

Introduction: The increase in the incidence of chronic degenerative diseases highlights the necessity to reorganize the network of health services. Technological innovation could reduce inequalities in access to health care by providing "tailor-made models" for citizens. The nutritional outpatient of the S. C. Hygiene of Food and Nutrition of the ASLTO5 has experimented a decentralized monitoring system thanks to the Internet of Things technology.

Methods: We had recruited 200 healthy subjects, subdivided into: "CG Control Group" (Traditional Nutritional Counselling) and "EG Experimental Group" (Nutritional Counselling in outpatient and decentralized life-style monitoring through the device kit in real time connection with the Inter Health system). Using mobile devices, a measure defined as subjective can be made objective and the preventive action can be extended to a wider user base.

Results: Using health indicators and wellbeing indicators, it is possible to establish an evaluation system on the feasibility and sustainability of the experimentation. Hundred subjects were recruited for CG, with an average age of 47 (80% females and 20% males), 32% overweight and 53% obese; the subjects with a high risk of developing chronic-degenerative diseases are 61% male and 72% female. Hundred subjects were recruited for EG with an average age of 46 (67% females and 33% males) 28% overweight and 31% obese; the subjects with high risk of developing chronic-degenerative diseases were 11% male and 21% female.

Conclusions: Provide new standards to assist the citizen to maintain his/her health status (efficiency), extending the preventive action, with the same resources, to a larger population group (effectiveness).

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APPLICATION OF RECURSIVE PARTITIONING METHOD (RPM) TO SELECT THE MULTI-FREQUENCY BIOIMPEDANCE ANALYSIS (MF-BIA) RAW PARAMETERS PREDICTING APPENDICULAR SKELETAL MUSCLE MASS INDEX (SMI)

Alessandro Pinto¹, Luigi Fattorini², Lorenzo Maria Donini¹, Daniela Pollakova¹, Marco Rizzo¹, Lucio Gnessi¹, Andrea Lenzi¹, Camillo Cammarota³. ¹Experimental Medicine Dep - Sapienza Rome University, Rome, Italy; ²Dep. Physiology and Pharmacology "Vittorio Ersamer" - Sapienza Rome University, Rome, Italy; ³Dep. Mathematics - Sapienza Rome University, Rome, Italy

Introduction: Anthropometric and BIA parameters are used as covariates in linear regression equation to estimate total body water and fat free mass. More recently, the research is focused on understanding the capacity of bioelectrical raw variables by itself to detect nutritional status. Objective of the study is to identify, among the multi-frequency BIA (MF-BIA) parameters, the best predictors of SMI (kg/m²) estimated by dual-energy X-ray absorptiometry (DXA).

Methods: 148 women (age 45.6 ± 14.8 years; BMI 37.3 ± 6.7 kg/m²) have been enrolled at CASCO. Z, AP, Rx and Xc at 5, 10, 50, 100, 250 kHz frequencies (Human im Touch, DSMedica) and SMI (Hologic 4500 RDR) were measured according to the standardized procedures. A set of MF-BIA covariates was selected a priori (PA50, Z5, Z50, Z250) and the recursive partitioning method (RPM) was applied to identify the best predictors of SMI. The RPM was performed using the party package of the free statistical software R which provides significance level for multiple test procedure (p-value <0.05 was assumed as significant).

Results: RPM selected at the first decision step Z250 as the covariate having the greatest association with SMI identifying a split at 4460hm. In the subsequent decisions step the covariates selected were Z250 (3730hm) and then PA50 (5.3°) in one branch of the decision tree and Z250 (4990hm) in the other branch. The value Z250 ≤ 373 together with PA50 > 5.3° and Z250 > 499 Ohm identify respectively the subjects with higher and lower SMI values (p-value < 0.001).

Conclusion: The study shows that multi-frequency raw data combined with each other can be used to predict SMI measured by DXA. We believe that this approach will allow to identify the cut-offs of the MF-BIA specific raw data useful to screening sarcopenia in various categories of subjects.

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SALT INTAKE AND ASTHMA IN CHILDREN AND ADOLESCENTS

Marika Dello Russo¹, Stefania La Grutta², Giovanna Cilluffo², Salvatore Fasola², Laura Montalbano², Giuliana Ferrante², Velia Malizia³, Fabio Lauria¹. ¹Istituto di Scienze dell'Alimentazione, CNR, Avellino, Italy; ²Istituto di Biomedicina e Immunologia Molecolare, CNR, Palermo, Italy; ³Dipartimento di Scienze per la Promozione della Salute e Materno Infantile, Università degli studi di Palermo, Palermo, Italy

Introduction: Asthma is one of the most common diseases in the world, in the last decades its prevalence has increased. Many studies have shown that excessive body weight and a high sodium intake increase the risk of asthma symptoms in children. Although the importance of diet on respiratory sensitivity is evident, the eating habits of patients with asthma are not commonly investigated in clinical practice.

Objectives: In a population of 438 children (age range: 3–18 yrs; M ± SD: 9.1 ± 3.0 yrs) enrolled at the Research Unit of Pediatric Pneumology and Allergy, CNR-IBIM of Palermo, we wanted to evaluate the association between sodium intake, estimated with FFQ, and asthma and to identify the foods responsible for this intake and/or a dietary pattern characteristic of asthmatic subjects. The diagnosis of asthma was performed according to GINA guidelines.

Results: The asthmatic subjects had a richer diet in sodium (asthma yes/no: 1081 ± 15/1011 ± 20 mg, M ± ES; p = 0.006) compared to healthy subjects, after correction for total Kcal, z-score BMI, sex, age, physical activity, breastfeeding and the presence of asthmatic parents. The analysis of FFQ also showed that the asthmatic subjects had a diet characterized by a greater consumption of convenience foods, such as ready-to-eat products and fast food, than non-asthmatic (asthma yes/no: 149 ± 102/126 ± 78 g daily, M ± SD; p = 0.006). In particular, among foods rich in sodium, consumption of pizza and cold cuts was higher in asthmatic children (p < 0.05).

Conclusions: Our data confirm the association between sodium intake and asthma in children and show a dietary pattern in asthmatic subjects characterized by convenience foods. These results suggest the need to create strategies aimed to increase food awareness of the population and to encourage a healthy diet adaptable to different nutritional and lifestyle needs.

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TIME RESTRICTED FEEDING IN HIGH-LEVEL ATHLETES: A PILOT STUDY

Cinzia Ferraris¹, Giuseppe Marcolin², Alessandro Veneto¹, Anna Tagliabue¹, Antonio Paoli². ¹Centro Interdipartimentale di Studi e Ricerche sulla Nutrizione Umana e i Disturbi del comportamento Alimentare, Dipartimento Sanità Pubblica, Medicina Sperimentale e Forense, Università di Pavia, Pavia, Italy; ²Laboratorio di Nutrizione e fisiologia dell'esercizio, Dipartimento di Scienze Biomediche, Università di Padova, Padova, Italy

Introduction: Time Restricted Feeding (TRF) is an intermittent fasting model. Moro (J. Transl. Med. 2016; 14:290) and Tinsley (Nutr. Rev. 2015; 73:661) studied the effect of TRF in strength athletes and demonstrated a significant variation in body composition. Data on the effect of TRF on endurance are lacking even if preliminary data seem to suggest an improvement in muscle efficiency and a reduction in inflammation indexes.

Methods: Randomized controlled clinical trial (HEC-DSB04/17). The aim is to verify compliance with a TRF protocol and effects on anthropometric parameters, body composition, blood tests and endurance performance in endurance athletes. Eighteen professional cyclists underwent anthropometry, body composition, blood tests, VO₂max and Peak Power Output, basal metabolic rate before and after 30 days of TRF performed with the 16/8 method. At baseline habitual eating habits have been investigated and personalized isocaloric diets have been elaborated for each participant with different temporal distribution of the meals in the study group (TRFG) and in the control group (CG).

Results: One athlete per group left the study. After 30 days of TRF there were no differences from baseline in the performance variables, while