedro Moreira^{1,6,7}; Patrícia Padrão^{1,6}; Nuno Borges^{1,5}; Alejandro Santos^{1,8}; Graça Ferro⁹; Cátia Martins¹⁰; Teresa F Amaral^{1,2}

* First authors - both authors have contributed equally to the study

¹ Faculdade de Ciências da Nutrição e Alimentação da Universidade do Porto (SFRH/BD/138362/2018)

² UISPA, LAETA-INEGI da Universidade do Porto

³ Faculdade de Ciências da Saúde (Ciências da Nutrição) da Universidade Fernando Pessoa

⁴ Center for Innovative Care and Health Technology of Polytechnic of Leiria

⁵ Centre for Health Technology and Services Research

⁶ EPIUnit - Instituto de Saúde Pública da Universidade do Porto

⁷ Centro de Investigação em Atividade Física, Saúde e Lazer da Universidade do Porto

⁸ Instituto de Investigação e Inovação em Saúde da Universidade do Porto

⁹ Alto Minho Local Health Unit, EPE

¹⁰ Obesity Research Group, Department of Clinical and Molecular Medicine, Norwegian University of Science and Technology

INTRODUCTION: Body weight is an important measure to evaluate nutritional status. However, weighing older adults may be challenging because they are often unable to assume the recommended standard position.

OBJECTIVES: The purpose of this study is to develop and cross-validate updated and reproducible equations to estimate body weight in older adults, namely amongst the oldest old.

METHODOLOGY: 1,456 individuals with 65 years or older, from Nutrition UP 65 study, were included in the present analysis. The participants were randomly assigned to one of two sub-samples: development ($n=991$) and validation samples ($n=465$). Prediction equations using height, mid upper arm circumference (MUAC), waist circumference (WC), calf circumference (CC) and triceps skinfold thickness (TST) were generated for the development sample using multiple regression analysis, and then validated using the validation sample.

RESULTS: The five variables prediction equation included height, MUAC, WC, CC and TST as predictors. The following generalized equations were developed: females 65-79 years: $114,682 + 0,522 \times \text{Height (cm)} + 0,620 \times \text{MUAC (cm)} + 0,517 \times \text{WC (cm)} + 0,893 \times \text{CC} + 0,111 \times \text{TST (mm)}$, adjusted $R^2=0,883$, standard error of the estimate (SEE)=4,4; females ≥ 80 years: $110,806 + 0,494 \times \text{Height (cm)} + 0,637 \times \text{MUAC (cm)} + 0,500 \times \text{WC (cm)} + 0,986 \times \text{CC} + 0,021 \times \text{TST (mm)}$, adjusted $R^2=0,890$, SEE=3,9; males 65-79 years: $114,875 + 0,558 \times \text{Height (cm)} + 0,073 \times \text{MUAC (cm)} + 0,671 \times \text{WC (cm)} + 0,717 \times \text{CC} + 0,182 \times \text{TST (mm)}$, adjusted $R^2=0,820$, SEE=5,0; males ≥ 80 years: $-128,789 + 0,546 \times \text{Height (cm)} + 0,202 \times \text{MUAC (cm)} + 0,612 \times \text{WC (cm)} + 1,236 \times \text{CC} + 0,093 \times \text{TST (mm)}$, adjusted $R^2=0,890$, SEE=3,5.

CONCLUSIONS: Body weight can be estimated with good accuracy in older adults using these sex- and age-specific regression models based on anthropometric variables.

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CO10. MAY OREGANO OR BEER ADDITION BEFORE COOKING CHICKEN MEAT PREVENT PUFAS FROM OXIDATION?

M Madalena C Sobral¹; Susana Casal¹; Miguel A Faria¹; Sara C Cunha¹; Isabel MPLVO Ferreira¹

¹ LAQV-REQUIMTE, Departamento de Ciências Químicas, Laboratório de Bromatologia e Hidrologia da Faculdade de Farmácia da Universidade do Porto

INTRODUCTION: Polyunsaturated fatty acids (PUFAs) may be oxidized during cooking of meat causing the formation of reactive aldehydes such as malondialdehyde (MDA), 4-hydroxy-2-nonenal (HNE), and hexanal (HEX), some of them involved in several pathologies. Moreover, the formation of these compounds seems to increase during *in vitro* digestion. Natural ingredients may prevent oxidation of lipids if added before cooking.

OBJECTIVES: The impact of six cooking practices – oven/microwave combined with/without seasoning with oregano/beer – on total fatty acids content and on the formation of three oxidation markers - MDA, HNE, and HEX – was evaluated after cooking and after *in vitro* digestion of chicken burgers.

METHODOLOGY: MDA was measured spectrophotometrically at 532 nm, while HNE and HEX were quantified by HPLC-FLD. The *in vitro* digestion of samples was performed according to the INFOGEST 2.0 protocol.

RESULTS: Cooking significantly increased all oxidation markers. Oregano prevented their formation, while beer had no influence. After *in vitro* digestion, MDA increased, regardless the cooking practice, while HNE and HEX values only raised in the samples that contained oregano.

CONCLUSIONS: Cooking with oregano exhibited the lowest losses of PUFAs and the lowest contents of all oxidation markers, thus oregano is an excellent mitigation strategy to preserve PUFAs during cooking and digestion and prevent the formation of hazardous compounds.

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CO11. OVERWEIGHT AT 25 YEARS OLD AND RISK OF NONCOMMUNICABLE DISEASES IN MIDDLE ADULTHOOD: AN ANALYSIS OF NHANES 2015-2016

Débora dos Santos Pereira¹; Mariane Helen de Oliveira²; Jéssica Cumpian Silva¹; Wolney Lisboa Conde¹

¹ Departamento de Nutrição da Faculdade de Saúde Pública da Universidade de São Paulo

² EPIUnit - Instituto de Saúde Pública da Universidade do Porto