

## Diets and Nutrition in Health Promotion

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Despite the age-long quote: “Eat your food as your medicines, otherwise, you have to eat medicines as your food”, it is undeniable that the majority of the world populations are yet to understand the power of nutrition. Nevertheless, for those who are well-informed, the acceptability of functional foods is solely dependent on their nutrition and health claims because of the awareness of the fact that health status is mainly determined by the kinds of foods consumed as well as the dietary patterns [1].

Currently, non-communicable disease or chronic disease has become the dominant and burgeoning contributor to the global burden of disease. The situation has been exacerbated by the overwhelming globalization and/or Westernization in addition to the rapid urbanization and industrialization. Unfortunately, not all countries have the potentials to increase their resource allocations to health. While high-income countries have access to equitable and effective health care services, the situation is different in low-income and third world countries [2]. The social cohesion of most countries has also been put under perpetual stress by globalization while the performance of the health systems is clearly less satisfactory despite being the key constituents of the architecture of contemporary societies.

Having said that much, the human body is characterized by many physiological and biochemical processes which produce free radicals and other reactive oxygen species as byproducts which in turn cause oxidative damage to biomolecules (such as nucleic acids, lipids, and proteins). Oxidative damage or stress is generally considered as the underlying cause of many chronic diseases in humans such as aging, atherosclerosis, cancer, diabetes, cell loss and other pathologies associated with Neurodegenerative Diseases (NDs). NDs are of significant economic and social importance. Common manifestations of NDs include progressive loss of independence as well as loss of memory and thinking ability, mood swings, and personality changes. Therefore, it is paramount to develop antioxidant strategies which could retard or minimize the oxidative degradation of biomolecules.

Plethora of researchers have established that plants are abundant sources of polyphenols which act as antioxidants through mechanisms such as quenching of singlet oxygen, hydrogen-donating ability, scavenging or sequestration of free radicals, breaking of the auto-oxidative chain reaction, reduction of localized oxygen concentration, as well as chelation of metal ion and by acting as substrates for attack by superoxide [3]. Though, the primary function of antioxidants remains the termination of the free radical reactions by interfering with the chain propagation reactions through hydrogen atom donation to radicals. There is a great potential for medicinal plants especially in the food industry such as in the prevention of food deterioration through their interference with oxidation reactions and decomposition of oxidation products [4]. On the other hand, medicinal plants are rich in a wide variety of antioxidants and free radical scavenging molecules (such as phenolic compounds, nitrogen

compounds, vitamins, terpenoids and other endogenous metabolites. A surfeit of scientific and epidemiological studies have reported the potential benefits of plant antioxidant as antiatherosclerotic, antibacterial, anticarcinogenic, anti-inflammatory, antitumor, antimutagenic and antiviral agents.

On a final note, disease treatment is always costlier than prevention. And the role of diets and nutrition or better still lifestyle in health promotion as well as the prevention and management of the disease is undeniable [5]. For instance, when we talk about balanced and healthy diet, fruits and vegetables are important components. But, how many people consume them as much as required? Their consumption is not only very low in the world but also inadequate especially in the low-income countries including the sub-Saharan Africa. Paradoxically, each and every country on the globe with no exception is endowed with abundant fruits and vegetable species which can be exploited and incorporated into the diets and help solve some nutrition related concerns [6].

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Received August 21, 2017; Accepted August 24, 2017; Published September 04, 2017

Citation: Ahmed IA (2017) Diets and Nutrition in Health Promotion. *J Nutr Diet* 1: e101.

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