

participants at baseline was assessed through three validated European questionnaires: EuroQol EQ-5D-3L, EORTC QLQ-C30 and EORTC QLQ-BR23. Statistical analyses were performed using a bivariate analysis (Pearson correlation) and univariate ANOVA.

Result: Significant correlations were observed between adherence to MedD and HRQOL measures: higher physical function (PF2, $r = 0,183$, $p = 0,007$), lower pain symptomatic scale (PA, $r = -0,16$; $p = 0,02$) and higher EQ5D3L score ($r = 0,149$, $p = 0,03$), which together indicate an improvement in the general state of health. Patients with high adherence to MedD (score >7) showed a significant improvement in PF2 ($p < 0,05$) and a reduction in symptomatic PA scale ($p < 0,05$).

Conclusion: A healthy diet and high adherence to the MedD in breast cancer survivors was related to better quality of life.

A39

DIFFERENT EFFECT OF A PERIOD OF CALORIC RESTRICTION FOLLOWING TREATMENT WITH A NORMAL LIPID OR HYPERLIPIDIC DIET IN THE EXPERIMENTAL ANIMAL MODEL: FOCUS ON MITOCHONDRIAL DYNAMICS PROTEINS IN THE LIVER

Vincenzo Migliaccio¹, Raffaella Sica², Marilena Lepretti¹, Rosaria Scudiero², Rosalba Putti², Lillà Lionetti¹. ¹Dipartimento di Chimica e Biologia "A. Zambelli", Università di Salerno, Fisciano, Italy; ²Dipartimento di Biologia, Università di Napoli Federico II, Napoli, Italy

Introduction: An excess of the daily caloric intake facilitates accumulations of fat that leads to the development of obesity. Caloric restriction is the strategy used to restore body composition to optimal levels. Likewise, a period of hypo-nutrition following a balanced diet promotes nutritional deficiencies. Both conditions above described induce changes in the cellular metabolism to which the mitochondria actively participate. These organelles are very dynamic and undergo against continuous fusion and fission processes in correlation with their functionality.

Objectives: In this study were monitored the effects of a caloric restriction period, following treatments with normal or hyperlipidic diet, on mitochondrial dynamics in rat liver. Therefore, 4 experimental groups were constituted: N (control diet); HFD high fat diet); Nr (N + restriction); HFDr (HFD + restriction). Attention was focused on the main mitochondrial dynamics' proteins, monitored by western blot: MFN2 (Mitofusin 2) and OPA1 (Optic atrophy type 1) as fusion markers; DRP1 (Dynamin-related protein 1) as fission marker.

Results: The data show reduction of MFN2 and increase of DRP1 in the Nr group compared to N with variation of the high and low isoforms of OPA1, suggesting increase of the mitochondrial fission. In contrast, both MFN2 and DRP1 increase in the HFDr group compared to HFD. In this case, the data seem to suggest a beneficial effect of the restriction with a probable induction of the mitochondrial biogenesis. This mechanism, in fact, could make more the utilization of lipids mobilized by deposits in consequence to caloric restriction.

Conclusions: In conclusion, we can assume that a reduced caloric intake generates reorganization of the mitochondrial liver network by acting differently on the basis of the nutritional conditions prior to the hypocaloric regimen.

A40

FOOD WASTE AND CHILDREN'S PREFERENCES TOWARDS VEGETABLES IN PRIMARY SCHOOLS: TWO ITALIAN CASE STUDIES

Beatrice Biasini¹, Alice Rosi¹, Francesca Giopp¹, Michele Donati², Filippo Arfini³, Francesca Scazzino¹. ¹Dipartimento di Scienze degli Alimenti e del Farmaco, Università di Parma, Parma, Italy; ²Dipartimento di Scienze Chimiche, della Vita e della Sostenibilità Ambientale, Università di Parma, Parma, Italy; ³Dipartimento di Scienze Economiche e Aziendali, Università di Parma, Parma, Italy

Introduction: The food waste analysis in the school canteen context is particularly relevant due to its educational and environmental relevance, the huge number of users and the consequent food amount handled every day. The present study, carried out within the EU H2020-funded Strength2food project, seeks to compare two case studies (Parma vs Lucca), characterised by different primary school food procurement models (local-organic vs organic) in relation to (i) the uneaten edible food served in primary school canteens and (ii) children's refusal towards the vegetable side dish.

Methods: The investigations were performed in 4 primary schools, 2 per case study, during 5 consecutive days in winter and spring, for a total of 40 days of data collection. The aggregate selective plate waste method was applied. Excluding special diets, the uneaten served food was scraped from children's plates according to 7 food categories (bread, starchy-based dish, protein based-dish, fruit, vegetables, dessert, other). Serving size of edible food was calculated as mean of the weight of 3 servings for each food. Finally, a questionnaire reporting a 5-point Likert scale was used to assess vegetable preferences.

Results: With the exception of bread ($p = 0,149$), with values ranged from 14.5% to 35.7%, the local-organic procurement model (Parma) has shown a significantly lower percentage of waste for most of the food categories compared to the organic model (Lucca), whose proportions ranged from 11.8% to 55.5%. The starchy-based dish, the protein-based dish and fruit gave higher wastes per child in Lucca, where a higher fraction of children (38%) compared to Parma (18%) did not appreciate at all the vegetables.

Conclusions: The obtained results suggest that a wider inclusion of products originating in the territory in the school food provision can contribute to a greater acceptability of the school menus and consequently to a lower food waste.

A41

EFFECTS OF A 3-MONTHS' DIETARY INTERVENTION WITH LACTO-OVO-VEGETARIAN DIET ON VITAMIN B12 LEVELS: RESULTS OF THE CARDIVEG STUDY

Monica Dinu¹, Giuditta Pagliai¹, Francesca Cesari², Alice Sereni³, Betti Giusti¹, Anna Maria Gori¹, Rossella Marcucci¹, Alessandro Casini¹, Francesco Sofi¹. ¹Dipartimento di Medicina Sperimentale e Clinica, Università degli Studi di Firenze, Firenze, Italy; ²SOD Laboratorio Generale, Azienda Ospedaliero-Universitaria Careggi, Firenze, Italy; ³SOD Malattie Aterotrombotiche, Azienda Ospedaliero-Universitaria Careggi, Firenze, Italy

Introduction: Previous studies have suggested that following a lacto-ovo-vegetarian diet (VD) may increase the risk of vitamin B12 deficiency. Our aim was to investigate whether VD followed for 3 months by omnivores could lead to decrease of circulating vitamin B12 levels. Methods: Fifty-four omnivores (43 F; 11 M) who performed a 3-month VD as the first intervention were analysed on the frame of the CARDIVEG study, a randomized, open, crossover dietary trial with 2 intervention periods.

Results: After 3 months, VD resulted in a significant reduction ($p < 0,001$) of 48.8% of the vitamin B12 intake, and a consequent significant reduction ($p = 0,005$) of 6.2% of the circulating levels of vitamin B12 ($-24,5$ pg/mL). Changes in vitamin B12 intake were significantly correlated with changes in circulating levels of vitamin B12 ($R = 0,61$, $p < 0,001$). Subgroup analyses showed that changes in circulating levels of vitamin B12 were more evident in older participants than younger ones, in overweight subjects compared to obese ones, in non-smokers compared to smokers and in subjects with hypercholesterolemia compared to those with normal cholesterol levels. Analyzing the risk of undergoing a reduction in circulating levels of vitamin B12, we carried out a logistic regression analysis that showed that a reduction of vitamin B12 intake equal to the first quartile of population distribution determined an increased risk of obtaining a reduction in circulating levels of vitamin B12 (OR 10.1; 95% CI 1.3–76.1).