exam stress, associated with the effect of coffee consumption, which is higher at girls comparative with boys. We recommend periodical check of blood pressure at youths that have high values, informing the youth about the risk of the negative factors, and about the modification of their lifestyle to a healthy life.

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Nutritional status and body fat distribution in subjects with psychological traits typical of eating disorders

Leone A, Vignati L, De Amicis R, Ponissi V, Beggio V, Battezzati A, Bertoli S

International Center for the Assessment of Nutritional Status (ICANS), Department of Food Environmental and Nutritional Sciences (DeFENS), University of Milan, Italy

Eating disorders (EDs) are characterized by some typical psychological traits (PT) like drive for thickness (DT), bulimia (B) and body dissatisfaction (BD) that increase the risk of malnutrition. However, if they lead to a different body fat (BF) content and distribution independently from BMI is unknown. We aimed to investigate the total BF and its distribution in subjects with different PTs. We conducted a cross-sectional study on 5015 adults recruited among subjects seeking for a weight loss or maintenance program. Weight, height, BMI, waist circumference (WC) and BF by skinfolds were taken. PTs were investigated using the Eating Disorder Inventory 3 questionnaire. Subjects were categorized based on how many and which PTs typical of EDs were found of clinical interest. Subjects with different PTs typical of EDs were compared with subjects free of PTs (controls). 55.0% of subjects presented at least one of the PTs typical of EDs. Using a linear regression model adjusted for sex and age, we found that, with the only exception of subjects with only a DT trait, subjects with different PTs typical of EDs had an increased BF and WC than controls. In particular, subjects having both B and BD traits had 11.5 cm (CI95%: 9.9-13.2, $p<0.001$) and 3.3% (CI95%: 2.8-3.8, $p<0.001$) more of WC and BF, respectively, than controls. However, after inclusion of BMI in the model, such associations disappeared or were strongly mitigated. Definitively, psychological traits typical of eating disorders do not seem to be associated in a biologically meaningful manner with body fat content and its abdominal distribution after adjustment for BMI.

Poster Session II (5/7)

Physiology of Metabolism

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Uncoupling protein 3 affects lipid handling in mice

Gentile A[1], Busiello RA[1], De Matteis R[2], Delli Paoli G[3], Buonaiuto S[3], Lanni A[3], Goglia F[4], Lombardi A[1]

[1]Department of Biology, University of Naples "Federico II", Italy; [2]Department of Biomolecular Sciences, University of Urbino "Carlo Bo", Italy; [3]Department of Environmental, Biological and Pharmaceutical Sciences and Technologies, University of Campania "Luigi Vanvitelli", Italy; [4]Department of Science and Technology, University of Sannio, Italy

Uncoupling protein-3 (UCP3) is localized in the mitochondrial inner membrane and is expressed in skeletal muscle (SkM), heart, brown adipose tissue (BAT) and white adipose tissue (WAT). The physiological role of UCP3 and its involvement in energy homeostasis is still under investigation, and we give further insight into the role played by UCP3 in lipid handling. Wild type (WT) and UCP3 null mice (KO) housed at thermoneutrality were used as animal models. KO mice presented blunted ability to use fatty acids as a metabolic substrate, as revealed by an enhanced respiratory quotient compared to WT ones. In agreement with this, in KO mice, SkM and BAT mitochondria showed a reduced oxygen consumption when using palmitoyl carnitine (but not pyruvate) as respiratory substrate, thus indicating a lower ability of these mitochondria to oxidize fatty acids. The contribution of visceral WAT to the weight of the mice was lower in KO mice (-25% vs WT). Variations in visceral WAT mass were not associated with change in adipocytes size, while basal lipolysis was almost doubled in KO mice compared to WT, as revealed by glycerol release from the tissue. Interestingly, histological analysis of lean tissues (liver and SkM) indicated an ectopic accumulation of fat associated to the absence of UCP3. Indeed, H&E staining of KO SkM and liver sections showed many large intracellular lipid droplets. Numerous intramyocellular lipid droplets were present only in skeletal muscle of KO mice as well as a massive lipid accumulation was shown in the cytoplasm of all the hepatocytes. As a whole these data indicate a role of UCP3 in lipid homeostasis and in the protection lean tissue by lipid accumulation and the consequent lipotoxicity.

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Hepatic oxidative stress induced by "western diet" in middle-aged rats

Mazzoli A, Crescenzo R, Cigliano L, Gatto C, Cancelliere R, Iossa S