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Rationale: Elderly people have lower insulin sensitivity and anabolic response compared with younger people. Elderly people are at risk for malnutrition and sarcopenia during illness. We examined the postprandial response to develop strategies that improve the anabolic response whilst minimizing unfavourable outcome
Methods: 9 elderly and 9 young volunteers underwent a 6-hours liquid mixed meal test. Blood samples were collected every 30 minutes. Body composition was measured at the start of the MMT with BODPOD. Resting energy expenditure was measured with indirect calorimetry at baseline, at 150 and 270 minutes. At the end of the MMT, volunteers consumed an ad libitum lunch in which eating rate and appetite was measured using the Universal Eating Monitor.
Results: Cholesterol levels were significantly higher in elderly volunteers($p<0.01$). FGF19 levels tend to be higher at t=60 minutes in elderly volunteers(82.0 ± 34.7 pg/ml vs. 132.2 ± 76.7 pg/ml, $p=0.092$). GLP-1 levels tend to be higher at t=30 minutes in elderly volunteers ($p=0.083$), whereas at t=270 minutes levels tend to be higher in young volunteers($p=0.037$). Fat mass was significantly higher in elderly volunteers(16.7 ± 4.8 kg vs. 8.3 ± 3.6 kg, $p<0.001$). Energy expenditure was higher in young volunteers at baseline, and t=150 minutes (baseline: 24.7 ± 1.4 kcal/kg/day vs. 22.0 ± 2.3 kcal/kg/day, $p<0.01$; t=150: 26.5 ± 1.8 kcal/kg/day vs. 22.7 ± 3.2 kcal/kg/day, $p<0.01$). A larger amount of food was consumed by the young volunteers at the ad libitum lunch test (844.1 ± 213.8 gram vs. 574.9 ± 245.0 gram, $p<0.05$). No differences in plasma glucose, insulin, total bile acid, triglycerides and HDL-levels were found.
Conclusion: Aging impacts postprandial metabolism and anabolic response, whereby appetite decreases and fat mass increases. Dietary intervention studies may focus on retaining or improving the anabolic response.
Disclosure of Interest: None declared

P108-W

BREATH VOLATILE METABOLITES (BVM) PROFILING AFTER THE INGESTION OF A HIGH-FIBER VERSUS LOW-FIBER BREAKFAST: INTEREST OF A NEW NON-INVASIVE PROCEDURE TO ANALYZE GUT MICROBIOME-NUTRITION-HOST INTERACTIONS IN HUMANS

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Rationale: The gut microbiota produces bioactive compounds, some of them being exhaled after intestinal absorption. The objective of the present study is to investigate the effect of a low-fiber *versus* high-fiber breakfast on targeted BVM in healthy volunteers.
Methods: One month apart, 14 individuals (21 ± 0.52 years old; 7 women/7 men) received a low-fiber (2.6 g) or high-fiber (16.1 g) breakfast. Before each intervention, participants completed a food diary and stools were collected to evaluate the gut microbiota composition by 16S rRNA gene amplicon sequencing (V5-V6 region) and to quantify short-chain fatty acids (SCFA) by gas-liquid chromatography. On intervention days, 25 BVM were measured using SYFT methodology; H_2 and CO_2 using thermal conductivity detector, and gastrointestinal discomfort using a visual analogue scale. Statistical analysis relied on Wilcoxon and Šídák tests.
Results: The gut microbiota composition and activity remained stable in individuals who kept similar dietary habits one month apart. Both breakfasts led to similar gastro-intestinal tolerance. Unlike H_2 and CO_2 excretion, the evolution of 19 BVM was significantly altered by the breakfast fiber content (see figure). BVM profiling was more homogeneous after a high-fiber breakfast and revealed changes in microbial processing of several nutrients.
Image:

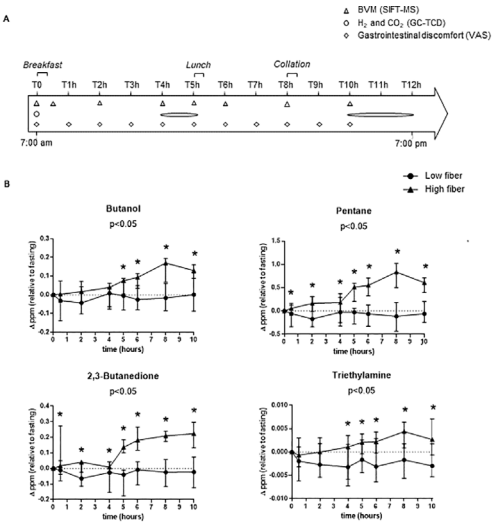

Figure 1. (A) Overview of the study design during the intervention days. (B) Illustration of targeted breath volatile metabolites (BVM) changed from baseline (fasting state) in healthy subjects (n = 14) in response to a high-fiber or low-fiber breakfast. Data are medians ± ranges ($p<0.05$, Wilcoxon matched-pairs signed rank test on net area under the curve; *, Šídák's multiple comparisons test ($\alpha = 0.05$)).

Conclusion: We confirm that volatolome analysis is relevant to unravel characteristics of nutrient interactions with the gut microbiota. Indeed, we demonstrate that the gut microbiota, even if it differs between individuals, drives similar BVM profiles after a low-fiber breakfast *versus* high-fiber breakfast. The application of this procedure could be of great interest to evaluate the individual response to nutrition in pathophysiological contexts involving the gut microbiome.
Disclosure of Interest: None declared

Micronutrients

P109-W

MAGNESIUM AND INFLAMMATION: A FOCUS ON CHRONIC KIDNEY DISEASES PATIENTS

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Rationale: Magnesium (Mg^{2+}) is a fundamental mineral that maintains cell function, and low levels may be linked to inflammation in patients with chronic kidney disease (CKD). This cross-sectional study evaluated the correlation between serum Mg^{2+} levels and inflammation status in dialysis patients.
Methods: One hundred and fifty patients with CKD undergoing hemodialysis (HD) (72 female, 50 (18) years; BMI 24 (4.8) kg/m^2) and 50 patients on peritoneal dialysis (PD) (18 female, 54 (17.7) years; BMI 27.5 (7.3) kg/m^2) were involved. Serum Mg^{2+} levels were evaluated using a colourimetric test by a commercial kit. Inflammatory markers were assessed by ELISA and multiplex bead-based assay. Lipid peroxidation was evaluated using thiobarbituric acid reactive substances (TBARS).
Results: The mean serum Mg^{2+} levels were 2.3 (0.5) mg/dL, and only 3.5% presented low levels (<1.6 mg/dL). There was no difference between Mg^{2+} serum levels in both groups. A significant negative correlation was