

The role of nutrients in inflammatory response

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Nutritional factors are known to play an important role in the development of a number of diseases. The relationship between nutrients and inflammatory response has been extensively studied in the recent years. The modern changes in human feeding behavior, with the introduction of High-fat and carbohydrate-rich diets, are amongst the most important factors leading to the increased prevalence of obesity. Therefore, we face ourselves with an amazing increase in obesity and related co-morbidities associated with low grade inflammation, and activation of the inflammasome in the liver, adipose tissue and immune cells. Thus, a quest for nutrients allowing the alleviation of the inflammatory response have begun. The anti-inflammatory properties of ω -3 polyunsaturated fatty acids (PUFA- ω 3) has been already well characterized, and their antagonism to the effects of ω -6 PUFA, and of saturated fatty acids, which are associated with proinflammatory effects. The epidemiological data shows that the consumption of vegetables and fruits is negatively associated with metabolic disorders. Flavonoids, catequins, and monounsaturated fatty acids (MUFA) are the major nutrients which consist the focus of latest attention. These compounds present different consequences upon intermediary metabolism and upon inflammation in the skeletal muscle, liver, adipose tissue, immune cells and hypothalamus. The different isoforms of Peroxisome Proliferator-activated Receptors (PPARs) may represent the connection between oxidative metabolism and inflammatory response. We intend to discuss the role of the mediation imposed by nutrients over these transcription factors and the impact in metabolic disease.

Biography

José Cesar Rosa Neto has completed his Ph.D. at the age of 27 years from Federal University of São Paulo (UNIFESP) and postdoctoral studies from Department of Physiology and Biophysics on Institute of Biomedical Sciences in University of São Paulo. He is a Professor of Department of Cell biology and development on Institute of Biomedical Sciences in University of São Paulo, SP, Brazil. He has published more than 30 papers in reputed journals about inflammatory response in obesity, cancer and heart failure and the effect of exercise and diet in low grade inflammation.