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Eating habits of exercising and exercising workers, with an emphasis on healthcare workers

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Eating Habits, can be determined by a lot of factors, environmental, behavioral, preferences, ethics, culture, ideals, status and of course work-related. The purpose of this thesis is to record the eating habits of adults and examine how working hours, workload and physical activity can affect their diet, psychology and their general physical condition. With particular emphasis being given to people working in healthcare. The research took place in Thessaloniki, Greece, In June 2020. The participants where 400 adults, aged 18-64, of the 400 participants, 120 of them were healthcare workers. The data collection was done with the completion of a survey which contained 52 questions scattered into 5 sections, 1) anthropometric characteristics, 2) social characteristics, 3) physical condition and lifestyle, 4) psychological characteristics and lastly 5) a weekly food frequency questionnaire. The conclusions of the research, gave a nice insight of how rotating and regular working hours affect, the eating habits, the daily habits and the general mental health of healthcare and non-healthcare workers.

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Effects of Nutritional disorders impairing the one-carbon cycle on diabetic cardiomyopathy remodeling: Experimental data and clinical perspectives

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Statement of the problem: Choline is recognized as an essential nutrient for public health with crucial role in the pathway of one-carbon metabolism through its implication in the methionine-homocysteine cycle. Its deficiency setting is an established experimental model of non-alcoholic steatohepatitis (NAFLD), which is associated with insulin resistance, increased oxidative stress, abnormal fat metabolism and increased morbidity due to cardiovascular disease; NAFLD might be predisposed by diabetes and vice versa, while diabetic cardiomyopathy is characterized by increased fibrosis, stiffness and diastolic dysfunction.

The purpose of this study was to evaluate the cardiac mechanical properties and remodeling process in the case of concomitant conditions of choline deficiency and diabetes.

Methodology and Theoretical Orientation: Wistar Albino rats (about 3 months old) were divided randomly into rats fed with standard (C) or choline deficient diet (CDD) and diabetic rats receiving standard (DM) or choline deficient diet (CDD+DM). Diabetes was experimentally induced by intraperitoneal injection of streptozotocin. After five weeks of dietary intervention cardiac function was evaluated by echocardiography followed by a histopathology and immunohistochemistry evaluation in order to investigate the architecture of the myocardium

Findings: Echocardiography evaluation revealed dilation of the left atrium in the CDD+DM group accompanied by a decrease of the left ventricular wall thickness ($p=0.041$ vs DM, $p=0.009$ vs CDD and $p=0.015$ vs C) with preserved ejection fraction. Histological examination showed inflammatory and fibrotic lesions in the choline-deprived diabetic rats that were more extended in comparison to the diabetic or choline-deprived only rats ($p<0.001$).

Conclusion & Significance: Choline deficiency impairs heart mechanical properties and induces extracellular matrix dysregulation leading to a restrictive pattern with diastolic dysfunction. On a diabetic substrate, the induced choline-deprived cardiomyopathy follows an intriguing pattern with restrictive and dilated features at the same time, implying that in this case the cardiac reserve is exhausted and cardiac dysfunction might establish more easily.

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Bioavailability and metabolism of bioactive compounds from opuntia Ficus indica

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The Opuntia ficus indica (L.) (OFI) is used as nutritional and pharmaceutical agent in various dietary and value-added products. Their nutritional properties have recently been clarified by several scientific studies, as widely reported by different authors. OFI cladodes are a source of carbohydrates and fibres, particularly pectin, lignin, mucilage, cellulose and hemicellulose, recognized for their positive influence on glucose and lipids metabolism, obesity control and for the prebiotic function. They are also recognized for the presence of bioactive compounds, flavonoids and phenolic acids, and hydroxycinnamic acids (piscidic and eucomic acids), rarely encountered in nature and restricted to plants exhibiting crassulacean acid metabolism and succulence. Further, OFI cladodes present high values of nutrients like minerals and vitamins, which are able to regulate osteoporosis diseases.

The main objective is to valorise an ingredient obtained by mild technologies from OFI cladodes to use for the enrichment of widely consumed foods, such as bread, pasta and biscuits, for a possible functional food industrial application and health promoting food. To this purpose, chemical characterization of polyphenols, minerals and soluble dietary fibres was performed. Furthermore, the antioxidant activity (as ABTS and DPPH radical scavengers) in dehydrated OFI cladodes were assessed. Moreover, considering the influence of other plant's cellular components on polyphenols and their fate during human digestion, a simulated gastrointestinal digestion was also executed. This method allowed us to evaluate the cations' bioaccessibility, an important point for assessing the health impact for functional ingredient. In the simulated gastrointestinal conditions, the non-covalent bonds between polyphenols and dietary fibres were probably broken, with consequent bioactive compounds release in the upper and lower parts of digestive tract, increasing their availability for colonic microbiota action. Further studies will adress the evaluation of the viability and metabolic activity of selected gut bacteria by an in vitro microbiota model.

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