and metabolic equivalents of tasks, respectively. Fat mass (FM) and FFM were evaluated with a 4-compartment model.

RESULTS: Body weight increased during the season (0.8±2.5kg, p=0.026) while FFM (0.6±2.8kg, p=0.096) and FM (0.1±2.2kg, p=0.637) did not change. Also, EA increased from pre-season (45.7±10.5kcal/kg FFM) to competition (54.0±9.0kcal/kg FFM, p<0.001). Both sexes and all sports increased EA between assessments (p<0.001 and p<0.05, respectively). During both moments, triathlon's EA (33.9±5.0 and 42.7±3.9kcal/kg FFM) was lower (p<0.05) than basketball (50.9±9.9 and 58.5±8.5kcal/kg FFM), volleyball (48.3±3.6 and 56.2±5.3kcal/kg FFM), and swimming (49.4±7.5 and 57.4±6.2kcal/kg FFM) while handball's EA (35.8±7.0 and 47.0±4.1kcal/kg FFM) was lower (p<0.05) than basketball and swimming. Clinical low EA was present in 2 athletes during pre-season (handball (n=1); triathlon (n=1)) and none during competition. Subclinical low EA was present in 18 athletes during pre-season (basketball (n=4); handball (n=3); swimming (n=3); triathlon (n=8)) and 11 during competition (basketball (n=2); handball (n=2); triathlon (n=7)).

CONCLUSIONS: Overall, EA increased over the season in both sexes and in all studied sports. Although athletes seem to be able to manage the physiological demands of the athletic season, low EA is still present. Thus, nutritionists should prevent and treat the evolution of low EA to prevent its negative outcomes.

CO15. PRETERM NEONATES' MICROBIOTA: INFLUENCE OF MATERNAL MICROBIAL TRANSMISSION AND FEEDING

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INTRODUCTION: Preterm infants are especially vulnerable to infections and disease. Vertical microbiota transmission and infant feeding are known to be major determinants of neonate's microbiota. Recently, fecal alkaline phosphatase (ALP) was suggested as a specific biomarker of Necrotizing Enterocolitis.

OBJECTIVES: The FEEDMI Study aimed to evaluate the link between the maternal gut – meconium's microbiota and the influence of infant-feeding (mother's own milk (MOM), donor human milk (DHM) and formula) on the fecal microbiota composition and ALP activity in preterm infants.

METHODOLOGY: This is an observational study that included preterm infants in the neonatal intensive care unit of Maternidade Dr. Alfredo da Costa (NCT03663556). Meconium and fecal samples were collected at four time points (between 2nd - 26th postnatal days). Fecal microbiota was analyzed by RT-PCR and by 16S rRNA sequencing. Fecal ALP activity was evaluated by spectrophotometry at the 26th postnatal day.

RESULTS: A total of 389 fecal samples were analyzed from 117 preterm neonates. Meconium microbiota of neonates born after 28 gestational weeks (very preterm neonates) showed stronger correlations with their mothers' fecal microbiota. However, neonates born before 28 gestational weeks (extremely preterm neonates) had more Lactobacillus – genus that dominate the vaginal microbiota – than very preterm neonates, regardless of the mode of delivery.

Human milk feeding was positively associated with bacterial richness. Neonates fed with human milk during the first week of life had increased Bifidobacterium content and fecal ALP activity on the 26th postnatal day.

CONCLUSIONS: Collectively, these findings support the hypothesis that mother-to-infant bacterial transmission is a controlled and time-specific process and point out the importance of MOM and DHM in the establishment of fecal microbiota on neonates prematurely delivered. Moreover, these results suggest an ALP-mediated pathway by which human milk may protect against NEC. Thus, the implementation of more human milk banks should be encouraged.

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CO16. BODY COMPOSITION AND NUTRITIONAL STATUS OF COVID-19 PATIENTS ADMITTED TO A HOSPITAL

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INTRODUCTION: Little is known about the body composition and nutritional status of patients infected with COVID-19. However, these parameters can be closely related to the disease outcomes and complications.

OBJETIVES: To assess and characterise the body composition and nutritional status of COVID-19 patients admitted to a hospital and relate to disease severity.

METHODOLOGY: Patients hospitalised with Covid-19 in the Infectious Diseases Department of the *Centro Hospitalar Universitário de São João*, between 12/2020 and 04/2021 had, in the first 48h, nutritional assessment. Weight, height, BMI, biochemical and body composition data through bioimpedance [Fat Mass (FM), Skeletal Muscle Mass (SMM) and Total Body Water (TBW)] were collected. Both SMM and FM were normalized for height by dividing by height^2 [SMM index (SMMI) and FM index (FMI)] and compared to population reference values. Data on comorbidities and Covid-19 severity was also collected in clinical process.

RESULTS: The 145 participants (62.0% males), had a mean age of 69 years (sd = 16). The majority (37.2%) had overweight, 26.8% obesity and 7,6% underweight (minimum BMI = 11.6 kg/m^2; maximum = 53.4; mean = 27.1; SD = 6.8).

About three-quarters of patients (73.8%) developed severe COVID-19, with males having significantly lower SMM (p = 0.015) and TBW (p = 0.012), and females higher CPR (p = 0.025), but with no significant differences in terms of the remaining body composition and clinical characteristics (analytical profile and comorbidities). When comparing our TBW, IMG and IMME values with the reference ones, we found that, 87.6%, 41.4%, 13.1% participants, respectively, had a lower value than the standardized reference one for sex and age.

CONCLUSIONS: Excessive weight was dominant in our sample. A large percentage of participants had discrepancies between their body composition values and the reference values. Severe COVID-19 was related to lower SMM and TBW in males.