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Detox and metabolism practical orthomolecular and nutritional approach

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One of the main health problems of the contemporary life and a mandatory concern to all antiaging physicians is the outcome of the constant contact with the high level of intoxication, which can be connected to the wide range of diseases, from allergies till cancer or neural degeneration. Discussion of the physiological pathways for detoxification has been mainly centered on phase I and phase II enzyme systems. Some key nutrients and antioxidants substances, which can inhibit the oxidation of a molecule and have the capacity to nullify the ill effects of oxidation caused by free radicals in the living organisms, have been and continue to be investigated for their role in the modulation of metabolic pathways involved in detoxification processes. Superoxide dismutase (SOD), glutathione peroxidase (GPX) and catalase are the key enzymatic antioxidants of this defense system by which the free radicals that are produced during metabolic reactions are removed. Several publications to date have leveraged cell, animal, and clinical studies to demonstrate that within the correct dose and synergy, food-derived components and nutrients can function as important co-factors to modulate processes of conversion and excretion of toxins from the body. The "Phase I" Cytochrome P450 CYP450 superfamily of enzymes is generally the first defense employed by the body to bio transform xenobiotic, steroid hormones, and pharmaceuticals. This microsomal membrane bound, heme-thiolate proteins, located mainly in the liver, but also in enterocytes, kidneys, lung, and even the brain, are responsible for the oxidation, peroxidation, and reduction of several endogenous and exogenous substrates. It is accepted that any variability in the number of CYP450 enzymes could have benefit(s) and/or consequence(s) for how an individual responds to the effect(s) of (a) toxin(s). Many nutrients appear to act as both inducers and inhibitors of CYP1 enzyme. These findings indicate that specific foods, vitamins, minerals, enzymes, etc., may upregulate or favorably balance metabolic pathways to assist with toxin biotransformation and subsequent elimination. Various foods such as cruciferous vegetables, berries, soy, garlic, turmeric and other spices, plus probiotics and exogenous antioxidants such as vitamins C, E, B complex, glutathione, cysteine, taurine, methionine, L-carnitine, CoQ10, etc., have been suggested to be beneficial and commonly prescribed as part of the orthomolecular and functional medicine based therapies. The objective of this talk is to highlight the clinical effect of the orthomolecular nutrients in the DE intoxication mechanisms. Enhance the knowledge about the main antioxidants, foods and their individual phytonutrients, especially in the case of dietary supplements and functional foods, could be worthwhile for clinicians to consider for patients who are taking a polypharmacy approach or are in contact with pollution by-products, heavy metals, hormones and further xenobiotic.

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Prevalence of obesity and its association with diet among 13-year old Omani school children

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Obesity is a global health disorder and the WHO considers obesity as the most serious non-communicable disease worldwide and is closely related to improper diet. All age groups are affected but the problem becomes worse when children are affected. Obesity in children is defined as BMI > 95th percentile as defined in the Expert Committee Recommendations. In the US, childhood obesity is about 11%, overweight is about 25%. Obesity prevalence worldwide is on the rise since 1970 especially in developed countries. A WHO report stated that, approximately 58% of diabetes mellitus, 21% of ischemic heart disease and 8–42% of cancer globally were attributable to obesity. These diseases can affect children and adolescents. Obesity also increase cardiovascular disease and increases the risks of all-cause mortality. Obese children are also more likely to become overweight in adulthood than are lean children. Approximately one half of overweight adolescents and over one-third of overweight children remain obese in adulthood.

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